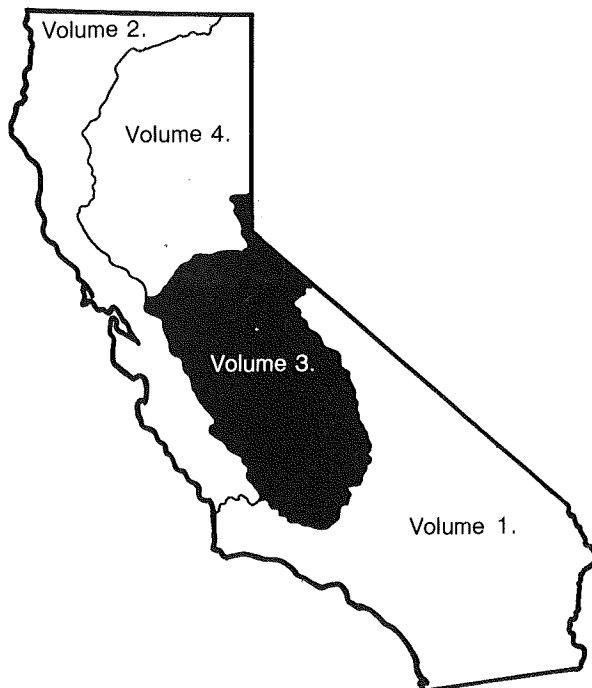




Water Resources Data California Water Year 1991

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



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-91-3
Prepared in cooperation with the California Department of
Water Resources and with other agencies

CALENDAR FOR WATER YEAR 1991

1990

OCTOBER							NOVEMBER							DECEMBER						
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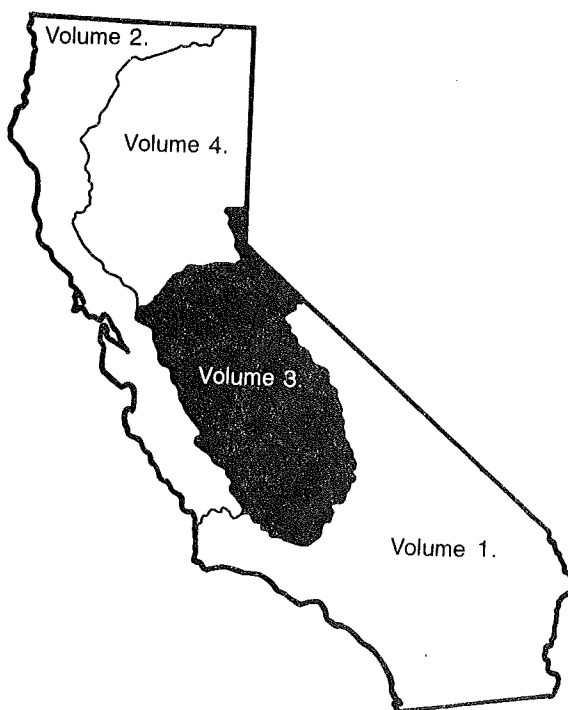
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Water Resources Data California Water Year 1991

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

by J.R. Mullen, S.W. Anderson, T.C. Hunter, and E.B. Hoffman



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-91-3
Prepared in cooperation with the California Department of
Water Resources and with other agencies

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Federal Building, Room W-2233
2800 Cottage Way
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 quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for California are contained in five 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
- Volume 5. Ground-water data

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 John M. Klein, District Chief, California.

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15. Supplementary Notes Prepared in cooperation with the California Department of Water Resources and with other State and Federal Agencies.					
16. Abstract (Limit: 200 words) Water resources data for the 1991 water year for California consist of records of stage, discharge, and water quality of streams; stage and contents in lakes and reservoirs; and water levels and water quality in wells. Volume 3 contains discharge records for 164 gaging stations, 3 crest-stage partial-record streamflow stations and 49 miscellaneous measurement stations; stage and contents records for 46 lakes and reservoirs; water- quality records for 32 streamflow-gaging stations; and precipitation records for one station. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in California.					
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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 ²)	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
10336759	Edgewood Creek near Stateline, NV	3.20	1983-87
10338000	Truckee River near Truckee	553	1945-61, 1977-82
10339400	Martis Creek near Truckee	39.9	1958-90
10342000	Little Truckee River near Hobart Mills	37.1	1947-72
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
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	2,974	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 Ornia 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
11208720	East Fork Kaweah River no 1 conduit near Three Rivers	--	1975-78
11208730	East Fork Kaweah River near Three Rivers	85.8	1952-55, 1958-78
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
11211500	Kaweah River at McKay Point, near Lemoncove	647	1919-21, 1974
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

DISCONTINUED GAGING STATIONS--Continued

Station no.	Station name	Drainage area (mi ²)	Period of record
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
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
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	--	1923, 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	1958-68
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	Chamberlain 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
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
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

DISCONTINUED GAGING STATIONS--Continued

Station no.	Station name	Drainage area (mi ²)	Period of record
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
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
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
11289501	Combined flow Modesto Canal plus Turlock Canal	--	1971, 1974-79
11291500	Relief Creek near Baker Station	24.4	1911-18
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
11294300	North Fork Stanislaus River below Ganns dams, near Big Meadow	111	1961-67
11295000	Utica Canal near Avery	--	1970, 1976-89
11299500	Stanislaus River below Melones powerhouse, near Sonora	905	1931-67
11299501	Stanislaus River below Melones powerhouse, near Sonora	--	1931-60
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
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
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
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	1922-41, 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

DISCONTINUED GAGING STATIONS--Continued

Station no.	Station name	Drainage area (mi ²)	Period of record
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

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 ²)	Period of record
10339380	Martis Creek Lake near Truckee	39.6	1972-90
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

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 ²)	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	54.8	C	1981-84
10336630	Eagle Creek near Camp Richardson	6.38	T,S	1972-74
10336640	Meeks Creek at Meeks Bay	8.08	T,S	1971-74
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, 1977, 1980-85, 1987-88
10337000	Lake Tahoe at Tahoe City	506	WQ	1969, 1978-79
10337500	Truckee River at Tahoe City	507	WQ	1978-81
10338000	Truckee River near Truckee	553	C,T	1977-82
10345900	Truckee River at Floriston	932	T	1968-71
10346000	Truckee River at Farad	932	WQ,B,C	1951-61, 1964-81
11185350	Kern River near Quaking Aspen Camp	530	T	1966-74

DISCONTINUED WATER-QUALITY STATIONS--Continued

Station no.	Station name	Drainage area (mi ²)	Type of record	Period of record
11187000	Kern River at Kernville	1,009	T	1962-66
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
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	T, S	1967-91
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
11253500	Fresno Slough 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
11268000	South Fork Merced River near El Portal	241	T	1975-78
11268200	Merced River near Briceburg	691	T	1976-77
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
11294500	North Fork Stanislaus River near Avery	163	T	1990-91
11295400	Stanislaus River near Hathaway Pines	629	T	1970-83
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
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	T	1961-79
11323500	Mokelumne River below Camanche Dam	627	T	1961-68, 1970-76
11325500	Mokelumne River at Woodbridge	661	C, T	1960-86
11335000	Cosumnes River at Michigan Bar	536	T, S	1963-70, 1973-79

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

WATER RESOURCES DATA -- CALIFORNIA, WATER YEAR 1991

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

FROM WALKER RIVER TO TRUCKEE RIVER

By J.R. Mullen, S.W. Anderson, T.C. Hunter, and E.B. Hoffman

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State 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 data base 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 164 streamflow-gaging stations, 3 crest-stage partial-record streamflow stations and 49 miscellaneous measurement stations; (2) stage and contents records for 46 lakes and reservoirs; and (3) water-quality records for 32 streamflow-gaging stations and 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 one volume, including 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, Books and Open-File Reports Section, Box 25425, Building 810, 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-91-3." 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 microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (916) 978-4668.

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 Food and Agriculture, James W. Wells, Interim Director.
 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.
 Modesto Irrigation District, William Kitscher, Senior Civil Engineer.
 North Kern Water Storage District, Charles Williams, Engineer/Manager.
 Panoche Water and Drainage District, Dennis Falasehi, General Manager.
 San Francisco, City and County, Hetch-Hetchy Water and Power, Andrew B. Moran, General Manager of Public Utilities.
 Tahoe Regional Planning Agency, Davie Ziegler, Executive Director.
 Tulare County Flood Control District, Michael Whitlock, Acting Flood Control Engineer.
 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; Forest Service, U.S. Department of Agriculture; and Bureau of Reclamation, U.S. Department of Interior.

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

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Runoff during the 1991 water year in the area covered by this volume was 77 percent of the 1961-90 median (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 113 percent of median at Los Gatos Creek near Nunez Canyon (station 11224500) to 65 percent at the Kern River near Kernville (station 11186001) and the Merced River at Phono Bridge (station 11266500). In figure 2, monthly mean discharge during the 1991 water year is compared to the 1961-90 median, maximum, and minimum monthly mean discharge at four representative gaging stations. In addition, a comparison of monthly precipitation in the 1991 water year and the long-term average is shown in figure 2. No streams in the area covered by this volume exceeded the peaks of record. A comparison of peak discharge for 1991 water year with the peak discharge for period of record is shown in table 1. A comparison of low flows is shown in table 2. Annual departure from 1961-90 mean discharge for four selected gaging stations is shown in figure 3.

Table 1. Comparison of peak discharge for 1991 water year with those for period of record for selected stations

Station No.	Station name	Water year 1991		Period of record	
		Peak discharge (ft ³ /s)	Date	Peak discharge (ft ³ /s)	Water year
11186001	Kern River near Kernville	12,400	Mar. 4	60,000	1966
11224500	Los Gatos Creek above Nunez Canyon, near Coalinga	1,120	Mar. 4	4,360	1969
11230500	Bear Creek near Lake Thomas A. Edison	815	June 11	3,660	1982
11266500	Merced River at Pohono Bridge, near Yosemite	3,530	May 25	23,400	1955

Table 2. Comparison of 7-day and 1-day low flow for 1991 water year to 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 ³ /s)		1-day low flow (ft ³ /s)		Period of record	
		1991 water year	Base period 1961-90	1991 water year	Base period 1961-90	Minimum daily (ft ³ /s)	Water year
11186001	Kern River near Kernville	96	84	76	83	76	1990, 91
11224500	Los Gatos Creek above Nunez Canyon, near Coalinga	0	0	0	0	0	Many
11230500	Bear Creek near Lake Thomas A. Edison	4.7	2.06	4.0	1.8	1.2	1924
11266500	Merced River at Pohono Bridge, near Yosemite	16.3	5.56	16	5.4	3.3	1924

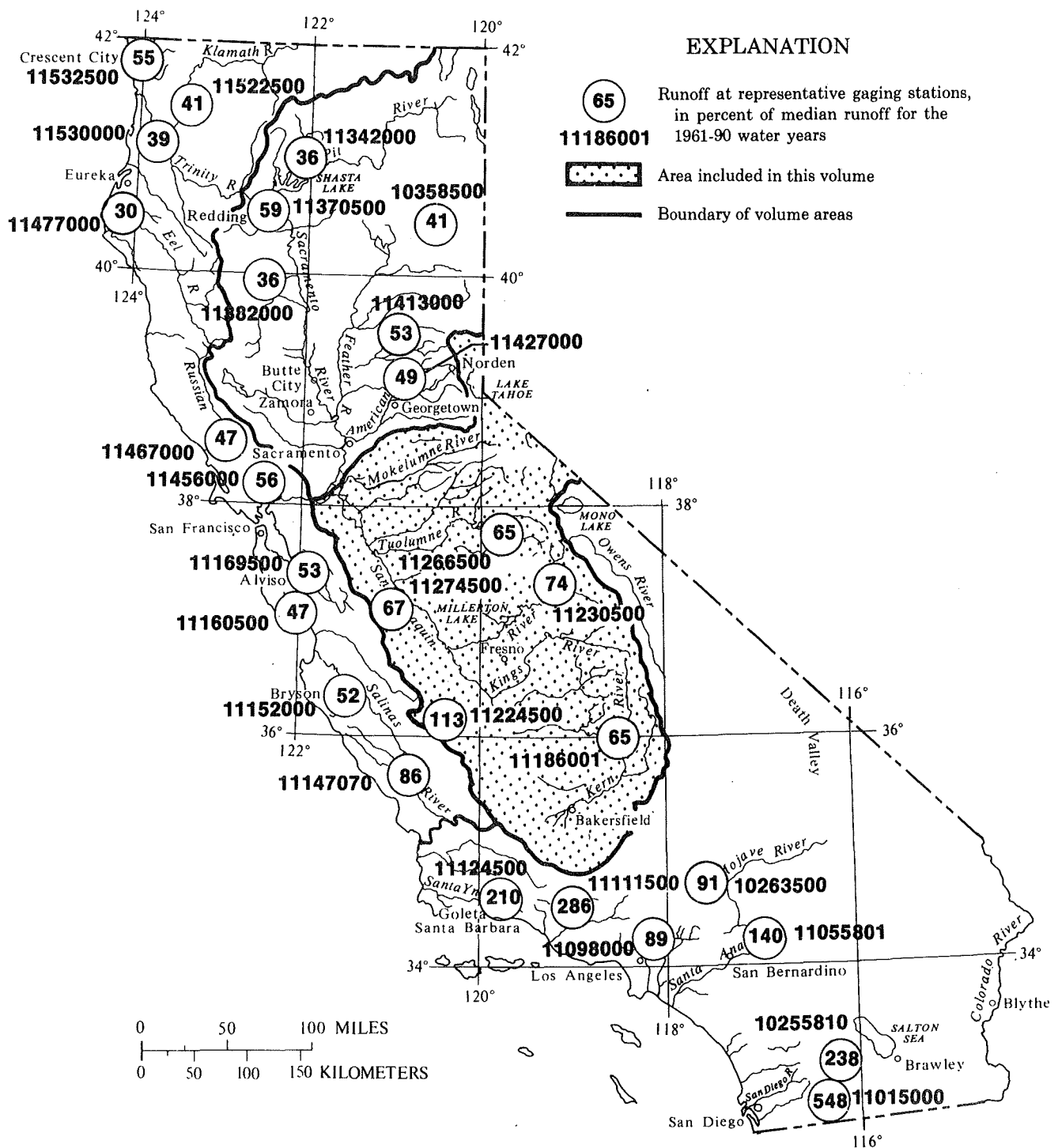


Figure 1. Runoff, in percent of median, for the 1991 water year.

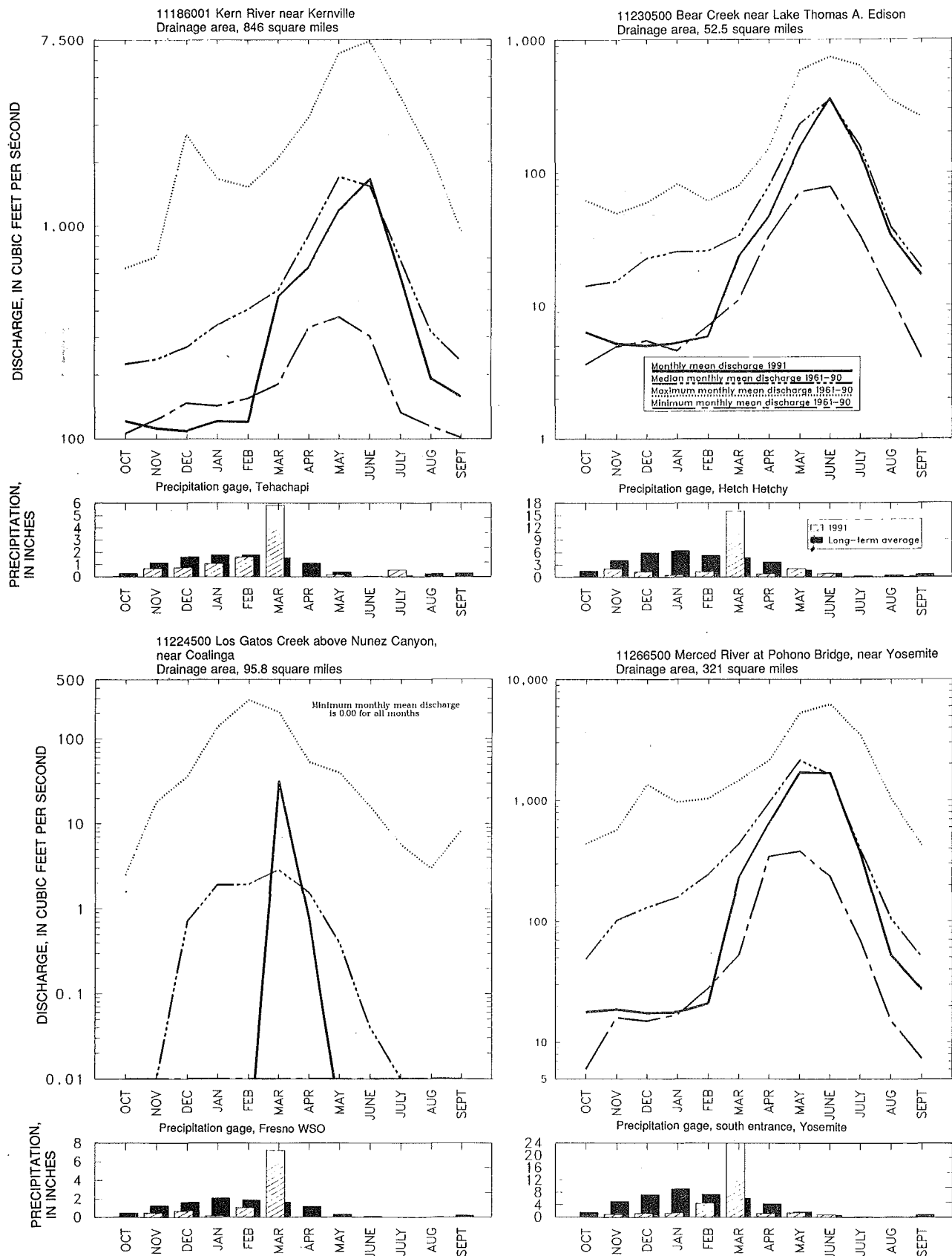


Figure 2. Discharge and precipitation during water year 1991 and long-term statistics at four representative gaging stations. Precipitation data from National Oceanic and Atmospheric Administration, 1991, Climatological data, annual report: v. 95.

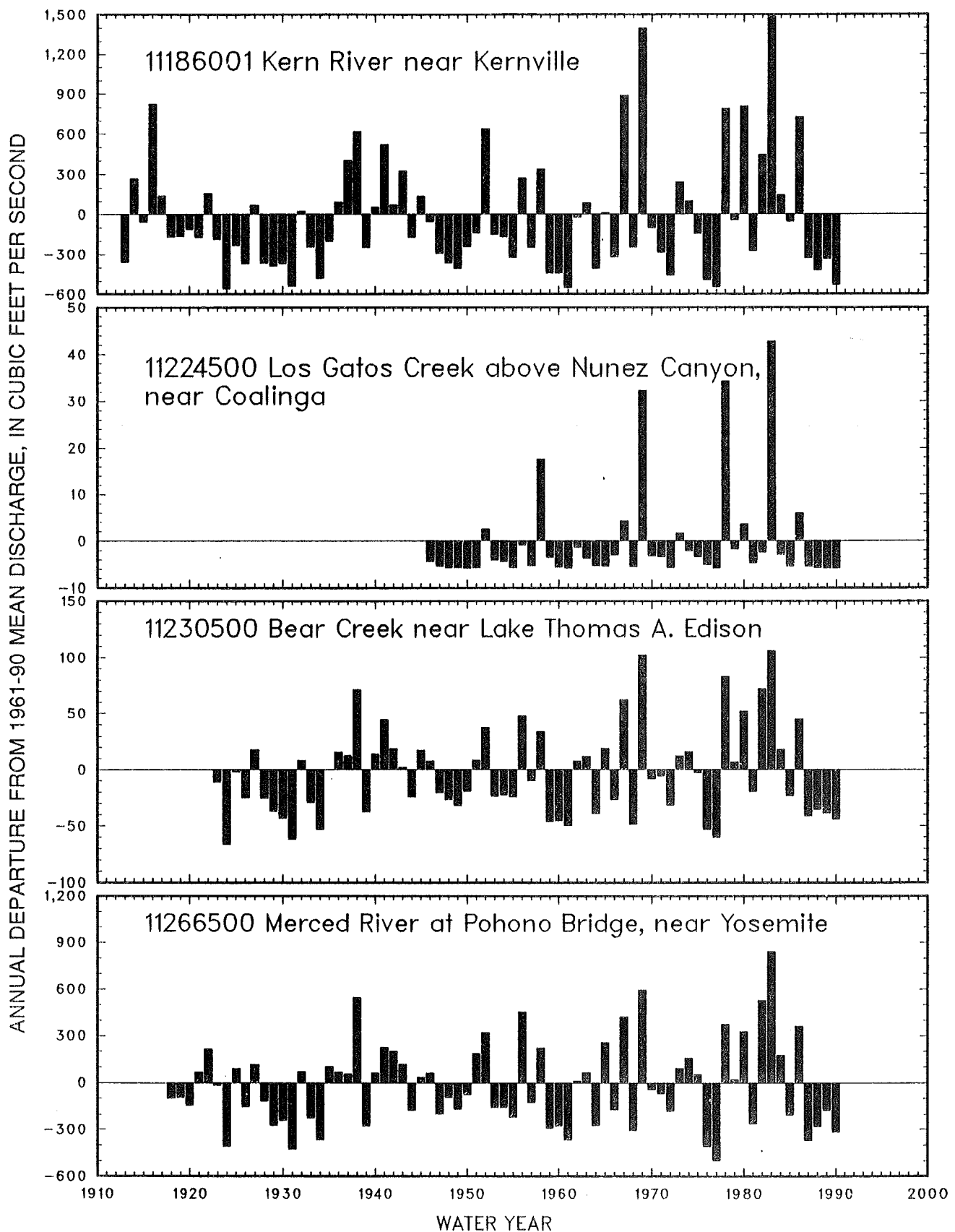


Figure 3. Annual departure from 1961-90 mean discharge for period of record at selected gaging stations.

Precipitation in the area covered by this volume was below normal during the 1991 water year, extending hydrologic drought conditions into a fifth consecutive year. The year was classed as "critically dry" based on flows in the Sacramento River basin. Precipitation (based on 10 representative rain gages) was 75 percent of the long-term average. The average April 1 water content of the Sierra Nevada snowpack was 50 percent of average. There were significant storms in March, with far above average precipitation occurring throughout the region.

The water year began with many reservoir levels below average. In anticipation of a fifth consecutive water year of less-than-normal precipitation, many water agencies limited reservoir releases to maximize storage. Most demands for water were met in 1991, although supply was limited. In the Sierra Nevada foothills, population has increased about 69 percent since 1977 and water use has increased 30 percent. In the Central Valley areas, population has increased 38 percent, but there were no concomitant increases in reservoir storage capacity. Many reservoirs had 50 percent of average or less in storage. By the end of the water year, storage in major reservoirs was about 40 percent of the average. Many small- to moderate-sized reservoirs were less than 50 percent of capacity. Both mandatory and voluntary water-conservation programs were kept in force by those agencies serving metropolitan water districts that rely on water imported from Sierra Nevada reservoirs. The State Water Project cut deliveries to agricultural customers by 50 percent, and the Central Valley Project cut deliveries to most customers by 25 to 50 percent. The drought was severe in the southern part of the San Joaquin Valley, but the impact was not as severe in many areas because ground water was available.

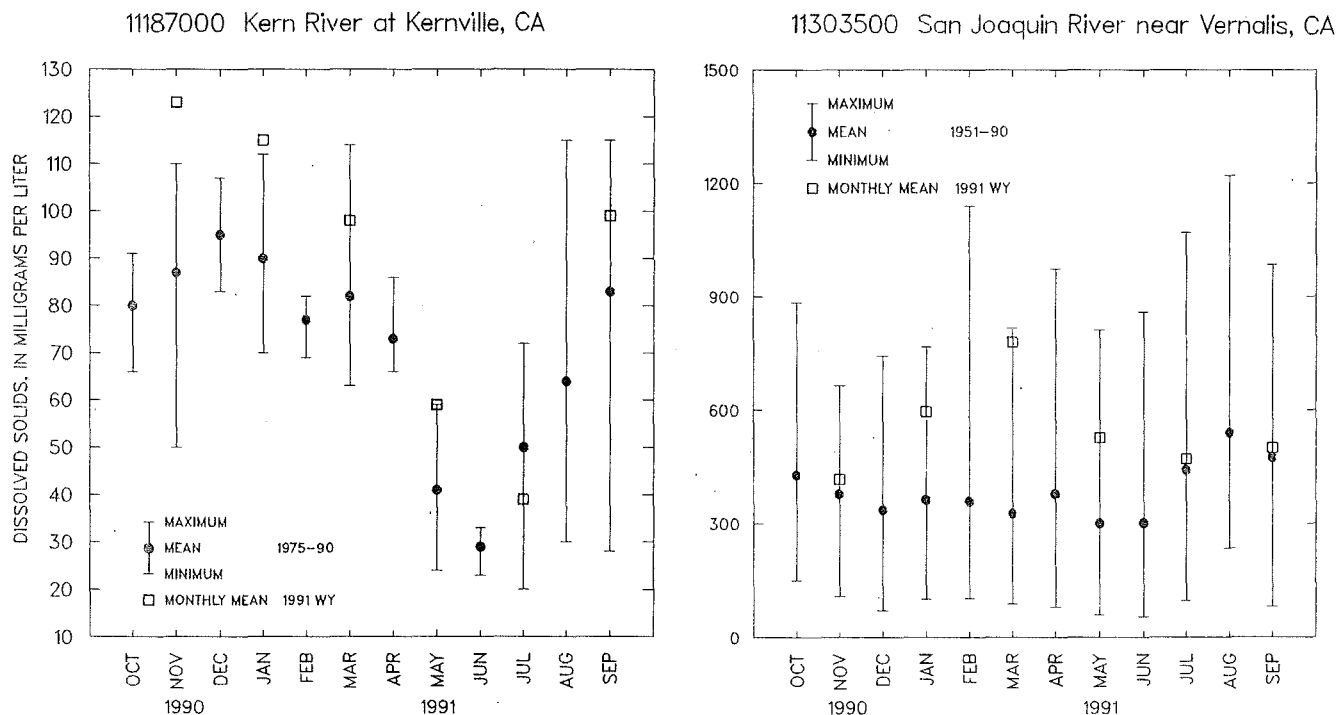


Figure 4. Comparison of monthly mean dissolved-solids concentrations during water year 1991 with long-term dissolved-solids concentrations at two selected stations.

Water Quality

Water samples collected at four NASQAN and two Hydrologic Benchmark stations reported in this volume were analyzed for water-quality constituents. Median dissolved-solids concentrations of samples collected from these stations were slightly larger when compared to the 1990 values. The monthly mean dissolved-solids concentrations during water year 1991 are compared in figure 4 with long-term dissolved-solids concentration at two selected stations. The largest densities of fecal-coliform bacteria (1,500 colonies per 100 milliliters) and fecal-streptococcus bacteria (11,000 colonies per 100 milliliters) were in water samples collected from the San Joaquin River near Vernalis (station 11303500) and the Mokelumne River at Woodbridge (station 1132550), respectively.

Sediment

Suspended-sediment discharge and concentration were monitored daily at six stations and periodically at eight stations in the area covered by this volume. Five of the daily stations monitor sediment transport into Lake Tahoe (station 10337000). The high resistance to erosion of the granitic and volcanic rock surrounding the lake, as well as the presence of snowcover during a significant part of the year, generally resulted in relatively low sediment discharge rates and concentrations. The stations monitored periodically are in an area extending from as far north as Truckee to as far south as the town of Kernville.

During the 1991 water year, sediment discharge for all stations in the area was significantly less than normal. Sediment discharge for four stations in the Lake Tahoe basin ranged from 8 to 40 percent of the mean sediment discharge for the 1981-90 water years. Sediment discharge for the San Joaquin River near Vernalis (station 11303500) was 25 percent of the long-term mean (1957-90).

Sediment discharge for the daily stations ranged from 31 tons per year for General Creek near Meeks Bay (station 10336645) to 87,400 tons per year for the San Joaquin River near Vernalis. Annual sediment discharge per square mile of drainage area ranged from a minimum of 2.6 tons per square mile for Trout Creek near Tahoe Valley (station 10336780) to a maximum of 29 tons per square mile for Blackwood Creek near Tahoe City (station 10336660).

Most sediment transport in the Lake Tahoe basin was the result of storm runoff in early March and snowmelt runoff in May and June. Sediment discharge at the San Joaquin River station was more evenly distributed during the year because of flow regulation.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark 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 drainage basins nationwide. The data 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 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 or trends with time in the pattern of occurrence of water-quality characteristics; and (4) to provide a nationally consistent data base useful for water-quality assessment and hydrologic research.

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1991 water year that began October 1, 1990, and ended September 30, 1991. 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.

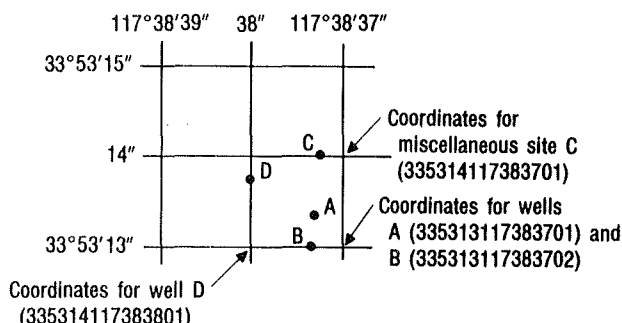


Figure 5. System for numbering miscellaneous sites (latitude and longitude).

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.

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 record, 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 record, 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

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location, period of record, average discharge, historical extremes, 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 gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. 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 can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be 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 in which the most recently revised figure was published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (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 statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also 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.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations with at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development.

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 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 and 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 in published records is discovered, 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 storage-capacity table when daily contents are given.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"), 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 are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations, monthly and (or) yearly measured discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

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 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.

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, measurements of 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 (ft^3/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 California 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 on page 21 of this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the California 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 California District office.

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 (ng/L). Present 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 will begin using new trace-element protocols in the near future.

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.

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 Bench-mark 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 in analyzing sediment samples and computing sediment records are given in Techniques of Water-Resources Investigations, Book 5, Chapter C1; methods used by the laboratory are given in Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4.

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 over 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 over 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 over 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. 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.)

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.

Acre-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^3) and periphyton and benthic organisms are expressed in grams per square meter (g/m^2).

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 (μm^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:

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

From cell volume, total algal biomass expressed as biovolume ($\pi\text{m}^3/\text{mL}$) 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^3/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.

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 the National Geodetic Vertical Datum of 1929. This elevation is established by a system of levels from known bench marks 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 (CaCO_3).

Hydrologic Bench-Mark 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, λ 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, 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, 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 (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.....	.000024-0.004	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 (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{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.

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 (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.....Hexagenia
Species.....Hexagenia limbata

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, 1991, is called the "1991 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, Books and Open-File Reports Section, Federal Center, Box 25425, Building 810, Denver, CO 80225. Prepayment is required. Remittance should be sent by check or money order payable to U.S. Geological Survey, Department of the Interior. 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 Warren 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. Rathbun, N. 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. 27 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 Richard L. Cooley and Richard L. Naff: USGS--TWRI: Book 3, Chapter B4. 1990. 232 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-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, edited 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, edited by L.J. Britton and P.E. Greens: 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.
- 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.

EXPLANATION

- ▲ GAGING STATION
- ◆ GAGING AND WATER-QUALITY STATION
- ◆ GAGING AND WATER-QUALITY (TEMPERATURE, SEDIMENT) STATION

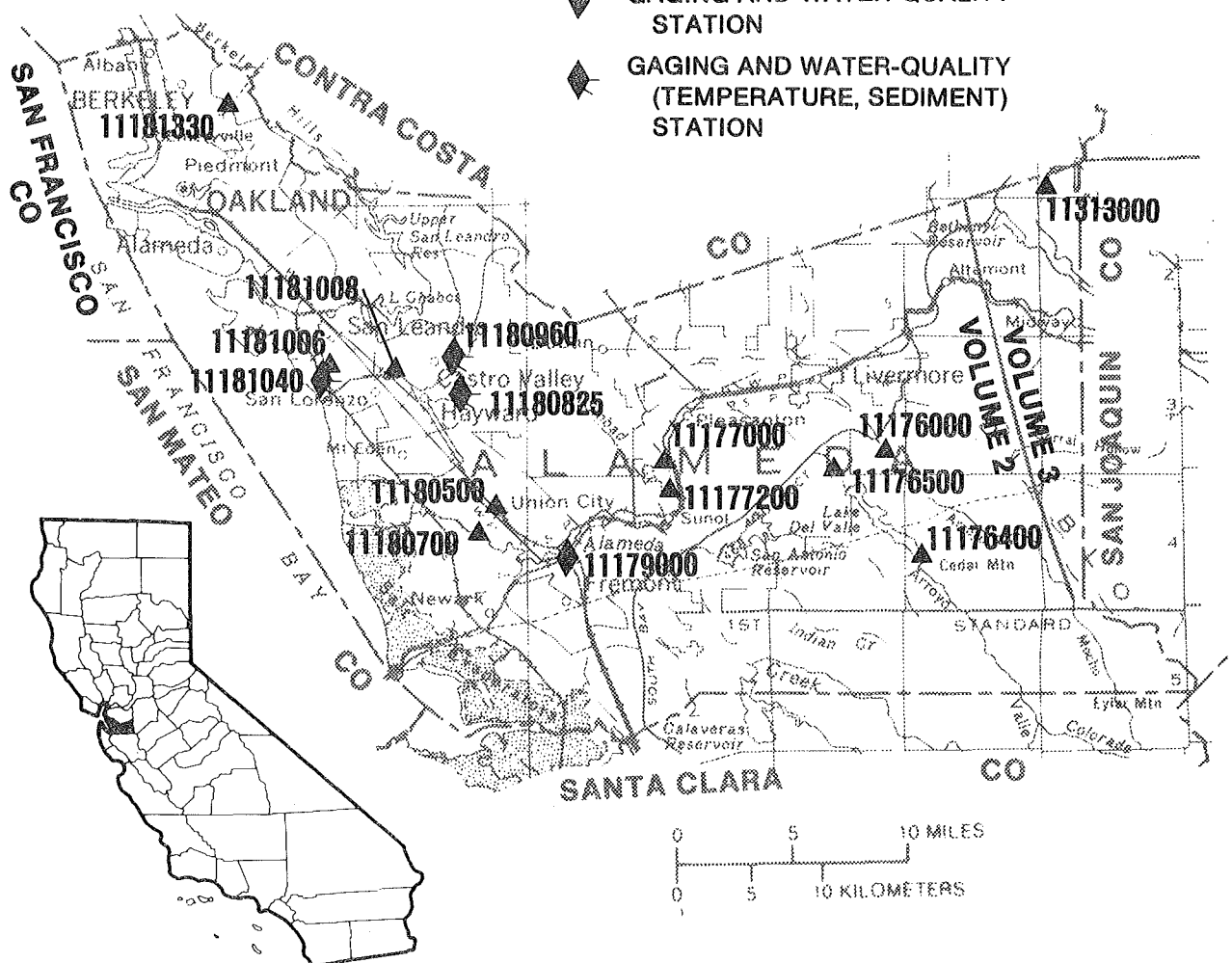


Figure 6. Location of discharge and water-quality stations in Alameda County.
(NOTE: Records for stations 11176000 through 11181330 published in volume 2.)

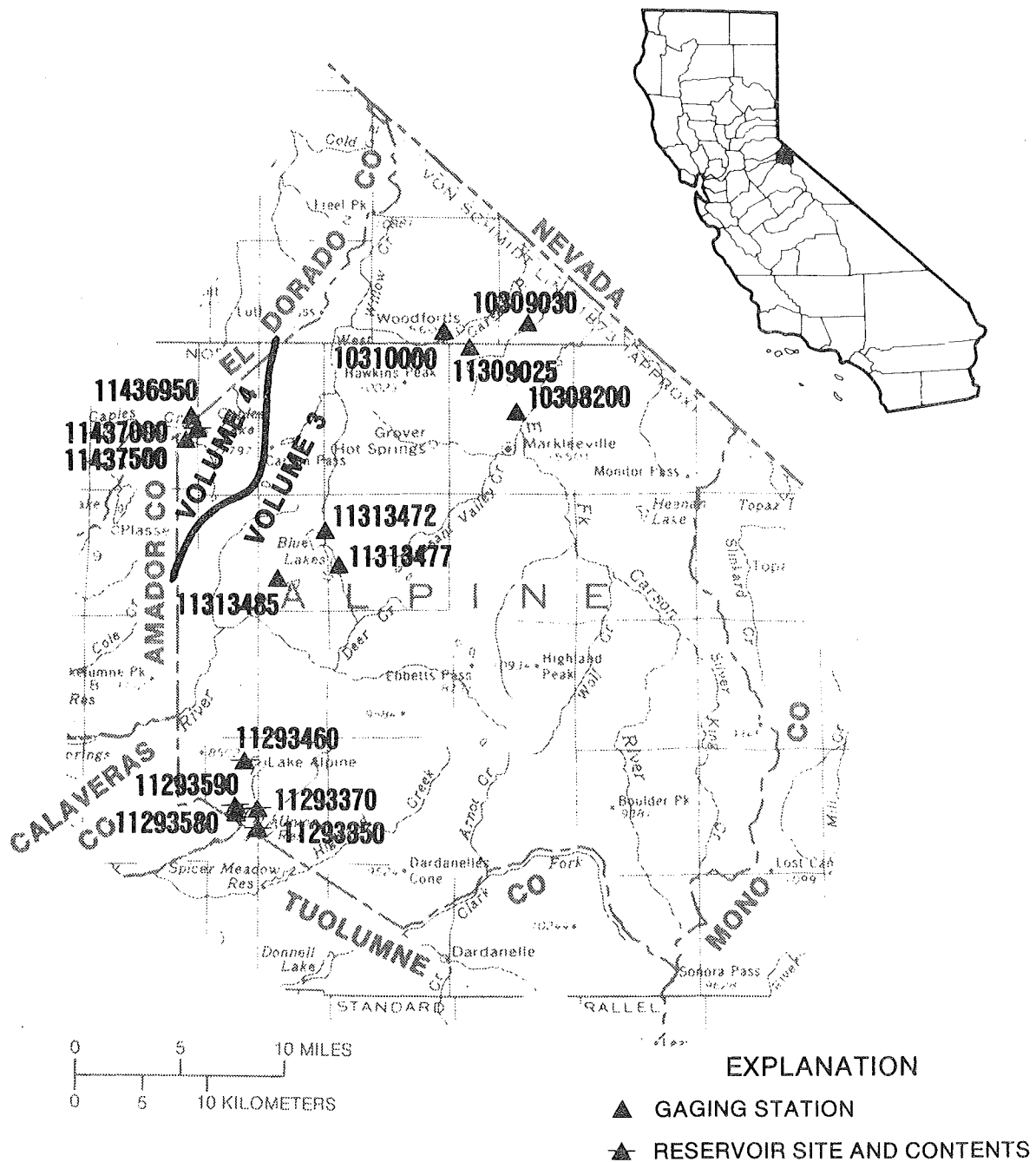


Figure 7. Location of discharge stations in Alpine County.
 (NOTE: Stations 10297000, 10336740, and 10336759 in Douglas County, Nevada, not shown on this map. Record for stations 11436950, 11437000, and 11437500 published in volume 4.)

EXPLANATION

- ▲ GAGING STATION
- POWERHOUSE
- ▲ RESERVOIR SITE AND CONTENTS

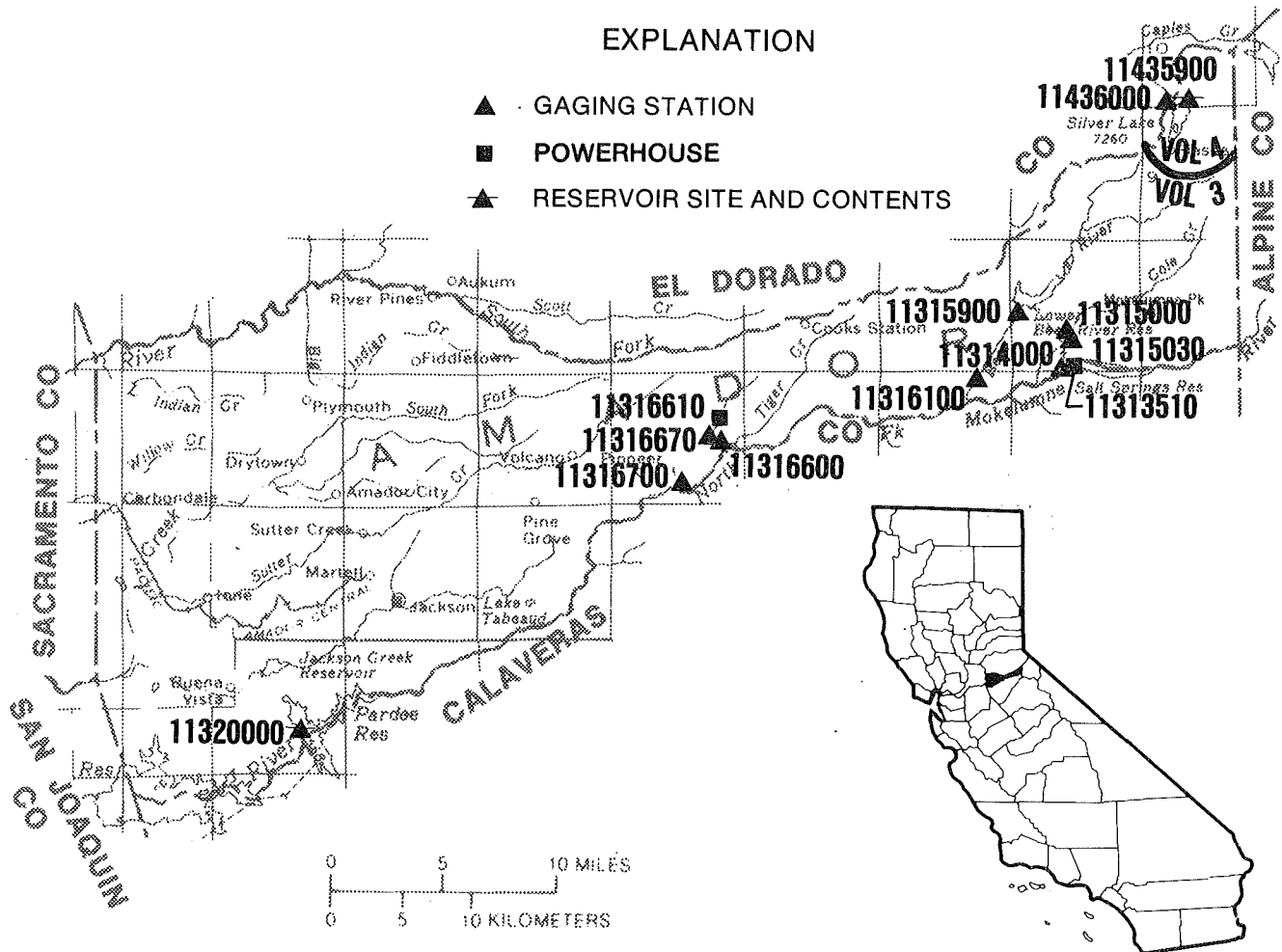


Figure 8. Location of discharge stations in Amador County.
 (NOTE: Record for stations 11435900 and 11436000 published
 in volume 4.)

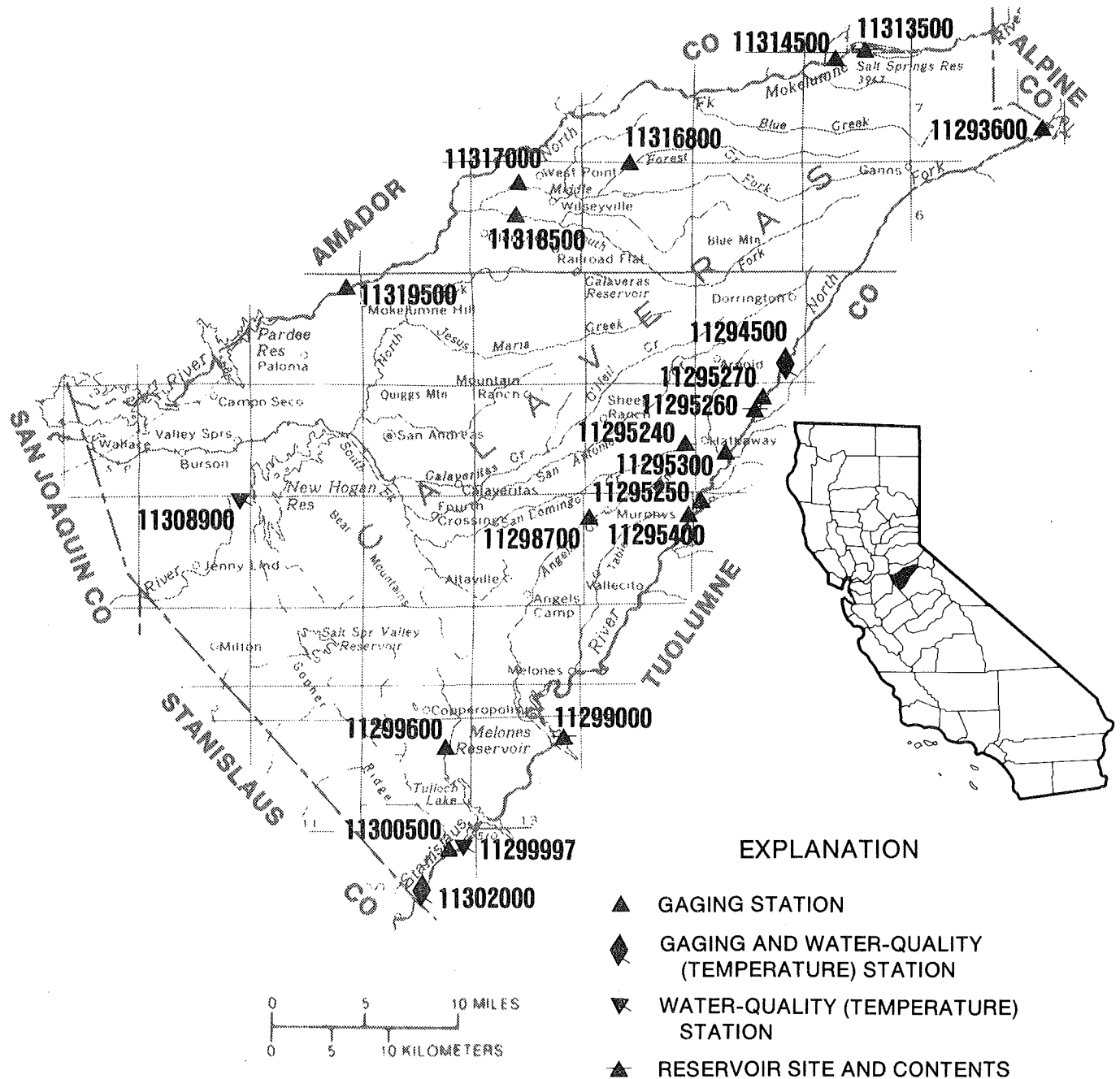


Figure 9. Location of discharge and water-quality stations in Calaveras County.

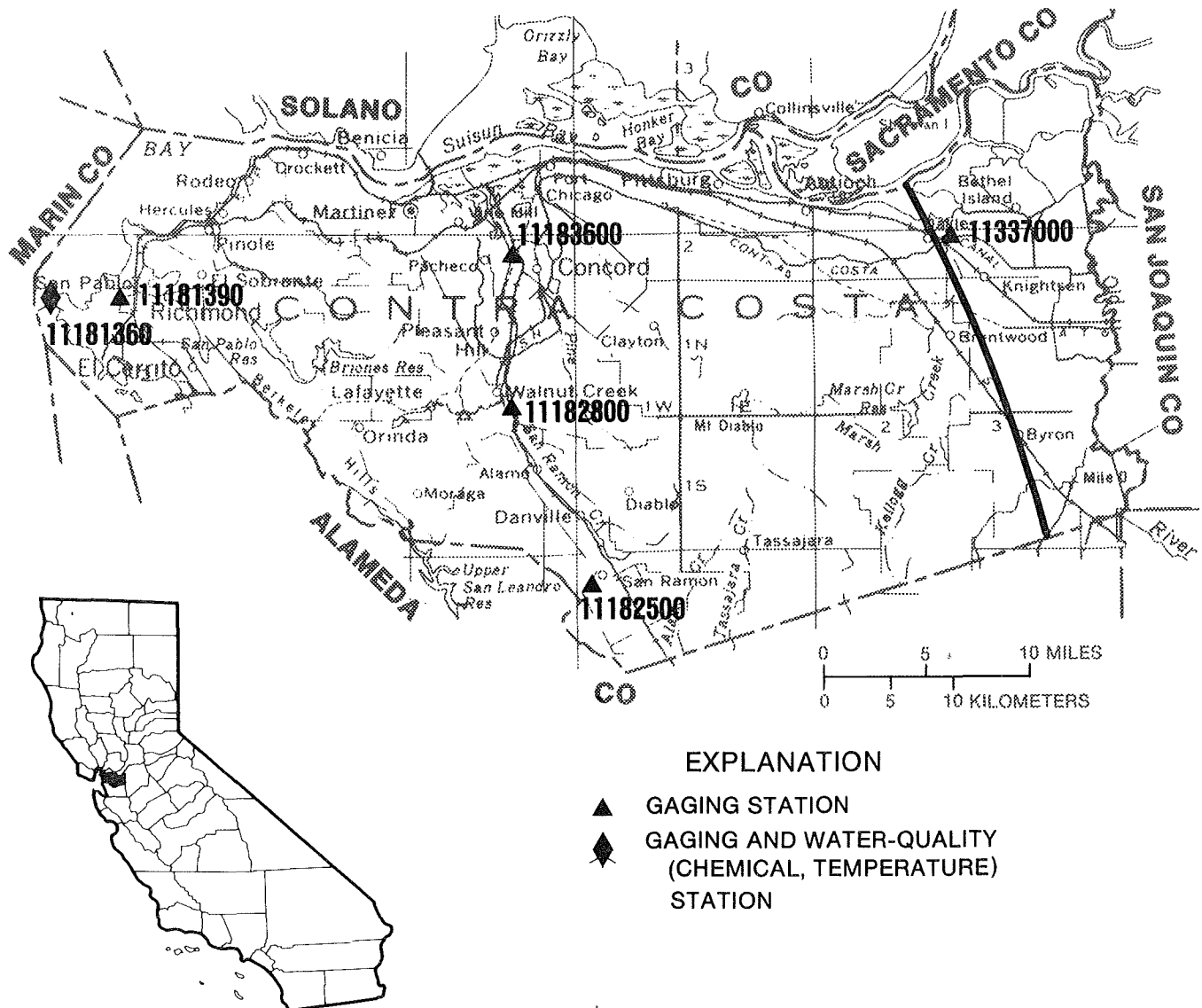


Figure 10. Location of discharge and water-quality stations in Contra Costa County.
(NOTE: Records for stations 11181390 through 11183600 published in volume 2.)

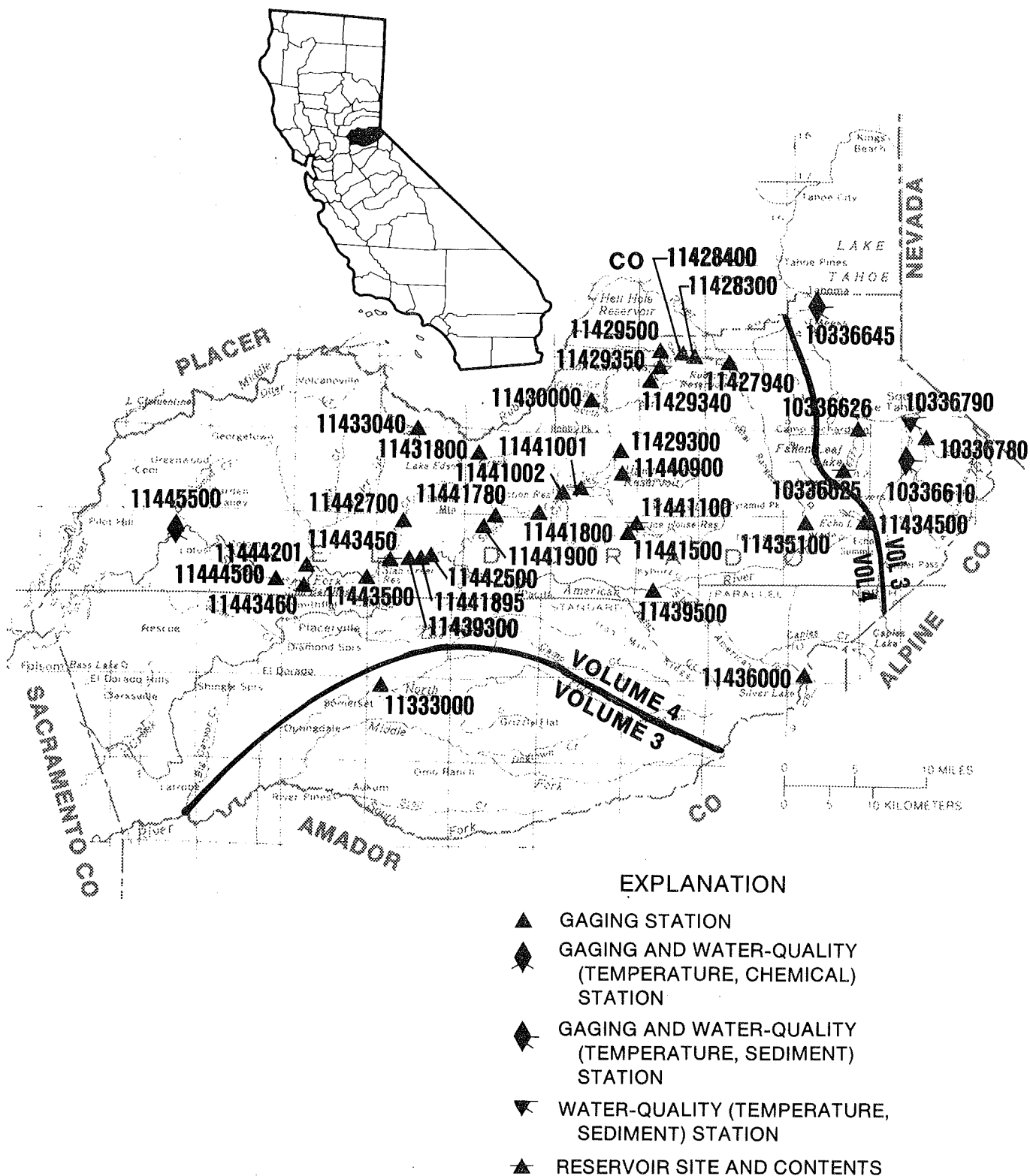


Figure 11. Location of discharge and water-quality stations in El Dorado County.
 (NOTE: Records for stations 11427940 through 11445500 published in volume 4.)

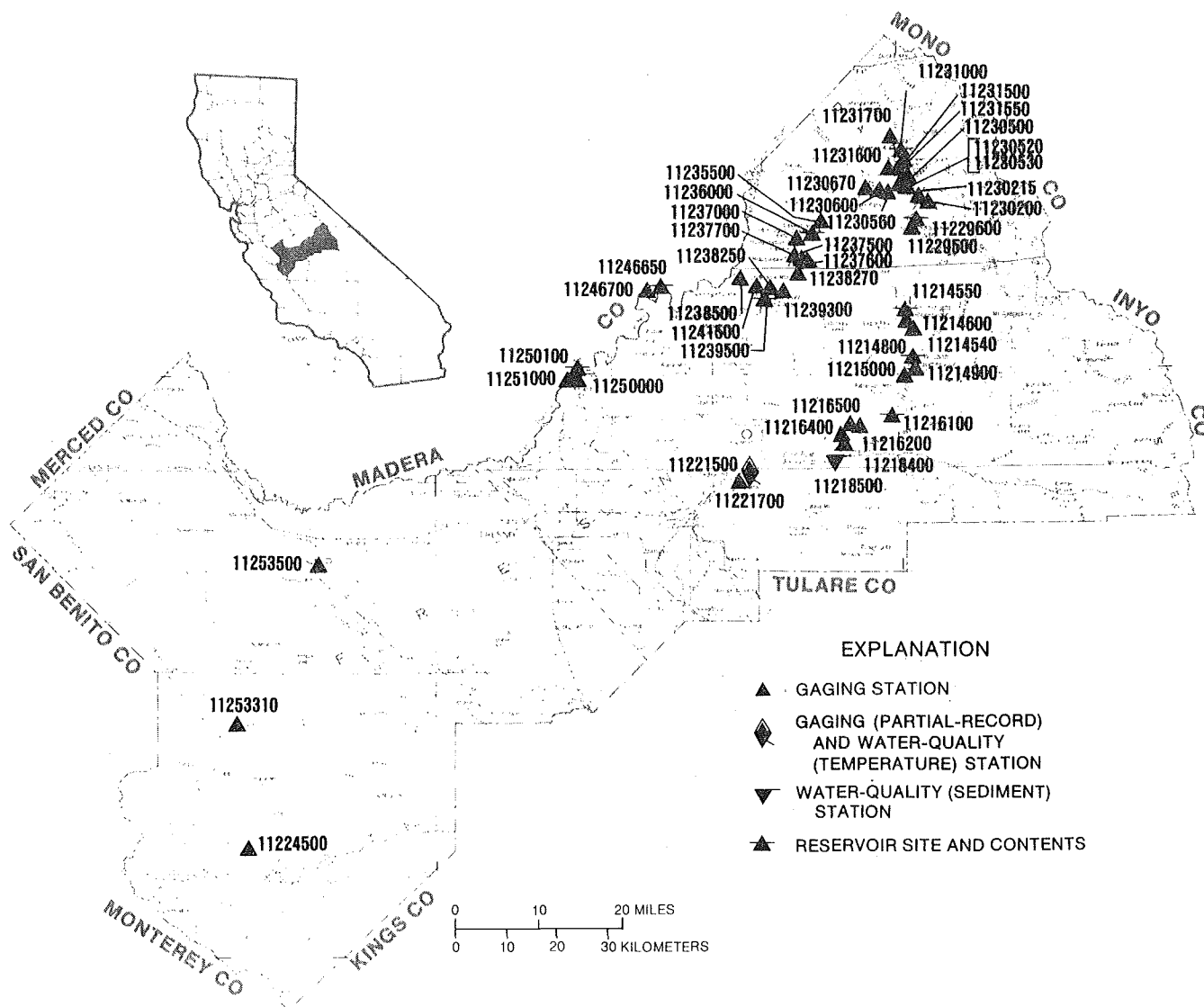


Figure 12. Location of discharge and water-quality stations in Fresno County.

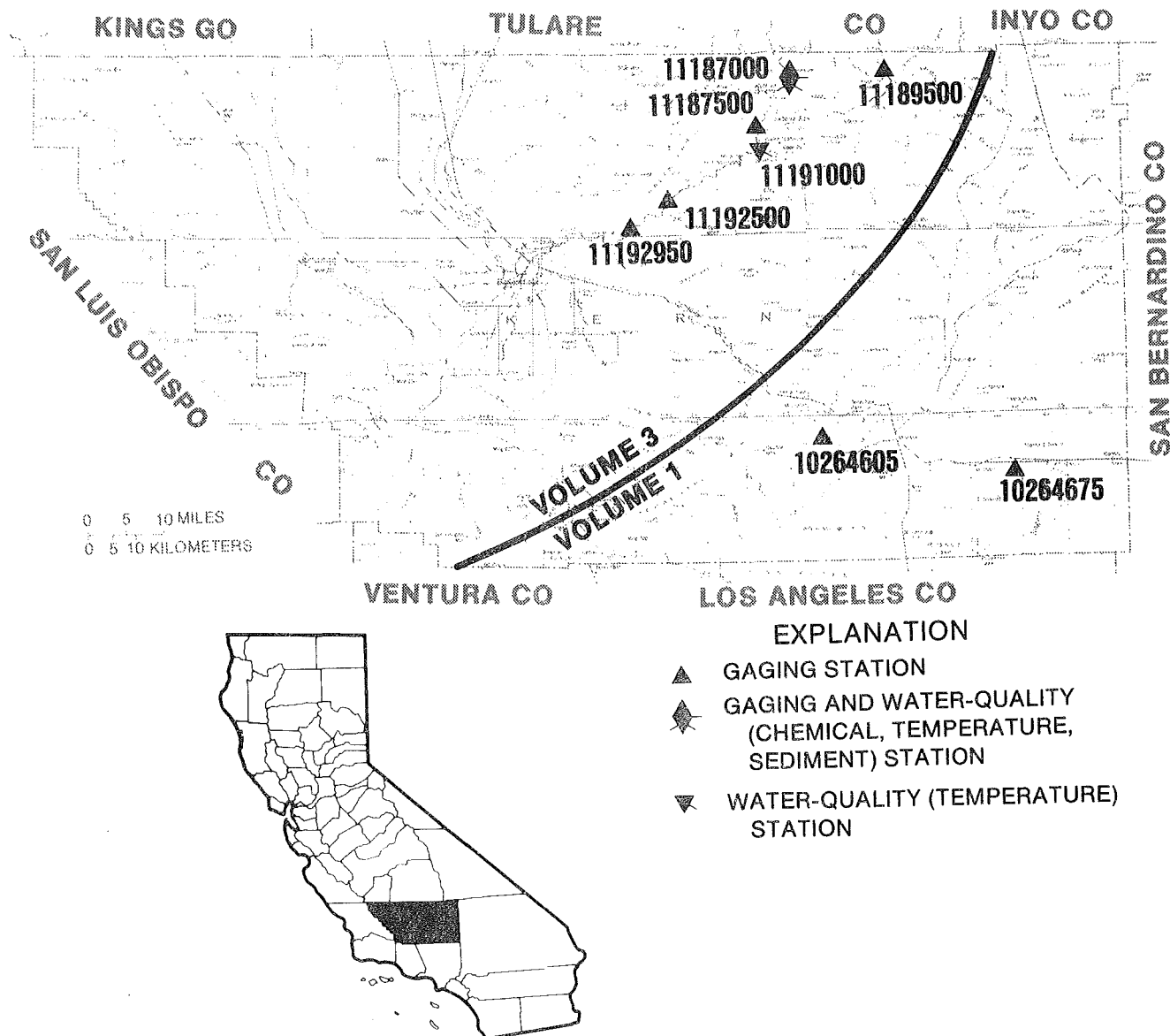


Figure 13. Location of discharge and water-quality stations in Kern County.
 (NOTE: Records for stations 10264605 and 10264675 published in volume 1.)

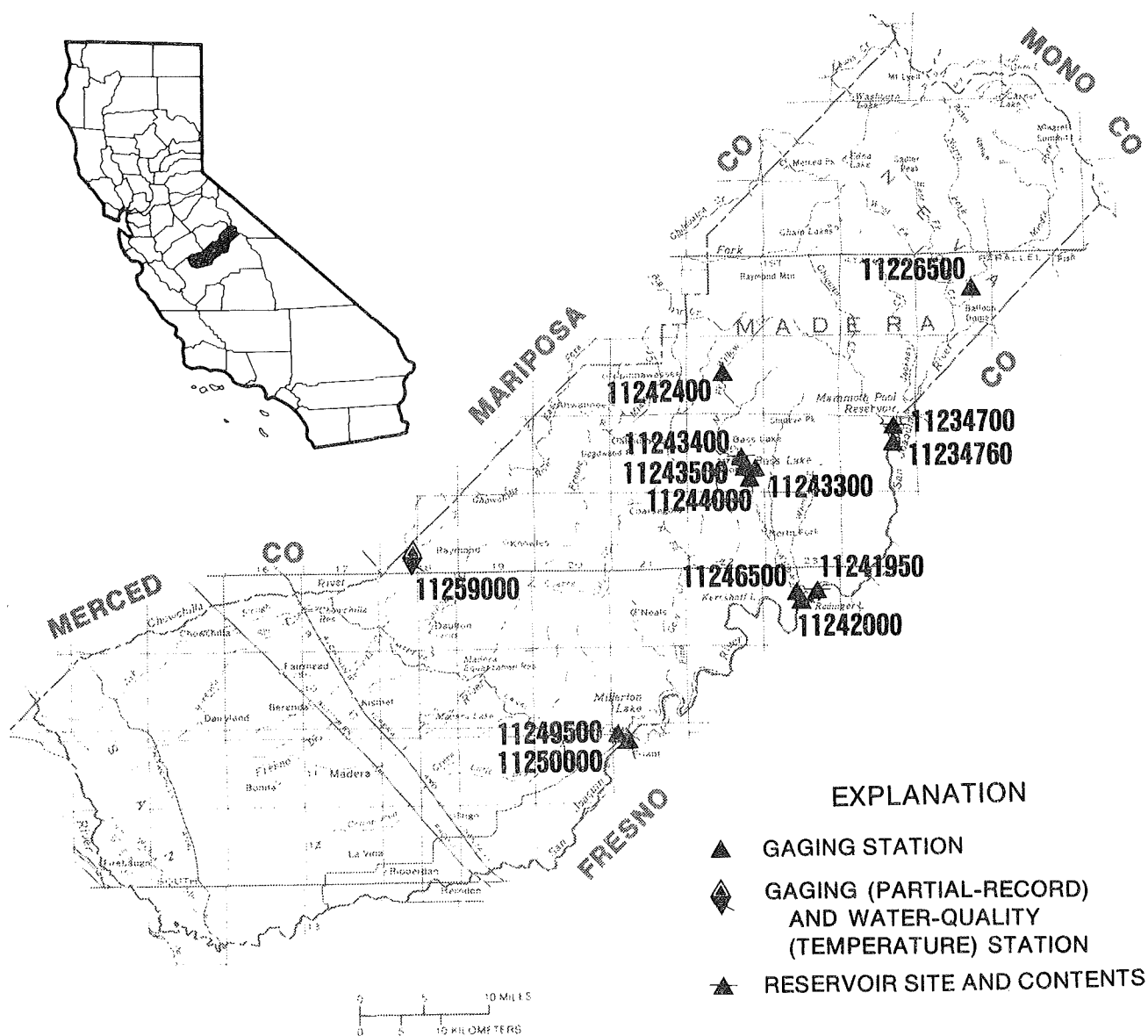


Figure 14. Location of discharge and water-quality stations in Madera County.

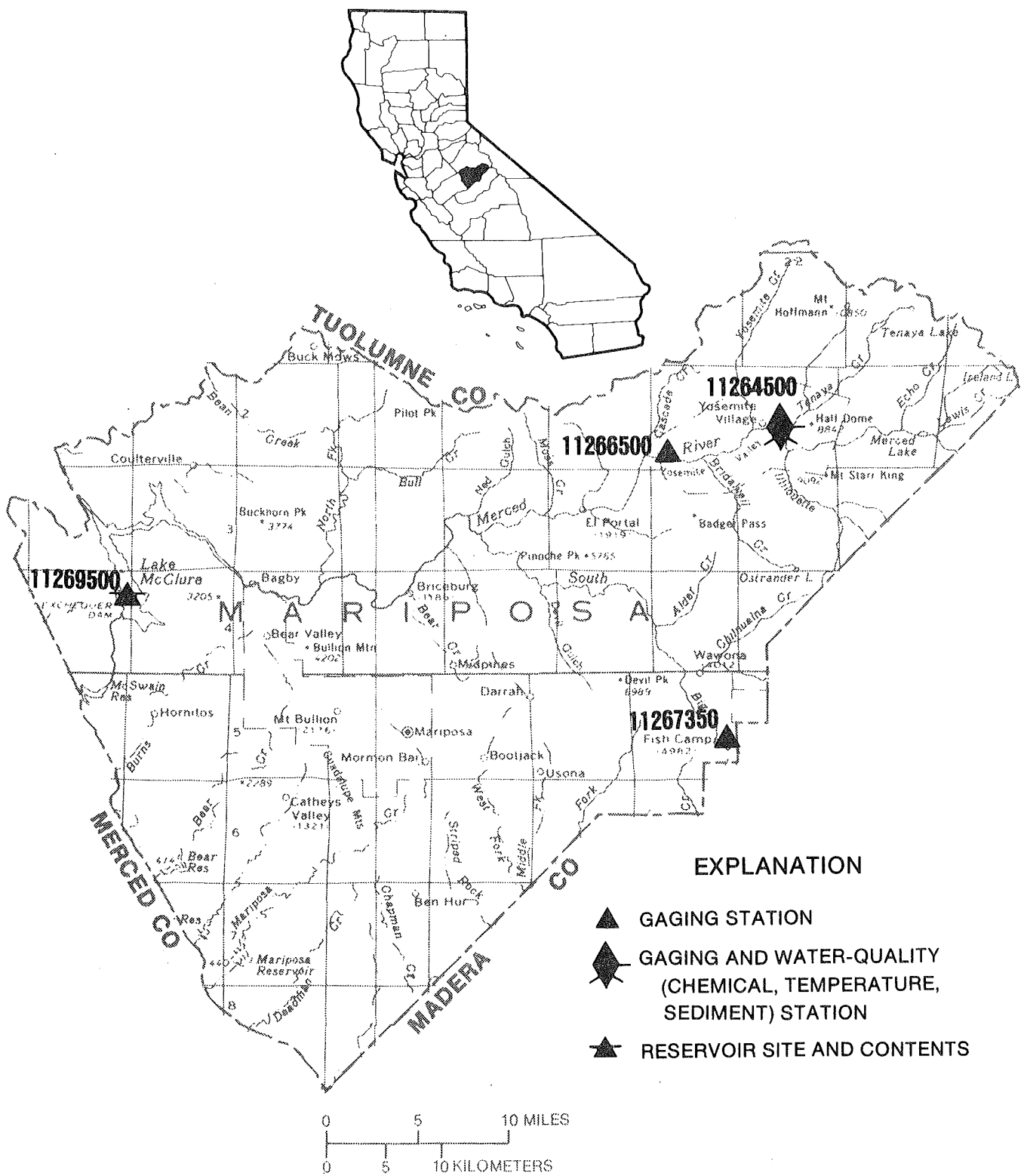


Figure 15. Location of discharge and water-quality stations in Mariposa County.

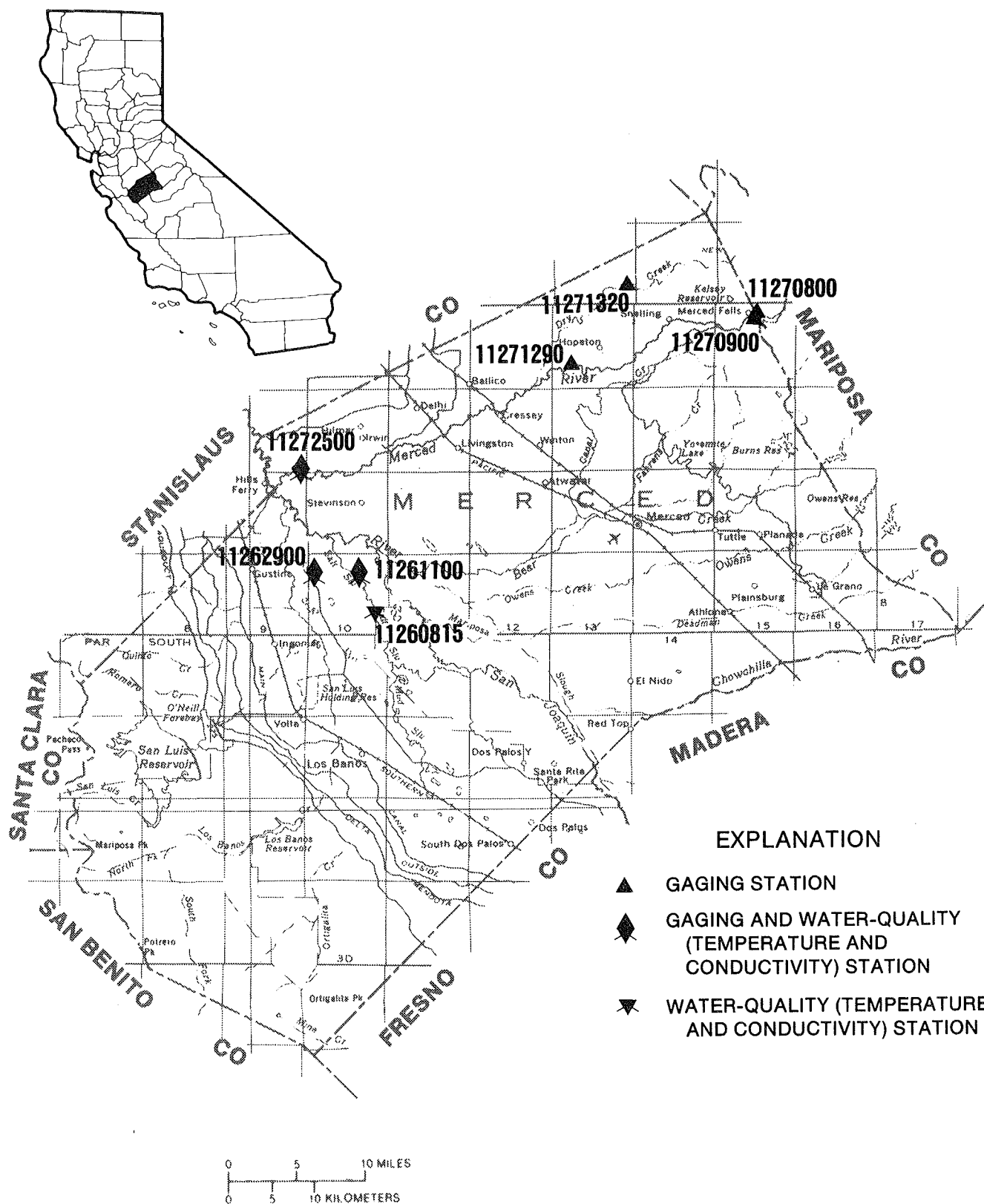


Figure 16. Location of discharge and water-quality stations in Merced County.

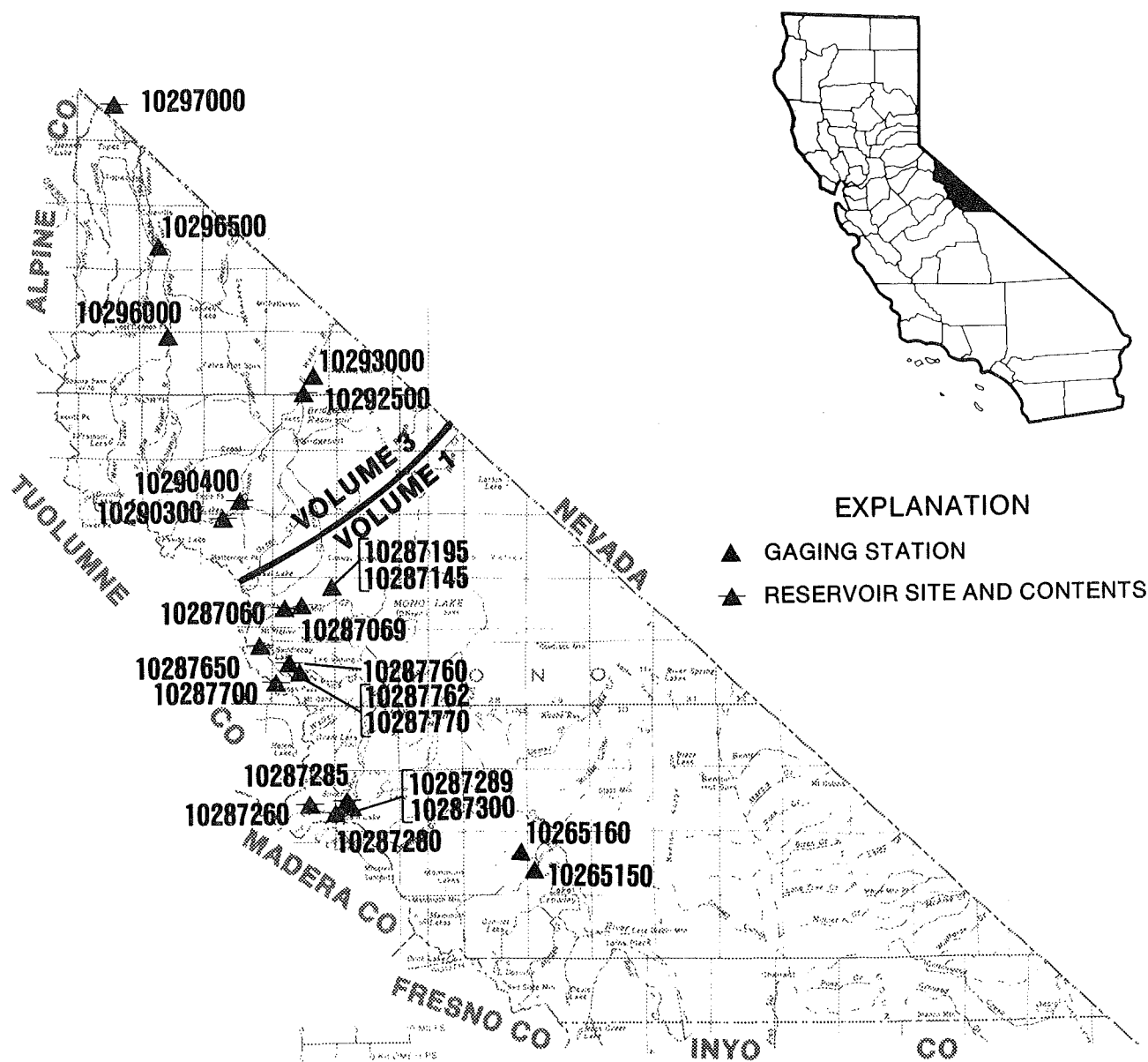
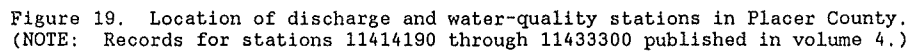


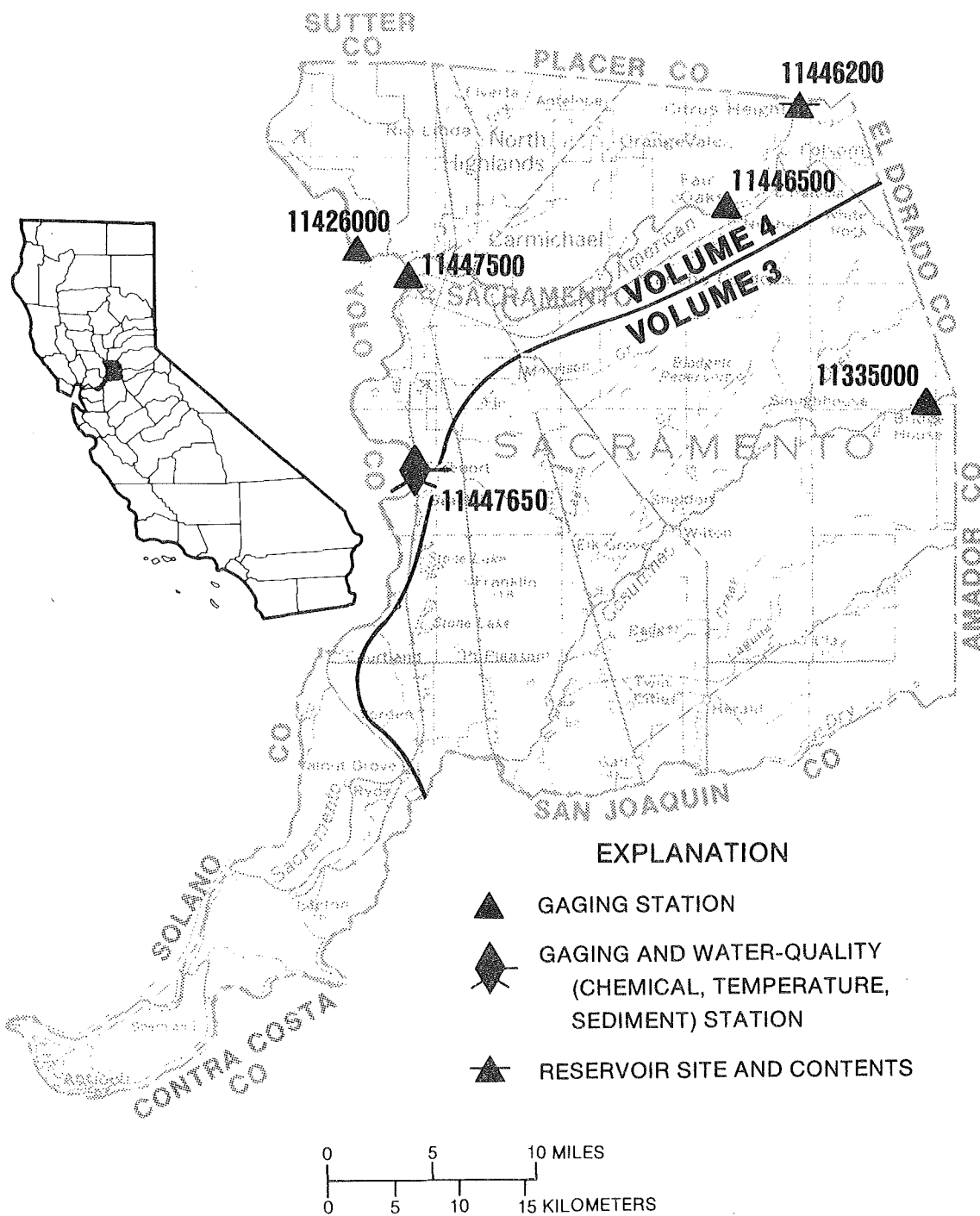
Figure 17. Location of discharge stations in Mono County.
 (NOTE: Records for stations 10265150 through 10287770
 published in volume 1.)



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



(NOTE: Records for stations 11414190 through 11433300 published in volume 4.)



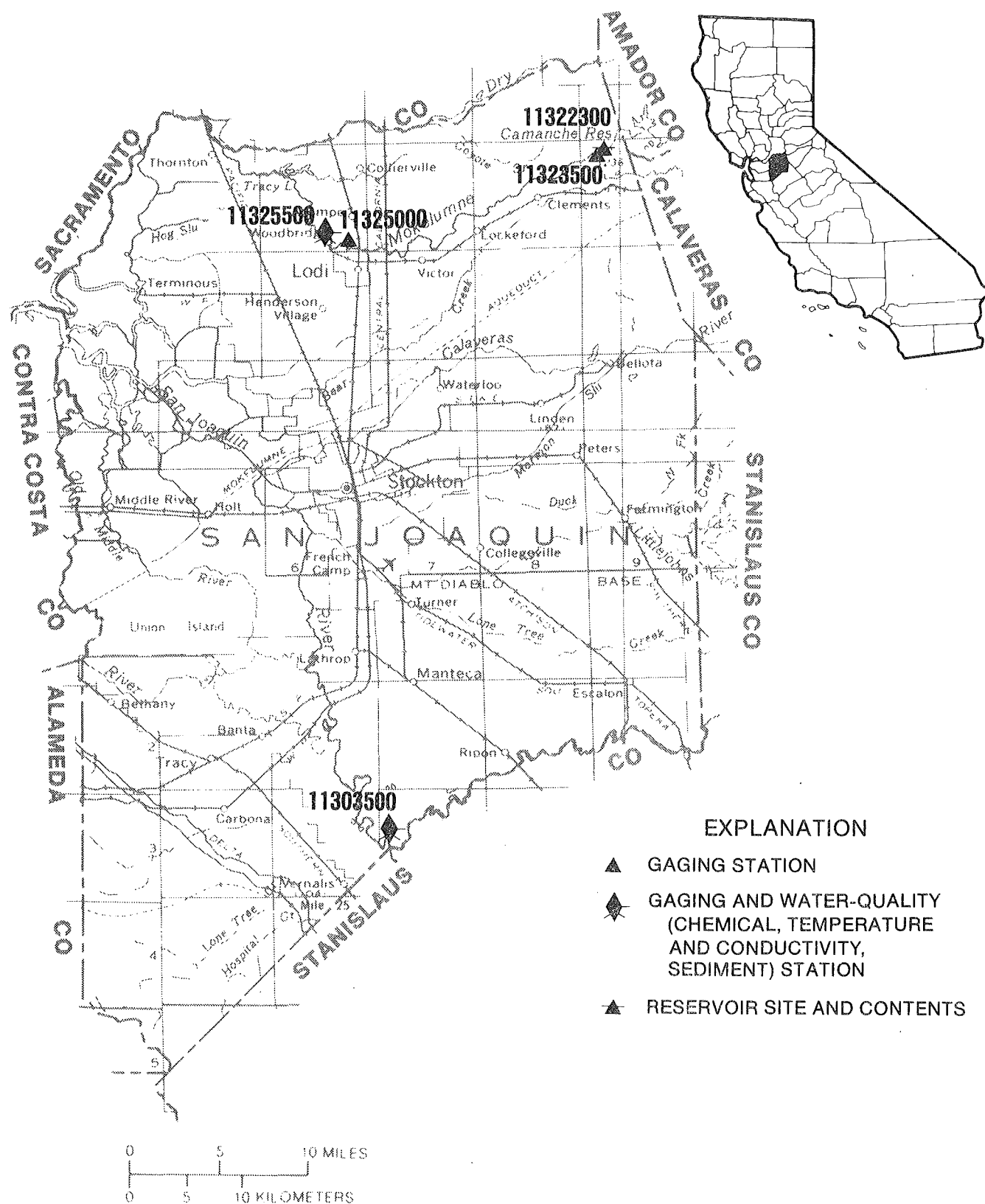
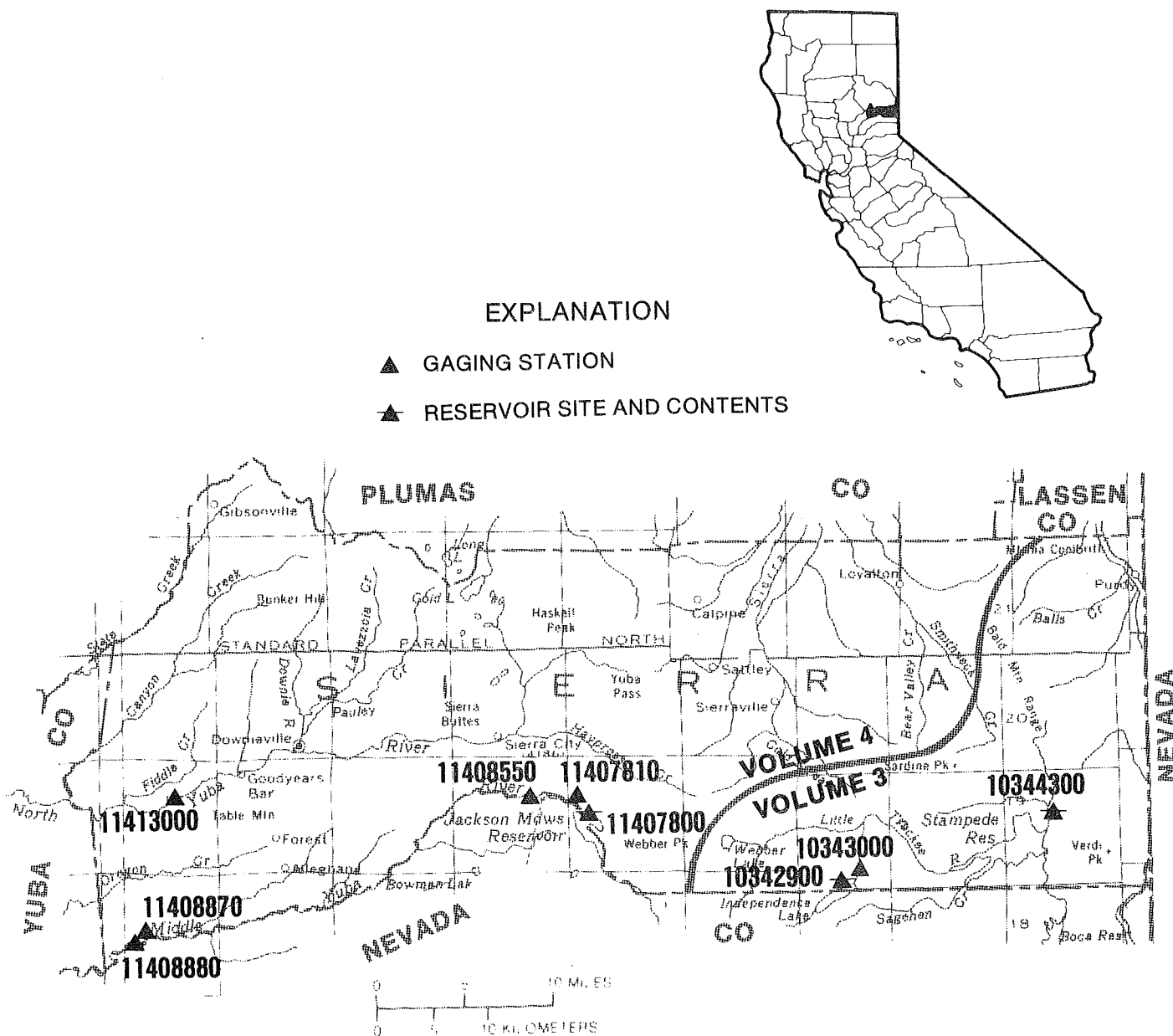


Figure 21. Location of discharge and water-quality stations in San Joaquin County.



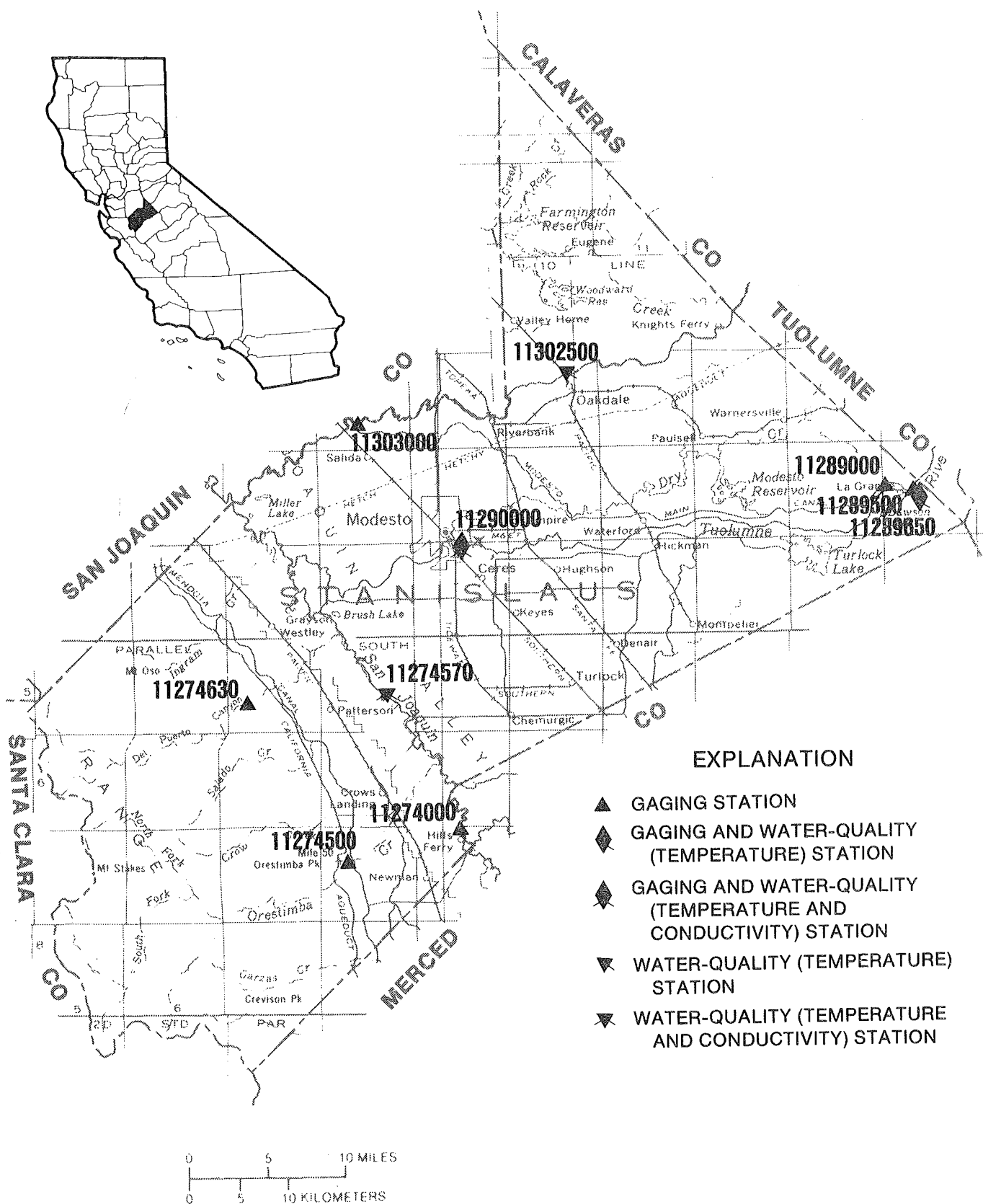


Figure 23. Location of discharge and water-quality stations in Stanislaus County.

EXPLANATION

- ▲ GAGING STATION
- △ GAGING (PARTIAL-RECORD)
- ◊ GAGING (PARTIAL-RECORD) AND WATER-QUALITY (TEMPERATURE) STATION
- ▲ RESERVOIR SITE AND CONTENTS

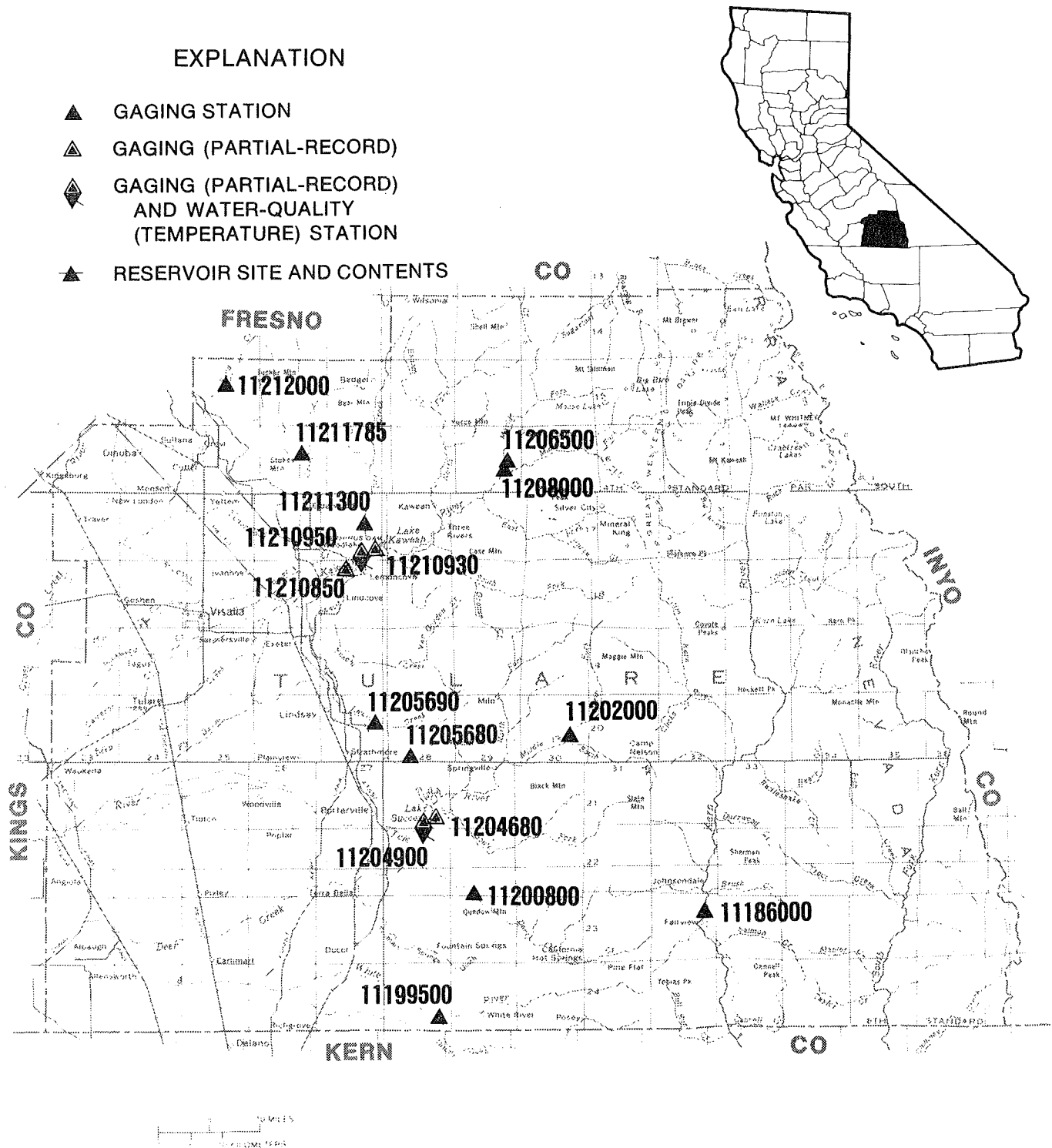


Figure 24. Location of discharge and water-quality stations in Tulare County.

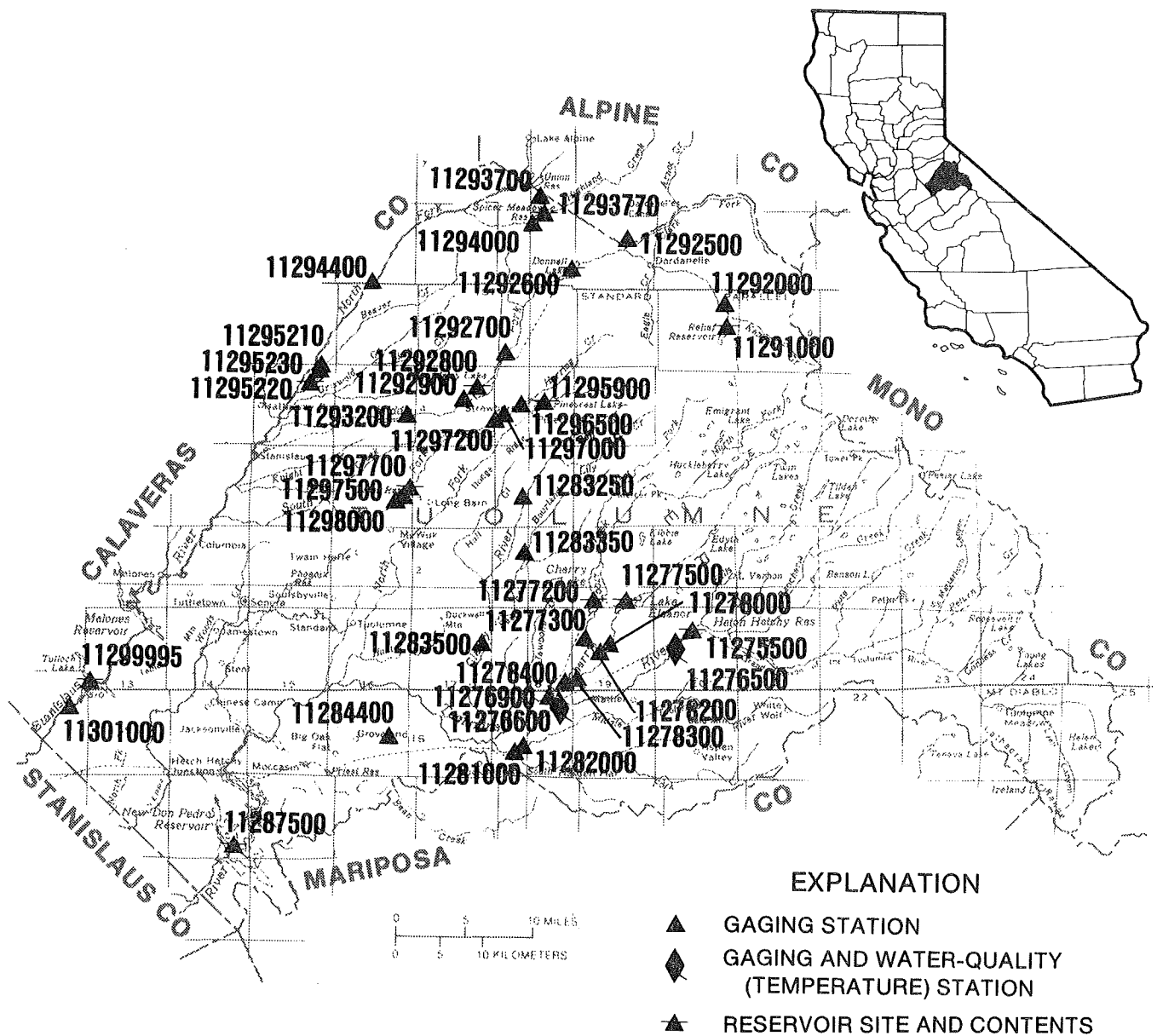


Figure 25. Location of discharge and water-quality stations in Tuolumne County.

GAGING STATION AND WATER-QUALITY RECORDS

Remark Codes

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

PRINTED OUTPUTREMARK

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)
&	Biological organism estimated as dominant
*	Instantaneous streamflow at the time of cross-sectional measurement
1	Laboratory value
A	Samples collected by another agency

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 mi².

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 National Geodetic Vertical Datum of 1929 (project datum of U.S. Indian Irrigation Service).

REMARKS.--Contents regulated by dam at outlet. Figures given 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, Nov. 1, 1990, elevation, 7,200.11 ft.

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

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,470 acre-ft, May 30, elevation, 7,208.26 ft; minimum observed, 30 acre-ft, Nov. 1, elevation, 7,200.11 ft.

MONTHEND ELEVATION AND CONTENTS, IN FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	7,200.28	78	--
Oct. 31.	7,200.12	33	-45
Nov. 30.	7,201.78	498	465
Dec. 31.	7,203.50	985	487
CAL YR 1990.	--	--	-1,105
Jan. 31.	7,204.72	1,350	365
Feb. 28.	7,205.79	1,680	330
Mar. 31.	7,207.03	2,090	410
Apr. 30.	7,207.32	2,170	80
May 31.	7,208.20	2,450	280
June 30.	7,207.34	2,180	-270
July 31.	7,206.06	1,770	-410
Aug. 31.	7,201.16	324	-1,450
Sept. 30.	7,200.53	148	-176
WTR YR 1991.	--	--	66

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

WALKER LAKE BASIN

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 mi².

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

GAGE.--Non-recording gage. Datum of gage is 7,205.45 ft above National Geodetic Vertical Datum of 1929 (project datum of U.S. Indian Irrigation Service).

REMARKS.--Contents regulated by dam at outlet and by Upper Twin Lake. Figures given 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, Nov. 17, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 3,850 acre-ft, June 27, elevation, 7,199.60 ft; minimum observed, 467 acre-ft, Nov. 1, elevation 7,191.17 ft.

MONTHEND ELEVATION AND CONTENTS, IN FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	7,191.78	711	--
Oct. 31.	7,191.19	475	-236
Nov. 30.	7,191.35	540	65
Dec. 31.	7,191.67	667	127
CAL YR 1990.	--	--	-2,023
Jan. 31.	7,191.98	791	124
Feb. 28.	7,192.38	951	160
Mar. 31.	7,193.98	1,600	649
Apr. 30.	7,194.62	1,840	240
May 31.	7,196.08	2,430	590
June 30.	7,199.51	3,810	1,380
July 31.	7,198.40	3,360	-450
Aug. 31.	7,194.97	1,990	-1,370
Sept. 30.	7,192.30	920	-1,070
WTR YR 1991.	--	--	209

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

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 mi².

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 National Geodetic Vertical Datum of 1929 (project datum).

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 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 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 recorded contents, 6,060 acre-ft, Mar. 31 and Apr. 1, elevation, 6,439.78 ft; minimum 810 acre-feet, Oct. 10, elevation, 6,428.57 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATIONS AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1090	869	1260	e1260	1850	2920	6020	5510	4350	4490	2530	2040
2	1070	889	1270	e1250	1870	2940	5990	5520	4370	4430	2500	2040
3	1040	902	1290	e1240	1880	3180	5930	5540	4410	4320	2440	2040
4	1000	951	1330	e1220	1910	4000	5880	5540	4410	4250	2390	2060
5	968	987	1360	1210	1940	4310	5860	5550	4490	4120	2340	2090
6	918	1020	1370	1220	1960	4390	5750	5550	4420	4040	2290	2130
7	877	1030	1390	1250	2000	4490	5680	5550	4330	4040	2230	2160
8	842	1060	1400	1260	2030	4570	5620	5500	4290	4030	2190	2160
9	820	1080	1420	1290	2050	4700	5620	5450	4280	3990	2140	2150
10	820	1090	1480	1320	2080	4700	5580	5460	4320	3890	2100	2140
11	820	1110	1530	1350	2110	4730	5590	5400	4420	3800	2090	2120
12	830	1140	1580	1390	2150	4780	5600	5400	4540	3710	2090	2100
13	834	1160	1590	1460	2200	4830	5590	5340	4620	3630	2090	2060
14	838	1170	1590	1530	2270	4870	5580	5310	4690	3560	2080	2020
15	842	1180	1570	1600	2350	4890	5560	5270	4720	3470	2120	1980
16	836	1210	1550	1640	2390	4910	5560	5290	4710	3380	2160	1930
17	836	1220	1550	1660	2430	4940	5580	5140	4660	3310	2180	1880
18	836	1230	1560	1700	2450	5030	5580	5080	4640	3270	2180	1830
19	832	1240	1550	1740	2500	5100	5580	5050	4540	3240	2170	1810
20	840	1240	1520	1770	2530	5140	5600	5010	4500	3200	2160	1780
21	847	1230	e1490	1780	2580	5210	5620	4970	4450	3140	2140	1780
22	857	1230	e1460	1780	2620	5290	5600	4930	4400	3110	2090	1780
23	869	1230	e1440	1780	2650	5430	5610	4860	4360	3040	2060	1770
24	871	1240	e1420	1800	2670	5540	5610	4830	4330	2940	2050	1760
25	867	1240	e1390	1810	2700	5660	5540	4780	4310	2860	2030	1760
26	867	1250	e1360	1820	2730	5750	5550	4760	4250	2800	2030	1760
27	865	1230	e1340	1830	2770	5820	5540	4750	4320	2750	2040	1750
28	865	1210	e1320	1830	2830	5880	5540	4660	4390	2710	2050	1740
29	865	1220	e1310	1830	---	5950	5530	4550	4460	2660	2060	1730
30	869	1250	e1300	1840	---	6000	5620	4460	4480	2590	2060	1720
31	861	---	e1280	1840	---	6020	---	4420	---	2550	2050	---
MAX	1090	1250	1590	1840	2830	6020	6020	5550	4720	4490	2530	2160
MIN	820	869	1260	1210	1850	2920	5530	4420	4250	2550	2030	1720
a	6428.83	6430.45	6430.56	6432.39	6434.80	6439.73	6439.23	6437.56	6437.65	6434.21	6433.00	6432.03
b	-249	+389	+30	+560	+990	+3190	-400	-1200	+60	-1930	-500	-330

CAL YR 1990 MAX 14830 MIN 810 b -5530
WTR YR 1991 MAX 6020 MIN 810 b +610

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

WALKER LAKE BASIN

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 mi².

PERIOD OF RECORD.--July 1911 to September 1914 (gage heights only), October and November 1921, June 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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1921, nonrecording gage at site 0.5 mi upstream at different datum. Oct. 1, 1921 to Feb. 21, 1924, water-stage recorder at site 1 mi downstream at different datum. Feb. 22, 1924 to Sept. 30, 1931, water-stage recorder, and Oct. 1, 1931 to May 25, 1939, nonrecording gage at present site at datum 2.34 ft lower. May 26, 1939 to Nov. 27, 1988, water-stage recorder at datum 2.00 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are poor. Diversions for irrigation of meadow pasturelands near Bridgeport. Flow regulated by Bridgeport Reservoir (station 10292500).

AVERAGE DISCHARGE.--68 years (water years 1923-24, 1926-91), 144 ft³/s, 104,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft³/s, June 19, 1963, gage height, 4.64 ft; maximum gage height, 4.95 ft, Jan. 22, 1943 (top of surge); minimum daily discharge, 0.2 ft³/s, Nov. 2-29, Dec. 1-22, 25-8, 1955, and Jan. 17-25, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 206 ft³/s, June 16-19, gage height, 3.62 ft; minimum daily, 23 ft³/s, many days in April and May.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	39	29	33	e35	31	62	23	125	136	60	55
2	47	35	29	33	35	25	72	23	125	136	60	55
3	51	33	29	33	35	26	72	23	126	136	60	55
4	51	31	29	33	e35	26	68	23	126	136	60	55
5	51	29	29	33	e35	27	64	23	151	136	58	55
6	50	29	29	33	e35	33	64	23	182	136	54	58
7	50	29	29	33	e35	38	64	29	184	112	52	62
8	50	32	30	33	e35	30	54	51	164	86	48	62
9	48	32	30	33	e34	28	35	51	151	92	45	67
10	41	31	30	33	e34	28	31	51	151	103	42	70
11	38	31	30	34	e34	28	28	47	153	106	38	70
12	38	31	30	34	e34	30	27	43	169	111	36	70
13	38	31	30	e34	e34	34	27	43	192	111	38	70
14	38	31	30	e34	35	34	27	43	197	110	40	70
15	39	31	30	e34	35	34	27	44	197	106	40	70
16	39	31	30	e34	35	34	25	47	199	105	40	69
17	39	30	30	e34	35	34	23	47	205	101	50	68
18	39	30	30	e34	35	34	23	48	204	91	59	64
19	39	30	30	e34	35	34	23	49	196	89	59	55
20	39	30	31	e34	35	34	23	49	159	83	59	48
21	39	30	34	e34	35	34	23	52	137	85	58	42
22	39	30	34	e35	35	34	23	55	121	85	56	42
23	39	30	34	e35	35	34	23	58	112	85	51	42
24	41	30	34	e35	35	34	23	63	112	84	45	42
25	42	30	34	e35	35	38	23	77	112	79	43	42
26	41	30	34	e35	36	43	23	82	112	68	43	42
27	42	29	34	e35	36	43	23	95	112	68	46	42
28	42	29	33	e35	35	43	23	115	112	68	53	42
29	42	29	33	e35	---	48	23	144	112	67	55	42
30	42	29	33	e35	---	57	23	137	116	68	55	42
31	42	---	33	e36	---	57	---	126	---	65	55	---
TOTAL	1320	922	964	1055	977	1087	1069	1784	4514	3044	1558	1668
MEAN	42.6	30.7	31.1	34.0	34.9	35.1	35.6	57.5	150	98.2	50.3	55.6
MAX	51	39	34	36	36	57	72	144	205	136	60	70
MIN	38	29	29	33	34	25	23	23	112	65	36	42
AC-FT	2620	1830	1910	2090	1940	2160	2120	3540	8950	6040	3090	3310

CAL YR 1990 TOTAL 21003 MEAN 57.5 MAX 134 MIN 13 AC-FT 41660
WTR YR 1991 TOTAL 19962 MEAN 54.7 MAX 205 MIN 23 AC-FT 39590

e Estimated.

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.--180 mi².

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 National Geodetic Vertical Datum of 1929, supplementary adjustment of 1958. Prior to Oct. 1, 1939, at site, 125 ft downstream at datum 1.00 ft higher. Oct. 1, 1939, to Sept. 30, 1969, at present site and datum. Oct. 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 Reservoir, capacity, 1,200 acre-ft, 7 mi upstream.

AVERAGE DISCHARGE.--53 years, 257 ft³/s, 186,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,220 ft³/s, Nov. 20, 1950, gage height, 8.10 ft, from rating curve extended above 1,900 ft³/s on basis of slope-area measurement of peak flow; minimum, 4.0 ft³/s, Nov. 18, 1948, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge observed prior to 1938, 5,800 ft³/s, Dec. 11, 1937, on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,120 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 25	2400	1,270	3.69	June 10	2400	*1,730	*4.15

Minimum daily, 12 ft³/s, Dec. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	23	e26	e21	e29	31	58	236	595	412	122	e33
2	22	21	27	e21	27	23	59	187	895	472	104	e32
3	22	21	25	e21	e28	38	63	160	1220	502	96	e35
4	21	24	24	23	e28	100	82	161	1340	487	90	e38
5	21	25	24	23	28	79	132	219	1300	455	89	e38
6	21	22	e25	24	26	60	169	315	1060	418	88	e38
7	21	21	e25	24	e28	52	144	416	982	359	82	93
8	21	e22	e25	23	e28	45	129	602	1070	316	78	59
9	21	22	e26	23	e28	45	134	491	1210	297	74	49
10	21	22	e29	23	e27	48	132	312	1380	269	71	47
11	21	22	23	24	24	49	115	237	1440	244	71	e47
12	21	24	22	26	25	46	105	205	1390	236	67	e44
13	21	23	e23	28	25	43	104	239	1320	230	71	e42
14	21	23	e16	26	25	39	119	211	1010	216	69	e39
15	20	23	e13	26	27	38	127	247	854	188	68	e37
16	20	23	14	29	27	48	116	396	797	170	69	e36
17	20	24	15	e28	24	37	110	454	723	171	65	e34
18	20	24	16	e28	23	41	109	294	679	172	64	e33
19	24	24	e12	e26	23	43	114	232	617	183	58	33
20	24	22	e12	e29	23	36	117	252	490	226	56	32
21	24	23	e13	e29	25	35	119	290	452	179	54	31
22	24	e25	e15	e25	24	36	132	401	447	159	48	30
23	24	e25	e16	e29	23	36	145	714	446	156	e44	29
24	23	e24	e17	e32	23	38	161	994	419	145	e41	29
25	23	e23	e18	e39	24	38	154	1080	361	135	e40	29
26	23	e22	e18	e17	26	46	140	1000	341	129	e39	28
27	23	e24	e19	e20	29	39	152	816	343	126	e38	28
28	22	25	e20	e23	30	37	157	804	318	125	e38	28
29	22	27	e21	e24	---	39	189	818	367	123	e37	28
30	21	26	e21	e24	---	43	224	715	380	113	e35	28
31	22	---	e21	e24	---	49	---	541	---	122	e34	---
TOTAL	677	699	621	782	727	1377	3811	14039	24246	7535	2000	1127
MEAN	21.8	23.3	20.0	25.2	26.0	44.4	127	453	808	243	64.5	37.6
MAX	24	27	29	39	30	100	224	1080	1440	502	122	93
MIN	20	21	12	17	23	23	58	160	318	113	34	28
AC-FT	1340	1390	1230	1550	1440	2730	7560	27850	48090	14950	3970	2240

CAL YR 1990 TOTAL 44872 MEAN 123 MAX 583 MIN 12 AC-FT 89000
WTR YR 1991 TOTAL 57641 MEAN 158 MAX 1440 MIN 12 AC-FT 114300

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929, 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 Sept. 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 Reservoir, capacity, 1,200 acre-ft, 17 mi upstream.

AVERAGE DISCHARGE.--62 years (water years 1903-7, 1910, 1916-37, 1958-91), 273 ft³/s, 197,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,500 ft³/s, Dec. 11, 1937, on basis of slope-area measurement of peak flow; minimum, 5 ft³/s, Dec. 3, 1924, and Aug. 27, 1931.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,120 ft³/s and maximum (*).

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	----	e1,340	unknown	June 11	----	e*1,800	unknown

Minimum daily, 21 ft³/s, Jan. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	36	38	e29	e32	44	76	328	e700	e470	130	38
2	29	33	43	e30	e30	32	77	266	e950	e490	111	38
3	29	29	44	e31	e32	51	81	226	e1300	e520	105	42
4	28	34	43	e30	e34	101	97	222	e1450	e500	100	44
5	28	41	43	e32	e34	118	154	294	e1400	e480	98	44
6	28	38	36	e32	e33	81	215	411	e1200	e450	97	45
7	29	29	e35	e32	e33	74	194	554	e1080	e425	89	88
8	29	e30	e34	e29	e33	64	168	790	e1180	e390	86	69
9	30	e31	e34	e29	e34	65	172	680	e1340	e370	81	58
10	31	e34	e32	e30	35	66	175	451	e1500	e340	77	55
11	30	37	e31	e30	34	66	153	360	e1580	e310	77	52
12	31	40	e29	e31	35	62	139	314	e1500	e305	73	49
13	30	39	e28	e32	37	61	133	354	e1480	e300	77	46
14	30	39	28	e29	37	55	153	324	e1180	e290	76	44
15	30	38	e28	e28	38	54	167	348	e1000	e260	75	42
16	29	39	e29	e29	38	57	153	508	e900	e240	73	40
17	29	39	e29	e29	36	54	145	619	e830	e240	70	38
18	29	39	e30	e30	31	55	142	431	e740	e245	68	38
19	35	39	e30	e31	32	58	150	353	e715	e270	62	38
20	35	39	e28	e32	33	49	154	344	e540	e290	61	37
21	35	e30	e24	e34	36	48	155	358	e500	e245	58	36
22	35	e31	e26	e29	35	47	169	411	e510	e220	54	35
23	35	e32	e28	e30	33	50	184	677	434	e220	52	35
24	35	e32	e29	e34	32	53	212	e900	419	e205	49	35
25	35	e34	e30	e37	31	53	208	e1180	385	e192	46	34
26	34	e34	e32	e21	34	60	185	e1080	374	135	45	34
27	34	e30	e36	e22	40	53	202	e950	378	132	43	34
28	34	e28	e29	e23	39	48	207	e940	349	130	43	34
29	34	45	e27	e23	---	53	249	e930	356	128	42	34
30	34	46	e26	e23	---	56	297	e650	368	116	41	34
31	34	---	e25	e24	---	65	---	e640	---	117	39	---
TOTAL	978	1065	984	905	961	1853	4966	16893	26638	9025	2198	1290
MEAN	31.5	35.5	31.7	29.2	34.3	59.8	166	545	888	291	70.9	43.0
MAX	35	46	44	37	40	118	297	1180	1580	520	130	88
MIN	28	28	24	21	30	32	76	222	349	116	39	34
AC-FT	1940	2110	1950	1800	1910	3680	9850	33510	52840	17900	4360	2560

CAL YR 1990 TOTAL 46838 MEAN 128 MAX 550 MIN 24 AC-FT 92900
WTR YR 1991 TOTAL 67756 MEAN 186 MAX 1580 MIN 21 AC-FT 134400

e Estimated.

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 National Geodetic Vertical Datum of 1929. Prior to Oct. 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). Usable 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 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 contents Oct. 31, 1924, many days, Sept. to Oct., 1960, Aug. to Dec., 1977, Sept. to Nov., 1988, Sept. 25, 1990, Oct. to Nov., 1990, and Sept., 1991.

EXTREMES FOR CURRENT YEAR.--Maximum contents 21,690 acre-ft, June 18, elevation, 4,985.77 ft; no contents, Oct. 4 to Nov. 8 and Sept. 22-30.

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

4,967	0	4,975	11,520
4,968	490	4,980	19,760
4,970	3,580	4,985	28,310

RESERVOIR STORAGE (AC-FT) WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATIONS AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	e.00	690	2360	4570	6180	7320	7510	10020	19970	9020	1570
2	46	e.00	767	2420	4660	6150	7320	7510	10110	19860	8550	1460
3	31	e.00	813	2480	4710	6250	7340	7460	10840	19800	8150	1310
4	.00	e.00	890	2530	4800	6400	7370	7400	11840	19720	7720	1260
5	.00	e.00	967	2540	4910	6480	7350	7380	12910	19550	7340	1170
6	.00	e.00	1030	2590	5010	6580	7540	7560	13710	19370	7020	1110
7	.00	e.00	1060	2730	5080	6660	7700	7800	14200	19050	6720	1010
8	.00	e.00	1090	2790	5160	6690	7800	8130	14770	18630	6400	921
9	.00	e15	1200	2840	5190	6770	7810	8550	15510	18180	6040	844
10	e.00	e61	1150	2950	5220	6830	7770	8500	16520	17760	5840	782
11	e.00	e76	1320	2990	5270	6820	7730	8340	17750	17430	5590	705
12	e.00	e107	1410	3050	5330	6880	7700	8180	18920	17120	5330	628
13	e.00	e107	1490	3130	5410	6850	7700	8150	19990	16790	5180	582
14	e.00	e92	1480	3240	5490	6850	7620	8020	20680	16440	4940	474
15	e.00	e76	1520	3320	5570	6860	7580	7750	21080	16110	4710	398
16	e.00	e76	1550	3360	5540	6880	7540	7640	21440	15690	4470	337
17	e.00	e76	1640	3470	5630	6860	7510	7770	21570	15330	4250	260
18	e.00	e61	1630	3570	5650	6970	7510	7590	21610	14970	4080	214
19	e.00	e61	1800	3650	5700	6990	7500	7430	21490	14630	3860	168
20	e.00	e76	1830	3710	5760	7020	7480	7270	21340	14310	3660	138
21	e.00	e122	1860	3770	5810	7020	7460	7210	21200	14040	3470	46
22	e.00	e168	1880	3820	5900	7040	7450	7150	21140	13710	3290	.00
23	e.00	e214	1890	3880	5880	7100	7460	7310	21150	13350	3080	.00
24	e.00	e275	1920	3960	5960	7130	7340	7690	21120	12860	2900	.00
25	e.00	e321	1970	4040	6010	7150	7460	8260	21020	12440	2640	.00
26	e.00	e382	2020	4110	6060	7210	7400	8880	20850	12000	2530	.00
27	e.00	382	1800	4140	6100	7240	7420	9180	20650	11580	2330	.00
28	e.00	444	2090	4270	6150	7310	7460	9470	20460	11130	2120	.00
29	e.00	490	2200	4300	---	7370	7510	9740	20140	10580	1970	.00
30	e.00	551	2250	4390	---	7370	7530	9950	20160	9950	1840	.00
31	e.00	---	2290	4520	---	7350	---	10020	---	9520	1710	---
MAX	76	551	2290	4520	6150	7370	7810	10020	21610	19970	9020	1570
MIN	.00	.00	690	2360	4570	6150	7320	7150	10020	9520	1710	.00
a	4967.38	4968.04	4969.17	4970.60	4971.64	4972.40	4972.51	4974.07	4980.24	4973.76	4968.79	4967.45
b	-76	+551	+1740	+2230	+1630	+1200	+180	+2490	+10140	-10640	-7810	-1710

CAL YR 1990 MAX 20090 MIN .00 b -7705

WTR YR 1991 MAX 21610 MIN .00 b -75

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

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 north-northeast of Markleeville.

DRAINAGE AREA.--276 mi.²

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

GAGE.--Water-stage recorder. Elevation of gage is 5,400 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 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.

AVERAGE DISCHARGE.--31 years, 352 ft³/s, 255,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,100 ft³/s, Jan. 31, 1963, gage height, 10.21 ft, present datum; minimum, 9.5 ft³/s, Nov. 19, 1977.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 1,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 24	2300	*1,350	*4.25				

Minimum daily, 30 ft³/s, Oct. 16, 17, Nov. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	39	44	e40	e46	49	217	436	649	239	74	67
2	39	36	43	e45	e48	37	186	339	814	244	70	66
3	39	32	39	e38	e45	92	187	297	954	238	70	68
4	38	35	38	e40	e46	460	257	339	1030	222	79	72
5	33	42	43	e43	e52	294	388	474	953	207	81	68
6	32	39	41	e31	e49	166	432	632	809	185	79	71
7	33	33	42	e35	e43	133	337	761	752	165	71	97
8	33	44	43	e41	e43	109	284	1050	764	149	67	63
9	33	42	44	e34	e43	107	275	769	798	141	63	65
10	33	39	45	e36	e44	98	281	525	855	136	59	65
11	33	39	46	e37	e45	94	228	428	878	133	66	63
12	33	41	44	e39	e47	85	204	391	852	123	73	59
13	31	40	41	e40	e47	86	202	477	792	110	72	50
14	31	40	34	e41	e46	79	247	415	666	104	70	45
15	31	38	47	e45	e45	78	269	508	575	97	75	42
16	30	40	e60	e48	47	86	229	741	534	99	60	42
17	30	40	e54	e47	44	78	214	742	486	101	64	40
18	31	40	e50	e47	38	80	210	508	458	101	53	41
19	37	40	e40	e46	39	80	225	423	423	119	44	44
20	38	40	e35	e52	40	73	236	409	361	131	61	43
21	36	35	e31	e80	43	71	224	444	335	106	62	42
22	36	40	e31	e70	42	69	237	578	318	91	64	43
23	35	43	e32	e70	41	78	260	852	303	86	60	53
24	35	45	e31	e79	39	85	309	1060	285	86	58	51
25	34	46	e31	e66	38	80	287	1110	260	80	71	52
26	33	43	e40	e63	41	81	250	995	250	77	75	46
27	34	31	e58	e52	43	92	274	846	249	81	74	49
28	34	30	e50	e58	44	80	290	813	254	92	75	51
29	34	33	e40	e50	---	103	355	814	280	91	72	51
30	34	40	e32	e46	---	136	416	761	245	72	71	56
31	35	---	e34	e45	---	181	---	608	---	76	71	---
TOTAL	1053	1165	1283	1504	1228	3420	8010	19545	17182	3982	2104	1665
MEAN	34.0	38.8	41.4	48.5	43.9	110	267	630	573	128	67.9	55.5
MAX	39	46	60	80	52	460	432	1110	1030	244	81	97
MIN	30	30	31	31	38	37	186	297	245	72	44	40
AC-FT	2090	2310	2540	2980	2440	6780	15890	38770	34080	7900	4170	3300

CAL YR 1990 TOTAL 54953 MEAN 151 MAX 678 MIN 29 AC-FT 109000
WTR YR 1991 TOTAL 62141 MEAN 170 MAX 1110 MIN 30 AC-FT 123300

e Estimated.

10309025 INDIAN CREEK NEAR WOODFORDS, CA

LOCATION.--Lat 38°44'54", long 119°48'54", in NE 1/4 NE 1/4 sec.6, T.10 N., R.20 E., Alpine County, Hydrologic Unit 16050201, on right bank 2 mi south of Woodfords.

DRAINAGE AREA.--1.7 mi², approximately.

PERIOD OF RECORD.--May 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,880 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Irrigation above the gage can cause considerable fluctuations. Periodic diversions from Millberry Canyon.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12.0 ft³/s, Mar. 4, 1991, gage height, 2.01 ft; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12.0 ft³/s, Mar. 4, gage height, 2.01 ft; no flow several days in July, August, and September.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.04	.08	e.08	e.25	.27	2.2	.10	.12	.02	.00	.00
2	.03	.03	.08	e.09	e.30	.24	1.8	.10	.36	.01	.00	.00
3	.06	.03	.08	e.09	e.29	1.9	1.8	.10	.42	.00	.00	.00
4	.07	.03	.09	e.09	e.29	5.5	1.9	.11	1.2	.00	.00	.00
5	.07	.03	.08	e.10	e.29	1.3	1.6	.11	1.4	.00	.00	.00
6	.10	.03	.07	e.11	e.28	.81	1.5	.11	.78	.00	.00	.00
7	.11	.03	.07	e.11	e.28	.74	1.2	.10	.75	.00	.00	.00
8	.11	.03	.08	e.11	e.27	.62	.82	.10	.86	.00	.00	.00
9	.12	.03	.09	e.09	e.27	.54	.32	.11	.76	.00	.00	.00
10	.12	.03	.09	e.10	e.27	.49	.26	.11	.89	.00	.00	.00
11	.12	.03	.09	e.11	e.26	.61	.21	.10	.93	.00	.00	.00
12	.12	.03	.09	e.12	e.25	.68	.19	.10	.89	.00	.00	.00
13	.12	.03	.08	e.13	e.25	.74	.17	.10	.70	.00	.00	.00
14	.10	.03	.08	e.14	e.24	.69	.16	.10	.44	.00	.00	.00
15	.05	.02	e.08	e.15	e.22	.59	.14	.09	.08	.00	.00	.00
16	.04	.03	e.07	e.17	e.20	.75	.14	.09	.06	.00	.00	.00
17	.04	.04	e.08	e.18	e.18	.66	.13	.09	.05	.00	.00	.00
18	.04	.05	e.09	e.18	e.20	.67	.13	.09	.04	.00	.00	.00
19	.06	.06	e.09	e.16	e.21	.70	.12	.09	.04	.00	.00	.00
20	.05	.06	e.06	e.13	e.23	.63	.13	.08	.04	.00	.00	.00
21	.04	.06	e.04	e.11	.24	.59	.12	.08	.03	.00	.00	.00
22	.04	.06	e.05	e.11	.23	.68	.12	.08	.03	.00	.00	.00
23	.04	.06	e.06	e.12	.22	.92	.12	.08	.03	.00	.00	.00
24	.04	.07	e.07	e.12	.22	.74	.11	.08	.03	.00	.00	.00
25	.04	.07	e.08	e.12	.22	.68	.12	.21	.02	.00	.00	.00
26	.03	.08	e.09	e.11	.22	.72	.11	.52	.02	.00	.00	.00
27	.03	.08	e.10	e.10	.23	.68	.11	.58	.03	.00	.00	.00
28	.03	.10	e.09	e.10	.26	.82	.11	.55	.03	.00	.00	.00
29	.03	.11	e.07	e.11	---	1.1	.11	.64	.03	.00	.00	.00
30	.03	.09	e.06	e.15	---	1.4	.11	.75	.02	.00	.00	.00
31	.03	---	e.07	e.20	---	1.6	---	.33	---	.00	.00	---
TOTAL	1.91	1.47	2.40	3.79	6.87	29.06	16.06	5.88	11.08	0.03	0.00	0.00
MEAN	.062	.049	.077	.12	.25	.94	.54	.19	.37	.001	.000	.000
MAX	.12	.11	.10	.20	.30	5.5	2.2	.75	1.4	.02	.00	.00
MIN	.00	.02	.04	.08	.18	.24	.11	.08	.02	.00	.00	.00
AC-FT	3.8	2.9	4.8	7.5	14	58	32	12	22	.06	.00	.00

CAL YR 1990 TOTAL 62.14 MEAN .17 MAX 1.3 MIN .00 AC-FT 123
WTR YR 1991 TOTAL 78.55 MEAN .22 MAX 5.5 MIN .00 AC-FT 156

e Estimated.

10309030 INDIAN CREEK AT DIAMOND VALLEY, NEAR PAYNESVILLE, CA

LOCATION.--Lat 38°46'37", Long 119°45'53", in NW 1/4 NE 1/4 sec.32, T.11 N., R.20 E., Alpine County, Hydrologic Unit 16050201, on left bank 1 mi southwest of Paynesville.

DRAINAGE AREA.--16.2 mi², approximately.

PERIOD OF RECORD.--May 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,440 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73 ft³/s, Mar. 4, 1991, gage height, 3.66 ft; maximum gage height, 5.53 ft, Oct. 3, 1989 (backwater from beaver dam); minimum daily, 0.29 ft³/s, July 19, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 73 ft³/s, Mar. 4, gage height, 3.66 ft; maximum gage height, 3.75 ft, July 15, (backwater from diversion structure); minimum daily, 0.55 ft³/s, Oct. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	e2.5	9.2	e4.4	7.7	16	24	29	30	29	2.0	3.2
2	1.3	e2.2	8.8	e4.8	8.7	10	19	36	21	6.6	2.1	3.2
3	1.2	e2.0	9.2	e5.0	8.0	32	7.1	17	7.6	5.8	2.2	3.3
4	1.1	e1.8	9.7	e5.0	9.1	48	7.2	6.7	13	5.5	2.3	3.4
5	1.0	e1.7	9.9	e5.4	9.7	38	7.3	6.2	10	5.1	2.5	3.4
6	.58	e1.6	8.4	e6.0	9.8	34	6.8	6.3	10	4.4	2.4	3.7
7	.55	e1.5	8.0	e5.8	9.3	31	6.4	4.5	5.7	4.4	1.6	4.6
8	.61	e1.5	7.7	e5.6	9.0	7.2	6.4	3.9	5.7	4.1	1.3	4.0
9	.64	e1.5	7.6	e5.2	9.1	6.8	6.2	5.5	8.1	4.1	1.4	3.9
10	.69	e1.5	7.9	e5.0	9.5	6.8	6.0	5.2	7.6	4.9	1.9	4.1
11	.67	e1.5	9.2	e5.2	10	6.4	5.8	6.7	5.0	5.4	2.9	3.9
12	.67	e1.5	9.5	e5.3	11	6.3	6.1	7.8	6.1	3.4	3.8	3.6
13	e.70	e1.5	8.6	e5.5	12	6.3	7.1	18	7.8	4.6	2.2	3.5
14	e.70	e1.5	6.2	e5.8	13	6.1	6.1	28	8.1	5.3	2.4	3.4
15	e.64	e1.7	6.2	e6.0	14	6.1	6.3	28	15	8.5	2.6	3.4
16	e.60	e2.0	6.0	e6.8	15	6.4	9.6	27	31	3.3	2.3	3.4
17	e.60	e3.0	5.9	e8.1	11	6.4	11	37	26	2.9	2.1	3.5
18	e.64	e4.5	6.8	12	17	6.2	8.3	44	10	2.9	2.0	3.7
19	e.68	e7.0	6.0	13	16	6.3	8.7	41	14	3.2	1.9	3.6
20	e.64	e11	e5.0	13	15	6.4	9.7	37	13	3.3	1.9	3.6
21	e.62	e10	e4.0	6.5	14	6.7	6.3	35	13	3.1	1.7	4.2
22	e.60	12	e3.8	6.1	12	6.3	6.1	33	10	3.0	1.7	4.7
23	e.60	13	e4.4	7.1	13	6.2	6.1	19	9.6	2.7	1.8	5.9
24	e.60	13	e5.0	14	13	6.1	7.8	14	9.4	2.6	2.4	4.2
25	e.60	12	e5.5	12	12	6.1	16	18	24	2.5	2.7	3.9
26	e.60	9.4	e5.8	6.7	12	6.2	26	17	34	2.3	4.0	3.9
27	e.60	7.7	e5.4	6.5	13	6.6	15	6.4	36	3.3	3.6	3.8
28	e.60	8.5	e4.5	6.6	13	7.8	22	7.6	34	5.1	3.5	3.8
29	e.64	12	e3.7	6.3	---	12	28	5.8	37	6.4	3.4	3.8
30	e1.5	12	e3.8	6.4	---	19	27	17	37	2.6	3.4	3.8
31	e2.8	---	e4.0	7.0	---	19	---	21	---	2.1	3.2	---
TOTAL	25.27	162.6	205.7	218.1	325.9	394.7	335.4	588.6	498.7	152.4	75.2	114.4
MEAN	.82	5.42	6.64	7.04	11.6	12.7	11.2	19.0	16.6	4.92	2.43	3.81
MAX	2.8	13	9.9	14	17	48	28	44	37	29	4.0	5.9
MIN	.55	1.5	3.7	4.4	7.7	6.1	5.8	3.9	5.0	2.1	1.3	3.2
AC-FT	50	323	408	433	646	783	665	1170	989	302	149	227

CAL YR 1990 TOTAL 4087.47 MEAN 11.2 MAX 37 MIN .55 AC-FT 8110
WTR YR 1991 TOTAL 3096.97 MEAN 8.48 MAX 48 MIN .55 AC-FT 6140

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1938, nonrecording gage at about the same site at different datum. Oct. 1, 1938, to Nov. 11, 1958, water-stage recorder at same site at datum 1.02 ft lower. Nov. 13, 1958, to Jan. 30, 1963, water-stage recorder at site 150 ft downstream at datum 3.06 ft lower.

REMARKS.--Records good, except 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.

AVERAGE DISCHARGE.--60 years (1901-1907, 1939-91), 110 ft³/s, 79,700 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,890 ft³/s, Feb. 1, 1963, gage height, 9.0 ft, on basis of slope-area measurement of peak flow; minimum, about 5 ft³/s, Dec. 28, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 11, 1937, reached a stage of 8.0 ft, present datum, from floodmarks, discharge, 3,500 ft³/s, on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 7	2200	*490	*2.91				

Minimum daily, 8.8 ft³/s, Dec. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

1	16	14	14	16	e11	19	38	213	187	59	27	20
2	14	12	15	16	e13	13	38	149	226	57	23	15
3	13	12	14	16	e15	18	42	134	264	55	22	13
4	13	12	14	17	16	59	52	175	256	52	21	e14
5	13	14	15	17	17	65	71	243	230	49	19	e14
6	12	14	14	18	17	58	91	302	184	44	18	e14
7	12	11	14	18	17	54	93	338	173	41	17	18
8	12	15	14	17	17	43	85	415	178	37	17	15
9	12	13	15	17	17	42	89	325	198	36	16	14
10	12	10	e14	17	17	34	94	222	196	34	16	16
11	12	12	e13	17	17	31	71	174	203	32	14	e22
12	12	13	e11	17	17	32	66	163	191	30	e13	e23
13	12	13	e11	18	18	26	78	206	174	29	e15	e23
14	12	13	e10	18	18	26	109	178	144	27	19	e20
15	12	13	e11	18	19	24	120	221	124	26	e20	e17
16	12	13	e11	17	19	25	98	296	113	25	28	e16
17	12	13	e12	17	19	22	87	299	104	24	e34	e14
18	12	13	e14	17	18	21	91	198	99	42	e30	e13
19	13	13	e13	17	18	21	106	159	92	50	16	e13
20	15	13	e11	17	18	21	110	153	79	54	e14	e13
21	14	13	e9.8	e16	18	20	101	163	73	48	e16	e13
22	14	14	e8.8	e15	17	21	125	210	69	26	16	e12
23	13	14	e9.4	e14	17	20	152	289	65	26	17	e12
24	13	14	e10	e13	17	19	176	333	62	22	22	14
25	13	13	e12	e12	17	18	146	342	60	20	22	15
26	13	12	e16	e12	18	20	130	305	57	20	25	14
27	13	12	e15	e12	19	23	148	251	57	21	26	14
28	13	14	e14	e11	19	28	165	243	60	23	23	13
29	13	15	e12	e12	---	27	204	247	81	21	22	13
30	13	15	15	e11	---	29	223	245	67	31	22	13
31	13	---	16	e10	---	33	---	185	---	41	21	---
TOTAL	398	392	398.0	480	480	912	3199	7376	4066	1102	631	460
MEAN	12.8	13.1	12.8	15.5	17.1	29.4	107	238	136	35.5	20.4	15.3
MAX	16	15	16	18	19	65	223	415	264	59	34	23
MIN	12	10	8.8	10	11	13	38	134	57	20	13	12
AC-FT	789	778	789	952	952	1810	6350	14630	8060	2190	1250	912

CAL YR 1990 TOTAL 17402.0 MEAN 47.7 MAX 251 MIN 8.8 AC-FT 34520
WTR YR 1991 TOTAL 19894.0 MEAN 54.5 MAX 415 MIN 8.8 AC-FT 39460

e Estimated.

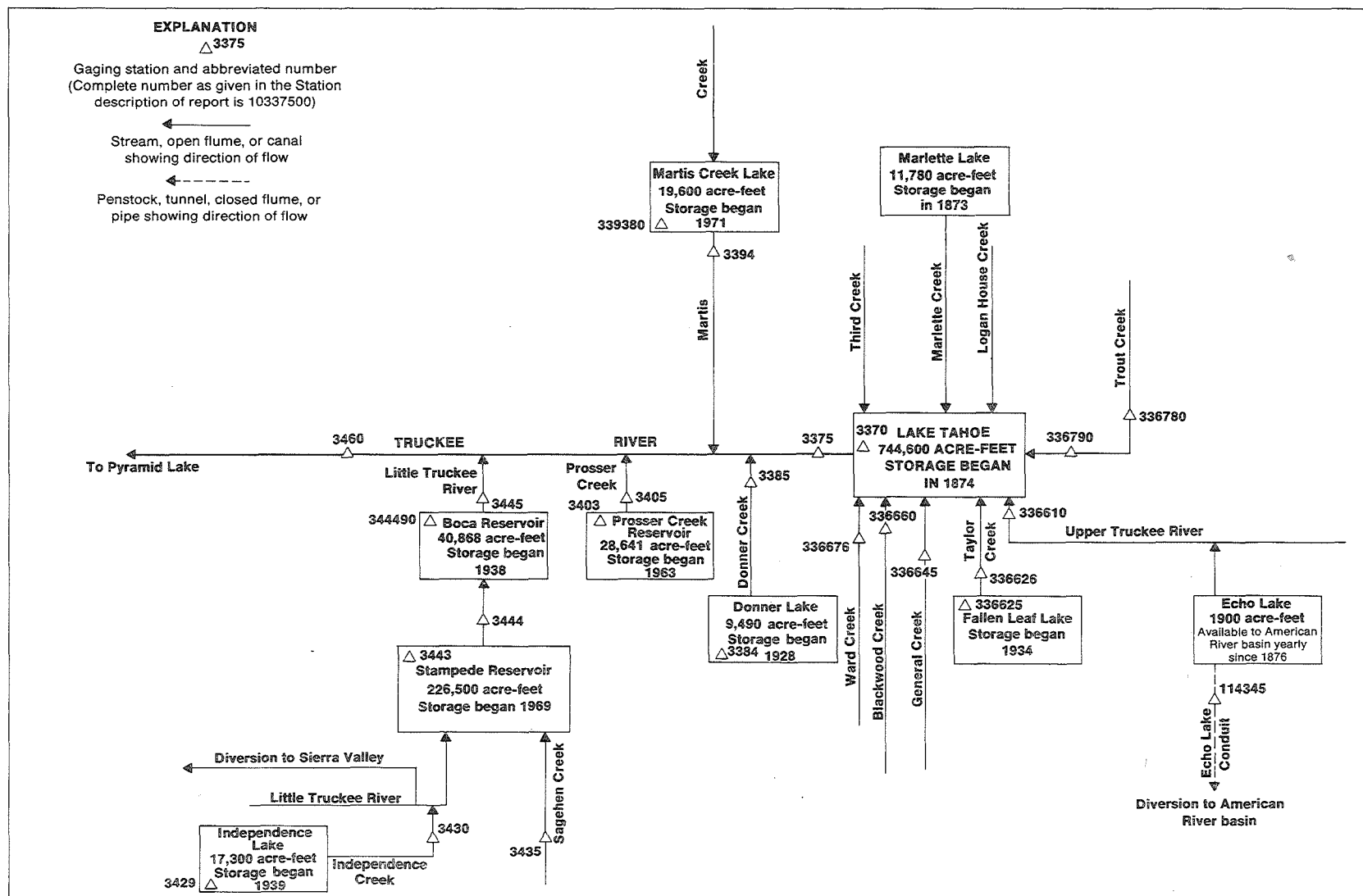


Figure 26. Diversions and storage in Truckee River basin.

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA

LOCATION.--Lat 38°55'22", long 119°59'23", in NW 1/4 SE 1/4 sec.4, 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, 1.0 mi northeast of South Lake Tahoe Post Office, and 1.4 mi upstream from Lake Tahoe.

DRAINAGE AREA.--54.9 mi².

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 National Geodetic Vertical Datum of 1929. Prior to Apr. 26, 1984, at datum 2.00 ft higher.

REMARKS.--Records good April to August and fair the remainder of the year. 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, capacity 1,900 acre-ft, to South Fork American River basin. See schematic diagram of Truckee River basin.

AVERAGE DISCHARGE.--14 years (water years 1972-74, 1981-91), 99.0 ft³/s, 71,730 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,740 ft³/s, Mar. 8, 1986, gage height, 9.08 ft; maximum gage height, 10.12 ft, present datum, Feb. 16, 1982; minimum daily, 0.94 ft³/s, Oct. 5, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1700	384	*5.02	June 5	0145	376	4.86
May 8	0145	317	4.51	June 10	0045	344	4.69
May 26	0130	*402	4.97				

Minimum daily, 2.8 ft³/s, Sept. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	7.9	e8.4	e8.0	e8.0	13	45	111	195	63	10	3.7
2	4.3	6.7	e8.5	e8.0	e8.0	18	46	93	241	52	9.9	3.7
3	4.8	6.7	e8.5	e8.0	e8.0	39	50	83	256	48	9.4	3.9
4	4.8	6.5	e8.6	e8.0	e8.0	221	59	87	283	44	8.9	4.3
5	4.2	6.3	e8.5	e8.0	e8.5	151	86	121	265	40	9.1	6.9
6	4.7	6.0	e8.4	e8.0	e8.7	91	129	166	203	39	8.9	5.9
7	4.8	6.0	e8.2	e8.0	e9.0	74	102	212	199	33	7.9	6.7
8	4.8	5.8	e8.0	e8.0	e9.5	65	83	277	218	29	7.7	5.0
9	5.4	6.3	e8.0	e8.0	e10	58	80	243	263	27	7.5	5.2
10	4.8	6.7	7.6	e8.0	e11	51	81	180	291	26	6.7	5.3
11	5.6	6.9	7.8	e8.0	11	49	69	148	269	24	6.2	4.8
12	5.7	7.2	8.0	e8.0	11	45	62	129	245	24	6.0	4.9
13	5.1	7.2	7.7	e8.0	12	44	62	147	221	22	5.9	4.6
14	4.4	6.7	e8.0	e8.0	12	42	69	139	192	21	6.5	4.1
15	5.2	7.1	e8.0	e8.0	13	41	75	149	174	19	7.8	3.7
16	4.7	7.1	e8.0	e8.0	13	40	70	178	154	18	8.3	3.7
17	4.6	7.5	e8.0	e8.0	12	35	64	195	132	17	7.0	3.6
18	5.2	7.5	e8.0	e8.0	12	35	60	135	114	17	6.3	3.1
19	7.1	7.8	e8.0	e8.0	11	35	61	e114	99	17	5.7	3.2
20	6.8	8.6	e8.0	e8.0	11	33	64	e103	84	16	5.4	3.1
21	6.7	8.1	e8.0	e8.0	11	31	64	e100	78	18	5.1	2.9
22	6.9	e8.1	e8.0	e8.0	11	29	65	132	75	16	4.8	3.0
23	6.7	e8.1	e8.0	e8.0	11	29	71	212	73	16	4.0	3.0
24	6.3	e8.2	e8.0	e8.0	11	32	83	284	66	15	3.8	2.9
25	5.5	e8.2	e8.0	e8.0	10	29	84	328	63	14	3.9	2.8
26	5.5	e8.2	e8.0	e8.0	10	e30	80	317	60	14	3.5	3.0
27	5.4	e8.3	e8.0	e8.0	11	e32	80	264	58	13	3.4	3.2
28	5.3	e8.3	e8.0	e8.0	11	e34	77	245	71	13	4.0	3.4
29	4.9	e8.3	e8.0	e8.0	---	35	89	247	113	13	4.1	3.5
30	5.3	e8.4	e8.0	e8.0	---	37	103	258	94	13	3.9	3.3
31	6.5	---	e8.0	e8.0	---	40	---	201	---	11	3.8	---
TOTAL	167.3	220.7	250.2	248.0	292.7	1538	2213	5598	4849	752	195.4	120.4
MEAN	5.40	7.36	8.07	8.00	10.5	49.6	73.8	181	162	24.3	6.30	4.01
MAX	7.1	8.6	8.6	8.0	13	221	129	328	291	63	10	6.9
MIN	4.2	5.8	7.6	8.0	8.0	13	45	83	58	11	3.4	2.8
AC-FT	332	438	496	492	581	3050	4390	11100	9620	1490	388	239

CAL YR 1990 TOTAL 15339.2 MEAN 42.0 MAX 195 MIN 2.8 AC-FT 30430

WTR YR 1991 TOTAL 16444.7 MEAN 45.1 MAX 328 MIN 2.8 AC-FT 32620

e Estimated.

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 current year.

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

REMARKS.--Sediment samples were collected during most days where a water temperature is published.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 416 mg/L, Mar. 4, 1991; minimum daily mean, 0 mg/L, several days during most years.

SEDIMENT LOAD: Maximum daily, 781 tons, Mar. 8, 1986; minimum daily, 0 ton, several days during most years.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 416 mg/L, Mar. 4; minimum daily mean, 1 mg/L, several days.

SEDIMENT LOAD: Maximum daily, 301 tons, Mar. 4; minimum daily, 0.01 ton, several days.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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)	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
MAR									
04...	1245	286	3.0	640	494	59	84	97	100
04...	1400	337	3.0	616	560	57	83	97	100
05...	0950	165	0.5	107	48	68	88	97	100
MAY									
14...	1650	132	11.0	13	4.6	62	--	--	--
23...	0710	215	4.5	29	17	65	--	--	--
29...	0745	269	4.0	32	23	71	--	--	--
JUN									
10...	1015	292	9.5	21	17	66	--	--	--

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	11.0	---	---	---
2	15.0	---	---	---	---	---	---	---	10.0	---	---	---
3	---	---	---	.0	.0	.0	5.0	---	---	---	---	---
4	---	---	---	---	---	3.0	---	---	---	---	---	17.0
5	---	---	1.5	---	---	.5	---	9.0	---	---	22.5	---
6	---	---	---	---	---	---	---	---	12.5	---	---	17.0
7	---	---	---	---	---	---	2.0	2.5	---	15.0	---	---
8	---	---	---	---	---	5.0	---	---	---	15.5	---	---
9	---	4.5	---	---	---	---	---	1.5	9.0	---	---	---
10	---	---	---	---	---	---	---	---	9.5	---	---	---
11	---	6.0	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	8.0	10.0	---	---	21.0	---
13	---	---	---	.0	---	---	---	---	15.0	---	---	---
14	---	---	---	---	---	---	---	11.0	---	---	---	---
15	10.5	---	---	---	---	---	---	3.5	9.0	---	---	---
16	---	---	.0	.5	---	---	---	---	---	---	---	---
17	---	---	.5	---	---	1.0	---	2.0	---	---	---	---
18	10.0	---	---	---	---	---	---	2.0	13.0	---	---	14.5
19	---	---	---	---	---	---	5.0	---	---	---	---	---
20	---	---	---	---	5.5	---	---	7.0	15.5	---	---	---
21	---	3.5	---	---	---	2.5	9.0	8.0	---	17.0	---	---
22	---	---	---	---	---	---	---	12.5	8.0	---	---	---
23	---	---	.0	---	---	---	---	4.5	---	18.0	---	---
24	---	---	---	---	---	---	---	---	---	---	---	14.5
25	---	2.0	---	---	---	---	---	5.5	---	---	---	---
26	---	---	---	---	---	---	7.0	---	14.0	---	---	---
27	---	---	---	---	---	---	---	---	---	---	14.5	---
28	---	---	---	---	---	---	---	9.0	---	---	---	---
29	10.5	---	---	---	---	---	---	8.0	9.0	---	---	17.5
30	---	---	---	.5	---	---	---	---	9.0	---	---	---
31	---	---	---	---	---	2.0	---	---	---	---	---	---

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	5.3	1	.01	7.9	2	.04	e8.4	5	.11
2	4.3	1	.01	6.7	2	.04	e8.5	5	.11
3	4.8	1	.01	6.7	2	.04	e8.5	4	.09
4	4.8	1	.01	6.5	2	.04	e8.6	4	.09
5	4.2	1	.01	6.3	2	.03	e8.5	4	.09
6	4.7	1	.01	6.0	2	.03	e8.4	4	.09
7	4.8	1	.01	6.0	2	.03	e8.2	4	.09
8	4.8	1	.01	5.8	4	.06	e8.0	4	.09
9	5.4	1	.01	6.3	6	.10	e8.0	4	.09
10	4.8	1	.01	6.7	7	.13	7.6	4	.08
11	5.6	1	.02	6.9	7	.13	7.8	4	.08
12	5.7	1	.02	7.2	7	.14	8.0	4	.09
13	5.1	1	.01	7.2	7	.14	7.7	4	.08
14	4.4	1	.01	6.7	7	.13	e8.0	4	.09
15	5.2	2	.03	7.1	7	.13	e8.0	4	.09
16	4.7	3	.04	7.1	7	.13	e8.0	4	.09
17	4.6	4	.05	7.5	7	.14	e8.0	4	.09
18	5.2	5	.07	7.5	7	.14	e8.0	4	.09
19	7.1	3	.06	7.8	7	.15	e8.0	4	.09
20	6.8	2	.04	8.6	7	.16	e8.0	4	.09
21	6.7	2	.04	8.1	7	.15	e8.0	4	.09
22	6.9	2	.04	e8.1	7	.15	e8.0	4	.09
23	6.7	2	.04	e8.1	7	.15	e8.0	4	.09
24	6.3	2	.03	e8.2	7	.15	e8.0	4	.09
25	5.5	2	.03	e8.2	7	.15	e8.0	4	.09
26	5.5	2	.03	e8.2	7	.15	e8.0	4	.09
27	5.4	2	.03	e8.3	6	.13	e8.0	4	.09
28	5.3	2	.03	e8.3	6	.13	e8.0	4	.09
29	4.9	2	.03	e8.3	6	.13	e8.0	4	.09
30	5.3	2	.03	e8.4	5	.11	e8.0	5	.11
31	6.5	2	.04	---	---	---	e8.0	5	.11
TOTAL	167.3	---	0.82	220.7	---	3.33	250.2	---	2.84
JANUARY			FEBRUARY			MARCH			
1	e8.0	5	.11	e8.0	3	.06	13	6	.21
2	e8.0	5	.11	e8.0	3	.06	18	6	.29
3	e8.0	5	.11	e8.0	3	.06	39	67	10
4	e8.0	5	.11	e8.0	3	.06	221	416	301
5	e8.0	5	.11	e8.5	3	.07	151	128	57
6	e8.0	5	.11	e8.7	3	.07	91	25	6.1
7	e8.0	5	.11	e9.0	3	.07	74	15	3.0
8	e8.0	5	.11	e9.5	3	.08	65	13	2.3
9	e8.0	5	.11	e10	6	.16	58	12	1.9
10	e8.0	6	.13	e11	6	.18	51	12	1.7
11	e8.0	6	.13	11	6	.18	49	11	1.5
12	e8.0	6	.13	11	6	.18	45	11	1.3
13	e8.0	6	.13	12	6	.19	44	10	1.2
14	e8.0	6	.13	12	6	.19	42	10	1.1
15	e8.0	6	.13	13	6	.21	41	9	1.0
16	e8.0	6	.13	13	6	.21	40	9	.97
17	e8.0	6	.13	12	6	.19	35	8	.76
18	e8.0	6	.13	12	6	.19	35	8	.76
19	e8.0	6	.13	11	6	.18	35	7	.66
20	e8.0	5	.11	11	6	.18	33	7	.62
21	e8.0	5	.11	11	6	.18	31	7	.59
22	e8.0	5	.11	11	6	.18	29	7	.55
23	e8.0	5	.11	11	6	.18	29	7	.55
24	e8.0	5	.11	11	6	.18	32	6	.52
25	e8.0	5	.11	10	6	.16	29	6	.47
26	e8.0	4	.09	10	6	.16	e30	6	.49
27	e8.0	4	.09	11	6	.18	e32	6	.52
28	e8.0	4	.09	11	6	.18	e34	6	.55
29	e8.0	4	.09	---	---	---	35	5	.47
30	e8.0	4	.09	---	---	---	37	5	.50
31	e8.0	4	.09	---	---	---	40	5	.54
TOTAL	248.0	---	3.49	292.7	---	4.17	1538	---	399.12

e Estimated.

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT
	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)
APRIL									
1	45	7	.85	111	16	4.8	195	29	15
2	46	8	.99	93	12	3.0	241	44	29
3	50	9	1.2	83	10	2.2	256	52	37
4	59	11	1.8	87	12	2.8	283	66	52
5	86	16	3.7	121	22	7.2	265	62	46
6	129	25	9.5	166	41	18	203	68	37
7	102	15	4.1	212	45	27	199	54	29
8	83	13	2.9	277	53	40	218	44	26
9	80	12	2.6	243	40	26	263	35	25
10	81	11	2.4	180	22	11	291	34	28
MAY									
11	69	9	1.7	148	16	6.4	269	41	31
12	62	7	1.2	129	13	4.5	245	30	21
13	62	7	1.2	147	15	6.0	221	21	13
14	69	6	1.1	139	13	4.9	192	18	9.3
15	75	6	1.2	149	15	6.0	174	11	5.2
16	70	6	1.1	178	23	11	154	9	3.7
17	64	6	1.0	195	22	12	132	8	2.9
18	60	5	.81	135	8	2.9	114	7	2.2
19	61	5	.82	e114	5	1.5	99	5	1.3
20	64	5	.86	e103	3	.83	84	2	.45
JUNE									
21	64	4	.69	e100	6	1.8	78	2	.42
22	65	4	.70	132	15	5.3	75	4	.81
23	71	4	.77	212	27	15	73	4	.79
24	83	5	1.1	284	49	39	66	5	.89
25	84	5	1.1	328	59	53	63	6	1.0
26	80	5	1.1	317	54	47	60	7	1.1
27	80	5	1.1	264	46	33	58	7	1.1
28	77	5	1.0	245	41	27	71	9	1.7
29	89	9	2.2	247	35	23	113	12	3.7
30	103	11	3.1	258	36	25	94	8	2.0
31	---	---	---	201	26	14	---	---	---
TOTAL	2213	---	53.89	5598	---	480.93	4849	---	427.56
JULY									
1	63	6	1.0	10	5	.13	3.7	1	.01
2	52	5	.70	9.9	5	.13	3.7	1	.01
3	48	4	.52	9.4	5	.13	3.9	1	.01
4	44	4	.48	8.9	5	.12	4.3	1	.01
5	40	4	.43	9.1	5	.12	6.9	4	.07
6	39	4	.42	8.9	5	.12	5.9	4	.06
7	33	4	.36	7.9	4	.09	6.7	4	.07
8	29	4	.31	7.7	4	.08	5.0	4	.05
9	27	4	.29	7.5	3	.06	5.2	4	.06
10	26	4	.28	6.7	3	.05	5.3	4	.06
AUGUST									
11	24	4	.26	6.2	2	.03	4.8	4	.05
12	24	4	.26	6.0	2	.03	4.9	4	.05
13	22	4	.24	5.9	2	.03	4.6	5	.06
14	21	4	.23	6.5	2	.04	4.1	5	.06
15	19	4	.21	7.8	2	.04	3.7	5	.05
16	18	4	.19	8.3	2	.04	3.7	5	.05
17	17	4	.18	7.0	2	.04	3.6	5	.05
18	17	4	.18	6.3	2	.03	3.1	5	.04
19	17	4	.18	5.7	2	.03	3.2	5	.04
20	16	4	.17	5.4	2	.03	3.1	5	.04
SEPTEMBER									
21	18	4	.19	5.1	2	.03	2.9	5	.04
22	16	4	.17	4.8	2	.03	3.0	5	.04
23	16	5	.22	4.0	2	.02	3.0	5	.04
24	15	5	.20	3.8	2	.02	2.9	5	.04
25	14	5	.19	3.9	2	.02	2.8	5	.04
26	14	5	.19	3.5	2	.02	3.0	5	.04
27	13	5	.18	3.4	6	.06	3.2	5	.04
28	13	5	.18	4.0	2	.02	3.4	5	.05
29	13	5	.18	4.1	2	.02	3.5	5	.05
30	13	5	.18	3.9	2	.02	3.3	5	.04
31	11	5	.15	3.8	2	.02	---	---	---
TOTAL	752	---	8.92	195.4	---	1.65	120.4	---	1.32
YEAR	16444.7		1388.04						
e Estimated.									

10336625 FALLEN LEAF LAKE NEAR CAMP RICHARDSON, CA

LOCATION.--Lat 38°54'00", long 120°04'14", in NE 1/4 SW 1/4 sec.11, T.12 N., R.17 E., El Dorado County, Hydrologic Unit 16050101, Eldorado National Forest, 200 ft north of Cathedral Creek, 1.5 mi south of Fallen Leaf Dam, 2.9 mi southwest of Camp Richardson, and 3.7 mi west of South Lake Tahoe Post Office.

DRAINAGE AREA.--16.7 mi².

PERIOD OF RECORD.--October 1968 to current year. Prior to October 1973, published as "near Tahoe Valley."

GAGE.--Water-stage recorder. Datum of gage is 6,372.30 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Lake levels regulated by a concrete dam at the outlet constructed in 1934. Regulation is for maintenance of lake level and enhancement of fishery. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 5.85 ft, Jan. 13, 1980; minimum, 1.31 ft, Feb. 2, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 4.25 ft, July 12, 13; minimum, 1.31 ft, Feb. 2.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.07	2.43	1.89	1.56	1.32	1.54	2.76	3.05	3.89	4.14	4.12	3.57
2	3.06	2.39	1.88	1.55	1.37	1.60	2.75	3.05	3.98	4.16	4.10	3.56
3	3.05	2.37	1.87	1.54	1.36	1.85	2.74	3.05	4.10	4.18	4.08	3.54
4	3.03	2.35	1.84	1.54	1.38	2.58	2.75	3.06	4.19	4.21	4.06	3.54
5	2.98	2.32	1.84	1.54	1.41	2.73	2.78	3.11	4.23	4.22	4.05	3.53
6	2.97	2.28	1.83	1.51	1.41	2.74	2.90	3.20	4.21	4.23	4.03	3.51
7	2.94	2.27	1.82	1.51	1.41	2.72	2.92	3.33	4.19	4.23	4.00	3.49
8	2.92	2.26	1.81	1.51	1.41	2.69	2.92	3.47	4.19	4.23	3.98	3.46
9	2.90	2.24	1.79	1.50	1.41	2.67	2.93	3.52	4.20	4.24	3.96	3.45
10	2.88	2.22	1.75	1.49	1.41	2.72	2.93	3.50	4.21	4.24	3.94	3.44
11	2.86	2.21	1.76	1.48	1.41	2.71	2.92	3.45	4.22	4.24	3.92	3.43
12	2.83	2.20	1.75	1.47	1.41	2.72	2.90	3.41	4.19	4.24	3.90	3.42
13	2.81	2.16	1.74	1.46	1.41	2.75	2.89	3.41	4.16	4.23	3.89	3.39
14	2.78	2.12	1.71	1.45	1.41	2.76	2.89	3.39	4.12	4.22	4.01	3.38
15	2.76	2.11	1.70	1.43	1.43	2.74	2.88	3.40	4.06	4.21	4.00	3.37
16	2.73	2.09	1.69	1.42	1.43	2.72	2.89	3.51	4.00	4.19	3.98	3.35
17	2.70	2.08	1.68	1.41	1.43	2.74	2.88	3.57	3.96	4.19	3.97	3.34
18	2.71	2.06	1.67	1.39	1.43	2.75	2.87	3.56	3.93	4.20	3.95	3.32
19	2.69	2.05	1.74	1.39	1.43	2.73	2.86	3.51	3.92	4.20	3.93	3.31
20	2.67	2.03	1.74	1.39	1.42	2.71	2.88	3.48	3.93	4.19	3.92	3.29
21	2.66	2.02	1.73	1.38	1.42	2.69	2.88	3.45	3.94	4.18	3.90	3.28
22	2.63	2.01	1.71	1.36	1.42	2.66	2.90	3.54	3.95	4.17	3.88	3.27
23	2.62	1.99	1.69	1.36	1.42	2.71	2.91	3.76	3.96	4.16	3.85	3.25
24	2.60	1.98	1.68	1.35	1.42	2.75	2.94	3.98	3.96	4.14	3.80	3.24
25	2.57	1.98	1.66	1.35	1.41	2.83	2.97	4.11	3.97	4.13	3.75	3.22
26	2.55	1.97	1.64	1.36	1.41	2.83	2.96	4.13	3.97	4.12	3.71	3.21
27	2.52	1.96	1.63	1.36	1.41	2.83	2.95	4.08	3.99	4.14	3.66	3.19
28	2.49	1.94	1.60	1.35	1.42	2.80	2.95	4.04	4.04	4.17	3.64	3.18
29	2.45	1.92	1.58	1.35	---	2.78	2.97	4.01	4.09	4.16	3.62	3.16
30	2.41	1.91	1.57	1.35	---	2.76	3.02	3.99	4.12	4.15	3.61	3.15
31	2.45	---	1.56	1.34	---	2.76	---	3.89	---	4.14	3.59	---
MEAN	2.75	2.13	1.73	1.43	1.41	2.63	2.89	3.55	4.06	4.19	3.90	3.36
MAX	3.07	2.43	1.89	1.56	1.43	2.83	3.02	4.13	4.23	4.24	4.12	3.57
MIN	2.41	1.91	1.56	1.34	1.32	1.54	2.74	3.05	3.89	4.12	3.59	3.15

CAL YR 1990 MEAN 3.16 MAX 4.48 MIN 1.56
WTR YR 1991 MEAN 2.84 MAX 4.24 MIN 1.32

10336626 TAYLOR CREEK NEAR CAMP RICHARDSON, CA

LOCATION.--Lat 38°55'18", long 120°03'37", in NE 1/4 NW 1/4 sec.2, T.12 N., R.17 E., El Dorado County, Hydrologic Unit 16050101, Eldorado National Forest, on left bank 0.1 mi downstream from Fallen Leaf Lake outlet and 1.4 mi southwest of Camp Richardson.

DRAINAGE AREA.--16.7 mi².

PERIOD OF RECORD.--October 1968 to current year. Prior to October 1973, published as "near Tahoe Valley."

GAGE.--Water-stage recorder. Datum of gage is 6,361.08 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for discharges less than 2 ft³/s, which are fair. Flow regulated by Fallen Leaf Lake (station 10336625). See schematic diagram of Truckee River basin.

AVERAGE DISCHARGE (unadjusted).--23 years, 43.8 ft³/s, 31,730 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,530 ft³/s, Jan. 14, 1980, gage height, 6.33 ft; minimum daily, 0.13 ft³/s, Sept. 12, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 192 ft³/s, May 26, gage height, 4.37 ft; minimum daily, 0.45 ft³/s, Jan. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	8.3	7.3	7.1	2.8	7.3	25	46	107	15	6.3	5.3
2	2.6	8.2	7.5	7.1	3.5	8.0	25	47	90	15	6.1	5.0
3	3.3	8.2	7.3	7.1	2.9	11	24	47	102	14	6.0	4.9
4	3.3	8.1	7.3	7.1	2.5	23	25	47	115	12	5.8	4.9
5	4.6	8.2	7.3	7.1	2.1	43	27	50	126	11	5.7	5.1
6	6.5	8.1	7.3	7.1	2.0	49	33	57	127	10	5.6	5.5
7	6.5	8.1	7.3	7.1	1.9	48	36	66	124	9.3	5.3	5.8
8	6.5	8.2	7.3	6.9	1.9	39	37	77	124	8.5	5.1	5.8
9	7.5	8.1	7.3	6.5	2.0	22	37	88	126	8.0	4.8	5.8
10	8.2	7.9	7.1	6.5	2.0	22	37	90	127	6.6	4.6	5.7
11	8.2	7.9	7.1	6.5	2.0	23	36	87	129	4.9	4.6	5.5
12	8.2	7.6	7.1	6.2	2.0	24	34	81	129	3.6	6.8	5.4
13	8.2	7.8	7.1	5.9	2.0	25	34	79	122	1.9	8.6	5.3
14	8.4	8.1	7.1	5.6	2.0	25	34	75	107	1.4	8.0	5.4
15	8.4	8.2	7.1	5.3	2.0	25	35	73	100	1.1	7.6	5.1
16	8.5	8.2	7.1	5.0	2.1	24	34	78	93	.99	7.8	5.1
17	8.5	7.9	7.1	4.8	2.2	23	34	89	71	.92	7.9	5.1
18	8.6	7.9	7.1	4.6	2.5	24	33	90	53	.81	7.1	5.0
19	8.9	7.9	7.4	4.3	2.5	25	33	86	38	4.5	6.7	4.6
20	8.9	7.7	7.6	4.1	2.5	24	34	82	21	9.8	6.2	4.1
21	8.7	7.3	7.6	3.8	2.5	22	34	79	18	9.1	6.1	3.6
22	8.8	7.0	7.6	3.6	2.4	21	34	46	16	8.4	6.9	3.3
23	8.9	7.1	7.4	3.3	2.4	21	36	35	16	8.2	7.1	3.4
24	8.9	7.1	7.5	3.2	2.4	23	38	53	15	7.7	6.7	3.6
25	8.9	7.2	7.6	2.6	2.4	28	40	127	15	7.4	6.2	3.5
26	8.2	7.6	7.5	1.0	2.5	30	40	171	15	7.4	5.7	3.8
27	8.2	7.5	7.3	.49	5.5	31	39	185	15	7.2	5.4	e3.7
28	8.2	7.3	7.3	.45	7.1	29	39	177	15	6.9	5.5	e3.7
29	8.2	7.3	7.1	.46	---	27	40	172	15	6.2	5.5	e3.7
30	8.2	7.2	7.1	1.2	---	26	42	169	15	6.3	5.5	e3.7
31	8.4	---	7.1	2.5	---	25	---	155	---	6.4	5.5	---
TOTAL	229.7	233.2	225.9	144.50	72.6	797.3	1029	2804	2186	220.52	192.7	140.4
MEAN	7.41	7.77	7.29	4.66	2.59	25.7	34.3	90.5	72.9	7.11	6.22	4.68
MAX	8.9	8.3	7.6	7.1	7.1	49	42	185	129	15	8.6	5.8
MIN	2.3	7.0	7.1	.45	1.9	7.3	24	35	15	.81	4.6	3.3
AC-FT	456	463	448	287	144	1580	2040	5560	4340	437	382	278

CAL YR 1990 TOTAL 7638.80 MEAN 20.9 MAX 186 MIN .46 AC-FT 15150
WTR YR 1991 TOTAL 8275.82 MEAN 22.7 MAX 185 MIN .45 AC-FT 16420

e Estimated.

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 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 6,250.38 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges and discharges less than 0.5 ft³/s, which are poor. No known diversion or regulation upstream from station. See schematic diagram of Truckee River basin.

AVERAGE DISCHARGE.--11 years, 16.6 ft³/s, 12,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 765 ft³/s, Dec. 20, 1981, gage height, 5.43 ft, from rating curve extended above 180 ft³/s on basis of computation of flow through culvert; minimum daily, 0.36 ft³/s, Sept. 19-22, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 23	2130	*154	*2.35				

Minimum daily, 0.36 ft³/s, Sept. 19-22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	1.3	e.92	e.88	e.91	e1.2	6.1	32	51	4.7	.84	.39
2	.66	1.1	e.92	e.88	e.91	e1.2	6.0	24	64	3.8	.76	.38
3	.65	1.1	e.92	e.88	e.91	4.1	6.5	19	64	3.3	.72	.39
4	.65	.98	e.92	e.88	e.91	29	8.1	20	58	2.9	.69	.50
5	.65	1.0	e.92	e.88	e.91	30	12	33	46	2.6	.73	.58
6	.66	1.1	e.92	e.90	e.91	e15	19	52	33	2.3	.74	.50
7	.67	1.1	e.92	e.90	e.91	e10	19	64	30	2.0	.72	.48
8	.67	1.1	e.90	e.90	e.91	e9.0	17	80	29	1.7	.71	.47
9	.68	1.0	e.90	e.90	e.91	e8.1	15	56	28	1.6	.66	.49
10	.71	.98	e.90	e.90	e.91	6.9	16	34	26	1.5	.61	.66
11	.70	.98	e.90	e.91	e.91	e7.0	15	28	23	1.3	.58	.62
12	.72	.98	e.90	e.91	e.91	6.0	13	25	19	1.2	.59	.61
13	.72	.98	e.90	e.91	e.91	5.6	13	37	16	1.1	.65	.62
14	.72	.98	e.90	e.91	e.91	e5.4	16	31	13	1.0	1.0	.62
15	.70	.98	e.90	e.91	.91	e5.1	18	47	11	.96	1.3	.55
16	.64	.98	e.90	e.91	.98	e4.8	16	69	9.3	.93	.96	.55
17	.66	.98	e.90	e.91	1.0	4.4	13	63	8.0	.89	.80	.48
18	.78	.98	e.90	e.91	1.1	4.5	13	34	7.1	.83	.65	.48
19	1.1	.99	e.88	e.91	1.1	4.4	14	27	6.3	1.0	.62	.36
20	.88	1.1	e.86	e.91	1.1	4.0	17	28	5.8	1.3	.57	.36
21	.87	.98	e.86	e.91	1.1	e4.0	16	33	5.2	1.3	.49	.36
22	.79	.98	e.86	e.91	1.1	e3.8	17	58	4.7	1.0	.45	.36
23	.79	1.0	e.86	e.91	1.1	3.7	21	90	4.3	.94	.43	.42
24	.79	e1.0	e.86	e.91	1.1	e3.7	25	93	4.0	.89	.42	.42
25	.79	e1.0	e.86	e.91	1.1	e3.8	21	95	3.8	.83	.47	.48
26	.79	e.95	e.86	e.91	1.1	e4.0	17	75	3.6	.80	.50	.55
27	.79	e.92	e.86	e.91	1.1	e4.2	18	59	3.7	.76	.56	.62
28	.79	e.92	e.86	e.91	1.2	e4.4	18	56	5.0	.75	.55	.70
29	.79	e.92	e.86	e.91	---	4.4	23	55	7.9	.87	.51	.70
30	.79	e.92	e.86	e.91	---	4.4	29	52	6.1	.86	.48	.62
31	1.2	---	e.86	e.91	---	5.1	---	37	---	.83	.44	---
TOTAL	23.45	30.28	27.54	28.01	27.83	211.2	477.7	1506	595.8	46.74	20.20	15.32
MEAN	.76	1.01	.89	.90	.99	6.81	15.9	48.6	19.9	1.51	.65	.51
MAX	1.2	1.3	.92	.91	1.2	30	29	95	64	4.7	1.3	.70
MIN	.64	.92	.86	.88	.91	1.2	6.0	19	3.6	.75	.42	.36
AC-FT	47	60	55	56	55	419	948	2990	1180	93	40	30

CAL YR 1990 TOTAL 3192.65 MEAN 8.75 MAX 65 MIN .51 AC-FT 6330
WTR YR 1991 TOTAL 3010.07 MEAN 8.25 MAX 95 MIN .36 AC-FT 5970

e Estimated.

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 current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1980 to current year.

REMARKS.--Sediment samples were collected during most days where a water temperature is published.

COOPERATION.--Selected sediment samples and water-temperature observations provided by University of California at Davis.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 266 mg/L, Dec. 20, 1981; minimum daily mean, 0 mg/L, many days during most years.

SEDIMENT LOAD: Maximum daily, 457 tons, Dec. 20, 1981; minimum daily, 0 ton, many days during most years.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 26 mg/L, Mar. 4; minimum daily mean, 0 mg/L, many days.

SEDIMENT LOAD: Maximum daily, 2.2 tons, Mar. 4; minimum daily, 0 ton, many days.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR 04...	1235	29	0.5	38	3.0	51

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	.0	---	3.0	---	---	---	---	---
2	---	---	---	.0	---	---	---	---	9.0	---	---	---
3	7.5	---	---	---	---	.0	---	3.0	6.0	---	---	---
4	---	---	---	---	---	0.5	---	5.0	10.0	---	---	---
5	8.5	3.0	---	---	---	0	---	5.5	---	---	---	---
6	---	---	---	---	---	.0	---	2.5	5.0	---	---	14.0
7	---	---	---	---	---	---	---	4.5	---	---	---	---
8	---	---	---	---	---	---	---	2.0	---	17.5	---	---
9	---	---	---	---	---	---	2.0	---	11.0	---	---	---
10	---	---	.5	---	---	---	---	3.0	13.0	---	---	---
11	---	---	---	---	---	---	---	---	10.0	---	---	---
12	---	---	---	---	.5	---	---	---	---	---	---	---
13	---	---	---	---	---	.5	---	---	---	---	14.0	12.0
14	---	---	---	---	---	---	6.5	5.5	---	---	13.0	---
15	5.5	---	---	1.0	---	---	---	4.5	---	---	14.0	---
16	---	4.0	---	---	---	---	---	2.0	---	---	---	---
17	---	---	---	---	---	---	1.5	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	1.0	1.0	---	---	---	14.0	---	---
20	---	---	---	---	---	---	---	5.0	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	.0	.0	---	---	---	8.0	---	---	---	---
23	---	---	---	---	---	---	5.0	3.5	---	---	---	---
24	---	---	---	---	---	---	---	2.5	---	---	---	---
25	5.5	---	---	---	---	---	---	7.5	---	---	---	---
26	---	---	---	---	---	---	---	6.0	---	---	16.0	---
27	---	---	.0	---	---	---	---	5.5	---	---	---	11.5
28	---	.5	---	---	---	---	6.0	---	---	---	---	---
29	---	---	---	---	---	---	4.5	---	---	13.0	---	---
30	4.5	---	---	---	---	---	---	5.0	---	---	---	---
31	---	---	---	---	---	---	---	---	---	16.0	---	---

10336645 GENERAL CREEK NEAR MEEKS BAY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	.65	1	.00	1.3	0	.00	e.92	0	.00
2	.66	0	.00	1.1	0	.00	e.92	0	.00
3	.65	0	.00	1.1	0	.00	e.92	0	.00
4	.65	0	.00	.98	0	.00	e.92	0	.00
5	.65	0	.00	1.0	0	.00	e.92	0	.00
6	.66	0	.00	1.1	0	.00	e.92	0	.00
7	.67	0	.00	1.1	0	.00	e.92	0	.00
8	.67	0	.00	1.1	0	.00	e.90	0	.00
9	.68	0	.00	1.0	0	.00	e.90	0	.00
10	.71	0	.00	.98	0	.00	e.90	0	.00
11	.70	0	.00	.98	0	.00	e.90	0	.00
12	.72	0	.00	.98	0	.00	e.90	0	.00
13	.72	0	.00	.98	0	.00	e.90	0	.00
14	.72	0	.00	.98	0	.00	e.90	0	.00
15	.70	0	.00	.98	0	.00	e.90	0	.00
16	.64	0	.00	.98	0	.00	e.90	0	.00
17	.66	0	.00	.98	0	.00	e.90	0	.00
18	.78	0	.00	.98	0	.00	e.90	0	.00
19	1.1	1	.00	.99	0	.00	e.88	0	.00
20	.88	1	.00	1.1	0	.00	e.86	0	.00
21	.87	0	.00	.98	0	.00	e.86	0	.00
22	.79	0	.00	.98	0	.00	e.86	0	.00
23	.79	0	.00	1.0	0	.00	e.86	0	.00
24	.79	0	.00	e1.0	0	.00	e.86	0	.00
25	.79	0	.00	e1.0	0	.00	e.86	0	.00
26	.79	0	.00	e.95	0	.00	e.86	0	.00
27	.79	0	.00	e.92	0	.00	e.86	0	.00
28	.79	0	.00	e.92	0	.00	e.86	0	.00
29	.79	0	.00	e.92	0	.00	e.86	0	.00
30	.79	0	.00	e.92	0	.00	e.86	0	.00
31	1.2	0	.00	---	---	---	e.86	0	.00
TOTAL	23.45	---	0.00	30.28	---	0.00	27.54	---	0.00
JANUARY			FEBRUARY			MARCH			
1	e.88	0	.00	e.91	0	.00	e1.2	0	.00
2	e.88	0	.00	e.91	0	.00	e1.2	0	.00
3	e.88	0	.00	e.91	0	.00	4.1	8	.13
4	e.88	0	.00	e.91	0	.00	29	26	2.2
5	e.88	0	.00	e.91	0	.00	30	7	.57
6	e.90	0	.00	e.91	0	.00	e15	2	.08
7	e.90	0	.00	e.91	0	.00	e10	2	.05
8	e.90	0	.00	e.91	0	.00	e9.0	2	.05
9	e.90	1	.00	e.91	0	.00	e8.1	2	.04
10	e.90	1	.00	e.91	0	.00	6.9	2	.04
11	e.91	1	.00	e.91	0	.00	e7.0	3	.06
12	e.91	1	.00	e.91	0	.00	6.0	3	.05
13	e.91	1	.00	e.91	0	.00	5.6	3	.05
14	e.91	1	.00	e.91	0	.00	e5.4	3	.04
15	e.91	1	.00	.91	0	.00	e5.1	3	.04
16	e.91	1	.00	.98	0	.00	e4.8	2	.03
17	e.91	1	.00	1.0	0	.00	4.4	2	.02
18	e.91	1	.00	1.1	0	.00	4.5	1	.01
19	e.91	1	.00	1.1	0	.00	4.4	1	.01
20	e.91	1	.00	1.1	0	.00	4.0	1	.01
21	e.91	1	.00	1.1	0	.00	e4.0	1	.01
22	e.91	1	.00	1.1	0	.00	e3.8	1	.01
23	e.91	1	.00	1.1	0	.00	3.7	2	.02
24	e.91	1	.00	1.1	0	.00	e3.7	2	.02
25	e.91	1	.00	1.1	0	.00	e3.8	2	.02
26	e.91	1	.00	1.1	0	.00	e4.0	2	.02
27	e.91	1	.00	1.1	0	.00	e4.2	2	.02
28	e.91	0	.00	1.2	0	.00	e4.4	3	.04
29	e.91	0	.00	---	---	---	4.4	3	.04
30	e.91	0	.00	---	---	---	4.4	3	.04
31	e.91	0	.00	---	---	---	5.1	4	.06
TOTAL	28.01	---	0.00	27.83	---	0.00	211.2	---	3.78

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

10336645 GENERAL CREEK NEAR MEEKS BAY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	6.1	4	.07	32	4	.35	51	3	.41
2	6.0	4	.06	24	3	.19	64	4	.69
3	6.5	4	.07	19	2	.10	64	3	.52
4	8.1	4	.09	20	3	.16	58	3	.47
5	12	4	.13	33	4	.36	46	2	.25
6	19	4	.21	52	6	.84	33	2	.18
7	19	4	.21	64	6	1.2	30	3	.24
8	17	4	.18	80	8	1.8	29	3	.23
9	15	6	.24	56	3	.45	28	4	.30
10	16	7	.30	34	1	.09	26	4	.28
11	15	6	.24	28	1	.08	23	4	.25
12	13	5	.18	25	2	.13	19	4	.21
13	13	5	.18	37	4	.40	16	4	.17
14	16	4	.17	31	4	.33	13	4	.14
15	18	4	.19	47	5	.63	11	4	.12
16	16	5	.22	69	5	.93	9.3	4	.10
17	13	5	.18	63	5	.85	8.0	4	.09
18	13	5	.18	34	1	.09	7.1	4	.08
19	14	5	.19	27	1	.07	6.3	4	.07
20	17	5	.23	28	1	.08	5.8	4	.06
21	16	6	.26	33	1	.09	5.2	4	.06
22	17	6	.28	58	2	.31	4.7	4	.05
23	21	6	.34	90	6	1.5	4.3	4	.05
24	25	6	.40	93	6	1.5	4.0	4	.04
25	21	6	.34	95	5	1.3	3.8	4	.04
26	17	5	.23	75	3	.61	3.6	4	.04
27	18	5	.24	59	2	.32	3.7	4	.04
28	18	5	.24	56	1	.15	5.0	5	.07
29	23	7	.43	55	1	.15	7.9	5	.11
30	29	6	.47	52	1	.14	6.1	4	.07
31	---	---	---	37	1	.10	---	---	---
TOTAL	477.7	---	6.75	1506	---	15.30	595.8	---	5.43
JULY			AUGUST			SEPTEMBER			
1	4.7	4	.05	.84	0	.00	.39	0	.00
2	3.8	4	.04	.76	0	.00	.38	0	.00
3	3.3	4	.04	.72	0	.00	.39	0	.00
4	2.9	4	.03	.69	0	.00	.50	0	.00
5	2.6	4	.03	.73	0	.00	.58	0	.00
6	2.3	4	.02	.74	0	.00	.50	0	.00
7	2.0	4	.02	.72	1	.00	.48	0	.00
8	1.7	3	.01	.71	1	.00	.47	0	.00
9	1.6	2	.01	.66	1	.00	.49	0	.00
10	1.5	2	.01	.61	1	.00	.66	1	.00
11	1.3	2	.01	.58	1	.00	.62	1	.00
12	1.2	2	.01	.59	1	.00	.61	1	.00
13	1.1	1	.00	.65	1	.00	.62	1	.00
14	1.0	1	.00	1.0	1	.00	.62	1	.00
15	.96	1	.00	1.3	0	.00	.55	1	.00
16	.93	1	.00	.96	0	.00	.55	1	.00
17	.89	1	.00	.80	0	.00	.48	1	.00
18	.83	1	.00	.65	0	.00	.48	1	.00
19	1.0	1	.00	.62	0	.00	.36	1	.00
20	1.3	1	.00	.57	0	.00	.36	1	.00
21	1.3	1	.00	.49	0	.00	.36	1	.00
22	1.0	1	.00	.45	0	.00	.36	1	.00
23	.94	1	.00	.43	0	.00	.42	1	.00
24	.89	1	.00	.42	0	.00	.42	1	.00
25	.83	1	.00	.47	0	.00	.48	1	.00
26	.80	1	.00	.50	0	.00	.55	2	.00
27	.76	1	.00	.56	0	.00	.62	2	.00
28	.75	1	.00	.55	0	.00	.70	1	.00
29	.87	1	.00	.51	0	.00	.70	1	.00
30	.86	1	.00	.48	0	.00	.62	1	.00
31	.83	0	.00	.44	0	.00	---	---	---
TOTAL	46.74	---	0.28	20.20	---	0.00	15.32	---	0.00
YEAR	3010.07		31.54						

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 mi².

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 National Geodetic Vertical Datum of 1929. 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.

AVERAGE DISCHARGE.--31 years, 36.5 ft³/s, 26,440 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft³/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 ft³/s, Sept. 19, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1430	ice jam	*3.35	May 25	1915	*177	2.37

Minimum daily, 1.7 ft³/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.4	e2.0	e2.0	e2.0	e2.3	12	53	90	26	3.4	2.0
2	2.0	2.0	e2.1	e2.0	e2.2	e2.3	12	44	105	24	3.3	2.0
3	2.0	2.0	e2.1	e2.0	e2.2	e2.5	13	41	116	23	3.4	2.0
4	2.0	2.0	e2.1	e2.0	e2.2	e150	17	50	114	21	3.3	2.1
5	2.0	2.0	2.1	e2.0	e2.2	e72	26	65	101	19	3.3	2.2
6	2.1	2.1	e2.1	e2.0	e2.2	e40	37	77	88	17	3.1	2.0
7	2.0	2.1	e2.1	e2.0	e2.2	e30	32	91	85	15	3.0	2.1
8	1.9	1.9	e2.1	e2.0	e2.3	e2.5	29	101	89	14	2.8	1.9
9	1.9	1.9	e2.1	e2.0	e2.3	e2.1	29	80	95	13	2.6	1.9
10	1.9	1.9	e2.1	e2.0	e2.3	e2.0	31	61	98	12	2.5	2.6
11	2.0	1.9	e2.1	e2.0	e2.3	e18	28	53	98	11	2.4	2.3
12	2.0	1.8	e2.1	e2.0	e2.3	e16	25	50	91	10	2.4	2.0
13	2.0	1.9	e2.1	e2.0	e2.3	e14	28	60	81	9.7	2.4	1.7
14	2.0	1.9	e2.1	e2.0	e2.3	e12	34	57	69	8.9	3.7	1.7
15	2.0	1.9	e2.1	e2.0	e2.3	e10	35	71	61	8.3	3.6	1.8
16	2.1	1.9	e2.0	e2.0	e2.3	e9.9	30	89	55	7.6	2.9	1.7
17	2.0	1.9	e2.0	e2.0	e2.3	e9.9	28	89	52	7.1	2.7	1.9
18	2.4	2.0	e2.0	e2.0	e2.3	e9.9	27	65	48	6.7	2.5	1.9
19	2.6	e2.0	e2.0	e2.0	e2.3	e9.9	29	57	44	6.6	2.5	1.7
20	1.9	e2.0	e2.0	e2.0	e2.3	9.8	35	57	39	6.7	2.5	1.8
21	1.8	e2.0	e2.0	e2.0	e2.3	9.6	36	63	35	6.4	2.4	1.7
22	1.9	e2.0	e2.0	e2.0	e2.3	e9.6	41	82	32	5.8	2.3	1.8
23	1.8	e2.0	e2.0	e2.0	e2.3	9.6	44	114	30	5.3	2.2	1.8
24	1.8	e2.0	e2.0	e2.0	e2.3	e9.6	45	124	28	5.1	2.2	1.8
25	1.8	e1.9	e2.0	e2.0	e2.3	e9.6	38	136	26	4.9	2.1	1.7
26	1.7	e1.9	e2.0	e2.0	e2.3	e9.8	34	118	24	4.5	2.2	1.9
27	1.8	e1.9	e2.0	e2.0	e2.3	e9.8	34	101	24	4.3	2.2	1.9
28	1.8	e1.9	e2.0	e2.0	e2.3	e9.6	37	96	32	4.1	2.2	1.9
29	1.7	e2.0	e2.0	e2.0	---	10	46	93	37	4.7	2.2	1.9
30	1.8	e2.0	e2.0	e2.0	---	11	51	97	28	4.1	2.3	1.7
31	2.6	---	e2.0	e2.0	---	12	---	80	---	3.9	2.1	---
TOTAL	61.3	59.1	63.4	62.0	63.5	617.2	943	2415	1915	319.7	82.7	57.4
MEAN	1.98	1.97	2.05	2.00	2.27	19.9	31.4	77.9	63.8	10.3	2.67	1.91
MAX	2.6	2.4	2.1	2.0	2.3	150	51	136	116	26	3.7	2.6
MIN	1.7	1.8	2.0	2.0	2.0	2.3	12	41	24	3.9	2.1	1.7
AC-FT	122	117	126	123	126	1220	1870	4790	3800	634	164	114

CAL YR 1990 TOTAL 7174.2 MEAN 19.7 MAX 107 MIN 1.7 AC-FT 14230
WTR YR 1991 TOTAL 6659.3 MEAN 18.2 MAX 150 MIN 1.7 AC-FT 13210

e Estimated.

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 current year.

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

REMARKS.--Sediment samples were collected during most days where a water temperature is published.

COOPERATION.--Selected sediment samples and water-temperature observations provided by University of California at Davis.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 1,200 mg/L, Jan. 13, 1980; minimum daily mean, 0 mg/L, many days during most years.

SEDIMENT LOAD: Maximum daily, 2,710 tons, Mar. 8, 1986; minimum daily, 0 ton, many days during most years.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 250 mg/L, Mar. 4; minimum daily mean, 0 mg/L, Dec. 2-5.

SEDIMENT LOAD: Maximum daily, 101 tons, Mar. 4; minimum daily, 0 ton, many days.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR SEPTEMBER 1990 TO OCTOBER 1991

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	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
MAR										
04...	1115	e150	0.0	427	173	59	81	94	100	--
04...	1215	e150	0.0	665	269	53	77	91	99	100
05...	1010	e72	1.0	64	12	67	--	--	--	--
05...	1105	e72	1.0	64	12	72	--	--	--	--

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR SEPTEMBER 1990 TO OCTOBER 1991
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	1.0	---	5.5	---	---	---	---	---
2	---	---	---	.0	---	---	---	---	7.5	---	---	---
3	11.0	---	---	---	---	.0	---	5.0	6.5	---	---	---
4	---	---	1.5	---	---	.0	---	9.0	11.5	---	---	---
5	11.0	6.0	---	---	---	1.0	---	9.0	---	---	---	---
6	---	---	---	---	---	3.0	4.5	7.5	3.0	---	---	14.5
7	---	---	---	---	---	---	---	8.0	---	---	19.0	---
8	---	---	---	---	---	---	---	4.0	---	19.0	---	---
9	---	---	---	---	---	---	7.0	---	---	14.0	---	---
10	---	---	2.0	---	---	---	---	5.5	13.0	---	---	---
11	---	---	---	---	---	---	---	---	9.0	---	---	---
12	---	---	---	---	3.0	---	---	---	---	---	---	10.0
13	---	---	---	---	---	.5	---	---	---	---	---	12.0
14	---	---	---	---	---	---	7.5	9.0	10.0	---	16.0	---
15	8.0	---	---	1.0	---	---	---	9.0	---	---	16.0	---
16	---	4.0	---	---	---	---	---	7.0	---	---	---	---
17	---	---	---	---	---	---	2.5	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	3.0	3.5	---	---	---	15.0	---	---
20	---	---	---	---	---	---	---	8.0	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	.5	---	---	---	11.0	---	---	---	---
23	---	---	---	---	---	---	9.5	7.5	---	---	---	---
24	---	---	---	---	---	---	---	8.0	---	---	---	---
25	9.0	---	---	---	---	---	---	10.0	---	---	---	---
26	---	---	.0	---	---	---	---	5.0	---	---	12.0	---
27	---	---	---	---	---	---	---	8.0	---	---	---	9.5
28	---	---	---	---	---	---	10.0	---	9.5	---	---	---
29	---	---	---	---	---	---	7.5	---	---	---	---	---
30	7.0	---	---	---	---	---	7.0	6.5	---	---	---	---
31	6.5	---	---	---	---	---	---	---	---	16.0	---	---

e Estimated.

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	2.0	1	.01	2.4	2	.01	e2.0	1	.01
2	2.0	1	.01	2.0	2	.01	e2.1	0	.00
3	2.0	1	.01	2.0	1	.01	e2.1	0	.00
4	2.0	1	.01	2.0	1	.01	e2.1	0	.00
5	2.0	1	.01	2.0	1	.01	2.1	0	.00
6	2.1	1	.01	2.1	1	.01	e2.1	1	.01
7	2.0	1	.01	2.1	1	.01	e2.1	1	.01
8	1.9	1	.01	1.9	1	.01	e2.1	2	.01
9	1.9	1	.01	1.9	1	.01	e2.1	2	.01
10	1.9	1	.01	1.9	1	.01	e2.1	2	.01
11	2.0	1	.01	1.9	1	.01	e2.1	2	.01
12	2.0	1	.01	1.8	1	.00	e2.1	2	.01
13	2.0	1	.01	1.9	1	.01	e2.1	2	.01
14	2.0	1	.01	1.9	1	.01	e2.1	2	.01
15	2.0	1	.01	1.9	1	.01	e2.1	2	.01
16	2.1	1	.01	1.9	1	.01	e2.0	2	.01
17	2.0	1	.01	1.9	1	.01	e2.0	1	.01
18	2.4	1	.01	2.0	1	.01	e2.0	1	.01
19	2.6	2	.01	e2.0	1	.01	e2.0	1	.01
20	1.9	1	.01	e2.0	1	.01	e2.0	1	.01
21	1.8	1	.00	e2.0	1	.01	e2.0	1	.01
22	1.9	1	.01	e2.0	1	.01	e2.0	1	.01
23	1.8	1	.00	e2.0	2	.01	e2.0	1	.01
24	1.8	1	.00	e2.0	2	.01	e2.0	1	.01
25	1.8	1	.00	e1.9	2	.01	e2.0	1	.01
26	1.7	1	.00	e1.9	2	.01	e2.0	1	.01
27	1.8	1	.00	e1.9	2	.01	e2.0	1	.01
28	1.8	1	.00	e1.9	2	.01	e2.0	1	.01
29	1.7	1	.00	e2.0	2	.01	e2.0	1	.01
30	1.8	1	.00	e2.0	1	.01	e2.0	1	.01
31	2.6	2	.01	---	---	---	e2.0	2	.01
TOTAL	61.3	---	0.22	59.1	---	0.29	63.4	---	0.27
JANUARY			FEBRUARY			MARCH			
1	e2.0	2	.01	e2.0	2	.01	e2.3	2	.01
2	e2.0	2	.01	e2.2	2	.01	e2.3	2	.01
3	e2.0	2	.01	e2.2	2	.01	e25	9	.61
4	e2.0	2	.01	e2.2	2	.01	e150	250	101
5	e2.0	2	.01	e2.2	2	.01	e72	56	11
6	e2.0	2	.01	e2.2	2	.01	e40	17	1.8
7	e2.0	2	.01	e2.2	2	.01	e30	14	1.1
8	e2.0	2	.01	e2.3	2	.01	e25	12	.81
9	e2.0	2	.01	e2.3	2	.01	e21	11	.62
10	e2.0	2	.01	e2.3	2	.01	e20	9	.49
11	e2.0	2	.01	e2.3	2	.01	e18	8	.39
12	e2.0	2	.01	e2.3	2	.01	e16	7	.30
13	e2.0	2	.01	e2.3	2	.01	e14	6	.23
14	e2.0	2	.01	e2.3	2	.01	e12	6	.19
15	e2.0	2	.01	e2.3	2	.01	e10	5	.13
16	e2.0	2	.01	e2.3	2	.01	e9.9	5	.13
17	e2.0	2	.01	e2.3	2	.01	e9.9	5	.13
18	e2.0	2	.01	e2.3	2	.01	e9.9	4	.11
19	e2.0	2	.01	e2.3	2	.01	e9.9	4	.11
20	e2.0	2	.01	e2.3	2	.01	9.8	4	.11
21	e2.0	2	.01	e2.3	2	.01	9.6	4	.10
22	e2.0	2	.01	e2.3	2	.01	e9.6	4	.10
23	e2.0	2	.01	e2.3	2	.01	9.6	5	.13
24	e2.0	2	.01	e2.3	2	.01	e9.6	5	.13
25	e2.0	2	.01	e2.3	2	.01	e9.6	5	.13
26	e2.0	2	.01	e2.3	2	.01	e9.8	5	.13
27	e2.0	2	.01	e2.3	2	.01	e9.8	5	.13
28	e2.0	2	.01	e2.3	2	.01	e9.6	5	.13
29	e2.0	2	.01	---	---	---	10	5	.13
30	e2.0	2	.01	---	---	---	11	6	.18
31	e2.0	2	.01	---	---	---	12	6	.19
TOTAL	62.0	---	0.31	63.5	---	0.28	617.2	---	120.76

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	12	6	.19	53	7	1.0	90	13	3.2
2	12	6	.19	44	4	.48	105	19	6.2
3	13	6	.21	41	3	.33	116	23	8.1
4	17	7	.32	50	5	.67	114	19	6.6
5	26	10	.70	65	14	2.8	101	11	3.0
6	37	16	1.6	77	30	6.8	88	5	1.2
7	32	11	.95	91	35	9.2	85	5	1.1
8	29	6	.47	101	22	6.0	89	8	1.9
9	29	5	.39	80	15	3.2	95	11	2.8
10	31	4	.33	61	8	1.3	98	11	2.9
11	28	4	.30	53	6	.86	98	9	2.4
12	25	4	.27	50	7	.94	91	7	1.7
13	28	5	.38	60	7	1.1	81	6	1.3
14	34	5	.46	57	9	1.4	69	5	.93
15	35	4	.38	71	17	3.3	61	5	.82
16	30	4	.32	89	28	6.7	55	4	.59
17	28	3	.23	89	24	5.8	52	4	.56
18	27	3	.22	65	12	2.1	48	4	.52
19	29	4	.31	57	9	1.4	44	3	.36
20	35	4	.38	57	8	1.2	39	3	.32
21	36	4	.39	63	12	2.0	35	3	.28
22	41	5	.55	82	19	4.7	32	3	.26
23	44	5	.59	114	53	20	30	3	.24
24	45	5	.61	124	34	12	28	3	.23
25	38	5	.51	136	40	16	26	4	.28
26	34	5	.46	118	26	8.3	24	4	.26
27	34	4	.37	101	18	4.9	24	4	.26
28	37	5	.56	96	16	4.1	32	6	.52
29	46	8	1.0	93	14	3.5	37	8	.80
30	51	9	1.3	97	12	3.1	28	6	.45
31	---	---	---	80	9	1.9	---	---	---
TOTAL	943	---	14.94	2415	---	137.08	1915	---	50.08
JULY			AUGUST			SEPTEMBER			
1	26	5	.35	3.4	2	.02	2.0	2	.01
2	24	5	.32	3.3	2	.02	2.0	2	.01
3	23	5	.31	3.4	2	.02	2.0	2	.01
4	21	5	.28	3.3	2	.02	2.1	2	.01
5	19	5	.26	3.3	2	.02	2.2	2	.01
6	17	4	.18	3.1	1	.01	2.0	3	.02
7	15	4	.16	3.0	1	.01	2.1	3	.02
8	14	4	.15	2.8	1	.01	1.9	3	.02
9	13	4	.14	2.6	1	.01	1.9	3	.02
10	12	4	.13	2.5	1	.01	2.6	3	.02
11	11	4	.12	2.4	1	.01	2.3	3	.02
12	10	4	.11	2.4	2	.01	2.0	3	.02
13	9.7	4	.10	2.4	2	.01	1.7	3	.01
14	8.9	3	.07	3.7	16	.19	1.7	3	.01
15	8.3	3	.07	3.6	3	.03	1.8	3	.01
16	7.6	3	.06	2.9	2	.02	1.7	3	.01
17	7.1	3	.06	2.7	2	.01	1.9	3	.02
18	6.7	3	.05	2.5	2	.01	1.9	3	.02
19	6.6	3	.05	2.5	2	.01	1.7	3	.01
20	6.7	3	.05	2.5	2	.01	1.8	2	.01
21	6.4	3	.05	2.4	2	.01	1.7	2	.01
22	5.8	3	.05	2.3	2	.01	1.8	2	.01
23	5.3	3	.04	2.2	2	.01	1.8	2	.01
24	5.1	3	.04	2.2	2	.01	1.8	2	.01
25	4.9	2	.03	2.1	2	.01	1.7	2	.01
26	4.5	2	.02	2.2	2	.01	1.9	2	.01
27	4.3	2	.02	2.2	2	.01	1.9	2	.01
28	4.1	2	.02	2.2	2	.01	1.9	2	.01
29	4.7	2	.03	2.2	2	.01	1.9	2	.01
30	4.1	2	.02	2.3	2	.01	1.7	2	.01
31	3.9	2	.02	2.1	2	.01	---	---	---
TOTAL	319.7	---	3.36	82.7	---	0.57	57.4	---	0.39
YEAR	6659.3		328.55						

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 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 6,230 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--19 years, 25.6 ft³/s, 18,550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft³/s, Dec. 19, 1981, gage height, 8.05 ft, from rating curve extended above 800 ft³/s; no flow for many days during 1977-78, 1981, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1315	*Unknown	*(a)6.52	June 3	1730	102	5.30
May 25	1715	119	5.38				

(a) Backwater from ice.

Minimum daily, 0.21 ft³/s, Sept. 3.*use as peak*DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.80	1.7	e1.0	e1.1	e1.1	e1.3	e6.8	29	59	16	1.3	.25
2	e.71	e1.2	e1.0	e1.1	e1.2	e1.3	e7.0	25	69	16	1.2	.23
3	e.71	e1.1	e1.0	e1.1	e1.2	e20	e7.2	25	78	15	1.1	.21
4	.66	e1.1	e1.0	e1.1	e1.2	e120	e12	30	75	14	.96	.32
5	.66	1.1	e1.0	e1.1	e1.2	e50	e17	39	66	13	.94	.39
6	.66	1.1	e1.0	e1.1	e1.2	e25	e25	49	57	12	.93	.36
7	.61	e1.1	e1.0	e1.1	e1.2	e14	21	58	55	10	.85	.34
8	.80	e1.1	e1.0	e1.1	e1.2	e10	20	65	57	9.3	.80	.31
9	.62	e1.1	e1.0	e1.1	e1.2	e8.0	21	46	63	8.6	.68	.29
10	.66	e1.1	e1.0	e1.1	e1.2	e7.0	21	34	66	8.0	.59	.64
11	.66	e1.1	e1.0	e1.1	e1.2	e6.0	18	29	65	7.3	.57	.55
12	.66	e1.1	e1.0	e1.1	e1.2	e6.0	17	31	60	6.5	.50	.43
13	.66	e1.1	e1.0	e1.1	e1.2	e6.0	19	36	53	5.7	.56	.36
14	.66	1.1	e1.0	e1.1	e1.2	e5.5	23	35	45	5.3	2.0	.33
15	.66	1.1	e1.0	e1.1	e1.2	e5.5	23	44	39	5.0	1.6	.31
16	.66	1.1	e1.0	e1.1	e1.2	e5.5	19	56	35	4.5	1.1	.32
17	.60	1.1	e1.0	e1.1	e1.3	e5.2	16	50	33	4.1	.74	.32
18	.84	1.1	e1.0	e1.1	e1.3	e5.2	16	35	30	3.9	.61	.33
19	2.1	1.1	e1.1	e1.1	e1.3	e5.2	19	32	28	3.8	.56	.33
20	1.4	e1.1	e1.1	e1.1	e1.3	e5.2	21	33	25	3.9	.51	.30
21	1.1	e1.1	e1.1	e1.1	e1.3	e5.2	21	39	23	3.6	.44	.29
22	.94	e1.1	e1.1	e1.1	e1.3	e5.2	24	53	21	3.2	.35	.29
23	.91	e1.1	e1.1	e1.1	e1.3	e5.2	27	73	20	2.8	.32	.29
24	.91	e1.1	e1.1	e1.1	e1.3	e5.2	27	79	19	2.5	.27	.28
25	.89	e1.0	e1.1	e1.1	e1.3	e5.2	22	88	18	2.3	.23	.28
26	.78	e1.0	e1.1	e1.1	e1.3	e5.4	21	75	17	2.1	.26	.28
27	.78	e1.0	e1.1	e1.1	e1.3	e5.6	21	65	17	1.9	.28	.30
28	.78	e1.0	e1.1	e1.1	e1.3	e5.8	23	61	21	1.9	.31	.30
29	.78	e1.0	e1.1	e1.1	---	e6.1	28	57	20	1.8	.32	.39
30	.78	e1.0	e1.1	e1.1	---	e6.4	30	69	17	1.5	.31	.33
31	1.3	---	e1.1	e1.1	---	e6.6	---	54	---	1.4	.28	---
TOTAL	25.54	33.1	32.3	34.1	34.7	373.8	593.0	1494	1251	196.9	21.47	9.95
MEAN	.82	1.10	1.04	1.10	1.24	12.1	19.8	48.2	41.7	6.35	.69	.33
MAX	2.1	1.7	1.1	1.1	1.3	120	30	88	78	16	2.0	.64
MIN	.60	1.0	1.0	1.1	1.1	1.3	6.8	25	17	1.4	.23	.21
AC-FT	51	66	64	68	69	741	1180	2960	2480	391	43	20

CAL YR 1990 TOTAL 4845.23 MEAN 13.3 MAX 76 MIN .18 AC-FT 9610
WTR YR 1991 TOTAL 4099.86 MEAN 11.2 MAX 120 MIN .21 AC-FT 8130

e Estimated.

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 current year.

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

REMARKS.--Sediment samples were collected during most days where a water temperature is published.

COOPERATION.--Selected sediment samples and water-temperature observations provided by University of California at Davis.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 1,510 mg/L, Dec. 19, 1981; minimum daily mean, 0 mg/L, many days during each year.

SEDIMENT LOAD: Maximum daily, 3,720 tons, Dec. 19, 1981; minimum daily, 0 ton, many days during each year.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 107 mg/L, Aug. 14; minimum daily mean, 0 mg/L, many days.

SEDIMENT LOAD: Maximum daily, 19 tons, Mar. 4; minimum daily, 0 ton, many days.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR						
04...	0910	e48	0.5	34	4.4	85
04...	1005	e48	0.5	37	4.8	77
05...	1225	e50	0.5	140	19	52
05...	1455	e50	0.0	90	12	61

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	.0	---	2.5	---	---	---	---	---
2	---	---	---	.0	---	---	---	7.0	7.0	---	---	---
3	13.5	---	---	---	---	.0	4.5	3.5	8.0	---	---	---
4	---	---	.5	---	---	.5	---	8.0	11.5	---	---	---
5	13.0	4.0	---	---	---	.5	---	8.0	---	---	---	---
6	---	---	---	---	---	.0	2.5	9.5	3.0	---	---	15.0
7	---	---	---	---	---	.5	---	7.0	---	---	18.5	---
8	---	---	---	---	---	---	---	3.0	---	---	---	---
9	---	---	---	---	---	---	6.5	---	8.0	12.0	---	---
10	---	---	.0	---	---	---	---	4.0	11.5	11.0	---	---
11	---	---	---	---	---	---	---	---	11.0	---	---	---
12	---	---	---	---	.0	---	---	---	---	---	---	8.0
13	---	---	---	---	---	.0	---	4.0	---	---	---	13.0
14	---	---	---	---	---	---	6.0	8.0	9.5	---	15.5	---
15	10.0	---	---	.0	---	---	---	10.5	---	---	14.0	---
16	---	2.0	---	---	---	---	3.0	7.0	---	---	---	---
17	---	---	---	---	---	---	---	---	---	19.0	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	.5	1.0	---	---	---	---	---	---
20	---	---	---	---	---	---	---	7.5	---	---	---	12.5
21	---	---	.0	---	.5	---	---	---	13.0	---	---	---
22	---	---	---	.0	---	---	---	11.5	---	---	---	---
23	---	---	---	.0	---	---	8.0	9.0	---	---	---	---
24	---	---	---	---	---	---	---	8.0	---	---	---	---
25	8.5	---	---	---	---	---	---	9.0	---	---	---	---
26	---	---	.0	---	---	---	---	4.5	---	---	17.5	---
27	---	---	---	---	---	---	---	7.0	---	---	---	9.5
28	---	---	---	---	---	---	8.5	10.0	8.0	---	---	---
29	---	---	---	---	---	---	8.5	4.0	---	---	---	---
30	6.5	---	---	---	---	---	6.5	6.0	---	---	---	---
31	5.0	---	---	---	---	---	---	11.0	---	16.0	---	---

e Estimated.

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	e.80	2	.00	1.7	2	.01	e1.0	1	.00
2	e.71	1	.00	e1.2	2	.01	e1.0	1	.00
3	e.71	0	.00	e1.1	2	.01	e1.0	0	.00
4	.66	0	.00	e1.1	2	.01	e1.0	0	.00
5	.66	0	.00	1.1	2	.01	e1.0	0	.00
6	.66	0	.00	1.1	2	.01	e1.0	0	.00
7	.61	0	.00	e1.1	2	.01	e1.0	1	.00
8	.60	0	.00	e1.1	2	.01	e1.0	1	.00
9	.62	0	.00	e1.1	2	.01	e1.0	1	.00
10	.66	0	.00	e1.1	1	.00	e1.0	1	.00
11	.66	0	.00	e1.1	1	.00	e1.0	1	.00
12	.66	0	.00	e1.1	1	.00	e1.0	1	.00
13	.66	0	.00	e1.1	1	.00	e1.0	1	.00
14	.66	0	.00	1.1	1	.00	e1.0	1	.00
15	.66	0	.00	1.1	1	.00	e1.0	1	.00
16	.66	0	.00	1.1	1	.00	e1.0	0	.00
17	.60	0	.00	1.1	1	.00	e1.0	0	.00
18	.84	1	.00	1.1	1	.00	e1.0	0	.00
19	2.1	2	.01	1.1	1	.00	e1.1	0	.00
20	1.4	2	.01	e1.1	1	.00	e1.1	0	.00
21	1.1	2	.01	e1.1	1	.00	e1.1	0	.00
22	.94	2	.01	e1.1	1	.00	e1.1	0	.00
23	.91	2	.00	e1.1	2	.01	e1.1	0	.00
24	.91	2	.00	e1.1	2	.01	e1.1	0	.00
25	.89	2	.00	e1.0	2	.01	e1.1	0	.00
26	.78	2	.00	e1.0	2	.01	e1.1	1	.00
27	.78	2	.00	e1.0	2	.01	e1.1	1	.00
28	.78	1	.00	e1.0	2	.01	e1.1	1	.00
29	.78	0	.00	e1.0	2	.01	e1.1	1	.00
30	.78	0	.00	e1.0	2	.01	e1.1	2	.01
31	1.3	2	.01	---	---	---	e1.1	2	.01
TOTAL	25.54	---	0.05	33.1	---	0.17	32.3	---	0.02
JANUARY			FEBRUARY			MARCH			
1	e1.1	2	.01	e1.1	2	.01	e1.3	1	.00
2	e1.1	2	.01	e1.2	4	.01	e1.3	1	.00
3	e1.1	2	.01	e1.2	2	.01	e20	7	.38
4	e1.1	2	.01	e1.2	2	.01	e120	60	19
5	e1.1	2	.01	e1.2	2	.01	e50	50	6.7
6	e1.1	2	.01	e1.2	2	.01	e25	10	.67
7	e1.1	1	.00	e1.2	2	.01	e14	9	.34
8	e1.1	1	.00	e1.2	2	.01	e10	9	.24
9	e1.1	1	.00	e1.2	2	.01	e8.0	8	.17
10	e1.1	1	.00	e1.2	2	.01	e7.0	7	.13
11	e1.1	0	.00	e1.2	2	.01	e6.0	7	.11
12	e1.1	0	.00	e1.2	2	.01	e6.0	6	.10
13	e1.1	0	.00	e1.2	2	.01	e6.0	6	.10
14	e1.1	0	.00	e1.2	2	.01	e5.5	5	.07
15	e1.1	0	.00	e1.2	1	.00	e5.5	4	.06
16	e1.1	0	.00	e1.2	1	.00	e5.5	3	.04
17	e1.1	0	.00	e1.3	1	.00	e5.2	3	.04
18	e1.1	0	.00	e1.3	1	.00	e5.2	2	.03
19	e1.1	0	.00	e1.3	1	.00	e5.2	2	.03
20	e1.1	0	.00	e1.3	1	.00	e5.2	2	.03
21	e1.1	0	.00	e1.3	1	.00	e5.2	2	.03
22	e1.1	0	.00	e1.3	1	.00	e5.2	2	.03
23	e1.1	0	.00	e1.3	1	.00	e5.2	2	.03
24	e1.1	0	.00	e1.3	1	.00	e5.2	2	.03
25	e1.1	0	.00	e1.3	1	.00	e5.2	2	.03
26	e1.1	1	.00	e1.3	1	.00	e5.4	2	.03
27	e1.1	1	.00	e1.3	1	.00	e5.6	3	.05
28	e1.1	1	.00	e1.3	1	.00	e5.8	3	.05
29	e1.1	2	.01	---	---	---	e6.1	3	.05
30	e1.1	2	.01	---	---	---	e6.4	3	.05
31	e1.1	2	.01	---	---	---	e6.6	3	.05
TOTAL	34.1	---	0.09	34.7	---	0.14	373.8	---	28.67

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT
	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	e6.8	3	.06	29	5	.39	59	7	1.1
2	e7.0	3	.06	25	4	.27	69	12	2.2
3	e7.2	3	.06	25	8	.54	78	13	2.7
4	e12	3	.10	30	11	.89	75	11	2.2
5	e17	5	.23	39	24	3.3	66	8	1.4
6	e25	14	.94	49	36	5.4	57	6	.92
7	21	7	.40	58	34	6.7	55	6	.89
8	20	2	.11	65	11	1.9	57	5	.77
9	21	1	.06	46	5	.62	63	5	.85
10	21	1	.06	34	2	.18	66	5	.89
11	18	1	.05	29	2	.16	65	6	1.1
12	17	2	.09	31	5	.42	60	5	.81
13	19	4	.21	36	3	.29	53	4	.57
14	23	4	.25	35	6	.57	45	3	.36
15	23	3	.19	44	7	.83	39	3	.32
16	19	2	.10	56	7	1.1	35	2	.19
17	16	2	.09	50	4	.54	33	2	.18
18	16	3	.13	35	1	.09	30	2	.16
19	19	4	.21	32	2	.17	28	1	.08
20	21	3	.17	33	2	.18	25	1	.07
21	21	5	.28	39	7	.74	23	0	.00
22	24	5	.32	53	10	1.4	21	0	.00
23	27	10	.73	73	35	8.9	20	0	.00
24	27	7	.51	79	28	6.0	19	0	.00
25	22	4	.24	88	30	7.1	18	0	.00
26	21	3	.17	75	17	3.4	17	0	.00
27	21	3	.17	65	12	2.1	17	0	.00
28	23	5	.31	61	10	1.6	21	1	.06
29	28	8	.60	57	6	.92	20	1	.05
30	30	6	.49	69	8	1.5	17	1	.05
31	---	---	---	54	5	.73	---	---	---
TOTAL	593.0	---	7.39	1494	---	58.93	1251	---	17.92
		JULY			AUGUST			SEPTEMBER	
1	16	1	.04	1.3	1	.00	.25	0	.00
2	16	1	.04	1.2	1	.00	.23	0	.00
3	15	1	.04	1.1	1	.00	.21	0	.00
4	14	1	.04	.96	1	.00	.32	0	.00
5	13	1	.04	.94	1	.00	.39	0	.00
6	12	1	.03	.93	1	.00	.36	0	.00
7	10	1	.03	.85	1	.00	.34	0	.00
8	9.3	1	.03	.80	1	.00	.31	0	.00
9	8.6	1	.02	.68	1	.00	.29	0	.00
10	8.0	1	.02	.59	1	.00	.64	0	.00
11	7.3	1	.02	.57	1	.00	.55	0	.00
12	6.5	1	.02	.50	1	.00	.43	0	.00
13	5.7	1	.02	.56	2	.00	.36	0	.00
14	5.3	1	.01	2.0	107	1.1	.33	0	.00
15	5.0	1	.01	1.6	4	.02	.31	0	.00
16	4.5	1	.01	1.1	1	.00	.32	0	.00
17	4.1	1	.01	.74	1	.00	.32	0	.00
18	3.9	1	.01	.61	1	.00	.33	0	.00
19	3.8	1	.01	.56	1	.00	.33	0	.00

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 mi².

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 National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--31 years, 35.9 ft³/s, 26,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 535 ft³/s, Feb. 1, 1963, gage height, 11.14 ft, from rating curve extended above 250 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 4	1645	*91	*7.22				

Minimum daily, 5.7 ft³/s, Oct. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	9.3	e8.3	e8.0	e8.0	8.4	18	25	34	23	9.8	5.9
2	5.9	6.9	e8.3	e8.0	e8.0	7.2	17	21	39	21	9.5	5.9
3	5.8	e7.1	8.3	e8.0	e8.0	16	17	19	45	19	8.2	6.0
4	5.8	e7.5	8.2	e8.0	e8.0	53	20	20	51	18	8.2	6.6
5	5.7	7.7	8.5	e8.0	e8.0	35	25	25	52	17	9.5	7.6
6	6.0	7.3	e8.5	e8.0	e8.0	e24	30	29	47	16	9.3	7.3
7	6.3	e7.3	e8.5	e8.0	e8.0	e19	26	34	44	15	9.0	13
8	6.3	e7.3	e8.4	e8.0	e8.0	e17	23	41	45	15	8.8	9.2
9	6.6	e7.4	e8.4	e8.0	e8.0	e15	22	36	47	14	8.5	8.8
10	6.7	e7.4	e8.4	e8.0	e8.0	e14	23	28	50	14	8.2	10
11	6.7	e7.4	8.3	e8.0	e8.0	e13	19	25	51	13	8.1	10
12	6.7	7.4	e8.3	e8.0	e8.0	e13	18	24	51	12	7.3	9.3
13	6.7	7.4	e8.3	e8.0	e8.0	e13	19	27	50	12	7.7	8.9
14	6.5	7.3	e8.2	e8.0	e8.0	13	21	25	47	11	9.7	8.7
15	6.5	7.3	e8.2	e8.0	e8.0	e13	21	29	44	11	12	8.4
16	6.5	7.4	8.1	e8.0	e8.0	e13	20	33	41	11	10	8.1
17	6.3	7.3	8.1	e8.0	e8.0	e12	19	35	38	10	8.3	6.5
18	6.9	7.2	e8.1	e8.0	e8.0	12	17	28	36	11	7.9	6.3
19	9.6	7.5	e8.1	e8.0	e8.0	e12	18	25	34	16	7.4	6.1
20	8.9	7.3	e8.1	e8.0	e8.0	e12	19	25	32	17	7.3	6.1
21	8.8	e7.3	e8.1	e8.0	e8.0	13	18	25	30	20	7.1	5.9
22	8.1	e7.5	e8.0	e8.0	e8.0	e13	19	28	29	15	6.8	6.1
23	7.2	e7.6	e8.0	e8.0	e8.0	14	20	35	28	15	6.5	5.9
24	7.1	e7.7	e8.0	e8.0	e8.0	12	22	41	27	12	6.2	5.8
25	7.2	e7.8	e8.0	e8.0	e8.0	12	20	43	26	10	5.9	5.8
26	8.2	e7.9	e8.0	e8.0	e8.0	e12	18	42	25	11	5.9	6.0
27	8.1	e8.0	e8.0	e8.0	8.1	e13	20	40	26	11	6.0	5.9
28	6.6	8.1	e8.0	e8.0	8.4	e13	20	39	29	12	6.4	6.3
29	6.7	8.1	e8.0	e8.0	---	e13	23	38	29	12	6.5	6.3
30	6.6	8.3	e8.0	e8.0	---	15	25	41	26	11	6.4	6.3
31	8.3	---	e8.0	e8.0	---	16	---	34	---	10	6.2	---
TOTAL	215.3	227.0	253.7	248.0	224.5	480.6	617	960	1153	435	244.6	219.0
MEAN	6.95	7.57	8.18	8.00	8.02	15.5	20.6	31.0	38.4	14.0	7.89	7.30
MAX	9.6	9.3	8.5	8.0	8.4	53	30	43	52	23	12	13
MIN	5.7	6.9	8.0	8.0	8.0	7.2	17	19	25	10	5.9	5.8
AC-FT	427	450	503	492	445	953	1220	1900	2290	863	485	434

CAL YR 1990 TOTAL 5030.6 MEAN 13.8 MAX 37 MIN 3.6 AC-FT 9980
WTR YR 1991 TOTAL 5277.7 MEAN 14.5 MAX 53 MIN 5.7 AC-FT 10470

e Estimated.

10336790 TROUT CREEK AT SOUTH LAKE TAHOE, CA

WATER-QUALITY RECORDS

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 current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1971 to June 1974, October 1988 to current year.

REMARKS.--Sediment samples were collected during most days where a water temperature is published. Discharge record used to compute sediment based on sum of Trout Creek near Tahoe Valley (station 10336780) and Heavenly Valley Creek near Tahoe Valley. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 300 mg/L, Jan. 15, 1974; minimum daily mean, 0 mg/L, at times in most years.

SEDIMENT LOAD: Maximum daily, 52 tons, Jan. 15, 1974; minimum daily, 0 ton, at times in most years.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 80 mg/L, Mar. 4; minimum daily mean, 1 mg/L, many days.

SEDIMENT LOAD: Maximum daily, 13 ton, Mar. 4; minimum daily, .02 ton, many days.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR 04...	1430	74	2.0	127	25	72
MAY 23...	0620	36	7.0	6	0.58	96

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	11.0	---	---	---
2	11.0	---	---	---	---	---	---	---	12.0	---	---	---
3	---	---	---	---	.0	.0	---	---	---	---	---	---
4	---	---	---	---	---	2.0	---	---	---	---	---	14.0
5	---	---	1.0	---	---	---	---	11.0	---	---	15.0	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	1.0	4.5	---	13.0	---	---
8	---	---	---	---	---	1.5	---	---	---	13.5	---	---
9	---	---	---	---	---	---	---	3.0	8.0	---	---	---
10	---	---	---	---	---	---	---	---	10.5	---	---	---
11	---	2.0	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	4.5	11.0	---	---	19.0	---
13	---	---	---	.0	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	6.5	---	---	---	---	---	---	5.5	8.5	---	---	---
16	---	---	.0	.5	---	---	---	---	---	---	---	---
17	---	---	---	---	---	.0	---	4.0	---	---	---	---
18	8.0	---	---	---	---	---	---	3.0	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	1.0	---	---	7.5	14.0	---	---	---
21	---	1.0	---	---	---	1.0	9.0	8.0	---	12.0	---	---
22	---	---	---	---	---	---	---	13.0	7.0	---	---	---
23	---	---	.0	---	---	---	---	7.0	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	1.0	---	---	---	---	---	5.5	---	---	---	---
26	---	---	---	---	---	---	8.0	---	13.0	---	---	---
27	---	---	.0	---	---	.5	---	---	---	---	15.5	---
28	---	---	---	---	---	---	---	9.5	---	---	---	---
29	6.0	---	---	---	---	---	---	5.5	7.5	---	---	14.0
30	---	---	---	---	---	---	---	---	7.5	---	---	---
31	---	---	---	---	---	1.0	---	---	---	---	---	---

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	6.0	1	.02	9.3	2	.05	8.3	2	.04
2	5.9	1	.02	6.9	2	.04	8.3	2	.04
3	5.8	1	.02	7.1	2	.04	8.3	1	.02
4	5.8	1	.02	7.5	1	.02	8.2	1	.02
5	5.7	1	.02	7.7	1	.02	8.5	1	.02
6	6.0	1	.02	7.3	1	.02	8.5	1	.02
7	6.3	1	.02	7.3	1	.02	8.5	1	.02
8	6.3	1	.02	7.3	1	.02	8.4	1	.02
9	6.6	1	.02	7.4	1	.02	8.4	1	.02
10	6.7	1	.02	7.4	1	.02	8.4	1	.02
11	6.7	1	.02	7.4	1	.02	8.3	2	.04
12	6.7	1	.02	7.4	1	.02	8.3	2	.04
13	6.7	1	.02	7.4	1	.02	8.3	2	.04
14	6.5	1	.02	7.3	2	.04	8.2	2	.04
15	6.5	1	.02	7.3	2	.04	8.2	2	.04
16	6.5	1	.02	7.4	2	.04	8.1	2	.04
17	6.3	1	.02	7.3	2	.04	8.1	2	.04
18	6.9	3	.06	7.2	3	.06	8.1	2	.04
19	9.6	4	.10	7.5	3	.06	8.1	2	.04
20	8.9	2	.05	7.3	4	.08	8.1	1	.02
21	8.8	2	.05	7.3	4	.08	8.1	1	.02
22	8.1	2	.04	7.5	4	.08	8.0	1	.02
23	7.2	2	.04	7.6	4	.08	8.0	1	.02
24	7.1	2	.04	7.7	5	.10	8.0	1	.02
25	7.2	2	.04	7.8	5	.11	8.0	2	.04
26	8.2	2	.04	7.9	5	.11	8.0	3	.06
27	8.1	2	.04	8.0	4	.09	8.0	3	.06
28	6.6	2	.04	8.1	4	.09	8.0	3	.06
29	6.7	2	.04	8.1	3	.07	8.0	3	.06
30	6.6	2	.04	8.3	3	.07	8.0	3	.06
31	8.3	2	.04	---	---	---	8.0	3	.06
TOTAL	215.3	---	1.00	227.0	---	1.57	253.7	---	1.10
JANUARY			FEBRUARY			MARCH			
1	8.0	3	.06	8.0	2	.04	8.4	4	.09
2	8.0	3	.06	8.0	2	.04	7.2	4	.08
3	8.0	3	.06	8.0	2	.04	16	37	2.0
4	8.0	3	.06	8.0	2	.04	54	80	13
5	8.0	3	.06	8.0	2	.04	36	42	4.1
6	8.0	3	.06	8.0	2	.04	24	20	1.3
7	8.0	3	.06	8.0	2	.04	19	14	.72
8	8.0	3	.06	8.0	2	.04	17	11	.50
9	8.0	3	.06	8.0	2	.04	15	8	.32
10	8.0	3	.06	8.0	3	.06	14	7	.26
11	8.0	3	.06	8.0	3	.06	13	7	.25
12	8.0	3	.06	8.0	3	.06	13	7	.25
13	8.0	3	.06	8.0	3	.06	13	7	.25
14	8.0	3	.06	8.0	3	.06	13	7	.25
15	8.0	2	.04	8.0	4	.09	13	6	.21
16	8.0	2	.04	8.0	4	.09	13	6	.21
17	8.0	2	.04	8.0	4	.09	12	6	.19
18	8.0	2	.04	8.0	4	.09	12	5	.16
19	8.0	2	.04	8.0	4	.09	12	5	.16
20	8.0	2	.04	8.0	4	.09	12	4	.13
21	8.0	2	.04	8.0	4	.09	13	5	.18
22	8.0	2	.04	8.0	4	.09	13	5	.18
23	8.0	2	.04	8.0	4	.09	14	5	.19
24	8.0	2	.04	8.0	4	.09	12	4	.13
25	8.0	2	.04	8.0	4	.09	12	4	.13
26	8.0	2	.04	8.0	4	.09	12	4	.13
27	8.0	2	.04	8.1	4	.09	13	3	.11
28	8.0	2	.04	8.4	4	.09	13	2	.07
29	8.0	2	.04	---	---	---	13	3	.11
30	8.0	2	.04	---	---	---	15	3	.12
31	8.0	2	.04	---	---	---	16	4	.17
TOTAL	248.0	---	1.52	224.5	---	1.92	482.6	---	25.95

PYRAMID AND WINNEMUCCA LAKES BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	18	4	.19	25	7	.47	34	7	.64
2	17	5	.23	21	7	.40	39	7	.74
3	17	5	.23	19	8	.41	45	6	.73
4	20	5	.27	20	10	.54	51	8	1.1
5	25	5	.34	25	12	.81	52	9	1.3
6	30	6	.49	29	10	.78	47	9	1.1
7	26	6	.42	34	10	.92	44	9	1.1
8	23	8	.50	41	11	1.2	45	9	1.1
9	22	10	.59	36	8	.78	47	10	1.3
10	23	12	.75	28	7	.53	50	9	1.2
11	19	14	.72	25	7	.47	51	9	1.2
12	18	16	.78	24	6	.39	52	8	1.1
13	19	16	.82	27	5	.36	51	7	.96
14	21	16	.91	25	5	.34	47	6	.76
15	21	15	.85	29	6	.47	44	5	.59
16	20	14	.76	33	8	.71	41	5	.55
17	19	13	.67	35	7	.66	38	5	.51
18	17	12	.55	28	3	.23	36	4	.39
19	18	10	.49	25	3	.20	34	4	.37
20	19	9	.46	25	3	.20	32	4	.35
21	18	9	.44	25	4	.27	30	4	.32
22	19	8	.41	28	3	.23	29	4	.31
23	20	8	.43	35	8	.76	28	3	.23
24	22	7	.42	41	11	1.2	27	2	.15
25	20	7	.38	43	10	1.2	26	1	.07
26	18	7	.34	42	11	1.2	25	2	.13
27	20	7	.38	40	8	.86	26	3	.21
28	20	7	.38	39	7	.74	30	3	.24
29	23	7	.43	38	6	.62	30	2	.16
30	25	7	.47	41	8	.89	26	1	.07
31	---	---	---	34	8	.73	---	---	---
TOTAL	617	---	15.10	960	---	19.57	1157	---	18.98
JULY			AUGUST			SEPTEMBER			
1	23	1	.06	9.8	5	.13	5.9	3	.05
2	21	1	.06	9.5	5	.13	5.9	2	.03
3	19	1	.05	8.2	5	.11	6.0	2	.03
4	18	1	.05	8.2	5	.11	6.6	2	.04
5	17	1	.05	9.5	5	.13	7.6	3	.06
6	16	1	.04	9.3	5	.13	7.3	5	.10
7	15	2	.08	9.0	4	.10	13	8	.28
8	15	3	.12	8.8	3	.07	9.2	5	.12
9	14	3	.11	8.5	2	.05	8.8	4	.10
10	14	3	.11	8.2	2	.04	10	3	.08
11	13	3	.11	8.1	1	.02	10	3	.08
12	12	3	.10	7.3	1	.02	9.3	3	.08
13	12	3	.10	7.7	1	.02	8.9	3	.07
14	11	3	.09	9.7	4	.10	8.7	3	.07
15	11	3	.09	12	2	.06	8.4	3	.07
16	11	3	.09	10	2	.05	8.1	3	.07
17	10	3	.08	8.3	2	.04	6.5	3	.05
18	11	4	.12	7.9	2	.04	6.3	3	.05
19	16	4	.17	7.4	2	.04	6.1	3	.05
20	17	4	.18	7.3	2	.04	6.1	3	.05
21	20	4	.22	7.1	2	.04	5.9	3	.05
22	15	4	.16	6.8	2	.04	6.1	3	.05
23	15	4	.16	6.5	3	.05	5.9	3	.05
24	12	4	.13	6.2	3	.05	5.8	3	.05
25	10	4	.11	5.9	3	.05	5.8	3	.05
26	11	4	.12	5.9	4	.06	6.0	3	.05
27	11	5	.15	6.0	4	.06	5.9	3	.05
28	12	5	.16	6.4	4	.07	6.3	3	.05
29	12	5	.16	6.5	3	.05	6.3	3	.05
30	11	5	.15	6.4	3	.05	6.3	3	.05
31	10	5	.13	6.2	3	.05	---	---	---
TOTAL	435	---	3.51	244.6	---	2.00	219.0	---	2.03
YEAR	5283.7		94.25						

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 mi², 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 National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1957, nonrecording gages at several sites near outlet of lake at same datum. 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, 6,221.65 ft, Feb. 1, 2, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 6,222.84 ft, Oct. 2; minimum, 6,221.65 ft, Feb. 1, 2.

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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.82	2.37	2.08	1.85	1.68	1.80	2.32	2.34	2.59	2.67	2.57	2.31
2	2.81	2.36	2.07	1.87	1.72	1.81	2.32	2.33	2.60	2.69	2.56	2.31
3	2.79	2.33	2.05	1.83	1.72	1.92	2.31	2.34	2.62	2.69	2.55	2.31
4	2.78	2.33	2.03	1.85	1.73	2.07	2.32	2.35	2.63	2.68	2.55	2.29
5	2.75	2.30	2.03	1.85	1.74	2.09	2.33	2.33	2.63	2.68	2.53	2.28
6	2.74	2.30	2.03	1.83	1.73	2.11	2.34	2.35	2.63	2.67	2.50	2.28
7	2.72	2.29	2.02	1.83	1.76	2.11	2.34	2.35	2.65	2.67	2.50	2.25
8	2.69	2.27	2.02	1.84	1.75	2.10	2.35	2.38	2.66	2.66	2.49	2.24
9	2.67	2.25	2.02	1.83	1.76	2.10	2.33	2.39	2.67	2.66	2.48	2.20
10	2.65	2.25	2.00	1.84	1.74	2.12	2.33	2.39	2.68	2.65	2.47	2.24
11	2.64	2.24	2.04	1.79	1.74	2.09	2.30	2.40	2.69	2.65	2.46	2.21
12	2.64	2.24	2.01	1.84	1.74	2.09	2.32	2.39	2.69	2.65	2.45	2.23
13	2.64	2.20	2.01	1.82	1.75	2.13	2.31	2.40	2.70	2.63	2.46	2.18
14	2.61	2.21	2.00	1.79	1.74	2.13	2.29	2.40	2.71	2.63	2.53	2.20
15	2.60	2.18	2.00	1.81	1.73	2.14	2.30	2.43	2.71	2.60	2.54	2.20
16	2.58	2.16	1.98	1.81	1.74	2.13	2.30	2.43	2.69	2.59	2.54	2.18
17	2.56	2.17	1.96	1.79	1.73	2.15	2.30	2.44	2.69	2.59	2.52	2.18
18	2.57	2.15	2.04	1.77	1.71	2.17	2.30	2.45	2.70	2.62	2.52	2.16
19	2.55	2.14	1.99	1.77	1.71	2.17	2.30	2.46	2.67	2.63	2.51	2.16
20	2.54	2.12	1.96	1.75	1.73	2.17	2.31	2.47	2.69	2.64	2.50	2.15
21	2.51	2.11	1.96	1.76	1.71	2.16	2.31	2.47	2.67	2.63	2.50	2.14
22	2.51	2.12	1.95	1.74	1.72	2.15	2.32	2.48	2.66	2.63	2.49	2.13
23	2.50	2.11	1.92	1.74	1.70	2.21	2.30	2.49	2.65	2.62	2.47	2.12
24	2.50	2.11	1.93	1.73	1.70	2.26	2.30	2.51	2.65	2.60	2.44	2.11
25	2.47	2.11	1.92	1.72	1.70	2.31	2.32	2.51	2.64	2.61	2.44	2.08
26	2.48	2.11	1.91	1.70	1.69	2.31	2.33	2.54	2.64	2.60	2.39	2.07
27	2.47	2.09	1.92	1.71	1.69	2.32	2.33	2.54	2.66	2.60	2.37	2.07
28	2.44	2.11	1.88	1.69	1.71	2.32	2.33	2.54	2.67	2.59	2.34	2.07
29	2.44	2.09	1.87	1.69	---	2.31	2.33	2.55	2.68	2.59	2.35	2.06
30	2.43	2.08	1.87	1.70	---	2.31	2.36	2.57	2.68	2.59	2.33	2.05
31	2.41	---	1.87	1.70	---	2.29	---	2.59	---	2.57	2.32	---
MEAN	2.60	2.20	1.98	1.78	1.72	2.15	2.32	2.44	2.66	2.63	2.47	2.18
MAX	2.82	2.37	2.08	1.87	1.76	2.32	2.36	2.59	2.71	2.69	2.57	2.31
MIN	2.41	2.08	1.87	1.69	1.68	1.80	2.29	2.33	2.59	2.57	2.32	2.05
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 1990	MEAN 3.15	MAX 3.81	MIN 1.87	b -26700								
WTR YR 1991	MEAN 2.26	MAX 2.82	MIN 1.68	b	0							

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 mi².

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."

CHEMICAL DATA: Water years 1978 to 1981, monthly.

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

GAGE.--Water-stage recorder. Datum of gage is 6,216.59 ft above National Geodetic Vertical Datum of 1929. 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, ice, and bridge construction. 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.

AVERAGE DISCHARGE (unadjusted).--91 years (water years 1901-91), 252 ft³/s, 182,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,630 ft³/s, June 19, 1969, gage height, 9.32 ft; no flow for parts of many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, unknown, Mar. 4, gage height, 2.57 ft; maximum gage height, 2.67 ft, July 8-10, 12, backwater from bridge construction; no flow Oct. 1-18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.10	e.10	e.20	e.20	e.20	e.90	e.20	e.20	e.20	e.20	e.20
2	e.00	e.10	e.10	e.20	e.20	e.20	e.90	e.20	e.20	e.20	e.20	e.20
3	e.00	e.10	e.10	e.20	e.20	e2.5	e.90	e.20	e.20	e.20	e.20	e.20
4	e.00	e.10	e.10	e.20	e.20	e10	e.90	e.20	e.20	e.20	e.20	e.20
5	e.00	e.10	e.10	e.20	e.20	e2.0	e.80	e.20	e.20	e.20	e.20	e.20
6	e.00	e.10	e.10	e.20	e.20	e.70	e.80	e.20	e.20	e.20	e.20	e.20
7	e.00	e.10	e.10	e.20	e.20	e.70	e.80	e.20	e.20	e.20	e.20	e.20
8	e.00	e.10	e.10	e.20	e.20	e.70	e.80	e.20	e.20	e.20	e.20	e.20
9	e.00	e.10	e.10	e.20	e.20	e.70	e.70	e.20	e.20	e.20	e.20	e.20
10	e.00	e.10	e.30	e.20	e.20	e.70	e.70	e.20	e.20	e.20	e.20	e.20
11	e.00	e.10	e2.4	e.20	e.20	e.70	e.70	e.20	e.20	e.20	e.20	e.20
12	e.00	e.10	e1.8	e.20	e.20	e1.5	e.70	e.20	e.20	e.20	e.20	e.20
13	e.00	e.10	e1.0	e.20	e.20	e1.1	e.60	e.20	e.20	e.20	e.20	e.20
14	e.00	e.10	e1.0	e.20	e.20	e.90	e.60	e.20	e.20	e.20	e.50	e.20
15	e.00	e.10	e1.0	e.20	e.20	e.90	e.60	e.20	e.20	e.20	e1.0	e.20
16	e.00	e.10	e1.0	e.20	e.20	e.90	e.60	e.20	e.20	e.20	e.20	e.20
17	e.00	e.10	e1.0	e.20	e.20	e.90	e.50	e.20	e.20	e.20	e.20	e.20
18	e.00	e.10	e1.0	e.20	e.20	e.90	e.50	e.20	e.20	e.20	e.20	e.20
19	e.10	e.10	e.30	e.20	e.20	e.90	e.50	e.20	e.20	e.20	e.20	e.20
20	e.10	e.10	e.20	e.20	e.20	e.90	e.50	e.20	e.20	e.20	e.20	e.20
21	e.10	e.10	e.20	e.20	e.20	e.90	e.40	e.20	e.20	e.20	e.20	e.20
22	e.10	e.10	e.20	e.20	e.20	e.90	e.40	e.20	e.20	e.20	e.20	e.20
23	e.10	e.10	e.20	e.20	e.20	e.90	e.40	e.20	e.20	e.20	e.20	e.20
24	e.10	e.10	e.20	e.20	e.20	e.90	e.40	e.20	e.20	e.20	e.20	e.20
25	e.10	e.10	e.20	e.20	e.20	e.90	e.30	e.20	e.20	e.20	e.20	e.20
26	e.10	e.10	e.20	e.20	e.20	e.90	e.30	e.20	e.20	e.20	e.20	e.20
27	e.10	e.10	e.20	e.20	e.20	e.90	e.30	e.20	e.20	e.20	e.20	e.20
28	e.10	e.10	e.20	e.20	e.20	e.90	e.30	e.20	e.20	e.20	e.20	e.20
29	e.10	e.10	e.20	e.20	---	e.90	e.20	e.20	e.20	e.20	e.20	e.20
30	e.10	e.10	e.20	e.20	---	e.90	e.20	e.20	e.20	e.20	e.20	e.20
31	e.10	---	e.20	e.20	---	e.90	---	e.20	---	e.20	e.20	---
TOTAL	1.30	3.00	14.10	6.20	5.60	37.90	17.20	6.20	6.00	6.20	7.30	6.00
MEAN	.042	.10	.45	.20	.20	1.22	.57	.20	.20	.20	.24	.20
MAX	.10	.10	2.4	.20	.20	10	.90	.20	.20	.20	1.0	.20
MIN	.00	.10	.10	.20	.20	.20	.20	.20	.20	.20	.20	.20
AC-FT	2.6	6.0	28	12	11	75	34	12	12	12	14	12

CAL YR 1990 TOTAL 13227.83 MEAN 36.2 MAX 144 MIN .00 AC-FT 26240
WTR YR 1991 TOTAL 117.00 MEAN .32 MAX 10 MIN .00 AC-FT 232

e Estimated.

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 mi².

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (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.

COOPERATION.--Selected gage-height readings provided by Westpac Utilities.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 9,490 acre-ft, May 5, June 7-9, 1989, elevation, 5,935.8 ft; minimum, 2,510 acre-ft, Jan. 24, 28-31, 1991, elevation, 5,927.23 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,450 acre-ft, July 3, elevation, 5,935.75 ft; minimum, 2,510 acre-ft, Jan. 24, 28-31, elevation, 5,927.23 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 1990 TO SEPTEMBER 1991
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5540	2920	2630	2580	2540	2880	5290	7550	9010	e9320	9110	6250
2	5470	2880	2640	2590	2610	2960	5320	7620	8990	e9430	9090	6230
3	5400	2860	2650	2550	2600	3160	5370	7690	8920	9450	9000	6210
4	5340	2870	2660	2550	2660	4000	5460	7850	8930	9440	8930	6080
5	5250	2820	2690	2540	2670	4120	5530	8010	8970	9430	8840	5930
6	5180	2770	2610	2540	2670	4210	5690	8200	9020	9410	8770	5760
7	5080	2790	2630	2570	2670	4250	5700	8420	9100	9400	8650	5610
8	5050	2760	2600	2580	2660	4300	5770	8650	9170	9360	8490	5420
9	5010	2740	2620	2580	2680	4320	5780	8820	9260	9340	8330	5290
10	4970	2730	2630	2580	2680	4380	5770	8860	9310	9310	8170	5170
11	4920	2740	2640	2590	2680	4420	5770	8880	9370	9280	8030	5090
12	4900	2730	2630	2580	2700	4500	5770	8910	9400	9280	7880	5020
13	4770	2740	2600	2580	2680	4560	5770	8920	9340	9270	7690	4930
14	4550	2720	2600	2600	2680	4580	5860	8990	9300	9270	7540	4860
15	4380	2700	2610	2560	2710	4610	5940	9070	9250	9250	7330	4800
16	4150	2710	2590	2600	2700	4650	6020	9170	9200	9240	7190	4740
17	4010	2700	2590	2550	2670	4710	6100	9210	9170	9220	7020	4680
18	3850	2650	2580	2590	2690	4730	6180	9150	9150	9220	6880	4620
19	3690	2670	e2580	2560	2700	4750	6280	9080	9140	9230	6730	4570
20	3580	2670	e2580	2530	2700	4790	6360	9010	9160	9230	6600	4480
21	3510	2650	e2580	2520	2710	4800	6440	9000	9160	9210	6480	4380
22	3410	2660	2580	2520	2710	4830	6590	9050	9180	9210	6400	4320
23	3350	2640	2550	2530	2700	4930	6730	9130	9170	9210	6400	4220
24	3290	2660	2610	2510	2720	5020	6830	9220	9170	9200	6370	4160
25	3230	2690	2600	2520	2700	5070	6940	9260	9170	9180	6360	4090
26	3180	2640	2570	2520	2700	5120	7040	9230	9190	9180	6350	4030
27	3140	2670	2620	2520	2730	5130	7120	9220	9200	9160	6330	3970
28	3090	2670	2610	2510	2770	5150	7220	9160	9260	9170	6300	3930
29	3030	2660	2570	2510	---	5180	7310	9100	9300	9150	6290	3870
30	2990	2660	2580	2510	---	5220	7450	9070	9330	9140	6280	3810
31	2990	---	2580	2510	---	5260	---	9040	---	9140	6270	---
MAX	5540	2920	2690	2600	2770	5260	7450	9260	9400	9450	9110	6250
MIN	2990	2640	2550	2510	2540	2880	5290	7550	8920	9140	6270	3810
a	5927.85	5927.43	5927.33	5927.23	5927.58	5930.72	5933.39	5935.27	5935.61	5935.39	5931.95	5928.90
b	-2620	-330	-80	-70	+260	+2490	+2190	+1590	+290	-190	-2870	-2460
CAL YR 1990	MAX 9460	MIN 2550	b -250									
WTR YR 1991	MAX 9450	MIN 2510	b -1800									

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929. 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.

AVERAGE DISCHARGE (unadjusted).--54 years (water years 1930-35, 1937, 1940-42, 1944-52, 1956-57, 1959-91), 34.5 ft³/s, 25,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 707 ft³/s, Feb. 19, 1986; gage height, 4.83 ft; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 129 ft³/s, Oct. 13, gage height, 3.97 ft; minimum daily, 0.28 ft³/s, Aug. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	15	3.4	2.3	1.8	3.2	15	3.9	106	2.2	1.8	1.4
2	32	13	3.3	2.2	1.4	4.1	15	3.9	102	2.0	14	1.7
3	32	11	3.3	2.2	1.3	4.5	15	3.9	99	1.8	40	26
4	32	11	3.2	2.2	1.5	4.7	15	3.9	69	e1.7	36	68
5	32	9.6	3.1	2.2	1.9	3.9	31	3.9	35	1.7	36	67
6	32	8.0	3.1	1.8	2.0	3.9	50	3.9	19	1.7	36	78
7	30	7.4	3.0	.86	2.0	3.9	50	3.9	6.4	1.7	60	86
8	28	6.9	2.9	2.4	2.1	3.8	51	3.9	6.4	e1.7	78	83
9	24	6.5	2.9	2.4	2.1	3.8	51	4.2	6.4	1.8	77	74
10	24	6.4	2.7	2.4	2.1	3.7	50	27	6.4	1.7	75	56
11	17	5.9	3.0	2.4	2.1	3.6	48	49	6.4	e1.7	74	38
12	9.6	5.5	3.0	2.4	2.1	3.5	46	50	22	1.7	73	38
13	60	4.7	3.1	2.3	2.1	3.4	46	52	47	1.8	94	37
14	117	4.4	3.0	2.4	2.2	3.3	21	54	47	1.7	108	36
15	105	4.1	3.0	2.3	2.2	3.3	1.5	54	47	1.7	99	35
16	101	3.8	2.9	2.2	2.2	3.3	1.1	53	48	1.7	79	31
17	92	3.8	2.8	2.2	2.3	3.2	.73	73	34	e1.7	78	25
18	78	3.6	2.8	2.3	2.2	3.3	.60	95	6.9	e1.7	76	25
19	68	3.5	2.2	2.2	2.2	3.3	.43	95	3.9	e1.6	75	29
20	59	3.7	2.8	2.1	2.2	3.3	.38	94	3.5	1.6	65	38
21	52	3.5	3.1	2.0	2.3	3.2	.29	94	2.6	1.6	58	42
22	46	3.4	3.0	2.0	2.1	3.2	2.8	94	2.4	1.7	30	40
23	40	3.3	2.9	2.0	2.1	3.2	4.6	93	2.4	1.9	1.1	39
24	36	3.1	e2.8	1.9	2.1	3.2	5.0	94	2.4	2.0	.52	38
25	31	3.3	e2.8	1.9	2.1	3.3	4.2	97	2.4	2.2	.28	38
26	27	3.7	e2.7	1.9	2.1	3.4	3.9	103	2.4	2.0	1.7	30
27	24	3.6	e2.7	1.9	2.1	3.4	3.9	102	2.3	2.0	2.8	25
28	21	3.5	2.7	1.9	2.3	3.4	3.9	105	2.3	2.0	1.9	24
29	18	3.5	2.6	1.8	---	3.5	3.9	107	2.3	1.8	1.5	24
30	16	3.5	2.5	1.9	---	11	3.9	107	2.4	1.9	1.3	23
31	15	---	2.3	1.8	---	15	---	107	---	1.9	1.2	---
TOTAL	1330.6	172.2	89.6	64.76	57.2	128.8	545.13	1834.4	745.2	55.9	1375.10	1196.1
MEAN	42.9	5.74	2.89	2.09	2.04	4.15	18.2	59.2	24.8	1.80	44.4	39.9
MAX	117	15	3.4	2.4	2.3	15	51	107	106	2.2	108	86
MIN	9.6	3.1	2.2	.86	1.3	3.2	.29	3.9	2.3	1.6	.28	1.4
AC-FT	2640	342	178	128	113	255	1080	3640	1480	111	2730	2370

CAL YR 1990 TOTAL 7101.03 MEAN 19.5 MAX 143 MIN .45 AC-FT 14080
WTR YR 1991 TOTAL 7594.99 MEAN 20.8 MAX 117 MIN .28 AC-FT 15060

e Estimated.

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 mi².

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 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (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 10...	0950	2.5	144	7.8	5.5	2.5	620	10.2	100	74
APR 09...	1030	19	109	8.0	5.0	4.6	620	10.8	104	39
AUG 12...	1200	1.7	145	8.1	16.0	3.5	620	8.3	104	88

DATE	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, 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 10...	60	0.800	0.030	0.47	0.50	1.3	0.020	<0.010	--	1
APR 09...	32	0.160	0.010	0.19	0.20	0.36	0.020	0.040	--	2
AUG 12...	72	<0.050	0.020	0.28	0.30	--	0.040	0.030	2	<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 10...	--	190	--	<1	<4	--	18	--	18
APR 09...	380	170	3	1	<4	20	14	<10	7
AUG 12...	890	570	3	<1	<4	70	51	<10	4

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 10...	0950	2.5	5.5	1	0.01
APR 09...	1030	19	5.0	6	0.31
AUG 12...	1200	1.7	16.0	6	0.03

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 mi².

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 1990 TO SEPTEMBER 1991

DATE	TIME	SPECIFIC-CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATURATION)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3)	CARBONATE WATER DIS IT FIELD (MG/L AS CO3)
OCT 10...	1015	141	9.3	12.0	3.1	620	7.3	84	58	12
APR 09...	1200	117	8.2	10.5	10	620	9.5	105	41	--
AUG 12...	1230	144	9.7	21.0	1.0	620	9.3	129	37	23

DATE	ALKALINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DIS-SOLVED (MG/L AS P)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT 10...	68	3.40	0.120	0.88	1.0	4.4	0.040	<0.010	--	1
APR 09...	33	0.320	0.010	0.39	0.40	0.72	0.030	<0.010	2	1
AUG 12...	69	<0.050	0.020	0.68	0.70	--	0.040	0.020	4	1

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 10...	--	61	--	1	<4	--	9	--	16
APR 09...	570	190	2	1	<4	20	11	<10	7
AUG 12...	80	33	--	<1	<4	10	3	20	5

SUSPENDED SEDIMENT CONCENTRATION, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)
OCT 10...	1015	12.0	2
APR 09...	1200	10.5	6
AUG 12...	1230	21.0	4

10339400 MARTIS CREEK NEAR TRUCKEE, CA

WATER-QUALITY RECORDS

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 mi².

PERIOD OF RECORD.--

WATER-DISCHARGE DATA: Water years 1959-90.

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 U.S. Geological Survey office in Carson City, NV.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 24.0 °C, on several days in 1977, 1979 and July 26, 1991; minimum recorded, 0.0 °C, Feb. 16, 17, 1982.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 24.0 °C, July 26; minimum recorded, 2.0 °C, on several days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (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											
10...	1215	4.0	140	9.1	12.5	2.4	620	9.5	110	66	8
APR											
09...	1330	26	117	8.3	9.5	10	620	9.7	105	41	--
AUG											
12...	1430	2.3	143	9.5	22.5	3.3	620	9.3	133	47	17

DATE	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, 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										
10...	68	1.20	0.040	0.66	0.70	1.9	0.030	<0.010	--	3
APR										
09...	33	<0.050	0.010	0.39	0.40	--	0.030	0.010	2	2
AUG										
12...	67	<0.050	0.030	0.67	0.70	--	0.060	0.040	3	<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									
10...	--	73	--	1	<4	--	18	--	13
APR									
09...	560	160	3	2	<4	30	15	<10	13
AUG									
12...	440	75	3	<1	<4	90	14	<10	3

10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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					
10...	1215	4.0	12.5	1	0.01
APR					
09...	1330	26	9.5	8	0.56
AUG					
12...	1430	2.3	22.5	5	0.03

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

PYRAMID AND WINNEMUCCA LAKES BASIN

10340300 PROSSER CREEK RESERVOIR NEAR TRUCKEE, CA

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.

DRAINAGE AREA.--50.3 mi².

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 National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REVISED RECORDS.--WDR CA-76-3: 1975. WDR CA-79-3: Drainage area.

REMARKS.--Reservoir is formed by rolled-earth and rockfill dam. Storage began Jan. 30, 1963. Usable capacity, 28,641 acre-ft between elevations 5,660.6 ft, top of inactive contents, and 5,741.2 ft, crest of spillway. Inactive contents, 1,201 acre-ft, includes 83 acre-ft dead contents below elevation 5,637.0 ft. Figures given represent total contents at 0800 hours. Reservoir is used for flood control, enhancement of fishery, and recreation. See schematic diagram of Truckee River basin.

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 PERIOD OF RECORD.--Maximum contents, 32,269 acre-ft, June 1, 1973, elevation, 5,744.33 ft; minimum since reservoir first filled, 66 acre-ft, Oct. 10-12, 1983, elevation, 5,635.75 ft.

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 11,061 acre-ft, Mar. 6, elevation, 5,707.17 ft; minimum observed, 9,444 acre-ft, May 13, elevation, 5,702.54 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by U.S. Bureau of Reclamation, dated August 1962)

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				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9811	9757	---	---	9865	9771	9891	9784	---	9851	9828	---
2	9804	9764	---	9733	---	---	9825	9784	---	9811	9824	---
3	9804	---	9845	9737	---	---	9875	9737	9622	9767	---	9757
4	9797	---	9848	9744	9925	9939	9824	---	9757	---	---	9757
5	9797	9767	9851	---	9960	10841	9800	---	9767	9784	9811	9761
6	---	9771	9855	---	9987	11061	---	9649	9689	---	9804	9764
7	---	9764	9858	9761	10008	11020	---	9804	9682	---	9797	---
8	9784	9767	---	9767	10022	10918	10167	9845	---	9733	9787	---
9	9777	9767	---	9774	---	---	10085	9915	---	9744	9777	9764
10	9774	---	9865	9784	---	---	9987	9790	10043	9757	---	9790
11	9777	---	9878	9790	9994	10498	9878	---	10085	9761	---	9804
12	9771	9771	9891	---	9981	10338	9757	---	10085	9764	9747	9804
13	---	9774	9895	---	9967	10195	---	9444	10018	---	9744	9797
14	---	9774	9891	9821	9960	10029	---	9451	9925	---	9744	---
15	9764	---	---	9831	9953	9865	9649	9451	---	9730	9771	---
16	9761	9777	---	9838	---	---	9703	9549	---	9737	9790	9764
17	9754	---	9891	9845	---	---	9737	9723	9797	9747	---	9757
18	9754	---	9895	9851	---	9689	9710	---	9771	9757	---	9757
19	9757	9787	9901	---	9918	9730	9669	---	9790	9767	9800	9757
20	---	9790	9912	---	9905	9774	---	9562	9797	---	9797	9757
21	---	9794	9915	9862	9885	9821	---	9523	9790	---	9797	---
22	9761	---	---	9865	9872	9851	9831	9682	---	9865	9797	---
23	9764	---	---	9865	---	---	9878	9824	---	9898	9787	9757
24	9761	---	9868	9865	---	---	9939	10022	9716	9925	---	9750
25	9761	---	---	9865	9824	9811	9831	---	9672	9872	---	9750
26	9757	9824	9831	---	9804	9790	9669	---	9716	9804	9774	9750
27	---	9824	9814	---	9787	9771	---	---	9784	---	9771	9757
28	---	9828	9794	9865	9771	9784	---	9994	9845	---	9764	---
29	9750	9834	---	9865	---	9800	9595	9891	---	9824	9761	---
30	9750	9838	---	9865	---	---	9682	9811	---	9831	9757	9777
31	9747	---	9733	9865	---	---	---	9710	---	9831	---	---

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 mi².

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. 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 National Geodetic Vertical Datum of 1929 (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.--No estimated daily discharges. Records good. Flow regulated by Prosser Creek Reservoir (station 10340300) since Jan. 30, 1963. See schematic diagram of Truckee River basin.

AVERAGE DISCHARGE (adjusted for change in contents in Prosser Creek Reservoir since 1963).--48 years (water years 1943-50, 1952-91), 86.8 ft³/s, 62,890 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1943-91).--Maximum discharge, 4,560 ft³/s, Dec. 23, 1955, gage height, 10.13 ft, present datum, from rating curve extended above 910 ft³/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 ft³/s, July 18, 1961, result of work on dam upstream. Maximum discharge since construction of Prosser Creek Dam in 1963, 1,790 ft³/s, Feb. 20-22, 1986, gage height, 6.66 ft, from rating curve extended above 880 ft³/s on basis of valve setting at Prosser Creek Dam; minimum daily, 0.02 ft³/s, Jan. 2, 1975, result of temporary closing of Prosser Creek Dam for spillway maintenance.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 204 ft³/s, May 9, gage height, 3.71 ft; minimum daily, 2.6 ft³/s, Sept. 28-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	9.0	8.6	8.4	11	20	44	90	133	80	10	4.2
2	8.5	9.0	8.4	8.4	12	20	81	106	137	80	10	4.2
3	8.4	9.0	8.4	8.4	12	21	99	107	126	62	10	4.2
4	8.4	9.0	8.4	8.4	11	42	99	105	146	47	10	4.2
5	8.4	9.0	8.4	8.4	11	30	91	104	175	47	10	4.2
6	8.4	9.0	8.4	8.6	10	87	83	86	151	47	10	4.2
7	8.4	9.0	8.4	9.0	10	111	82	115	96	47	9.9	4.2
8	8.4	9.0	8.4	9.0	13	111	119	141	83	37	9.9	4.2
9	8.4	8.7	8.4	9.0	20	111	153	177	83	26	9.9	4.2
10	7.4	8.4	8.4	9.0	20	111	143	170	122	26	9.9	4.4
11	8.3	8.4	8.4	8.8	20	111	139	136	149	26	9.9	7.1
12	8.4	8.4	8.9	8.4	20	111	129	141	165	26	9.3	9.9
13	8.7	8.4	9.4	8.4	20	111	111	120	175	26	8.4	9.9
14	9.0	8.4	9.4	7.9	20	111	110	105	143	26	9.0	9.9
15	9.0	8.4	9.4	7.9	20	109	85	95	119	19	9.0	9.9
16	8.9	8.4	9.4	7.9	20	49	67	77	119	11	9.0	8.4
17	8.4	8.4	9.4	8.2	20	48	84	103	110	11	8.8	4.9
18	8.4	8.4	9.4	8.9	20	26	95	141	87	11	8.4	4.9
19	8.4	8.4	9.4	9.4	20	9.9	72	145	73	11	8.4	5.1
20	8.4	8.4	9.4	9.4	20	9.9	61	122	72	11	8.4	5.6
21	8.4	8.4	12	9.4	20	9.9	59	55	72	12	8.4	5.6
22	8.4	8.4	16	9.6	20	29	78	59	72	11	8.2	6.2
23	8.4	8.4	16	9.9	20	39	92	102	74	11	6.9	6.4
24	8.4	8.4	16	10	20	39	138	149	73	30	6.5	5.7
25	8.4	8.6	16	10	20	40	165	183	44	47	6.4	3.9
26	8.6	9.0	16	10	20	40	120	179	23	28	6.1	2.9
27	9.0	9.0	16	10	20	31	93	179	23	11	6.1	2.8
28	9.0	9.0	16	10	20	23	92	178	58	11	5.9	2.6
29	9.0	9.0	16	11	---	27	70	163	81	11	5.3	2.6
30	9.0	9.0	16	11	---	31	60	182	80	11	4.7	2.6
31	9.0	---	12	11	---	31	---	167	---	11	4.2	---
TOTAL	264.9	260.3	344.7	283.7	490	1699.7	2914	3982	3064	871	256.9	159.1
MEAN	8.55	8.68	11.1	9.15	17.5	54.8	97.1	128	102	28.1	8.29	5.30
MAX	9.0	9.0	16	11	20	111	165	183	175	80	10	9.9
MIN	7.4	8.4	8.4	7.9	10	9.9	44	55	23	11	4.2	2.6
AC-FT	525	516	684	563	972	3370	5780	7900	6080	1730	510	316

CAL YR 1990 TOTAL 19487.1 MEAN 53.4 MAX 278 MIN 7.2 AC-FT 38650 MEAN a 41.9 AC-FT a 30340
WTR YR 1991 TOTAL 14590.3 MEAN 40.0 MAX 183 MIN 2.6 AC-FT 28940 MEAN a 39.9 AC-FT a 28910

a Adjusted for change in contents in Prosser Creek Reservoir.

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 16050102, on right bank of outlet channel, 60 ft upstream from outlet gates, and 10.5 mi northwest of Truckee.

DRAINAGE AREA.--7.51 mi².

PERIOD OF RECORD.--November 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (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, 17,400 acre-ft, June 7-13, 1989, elevation, 6,949.19 ft; minimum, 4,750 acre-ft, Nov. 10, 11, 1988, elevation, 6,929.39 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,400 acre-ft, Apr. 25 to May 3, elevation, 6,947.78 ft; minimum, 13,500 acre-ft, Sept. 26-30, elevation, 6,943.43 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14600	14300	14200	14200	14300	14600	15800	16400	16100	14900	14200	13900
2	14600	14300	14200	14200	14300	14600	15800	16400	16200	14800	14200	13900
3	14600	14300	14200	14200	14300	14800	15800	16400	16200	14700	14100	13900
4	14600	14300	14200	14200	14400	15100	15800	16300	16300	14600	14100	13900
5	14600	14300	14200	14200	14400	15200	15900	16200	16300	14600	14100	13900
6	14500	14300	14200	14200	14400	15200	15900	16200	16300	14500	14100	13900
7	14500	14300	14200	14300	14400	15200	15900	16200	16300	14400	14100	13800
8	14500	14300	14200	14300	14400	15200	16000	16200	16200	14300	14100	13800
9	14500	14300	14200	14300	14400	15200	16000	16200	16300	14300	14100	13800
10	14500	14300	14200	14300	14400	15300	16000	16100	16300	14300	14000	13800
11	14500	14300	14200	14300	14400	15300	16000	16100	16200	14300	14000	13800
12	14500	14300	14200	14300	14400	15300	16000	16000	16200	14300	14000	13800
13	14500	14300	14200	14300	14400	15400	16000	16000	16200	14300	14000	13700
14	14500	14300	14200	14300	14400	15400	16100	15900	16200	14300	14100	13700
15	14500	14300	14200	14300	14400	15400	16100	15900	16100	14300	14100	13700
16	14400	14300	14200	14300	14400	15400	16100	16000	16000	14300	14100	13700
17	14500	14300	14200	14300	14400	15500	16100	16000	16000	14200	14100	13700
18	14400	14300	14200	14300	14400	15500	16100	15900	15900	14200	14100	13700
19	14400	14300	14300	14300	14400	15500	16200	15900	15800	14200	14100	13700
20	14400	14300	14300	14300	14400	15500	16200	15900	15700	14200	14100	13600
21	14400	14300	14300	14300	14400	15500	16200	15800	15700	14200	14100	13600
22	14400	14200	14300	14300	14400	15500	16200	15900	15600	14200	14000	13600
23	14400	14200	14300	14300	14400	15600	16300	15900	15500	14200	14000	13600
24	14400	14200	14300	14300	14400	15700	16300	16000	15400	14200	14000	13600
25	14400	14200	14200	14300	14400	15700	16400	16100	15300	14200	14000	13600
26	14400	14300	14200	14300	14400	15800	16400	16100	15200	14200	14000	13500
27	14400	14300	14300	14300	14400	15800	16400	16100	15100	14200	13900	13500
28	14400	14300	14200	14300	14500	15800	16400	16100	15100	14200	13900	13500
29	14400	14300	14200	14300	---	15800	16400	16100	15100	14200	13900	13500
30	14400	14200	14200	14300	---	15800	16400	16100	15000	14200	13900	13500
31	14400	---	14200	14300	---	15800	---	16100	---	14200	13900	---
MAX	14600	14300	14300	14300	14500	15800	16400	16400	16300	14900	14200	13900
MIN	14400	14200	14200	14200	14300	14600	15800	15800	15000	14200	13900	13500
a	6944.74	6944.56	6944.54	6944.58	6944.90	6946.84	6947.78	6947.30	6945.64	6944.45	6944.03	6943.43
b	-200	-200	0	+100	+200	+1300	+600	-300	-1100	-800	-300	-400

CAL YR 1990 MAX 16800 MIN 14200 b 0
WTR YR 1991 MAX 16400 MIN 13500 b -1100

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 mi².

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 National Geodetic Vertical Datum of 1929, 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.--Records good. Flow regulated by Independence Lake (station 10342900) since 1939. See schematic diagram of Truckee River basin.

AVERAGE DISCHARGE (unadjusted).--28 years (water years 1903-7, 1969-91), 25.4 ft³/s, 18,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 291 ft³/s, Dec. 20, 1981, gage height, 6.12 ft; no flow Sept. 28 to Nov. 10, 1905, June 1, 1906.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 69 ft³/s, May 3, gage height, 3.52 ft; minimum daily, 1.1 ft³/s, Feb. 6-11, 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	2.2	1.9	e1.9	1.4	1.2	1.6	27	46	56	3.3	1.7
2	2.5	2.1	2.1	e1.9	1.3	1.3	1.6	27	46	56	3.4	1.7
3	2.4	2.1	2.1	e1.9	1.3	1.4	1.6	47	46	56	3.2	1.9
4	2.5	2.1	2.1	e1.9	1.3	2.3	1.6	64	46	56	3.5	1.9
5	2.6	2.1	2.1	e1.9	1.2	1.4	1.7	61	46	55	3.3	1.9
6	2.6	2.1	2.1	e1.8	1.1	1.4	2.0	59	49	55	3.3	4.9
7	2.6	2.1	2.1	e1.8	1.1	1.2	2.2	57	55	55	2.9	7.6
8	2.6	2.1	2.1	e1.8	1.1	1.3	2.4	57	59	41	2.8	7.2
9	2.6	1.9	2.1	e1.8	1.1	1.3	2.3	57	60	7.7	3.2	7.2
10	2.5	1.9	2.2	e1.8	1.1	1.4	2.3	54	62	6.9	3.3	7.0
11	2.4	1.9	2.3	e1.8	1.1	1.4	2.1	52	62	6.1	3.0	6.8
12	2.3	1.9	2.1	e1.8	1.3	1.4	2.0	50	62	6.0	2.7	6.5
13	2.3	1.9	2.1	1.8	1.3	1.4	2.1	49	62	6.0	2.4	6.5
14	2.2	1.9	2.1	1.6	1.3	1.4	2.2	48	61	5.0	2.4	6.5
15	2.4	2.0	2.1	1.4	1.3	1.4	2.2	47	61	4.6	2.1	5.9
16	2.3	2.1	2.1	1.4	1.3	1.4	2.1	47	60	4.4	1.9	5.5
17	2.1	2.1	2.1	1.4	1.3	1.5	1.8	46	59	4.8	2.1	5.4
18	2.1	1.9	e2.1	1.4	1.3	1.5	1.7	45	59	5.2	2.3	5.4
19	2.1	1.9	e2.1	1.4	1.2	1.5	1.9	44	58	4.7	2.4	5.1
20	2.2	1.9	e2.1	1.4	1.3	1.5	2.0	44	58	5.1	2.2	5.2
21	2.3	1.9	e2.1	1.4	1.3	1.6	2.1	44	58	5.0	2.3	5.9
22	2.4	2.0	e2.1	1.4	1.2	1.6	2.3	44	58	4.9	2.2	5.4
23	2.4	2.1	e2.1	1.4	1.2	1.7	2.5	44	58	4.7	2.0	5.4
24	2.4	2.1	e2.0	1.4	1.3	1.6	2.3	44	57	4.3	1.9	5.4
25	2.6	2.1	e2.0	1.4	1.3	1.7	2.1	45	57	4.6	2.0	6.0
26	2.6	2.1	e2.0	1.4	1.3	1.7	2.7	46	57	4.3	2.1	6.0
27	2.4	2.1	e2.0	1.4	1.1	1.6	8.3	46	57	4.1	1.8	5.6
28	2.4	2.1	e2.0	1.4	1.1	1.6	9.9	47	57	3.7	2.0	5.5
29	2.4	2.1	e2.0	1.4	---	1.6	16	46	57	3.3	2.1	5.7
30	2.4	1.9	e1.9	1.4	---	1.6	23	46	56	3.0	2.1	6.0
31	2.3	---	e1.9	1.4	---	1.6	---	46	---	3.0	2.0	---
TOTAL	74.5	60.7	64.2	49.3	34.5	46.5	110.6	1480	1689	541.4	78.2	158.7
MEAN	2.40	2.02	2.07	1.59	1.23	1.50	3.69	47.7	56.3	17.5	2.52	5.29
MAX	2.6	2.2	2.3	1.9	1.4	2.3	23	64	62	56	3.5	7.6
MIN	2.1	1.9	1.9	1.4	1.1	1.2	1.6	27	46	3.0	1.8	1.7
AC-FT	148	120	127	98	68	92	219	2940	3350	1070	155	315

CAL YR 1990 TOTAL 3753.9 MEAN 10.3 MAX 89 MIN 1.9 AC-FT 7450
WTR YR 1991 TOTAL 4387.6 MEAN 12.0 MAX 64 MIN 1.1 AC-FT 8700

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA
(Hydrologic bench-mark 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 mi².

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 National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE.--38 years, 12.3 ft³/s, 8,910 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 765 ft³/s, Feb. 1, 1963, gage height, 4.64 ft from floodmarks, from rating curve extended above 160 ft³/s on basis of slope-area measurement at gage height 4.28 ft; minimum, 0.6 ft³/s, Aug. 8, 1960, Aug. 7, 1961, result of temporary regulation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1430	*85	*2.91				

Minimum daily, 1.3 ft³/s, on several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	2.2	2.0	2.1	2.0	2.9	5.3	13	10	3.2	1.6	1.3
2	1.7	2.0	2.0	2.1	2.3	2.7	5.4	12	10	3.0	1.6	1.3
3	1.7	1.9	2.0	2.1	2.5	6.2	5.8	12	10	2.8	1.6	1.3
4	1.6	2.0	2.0	2.2	2.4	47	6.6	13	10	2.7	1.7	1.4
5	1.7	2.0	2.1	2.2	2.7	19	8.3	14	9.4	2.5	1.7	1.4
6	1.7	2.0	2.0	2.2	2.5	9.4	17	16	8.6	2.4	1.6	1.3
7	1.7	1.9	2.0	2.2	2.4	6.2	12	18	8.1	2.3	1.6	1.3
8	1.7	2.0	2.0	2.2	2.4	5.2	9.7	21	8.1	2.3	1.6	1.3
9	1.7	2.0	2.0	2.2	2.3	4.7	9.8	19	8.2	2.2	1.5	1.7
10	1.7	2.0	2.1	2.1	2.5	4.3	9.1	15	8.2	2.2	1.5	2.3
11	1.7	2.0	2.1	2.1	2.4	3.9	7.7	13	8.0	2.2	1.5	1.6
12	1.7	2.0	2.1	2.2	2.5	3.6	7.8	13	7.5	2.1	1.4	1.5
13	1.7	2.0	2.2	2.2	2.7	3.6	9.2	14	6.8	2.1	1.5	1.5
14	1.7	2.0	2.2	2.2	2.9	3.4	11	14	6.2	2.0	2.3	1.4
15	1.7	2.1	2.2	2.2	3.0	3.3	10	15	5.6	1.9	2.9	1.4
16	1.7	2.1	2.2	2.1	3.0	3.2	8.9	17	5.2	1.9	2.1	1.5
17	1.7	2.1	2.2	2.1	2.8	3.2	7.9	17	4.8	1.9	1.8	1.4
18	1.8	2.1	2.2	2.1	2.7	3.1	8.2	14	4.4	1.9	1.7	1.4
19	2.1	2.0	e2.2	2.1	2.7	3.1	9.3	12	4.3	1.9	1.6	1.4
20	1.9	2.0	2.2	2.1	2.7	3.0	11	13	4.1	2.4	1.5	1.4
21	1.9	2.0	e2.2	2.1	2.7	2.9	11	14	3.8	2.4	1.5	1.4
22	1.8	1.9	e2.2	2.0	2.8	2.9	12	15	3.6	2.1	1.4	1.4
23	1.8	1.9	e2.2	2.0	2.8	2.8	13	16	3.5	2.1	1.4	1.4
24	1.8	1.9	e2.2	2.0	2.6	3.2	13	16	3.5	1.9	1.4	1.4
25	1.8	1.9	e2.2	2.0	2.6	3.0	11	16	3.5	1.8	1.3	1.4
26	1.8	2.0	e2.2	2.0	2.7	2.9	11	14	3.5	1.8	1.3	1.5
27	1.8	2.1	2.2	2.0	2.7	2.9	11	13	3.6	1.8	1.3	1.5
28	1.8	2.1	2.2	2.0	3.0	3.1	12	12	4.6	1.8	1.4	1.5
29	1.8	2.1	2.2	1.9	---	3.4	14	11	4.3	1.9	1.4	1.5
30	1.8	2.1	e2.1	2.0	---	4.0	14	12	3.6	1.7	1.4	1.5
31	2.4	---	2.1	2.0	---	4.8	---	11	---	1.6	1.3	---
TOTAL	55.1	60.4	66.0	65.0	73.3	176.9	302.0	445	185.0	66.8	49.4	43.6
MEAN	1.78	2.01	2.13	2.10	2.62	5.71	10.1	14.4	6.17	2.15	1.59	1.45
MAX	2.4	2.2	2.2	2.2	3.0	47	17	21	10	3.2	2.9	2.3
MIN	1.6	1.9	2.0	1.9	2.0	2.7	5.3	11	3.5	1.6	1.3	1.3
AC-FT	109	120	131	129	145	351	599	883	367	132	98	86

CAL YR 1990 TOTAL 1754.3 MEAN 4.81 MAX 29 MIN 1.4 AC-FT 3480
WTR YR 1991 TOTAL 1588.5 MEAN 4.35 MAX 47 MIN 1.3 AC-FT 3150

e Estimated.

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--December 1990 to September 1991.

INSTRUMENTATION.--Recording weighing rain gage since Dec. 1, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum daily precipitation, 3.36 in, Mar. 4; no precipitation for many days.

PRECIPITATION ACCUMULATED (INCHES), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.00	.00	.03	1.25	.00	.09	.00	.00	.00	.00
2	---	---	.04	.00	.82	.73	.00	.22	.00	.00	.00	.00
3	---	---	.00	.00	.05	2.43	.00	.00	.05	.00	.00	.00
4	---	---	.00	.00	.23	3.36	.00	.00	.00	.00	.32	.00
5	---	---	.00	.00	.15	.22	.05	.00	.00	.00	.00	.00
6	---	---	.00	.07	.00	.00	.49	.05	.00	.00	.00	.00
7	---	---	.00	.29	.00	.00	.00	.00	.00	.00	.00	.00
8	---	---	.00	.00	.00	.00	.00	.51	.00	.00	.00	.00
9	---	---	.00	.00	.00	.00	.04	.20	.00	.00	.00	.55
10	---	---	.05	.00	.00	.27	.00	.00	.00	.00	.00	.18
11	---	---	.30	.00	.00	.15	.00	.00	.00	.00	.00	.00
12	---	---	.00	.00	.00	.26	.00	.00	.00	.00	.00	.10
13	---	---	.06	.00	.00	.70	.00	.12	.00	.00	.00	.00
14	---	---	.00	.00	.00	.08	.00	.00	.00	.00	.71	.00
15	---	---	.11	.00	.00	.31	.04	.00	.00	.00	.40	.00
16	---	---	.00	.00	.02	.02	.00	.21	.00	.00	.00	.00
17	---	---	.00	.00	.02	.24	.00	.21	.00	.00	.00	.00
18	---	---	.14	.00	.00	.33	.00	.04	.00	.08	.00	.00
19	---	---	.49	.00	.00	.29	.00	.00	.00	.17	.00	.00
20	---	---	.11	.00	.00	.25	.02	.11	.00	.59	.00	.00
21	---	---	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
22	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	---	---	.00	.00	.00	.28	.02	.00	.00	.00	.00	.00
24	---	---	.00	.00	.00	1.70	.19	.00	.00	.00	.00	.00
25	---	---	.00	.00	.00	.23	.16	.00	.00	.00	.00	.00
26	---	---	.00	.00	.00	1.00	.00	.00	.00	.00	.00	e.15
27	---	---	.00	.00	.00	.98	.00	.00	.17	.17	.00	.00
28	---	---	.00	.00	.18	.12	.00	.00	.29	.08	.00	.00
29	---	---	.00	.00	---	.02	.00	.07	.00	.04	.00	.00
30	---	---	.00	.00	---	.04	.11	.28	.00	.00	.00	.00
31	---	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	---	1.30	0.36	1.50	15.30	1.12	2.11	0.51	1.13	1.43	0.98

e Estimated.

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, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
(NOT PREVIOUSLY PUBLISHED)

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
MAY											
01...	1030	13	4.0	0.5	<0.4	1.0	<0.4	0.9	<0.4	0.09	0.12
AUG											
09...	1115	1.9	10.5	0.9	<0.4	2.1	<0.4	1.7	<0.4	0.06	0.59

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (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											
29...	1250	2.0	128	8.0	1.5	2.3	610	11.3	101	K2	K12
FEB											
11...	1045	2.3	123	8.3	2.5	4.1	605	11.3	105	K1	K5
MAY											
08...	1145	18	54	7.8	6.0	2.9	605	9.9	100	K1	K2
AUG											
08...	1030	1.7	132	8.3	8.5	0.40	610	9.3	100	K13	64

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 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)
NOV										
29...	55	0	14	4.7	6.6	20	0.4	2.3	93	76
FEB										
11...	54	0	14	4.7	6.3	19	0.4	2.1	78	64
MAY										
08...	24	1	6.3	2.1	3.1	21	0.3	0.80	28	23
AUG										
08...	62	0	16	5.2	6.7	18	0.4	2.4	85	70

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 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV											
29...	1.2	<0.10	32	88	--	--	0.001	0.052	0.005	0.006	0.30
FEB											
11...	0.50	<0.10	31	88	--	--	0.004	0.022	0.016	0.010	<0.20
MAY											
08...	0.70	<0.10	22	52	--	--	0.002	0.015	0.026	0.009	<0.20
AUG											
08...	0.20	<0.10	33	91	106	0.12	0.001	0.014	0.007	0.002	<0.20

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	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)
NOV 29...	0.028	0.029	0.013	40	<1	24	<0.5	<1.0	<1	<3	<1
FEB 11...	0.016	0.025	0.013	80	<1	23	<0.5	<1.0	<1	<3	1
MAY 08...	0.015	0.015	0.002	130	<1	12	<0.5	<1.0	<1	<3	2
AUG 08...	0.023	0.015	0.008	<10	<1	26	<0.5	<1.0	<1	<3	1

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	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)
NOV 29...	55	1	<4	3	<0.1	<10	<1	<1	<1.0	150
FEB 11...	60	<1	<4	3	<0.1	<10	1	<1	<1.0	140
MAY 08...	54	1	<4	2	<0.1	<10	1	<1	<1.0	74
AUG 08...	57	<1	<4	4	<0.1	<10	<1	<1	<1.0	170

DATE	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
NOV 29...	<6	<3	--	--	--	--	--	--	--	--
FEB 11...	<6	4	--	--	--	--	--	--	--	--
MAY 08...	<6	7	<0.6	<0.6	1.0	<0.6	0.9	<0.6	0.02	0.10
AUG 08...	<6	4	1.3	<0.6	2.2	<0.6	1.8	<0.6	<0.02	0.63

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDE (MG/L)
MAY											
08...*	1200	1.34	0.90	55	7.9	7.5	605	8.9	94	4	
08...*	1205	1.20	3.30	55	7.8	7.5	605	8.9	94	4	
08...*	1210	1.42	5.70	55	7.8	7.5	605	8.9	94	5	
08...*	1215	1.50	7.70	55	7.8	7.5	605	9.0	95	4	
08...*	1220	1.48	9.70	55	7.8	7.5	605	9.1	96	4	
AUG											
08...*	1035	0.60	0.40	130	8.2	8.5	610	9.3	100	7	
08...*	1040	0.65	1.20	128	8.2	8.5	610	9.3	100	5	
08...*	1045	0.70	2.40	128	8.2	8.5	610	9.3	100	6	
08...*	1050	0.65	3.60	131	8.2	8.5	610	9.3	100	4	
08...*	1055	0.55	5.40	129	8.2	8.5	610	9.3	100	5	

* Instantaneous discharge at the time of cross-sectional measurement: May 8, 18 ft³/s; Aug 8, 1.7 ft³/s.

PYRAMID AND WINNEMUCCA LAKES BASIN

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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)
NOV 29...	1250	2.0	1.5	2	0.01
FEB 11...	1045	2.3	2.5	1	0.01
MAY 08...	1145	18	6.0	4	0.19
AUG 08...	1030	1.7	8.5	5	0.02

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 mi².

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 National Geodetic Vertical Datum of 1929 (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, 90,611 acre-ft, Oct. 1, elevation, 5,898.00 ft; minimum observed, 80,382 acre-ft, Sept. 30, elevation, 5,892.50 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	47,204	5,900	94,535	5,930	167,355	5,960	267,386

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90611	88996	---	---	85729	85599	89724	88443	---	86121	83420	---
2	90573	88919	---	86759	---	---	89724	88348	---	85991	83365	---
3	90495	---	87702	86665	---	---	89763	88214	87570	85823	---	81603
4	90457	---	87702	86646	85748	86178	89801	---	87645	---	---	81548
5	90399	88786	87645	---	85823	87324	89821	---	87854	85320	83218	81512
6	---	88748	87589	---	85785	87589	---	87930	87930	---	83164	81458
7	---	88633	87551	86571	85785	87835	---	88043	87835	---	83091	---
8	90129	88595	---	86534	85785	87949	90225	88062	---	84431	82999	---
9	90071	88576	---	86496	---	---	90206	88290	---	84283	82963	81296
10	90032	---	87475	86440	---	---	90167	88290	87683	84209	---	81386
11	89994	---	87494	86421	85767	88252	---	---	87702	84173	---	81332
12	89936	88443	87475	---	85711	88328	89994	---	87721	84117	82762	81296
13	---	88424	87475	---	85729	88462	---	87778	87683	---	82726	81260
14	---	88424	87400	86327	85729	88576	---	87589	87608	---	82671	---
15	89801	---	---	86290	85748	88614	90129	87419	---	83915	82726	---
16	89763	88290	---	86271	---	---	90129	87305	---	83841	82708	81099
17	89686	---	87249	86215	---	---	90206	87343	86985	83750	---	81063
18	89667	---	87230	86196	---	88786	89974	---	86703	83695	---	81009
19	89609	88214	87211	---	85636	88881	89821	---	86646	83786	82580	80973
20	---	88157	87249	---	85636	88900	---	87098	86571	---	82562	80937
21	---	88119	87173	86103	85617	88919	---	86909	86571	---	82508	---
22	89475	---	---	86047	85617	88900	89436	86778	---	83823	82453	---
23	89417	---	---	86009	---	---	89340	86778	---	83786	82399	80740
24	89379	---	87004	85991	---	---	89340	86928	86496	83731	---	80686
25	89340	---	---	85953	85524	89226	---	---	86477	83658	---	80633
26	89283	88024	86947	---	85487	89283	89034	---	86440	83621	82163	80597
27	---	87930	86909	---	85524	89321	---	---	86365	---	82109	80561
28	---	87892	86947	85860	85543	89340	---	87645	86290	---	81982	---
29	89130	87854	---	85804	---	89398	88481	87683	---	83566	81928	---
30	89092	87854	---	85767	---	---	88443	87683	---	83530	81855	80382
31	89053	---	86759	85729	---	---	---	87702	---	83511	---	---

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 mi².

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 National Geodetic Vertical Datum of 1929 (U.S. Bureau of Reclamation bench mark). 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, one transbasin diversion to Sierra Valley, and Stampede Reservoir (station 10344300) since 1969. See schematic diagram of Truckee River basin.

AVERAGE DISCHARGE (adjusted for change in contents in Stampede Reservoir since 1969).--59 years (water years 1904-10, 1940-91), 186 ft³/s, 134,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft³/s, Feb. 1, 1963, gage height, 9.00 ft, from rating curve extended above 1,600 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 0.30 ft³/s, Sept. 16-21, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 290 ft³/s, May 8, gage height, 1.64 ft; minimum daily, 28 ft³/s, many days in October and February.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	30	29	34	29	29	65	201	281	144	30	30
2	28	29	29	34	30	29	91	201	280	156	30	30
3	28	29	29	34	29	33	104	228	279	184	30	30
4	28	29	29	34	29	47	115	226	279	204	30	30
5	28	29	29	34	30	34	115	226	280	204	30	30
6	28	29	29	e34	29	31	116	224	279	203	30	31
7	28	29	29	34	29	30	115	258	280	203	30	30
8	28	29	29	34	29	30	152	283	280	164	30	30
9	28	29	29	34	29	30	185	285	278	81	29	32
10	28	29	29	34	29	30	167	278	279	33	29	32
11	28	29	30	34	29	30	157	281	278	32	29	30
12	28	29	31	34	29	30	131	281	278	31	29	30
13	28	29	33	34	29	31	115	281	278	31	30	30
14	28	30	32	34	29	31	115	281	279	31	31	30
15	28	30	33	34	30	31	115	281	278	31	31	30
16	29	30	32	34	29	31	116	281	278	31	31	30
17	31	30	33	e33	29	30	163	281	277	31	30	30
18	30	29	33	33	28	30	215	281	215	34	30	30
19	30	29	e33	33	28	31	189	281	143	34	30	30
20	30	29	e33	33	28	31	173	281	117	38	30	30
21	30	29	e33	e33	28	30	172	281	98	34	30	30
22	30	29	e33	e33	28	30	172	281	99	31	30	30
23	30	29	e33	e33	28	32	172	281	98	31	30	30
24	30	29	e33	e31	28	33	196	281	97	30	30	30
25	29	30	e34	e31	28	32	211	281	96	30	30	30
26	29	29	e34	e31	28	33	202	281	116	30	30	30
27	29	29	e34	e31	28	33	196	281	133	30	30	30
28	29	29	e34	e31	28	33	196	280	134	30	30	30
29	29	29	e34	e31	---	35	176	279	133	30	30	30
30	29	29	e34	e30	---	36	164	281	132	30	30	30
31	30	---	e34	e30	---	37	---	281	---	30	30	---
TOTAL	894	876	983	1021	804	993	4571	8308	6352	2236	929	905
MEAN	28.8	29.2	31.7	32.9	28.7	32.0	152	268	212	72.1	30.0	30.2
MAX	31	30	34	34	30	47	215	285	281	204	31	32
MIN	28	29	29	30	28	29	65	201	96	30	29	30
AC-FT	1770	1740	1950	2030	1590	1970	9070	16480	12600	4440	1840	1800

CAL YR 1990 TOTAL 31108 MEAN 85.2 MAX 376 MIN 28 AC-FT 61700 MEAN a 69.2 AC-FT a 50130
WTR YR 1991 TOTAL 28872 MEAN 79.1 MAX 285 MIN 28 AC-FT 57270 MEAN a 64.8 AC-FT a 46900

e Estimated.

a Adjusted for change in contents in Stampede Reservoir.

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 mi².

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 once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (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, 27,084 acre-ft, June 18, elevation, 5,589.50 ft; minimum, 4,396 acre-ft, Sept. 4, elevation, 5,548.15 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5116	6898	8612	9225	9912	10386	6859	7310	18788	22626	6332	4593
2	5181	6960	8655	9225	9936	10362	6821	7430	19289	22298	6258	4502
3	5231	7014	8704	9225	9959	10338	6782	7450	19797	21972	6185	4411
4	5297	7069	8778	9225	9982	10410	6782	7470	20347	21649	6131	4396
5	5364	7124	8858	9202	10029	10676	6782	7470	20905	21364	6077	4456
6	5421	7179	8915	9179	10053	10749	6782	7673	21364	21046	6023	4517
7	5479	7226	8964	9157	10076	10773	6936	7880	21900	20695	5970	4578
8	5537	7282	9013	9134	10100	10822	7132	8344	22407	20347	5916	4640
9	5588	7338	9049	9134	10124	10847	7470	8933	22883	19797	5863	4701
10	5643	7386	9089	9157	10147	10896	7817	9474	23402	19121	5793	4780
11	5699	7438	9125	9179	10195	10872	8110	9889	23927	18392	5740	4843
12	5758	7498	9152	9248	10195	10872	8301	10195	24382	17646	5688	4890
13	5814	7567	9161	9293	10219	10847	8258	10482	24956	16885	5619	4938
14	5870	7620	9157	9361	10242	10822	8237	10724	25460	16112	5568	4986
15	5923	7673	9166	9406	10266	10798	8280	10946	25969	15328	5516	5035
16	5980	7727	9157	9429	10266	10579	8194	11169	26444	14536	5482	5083
17	6041	7788	9157	9429	10266	10362	8068	11573	26763	13712	5550	5132
18	6102	7846	9175	9451	10266	10124	7921	11985	27084	12886	5516	5198
19	6164	7905	9193	9474	10266	9866	7838	12404	27043	12063	5482	5247
20	6222	7959	9193	9520	10290	9588	7653	12805	26843	11294	5482	5297
21	6280	8013	9179	9542	10290	9293	7511	13131	26523	10530	5465	5347
22	6336	8064	9116	e9565	10290	9022	7350	13489	26206	9773	5465	5381
23	6391	8123	9094	9588	10314	8712	7270	14021	25812	9000	5431	5415
24	6447	8178	9089	9657	10314	8451	7230	14536	25421	8194	5364	5465
25	6506	8233	9080	9680	10338	8237	7470	15120	24956	7410	5281	5516
26	6559	8288	9071	9726	10338	8026	7673	15657	24458	6649	5152	5568
27	6619	8361	9071	9749	10362	7813	7633	16173	23965	6611	5041	5602
28	6676	8438	9112	9773	10362	7571	7571	16667	23514	6574	4948	5654
29	6733	8503	9157	9796	---	7330	7511	17168	23216	6536	e4861	5706
30	6786	8564	9202	9819	---	7132	7390	17742	22920	6480	4773	5740
31	6844	---	9248	9866	---	6975	---	18294	---	6406	4686	---
MAX	6844	8564	9248	9866	10362	10896	8301	18294	27084	22626	6332	5740
MIN	5116	6898	8612	9134	9912	6975	6782	7310	18788	6406	4686	4396
a	5555.31	5559.51	5561.05	5562.40	5563.45	5555.65	5556.70	5577.45	5584.10	5554.15	5549.10	5552.30
b	+1793	+1720	+684	+618	+496	-3387	+415	+10904	+4626	-16514	-1720	+1054

CAL YR 1990 MAX 28223 MIN 2967 b +5130
WTR YR 1991 MAX 27084 MIN 4396 b +689

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

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 mi².

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 National Geodetic Vertical Datum of 1929, 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.--Records good except for estimated daily discharges, which are fair. 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.

AVERAGE DISCHARGE (unadjusted).--56 years (water years 1912-15, 1940-91), 186 ft³/s, 134,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,800 ft³/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, 467 ft³/s, July 16, gage height, 3.35 ft; minimum daily, 0.02 ft³/s, Oct. 28 to Dec. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.05	e.02	e.02	e42	e29	41	123	163	e.05	295	66	72
2	e.05	e.02	e.02	44	20	48	123	169	e.05	301	61	72
3	e.05	e.02	e.02	43	20	48	122	204	e.05	327	59	65
4	e.05	e.02	e.02	43	18	19	122	216	e.05	344	59	e.10
5	e.05	e.02	e.02	43	18	e.05	122	150	e.05	344	58	e.05
6	e.04	e.02	e.02	43	18	e.05	80	114	e.05	355	49	e.05
7	e.04	e.02	7.2	43	18	e.05	11	50	13	376	50	e.05
8	e.04	e.02	12	43	18	11	e.05	e.05	28	393	56	e.05
9	e.04	e.02	12	22	18	25	e.05	e.05	9.9	408	56	e.05
10	e.04	e.02	12	11	18	35	e.05	39	e.05	412	56	e.05
11	e.04	e.02	18	11	24	45	43	101	e.05	410	56	1.2
12	e.04	e.02	27	11	27	56	116	118	e.05	419	56	2.6
13	e.04	e.02	31	11	27	66	139	144	e.05	423	56	2.6
14	e.04	e.02	31	14	27	66	96	158	e.05	428	56	2.7
15	e.04	e.02	31	18	27	105	127	158	27	437	56	2.8
16	e.04	e.02	31	19	27	154	172	97	58	448	21	2.8
17	e.03	e.02	31	19	27	153	230	62	100	449	25	2.8
18	e.03	e.02	31	17	28	169	254	63	152	451	43	3.7
19	e.03	e.02	41	17	28	181	265	63	190	450	33	e3.7
20	e.03	e.02	44	17	28	180	241	100	234	450	27	e3.7
21	e.03	e.02	44	17	28	172	238	102	251	432	27	e3.7
22	e.03	e.02	44	17	28	173	222	33	268	428	39	e3.6
23	e.03	e.02	44	17	28	180	192	e.05	293	441	68	e3.6
24	e.03	e.02	44	18	28	156	111	e.05	304	441	60	e3.6
25	e.03	e.02	44	19	28	139	94	e.05	322	438	83	e3.6
26	e.03	e.02	44	18	28	155	183	e.05	347	162	85	e3.6
27	e.03	e.02	43	18	32	163	220	e.05	354	48	77	e3.6
28	e.02	e.02	40	18	34	162	220	e.05	319	49	73	e3.5
29	e.02	e.02	40	18	---	154	220	e.05	270	55	73	e3.5
30	e.02	e.02	40	e18	---	138	202	e.05	270	59	73	e3.5
31	e.02	---	e41	e18	---	123	---	e.05	---	64	72	---
TOTAL	1.10	0.60	827.32	727	699	3117.15	4288.15	2304.55	3810.45	10537	1729	273.80
MEAN	.035	.020	26.7	23.5	25.0	101	143	74.3	127	340	55.8	9.13
MAX	.05	.02	44	44	34	181	265	216	354	451	85	72
MIN	.02	.02	.02	11	18	.05	.05	.05	.05	48	21	.05
AC-FT	2.2	1.2	1640	1440	1390	6180	8510	4570	7560	20900	3430	543

CAL YR 1990 TOTAL 30805.00 MEAN 84.4 MAX 370 MIN .02 AC-
WTR YR 1991 TOTAL 28315.12 MEAN 77.6 MAX 451 MIN .02 AC-

e Estimated.

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 mi².

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.

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.

WATER TEMPERATURE: Water years 1964-81.

SUSPENDED SEDIMENT: Water years 1974, 1978.

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 National Geodetic Vertical Datum of 1929 (U.S. Bureau of Reclamation bench mark). See WSP 2127 for history of changes prior to Aug. 26, 1957.

REMARKS.--Records good except for estimated daily discharges, which are fair. 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.

AVERAGE DISCHARGE.--92 years (water years 1900-91), 801 ft³/s, 580,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft³/s, Nov. 21, 1950, gage height, 14.5 ft, present datum, from floodmarks, from slope-area measurement of peak flow; minimum, 28 ft³/s, Dec. 18, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,510 ft³/s, Mar. 4, gage height, 5.53 ft; minimum daily, 47 ft³/s, Nov. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	67	55	e90	79	121	353	509	562	502	119	114
2	95	62	55	e90	79	131	386	495	640	506	120	113
3	91	60	67	e90	86	157	410	503	704	507	135	121
4	83	60	57	e90	82	1090	430	521	713	503	153	96
5	82	60	56	e90	88	752	465	519	672	496	154	92
6	84	64	54	e90	89	378	553	508	573	494	142	98
7	83	57	57	e90	84	326	492	519	485	503	140	122
8	81	58	70	e90	81	291	434	590	500	507	194	132
9	78	57	71	e80	89	294	452	563	520	501	194	128
10	74	56	67	e62	90	287	447	519	560	502	193	128
11	74	55	72	e64	93	292	437	520	598	494	191	92
12	71	54	82	e66	96	290	461	521	577	496	188	87
13	61	52	97	e68	97	302	480	555	595	498	193	85
14	156	54	89	e70	98	287	465	543	519	498	246	86
15	166	53	91	e72	101	312	442	555	466	499	287	88
16	154	53	92	e75	101	314	447	559	472	496	201	86
17	159	54	92	e75	101	312	481	590	487	496	163	75
18	142	53	90	e75	99	309	512	582	480	497	186	69
19	137	58	91	e75	98	300	514	536	480	518	174	68
20	122	54	e91	e75	97	291	505	545	490	519	169	73
21	112	47	e91	e75	97	288	487	513	496	505	134	81
22	103	49	e91	e75	97	282	509	492	498	488	139	82
23	93	49	e91	e75	97	321	523	609	513	493	134	81
24	89	49	e91	75	96	310	513	727	519	504	104	79
25	84	54	e91	e75	96	288	492	806	506	521	123	77
26	76	55	e90	e75	96	288	503	779	499	308	132	78
27	73	52	e90	e76	98	304	513	683	516	110	128	74
28	70	57	e90	e76	105	292	508	665	532	109	120	71
29	67	56	e90	e76	---	300	519	656	537	112	119	69
30	65	59	e90	e77	---	308	512	667	492	105	117	69
31	64	---	e90	e77	---	324	---	593	---	109	115	---
TOTAL	2978	1668	2491	2409	2610	10141	14245	17942	16201	13396	4907	2714
MEAN	96.1	55.6	80.4	77.7	93.2	327	475	579	540	432	158	90.5
MAX	166	67	97	90	105	1090	553	806	713	521	287	132
MIN	61	47	54	62	79	121	353	492	466	105	104	68
AC-FT	5910	3310	4940	4780	5180	20110	28250	35590	32130	26570	9730	5380

CAL YR 1990 TOTAL 114189 MEAN 313 MAX 1220 MIN 47 AC-FT 226500
WTR YR 1991 TOTAL 91702 MEAN 251 MAX 1090 MIN 47 AC-FT 181900

e Estimated.

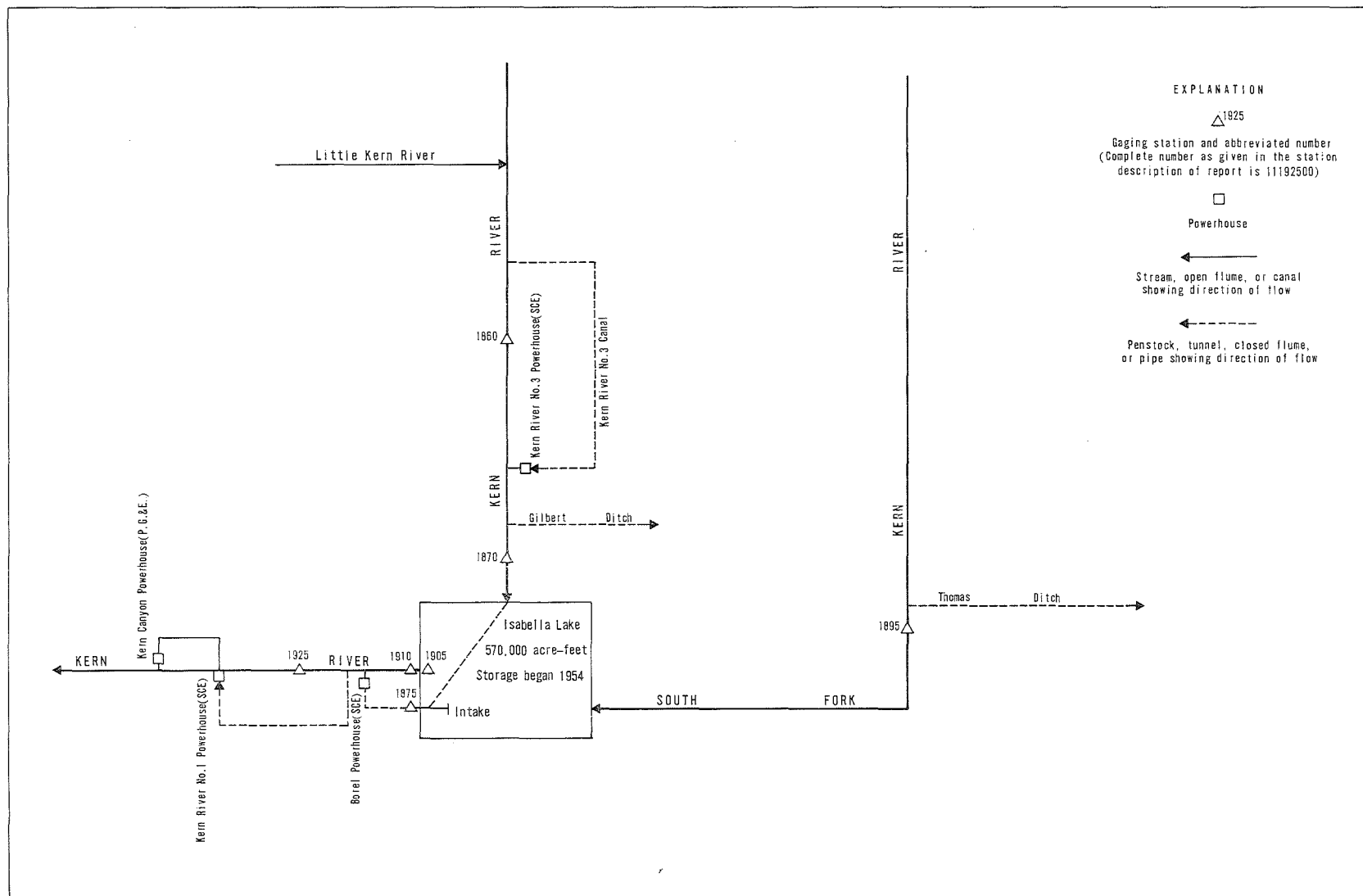


Figure 27. Diversions and storage in Kern River basin.

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 mi².

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 National Geodetic Vertical Datum of 1929, 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 diverts up to 630 ft³/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 following page.

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.

AVERAGE DISCHARGE.--River only: 9 years (water years 1912-20), 790 ft³/s, 571,900 acre-ft/yr; 64 years (water years 1921-53, 1961-91), 392 ft³/s, 284,000 acre-ft/yr.

Combined river and diversion: 71 years (water years 1921-91), 743 ft³/s, 538,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 60,000 ft³/s, Dec. 6, 1966, gage height, 22.77 ft, site and datum then in use, from floodmarks, from rating curve extended above 6,000 ft³/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 ft³/s, Dec. 6, 1966; minimum daily, 76 ft³/s, Dec. 22, 1990.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 12,400 ft³/s, Mar. 4, gage height, 13.11 ft; minimum daily, 28 ft³/s, Oct. 26-28, Nov. 1.

Combined river and diversion: Maximum daily discharge, 3,470 ft³/s, Mar. 4; minimum daily, 76 ft³/s, Dec. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	28	31	32	29	72	89	309	812	228	102	81
2	30	29	31	32	29	73	91	197	1090	372	101	81
3	30	30	30	36	29	83	91	133	1480	456	102	83
4	29	30	30	33	29	3100	97	119	1660	478	101	83
5	29	30	29	32	29	1480	97	136	1660	440	102	82
6	29	30	30	31	30	292	213	245	1700	389	102	82
7	29	31	29	32	29	114	276	420	1640	300	100	81
8	29	30	29	32	31	74	203	673	1720	223	99	81
9	29	30	30	31	29	67	187	761	1640	174	99	81
10	29	30	30	32	29	65	224	554	1750	117	99	82
11	29	30	30	31	30	68	134	405	1780	115	100	80
12	29	30	30	31	30	66	87	287	1810	113	101	81
13	29	30	30	32	30	68	85	294	1700	107	102	81
14	29	30	30	32	30	68	85	320	1590	105	101	81
15	29	30	31	32	30	69	87	317	1420	108	100	81
16	30	30	30	31	29	68	87	480	1360	98	100	80
17	30	30	34	31	29	68	86	710	1220	98	100	80
18	30	30	42	30	29	69	86	569	1020	99	100	79
19	30	30	42	31	29	71	87	446	813	98	100	79
20	30	30	52	30	29	70	86	424	681	98	100	78
21	31	30	43	30	30	69	85	469	596	98	100	79
22	31	30	39	30	29	68	85	437	549	98	101	79
23	30	30	37	32	30	68	85	584	525	98	101	79
24	29	30	40	32	29	67	87	933	497	98	101	79
25	29	30	35	31	30	67	89	1280	408	99	101	79
26	28	30	35	31	29	66	85	1410	343	101	100	79
27	28	30	36	30	29	68	87	1330	296	100	100	78
28	28	30	33	30	29	68	86	1180	240	100	100	78
29	29	30	33	30	---	70	129	1170	172	100	101	78
30	29	30	33	30	---	73	230	1170	144	101	106	80
31	34	---	34	29	---	73	---	932	---	101	105	---
TOTAL	923	898	1048	969	823	6862	3526	18694	32316	5310	3127	2405
MEAN	29.8	29.9	33.8	31.3	29.4	221	118	603	1077	171	101	80.2
MAX	39	31	52	36	31	3100	276	1410	1810	478	106	83
MIN	28	28	29	29	29	65	85	119	144	98	99	78
AC-FT	1830	1780	2080	1920	1630	13610	6990	37080	64100	10530	6200	4770

CAL YR 1990 TOTAL 27443 MEAN 75.2 MAX 519 MIN 28 AC-FT 54430
WTR YR 1991 TOTAL 76901 MEAN 211 MAX 3100 MIN 28 AC-FT 152500

BUENA VISTA LAKE BASIN

11186001 KERN RIVER NEAR KERNVILLE, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KERN RIVER AND KERN RIVER
NO. 3 CANAL NEAR KERNVILLE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	111	120	118	115	277	448	898	1390	812	308	134
2	137	114	122	118	114	183	440	785	1670	956	299	132
3	134	115	114	140	115	264	472	716	2060	1040	274	139
4	130	112	114	182	116	3470	545	647	2240	1060	256	154
5	129	114	115	165	118	1820	686	724	2240	1030	243	171
6	130	115	114	136	123	649	795	834	2280	975	231	180
7	131	109	111	126	118	447	854	1010	2220	885	220	202
8	130	106	111	121	116	370	782	1260	2310	808	210	223
9	129	114	111	118	116	346	773	1350	2230	759	201	210
10	126	112	111	118	116	307	814	1140	2340	687	195	195
11	124	110	114	118	115	314	714	988	2370	661	190	181
12	122	109	120	118	116	289	616	871	2400	636	198	178
13	120	111	118	119	116	294	585	879	2290	599	209	178
14	119	110	109	121	120	266	604	903	2180	572	205	172
15	116	110	98	120	124	274	642	899	2000	533	201	165
16	116	110	103	119	126	245	635	1060	1940	490	196	157
17	116	110	92	117	127	256	608	1290	1800	456	188	151
18	116	110	106	118	121	272	591	1150	1600	427	178	145
19	118	112	122	117	118	313	596	1030	1400	410	170	141
20	119	117	103	116	119	296	580	1000	1270	394	164	137
21	120	116	96	117	121	283	547	1050	1180	376	160	137
22	119	110	76	110	120	268	560	1020	1130	365	156	140
23	117	110	80	111	121	283	567	1160	1110	345	153	142
24	115	111	98	113	118	276	612	1510	1080	338	151	139
25	113	111	117	113	119	319	663	1860	993	338	149	134
26	112	123	120	113	119	304	593	1990	928	328	149	140
27	111	110	118	112	122	300	623	1910	881	312	148	145
28	110	110	118	112	154	307	658	1760	825	294	147	141
29	111	118	113	110	---	339	724	1750	755	281	145	138
30	111	119	110	111	---	384	819	1750	727	291	137	137
31	109	---	112	114	---	428	---	1520	---	293	136	---
TOTAL	3751	3369	3386	3761	3363	14443	19146	36714	49839	17751	5967	4738
MEAN	121	112	109	121	120	466	638	1184	1661	573	192	158
MAX	141	123	122	182	154	3470	854	1990	2400	1060	308	223
MIN	109	106	76	110	114	183	440	647	727	281	136	132
AC-FT	7440	6680	6720	7460	6670	28650	37980	72820	98860	35210	11840	9400
CAL YR 1990	TOTAL	89379	MEAN	245	MAX	890	MIN	76	AC-FT	177300		
WTR YR 1991	TOTAL	166228	MEAN	455	MAX	3470	MIN	76	AC-FT	329700		

11187000 KERN RIVER AT KERNVILLE, CA
(National stream-quality accounting network station)

LOCATION.--Lat 35°45'16", long 118°25'21", in NE 1/4 SW 1/4 sec.15, T.25 S., R.33 E., Kern County, Hydrologic Unit 18030001, on right bank 300 ft downstream from highway bridge at Kernville, 1.1 mi upstream from Caldwell Creek, 8.9 mi upstream from Isabella Dam, and 42 mi northeast of Bakersfield.
DRAINAGE AREA.--1,009 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1905 to December 1912, October 1953 to current year. Monthly discharge only for September to December 1912, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,621.57 ft above National Geodetic Vertical Datum of 1929.

January 1905 to September 1912, non-recording gage at two sites 3.5 mi downstream at different datums. October 1953 to Feb. 20, 1967, at present site and datum. Feb. 20, 1967, to Oct. 11, 1976, water-stage recorder 0.6-mi upstream at datum 2,634.57 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Slight regulation at times by operation of Kern River No. 3 Canal and powerplant. A few small diversions for irrigation upstream from station. Gilbert irrigation ditch diverts up to 7 ft³/s around station during irrigation season.

AVERAGE DISCHARGE.--45 years, 876 ft³/s, 634,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,000 ft³/s, Dec. 6, 1966, gage height, 22.2 ft, from floodmarks, present site, from rating curve extended above 11,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 70 ft³/s, Sept. 29, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known from at least 1912 to December 1966, 18.4 ft, from floodmarks, Nov. 19, 1950, site and datum then in use, discharge, 38,700 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2015	*14,100	*11.44	Jun. 12	1245	2,860	7.52

Minimum daily, 92 ft³/s, Dec. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	122	131	135	129	345	611	932	1430	773	299	154
2	146	122	133	133	128	297	580	917	1570	920	304	162
3	138	122	126	158	134	282	607	805	2010	1050	302	162
4	133	122	124	232	135	4540	699	743	2330	1060	300	160
5	129	121	126	222	137	2900	847	765	2360	1100	274	175
6	127	122	126	176	140	922	952	834	2430	1030	232	193
7	127	125	125	155	138	614	1070	998	2260	942	227	210
8	127	125	124	145	134	497	1010	1240	2320	846	222	228
9	127	123	124	142	138	448	956	1410	2320	795	215	230
10	127	125	125	140	135	393	981	1250	2420	733	205	212
11	126	122	125	139	134	395	913	1190	2570	680	198	191
12	125	120	133	140	135	374	782	988	2680	653	201	181
13	125	122	130	141	136	375	723	904	2510	613	213	182
14	125	122	121	143	135	347	739	951	2350	584	215	179
15	125	120	109	142	140	343	795	939	2210	548	215	175
16	124	117	115	141	145	307	795	1030	2050	510	212	166
17	123	119	102	137	147	319	767	1270	1810	480	206	160
18	123	119	111	139	143	325	734	1250	1640	436	189	153
19	123	119	145	137	135	399	731	1110	1450	407	180	147
20	123	125	118	137	136	387	718	1030	1380	397	176	145
21	123	128	109	138	137	373	690	1050	1270	376	172	145
22	123	121	92	130	137	350	675	1050	1190	364	161	145
23	123	120	97	127	136	365	678	1130	1120	341	159	146
24	123	121	111	133	135	364	719	1440	1100	318	159	146
25	120	122	139	132	135	420	743	1790	1030	316	155	143
26	120	137	137	130	135	421	718	2030	1010	314	152	148
27	120	124	134	130	135	417	712	1970	909	303	147	150
28	119	120	136	129	181	419	726	1760	852	284	145	149
29	116	128	128	127	---	467	749	1730	787	271	145	145
30	116	129	126	127	---	522	849	1690	742	277	142	144
31	116	---	125	130	---	585	---	1650	---	290	139	---
TOTAL	3904	3684	3807	4467	3865	19512	23269	37846	52110	18011	6261	5026
MEAN	126	123	123	144	138	629	776	1221	1737	581	202	168
MAX	162	137	145	232	181	4540	1070	2030	2680	1100	304	230
MIN	116	117	92	127	128	282	580	743	742	271	139	143
AC-FT	7740	7310	7550	8860	7670	38700	46150	75070	103400	35720	12420	9970

CAL YR 1990 TOTAL 92609 MEAN 254 MAX 860 MIN 84 AC-FT 183700
WTR YR 1991 TOTAL 181762 MEAN 498 MAX 4540 MIN 92 AC-FT 360500

11187000 KERN RIVER AT KERNVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

CHEMICAL DATA: Water years 1975 to current year.

BIOLOGICAL DATA: Water years 1978-81.

WATER TEMPERATURE: Water years 1962-88.

SEDIMENT DATA: Water years 1967-74, 1978 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1962 to September 1988.

REMARKS.--Quality of water samples obtained at the gage.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (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- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
NOV, 1990												
15...	1000	119	187	8.0	8.5	0.40	695	10.8	101	K3	K7	54
JAN, 1991												
09...	1050	140	185	8.0	3.0	0.60	690	12.6	103	K1	K12	51
MAR												
13...	1210	363	150	7.8	8.5	2.4	704	11.8	109	K2	29	45
MAY												
15...	1310	949	72	7.7	12.0	1.5	692	10.1	103	K1	28	21
JUL												
25...	0945	318	94	7.4	20.5	1.0	708	8.4	101	K60	K320	28
SEP												
18...	0950	153	150	8.2	19.5	1.3	700	8.4	100	20	K150	44

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	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	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)
NOV												
15...	0	17	2.7	18	41	1	1.7	86	0	70	13	10
JAN												
09...	0	16	2.7	17	41	1	1.9	90	0	74	14	9.9
MAR												
13...	0	14	2.3	16	43	1	1.6	69	0	57	11	6.2
MAY												
15...	0	6.9	1.0	7.1	41	0.7	0.90	35	0	29	4.6	2.7
JUL												
25...	0	8.6	1.5	8.4	39	0.7	1.0	47	0	39	5.6	2.4
SEP												
18...	0	14	2.1	15	42	1	1.6	70	0	57	8.2	5.2

11187000 KERN RIVER AT KERNVILLE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	FLUORIDE, 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 TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 15...	0.40	17	123	123	0.17	0.010	0.010	0.100	0.100	0.041	0.041	0.20
JAN 09...	0.20	18	115	124	0.16	<0.010	<0.010	<0.100	<0.100	<0.010	<0.010	<0.20
MAR 13...	0.20	18	98	104	0.13	<0.010	0.010	0.054	0.065	0.020	0.020	0.20
MAY 15...	0.20	13	59	54	0.08	<0.010	<0.010	<0.050	<0.050	0.010	0.020	0.30
JUL 25...	0.20	11	--	62	0.05	<0.010	<0.010	<0.050	0.065	<0.010	0.010	0.20
SEP 18...	0.20	14	99	95	0.13	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.20

DATE	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DIS-SOLVED (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P)	ALUMINUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYLLIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)
NOV 15...	0.010	0.010	0.010	0.010	<10	6	16	<0.5	<1.0	<1	<3	1
JAN 09...	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--
MAR 13...	0.020	<0.010	<0.010	0.010	50	4	17	0.7	<1.0	<1	<3	1
MAY 15...	<0.010	0.010	<0.010	<0.010	20	2	7	<0.5	<1.0	<1	<3	2
JUL 25...	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--
SEP 18...	0.020	<0.010	<0.010	<0.010	<10	5	15	<0.5	<1.0	<1	<3	2

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGANESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELENIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRONTIUM, DIS-SOLVED (UG/L AS SR)	VANADIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 15...	47	<1	38	4	<0.1	<10	1	<1	<1.0	110	<6	<3
JAN 09...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 13...	86	1	26	13	0.2	<10	<1	<1	<1.0	100	<6	6
MAY 15...	50	1	9	2	--	<10	<1	<1	<1.0	49	<6	4
JUL 25...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 18...	46	<1	30	6	<0.1	10	<1	<1	<1.0	91	<6	4

BUENA VISTA LAKE BASIN

11187000 KERN RIVER AT KERNVILLE, CA--Continued

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 (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 (MG/L)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAY											
15...*	1300	3.70	150	71	7.5	12.0	692	10.0	102	8	53
15...*	1305	3.70	135	71	7.8	12.0	692	10.0	102	7	60
15...*	1315	3.60	118	71	7.7	12.0	692	10.0	102	5	73
15...*	1325	2.70	94.0	71	7.8	12.0	692	10.0	102	5	65
15...*	1340	1.90	60.0	71	7.6	12.0	692	10.0	102	5	65
SEP											
18...*	0955	0.79	41.0	150	8.2	19.5	700	8.4	98	2	83
18...*	1000	1.34	60.0	150	8.2	19.5	700	8.5	99	3	75
18...*	1005	1.50	72.0	150	8.2	19.5	700	8.5	99	2	83
18...*	1010	1.80	81.0	150	8.2	19.5	700	8.4	98	2	88
18...*	1015	1.58	92.0	150	8.2	19.5	700	8.2	95	1	75

* Instantaneous discharge at the time of cross-sectional measurement: May 15, 949 ft³/s; Sept. 18, 153 ft³/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SEDI- SUS- PENDE (MG/L)	SED. SUSP. DIS- CHARGE, SUS- PENDE (T/DAY)	SIEVE DIAM. % FINER THAN .062 MM
NOV						
15...	1000	119	8.5	4	1.3	57
JAN						
09...	1145	140	3.0	1	0.39	80
MAR						
13...	1210	363	8.5	2	2.0	84
MAY						
15...	1345	949	12.0	6	15	63
JUL						
25...	1010	318	20.5	6	5.2	88
SEP						
18...	1045	153	19.5	2	0.83	81

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 mi².

PERIOD OF RECORD.--September 1911 to August 1914, January 1919 to September 1942, October 1947 to current year.
Yearly estimate for water year 1927 (incomplete) and monthly discharge only for some periods, 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 National Geodetic Vertical Datum of 1929, 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 except for estimated daily discharges, which are poor. Lowell and Thomas ditches divert upstream from station for irrigation of 160 acres below station, combined capacity, 7 ft³/s.

AVERAGE DISCHARGE.--67 years (water years 1912-13, 1920-25, 1927, 1930-42, 1947-91), 124 ft³/s, 89,840 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,700 ft³/s, Dec. 6, 1966, gage height, 18.9 ft, from floodmarks, present datum, from rating curve extended above 3,000 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2030	*2,100	*7.83	Apr. 10	1315	399	5.40

Minimum daily, 2.7 ft³/s, Sept. 4, 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	9.9	e14	e17	21	59	132	250	96	27	7.8	3.5
2	6.4	10	e14	e17	e22	46	135	235	93	25	8.2	3.5
3	6.5	11	e14	e17	e21	40	150	204	90	23	7.4	3.3
4	6.4	11	e14	e17	e20	703	184	187	90	22	7.5	2.7
5	6.2	11	e14	e17	e19	676	236	174	84	20	6.0	2.7
6	6.1	11	e14	e17	18	210	279	e165	81	19	5.9	3.8
7	6.1	11	e14	e18	17	137	311	e165	78	18	5.6	4.7
8	6.3	11	e14	e18	17	110	323	e174	74	20	5.2	4.3
9	6.4	11	e15	e18	17	97	335	e185	70	23	4.9	4.8
10	6.6	11	e15	17	17	87	359	209	64	22	4.8	4.7
11	6.7	11	e15	17	18	84	332	205	61	21	4.6	4.5
12	6.8	11	e15	16	17	70	273	181	59	15	4.7	4.3
13	6.9	11	e15	17	18	70	242	158	57	11	5.7	4.1
14	7.1	11	e15	18	18	67	256	155	53	9.7	5.8	3.9
15	7.3	12	e15	17	19	62	298	151	50	8.8	5.7	3.9
16	7.4	12	e15	17	20	54	296	145	47	8.1	5.6	3.8
17	7.5	13	e15	17	21	53	268	145	44	7.6	5.6	3.7
18	7.8	13	e15	17	21	56	257	143	42	7.0	5.2	3.5
19	8.2	13	e15	17	19	68	252	140	40	6.8	4.9	3.4
20	8.4	13	e16	17	19	62	238	136	38	6.7	4.7	3.3
21	8.6	14	e16	17	20	57	216	132	36	6.5	4.6	3.4
22	8.7	14	e16	17	19	59	213	143	34	6.2	4.3	3.4
23	8.7	13	e16	16	19	63	215	140	33	5.9	4.2	3.5
24	8.7	12	e16	17	18	67	214	126	32	5.7	4.0	3.5
25	8.6	12	e16	18	18	75	240	130	31	5.6	3.9	3.4
26	8.5	12	e16	19	17	74	229	127	30	5.5	3.8	3.6
27	8.7	13	e16	18	17	77	233	119	29	5.1	3.8	4.4
28	8.7	e14	e16	18	27	72	240	113	28	5.0	3.8	4.9
29	8.8	e14	e16	18	---	83	238	113	28	4.8	3.7	5.0
30	9.2	e14	e16	18	---	96	248	104	28	4.7	3.6	5.6
31	9.6	---	e17	19	---	118	---	102	---	6.3	3.5	---
TOTAL	234.5	359.9	470	538	534	3652	7442	4856	1620	382.0	159.0	117.1
MEAN	7.56	12.0	15.2	17.4	19.1	118	248	157	54.0	12.3	5.13	3.90
MAX	9.6	14	17	19	27	703	359	250	96	27	8.2	5.6
MIN	6.1	9.9	14	16	17	40	132	102	28	4.7	3.5	2.7
AC-FT	465	714	932	1070	1060	7240	14760	9630	3210	758	315	232

CAL YR 1990 TOTAL 7523.8 MEAN 20.6 MAX 115 MIN 1.9 AC-FT 14920
WTR YR 1991 TOTAL 20364.5 MEAN 55.8 MAX 703 MIN 2.7 AC-FT 40390

e Estimated.

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.

WATER TEMPERATURE: Water years 1971 to current year.

WATER TEMPERATURE: November 1970 to current year.

WATER TEMPERATURE: Maximum recorded, 25.0 °C, Aug. 24, Sept. 3; minimum recorded, 3.5 °C, Dec. 9.

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.5	18.0	14.0	13.0	7.0	6.0	---	---	---	---	---	---
2	19.0	17.0	13.5	12.5	7.0	5.5	---	---	---	---	---	---
3	19.5	17.5	13.0	12.0	7.0	6.0	---	---	---	---	---	---
4	19.0	17.5	12.5	11.5	7.0	5.0	---	---	---	---	---	---
5	18.5	17.5	12.0	11.0	6.0	5.0	---	---	---	---	---	---
6	18.5	16.5	12.0	11.0	6.0	4.5	---	---	---	---	---	---
7	18.5	17.5	12.0	10.5	6.5	5.0	---	---	---	---	---	---
8	18.0	16.5	11.0	10.0	6.0	4.5	---	---	---	---	---	---
9	18.0	16.5	11.0	8.5	6.0	3.5	---	---	---	---	---	---
10	17.5	16.0	10.5	9.5	---	---	---	---	---	---	---	---
11	17.0	16.0	10.5	9.0	---	---	---	---	---	---	---	---
12	17.0	14.0	10.5	9.0	---	---	---	---	---	---	---	---
13	18.0	15.5	11.0	9.0	---	---	---	---	---	---	---	---
14	17.5	13.5	10.0	9.0	---	---	---	---	---	---	---	---
15	16.5	13.0	10.0	9.0	---	---	---	---	---	---	---	---
16	16.5	14.5	10.5	9.0	---	---	---	---	---	---	---	---
17	16.0	15.0	9.5	9.0	---	---	---	---	---	---	---	---
18	17.0	14.5	10.0	9.0	---	---	---	---	---	---	---	---
19	15.5	14.5	9.5	9.0	---	---	---	---	---	---	---	---
20	15.5	14.5	9.5	9.0	---	---	---	---	---	---	---	---
21	15.5	14.5	9.5	8.5	---	---	---	---	---	---	---	---
22	15.0	14.0	9.0	8.5	---	---	---	---	---	---	---	---
23	15.0	14.0	9.0	8.0	---	---	---	---	---	---	---	---
24	15.0	14.0	8.5	8.0	---	---	---	---	---	---	---	---
25	15.0	14.0	8.0	7.5	---	---	---	---	---	---	---	---
26	14.5	13.5	8.0	7.5	---	---	---	---	---	---	---	---
27	14.5	13.5	8.0	7.0	---	---	---	---	---	---	---	---
28	14.5	13.5	7.5	7.0	---	---	---	---	---	---	---	---
29	14.5	13.5	7.5	4.5	---	---	---	---	---	---	---	---
30	14.0	13.0	9.5	4.0	---	---	---	---	---	---	---	---
31	14.0	13.0	---	---	---	---	---	---	---	---	---	---
MONTH	19.5	13.0	14.0	4.0	---	---	---	---	---	---	---	---

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

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 mi².

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 National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Kern River No. 1 conduit diverts up to about 420 ft³/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 (station 11190500). Many diversions upstream from station for irrigation. See schematic diagram of Kern River basin. For records of combined discharge of river and conduit, see following page.

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.

AVERAGE DISCHARGE.--River only, 41 years, 634 ft³/s, 459,300 acre-ft/yr.
Combined river and diversion, 41 years, 967 ft³/s, 700,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, prior to regulation by Isabella Lake in 1954: Maximum discharge, 40,000 ft³/s, Nov. 19, 1950, gage height, 30.7 ft, from rating curve extended above 8,700 ft³/s on basis of computation of peak flow over dam (basic data for computation provided by Southern California Edison Co.); minimum daily, 0.7 ft³/s, Nov. 17-19, 1951. Since regulation by Isabella Lake: Maximum discharge, 10,100 ft³/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 ft³/s, Nov. 19, 1950; minimum daily, 123 ft³/s, Sept. 22, 1951. Since regulation by Isabella Lake: Maximum discharge, 10,100 ft³/s, Dec. 6, 1966; minimum daily, 10 ft³/s, Dec. 17, 1968.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 1,100 ft³/s, July 17, gage height, 8.70 ft; minimum daily, 4.4 ft³/s, Jan. 7.

Combined flow: Maximum daily discharge, 1,340 ft³/s, June 18, 19; minimum daily, 100 ft³/s, Dec. 19, 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	6.4	5.0	4.7	6.0	9.2	194	84	249	783	742	60
2	9.4	6.3	5.0	4.7	6.0	23	186	127	235	794	796	60
3	8.4	5.8	5.0	4.8	6.0	6.1	194	119	235	769	764	60
4	8.1	5.6	5.0	5.0	6.0	116	198	56	253	788	729	63
5	7.9	5.4	5.1	4.7	6.0	213	189	46	283	759	725	61
6	7.8	5.4	5.1	12	6.0	70	82	27	349	780	677	60
7	7.6	5.4	5.0	4.4	5.8	49	79	26	384	783	699	60
8	7.5	5.2	5.0	4.6	5.7	38	374	26	407	820	742	60
9	7.3	5.0	5.0	4.7	5.7	19	326	29	473	830	735	59
10	7.2	4.8	4.7	4.7	5.7	25	31	79	554	785	712	59
11	7.0	4.7	5.1	4.7	5.7	29	28	87	623	755	718	59
12	6.9	4.7	5.2	5.0	5.7	25	27	83	741	708	773	58
13	6.8	4.7	5.4	5.2	5.7	63	27	82	838	610	748	59
14	6.6	4.8	5.4	5.2	5.7	49	27	40	828	566	747	59
15	6.7	5.0	5.5	5.3	5.8	33	26	27	751	741	705	58
16	7.8	5.0	5.5	5.3	5.7	27	26	26	782	694	592	59
17	8.4	5.4	5.5	5.3	6.0	36	26	26	924	901	445	58
18	6.5	5.8	5.4	6.3	5.8	37	26	48	930	779	310	57
19	6.5	5.7	5.5	5.4	5.6	76	26	28	933	694	298	57
20	6.8	5.9	6.5	5.4	5.7	57	26	26	902	522	249	58
21	6.9	5.6	5.0	5.4	6.0	58	26	37	868	509	69	58
22	6.8	5.5	5.1	5.4	6.0	26	26	41	824	749	60	58
23	6.8	5.5	4.9	5.4	5.9	25	71	59	850	970	58	58
24	6.3	5.1	4.7	5.4	6.0	67	70	87	823	980	64	57
25	6.0	5.0	4.7	5.4	6.0	79	27	96	798	1070	58	57
26	6.0	5.2	4.7	5.5	6.0	118	27	75	795	951	58	57
27	6.0	4.6	4.7	5.5	5.9	104	27	102	769	751	58	57
28	6.1	4.7	4.8	5.7	6.0	89	27	229	768	716	58	56
29	6.2	4.7	4.7	5.7	---	85	26	225	730	726	60	56
30	6.2	4.8	4.7	5.9	---	140	29	283	712	785	59	56
31	6.2	---	4.7	5.8	---	185	---	218	---	753	60	---
TOTAL	231.7	157.7	157.6	168.5	164.1	1976.3	2474	2544	19611	23821	13568	1754
MEAN	7.47	5.26	5.08	5.44	5.86	63.8	82.5	82.1	654	768	438	58.5
MAX	21	6.4	6.5	12	6.0	213	374	283	933	1070	796	63
MIN	6.0	4.6	4.7	4.4	5.6	6.1	26	26	235	509	58	56
AC-FT	460	313	313	334	325	3920	4910	5050	38900	47250	26910	3480

CAL YR 1990 TOTAL 13066.7 MEAN 35.8 MAX 292 MIN 4.6 AC-FT 25920
WTR YR 1991 TOTAL 66627.9 MEAN 183 MAX 1070 MIN 4.4 AC-FT 132200

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COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KERN RIVER AND KERN RIVER NO. 1 CONDUIT
NEAR DEMOCRAT SPRINGS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

CAL YR 1990	TOTAL 107756	MEAN 295	MAX 662	MIN 98	AC-FT 213700
WTR YR 1991	TOTAL 160663	MEAN 440	MAX 1340	MIN 100	AC-FT 318700

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 left bank at diversion dam 16.4 mi northeast of Bakersfield.
DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder and sharp-crested rectangular weir. Elevation of gage is 975 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated at diversion dam immediately upstream and does not include leakage through diversion dam radial gates. Discharge exceeding fishwater requirement bypassed the gage Oct. 13-26, and Oct. 31 to Nov. 1 when maintenance was being performed. Bypass flow entered the main channel immediately downstream from the gage. See schematic diagram of Kern River basin. No records computed above 36 ft³/s.

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.--Minimum daily, 6.0 ft³/s, Dec. 18, 1988.EXTREMES FOR CURRENT YEAR.--Minimum daily, 13 ft³/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	---	25	16	e19	15	16	28	29	31	31	31
2	27	15	25	16	14	15	15	28	29	28	31	31
3	27	15	25	16	14	14	14	29	29	26	31	31
4	27	15	25	16	14	15	15	28	29	27	31	31
5	27	17	25	16	14	e15	14	28	29	27	31	31
6	27	18	25	16	13	e15	15	29	32	27	31	31
7	27	17	25	16	13	e15	15	29	33	27	31	31
8	20	21	23	16	13	e16	16	29	e33	31	31	31
9	16	24	20	16	13	e16	15	29	e33	e29	31	31
10	17	24	23	16	13	e16	14	29	e33	e29	31	31
11	17	24	26	16	13	e14	14	29	34	e28	31	31
12	13	25	26	16	14	e16	14	29	35	e28	31	31
13	---	25	18	16	13	e16	15	29	36	e28	31	31
14	---	25	14	16	14	e16	15	29	36	e28	31	31
15	---	25	14	16	14	e16	15	29	36	e28	31	31
16	---	25	15	15	14	14	15	29	37	e28	31	31
17	---	25	14	15	14	14	15	29	36	28	31	31
18	---	25	15	15	14	14	15	29	35	30	27	32
19	---	25	15	15	14	14	15	29	34	29	27	32
20	---	25	15	15	13	14	15	29	33	30	28	31
21	---	25	15	15	13	14	15	29	33	27	29	31
22	---	25	16	15	13	16	15	28	33	30	30	31
23	---	25	16	15	13	15	15	29	34	30	29	31
24	---	25	16	e13	14	14	15	29	33	31	30	31
25	---	25	16	e14	14	15	15	29	33	30	29	31
26	---	25	16	e14	14	14	15	29	34	30	30	31
27	18	25	16	e15	14	15	15	29	34	31	30	31
28	18	25	16	e16	15	15	15	29	34	31	30	31
29	17	25	16	e16	---	14	15	29	34	31	30	31
30	17	25	16	e17	---	14	23	30	34	31	30	31
31	---	---	16	e18	---	14	---	29	---	31	31	---
TOTAL	---	---	588	483	387	460	455	895	997	900	937	932
MEAN	---	---	19.0	15.6	13.8	14.8	15.2	28.9	33.2	29.0	30.2	31.1
MAX	---	---	26	18	19	16	23	30	37	31	31	32
MIN	---	---	14	13	13	14	14	28	29	26	27	31
AC-FT	---	---	1170	958	768	912	902	1780	1980	1790	1860	1850

The following table is for random instantaneous discharges for leakage around radial gates and is in addition to recorded discharge:

Date	Discharge (ft ³ /s)	Date	Discharge (ft ³ /s)	Date	Discharge (ft ³ /s)	Date	Discharge (ft ³ /s)	Date	Discharge (ft ³ /s)
Jan. 24	17	May 17	1.1	June 5	1.1	Aug. 30	.74	Sept. 13	.74
Feb. 1	1.5	May 19	1.0	Aug. 21	2.0	Aug. 31	.88	Sept. 16	1.0
Feb. 24	1.5	May 20	1.1	Aug. 22	.88	Sept. 3	.74	Sept. 18	1.0
Apr. 17	1.1	May 21	1.5	Aug. 23	.88	Sept. 4	.74	Sept. 19	1.0
May 13	1.1	May 24	1.5	Aug. 26	.74	Sept. 5	.74	Sept. 20	1.0
May 14	1.1	May 28	1.1	Aug. 27	.74	Sept. 6	.74	Sept. 23	1.0
May 15	1.1	May 29	1.1	Aug. 28	.74	Sept. 9	.74	Sept. 25	1.0
May 16	1.1	May 31	1.1	Aug. 29	.74	Sept. 10	.48	Sept. 27	1.0
								Sept. 30	1.0

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929, 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.--Records good. No storage or diversion upstream from station.

AVERAGE DISCHARGE.--31 years (water years 1943-53, 1972-91), 9.61 ft³/s, 6,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	0130	*111	*2.04	Mar. 27	0530	34	1.46

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.55	3.5	12	4.2	2.4	e.00	.00	.00
2	.00	.00	.00	.00	.54	18	12	4.2	1.9	e.00	.00	.00
3	.00	.00	.00	.00	.58	6.9	10	3.8	1.6	.00	.00	.00
4	.00	.00	.00	.00	.57	6.6	9.9	3.5	1.5	.00	.00	.00
5	.00	.00	.00	.00	.62	40	11	3.3	1.2	.00	.00	.00
6	.00	.00	.00	.00	.66	11	12	3.4	1.1	.00	.00	.00
7	.00	.00	.00	.00	.69	6.0	11	3.7	.97	.00	.00	.00
8	.00	.00	.00	.00	.72	4.0	10	3.8	.90	.00	.00	.00
9	.00	.00	.00	.00	.68	3.4	9.8	3.9	.75	.00	.00	.00
10	.00	.00	.00	.00	.68	2.9	9.8	3.8	.62	.00	.00	.00
11	.00	.00	.00	.00	.71	3.3	9.2	3.4	.42	.00	.00	.00
12	.00	.00	.00	.00	.74	3.3	7.8	3.1	.30	.00	.00	.00
13	.00	.00	.00	.00	.74	3.5	6.8	3.2	.12	.00	.00	.00
14	.00	.00	.00	.00	.81	5.9	6.4	3.6	e.00	.00	.00	.00
15	.00	.00	.00	.00	.83	4.7	6.5	3.7	e.00	.00	.00	.00
16	.00	.00	.00	.08	.82	4.3	6.5	3.5	e.00	.00	.00	.00
17	.00	.00	.00	.44	.77	4.0	6.3	3.5	e.00	.00	.00	.00
18	.00	.00	.00	.59	.78	5.3	5.9	3.7	e.00	.00	.00	.00
19	.00	.00	.00	.59	.74	12	5.6	3.8	e.00	.00	.00	.00
20	.00	.00	.00	.55	.83	16	6.0	3.6	e.00	.00	.00	.00
21	.00	.00	.00	.49	.92	18	6.2	3.4	e.00	.00	.00	.00
22	.00	.00	.00	.43	.92	11	5.5	3.2	e.00	.00	.00	.00
23	.00	.00	.00	.39	.92	8.9	5.2	2.9	e.00	.00	.00	.00
24	.00	.00	.00	.37	.92	8.1	5.0	2.9	e.00	.00	.00	e.00
25	.00	.00	.00	.39	.87	13	5.2	2.8	e.00	.00	.00	e.00
26	.00	.00	.00	.43	.84	17	5.2	2.8	e.00	.00	.00	e.00
27	.00	.00	.00	.46	.94	26	4.6	2.6	e.00	.00	.00	e.00
28	.00	.00	.00	.53	1.0	15	4.3	2.4	e.00	.00	.00	e.00
29	.00	.00	.00	.52	---	12	4.3	2.2	e.00	.00	.00	e.00
30	.00	.00	.00	.49	---	11	4.1	2.4	e.00	.00	.00	e.00
31	.00	---	.00	.53	---	11	---	2.8	---	.00	.00	---
TOTAL	0.00	0.00	0.00	7.28	21.39	315.6	224.1	103.1	13.78	0.00	0.00	0.00
MEAN	.000	.000	.000	.23	.76	10.2	7.47	3.33	.46	.000	.000	.000
MAX	.00	.00	.00	.59	1.0	40	12	4.2	2.4	.00	.00	.00
MIN	.00	.00	.00	.00	.54	2.9	4.1	2.2	.00	.00	.00	.00
AC-FT	.00	.00	.00	14	42	626	445	204	27	.00	.00	.00

CAL YR 1990 TOTAL 389.67 MEAN 1.07 MAX 5.8 MIN .00 AC-FT 773
WTR YR 1991 TOTAL 685.25 MEAN 1.88 MAX 40 MIN .00 AC-FT 1360

e Estimated.

TULARE LAKE BASIN

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 mi².

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 980 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. No storage or diversion upstream from station.

AVERAGE DISCHARGE.--23 years, 32.4 ft³/s, 23,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,340 ft³/s, Feb. 24, 1969, gage height, 9.85 ft, from rating curve extended above 800 ft³/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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2115	*1,050	*6.69				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.62	2.2	4.6	5.1	4.8	25	57	22	13	4.0	.00	.00
2	.35	2.6	4.6	5.1	4.7	44	47	21	10	4.5	.06	.00
3	.23	2.9	4.6	6.3	4.6	19	41	20	9.9	3.4	.33	.00
4	.14	3.1	4.5	19	4.8	223	45	19	9.8	2.4	.33	.00
5	.07	2.8	4.4	16	4.9	141	54	17	9.4	1.6	.10	.00
6	.49	3.0	4.5	9.0	5.1	44	58	17	8.3	1.2	.03	.00
7	.72	2.9	4.5	7.4	4.8	26	50	18	8.2	1.0	.00	.00
8	1.2	3.1	4.4	6.8	3.7	20	44	18	7.8	.79	.00	.00
9	1.4	3.0	4.3	6.5	3.3	17	40	18	5.9	1.7	.00	.00
10	1.1	2.5	4.3	6.3	3.7	15	42	19	5.6	1.8	.00	.00
11	1.2	2.4	4.3	6.2	3.6	20	37	18	6.6	1.6	.00	.00
12	1.2	2.5	4.4	6.1	4.9	17	30	15	6.7	1.9	.00	.00
13	1.3	2.8	4.6	6.1	5.2	22	27	16	6.4	1.8	.00	.00
14	1.3	2.8	4.7	6.2	5.0	27	27	17	6.2	.81	.00	.00
15	1.1	2.9	4.8	6.2	4.8	22	28	18	6.1	.52	.00	.00
16	.74	3.1	5.0	6.2	5.1	20	28	17	4.5	1.2	.00	.00
17	.48	3.2	5.0	6.1	4.8	20	26	17	4.5	1.3	.00	.00
18	.42	2.9	5.0	5.9	4.5	22	24	17	5.5	1.5	.00	.00
19	.61	2.6	5.8	5.8	4.8	e41	24	18	4.9	1.5	.00	.00
20	1.1	2.8	7.0	5.7	4.7	e49	25	17	4.1	.68	.00	.00
21	1.3	4.5	5.4	5.6	4.4	e50	25	16	4.6	.38	.00	.00
22	1.5	3.7	4.7	5.4	4.2	32	23	15	4.8	.11	.00	.00
23	1.5	3.8	4.0	5.6	4.4	32	23	15	4.2	.18	.00	.00
24	1.8	3.6	4.7	5.6	4.1	29	23	14	3.8	.83	.00	.00
25	1.7	4.0	5.1	5.5	4.8	51	24	13	5.5	.82	.00	.00
26	1.6	5.8	5.2	5.5	4.9	57	23	11	5.5	.81	.00	.00
27	1.4	5.3	6.0	5.5	4.9	58	21	11	5.4	.80	.00	.00
28	1.4	4.6	5.2	5.5	6.7	41	20	12	5.1	.47	.00	.00
29	1.3	4.5	5.4	5.3	---	41	20	12	5.5	.17	.00	.00
30	1.5	4.6	5.1	5.0	---	41	20	13	4.8	.02	.00	.00
31	1.8	---	5.1	5.0	---	52	---	15	---	.00	.00	---
TOTAL	32.57	100.5	151.2	207.5	130.2	1318	976	506	192.6	39.79	0.85	0.00
MEAN	1.05	3.35	4.88	6.69	4.65	42.5	32.5	16.3	6.42	1.28	.027	.000
MAX	1.8	5.8	7.0	19	6.7	223	58	22	13	4.5	.33	.00
MIN	.07	2.2	4.0	5.0	3.3	15	20	11	3.8	.00	.00	.00
AC-FT	65	199	300	412	258	2610	1940	1000	382	79	1.7	.00

CAL YR 1990 TOTAL 2261.73 MEAN 6.20 MAX 38 MIN .00 AC-FT 4490
WTR YR 1991 TOTAL 3655.21 MEAN 10.0 MAX 223 MIN .00 AC-FT 7250

e Estimated.

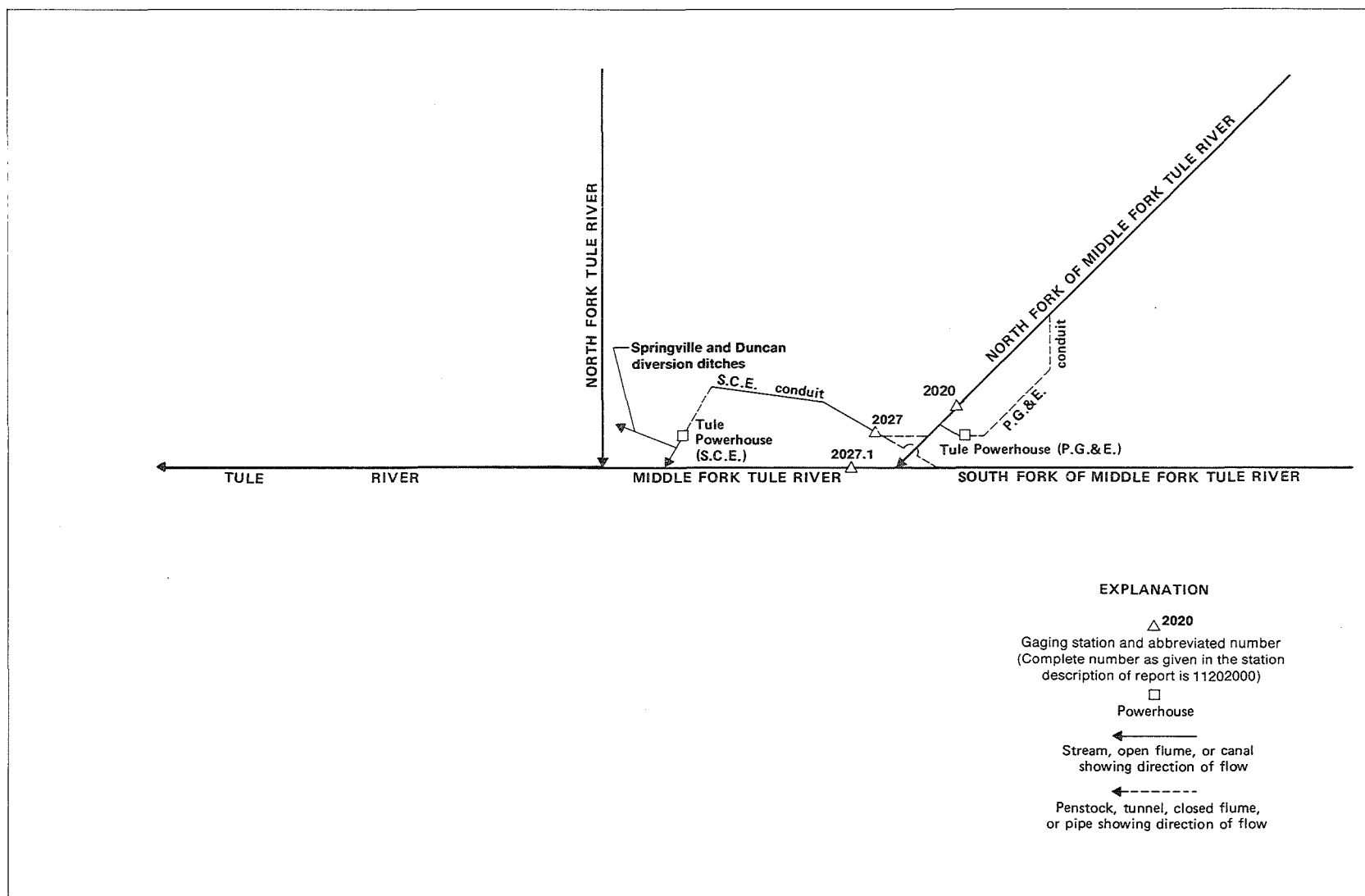


Figure 28. Diversions and storage in Tule River basin.

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 mi².

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.

REVISED RECORDS.--WSP 1445: 1951. WSP 1930: Drainage area.

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Pacific Gas and Electric Co. conduit diverts 2.5 mi above station; water is returned to river 1.1 mi below station after passing through Tule River powerplant. See schematic diagram of Tule River basin. For records of combined discharge of river and powerplant, see following page.

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.

AVERAGE DISCHARGE.--River only: 52 years, 26.2 ft³/s, 18,980 acre-ft/yr.

Combined river and diversion: 52 years, 58.1 ft³/s, 42,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 16,900 ft³/s, Dec. 6, 1966, gage height, 13.83 ft, from floodmarks, from rating curve extended above 1,820 ft³/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 ft³/s, Dec. 6, 1966; minimum daily, 6.7 ft³/s, Aug. 15, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 2,210 ft³/s, Mar. 4, gage height, 7.42 ft; minimum daily, 0.38 ft³/s, Oct. 10-13.

Combined flow: Maximum daily discharge, 663 ft³/s, Mar. 4; minimum daily, 7.3 ft³/s, Oct. 1.

REVISIONS.--Revised figures of combined discharge for the 1990 water year, superseding those published in the report for 1990, are given below.

EXTREMES FOR 1990 WATER YEAR.--

Combined flow: Maximum daily discharge, 76 ft³/s, May 28; minimum daily discharge, 8.5 ft³/s, July 9.

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF NORTH FORK OF MIDDLE FORK TULE RIVER
AND PACIFIC GAS & ELECTRIC CO. TULE RIVER POWERPLANT NEAR SPRINGVILLE, CA,
WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	13	14	13	17	31	29	36	46	16	e10	10
2	14	14	14	16	17	27	30	36	46	15	e10	10
3	13	13	14	14	17	35	31	36	39	16	e10	10
4	13	13	14	14	17	32	31	38	35	15	e10	10
5	12	13	14	13	16	32	28	40	35	16	e10	10
6	13	13	13	13	17	26	37	43	32	16	e10	10
7	13	13	14	13	17	29	37	47	29	15	e10	10
8	12	13	13	13	16	30	37	41	27	11	e10	10
9	13	13	14	13	17	28	32	41	26	8.5	e10	10
10	12	13	13	14	17	30	33	40	26	11	e10	10
11	12	13	14	13	18	34	37	36	24	12	e10	9.6
12	13	12	13	13	20	29	44	34	23	12	e10	9.3
13	14	12	13	24	20	26	45	33	21	12	e10	10
14	13	13	13	25	16	25	49	31	22	11	e10	9.6
15	12	13	13	16	17	25	49	30	21	11	e10	10
16	14	12	14	18	17	33	50	30	22	11	e10	9.3
17	12	12	13	17	17	35	47	29	23	11	e11	9.6
18	12	12	13	16	19	39	40	27	21	11	11	9.6
19	13	13	13	16	18	41	38	27	19	e11	11	9.6
20	13	12	13	16	17	43	39	26	19	e11	11	9.7
21	13	13	13	17	18	50	38	26	19	e11	11	9.4
22	14	12	13	16	19	48	37	25	19	e10	12	9.8
23	14	12	13	16	22	49	45	25	18	e10	11	9.5
24	14	13	13	15	25	48	43	29	18	e10	12	10
25	18	13	13	16	26	45	39	27	17	e10	11	10
26	16	27	13	16	26	42	40	24	17	e10	12	10
27	15	14	13	15	31	44	45	24	17	e10	10	e10
28	15	15	13	15	32	40	53	76	17	e10	10	e10
29	15	14	13	15	---	31	52	45	16	e10	10	e10
30	14	13	13	15	---	30	47	53	16	e10	10	e10
31	14	---	13	16	---	29	---	49	---	e10	10	---
TOTAL	419	401	412	482	546	1086	1202	1104	730	363.5	323	295.0
MEAN	13.5	13.4	13.3	15.5	19.5	35.0	40.1	35.6	24.3	11.7	10.4	9.83
MAX	18	27	14	25	32	50	53	76	46	16	12	10
MIN	12	12	13	13	16	25	28	24	16	8.5	10	9.3
AC-FT	831	795	817	956	1080	2150	2380	2190	1450	721	641	585

CAL YR 1989 TOTAL 11182 MEAN 30.6 MAX 130 MIN 10 AC-FT 22180
WTR YR 1990 TOTAL 7363.5 MEAN 20.2 MAX 76 MIN 8.5 AC-FT 14610

e Estimated.

11202000 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1.1	.74	.62	.82	9.0	11	20	23	.90	1.3	.66
2	.71	1.8	.71	.67	.82	5.1	8.3	8.6	28	2.1	.95	.65
3	.58	.69	.62	1.3	.82	12	6.9	6.0	35	1.6	.70	.64
4	.46	.53	.55	2.6	.82	629	8.4	2.5	42	1.3	.71	.63
5	.52	.50	.55	1.2	.82	156	24	3.3	38	.93	.77	.63
6	.50	.50	.55	.91	.82	17	35	14	31	.86	.81	.59
7	.47	.50	.55	.84	.82	8.6	25	26	25	.93	.72	.58
8	.42	.50	.55	.74	.78	6.1	16	46	25	1.0	.69	.62
9	.39	.50	3.6	.72	.74	3.0	19	38	21	.86	.73	.64
10	.38	.50	.79	.67	.74	2.8	20	22	21	.85	.78	.71
11	.38	.53	.51	.67	.74	3.9	9.8	13	18	.95	.79	.75
12	.38	.60	.55	.64	.74	3.2	4.0	6.4	16	.90	.81	.74
13	.38	.60	.60	.61	.74	5.1	3.4	5.2	12	.87	.89	.74
14	.40	.63	.61	.67	.74	4.7	3.3	4.7	7.3	.85	.84	.74
15	.39	.66	.62	.67	.74	4.7	4.1	5.1	1.9	.81	.97	.78
16	.41	.65	.67	.67	.74	4.1	3.8	23	1.4	.80	1.1	.75
17	.41	1.9	.67	.67	.83	4.2	3.0	34	1.2	.77	1.0	.70
18	.44	.76	.67	.67	.84	5.8	2.8	21	1.1	.68	.82	.69
19	.50	1.3	.78	.67	.82	7.0	2.7	13	1.0	.74	.71	.61
20	.50	2.9	.81	.67	.82	6.9	2.8	13	1.1	.79	.66	.58
21	.49	.89	.71	.67	.75	6.7	2.9	13	1.0	.73	.63	.60
22	.44	.69	.65	.67	.74	6.7	2.7	8.2	1.0	.67	.62	.62
23	.44	.67	.67	.73	.74	6.6	2.9	16	.92	.97	.62	.63
24	.46	.67	.67	.70	.74	6.4	2.7	36	.93	.97	.59	.62
25	.46	.69	.61	.67	.74	11	3.1	57	.96	.67	.77	.62
26	.47	1.5	.61	.69	.67	8.7	2.8	59	1.1	.66	.79	.62
27	.50	.84	.61	.74	.68	7.6	2.6	48	.96	.61	.83	.68
28	.52	.77	.61	.74	1.6	6.9	2.5	39	.94	.57	.75	.74
29	.56	.74	.61	.74	---	7.3	2.5	38	1.0	.89	.68	.73
30	1.2	.76	.61	1.0	---	7.8	9.3	34	1.0	1.1	.67	2.0
31	.57	---	.61	.88	---	9.9	---	23	---	1.3	.66	---
TOTAL	16.73	25.87	22.67	25.11	22.41	983.8	247.3	696.0	359.81	28.63	24.36	21.29
MEAN	.54	.86	.73	.81	.80	31.7	8.24	22.5	12.0	.92	.79	.71
MAX	2.0	2.9	3.6	2.6	1.6	629	35	59	42	2.1	1.3	2.0
MIN	.38	.50	.51	.61	.67	2.8	2.5	2.5	.92	.57	.59	.58
AC-FT	33	51	45	50	44	1950	491	1380	714	57	48	42

CAL YR 1990 TOTAL 753.98 MEAN 2.07 MAX 16 MIN .38 AC-FT 1500
WTR YR 1991 TOTAL 2473.98 MEAN 6.78 MAX 629 MIN .38 AC-FT 4910

TULARE LAKE BASIN

11202001 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF NORTH FORK OF MIDDLE FORK TULE RIVER
AND PACIFIC GAS & ELECTRIC CO. TULE RIVER POWERPLANT NEAR SPRINGVILLE, CADISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	11	13	13	13	32	63	87	89	31	15	13
2	10	13	12	13	13	14	52	72	95	28	17	13
3	11	12	12	15	12	35	56	68	102	28	16	13
4	10	12	12	37	12	663	72	60	109	25	16	13
5	9.7	11	10	16	12	219	92	69	103	25	17	13
6	10	11	8.7	15	13	85	101	81	98	24	17	8.1
7	10	11	8.4	15	12	55	91	94	91	23	17	13
8	11	11	12	14	13	44	82	112	91	26	15	13
9	10	11	11	13	12	42	84	105	87	27	15	14
10	10	11	12	14	12	35	87	89	86	24	15	14
11	10	12	12	13	12	39	57	79	81	24	15	13
12	10	12	12	13	12	34	66	73	81	23	16	13
13	10	12	8.5	13	12	30	60	72	77	22	16	13
14	11	11	12	13	13	30	60	71	72	22	15	13
15	10	12	12	14	12	31	64	72	64	20	16	13
16	10	12	13	13	13	34	66	89	62	20	15	13
17	10	11	12	13	13	35	60	101	56	21	16	14
18	10	11	12	13	13	37	55	88	54	20	16	13
19	10	11	13	13	13	24	56	78	48	20	15	13
20	10	14	12	13	13	24	61	79	48	20	15	13
21	11	12	12	13	13	30	54	81	45	20	15	13
22	11	11	14	13	12	24	43	74	41	19	14	13
23	10	11	12	12	12	31	57	79	41	18	14	13
24	11	13	13	13	12	28	52	103	41	18	14	13
25	10	12	12	13	12	42	61	125	35	18	14	12
26	11	13	13	12	12	35	61	125	37	18	14	12
27	10	14	13	12	12	33	48	115	36	18	14	12
28	12	14	13	12	16	29	56	106	35	13	14	12
29	9.8	14	12	12	---	29	63	104	36	7.5	14	12
30	11	13	12	12	---	38	76	100	33	17	14	10
31	10	---	13	12	---	47	---	90	---	16	13	---
TOTAL	316.8	359	368.6	432	351	1908	1956	2741	1974	655.5	469	380.1
MEAN	10.2	12.0	11.9	13.9	12.5	61.5	65.2	88.4	65.8	21.1	15.1	12.7
MAX	12	14	14	37	16	663	101	125	109	31	17	14
MIN	7.3	11	8.4	12	12	14	43	60	33	7.5	13	8.1
AC-FT	628	712	731	857	696	3780	3880	5440	3920	1300	930	754
CAL YR 1990	TOTAL	7175.9	MEAN	19.7	MAX	76	MIN	7.3	AC-FT	14230		
WTR YR 1991	TOTAL	11911.0	MEAN	32.6	MAX	663	MIN	7.3	AC-FT	23630		

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 and 5 mi east of Porterville.

WATER TEMPERATURE: Water years 1971 to current year.

WATER TEMPERATURE: November 1970 to current year.

WATER TEMPERATURE: Maximum recorded, 34.5 °C, Aug. 23, 1990; minimum recorded, 3.0 °C, Jan. 3, 1975.

WATER TEMPERATURE: Maximum recorded, 30.5 °C, Oct. 4; minimum recorded, 8.5 °C, on several days from November to January.

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	29.0	22.0	21.5	15.5	12.0	9.0	---	---	13.0	9.0	---	---
2	29.5	20.0	19.5	14.0	12.5	8.5	---	---	---	---	---	---
3	29.5	20.0	19.5	12.0	13.0	8.5	---	---	---	---	---	---
4	30.5	19.5	19.5	11.5	12.0	9.0	---	---	---	---	---	---
5	29.0	19.5	19.0	11.5	12.0	9.0	---	---	---	---	---	---
6	27.5	20.0	18.0	11.5	12.0	8.5	---	---	---	---	---	---
7	26.5	18.5	17.5	11.0	13.0	9.0	---	---	---	---	---	---
8	23.5	22.5	16.0	11.0	13.5	9.0	---	---	---	---	---	---
9	23.5	22.5	15.5	15.0	12.0	8.5	---	---	---	---	---	---
10	23.0	22.0	16.0	15.0	13.5	8.5	12.5	8.5	---	---	---	---
11	23.0	22.0	15.5	15.0	15.0	10.5	12.5	9.0	---	---	---	---
12	22.5	21.5	15.5	14.5	12.0	11.5	12.5	9.5	---	---	---	---
13	22.5	21.5	15.5	15.0	12.0	11.5	13.0	10.5	---	---	---	---
14	22.0	21.5	15.5	14.5	13.0	10.0	12.5	11.5	---	---	---	---
15	26.5	19.0	15.0	14.5	11.5	10.5	12.0	11.5	---	---	---	---
16	25.0	17.5	16.0	14.0	11.5	10.5	14.0	11.0	---	---	---	---
17	25.5	17.5	17.5	13.5	11.5	10.5	12.5	10.0	---	---	---	---
18	25.0	18.0	17.0	13.0	11.0	10.5	13.0	8.5	---	---	---	---
19	24.0	17.0	15.0	13.5	10.5	10.0	13.0	9.5	---	---	---	---
20	24.5	16.0	15.5	12.5	11.5	8.5	12.5	9.0	---	---	---	---
21	24.5	16.0	15.0	10.0	---	---	13.5	10.5	---	---	---	---
22	21.0	19.5	15.0	10.0	---	---	13.0	9.5	---	---	---	---
23	21.5	19.5	15.0	9.5	---	---	12.5	9.0	---	---	---	---
24	21.5	19.5	14.5	9.5	---	---	13.0	9.0	---	---	---	---
25	21.5	18.0	15.0	9.5	---	---	12.5	9.0	---	---	---	---
26	20.5	17.0	13.5	10.5	---	---	12.0	9.5	---	---	---	---
27	20.5	17.5	13.0	9.0	---	---	12.0	9.0	---	---	---	---
28	21.0	18.5	13.0	8.5	---	---	12.0	9.0	---	---	---	---
29	23.5	18.5	13.5	9.0	---	---	12.0	9.0	---	---	---	---
30	23.0	16.0	13.5	9.5	---	---	12.5	8.5	---	---	---	---
31	20.0	15.0	---	---	---	---	12.0	9.5	---	---	---	---
MONTH	30.5	15.0	21.5	8.5	---	---	---	---	---	---	---	---

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

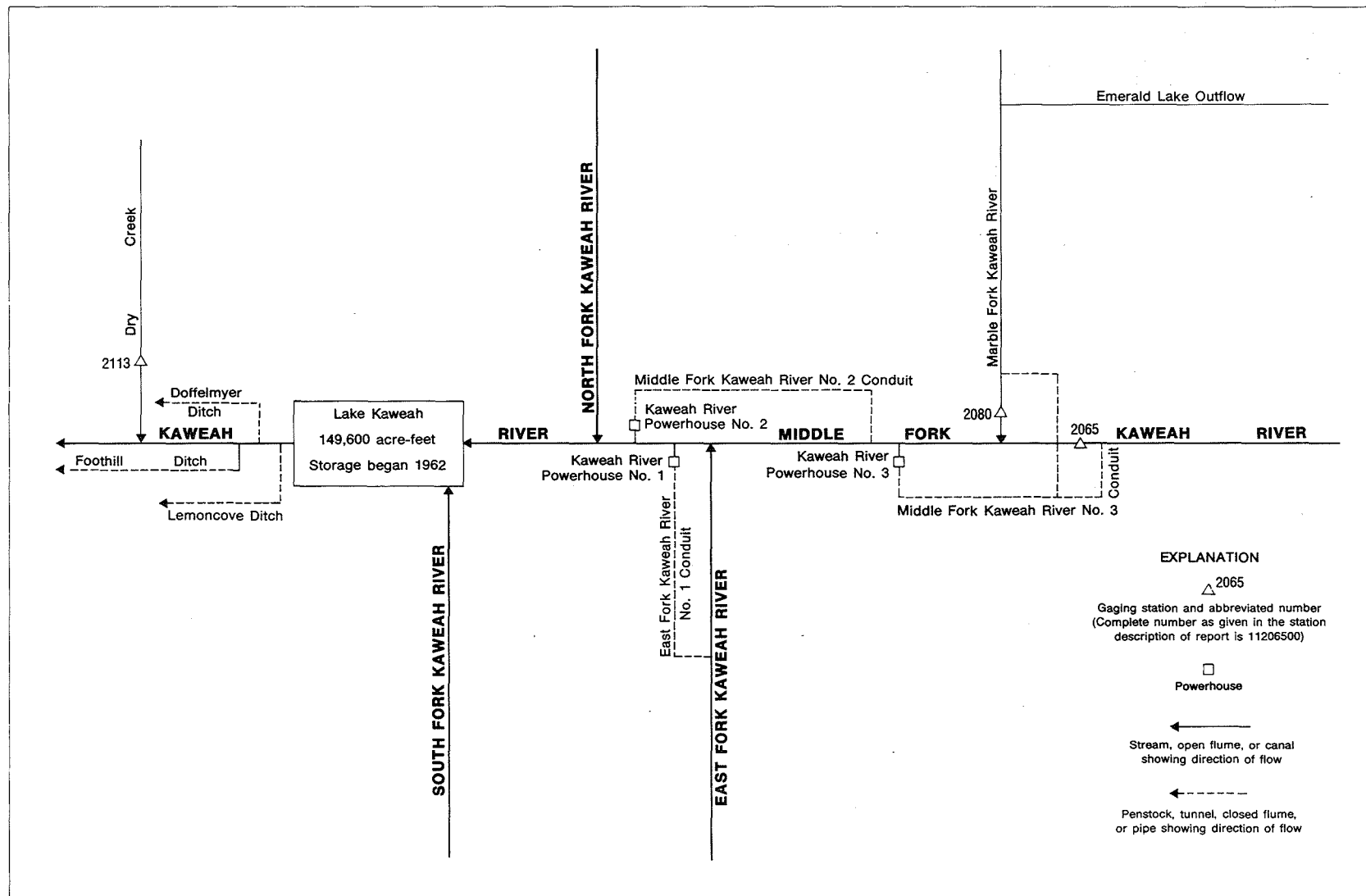


Figure 29. Diversions and storage in Kaweah River basin.

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 mi².

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.

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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1955, at datum 0.70 ft higher.

REMARKS.--Middle Fork No. 3 conduit 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 the combined flow passes through Kaweah River No. 3 powerplant of Southern California Edison Co. Diversion during water year 1991 occurred Nov. 26 to Dec. 1, Jan. 3-8, Feb. 28 to Aug. 11, Aug. 19-21, Sept. 1-23. 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 following page.

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.

AVERAGE DISCHARGE.--River only: 42 years, 138 ft³/s, 99,980 acre-ft/yr.

Combined river and diversion: 42 years, 178 ft³/s, 129,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 46,800 ft³/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 ft³/s, Nov. 12-15, 1949.

Combined flow, maximum discharge, 46,800 ft³/s, Dec. 23, 1955; minimum daily, 7.0 ft³/s, Sept. 16, 17, 1990.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 5,110 ft³/s, Mar. 4, gage height, 11.06 ft; minimum daily, 8.7 ft³/s, Oct. 26-31.

Combined flow, maximum daily discharge, 1,770 ft³/s, Mar. 4; minimum daily, 8.7 ft³/s, Oct. 26-31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e12	11	12	15	14	102	190	263	445	203	46	15
2	e11	14	12	16	14	50	160	217	530	224	40	14
3	e11	12	12	23	14	116	180	193	580	233	38	13
4	e10	11	12	35	14	1770	227	182	587	229	36	13
5	e10	10	11	21	15	648	283	226	558	214	35	13
6	e10	10	11	17	17	260	297	291	557	202	33	14
7	e10	10	11	17	16	179	270	374	554	172	32	18
8	e9.8	10	11	17	15	143	249	469	552	154	30	28
9	9.7	10	11	19	15	127	256	402	551	142	29	18
10	9.6	10	10	18	15	110	258	279	588	123	28	14
11	9.3	9.7	11	18	15	118	215	233	598	123	27	14
12	9.2	9.6	14	18	15	98	187	214	585	116	27	13
13	9.2	9.4	13	19	15	100	177	234	538	112	28	14
14	9.2	9.3	12	19	16	85	186	234	482	104	28	14
15	9.2	9.4	11	19	17	81	193	271	455	90	28	14
16	9.2	9.4	12	18	19	78	190	376	426	81	29	13
17	9.2	9.4	11	17	21	75	178	395	378	73	28	14
18	9.2	9.6	13	17	19	89	169	292	336	68	26	15
19	9.7	9.9	13	17	22	102	170	246	325	63	21	14
20	11	13	e10	16	19	91	166	252	296	60	18	14
21	10	13	e9.3	16	19	82	156	264	276	55	20	14
22	9.7	11	e9.8	16	18	86	150	260	259	51	22	14
23	9.4	11	e11	15	18	80	150	386	252	49	21	14
24	9.2	10	e12	15	18	82	168	532	238	49	20	14
25	8.9	10	e14	15	17	125	178	574	199	48	19	14
26	8.7	13	e15	15	17	97	157	557	187	46	19	16
27	8.7	13	e16	14	17	92	156	508	202	44	19	15
28	8.7	13	16	14	31	89	165	462	171	42	19	14
29	8.7	13	15	14	---	102	211	482	160	41	19	14
30	8.7	13	14	14	---	138	260	455	180	40	18	13
31	8.7	---	14	15	---	176	---	437	---	40	17	---
TOTAL	296.9	326.7	379.1	539	482	5571	5952	10560	12045	3291	820	441
MEAN	9.58	10.9	12.2	17.4	17.2	180	198	341	401	106	26.5	14.7
MAX	12	14	16	35	31	1770	297	574	598	233	46	28
MIN	8.7	9.3	9.3	14	14	50	150	182	160	40	17	13
AC-FT	589	648	752	1070	956	11050	11810	20950	23890	6530	1630	875

CAL YR 1990 TOTAL 15322.8 MEAN 42.0 MAX 252 MIN 7.0 AC-FT 30390
WTR YR 1991 TOTAL 40703.7 MEAN 112 MAX 1770 MIN 8.7 AC-FT 80740

e Estimated.

11206501 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MIDDLE FORK KAWEAH RIVER AND MIDDLE FORK
KAWEAH RIVER NO. 3 CONDUIT NEAR POTWISHA CAMP, CA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e12	11	12	15	14	102	e190	263	446	204	46	16
2	e11	14	12	16	14	50	e160	217	531	225	40	15
3	e11	12	12	26	14	116	e180	193	581	234	38	14
4	e10	11	12	54	14	1770	e227	182	588	230	36	14
5	e10	10	11	32	15	648	e283	226	559	215	35	14
6	e10	10	11	25	17	260	e297	291	558	203	33	15
7	e10	10	11	21	16	179	e270	374	555	173	32	19
8	e9.8	10	11	19	15	143	e249	469	553	155	30	29
9	9.7	10	11	19	15	127	e256	402	552	143	29	25
10	9.6	10	10	18	15	110	e258	279	589	124	28	24
11	9.3	9.7	11	18	15	118	e215	233	599	124	27	23
12	9.2	9.6	14	18	15	98	e187	214	586	117	27	25
13	9.2	9.4	13	19	15	100	e177	235	539	113	28	22
14	9.2	9.3	12	19	16	85	e186	235	483	105	28	21
15	9.2	9.4	11	19	17	81	e193	272	456	91	28	20
16	9.2	9.4	12	18	19	78	e190	377	427	82	29	17
17	9.2	9.4	11	17	21	75	e178	396	379	74	28	16
18	9.2	9.6	13	17	19	89	e169	293	337	69	26	16
19	9.7	9.9	13	17	22	102	170	247	326	64	25	15
20	11	13	e10	16	19	91	166	253	297	61	22	15
21	10	13	e9.3	16	19	82	156	265	277	56	22	15
22	9.7	11	e9.8	16	18	86	150	261	260	52	22	15
23	9.4	11	e11	15	18	80	150	387	253	50	21	14
24	9.2	10	e12	15	18	82	168	533	239	50	20	14
25	8.9	10	e14	15	17	125	178	575	200	48	19	14
26	8.7	15	e15	15	17	e97	157	558	188	46	19	16
27	8.7	16	e16	14	17	e92	156	509	203	44	19	15
28	8.7	15	16	14	31	e89	165	463	172	42	19	14
29	8.7	14	15	14	---	e102	211	483	161	41	19	14
30	8.7	14	14	14	---	e138	260	456	181	40	18	13
31	8.7	---	14	15	---	e176	---	438	---	40	17	---
TOTAL	296.9	335.7	379.1	586	482	5571	5952	10579	12075	3315	830	519
MEAN	9.58	11.2	12.2	18.9	17.2	180	198	341	402	107	26.8	17.3
MAX	12	16	16	54	31	1770	297	575	599	234	46	29
MIN	8.7	9.3	9.3	14	14	50	150	182	161	40	17	13
AC-FT	589	666	752	1160	956	11050	11810	20980	23950	6580	1650	1030

CAL YR 1990 TOTAL 24258.8 MEAN 66.5 MAX 316 MIN 7.0 AC-FT 48120
WTR YR 1991 TOTAL 40920.7 MEAN 112 MAX 1770 MIN 8.7 AC-FT 81170

e Estimated.

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 mi².

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.

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Marble Fork Kaweah River No. 3 conduit 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. Diversion during water year 1991 occurred Nov. 26 to Dec. 21, and Sept. 1-30. See schematic diagram of Kaweah River basin. For records of combined discharge of river and conduit, see following page.

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.

AVERAGE DISCHARGE.--River only: 41 years, 76.8 ft³/s, 55,640 acre-ft/yr.
Combined river and diversion: 41 years, 100 ft³/s, 72,450 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 12,500 ft³/s, Dec. 23, 1955, gage height, 13.4 ft, from rating curve extended above 1,100 ft³/s on basis of slope-area measurement of peak flow; no flow Sept. 5-15, Oct. 24-28, 1953, Oct. 26-31, 1957.
Combined flow, maximum discharge, 12,500 ft³/s, Dec. 23, 1955; minimum daily, 0.82 ft³/s, Oct. 4, 5, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 1,940 ft³/s, Mar. 4, gage height, 8.12 ft; minimum daily, 1.8 ft³/s, Dec. 5, 6.
Combined flow, maximum daily discharge, 636 ft³/s, Mar. 4; minimum daily, 1.9 ft³/s, Oct. 27-29, Dec. 22, 30, 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	3.3	2.5	e2.0	4.6	36	77	193	310	109	56	5.1
2	2.4	3.7	2.4	e2.0	4.6	18	64	135	372	111	25	5.1
3	2.5	3.1	2.0	e3.1	4.7	31	77	115	409	106	19	4.8
4	2.3	2.9	1.9	14	4.8	636	104	108	412	97	16	4.7
5	2.3	2.7	1.8	12	5.3	315	139	145	387	85	15	5.0
6	2.3	2.6	1.8	7.0	6.0	115	158	212	373	76	13	5.2
7	2.5	2.8	1.9	5.6	5.7	81	147	269	376	64	13	5.7
8	2.5	2.6	1.9	5.1	5.7	69	131	335	371	56	12	6.2
9	2.5	2.6	2.0	5.0	5.7	65	147	272	371	53	11	4.2
10	2.5	2.6	2.1	4.9	5.7	58	153	184	385	47	9.9	2.5
11	2.3	2.5	2.3	4.8	5.6	58	118	149	377	45	9.4	2.5
12	2.3	2.4	3.6	4.7	5.9	52	102	137	366	40	9.1	2.5
13	2.3	2.3	4.1	4.9	6.1	53	99	166	336	37	9.4	2.6
14	2.5	2.5	3.3	5.2	6.4	47	107	158	290	35	9.0	2.7
15	2.5	2.7	2.6	5.3	7.0	45	116	192	271	31	8.8	2.8
16	2.5	2.6	2.8	5.3	8.4	43	115	282	248	28	9.7	2.8
17	2.5	2.5	2.8	5.0	9.4	43	107	281	212	26	9.4	2.8
18	2.7	2.5	3.0	5.4	8.0	45	98	194	184	24	8.7	2.8
19	2.9	2.5	3.8	5.1	7.1	47	103	166	180	23	8.1	2.7
20	3.5	3.1	3.3	5.0	6.9	45	97	184	162	23	7.7	2.8
21	3.3	2.9	3.0	5.1	6.9	42	92	190	152	22	7.5	2.7
22	2.7	2.7	e1.9	4.7	7.0	39	93	179	141	20	7.3	2.7
23	2.5	2.6	e2.0	4.5	7.1	41	98	276	135	19	6.9	2.8
24	2.3	2.4	e2.0	4.7	7.1	42	115	365	122	18	6.7	2.7
25	2.2	2.2	e2.0	4.7	7.1	52	109	397	94	17	6.4	2.4
26	2.0	2.8	e2.0	4.7	7.3	49	96	370	89	16	6.2	3.2
27	1.9	3.2	e2.0	4.6	7.7	46	103	343	105	15	6.3	3.4
28	1.9	3.2	e2.0	4.4	13	44	114	318	86	14	6.3	3.5
29	1.9	2.8	e2.0	4.4	---	46	157	337	89	14	6.2	3.3
30	2.0	2.5	e1.9	4.4	---	57	196	314	98	13	5.9	3.3
31	2.1	---	e1.9	5.0	---	70	---	255	---	15	5.6	---
TOTAL	75.3	81.8	74.6	162.6	186.8	2430	3432	7221	7503	1299	350.5	105.5
MEAN	2.43	2.73	2.41	5.25	6.67	78.4	114	233	250	41.9	11.3	3.52
MAX	3.5	3.7	4.1	14	13	636	196	397	412	111	56	6.2
MIN	1.9	2.2	1.8	2.0	4.6	18	64	108	86	13	5.6	2.4
AC-FT	149	162	148	323	371	4820	6810	14320	14880	2580	695	209

CAL YR 1990 TOTAL 8314.2 MEAN 22.8 MAX 164 MIN 1.8 AC-FT 16490
WTR YR 1991 TOTAL 22922.1 MEAN 62.8 MAX 636 MIN 1.8 AC-FT 45470

e Estimated.

11208001 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MARBLE FORK KAWEAH RIVER AND MARBLE FORK KAWEAH RIVER NO. 3 CONDUIT AT POTWISHA CAMP, CA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	3.3	2.7	e2.0	4.6	36	77	193	310	109	56	5.2
2	2.4	3.7	2.6	e2.0	4.6	18	64	135	372	111	25	5.4
3	2.5	3.1	2.2	e3.1	4.7	31	77	115	409	106	19	5.1
4	2.3	2.9	2.1	14	4.8	636	104	108	412	97	16	5.0
5	2.3	2.7	2.0	12	5.3	315	139	145	387	85	15	5.2
6	2.3	2.6	2.0	7.0	6.0	115	158	212	373	76	13	5.4
7	2.5	2.8	2.1	5.6	5.7	81	147	269	376	64	13	5.8
8	2.5	2.6	2.1	5.1	5.7	69	131	335	371	56	12	6.3
9	2.5	2.6	2.3	5.0	5.7	65	147	272	371	53	11	6.4
10	2.5	2.6	2.3	4.9	5.7	58	153	184	385	47	9.9	6.1
11	2.3	2.5	2.7	4.8	5.6	58	118	149	377	45	9.4	6.3
12	2.3	2.4	4.2	4.7	5.9	52	102	137	366	40	9.1	6.1
13	2.3	2.3	4.5	4.9	6.1	53	99	166	336	37	9.4	5.9
14	2.5	2.5	3.7	5.2	6.4	47	107	158	290	35	9.0	5.8
15	2.5	2.7	2.9	5.3	7.0	45	116	192	271	31	8.8	5.7
16	2.5	2.6	3.2	5.3	8.4	43	115	282	248	28	9.7	5.4
17	2.5	2.5	3.2	5.0	9.4	43	107	281	212	26	9.4	5.2
18	2.7	2.5	3.3	5.4	8.0	45	98	194	184	24	8.7	4.8
19	2.9	2.5	4.2	5.1	7.1	47	103	166	180	23	8.1	4.7
20	3.5	3.1	3.7	5.0	6.9	45	97	184	162	23	7.7	4.6
21	3.3	2.9	3.2	5.1	6.9	42	92	190	152	22	7.5	4.5
22	2.7	2.7	e1.9	4.7	7.0	39	93	179	141	20	7.3	4.5
23	2.5	2.6	e2.0	4.5	7.1	41	98	276	135	19	6.9	4.6
24	2.3	2.4	e2.0	4.7	7.1	42	115	365	122	18	6.7	4.5
25	2.2	2.2	e2.0	4.7	7.1	52	109	397	94	17	6.4	4.1
26	e2.0	3.1	e2.0	4.7	7.3	49	96	370	89	16	6.2	5.0
27	e1.9	3.5	e2.0	4.6	7.7	46	103	343	105	15	6.3	5.6
28	e1.9	3.5	e2.0	4.4	13	44	114	318	86	14	6.3	5.5
29	e1.9	3.1	e2.0	4.4	---	46	157	337	89	14	6.2	5.1
30	2.0	2.7	e1.9	4.4	---	57	196	314	98	13	5.9	5.1
31	2.1	---	e1.9	5.0	---	70	---	255	---	15	5.6	---
TOTAL	75.3	83.2	80.9	162.6	186.8	2430	3432	7221	7503	1299	350.5	158.9
MEAN	2.43	2.77	2.61	5.25	6.67	78.4	114	233	250	41.9	11.3	5.30
MAX	3.5	3.7	4.5	14	13	636	196	397	412	111	56	6.4
MIN	1.9	2.2	1.9	2.0	4.6	18	64	108	86	13	5.6	4.1
AC-FT	149	165	160	323	371	4820	6810	14320	14880	2580	695	315

CAL YR 1990 TOTAL 12248.9 MEAN 33.6 MAX 195 MIN 1.9 AC-FT 24300
WTR YR 1991 TOTAL 22983.2 MEAN 63.0 MAX 636 MIN 1.9 AC-FT 45590

e Estimated.

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 and 2.2 mi northeast of Lemoncove.

DRAINAGE AREA.--561 mi².

PERIOD OF RECORD.--Water years 1962 to current year.

CHEMICAL DATA: Water years 1962-79.

WATER TEMPERATURE: Water years 1971 to current year.

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 recording instrument or no flow. Water temperature is affected by regulation from Terminus Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 31.5 °C, Aug. 26, 1988; minimum recorded, 4.5 °C, Feb. 26, 1986 and on several days during December 1990 and January 1991.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 29.5 °C, Aug. 3, 4; minimum recorded, 4.5 °C on several days during December and January.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	25.5	19.5	19.0	15.5	12.0	9.0	7.5	4.5	11.0	5.5	11.5	10.0
2	25.0	21.0	18.0	14.5	11.5	8.5	7.5	4.5	8.5	6.5	15.5	8.5
3	25.5	20.5	18.0	13.0	11.5	8.5	6.5	5.5	11.5	6.5	12.5	9.5
4	25.5	20.5	18.0	13.0	12.0	8.5	7.5	6.0	12.0	7.0	11.5	10.5
5	25.0	20.5	17.5	13.0	10.5	8.5	8.0	7.5	12.0	8.0	11.5	10.0
6	24.5	21.0	17.0	13.0	10.5	7.5	8.5	7.0	11.5	7.0	13.0	6.5
7	24.0	20.0	16.5	12.0	10.5	8.0	8.5	6.0	12.0	7.0	15.5	7.0
8	24.0	19.0	16.5	12.0	10.5	7.5	9.0	5.5	12.0	7.0	12.5	8.0
9	24.0	18.0	17.0	12.0	10.5	7.5	9.5	7.0	12.5	7.0	9.5	7.5
10	24.0	18.5	17.0	12.5	11.0	7.5	9.0	6.0	12.5	7.5	10.0	7.5
11	23.5	17.5	16.5	12.5	11.0	10.0	9.0	7.0	12.0	7.5	9.5	8.0
12	23.0	17.5	17.0	13.0	11.0	10.5	8.5	7.5	12.5	8.0	10.0	7.5
13	23.0	17.5	17.0	12.5	10.5	10.5	8.5	7.5	12.5	8.0	9.5	8.0
14	23.0	18.0	16.5	13.0	10.5	8.5	9.0	8.0	13.0	8.0	10.0	7.5
15	23.0	17.5	16.5	13.5	10.0	7.0	9.0	8.5	11.5	8.5	10.0	7.5
16	22.5	18.0	15.5	13.0	10.0	7.0	9.5	8.5	12.5	8.5	14.5	7.5
17	22.5	18.0	16.5	14.0	10.5	8.5	9.5	7.0	11.0	9.0	12.0	9.5
18	22.0	19.0	16.0	13.0	10.0	7.0	9.5	6.5	13.5	7.0	10.0	9.5
19	22.0	18.5	14.5	13.5	8.5	7.5	9.0	6.5	14.0	7.5	12.5	9.0
20	22.0	17.5	14.5	13.0	9.0	7.0	9.0	6.5	14.0	7.5	11.0	8.5
21	21.5	17.0	15.5	12.0	8.0	6.0	9.5	7.0	15.0	8.0	10.5	8.5
22	21.0	16.5	15.0	11.5	7.0	5.0	9.0	6.0	14.0	8.5	9.0	8.0
23	21.5	16.5	15.0	11.0	7.5	5.0	8.5	6.0	14.5	8.0	9.0	8.0
24	21.5	16.0	15.0	11.0	7.5	4.5	10.5	6.0	15.0	8.0	9.5	8.5
25	21.0	16.0	15.0	10.5	7.5	4.5	10.0	6.0	15.5	8.5	10.5	8.5
26	20.5	16.0	12.5	11.5	7.5	5.0	9.5	6.0	15.0	8.5	9.5	8.5
27	21.0	15.5	12.5	10.0	8.0	5.0	9.5	6.0	12.0	9.0	11.0	8.5
28	20.5	15.5	12.0	10.0	8.0	4.5	9.5	6.0	12.0	10.0	16.0	9.5
29	20.0	15.5	12.5	10.0	7.5	4.5	10.0	6.0	---	---	17.5	12.5
30	20.0	15.5	12.5	10.0	7.5	4.5	10.5	6.0	---	---	21.5	13.5
31	18.5	15.5	---	---	7.5	4.5	9.0	6.0	---	---	21.5	15.0
MONTH	25.5	15.5	19.0	10.0	12.0	4.5	10.5	4.5	15.5	5.5	21.5	6.5

11210950 KAWEAH RIVER BELOW TERMINUS DAM, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	18.5	14.0	12.5	10.0	12.0	11.5	16.0	15.5	28.0	21.0	28.0	21.5
2	16.0	11.5	14.5	10.0	12.0	11.5	16.0	15.0	28.5	25.5	28.5	22.0
3	14.5	9.0	13.0	9.5	12.0	11.5	16.5	16.0	29.5	27.0	28.5	22.5
4	16.5	9.0	14.5	10.0	12.0	11.5	16.5	16.0	29.5	24.0	28.5	23.0
5	17.5	10.0	15.0	10.0	12.0	11.5	17.0	16.0	28.5	21.5	28.5	22.5
6	16.5	10.5	14.0	10.5	12.5	11.5	17.0	16.5	29.0	27.5	28.0	23.5
7	15.0	10.5	13.0	10.5	12.5	12.0	17.5	16.5	29.0	26.5	28.5	23.0
8	17.0	9.5	13.0	10.5	12.5	12.0	18.0	17.0	29.0	27.0	28.0	23.0
9	15.0	9.5	12.5	10.0	13.0	12.0	17.5	16.5	28.5	22.5	27.0	22.5
10	14.5	10.0	14.0	9.0	13.0	12.0	17.5	16.5	28.0	20.0	26.5	21.5
11	12.0	8.0	14.0	10.0	13.0	12.0	19.5	17.0	21.5	19.0	27.0	21.5
12	12.0	8.5	15.0	10.0	13.0	12.0	20.0	18.0	20.5	19.0	27.5	21.5
13	12.0	7.5	13.5	10.5	13.5	12.0	20.5	18.5	21.0	19.5	28.0	22.0
14	12.0	9.5	13.5	10.5	13.5	12.0	20.5	19.5	24.0	19.5	28.0	22.0
15	14.0	9.5	15.5	10.5	13.5	13.0	21.0	20.0	24.0	20.0	28.0	22.0
16	14.5	8.5	14.5	10.5	13.5	12.5	21.5	20.0	24.5	19.5	28.0	22.0
17	13.5	9.0	15.5	10.5	14.0	12.0	21.5	18.5	24.5	20.0	27.5	22.5
18	16.0	7.0	15.0	10.5	14.0	12.0	21.5	20.0	25.0	20.0	28.0	22.5
19	14.5	9.5	15.5	10.5	14.0	13.0	22.0	19.0	25.5	20.0	28.0	22.0
20	13.5	9.0	12.5	10.5	14.5	13.0	22.5	22.0	25.5	20.0	28.5	22.5
21	14.0	9.5	13.0	10.5	14.5	13.5	23.0	22.0	26.0	20.5	28.0	22.5
22	15.0	9.0	12.5	11.0	14.5	14.0	24.5	22.0	27.0	20.5	28.0	22.5
23	16.5	9.5	12.5	11.0	15.0	14.0	24.5	24.0	26.0	20.5	28.0	22.5
24	14.5	9.0	13.0	11.0	15.5	14.0	25.5	24.0	27.0	20.5	28.0	22.0
25	16.0	9.0	12.5	11.0	15.0	14.5	25.5	24.0	26.5	21.0	27.5	22.0
26	14.0	8.5	13.0	11.0	15.5	14.5	27.5	25.5	26.5	21.0	28.0	22.0
27	15.0	9.0	12.5	11.0	15.5	14.5	27.5	25.5	26.0	20.5	28.0	21.5
28	15.5	9.5	12.0	11.0	15.5	14.5	28.0	27.0	26.5	19.5	27.5	21.5
29	14.5	10.0	12.0	11.0	15.5	15.0	28.5	26.0	27.0	19.5	27.5	21.5
30	15.5	10.0	12.0	11.0	16.0	15.0	29.0	26.5	27.5	21.0	28.0	21.5
31	---	---	12.0	11.0	---	---	28.0	27.5	28.0	21.5	---	---
MONTH	18.5	7.0	15.5	9.0	16.0	11.5	29.0	15.0	29.5	19.0	28.5	21.5

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 mi².

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WSP 2130: 1960(M).

GAGE.--Water-stage recorder. Elevation of gage is 570 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 8, 1969, 1.6 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--32 years, 22.8 ft³/s, 16,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/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 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2030	*1,090	*4.88	Mar. 25	0730	269	3.34
Mar. 19	1045	306	3.47				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.26	40	5.6	1.1	.00	.00	.00
2	.00	.00	.00	.00	.00	27	32	5.6	1.0	.00	.00	.00
3	.00	.00	.00	.00	.00	7.3	26	5.4	.83	.00	.00	.00
4	.00	.00	.00	.00	.00	224	24	5.1	.66	.00	.00	.00
5	.00	.00	.00	.00	.00	138	25	4.9	.52	.00	.00	.00
6	.00	.00	.00	.00	.00	25	24	4.5	.38	.00	.00	.00
7	.00	.00	.00	.00	.00	13	21	4.3	.25	.00	.00	.00
8	.00	.00	.00	.00	.00	9.1	18	4.2	.17	.00	.00	.00
9	.00	.00	.00	.00	.00	7.4	16	4.2	.10	.00	.00	.00
10	.00	.00	.00	.00	.00	6.6	15	4.1	.05	.00	.00	.00
11	.00	.00	.00	.00	.00	9.3	14	3.9	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	9.0	13	3.9	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	16	12	3.6	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	25	12	3.7	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	23	11	3.7	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	17	11	3.6	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	12	11	3.4	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	73	9.9	3.5	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	209	9.4	3.6	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	156	9.2	3.5	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	101	9.2	3.5	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	53	8.6	3.5	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	34	8.2	3.5	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	27	8.2	3.6	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	193	7.8	3.4	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	119	7.3	2.9	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	105	7.1	2.5	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	67	6.9	2.2	.00	.00	.00	.00
29	.00	.00	.00	.00	---	53	6.5	1.8	.00	.00	.00	.00
30	.00	.00	.00	.00	---	44	6.0	1.5	.00	.00	.00	.00
31	.00	---	.00	.00	---	39	---	1.3	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	1841.96	429.3	114.0	5.06	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	59.4	14.3	3.68	.17	.000	.000	.000
MAX	.00	.00	.00	.00	.00	224	40	5.6	1.1	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.26	6.0	1.3	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	3650	852	226	10	.00	.00	.00

CAL YR 1990 TOTAL 433.51 MEAN 1.19 MAX 23 MIN .00 AC-FT 860
WTR YR 1991 TOTAL 2390.32 MEAN 6.55 MAX 224 MIN .00 AC-FT 4740

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 18030712, on left bank, 4.0 mi north of Elderwood and 8.0 mi north of Woodlake, on State Highway 245.

DRAINAGE AREA.--52.3 mi².

PERIOD OF RECORD.--January 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 600 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--6 years, 5.64 ft³/s, 4,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,920 ft³/s, Feb. 15, 1986, gage height, 5.81 ft; no flow many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 35 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2030	400	3.36	Mar. 19	0900	519	3.68
Mar. 13	1745	45	2.04	Mar. 25	0545	*523	*3.69

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.09	12	18	2.6	.34	.00	.00	.00
2	.00	.00	.00	.00	.17	13	14	2.5	.25	.00	.00	.00
3	.00	.00	.00	.00	.20	6.2	12	2.4	.21	.00	.00	.00
4	.00	.00	.00	.00	.25	82	10	2.4	.16	.00	.00	.00
5	.00	.00	.00	.00	.31	30	9.3	2.4	.12	.00	.00	.00
6	.00	.00	.00	.00	.35	9.1	8.5	2.2	.07	.00	.00	.00
7	.00	.00	.00	.00	.37	7.3	8.1	2.1	.03	.00	.00	.00
8	.00	.00	.00	.00	.37	6.4	7.6	2.0	.00	.00	.00	.00
9	.00	.00	.00	.00	.37	5.5	6.9	1.9	.00	.00	.00	.00
10	.00	.00	.00	.00	.38	4.6	6.8	2.0	.00	.00	.00	.00
11	.00	.00	.00	.00	.37	7.7	6.5	2.0	.00	.00	.00	.00
12	.00	.00	.00	.00	.37	6.3	6.1	1.9	.00	.00	.00	.00
13	.00	.00	.00	.00	.37	18	5.7	1.9	.00	.00	.00	.00
14	.00	.00	.00	.00	.40	15	5.4	2.0	.00	.00	.00	.00
15	.00	.00	.00	.00	.44	15	5.3	2.0	.00	.00	.00	.00
16	.00	.00	.00	.00	.43	11	5.0	1.6	.00	.00	.00	.00
17	.00	.00	.00	.00	.37	8.6	4.6	1.4	.00	.00	.00	.00
18	.00	.00	.00	.00	.37	76	4.2	1.5	.00	.00	.00	.00
19	.00	.00	.00	.00	.35	188	4.2	1.5	.00	.00	.00	.00
20	.00	.00	.00	.00	.32	137	4.2	1.5	.00	.00	.00	.00
21	.00	.00	.00	.00	.35	44	4.2	1.2	.00	.00	.00	.00
22	.00	.00	.00	.00	.37	25	4.0	1.1	.00	.00	.00	.00
23	.00	.00	.00	.00	.37	18	3.9	.84	.00	.00	.00	.00
24	.00	.00	.00	.00	.37	15	3.7	.71	.00	.00	.00	.00
25	.00	.00	.00	.00	.37	232	3.6	.57	.00	.00	.00	.00
26	.00	.00	.00	.00	.37	74	3.3	.40	.00	.00	.00	.00
27	.00	.00	.00	.00	.37	104	3.2	.32	.00	.00	.00	.00
28	.00	.00	.00	.00	.78	43	3.1	.32	.00	.00	.00	.00
29	.00	.00	.00	.00	---	31	2.9	.29	.00	.00	.00	.00
30	.00	.00	.00	.00	---	22	2.7	.23	.00	.00	.00	.00
31	.00	---	.00	.00	---	18	---	.28	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	10.00	1284.7	187.0	46.06	1.18	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.36	41.4	6.23	1.49	.039	.000	.000	.000
MAX	.00	.00	.00	.00	.78	232	18	2.6	.34	.00	.00	.00
MIN	.00	.00	.00	.00	.09	4.6	2.7	.23	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	20	2550	371	91	2.3	.00	.00	.00

CAL YR 1990 TOTAL 292.71 MEAN .80 MAX 11 MIN .00 AC-FT 581
WTR YR 1991 TOTAL 1528.94 MEAN 4.19 MAX 232 MIN .00 AC-FT 3030

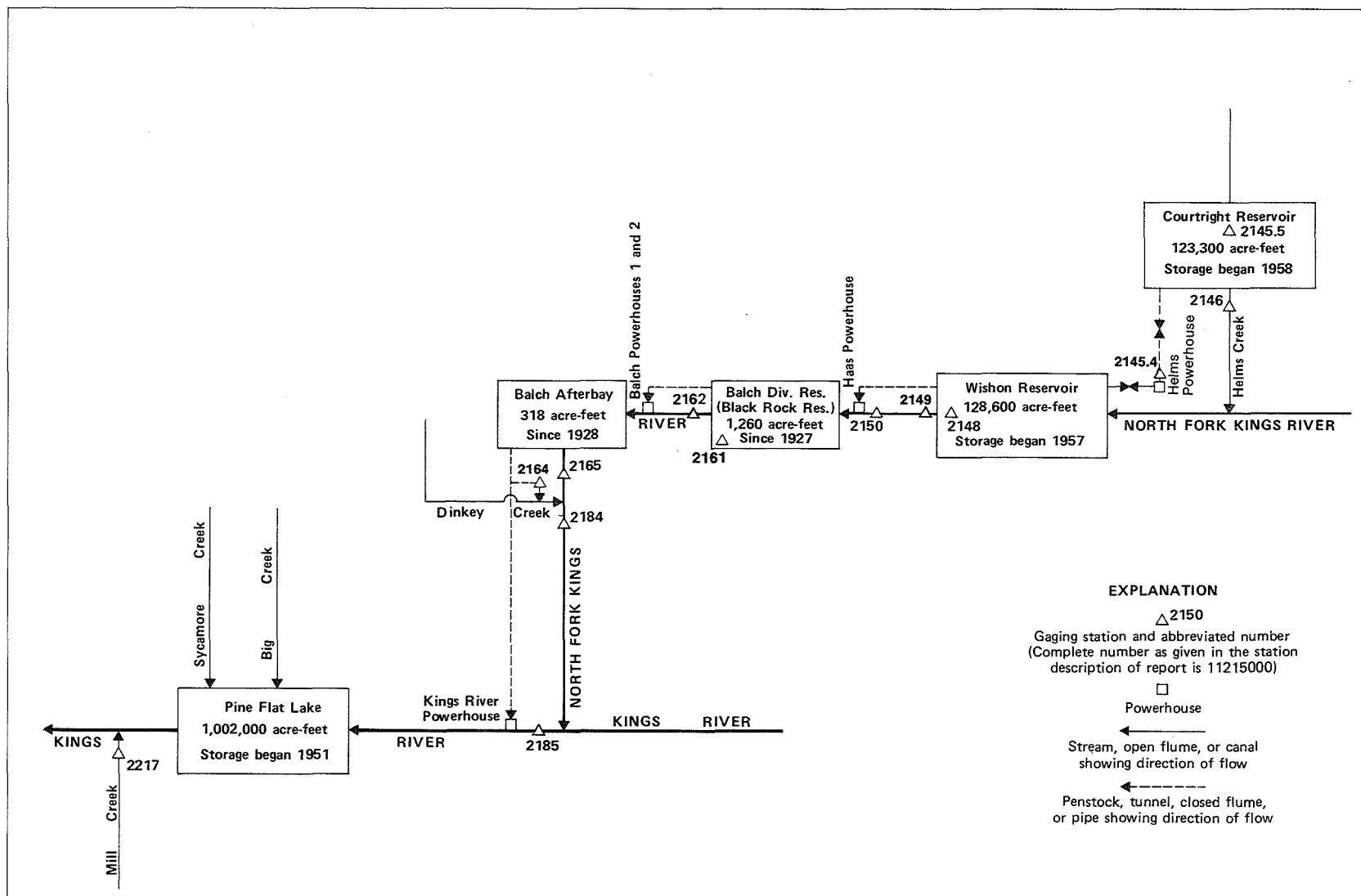


Figure 30. Diversions and storage in Kings River basin.

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 National Geodetic Vertical Datum of 1929 (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, then to Wishon Reservoir (station 11214800), which generates electricity during peak power demand. During periods of low power demand, reversible turbines pump water from Wishon Reservoir to Courtright Reservoir. Turbines draft up to 9,000 ft³/s and pump up to 7,200 ft³/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, 3,720 ft³/s, July 13, 1990; maximum daily pumpage, 3,650 ft³/s, May 28, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	271	59	-898	-194	-205	-541	-337	-831	-1320	270	.00	-271
2	.00	.00	-1170	-369	676	-187	648	-866	-2240	941	655	31
3	.00	.00	-298	2560	-489	-58	1090	.00	-928	226	.00	542
4	1670	.00	1330	-492	-118	-458	358	.00	11	-610	-179	601
5	.00	115	1300	-162	-410	1730	-295	-28	-252	-532	1310	485
6	.00	149	902	-1230	280	-484	-419	-310	-970	-336	1220	.00
7	.00	122	52	-450	-222	-763	-384	.00	190	-300	1280	.00
8	.00	151	-18	364	196	-1080	101	.00	314	51	689	.00
9	.00	40	-938	-347	.00	-992	562	-43	-899	566	-341	2430
10	.00	.00	926	235	-46	-283	-384	-388	439	629	183	.00
11	125	.00	-610	682	-443	1870	423	.00	575	679	-54	.00
12	.00	227	-399	-293	150	567	-475	-1160	-794	202	.00	175
13	.00	-298	-519	-868	52	-803	-413	-859	743	-704	1570	.00
14	.00	-288	-64	1170	75	-403	-669	-383	1140	-944	.00	.00
15	.00	-42	-400	-215	40	405	1010	-210	-652	-454	522	.00
16	.00	61	-918	478	-16	-143	735	-712	-607	20	753	2670
17	.00	-598	-474	-110	-466	219	693	-28	1750	179	.00	1780
18	.00	-1150	-695	45	328	620	-274	74	.00	544	198	1920
19	.00	987	1470	-354	393	-276	-642	-367	.00	-148	361	1910
20	.00	418	2200	-694	-176	1130	-983	-978	.00	.00	.00	1800
21	.00	601	2970	119	-287	1110	-1210	-816	.00	-361	.00	1470
22	.00	-431	100	1200	359	-210	-840	-756	-1020	316	.00	429
23	.00	-886	-1950	503	43	-940	276	-643	-649	-232	308	1780
24	272	-523	-1140	569	26	-863	458	-481	-915	-342	400	2090
25	151	-609	-3300	493	296	1390	-52	-1590	153	.00	-45	858
26	-192	-143	-155	-932	-209	456	235	-3550	793	275	-154	786
27	.00	788	213	-1630	-106	-257	-940	-3530	98	-107	.00	2020
28	.00	-67	505	1120	1730	-322	-637	-591	194	-205	2110	1630
29	31	416	56	-141	---	.00	-900	-985	-403	780	436	1110
30	158	1200	.00	-949	---	.00	147	-733	-575	1070	.00	573
31	.00	---	-115	-21	---	-55	---	-964	---	163	.00	---
TOTAL	2486.00	299.00	-2037.00	87	1451.00	379.00	-3118	-21728.00	-5824.00	1636.00	11222.00	26819.00
MEAN	80.2	9.97	-65.7	2.81	51.8	12.2	-104	-701	-194	52.8	362	894
MAX	1670	1200	2970	2560	1730	1870	1090	74	1750	1070	2110	2670
MIN	-192	-1150	-3300	-1630	-489	-1080	-1210	-3550	-2240	-944	-341	-271
AC-FT	4930	593	-4040	173	2880	752	-6180	-43100	-11550	3250	22260	53200

CAL YR 1990 TOTAL 17366.60 MEAN 47.6 MAX 3720 MIN -3650 AC-FT 34450

WTR YR 1991 TOTAL 11672.00 MEAN 32.0 MAX 2970 MIN -3550 AC-FT 23150

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 mi².

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 National Geodetic Vertical Datum of 1929 (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. 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, 121,937 acre-ft, July 7, elevation, 8,183.17 ft; minimum, 21,221 acre-ft, Dec. 22, elevation, 8,082.34.

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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35663	29566	30381	33059	33087	31251	31689	42298	103568	120758	117205	93929
2	35635	29540	32670	33793	31939	31617	30394	44244	108774	118949	115901	93902
3	34640	29509	33316	28765	32871	31781	28228	44422	111505	118519	115807	92688
4	31381	29509	30708	29772	33059	32938	27536	44609	112348	119715	116151	91485
5	31341	29316	28119	30120	33984	29741	28197	45041	113597	120710	113597	90504
6	31323	28956	26488	32536	33425	30727	29117	46202	116073	121355	111322	90518
7	31297	28673	26326	33432	33854	32237	29962	46944	116245	121937	108248	90531
8	31277	28343	26349	32697	33445	34460	29855	47719	116167	121791	106859	90526
9	31251	28246	28234	33384	33438	36517	28845	48347	118503	120662	107455	85773
10	31225	28210	26389	32898	33459	37181	29747	49473	118233	119475	107008	85875
11	30953	28167	27417	31558	34397	33452	28931	49698	117458	118122	107082	85849
12	30927	27698	28435	32151	34074	32356	29975	52301	119411	117694	107060	85481
13	30901	28185	29285	33841	33971	34060	30862	54414	118265	119044	103902	85443
14	30882	28747	29522	31558	33806	34905	32316	55531	116324	120865	103858	85405
15	30850	28870	30209	31972	33717	34108	30394	56826	117774	121694	102829	85367
16	30822	28734	31919	31017	33717	34370	29067	58818	119140	121581	101291	80168
17	30817	29899	32965	31212	34682	33984	27692	59547	115838	121161	101248	76694
18	30779	32151	34370	31251	34012	32871	28349	59774	115885	120244	100791	73001
19	30772	30203	31512	31853	33235	33459	29798	60821	115901	120485	100039	69340
20	30746	29397	27215	33235	33588	31232	31900	63198	116136	120453	99968	65909
21	30727	28228	21392	33006	34328	28962	34349	65308	116183	121177	99925	63075
22	30701	29030	21221	30605	33445	29459	36203	67486	118218	120485	99854	62246
23	30682	30779	24994	29597	33343	31316	35472	69757	119491	120919	99191	58769
24	30126	31781	27209	28459	33262	33120	34688	71662	121399	121435	98362	54720
25	29804	33006	33636	27524	32703	30490	34939	75843	121064	121355	98404	53041
26	30178	33283	34060	29341	33127	29591	34578	83682	119523	120742	98685	50020
27	30171	31761	33622	32436	33337	30158	36647	91193	119386	120903	98615	46077
28	30139	31873	32623	30438	29975	30817	38073	93091	119092	121339	94485	42899
29	30050	31037	32490	30727	---	30817	40230	95770	120035	119715	93590	40736
30	29722	28655	32483	32637	---	30843	40314	97804	121226	117584	93550	39609
31	29697	---	32690	32623	---	30946	---	100209	---	117253	93482	---
MAX	35663	33283	34370	33841	34682	37181	40314	100209	121399	121937	117205	93929
MIN	29697	27698	21221	27524	29975	28962	27536	42298	103568	117253	93482	39609
a	8097.38	8095.70	8101.99	8101.89	8097.82	8099.34	8112.64	8168.88	8182.73	8180.24	8164.02	8111.71
b	-6513	-1042	+4035	-67	-2648	+971	+9368	+59895	+21017	-3973	-23771	-53873

CAL YR 1990 b -18364
WTR YR 1991 b +3399

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

TULARE LAKE BASIN

135

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 mi².

PERIOD OF RECORD.--October 1958 to current year. Record for water year 1986 is incomplete.

REVISED RECORDS.--WSP 1715: 1959. WSP 2130: 1959.

GAGE.--Water-stage recorder and broad-crested weir with trapezoidal notch. 90° V-notch weir control since Nov. 13, 1990. Elevation of gage is 7,836 ft above National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE (prior to operation of Helms Creek Project pump/generator facility, adjusted for change in contents in Courtright Reservoir).--25 years (water years 1959-83), 82.8 ft³/s, 59,990 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft³/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, 22 ft³/s, July 9, gage height, 4.21 ft; minimum daily, 3.0 ft³/s, Jan. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	5.2	4.8	5.1	3.2	3.3	3.4	4.6	11	21	21	14
2	5.0	5.2	4.9	5.2	3.2	3.3	3.4	4.7	12	21	21	15
3	5.0	5.2	5.0	5.1	3.2	3.3	3.4	4.6	14	21	21	14
4	5.5	5.2	5.0	5.1	3.2	5.5	3.5	4.8	15	21	21	14
5	5.4	5.2	4.9	5.0	3.3	3.8	3.6	5.0	15	21	21	14
6	5.4	5.0	4.8	5.1	3.3	3.4	3.6	5.4	16	21	20	13
7	5.4	5.0	4.7	5.2	3.3	3.4	3.6	5.6	16	22	20	13
8	5.4	e5.2	4.7	4.2	3.3	3.5	3.6	5.4	16	22	19	13
9	5.4	e15	4.7	3.2	3.3	3.6	3.7	5.2	16	22	19	13
10	5.4	e15	4.8	3.2	3.3	3.6	3.6	5.2	17	22	19	12
11	5.4	e16	4.8	3.2	3.3	3.6	3.4	5.2	16	22	19	12
12	5.4	e16	4.8	3.1	3.3	3.4	3.4	5.4	16	21	19	12
13	5.4	e12	4.9	3.2	3.3	3.4	3.5	5.8	16	22	19	12
14	5.4	8.0	4.8	3.2	3.3	3.5	3.7	6.0	16	21	18	12
15	5.4	4.8	4.9	3.2	3.3	3.5	3.6	6.3	18	21	18	12
16	5.4	4.8	4.9	3.2	3.3	3.4	3.5	6.6	19	22	18	12
17	5.4	4.8	5.0	3.1	3.3	3.5	3.5	6.4	19	22	17	11
18	5.4	4.9	5.0	3.1	3.3	3.5	3.5	6.3	19	22	17	10
19	5.4	5.0	5.0	3.2	3.3	3.4	3.5	6.4	19	22	17	9.3
20	5.4	4.9	4.9	3.2	3.4	3.4	3.5	6.6	19	22	17	8.7
21	5.4	4.8	4.7	3.2	3.4	3.3	3.7	6.7	19	22	17	8.4
22	5.4	4.8	4.6	3.2	3.4	3.2	3.9	7.1	19	21	17	8.1
23	5.4	4.8	4.6	3.1	3.3	3.3	4.0	7.4	20	22	17	8.0
24	5.2	4.9	4.8	3.1	3.3	3.4	4.1	7.7	20	22	17	7.5
25	5.2	4.9	5.0	3.0	3.3	3.4	3.9	8.4	20	22	16	6.7
26	5.2	4.9	5.2	3.1	3.3	3.3	3.9	8.7	20	22	16	6.4
27	5.2	4.9	5.2	3.1	3.3	3.3	4.1	11	20	22	16	5.8
28	5.2	4.8	5.2	3.2	3.3	3.3	4.3	11	20	22	16	5.3
29	5.2	4.8	5.1	3.2	---	3.3	4.7	12	20	22	15	4.8
30	5.2	4.8	5.1	3.2	---	3.3	4.8	11	21	22	15	6.7
31	5.2	---	5.1	3.2	---	3.4	---	11	---	21	14	---
TOTAL	165.0	200.8	151.9	112.7	92.3	107.8	111.9	213.5	524	671	557	313.7
MEAN	5.32	6.69	4.90	3.64	3.30	3.48	3.73	6.89	17.5	21.6	18.0	10.5
MAX	5.5	16	5.2	5.2	3.4	5.5	4.8	12	21	22	21	15
MIN	5.0	4.8	4.6	3.0	3.2	3.2	3.4	4.6	11	21	14	4.8
AC-FT	327	398	301	224	183	214	222	423	1040	1330	1100	622

CAL YR 1990 TOTAL 2119.0 MEAN 5.81 MAX 16 MIN 3.6 AC-FT 4200
WTR YR 1991 TOTAL 3221.6 MEAN 8.83 MAX 22 MIN 3.0 AC-FT 6390

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929 (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, 92,113 acre-ft, Sept. 30, elevation, 6,511.35 ft; minimum, 40,131 acre-ft, Feb. 17, elevation, 6,441.12 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41698	46366	44651	41464	41614	44246	40244	41728	47604	74987	44848	45490
2	41698	46366	42318	40712	42783	43921	41458	40262	46204	76095	44909	45508
3	42674	46372	41602	45936	41824	44050	43391	40671	47793	75932	43744	45663
4	45992	46372	44258	44971	41632	45248	44135	40885	51432	73974	42107	46222
5	45986	46546	46841	44669	40724	49299	43842	41632	54114	72182	43616	46460
6	45955	46796	48569	42173	41309	48767	43744	42215	55212	70538	44657	46485
7	45930	47017	48697	41243	40867	47408	43525	44037	58353	68998	46004	46578
8	45806	47269	48665	42022	41279	44577	44019	46503	61681	68265	46216	46641
9	45799	47351	46691	41321	41291	42191	45446	48289	62545	68491	44417	51511
10	45793	47364	48588	41824	41285	41285	45113	48308	65878	68647	43488	51564
11	45936	47383	47566	43166	40327	44823	46073	48882	69963	68951	42167	51340
12	45930	47781	46566	42571	40647	45533	44983	47433	70807	68296	40891	51689
13	45880	47193	45651	40879	40772	43634	44209	46516	74508	65886	42777	50908
14	45911	46585	45409	43196	40950	42475	43238	46353	78502	62868	41806	50908
15	45917	46460	44706	42765	41046	42826	45619	47068	78791	60823	41578	50914
16	45917	46572	42911	43732	41058	42324	47238	48174	78891	59762	41794	56116
17	45793	45360	41896	43512	40131	42354	48985	50074	83417	58849	40790	59036
18	45793	43044	40445	43506	40813	43354	48588	51307	84059	58734	40802	62291
19	45756	45026	43451	42892	41602	42475	47408	51334	84567	57243	41327	66078
20	45706	45874	47876	41518	41261	44319	45508	50237	84822	56026	41291	69656
21	45706	46967	53480	41752	40689	46048	43141	49712	84321	54236	41213	72614
22	45719	46110	53655	44160	41350	45075	41440	49518	81703	53587	41195	73280
23	45632	44282	49757	45174	41452	42925	42318	50862	79969	52072	41788	76128
24	46154	43245	47540	46322	41554	40855	43531	53392	77530	50451	41974	79877
25	46447	42028	40897	47269	42131	43287	43775	53918	77299	49164	42493	81068
26	46052	41734	40457	45422	41710	43854	44442	50165	78180	48340	42185	83594
27	46023	43311	40897	42306	41506	42886	42698	45899	77925	47118	42191	87118
28	45936	43172	41926	44325	45168	41764	41950	46954	77884	45471	45694	89906
29	45992	43995	42047	44019	---	41380	40861	47401	76651	45799	46073	91666
30	46216	46441	42065	42065	---	41219	42366	48238	75142	46804	46060	92113
31	46210	---	41836	42077	---	41088	---	47888	---	45961	46048	---
MAX	46447	47731	53655	47269	45168	49299	48985	53918	84822	76095	46216	92113
MIN	41698	41734	40445	40712	40131	40855	40244	40262	46204	45471	40790	45490
a	6451.13	6451.50	6443.23	6444.38	6449.45	6442.73	6444.86	6453.80	6491.25	6450.73	6450.87	6511.35
b	+5057	+231	-4605	+241	+3091	-4080	+1278	+5522	+27254	-29181	+87	+46065

CAL YR 1990 b -331
WTR YR 1991 b +50960

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 mi².

PERIOD OF RECORD.--October 1986 to September 1990, October 1990 to September 1991 (no records computed above 25 ft³/s).

GAGE.--Water-stage recorder and 90° V-notch steel weir and concrete control. Elevation of gage is 6,300 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	9.0	8.9	8.8	8.6	9.4	11	9.7	16	16	16	16
2	8.4	8.9	8.7	8.7	e8.7	9.1	11	9.7	16	16	16	16
3	8.4	8.9	8.6	9.0	e8.7	9.3	12	9.5	16	17	16	16
4	8.5	8.9	8.6	9.6	e8.6	---	13	9.5	16	16	16	16
5	8.7	8.9	8.8	9.3	e8.6	13	14	9.5	17	16	16	16
6	8.8	8.9	9.1	9.0	e8.7	11	14	9.5	17	16	16	16
7	8.8	8.9	9.1	8.9	e8.7	10	13	9.6	17	16	16	16
8	8.8	9.0	9.2	8.8	e8.7	10	12	9.7	18	16	16	16
9	8.8	9.0	9.1	8.8	e8.7	10	13	10	18	16	16	17
10	8.8	9.1	8.8	8.7	e8.7	9.8	12	10	18	16	16	17
11	8.8	9.1	9.0	8.8	e8.6	9.8	11	10	19	16	16	17
12	8.8	9.1	9.0	8.9	e8.6	10	11	10	19	16	16	17
13	8.8	9.1	8.8	8.9	e8.7	10	12	10	20	16	16	17
14	8.8	9.0	8.7	8.7	e8.7	9.8	12	10	20	16	16	17
15	8.7	8.9	8.7	8.8	e8.7	9.7	12	9.8	20	15	16	17
16	8.8	8.9	8.6	8.8	e8.7	9.6	12	9.8	21	15	16	17
17	8.8	8.9	8.5	8.8	e8.7	9.5	12	10	19	16	16	18
18	8.8	8.8	8.6	8.9	e8.7	9.7	12	10	17	16	15	18
19	8.8	8.7	8.6	8.7	e8.7	9.7	11	10	16	16	15	17
20	8.8	8.9	8.8	8.7	e8.6	9.6	11	10	16	16	16	17
21	8.8	9.0	9.1	8.7	e8.7	9.7	11	10	17	16	15	17
22	8.8	9.0	9.6	8.7	e8.6	9.8	11	10	16	16	15	17
23	8.8	8.8	9.6	8.8	e8.7	9.8	11	10	16	16	15	18
24	8.8	8.7	9.5	9.0	e8.7	9.9	11	10	16	15	15	18
25	8.8	8.6	9.2	9.1	e8.7	10	10	10	16	16	15	17
26	8.8	8.6	8.7	9.1	e8.7	9.9	10	10	16	17	15	16
27	8.8	8.6	8.7	9.0	e8.7	9.7	10	9.9	17	17	16	17
28	8.8	8.7	8.7	8.9	9.0	9.7	9.7	9.6	17	16	16	17
29	8.8	8.7	8.8	9.0	---	9.9	9.5	14	17	16	16	18
30	8.8	8.8	8.8	9.0	---	10	9.5	16	17	16	16	18
31	8.9	---	8.8	8.9	---	11	---	16	---	16	16	---
TOTAL	271.2	266.4	275.7	275.8	243.2	---	343.7	321.8	521	496	488	507
MEAN	8.75	8.88	8.89	8.90	8.69	---	11.5	10.4	17.4	16.0	15.7	16.9
MAX	8.9	9.1	9.6	9.6	9.0	---	14	16	21	17	16	18
MIN	8.4	8.6	8.5	8.7	8.6	---	9.5	9.5	16	15	15	16
AC-FT	538	528	547	547	482	---	682	638	1030	984	968	1010

CAL YR 1990 TOTAL 3235.2 MEAN 8.86 MAX 13 MIN 7.2 AC-FT 6420

e Estimated.

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 mi².

PERIOD OF RECORD.--August 1921 to September 1990, October 1990 to September 1991 (no records computed below 25 ft³/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 National Geodetic Vertical Datum of 1929 (levels by San Joaquin Light and Power Corp.). Prior to Nov. 24, 1922, at site 1 mi upstream at different datum.

REMARKS.--No estimated daily discharges. 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 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

[illegible]

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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (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. Flow is diverted from powerplant tailrace 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, 1,275 acre-ft, Mar. 4, elevation, 4,098.43 ft; minimum, 616 acre-ft, Apr. 2, elevation, 4,076.54 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	877	865	1022	1181	903	1102	743	798	712	882	945	994
2	839	836	991	1192	894	1102	616	931	670	997	1009	988
3	804	859	1016	1199	888	885	857	762	782	912	973	1178
4	776	871	1003	1202	891	1275	979	822	787	891	1022	1102
5	748	891	1012	1195	941	1233	1063	865	776	821	954	1086
6	801	868	1037	1212	886	997	844	1003	704	910	1076	1066
7	799	882	1027	1219	881	894	712	1112	779	936	1105	1047
8	831	900	1022	1161	888	927	745	1028	745	912	1009	1047
9	871	882	948	1154	865	909	865	856	723	894	912	1022
10	821	906	909	1175	872	950	743	991	877	957	960	933
11	838	897	900	930	885	877	853	1005	781	976	918	765
12	821	938	906	939	900	924	880	691	844	994	936	759
13	912	969	915	973	915	927	900	677	867	901	960	927
14	909	1001	918	903	930	877	781	876	903	951	891	927
15	875	963	826	879	936	930	731	811	807	948	960	924
16	827	937	853	906	966	743	824	787	734	951	1031	903
17	906	962	880	900	1000	765	709	903	758	1076	980	1063
18	880	985	906	924	1028	657	714	894	759	941	857	1069
19	900	932	874	909	1054	621	661	894	819	983	882	1060
20	924	963	894	900	1077	626	650	891	813	1051	948	1054
21	874	982	1006	906	1086	751	716	859	1003	977	1007	1047
22	900	985	1028	912	1054	787	729	924	1131	1105	991	1022
23	942	1009	1038	918	1016	651	847	782	1145	991	1051	1079
24	912	1031	1066	916	1046	636	894	813	1151	894	1016	1073
25	871	1054	1095	888	1038	727	773	799	1086	1022	1049	1041
26	847	1016	1118	912	1079	707	723	751	1125	1165	1031	1205
27	865	1047	1141	915	954	709	871	694	1076	997	1016	1086
28	880	1057	1165	909	966	779	856	707	994	1047	948	1079
29	900	1009	1158	927	---	830	867	744	1063	1050	982	1112
30	918	1000	1178	909	---	779	781	713	856	981	985	1016
31	847	---	1168	909	---	685	---	787	---	988	985	---
MAX	942	1057	1178	1219	1086	1275	1063	1112	1151	1165	1105	1205
MIN	748	836	826	879	865	621	616	677	670	821	857	759
a	4085.02	4090.13	4095.33	4087.13	4089.12	4079.21	4082.71	4082.93	4085.33	4089.74	4089.64	4090.64
b	-38	+153	+168	-259	+57	-281	+96	+6	+69	+132	-3	+31

CAL YR 1990 b +378

WTR YR 1991 b +131

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 mi².

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,890 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100).

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.

AVERAGE DISCHARGE.--8 years, 33.2 ft³/s, 24,050 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,360 ft³/s, Mar. 4, 1991, gage height, 8.84 ft, from rating curve extended above 827 ft³/s on basis of computation of spill over Balch Diversion Dam; minimum daily, 0.89 ft³/s, Oct. 21, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,360 ft³/s, Mar. 4, gage height, 8.84 ft; minimum daily, 3.0 ft³/s, Dec. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	4.0	3.7	6.2	3.4	23	e19	6.1	10	6.9	7.6	7.2
2	4.1	3.5	3.6	6.7	3.4	11	e18	5.7	10	7.0	7.7	7.4
3	3.9	3.4	3.6	4.6	3.4	19	e18	5.8	10	7.2	7.9	7.5
4	3.8	3.4	3.6	4.2	3.4	1330	15	5.4	9.5	7.3	8.0	7.9
5	3.8	3.4	3.6	4.1	3.4	185	16	5.2	9.8	6.9	7.7	7.6
6	3.8	3.5	3.6	4.1	3.4	12	16	5.3	9.8	6.6	8.1	7.7
7	3.8	3.5	4.2	4.0	3.4	9.2	14	5.8	9.4	6.7	8.4	7.4
8	3.9	3.3	9.6	4.0	3.4	7.7	13	6.0	9.7	6.9	8.1	6.4
9	4.0	3.3	3.1	3.9	3.4	6.7	12	5.8	9.4	6.7	7.9	6.4
10	4.0	3.3	3.0	3.6	5.9	6.4	12	5.4	9.3	7.1	8.1	6.3
11	4.0	3.2	3.3	3.6	11	8.4	11	5.3	9.9	7.4	7.8	5.9
12	3.9	3.2	3.4	3.6	11	6.9	10	5.1	9.2	7.3	7.9	5.5
13	3.6	3.4	3.4	3.6	11	9.1	10	5.0	6.6	7.4	7.9	5.5
14	3.8	3.4	3.4	3.5	11	8.0	10	5.1	7.4	7.2	7.6	5.9
15	3.8	3.5	3.6	3.4	11	8.6	10	5.0	7.4	7.3	7.7	5.9
16	3.8	3.6	3.3	3.4	8.6	7.8	9.5	4.6	6.8	7.3	8.3	5.9
17	3.7	3.4	3.2	3.4	4.0	8.2	7.6	4.6	6.8	7.6	8.4	5.9
18	3.8	3.2	3.2	3.4	3.6	18	7.3	4.7	6.7	7.7	8.2	6.5
19	3.8	3.3	e3.2	3.4	3.4	19	7.6	4.6	6.7	7.2	8.0	6.6
20	3.8	3.9	e3.3	3.4	5.1	14	8.4	4.5	6.7	7.1	8.1	6.6
21	3.8	3.7	e3.3	3.4	12	12	8.1	4.5	6.8	6.9	8.3	6.6
22	3.6	3.1	e3.4	3.4	12	11	6.9	4.4	8.0	7.1	8.1	6.6
23	3.6	3.1	e3.4	3.4	4.2	11	6.4	4.3	8.1	7.0	7.4	6.6
24	3.6	3.6	e3.6	3.4	3.2	12	6.8	4.0	8.0	6.5	7.4	6.6
25	3.6	3.9	e3.6	3.4	3.2	18	7.7	4.0	7.8	7.6	7.4	6.6
26	3.6	4.8	e3.4	3.4	3.2	14	6.8	3.9	7.9	8.4	7.4	6.7
27	3.6	3.8	e3.5	3.4	3.2	13	6.4	3.7	7.8	8.3	7.3	6.9
28	3.6	3.8	e3.6	3.4	6.6	14	6.4	3.5	8.2	8.1	7.3	6.5
29	3.6	3.8	e3.6	3.4	---	17	6.6	3.6	8.8	8.2	7.2	6.5
30	3.5	3.8	e3.6	3.4	---	19	6.7	6.0	7.7	7.8	7.2	6.4
31	3.5	---	e3.9	3.4	---	e20	---	9.9	---	7.7	7.2	---
TOTAL	116.8	106.1	113.8	117.5	163.8	1879.0	313.2	156.8	250.2	226.4	241.6	198.0
MEAN	3.77	3.54	3.67	3.79	5.85	60.6	10.4	5.06	8.34	7.30	7.79	6.60
MAX	4.1	4.8	9.6	6.7	12	1330	19	9.9	10	8.4	8.4	7.9
MIN	3.5	3.1	3.0	3.4	3.2	6.4	6.4	3.5	6.6	6.5	7.2	5.5
AC-FT	232	210	226	233	325	3730	621	311	496	449	479	393

CAL YR 1990 TOTAL 1770.7 MEAN 4.85 MAX 18 MIN 3.0 AC-FT 3510
WTR YR 1991 TOTAL 3883.2 MEAN 10.6 MAX 1330 MIN 3.0 AC-FT 7700

e Estimated.

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow release required for fishery enhancement from June 1 to Sept. 30 when natural flow of Dinkey Creek is equal to or less than 60 ft³/s. See records for North Fork Kings River above Dinkey Creek (station 11216500), North Fork Kings River below Dinkey Creek (station 11218400), and 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.

AVERAGE DISCHARGE.--5 years, 3.32 ft³/s, 2,410 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 15 ft³/s, several days in October 1990 and September 1991; no flow many days most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	12	6.2	.00	6.7	.00	.00	.00	.00	.00	11	11
2	14	9.7	5.7	.00	6.7	.00	.00	.00	.00	.00	11	11
3	14	9.7	6.0	.00	6.7	.00	.00	.00	.00	.00	11	11
4	14	9.7	5.7	.00	6.7	.00	.00	.00	.00	2.5	11	11
5	14	9.7	5.2	.00	5.7	.00	.00	.00	.00	4.6	11	11
6	14	9.8	4.9	.00	4.6	.00	.00	.00	.00	4.6	11	11
7	14	9.7	5.1	.00	2.3	.00	.00	.00	.00	4.6	11	11
8	14	8.8	6.2	.00	.00	.00	.00	.00	.00	4.6	11	11
9	14	7.6	7.1	.00	.00	.00	.00	.00	.00	4.6	11	11
10	14	7.7	7.2	.00	.00	.00	.00	.00	.00	4.6	11	11
11	14	7.6	6.9	.00	.00	.00	.00	.00	.00	4.6	11	11
12	15	7.6	6.2	.00	.00	.00	.00	.00	.00	4.6	11	11
13	15	7.7	4.8	.00	.00	.00	.00	.00	.00	8.6	11	11
14	14	7.2	3.7	.00	.00	.00	.00	.00	.00	11	11	11
15	14	6.0	2.9	.00	.00	.00	.00	.00	.00	11	11	11
16	14	6.0	1.4	.00	.00	.00	.00	.00	.00	11	11	11
17	14	5.9	.00	.00	.00	.00	.00	.00	.00	11	11	11
18	15	6.7	1.6	.00	.00	.00	.00	.00	.00	11	11	11
19	15	6.9	5.1	.00	.00	.00	.00	.00	.00	11	11	11
20	15	5.9	4.9	.00	.00	.00	.00	.00	.00	11	11	11
21	14	4.7	2.5	.00	.00	.00	.00	.00	.00	11	11	11
22	15	4.7	.00	.00	.00	.00	.00	.00	.00	11	11	11
23	15	4.7	.00	.00	.00	.00	.00	.00	.00	11	11	11
24	14	4.7	.00	.00	.00	.00	.00	.00	.00	11	11	11
25	14	4.7	.00	.00	.00	.00	.00	.00	.00	11	11	11
26	15	4.3	.00	.00	.00	.00	.00	.00	.00	11	11	14
27	15	4.2	.00	.00	.00	.00	.00	.00	.00	11	11	15
28	15	6.7	.00	.00	.00	.00	.00	.00	.00	11	11	15
29	15	5.9	.00	.00	---	.00	.00	.00	.00	11	11	15
30	14	6.1	.00	.00	---	.00	.00	.00	.00	11	11	15
31	15	---	.00	4.2	---	.00	---	.00	---	11	11	---
TOTAL	446	212.6	99.30	4.20	39.40	0.00	0.00	0.00	0.00	245.90	341	349
MEAN	14.4	7.09	3.20	.14	1.41	.0000	.0000	.0000	.0000	7.93	11.0	11.6
MAX	15	12	7.2	4.2	6.7	.00	.00	.00	.00	11	11	15
MIN	14	4.2	.00	.00	.00	.00	.00	.00	.00	.00	11	11
AC-FT	885	422	197	8.3	78	.00	.00	.00	.00	488	676	692

CAL YR 1990 TOTAL 2003.70 MEAN 5.49 MAX 15 MIN .00 AC-FT 3970
WTR YR 1991 TOTAL 1737.40 MEAN 4.76 MAX 15 MIN .00 AC-FT 3450

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 mi².

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.

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 National Geodetic Vertical Datum of 1929, 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.--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. Diversion from Balch Afterbay to Kings River powerplant began 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 ft³/s, June 4, 1922, gage height, 12.18 ft, site and datum then in use; minimum, 4.0 ft³/s, Aug. 29 to Sept. 1, 1924.
1960 to current year: Maximum discharge, 14,000 ft³/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 ft³/s; minimum daily, 0.30 ft³/s, Nov. 3, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,740 ft³/s, Mar. 4, gage height, 6.62 ft; minimum daily, 11 ft³/s, on many days from October to May.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	13	13	14	e14	20	18	13	17	16	16	17
2	12	13	12	13	e14	16	18	12	17	16	16	17
3	12	13	13	14	e14	17	17	13	16	16	16	18
4	12	12	12	16	e14	1290	17	13	16	16	16	19
5	13	12	13	14	14	e110	16	13	17	16	16	19
6	13	13	12	15	14	19	16	12	16	16	16	18
7	12	13	12	15	14	18	16	12	16	16	16	18
8	12	13	11	14	14	18	16	12	16	16	16	19
9	12	13	11	14	13	19	15	11	16	16	17	18
10	11	13	12	14	12	16	15	13	17	16	17	18
11	12	12	11	14	11	17	15	12	16	16	16	18
12	12	13	12	15	11	15	14	12	16	16	16	18
13	13	13	12	15	11	17	15	12	17	16	16	18
14	12	13	12	15	11	17	14	11	16	16	16	18
15	12	13	13	14	11	17	14	11	16	16	17	18
16	12	13	14	14	11	15	14	11	16	16	17	18
17	13	13	14	13	11	15	14	11	17	16	17	18
18	13	12	13	12	11	20	14	12	16	16	16	19
19	12	12	13	12	11	25	14	13	16	16	16	18
20	13	13	13	12	11	22	14	12	16	16	16	18
21	12	12	12	12	11	20	14	12	17	16	16	19
22	12	14	13	13	11	19	14	12	17	16	16	19
23	13	13	13	e15	11	18	13	12	16	16	17	19
24	13	13	13	e13	11	18	13	12	16	16	17	19
25	12	13	13	e13	11	28	13	12	16	16	17	19
26	12	13	12	e13	11	25	13	12	16	16	17	18
27	12	13	12	e13	11	22	13	12	16	16	17	18
28	12	13	12	e13	13	20	12	12	16	16	17	18
29	13	12	12	e14	---	20	12	12	16	16	17	18
30	12	13	12	e13	---	19	12	16	16	16	17	18
31	13	---	13	e14	---	19	---	18	---	16	17	---
TOTAL	381	384	385	425	337	1951	435	383	488	496	510	547
MEAN	12.3	12.8	12.4	13.7	12.0	62.9	14.5	12.4	16.3	16.0	16.5	18.2
MAX	13	14	14	16	14	1290	18	18	17	16	17	19
MIN	11	12	11	12	11	15	12	11	16	16	16	17
AC-FT	756	762	764	843	668	3870	863	760	968	984	1010	1080

CAL YR 1990 TOTAL 7864 MEAN 21.5 MAX 258 MIN 10 AC-FT 15600
WTR YR 1991 TOTAL 6722 MEAN 18.4 MAX 1290 MIN 11 AC-FT 13330

e Estimated.

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 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 1,035 ft above National Geodetic Vertical Datum of 1929, 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. Diversion from Balch Afterbay to Kings River powerplant began 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.

AVERAGE DISCHARGE.--31 years, 328 ft³/s, 237,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft³/s, Feb. 1, 1963, gage height, 19.20 ft, from rating curve extended above 10,100 ft³/s; minimum daily, 6.4 ft³/s, Oct. 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,740 ft³/s, Mar. 4, gage height, 12.45 ft; minimum daily, 22 ft³/s, several days in December and January.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	31	28	23	24	173	263	701	636	146	48	37
2	32	29	27	22	30	88	223	436	740	128	48	37
3	31	30	26	22	33	132	268	359	801	116	47	38
4	31	28	25	22	32	3090	348	345	824	110	46	39
5	31	27	25	23	32	1170	450	531	733	105	46	39
6	31	28	25	24	33	378	509	744	633	96	45	38
7	31	29	24	29	31	249	473	898	583	91	45	38
8	30	27	24	29	28	203	445	979	547	88	44	39
9	31	26	25	30	28	196	481	756	515	86	44	39
10	30	26	26	30	26	168	501	516	515	82	44	39
11	30	25	25	29	25	163	373	427	487	78	42	39
12	31	25	22	29	25	141	315	392	445	74	41	39
13	31	25	23	26	26	158	330	509	399	70	42	39
14	30	25	23	26	27	136	404	480	349	72	43	39
15	30	23	23	25	30	135	440	588	307	69	44	38
16	30	23	23	24	32	118	384	820	278	67	45	38
17	31	24	23	25	36	126	362	789	250	65	44	38
18	31	24	23	25	34	191	360	525	225	63	42	37
19	31	24	23	25	29	245	384	432	208	62	41	37
20	32	27	22	29	29	196	341	460	193	63	41	37
21	32	25	22	29	28	161	309	504	178	64	39	37
22	32	26	22	30	29	136	307	556	167	61	39	37
23	32	25	23	30	29	137	323	794	156	60	40	37
24	33	24	24	29	29	141	415	971	146	57	38	37
25	31	24	22	30	28	261	397	1030	143	55	39	37
26	31	29	23	27	28	217	329	922	137	54	37	37
27	31	27	24	25	29	200	358	802	141	53	38	39
28	31	29	24	25	51	177	434	740	159	52	38	39
29	31	27	24	24	---	181	586	745	253	51	38	39
30	30	27	23	25	---	210	725	692	191	50	38	39
31	31	---	23	25	---	248	---	559	---	48	38	---
TOTAL	962	789	739	816	841	9525	11837	20002	11339	2336	1304	1142
MEAN	31.0	26.3	23.8	26.3	30.0	307	395	645	378	75.4	42.1	38.1
MAX	33	31	28	30	51	3090	725	1030	824	146	48	39
MIN	30	23	22	22	24	88	223	345	137	48	37	37
AC-FT	1910	1560	1470	1620	1670	18890	23480	39670	22490	4630	2590	2270

CAL YR 1990 TOTAL 43672 MEAN 120 MAX 698 MIN 22 AC-FT 86620

WTR YR 1991 TOTAL 61632 MEAN 169 MAX 3090 MIN 22 AC-FT 122200

TULARE LAKE BASIN

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA
(National stream-quality accounting network station)

LOCATION.--Lat 36°52'29", long 119°08'27", in SW 1/4 NE 1/4 sec.21, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, on right bank 0.8 mi downstream from North Fork, 2.4 mi southwest of Balch Camp, and 8.5 mi southeast of Trimmer.

DRAINAGE AREA.--1,342 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1951 to current year. Prior to January 1952 monthly discharge only, published in WSP 1735. Published as Kings River below North Fork, October 1951 to September 1965. Records for 1962 to 1984 include flow diverted to Kings River powerplant.

REVISED RECORDS.--WSP 1930: Drainage area. WDR CA-72-2: Adjusted data for 1971.

GAGE.--Water-stage recorder. Datum of gage is 942.42 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Courtright and Wishon Reservoirs (stations 11214550 and 11214800). This station measures inflow to Pine Flat Lake (station 11221000). See schematic diagram of Kings River basin. For records of combined discharge of river and powerplant, see following page.

COOPERATION.--Records of diversion to Kings River powerplant and contents for Courtright and Wishon Reservoirs were provided by Pacific Gas & Electric Co.

AVERAGE DISCHARGE (adjusted for diversion to Kings River powerplant and change in contents in Wishon and Courtright Reservoirs).--40 years, 2,229 ft³/s, 1,615,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 85,200 ft³/s, Dec. 23, 1955, gage height, 23.08 ft, from rating curve extended above 22,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 86 ft³/s, Oct. 1, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 19, 1950, reached a stage of 21.6 ft from floodmarks, discharge, 74,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 23,400 ft³/s, Mar. 4, gage height, 12.60 ft; minimum daily, 121 ft³/s, Dec. 23.

Combined river and powerplant: Maximum daily discharge, 9,270 ft³/s, Mar. 4; minimum daily, 121 ft³/s, Dec. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	209	145	144	150	136	740	1270	2830	3850	1970	752	193
2	201	146	139	153	134	478	1110	2110	5160	2300	713	187
3	196	146	134	163	135	600	1150	1780	6600	2540	605	190
4	190	142	135	266	135	8610	1340	1650	7160	2630	532	193
5	191	143	135	240	137	3860	1720	2140	6810	2560	485	206
6	186	143	133	181	139	1560	2060	2980	6600	2440	449	212
7	183	141	130	165	138	1220	2060	3750	6250	2110	420	268
8	180	133	129	155	132	1070	1940	4900	6390	1990	395	341
9	175	138	130	148	133	1000	1970	4500	6020	1770	371	315
10	171	136	129	147	131	897	2030	3160	6420	1600	353	299
11	168	133	132	145	130	905	1670	2500	6650	1530	335	286
12	166	132	145	147	131	806	1440	2110	6960	1410	324	282
13	163	133	155	147	132	853	1370	2530	6680	1330	333	276
14	160	131	158	147	133	794	1470	2430	5910	1280	338	259
15	157	131	151	147	138	789	1580	2710	5040	1170	348	243
16	154	131	150	146	143	650	1490	3820	4830	1070	342	229
17	154	131	146	143	152	667	1420	4450	4340	986	329	218
18	152	131	142	140	154	962	1360	3180	3500	921	314	208
19	153	132	167	139	143	1250	1400	2600	3270	872	301	194
20	160	142	169	139	144	993	1310	2610	3080	843	289	188
21	162	141	151	139	143	843	1230	3020	2810	787	279	182
22	159	137	128	137	144	723	1230	2890	2690	724	267	180
23	156	134	121	134	144	707	1270	4090	2700	678	259	178
24	155	135	144	134	143	697	1480	5840	2590	638	248	176
25	150	135	155	132	142	1260	1580	6620	2290	621	242	170
26	148	148	161	131	141	1080	1360	6470	2120	596	236	171
27	147	143	161	131	142	975	1470	5750	2110	564	233	180
28	146	137	158	130	179	899	1630	4960	1920	538	227	177
29	146	142	154	129	---	924	1970	5180	1830	514	218	176
30	144	144	149	126	---	1020	2500	4970	1760	504	208	175
31	144	---	149	130	---	1160	---	3930	---	526	200	---
TOTAL	5126	4136	4484	4661	3928	38992	46880	112460	134340	40012	10945	6552
MEAN	165	138	145	150	140	1258	1563	3628	4478	1291	353	218
MAX	209	148	169	266	179	8610	2500	6620	7160	2630	752	341
MIN	144	131	121	126	130	478	1110	1650	1760	504	200	170
AC-FT	10170	8200	8890	9250	7790	77340	92990	223100	266500	79360	21710	13000

CAL YR 1990 TOTAL 273518 MEAN 749 MAX 3630 MIN 121 AC-FT 542500 MEAN a 910 AC-FT a 658800
WTR YR 1991 TOTAL 412516 MEAN 1130 MAX 8610 MIN 121 AC-FT 818200 MEAN a 1406 AC-FT a 1018000

a Adjusted for diversion to Kings River powerplant and change in contents in Wishon and Courtright Reservoirs.

11218501 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KINGS RIVER BELOW NORTH FORK
AND KINGS RIVER POWERPLANT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	209	145	144	150	136	824	1610	3090	4140	2550	1340	193
2	201	146	139	153	134	573	1430	2370	5450	2910	1250	187
3	196	146	134	163	135	845	1370	2070	6880	3100	1240	525
4	190	142	135	364	135	9270	1670	1940	7430	3300	1120	540
5	191	143	135	240	137	3860	2080	2430	7090	3130	1060	633
6	186	143	133	181	139	2560	2410	3280	6860	3010	1020	212
7	183	141	130	165	138	1480	2370	4040	6540	2720	1010	268
8	180	133	129	241	132	1340	2250	5200	6670	2600	987	341
9	175	138	130	148	133	1310	2270	4790	6300	2370	942	315
10	171	136	210	147	131	1170	2310	3450	6690	2160	949	367
11	168	133	132	261	130	1190	1950	2780	6920	2110	941	482
12	166	132	145	147	131	1090	1780	2390	7250	2010	891	282
13	163	133	155	147	132	1120	1680	2810	6950	1920	910	581
14	160	131	158	217	133	1090	1790	2710	6180	1860	851	259
15	157	131	151	207	138	1080	1900	3010	5290	1750	949	243
16	154	131	150	146	143	955	1800	4100	5100	1660	937	318
17	154	131	146	143	152	916	1680	4720	4620	1560	811	439
18	152	131	142	140	154	1320	1680	3460	3780	1520	543	472
19	153	132	167	193	143	1600	1620	2880	3560	1480	387	194
20	160	142	219	139	144	1300	1620	2890	3470	1450	289	188
21	162	141	234	139	143	1130	1520	3290	3390	1400	323	182
22	159	137	128	181	144	1050	1550	3170	3290	1330	267	304
23	156	134	121	134	144	1000	1550	4360	3300	1250	259	483
24	155	135	144	134	143	1000	1770	6120	3160	1210	248	394
25	150	135	155	132	142	1580	1880	6890	2900	1220	242	451
26	199	148	161	131	141	1390	1620	6760	2730	1210	236	361
27	147	143	161	131	243	1290	1810	6020	2720	1160	233	483
28	146	137	158	130	246	1200	1900	5220	2490	1100	609	412
29	146	142	154	129	---	1230	2260	5460	2420	1070	431	381
30	144	144	149	126	---	1330	2850	5240	2350	1030	208	514
31	144	---	149	130	---	1480	---	4170	---	1080	200	---
TOTAL	5177	4136	4698	5189	4096	48573	55980	121110	145920	58230	21683	11004
MEAN	167	138	152	167	146	1567	1866	3907	4864	1878	699	367
MAX	209	148	234	364	246	9270	2850	6890	7430	3300	1340	633
MIN	144	131	121	126	130	573	1370	1940	2350	1030	200	182
AC-FT	10270	8200	9320	10290	8120	96340	111000	240200	289400	115500	43010	21830

CAL YR 1990 TOTAL 341689 MEAN 936 MAX 4330 MIN 121 AC-FT 677700

WTR YR 1991 TOTAL 485796 MEAN 1331 MAX 9270 MIN 121 AC-FT 963600

TULARE LAKE BASIN

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956 to current year.

CHEMICAL DATA: Water years 1956-66, 1968-70, 1973 to current year.

BIOLOGICAL DATA: Water years 1978-81.

WATER TEMPERATURE: Water years 1967-88.

SEDIMENT DATA: Water years 1978 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1966 to September 1988.

REMARKS.--Quality of water samples are obtained at the gaging station upstream from the powerplant. There was no backwater during the year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 KF AGAR (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CaCO3)
NOV, 1990												
14...	1245	132	61	7.4	11.0	0.40	735	10.2	96	<1	<1	19
JAN, 1991												
08...	1125	155	62	7.1	5.0	0.90	737	--	--	K6	39	19
MAR												
12...	1400	774	51	7.4	9.0	2.7	754	12.0	105	K2	21	16
MAY												
14...	1325	2340	26	7.2	11.5	1.1	747	10.6	99	K1	K5	8
JUL												
24...	1035	626	33	7.4	21.0	1.4	747	8.8	101	K2	K310	11
SEP												
17...	1250	217	49	7.8	22.0	1.2	734	8.5	101	K120	32	15

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	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	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)
NOV												
14...	0	6.2	0.78	4.2	32	0.4	0.90	27	0	22	5.6	2.9
JAN												
08...	0	6.3	0.88	4.1	30	0.4	1.0	25	0	20	4.6	3.1
MAR												
12...	0	5.3	0.71	3.7	32	0.4	1.0	21	0	17	3.3	1.7
MAY												
14...	0	2.7	0.36	2.0	32	0.3	0.90	11	0	11	1.5	0.60
JUL												
24...	0	3.6	0.38	2.1	29	0.3	0.70	15	0	13	2.3	0.50
SEP												
17...	0	5.1	0.54	3.4	31	0.4	0.90	19	0	15	3.3	1.9

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	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 TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 14...	0.20	10	47	44	0.06	<0.010	<0.010	<0.100	<0.100	0.050	0.040	<0.20
JAN 08...	<0.10	11	34	43	0.05	<0.010	<0.010	0.100	<0.100	0.010	0.020	0.40
MAR 12...	<0.10	11	36	38	0.05	<0.010	<0.010	0.140	0.150	<0.010	0.020	0.30
MAY 14...	<0.10	8.4	26	22	0.03	<0.010	<0.010	<0.050	<0.050	0.010	0.030	0.20
JUL 24...	<0.10	6.9	--	24	0.01	<0.010	<0.010	<0.050	<0.050	0.020	0.020	0.40
SEP 17...	<0.10	8.3	31	33	0.04	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.20

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	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)
NOV 14...	<0.010	<0.010	<0.010	<0.010	<10	1	8	<0.5	<1.0	<1	<3	2
JAN 08...	0.030	0.040	0.020	<0.010	--	--	--	--	--	--	--	--
MAR 12...	0.020	0.010	<0.010	<0.010	50	<1	9	0.8	<1.0	2	<3	2
MAY 14...	<0.010	0.020	<0.010	<0.010	30	<1	4	<0.5	<1.0	<1	<3	2
JUL 24...	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--
SEP 17...	0.010	<0.010	0.020	<0.010	20	1	8	<0.5	<1.0	<1	<3	2

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	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)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 14...	10	1	<4	1	<0.1	<10	1	<1	<1.0	39	<6	9
JAN 08...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 12...	48	<1	<4	3	<0.1	<10	1	<1	<1.0	37	<6	<3
MAY 14...	24	3	<4	1	0.6	<10	<1	<1	<1.0	19	<6	4
JUL 24...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 17...	10	<1	<4	2	<0.1	<10	<1	<1	<1.0	33	<6	4

TULARE LAKE BASIN

11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CA--Continued

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR											
12...*	1330	2.70	218	52	7.6	9.0	754	12.0	102	2	91
12...*	1335	2.80	236	50	7.5	9.0	754	12.2	104	2	90
12...*	1340	2.50	256	51	7.6	9.0	754	12.0	102	2	91
12...*	1350	2.30	285	51	7.6	9.0	754	11.8	101	2	89
12...*	1355	3.00	316	52	7.6	9.0	754	11.8	101	2	92
SEP											
17...*	1300	2.11	32.0	49	7.8	22.0	734	8.5	101	1	75
17...*	1305	2.83	56.0	49	7.8	22.0	734	8.5	101	1	75
17...*	1310	3.18	75.0	51	7.8	22.0	734	8.5	101	1	75
17...*	1315	2.53	96.0	50	7.8	22.0	734	8.5	101	1	75
17...*	1320	2.23	121	50	7.8	22.0	734	8.5	101	1	75

* Instantaneous discharge at the time of cross-sectional measurement: Mar. 12, 774 ft³/s; Sept. 17, 217 ft³/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	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
NOV						
14...	1300	132	2.5	1	0.36	87
JAN						
08...	1210	155	5.0	1	0.43	72
MAR						
12...	1430	774	9.0	2	4.1	91
MAY						
14...	1325	2340	11.5	7	44	41
JUL						
24...	1035	626	21.0	4	6.9	81
SEP						
17...	1420	217	22.0	1	0.57	75

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 and 2.9 mi northeast of Piedra.

DRAINAGE AREA.--1,545 mi².

PERIOD OF RECORD.--Water years 1956-66, 1970 to current year.

WATER-DISCHARGE RECORDS: Water years 1954-90

CHEMICAL DATA: Water years 1956-66.

WATER TEMPERATURE: Water years 1970 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1969 to current year.

INSTRUMENTATION.--Temperature recorder since October 1969.

REMARKS.--Interruptions in record were due to malfunction of recording instrument. Water temperature is affected by regulation from Pine Flat Dam.

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.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 25.0 °C, Oct. 1, 4; minimum recorded, 6.0 °C, Dec. 24.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	25.0	22.0	19.5	17.0	---	---	9.0	7.0	9.5	7.0	---	---
2	24.5	22.0	19.0	16.0	---	---	9.0	7.0	9.0	7.0	---	---
3	24.5	22.0	19.0	16.0	---	---	8.5	7.5	9.5	6.5	---	---
4	25.0	21.5	18.5	15.5	---	---	8.5	7.5	10.0	7.0	---	---
5	24.5	22.0	18.5	14.5	---	---	8.5	7.5	10.5	8.0	---	---
6	24.5	22.0	18.0	14.5	---	---	8.5	7.5	10.0	7.0	---	---
7	24.0	21.5	17.5	14.5	---	---	9.0	7.0	11.0	7.0	---	---
8	24.5	21.5	17.5	14.0	13.0	10.5	9.0	7.0	11.0	7.0	---	---
9	24.0	21.0	17.0	13.5	13.0	10.0	9.0	7.5	11.0	7.5	---	---
10	24.0	20.5	17.0	13.5	14.0	10.0	9.5	7.0	11.0	6.5	---	---
11	23.5	19.5	17.0	13.5	13.0	10.5	9.0	7.5	10.0	7.0	---	---
12	23.5	20.0	17.0	14.0	12.0	10.5	10.0	7.5	10.5	6.5	---	---
13	23.0	20.0	17.0	13.5	12.0	10.5	9.5	7.5	11.0	7.5	---	---
14	23.0	19.5	16.5	14.0	12.0	10.5	8.5	7.5	10.5	7.0	---	---
15	22.5	19.5	16.0	14.0	11.5	10.0	8.5	7.5	10.5	7.0	---	---
16	22.5	18.0	16.0	13.0	12.5	10.0	9.0	7.5	11.0	7.0	---	---
17	22.5	19.5	---	---	12.0	10.0	9.5	7.5	10.5	7.0	---	---
18	21.5	20.0	---	---	12.0	10.0	9.5	7.5	11.5	7.5	---	---
19	22.0	19.5	---	---	10.5	10.0	9.5	7.5	10.5	7.5	---	---
20	22.0	19.0	---	---	11.0	9.5	9.5	6.5	10.0	6.5	---	---
21	22.0	19.0	---	---	11.0	9.5	9.5	7.5	10.0	7.5	---	---
22	21.5	18.5	---	---	11.5	8.5	9.5	7.0	11.5	8.0	---	---
23	21.5	18.5	---	---	10.5	8.0	9.5	7.0	---	---	---	---
24	21.5	18.0	---	---	10.0	6.0	9.5	7.0	---	---	---	---
25	20.5	18.0	---	---	10.0	7.5	9.5	7.0	---	---	---	---
26	21.0	17.5	---	---	10.0	7.5	9.5	7.0	---	---	---	---
27	20.5	17.0	---	---	10.0	7.5	9.5	7.0	---	---	---	---
28	20.5	16.5	---	---	9.5	7.0	9.5	7.5	---	---	---	---
29	20.0	17.0	---	---	9.0	6.5	9.5	7.0	---	---	---	---
30	20.0	17.0	---	---	9.5	7.0	9.5	7.0	---	---	---	---
31	19.0	17.5	---	---	9.0	7.0	10.0	7.0	---	---	---	---
MONTH	25.0	16.5	---	---	---	---	10.0	6.5	---	---	---	---

11221500 KINGS RIVER BELOW PINE FLAT DAM, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	9.5	9.0	11.0	10.5	14.0	14.0	---	---	---	---
2	---	---	9.5	9.0	11.5	10.5	14.0	14.0	---	---	---	---
3	---	---	9.5	9.0	11.0	10.5	14.5	14.0	---	---	---	---
4	---	---	9.5	9.5	11.0	10.5	14.5	14.0	---	---	---	---
5	---	---	9.5	9.0	11.5	11.0	14.5	14.5	---	---	---	---
6	---	---	9.5	9.0	11.5	11.0	14.5	14.5	---	---	---	---
7	---	---	10.0	9.0	12.0	11.5	15.0	14.5	---	---	---	---
8	---	---	10.0	9.0	12.0	11.5	15.0	15.0	---	---	---	---
9	---	---	10.0	9.5	12.0	11.5	15.5	15.0	---	---	---	---
10	---	---	10.0	9.5	12.0	11.5	16.0	15.5	---	---	---	---
11	---	---	14.0	9.5	12.0	12.0	16.5	16.0	---	---	---	---
12	9.5	8.0	10.0	9.5	12.0	12.0	16.5	16.0	---	---	---	---
13	9.0	8.5	10.0	9.5	12.5	12.0	17.0	16.5	---	---	---	---
14	9.0	8.5	10.0	9.5	12.5	12.0	17.5	17.0	---	---	---	---
15	9.5	7.5	10.5	9.5	12.5	12.5	18.0	17.5	---	---	---	---
16	9.0	8.5	10.0	9.5	13.0	12.5	18.5	18.0	---	---	---	---
17	9.0	8.5	10.0	10.0	13.0	12.5	18.5	18.5	---	---	---	---
18	9.0	8.5	10.0	9.5	13.0	12.5	19.0	18.5	---	---	---	---
19	9.0	8.5	10.0	9.5	13.0	12.5	19.5	19.0	---	---	---	---
20	9.0	8.5	10.0	10.0	13.0	13.0	19.5	19.5	---	---	---	---
21	9.0	8.5	10.5	10.0	13.0	13.0	20.0	15.0	---	---	---	---
22	9.0	8.5	10.5	10.0	13.0	13.0	18.0	16.5	---	---	---	---
23	9.0	8.5	10.5	10.0	13.5	13.0	18.5	18.0	---	---	---	---
24	9.5	8.0	10.5	10.0	13.5	13.5	19.0	18.5	---	---	---	---
25	9.0	8.5	10.5	10.0	13.5	13.5	19.5	19.0	---	---	---	---
26	9.0	8.5	10.5	10.0	13.5	13.5	20.0	19.5	---	---	---	---
27	9.0	9.0	11.5	10.0	13.5	13.5	20.5	20.0	---	---	---	---
28	9.0	9.0	11.0	10.0	14.0	13.5	21.0	20.5	---	---	---	---
29	9.5	9.0	10.5	10.5	14.0	13.5	22.0	21.0	---	---	---	---
30	10.0	9.0	11.0	10.5	14.0	14.0	---	---	---	---	---	---
31	---	---	11.0	10.5	---	---	---	---	---	---	---	---
MONTH	---	---	14.0	9.0	14.0	10.5	---	---	---	---	---	---

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 mi².

PERIOD OF RECORD.--October 1957 to current year. 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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 14, 1958, at site 150 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Some small diversions upstream from station for irrigation. See schematic diagram of Kings River basin.

AVERAGE DISCHARGE.--34 years, 42.7 ft³/s, 30,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s, Dec. 6, 1966, gage height, 9.53 ft in gage well, 10.2 ft from floodmarks; 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2000	*1,710	*4.87	Mar. 25	0700	942	4.30
Mar. 19	0915	1,290	4.59				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	66	99	13	3.3	.00	.00	.00
2	.00	.00	.00	.00	.00	76	82	13	3.1	.00	.00	.00
3	.00	.00	.00	.00	.00	27	64	13	2.7	.00	.00	.00
4	.00	.00	.00	.00	.00	418	58	12	2.2	.00	.00	.00
5	.00	.00	.00	.00	.00	299	58	12	1.8	.00	.00	.00
6	.00	.00	.00	.00	.00	72	55	11	1.5	.00	.00	.00
7	.00	.00	.00	.00	.00	36	49	10	.98	.00	.00	.00
8	.00	.00	.00	.00	.00	24	42	10	.65	.00	.00	.00
9	.00	.00	.00	.00	.00	18	35	9.8	.51	.00	.00	.00
10	.00	.00	.00	.00	.00	14	36	10	.43	.00	.00	.00
11	.00	.00	.00	.00	.00	18	38	9.6	.14	.00	.00	.00
12	.00	.00	.00	.00	.00	16	34	9.5	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	26	30	9.2	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	45	28	9.2	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	43	27	9.5	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	33	26	8.8	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	27	24	7.8	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	284	22	7.5	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	728	21	8.0	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	473	21	7.8	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	206	20	7.3	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	102	19	6.8	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	70	19	6.1	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	56	18	5.2	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	617	17	4.5	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	403	16	4.1	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	369	15	3.8	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	178	15	3.5	.00	.00	.00	.00
29	.00	.00	.00	.00	---	130	14	3.5	.00	.00	.00	.00
30	.00	.00	.00	.00	---	106	13	3.2	.00	.00	.00	.00
31	.00	---	.00	.00	---	103	---	3.2	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	5083	1015	251.9	17.31	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	164	33.8	8.13	.58	.000	.000	.000
MAX	.00	.00	.00	.00	.00	728	99	13	3.3	.00	.00	.00
MIN	.00	.00	.00	.00	.00	14	13	3.2	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	10080	2010	500	34	.00	.00	.00

CAL YR 1990 TOTAL 1215.19 MEAN 3.33 MAX 33 MIN .00 AC-FT 2410
WTR YR 1991 TOTAL 6367.21 MEAN 17.4 MAX 728 MIN .00 AC-FT 12630

TULARE LAKE BASIN

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 mi².

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 National Geodetic Vertical Datum of 1929. 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.--Records fair except for estimated daily discharges, which are poor. Minor diversion for irrigation and stock ponds.

AVERAGE DISCHARGE.--46 years, 5.42 ft³/s, 3,930 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (SINCE 1950).--Maximum discharge, 4,360 ft³/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 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1745	*1,120	*6.28	Mar. 24	2345	657	5.57
Mar. 20	0345	909	5.97				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	8.0	3.4	.04	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	8.1	2.9	.04	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	7.0	2.3	.03	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	e56	1.8	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	e96	1.4	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.86	1.2	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.01	1.2	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.99	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.83	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.74	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.76	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.69	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.58	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	17	.35	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	63	.25	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	117	.22	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	227	.27	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	32	.35	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	8.7	.24	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	4.5	.19	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	48	.17	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	96	.14	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	e102	.14	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	e33	.14	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	18	.12	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	12	.09	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	6.7	.08	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	4.2	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	965.07	22.90	0.11	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	31.1	.76	.004	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	227	3.4	.04	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	1910	45	.2	.00	.00	.00	.00

CAL YR 1990 TOTAL 22.00 MEAN .060 MAX 22 MIN .00 AC-FT 44
WTR YR 1991 TOTAL 988.08 MEAN 2.71 MAX 227 MIN .00 AC-FT 1960

e Estimated.

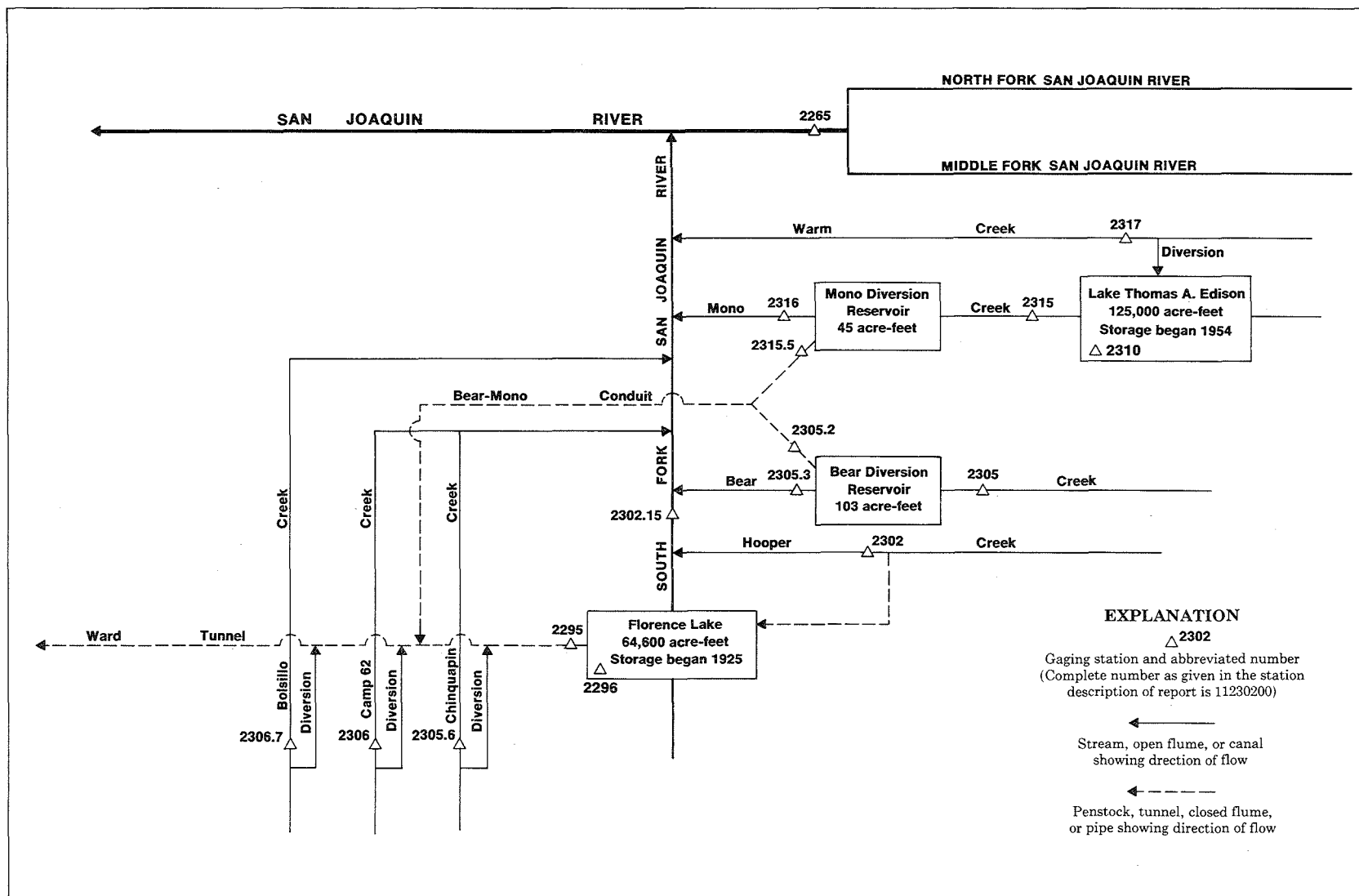


Figure 31. Diversions and storage in upper San Joaquin River basin.

11226500 SAN JOAQUIN RIVER AT MILLER CROSSING, CA

LOCATION.--Lat 37°30'38", long 119°11'47", in SE 1/4 NE 1/4 sec.11, T.5 S., R.25 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank at Miller Crossing, 2.4 mi downstream from North Fork San Joaquin River, 4.6 mi east of Clover Meadow Ranger Station, and 23 mi northeast of town of Bass Lake.

DRAINAGE AREA.--249 mi².

PERIOD OF RECORD.--October 1921 to September 1928, October 1951 to September 1991 (discontinued). Monthly discharges only for some periods, published in WSP 1315-A and WSP 2130. Prior to October 1954, published as Middle Fork San Joaquin River at Miller Bridge.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,570 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 24, 1922, nonrecording gage at same site and datum.

REMARKS.--No regulation or diversion upstream from station. See schematic diagram of upper San Joaquin 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.

AVERAGE DISCHARGE.--47 years, 601 ft³/s, 435,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,600 ft³/s, Dec. 23, 1955, gage height, 21.28 ft, from rating curve extended above 5,200 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 19 ft³/s, Nov. 17, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,110 ft³/s, May 20, gage height, 16.00 ft; minimum daily, 29 ft³/s, Nov. 7, Dec. 15, Jan. 2-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	39	37	e30	38	88	352	825	1510	910	289	66
2	44	38	34	e29	40	79	293	547	2070	1040	224	66
3	42	32	37	e29	41	97	340	460	2530	1110	185	68
4	42	36	38	e29	43	1230	473	533	2680	1120	170	69
5	41	37	36	e30	48	557	648	869	2490	1090	158	77
6	41	36	34	e30	49	272	644	1180	2190	1000	147	83
7	40	29	33	e31	45	239	543	1480	2110	897	139	109
8	39	39	34	e31	46	224	509	1720	2090	864	131	104
9	39	37	34	e31	45	220	547	1190	2200	750	124	94
10	39	35	34	e31	44	188	533	978	2430	645	121	93
11	38	35	e37	e31	45	175	401	786	2530	616	115	92
12	38	36	42	e31	45	158	332	743	2570	576	113	90
13	37	36	34	e31	47	158	351	877	2410	567	116	77
14	37	35	30	e31	50	145	458	815	1960	526	117	71
15	36	34	29	34	55	148	488	1000	1750	449	120	68
16	36	34	e34	35	58	146	393	1430	1640	403	116	65
17	36	34	e36	35	54	150	362	2610	1470	358	110	62
18	36	34	e36	35	45	149	349	3340	1260	340	109	60
19	37	34	e34	37	48	159	374	3710	1190	323	105	59
20	36	40	e33	39	47	151	359	3760	1070	301	101	59
21	40	36	e31	45	51	155	348	3560	986	264	98	58
22	41	34	e30	41	49	155	433	2920	975	249	95	57
23	40	38	e31	42	48	161	503	2110	980	247	93	57
24	39	38	e32	41	48	176	550	1660	886	245	90	55
25	39	37	e32	41	46	171	503	1470	725	243	89	55
26	39	e35	e32	40	49	162	445	1670	689	236	91	58
27	37	32	e31	39	52	171	552	1940	748	221	91	58
28	37	e35	e30	40	66	189	616	1970	746	213	85	57
29	37	e40	e30	39	---	238	786	1930	988	205	76	55
30	36	41	e30	38	---	320	938	1450	860	199	70	54
31	36	---	e30	40	---	356	---	1190	---	306	67	---
TOTAL	1200	1076	1035	1086	1342	6987	14423	50723	48733	16513	3765	2096
MEAN	38.7	35.9	33.4	35.0	47.9	225	481	1636	1624	533	121	69.9
MAX	45	41	42	45	66	1230	938	3760	2680	1120	289	109
MIN	36	29	29	29	38	79	293	460	689	199	67	54
AC-FT	2380	2130	2050	2150	2660	13860	28610	100600	96660	32750	7470	4160

CAL YR 1990 TOTAL 111786 MEAN 306 MAX 1430 MIN 29 AC-FT 221700
WTR YR 1991 TOTAL 148979 MEAN 408 MAX 3760 MIN 29 AC-FT 295500

e Estimated.

11229500 WARD TUNNEL INTAKE AT FLORENCE LAKE, CA

LOCATION.--Lat 37°16'27", long 118°58'23", in NW 1/4 sec.1, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse at entrance to tunnel.

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 National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--No estimated daily discharges. Ward tunnel diverts from Florence Lake (station 11229600), a reservoir on South Fork San Joaquin River, to Huntington Lake (station 11236000) via Portal powerplant. Water used again in Big Creek powerplants. See schematic diagram of upper San Joaquin 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.

AVERAGE DISCHARGE.--66 years, 276 ft³/s, 200,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,990 ft³/s, Apr. 30, 1926; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	1.0	5.1	1.8	.53	.68	77	2.3	1280	600	312	414
2	20	.92	3.9	1.8	.59	.68	77	2.3	1180	714	604	411
3	18	.77	3.3	1.8	.59	.68	77	2.1	860	858	603	406
4	12	.72	3.4	1.8	.59	.68	78	2.3	823	897	659	403
5	8.6	.70	3.2	1.8	.59	.75	30	2.2	419	900	699	402
6	8.0	2.5	2.6	1.7	.59	.80	1.9	2.4	162	903	696	398
7	8.3	2.4	2.4	1.6	.59	.87	2.1	2.4	161	903	692	396
8	8.2	2.3	2.4	1.6	.59	.87	2.1	2.5	156	903	752	395
9	7.9	2.3	2.4	2.0	.59	.97	2.1	2.6	144	901	653	393
10	8.2	2.3	2.3	2.5	.59	1.1	2.1	2.5	102	900	271	391
11	8.2	2.3	2.7	2.7	.68	1.1	2.1	2.6	119	932	105	390
12	7.9	2.4	4.1	2.9	.68	1.1	204	2.6	352	950	93	386
13	7.7	2.9	4.2	3.1	.68	1.1	472	2.6	731	949	293	383
14	7.4	3.0	2.8	3.3	.68	27	1.7	134	876	946	292	376
15	7.1	2.9	2.5	3.3	.68	82	1.8	342	866	883	293	371
16	7.0	3.2	2.2	2.9	.68	82	1.9	403	867	544	292	204
17	5.6	3.3	2.2	2.6	.68	81	2.0	342	899	539	291	103
18	3.6	3.4	3.3	2.6	.68	81	2.0	356	943	537	290	135
19	4.1	3.5	4.6	2.6	.68	81	2.0	357	948	532	288	153
20	11	3.7	4.6	2.7	.68	81	2.1	356	1020	327	287	150
21	18	2.8	4.1	2.8	.68	80	2.1	355	666	227	334	147
22	.55	2.1	3.6	2.2	.68	80	2.1	354	386	227	438	146
23	.68	2.1	3.2	1.8	.66	79	2.1	322	387	226	434	145
24	.62	2.4	2.6	1.6	.68	79	2.1	690	400	280	432	144
25	.62	2.9	2.6	1.6	.68	77	2.1	1180	465	295	429	144
26	.68	3.3	2.6	1.6	.68	78	2.3	1230	535	224	427	141
27	.62	2.2	2.4	1.6	.68	78	2.3	1240	557	225	426	141
28	.73	2.6	2.4	1.6	.68	77	2.3	1240	580	227	423	143
29	1.9	4.4	2.3	1.6	---	76	2.3	1230	549	246	411	90
30	2.4	5.3	2.2	1.5	---	76	2.3	1260	554	259	419	4.4
31	.79	---	2.1	.90	---	76	---	1320	---	262	416	---
TOTAL	215.39	76.61	94.3	65.90	18.06	1382.38	1062.9	12742.4	17987	18316	13054	7905.4
MEAN	6.95	2.55	3.04	2.13	.64	44.6	35.4	411	600	591	421	264
MAX	20	5.3	5.1	3.3	.68	82	472	1320	1280	950	752	414
MIN	.55	.70	2.1	.90	.53	.68	1.7	2.1	102	224	93	4.4
AC-FT	427	152	187	131	36	2740	2110	25270	35680	36330	25890	15680

CAL YR 1990 TOTAL 54288.00 MEAN 149 MAX 688 MIN .55 AC-FT 107700
WTR YR 1991 TOTAL 72920.34 MEAN 200 MAX 1320 MIN .53 AC-FT 144600

11229600 FLORENCE LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°16'26", long 118°58'23", in NW 1/4 sec.1, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of Ward tunnel intake near dam on South Fork San Joaquin River, 16 mi northeast of town of Big Creek.
DRAINAGE AREA.--171 mi².

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 National Geodetic Vertical Datum of 1929 (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, and 7,327.50 ft, top of spillway drum gates, NGVD. 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 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 provided 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, 59,697 acre-ft, July 5, elevation, 7,322.55 ft; minimum, 1,002 acre-ft, Feb. 3, elevation, 7,230.74 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	7,235	1,774	7,260	11,608	7,290	31,966
7,222	63	7,240	2,976	7,265	14,580	7,300	39,851
7,224	201	7,245	4,666	7,270	17,755	7,310	48,284
7,227	495	7,250	6,648	7,275	21,097	7,320	57,312
7,230	887	7,255	8,950	7,280	24,588	7,330	66,826

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1044	1014	1042	1022	1006	1226	3102	11447	19235	59207	48740	25684
2	1037	1011	1037	1020	1005	1244	3175	11792	19656	59461	47927	24931
3	1033	1009	1037	1019	1002	1307	3283	12097	21427	59565	47025	24127
4	1039	1020	1037	1023	1008	1590	3529	12448	23619	59659	45976	23373
5	1042	1031	1034	1028	1011	1906	4063	13028	26429	59697	44816	22610
6	1042	1030	1033	1031	1016	2093	4666	13850	29490	59640	43634	21943
7	1042	1019	1031	1037	1020	2273	6130	14983	32594	59518	42429	21296
8	1040	1027	1030	1039	1027	2440	5487	16357	35672	59254	41088	20648
9	1042	1030	1027	1042	1033	2622	5820	17334	38821	58674	39957	19972
10	1042	1030	1028	1044	1039	2804	6195	17978	42454	57982	39502	19295
11	1042	1028	1036	1052	1042	2995	6476	18490	46284	57182	39396	18609
12	1039	1033	1037	1052	1047	3185	6308	19001	49777	58257	39348	17919
13	1037	1033	1036	1054	1054	3364	5637	19669	52104	55262	38870	17211
14	1036	1034	1030	1054	1062	3463	5971	19979	53242	54199	38410	16510
15	1033	1037	1027	1052	1073	3394	6316	20060	54107	53151	37936	15804
16	1028	1037	1025	1051	1083	3322	6627	20512	55152	52689	37463	15408
17	1030	1037	1027	1049	1091	3257	6912	21015	55990	52167	36986	15231
18	1037	1037	1034	1049	1095	3207	7166	21070	56165	51619	36486	14983
19	1047	1037	1039	1047	1103	3147	7416	20947	56238	51155	35972	14685
20	1044	1037	1034	1049	1110	3099	7643	20784	55962	50994	35476	14385
21	1020	1028	1031	1045	1119	3039	7878	20696	56220	50940	34865	14098
22	1020	1027	1031	1044	1125	2979	8121	20764	57062	50860	34031	13820
23	1017	1031	1031	1042	1132	2933	8377	21681	57871	50735	33195	13525
24	1014	1034	1031	1042	1139	2893	8667	22547	58533	50495	32364	13237
25	1017	1037	1031	1040	1144	2867	8940	22722	58889	50202	31540	12951
26	1020	1030	1030	1039	1151	2813	9212	22729	59011	50033	30707	12660
27	1023	1023	1027	1036	1159	2796	9537	22442	59198	49857	29872	12371
28	1025	1037	1027	1031	1190	2784	9892	21943	59104	49645	29036	12074
29	1023	1042	1023	1039	---	2816	10353	21585	59048	49381	28206	11890
30	1019	1045	1023	1022	---	2896	10927	21009	59001	49081	27361	11901
31	1016	---	1022	1011	---	3008	---	19885	---	48853	26523	---
MAX	1047	1045	1042	1054	1190	3463	10927	22729	59198	59697	48740	25684
MIN	1014	1009	1022	1011	1002	1226	3102	11447	19235	48853	26523	11890
a	7230.83	7231.02	7230.87	7230.80	7231.87	7240.10	7258.77	7273.21	7321.81	7310.65	7282.69	7260.51
b	-36	+29	-23	-11	+179	+1818	+7919	+8958	+39116	-10148	-22330	-14622

CAL YR 1990 b -25

WTR YR 1991 b +10849

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11230200 HOOPER CREEK AT DIVERSION DAM, NEAR FLORENCE LAKE, CA

LOCATION.--Lat 37°18'19", long 118°56'57", unsurveyed, T.7 S., R.28 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 80 ft downstream from diversion dam, 0.8 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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 7,440 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated by diversion dam 80 ft upstream and consists of fishery release and spill over diversion dam. Diversion to Florence Lake and Ward tunnel (stations 11229600 and 11229500). See schematic diagram of upper San Joaquin 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.

AVERAGE DISCHARGE.--5 years, 2.71 ft³/s, 1,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 20 ft³/s, Apr. 18, 1989; minimum daily, 1.2 ft³/s, Apr. 25, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 5.0 ft³/s, Mar. 4; minimum daily, 1.3 ft³/s, Oct. 11-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.9	1.8	1.5	1.5	1.5	2.6	2.5	3.2	2.8	2.5	2.5
2	1.7	1.7	1.8	1.5	1.6	1.8	2.6	2.6	2.9	2.9	3.6	2.7
3	1.6	1.9	1.7	1.5	1.6	1.8	3.0	2.6	2.7	2.8	4.1	2.7
4	1.6	1.9	1.7	1.5	1.6	5.0	3.9	2.5	3.3	2.8	4.2	3.7
5	1.6	1.8	1.7	1.5	1.7	2.3	4.4	2.4	3.4	2.6	4.2	3.6
6	1.8	1.7	1.7	1.5	1.6	3.8	4.0	2.5	3.1	2.5	4.3	4.2
7	1.9	1.9	1.7	1.5	1.6	2.0	3.8	2.3	2.8	2.3	4.3	4.6
8	1.7	2.0	1.6	1.5	1.6	2.4	3.7	2.4	3.2	2.3	4.1	3.3
9	1.5	1.9	1.6	1.5	1.5	1.9	3.8	2.4	3.7	2.5	4.0	3.2
10	1.4	1.8	1.6	1.5	1.5	1.9	3.6	2.4	3.7	2.4	4.1	3.8
11	1.3	1.8	1.8	1.6	1.5	1.8	3.4	2.3	3.6	2.5	3.9	4.4
12	1.3	1.8	1.8	1.6	1.6	2.0	3.1	2.2	3.9	2.5	3.3	3.9
13	1.3	1.8	1.9	1.6	1.6	1.7	3.2	2.3	3.0	2.2	2.7	3.6
14	1.3	1.8	e1.7	1.6	1.5	2.3	3.5	2.3	3.4	2.7	2.6	3.4
15	1.3	1.8	e1.7	1.6	1.5	1.7	3.6	2.2	4.0	3.8	2.7	3.0
16	1.4	1.8	e1.7	1.6	1.5	1.8	3.4	2.1	4.0	4.0	2.6	2.8
17	1.6	1.8	e1.6	1.6	1.6	1.7	3.4	2.4	3.7	4.0	2.7	2.7
18	1.9	1.8	e1.6	1.6	2.0	1.9	3.3	2.3	3.5	3.9	3.2	2.6
19	2.0	1.8	1.7	1.6	1.6	1.9	3.2	2.3	3.6	4.0	3.1	2.5
20	2.0	1.8	1.8	1.6	1.5	1.9	3.0	2.3	3.7	3.9	3.0	2.3
21	1.9	1.8	1.7	1.6	1.4	2.0	3.0	2.5	3.6	3.9	2.3	2.2
22	1.9	1.8	1.6	1.6	1.4	2.3	3.0	2.8	3.6	4.0	2.3	2.3
23	1.8	1.7	1.6	1.6	1.5	2.1	3.0	2.9	3.7	4.0	3.1	2.3
24	1.8	1.7	1.5	1.6	1.5	2.1	3.1	2.9	3.7	e4.0	3.0	2.1
25	1.9	1.6	1.5	1.5	1.5	2.1	3.0	2.6	3.6	e3.9	3.0	2.5
26	1.8	1.9	1.6	1.5	1.5	2.1	2.9	2.7	3.0	e3.8	2.8	2.5
27	1.8	2.2	1.5	1.5	1.5	2.1	3.1	2.8	3.0	3.8	2.6	2.3
28	1.8	1.9	1.4	1.5	1.5	2.2	2.7	2.6	3.0	3.4	2.8	2.3
29	1.9	1.8	1.4	1.5	---	2.4	2.3	2.4	3.0	3.8	2.7	2.3
30	1.9	1.8	1.4	1.5	---	2.6	2.3	2.9	2.9	3.9	2.7	2.3
31	1.9	---	1.4	1.5	---	2.7	---	3.2	---	3.8	2.5	---
TOTAL	52.2	54.7	50.8	47.9	43.5	67.8	96.9	77.6	101.5	101.7	99.0	88.6
MEAN	1.68	1.82	1.64	1.55	1.55	2.19	3.23	2.50	3.38	3.28	3.19	2.95
MAX	2.0	2.2	1.9	1.6	2.0	5.0	4.4	3.2	4.0	4.0	4.3	4.6
MIN	1.3	1.6	1.4	1.5	1.4	1.5	2.3	2.1	2.7	2.2	2.3	2.1
AC-FT	104	108	101	95	86	134	192	154	201	202	196	176

CAL YR 1990 TOTAL 884.6 MEAN 2.42 MAX 8.0 MIN 1.3 AC-FT 1750
WTR YR 1991 TOTAL 882.2 MEAN 2.42 MAX 5.0 MIN 1.3 AC-FT 1750

e Estimated.

11230215 SOUTH FORK SAN JOAQUIN RIVER BELOW HOOPER CREEK, NEAR FLORENCE LAKE, CA

LOCATION.--Lat 37°18'30", Long 118°57'40", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.2 mi downstream from Hooper Creek, 3.2 mi downstream from spillway of Florence Lake Dam, and 17 mi northeast of town of Big Creek.

DRAINAGE AREA.--184 mi².

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 National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Flow regulated by Florence Lake (station 11229600) 3.2 mi upstream, and Hooper Creek diversion dam (capacity less than 2 acre-ft) 0.7 mi upstream. See schematic diagram of upper San Joaquin 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.

AVERAGE DISCHARGE (combined flow of South Fork San Joaquin River and Ward Tunnel at intake).--13 years, 364 ft³/s, 263,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,950 ft³/s, Sept. 26, 1982, gage height, 11.42 ft, from rating curve extended above 1,300 ft³/s on basis of spill flow at Florence Lake; minimum daily, 3.9 ft³/s, Oct. 24, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 61 ft³/s, Apr. 5, gage height, 4.64 ft; minimum daily, 11 ft³/s, Feb. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	21	14	13	13	14	30	26	26	24	24	24
2	18	20	14	13	14	13	29	25	26	24	24	27
3	16	15	14	14	13	13	32	24	26	23	26	25
4	17	14	14	14	13	30	41	23	27	24	27	25
5	17	14	14	14	12	33	49	23	28	23	26	26
6	22	14	14	14	12	24	49	24	27	23	25	28
7	19	13	14	14	12	21	49	24	25	23	25	28
8	19	14	14	14	12	21	41	25	25	24	25	26
9	18	14	14	13	12	21	35	25	27	24	25	25
10	17	14	14	13	12	20	30	25	27	23	25	26
11	16	14	14	14	12	20	26	25	26	23	25	27
12	16	14	14	14	12	19	22	24	27	23	24	26
13	16	14	14	14	12	19	23	25	26	22	24	26
14	16	14	13	14	13	18	27	25	27	23	24	25
15	16	14	13	14	12	18	27	25	27	25	23	24
16	16	14	e13	14	12	18	24	25	27	23	23	24
17	17	14	e13	14	12	17	22	25	27	23	23	24
18	17	14	e13	14	12	18	21	26	27	23	24	24
19	17	14	e13	14	12	18	20	26	26	25	23	23
20	17	14	e13	14	12	17	19	26	26	26	23	23
21	17	13	e13	14	12	17	19	26	26	24	23	24
22	23	13	e13	14	12	18	20	25	26	23	27	23
23	27	13	e13	14	12	18	20	26	26	23	23	23
24	27	14	e13	14	12	18	19	26	26	23	23	23
25	25	14	e13	14	12	20	19	27	27	23	23	25
26	22	14	e13	14	12	19	17	27	25	23	23	27
27	21	13	e13	14	11	18	18	28	25	23	22	27
28	21	13	e13	14	12	18	17	27	25	22	23	27
29	21	13	13	14	---	19	17	27	26	24	24	27
30	21	13	13	14	---	24	19	27	24	24	24	27
31	21	---	13	14	---	28	---	27	---	25	24	---
TOTAL	597	426	416	430	341	609	801	789	786	728	747	759
MEAN	19.3	14.2	13.4	13.9	12.2	19.6	26.7	25.5	26.2	23.5	24.1	25.3
MAX	27	21	14	14	14	33	49	28	28	26	27	28
MIN	16	13	13	13	11	13	17	23	24	22	22	23
AC-FT	1180	845	825	853	676	1210	1590	1560	1560	1440	1480	1510

CAL YR 1990 TOTAL 7309 MEAN 20.0 MAX 59 MIN 11 AC-FT 14500
WTR YR 1991 TOTAL 7429 MEAN 20.4 MAX 49 MIN 11 AC-FT 14740

e Estimated.

11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°20'18", long 118°58'23", unsurveyed, in SW 1/4 sec.12, 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 mi².

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 National Geodetic Vertical Datum of 1929 (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 provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--70 years, 91.6 ft³/s, 66,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,660 ft³/s, Sept. 26, 1982, gage height, 8.35 ft, from rating curve extended above 570 ft³/s; minimum daily, 1.2 ft³/s, Sept. 29 to Oct. 5, 1924.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 815 ft³/s, June 11, gage height, 5.72 ft; minimum daily, 4.0 ft³/s, Nov. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	5.5	e5.5	e5.0	e4.6	e6.7	36	74	250	210	137	11
2	8.2	4.9	e4.8	e5.0	e4.5	e7.0	31	e45	360	282	114	11
3	8.2	4.9	e5.0	e4.8	e4.6	e10	34	e42	424	318	82	12
4	7.0	5.6	e5.2	e5.1	e4.8	e21	49	e50	435	324	62	18
5	7.0	6.2	e5.2	e5.3	e4.9	e24	72	e92	430	300	52	26
6	6.4	5.1	e5.2	e5.0	e5.1	e17	70	e131	416	281	44	25
7	6.1	4.0	e5.1	e5.0	e5.2	e20	58	e168	447	276	38	35
8	6.1	5.3	e5.0	e5.0	e5.2	e38	53	e206	476	268	35	32
9	6.1	4.8	e5.0	e5.1	e5.3	e32	56	e137	495	192	32	30
10	6.1	4.8	e5.0	e5.2	e5.3	e30	53	e95	540	168	30	27
11	5.9	4.9	e5.0	e5.2	e5.4	e27	41	e78	591	164	28	26
12	5.9	5.3	e5.1	e5.2	e5.5	e25	35	e70	618	152	28	24
13	5.9	5.0	e5.0	e5.2	e5.7	e24	38	e99	588	145	28	22
14	5.9	5.2	e4.9	e5.2	e5.9	e21	48	e92	493	134	27	20
15	5.7	5.4	e4.8	e5.3	e6.1	e20	49	e117	444	112	26	18
16	5.7	5.2	e4.8	e5.4	e6.5	e21	44	e176	418	100	26	16
17	5.7	5.4	e5.1	e5.5	e6.2	e22	40	e165	384	87	24	15
18	5.7	5.1	e4.8	e5.6	e6.2	e20	39	e110	307	81	23	13
19	6.4	5.2	e4.8	e5.6	e6.6	e20	39	e92	287	84	22	12
20	7.6	5.0	e4.8	e5.8	e6.4	e22	33	e82	264	86	21	11
21	6.4	4.2	e4.9	e6.0	e6.5	e23	32	e92	250	71	20	11
22	6.4	4.7	e4.8	e5.8	e6.3	e23	32	136	258	63	18	10
23	6.1	5.1	e4.9	e5.5	e6.3	e25	34	228	260	57	17	10
24	6.1	5.1	e5.0	e5.5	e6.5	e24	44	276	231	53	16	9.4
25	6.1	e5.0	e5.1	e5.3	e6.3	e22	42	325	190	50	15	9.0
26	6.1	e5.0	e5.2	e5.3	e6.6	e24	36	316	180	48	15	11
27	5.9	e4.8	e5.2	e5.0	e6.7	e25	48	289	185	45	14	10
28	5.9	e5.9	e5.1	e4.9	e7.1	e25	54	256	158	43	13	9.5
29	5.7	e6.6	e4.8	e4.8	---	e27	74	264	145	41	12	9.0
30	5.9	e6.2	e4.8	e4.7	---	e33	81	239	154	40	12	8.8
31	5.7	---	e5.0	e4.9	---	e37	---	195	---	56	12	---
TOTAL	196.3	155.4	154.9	162.2	162.3	715.7	1395	4737	10678	4331	1043	501.7
MEAN	6.33	5.18	5.00	5.23	5.80	23.1	46.5	153	356	140	33.6	16.7
MAX	8.4	6.6	5.5	6.0	7.1	38	81	325	618	324	137	35
MIN	5.7	4.0	4.8	4.7	4.5	6.7	31	42	145	40	12	8.8
AC-FT	389	308	307	322	322	1420	2770	9400	21180	8590	2070	995

CAL YR 1990 TOTAL 18147.7 MEAN 49.7 MAX 295 MIN 4.0 AC-FT 36000
WTR YR 1991 TOTAL 24232.5 MEAN 66.4 MAX 618 MIN 4.0 AC-FT 48070

e Estimated.

11230520 BEAR CREEK CONDUIT NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°20'06", long 118°58'24", 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 2.3 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 at diversion dam (station 11230530). Datum of conduit invert, 7,340 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Diversion to Mono-Bear conduit, thence to Ward tunnel and Huntington Lake via Portal Powerplant and used for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin 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.

AVERAGE DISCHARGE.--5 years, 54.8 ft³/s, 39,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 462 ft³/s, June 11, 12, 1991; no flow Oct. 18-21, 1988, Sept. 23-27, Oct. 4, 1989.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	4.1	e3.8	e3.3	e2.9	e4.9	34	71	247	207	135	8.1
2	6.7	3.5	e3.0	e3.3	e2.8	e5.2	29	e42	349	279	111	8.1
3	6.7	3.5	e3.2	e3.1	e2.9	e8.2	32	e39	400	315	80	9.1
4	5.5	4.2	e3.4	e3.4	e3.1	e19	47	e48	410	321	60	15
5	5.5	4.7	e3.4	e3.6	e3.3	e22	66	e89	410	297	50	23
6	4.9	3.6	e3.4	e3.3	e3.5	e15	33	e128	404	278	42	22
7	4.6	2.5	e3.3	e3.3	e3.6	e18	56	e165	419	273	36	32
8	4.6	3.8	e3.2	e3.3	e3.6	e36	51	e203	440	265	32	29
9	4.6	3.3	e3.2	e3.3	e3.7	e30	54	e134	446	189	29	27
10	4.6	3.4	e3.2	e3.4	e3.6	e28	51	e92	456	165	27	24
11	4.4	3.5	e3.2	e3.4	e3.7	e25	39	e75	462	161	25	23
12	4.4	3.9	e3.3	e3.4	e3.8	e23	33	e67	462	149	25	21
13	4.4	3.6	e3.2	e3.4	e4.0	e22	36	e96	447	142	25	19
14	4.4	3.8	e3.1	e3.4	e4.2	e19	46	e89	422	131	24	17
15	4.2	4.0	e3.0	e3.5	e4.4	e18	47	e114	408	109	23	15
16	4.2	3.8	e3.0	e3.6	e4.9	e19	42	e173	397	97	23	13
17	4.2	4.0	e3.3	e3.7	e4.5	e20	38	e162	376	84	21	12
18	4.2	3.7	e3.0	e3.8	e4.5	e18	37	e107	304	78	20	10
19	4.9	3.8	e3.1	e3.8	e4.9	e18	37	e89	284	81	19	9.1
20	6.1	3.6	e3.1	e4.0	e4.7	e20	31	e79	261	83	18	8.1
21	4.9	2.8	e3.1	e4.2	e4.8	e21	30	e89	247	68	17	8.1
22	4.9	3.3	e3.1	e4.0	e4.6	e21	30	133	255	60	15	7.1
23	4.6	3.7	e3.2	e3.7	e4.6	e23	32	225	257	54	14	7.2
24	4.6	3.6	e3.3	e3.7	e4.8	e22	42	273	228	50	13	6.6
25	4.6	e3.2	e3.4	e3.5	e4.6	e20	40	322	187	47	12	6.2
26	4.6	e3.2	e3.4	e3.5	e4.9	e22	34	313	177	45	12	8.2
27	4.4	e3.1	e3.4	e3.2	e5.0	e23	46	286	182	42	11	7.2
28	4.4	e4.1	e3.3	e3.1	e5.4	e23	52	253	155	40	10	6.7
29	4.3	e4.8	e3.1	e3.0	---	e25	72	261	142	38	9.1	6.2
30	4.6	e4.4	e3.1	e3.0	---	e31	79	236	151	37	9.1	6.0
31	4.4	---	e3.3	e3.2	---	e35	---	192	---	53	9.1	---
TOTAL	149.6	110.5	100.1	107.4	115.3	654.3	1296	4645	9785	4238	956.3	414.0
MEAN	4.83	3.68	3.23	3.46	4.12	21.1	43.2	150	326	137	30.8	13.8
MAX	6.7	4.8	3.8	4.2	5.4	36	79	322	462	321	135	32
MIN	4.2	2.5	3.0	3.0	2.8	4.9	29	39	142	37	9.1	6.0
AC-FT	297	219	199	213	229	1300	2570	9210	19410	8410	1900	821

CAL YR 1990 TOTAL 17344.1 MEAN 47.5 MAX 292 MIN 2.5 AC-FT 34400
WTR YR 1991 TOTAL 22571.5 MEAN 61.8 MAX 462 MIN 2.5 AC-FT 44770

e Estimated.

11230530 BEAR CREEK AT DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°20'05", long 118°58'26", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 450 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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 7,338.30 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--No estimated daily discharges. Flow consists of fishery release and spill over diversion dam. Diversion through Bear conduit at diversion dam to Ward tunnel. See schematic diagram of upper San Joaquin 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.

AVERAGE DISCHARGE.--5 years, 2.72 ft³/s, 1,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 156 ft³/s, June 12, 1991; minimum daily, 0.94 ft³/s, Oct. 15, 1987.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	1.4	1.7	1.7	1.7	1.8	1.8	2.6	2.9	2.8	2.3	2.9
2	1.5	1.4	1.8	1.7	1.7	1.8	1.8	2.5	11	2.8	2.5	2.9
3	1.5	1.4	1.8	1.7	1.7	1.8	1.7	2.5	24	2.8	2.4	2.9
4	1.5	1.4	1.8	1.7	1.7	1.8	1.8	2.4	25	2.8	2.2	2.9
5	1.5	1.5	1.8	1.7	1.6	1.8	5.9	2.6	20	2.8	2.2	2.9
6	1.5	1.5	1.8	1.7	1.6	1.8	37	2.5	12	2.8	2.1	2.9
7	1.5	1.5	1.8	1.7	1.6	1.8	1.7	2.5	28	2.8	2.1	2.9
8	1.5	1.5	1.8	1.7	1.6	1.8	1.6	2.5	36	2.9	2.5	2.9
9	1.5	1.5	1.8	1.8	1.6	1.8	1.6	2.5	49	2.8	3.0	2.9
10	1.5	1.4	1.8	1.8	1.7	1.8	1.7	2.6	84	2.7	2.9	2.9
11	1.5	1.4	1.8	1.8	1.7	1.8	1.6	2.6	129	2.7	2.9	2.9
12	1.5	1.4	1.8	1.8	1.7	1.8	1.6	2.6	156	2.7	2.9	2.9
13	1.5	1.4	1.8	1.8	1.7	1.8	1.6	2.6	141	2.7	2.9	3.0
14	1.5	1.4	1.8	1.8	1.7	1.8	1.6	2.6	71	2.8	2.9	3.0
15	1.5	1.4	1.8	1.8	1.7	1.8	1.7	2.6	36	2.7	2.9	2.9
16	1.5	1.4	1.8	1.8	1.6	1.6	1.7	2.6	21	2.7	2.9	2.9
17	1.5	1.4	1.8	1.8	1.7	1.8	1.7	2.6	7.6	2.7	2.9	2.9
18	1.5	1.4	1.8	1.8	1.7	1.8	1.8	2.6	2.7	2.7	2.9	2.9
19	1.5	1.4	1.7	1.8	1.7	1.8	1.7	2.6	2.7	2.7	2.9	2.9
20	1.5	1.4	1.7	1.8	1.7	1.8	1.7	2.5	2.7	2.7	2.9	2.9
21	1.5	1.4	1.8	1.8	1.7	1.8	1.7	2.6	2.7	2.7	2.9	2.9
22	1.5	1.4	1.7	1.8	1.7	1.8	1.7	2.6	2.7	2.7	2.9	2.9
23	1.5	1.4	1.7	1.8	1.7	1.8	1.7	2.6	2.7	2.7	2.9	2.8
24	1.5	1.5	1.7	1.8	1.7	1.8	1.6	2.6	2.7	2.7	2.9	2.8
25	1.5	1.8	1.7	1.8	1.7	1.8	1.5	2.7	2.8	2.7	2.9	2.8
26	1.5	1.8	1.8	1.8	1.7	1.8	1.5	2.7	2.9	2.7	2.9	2.8
27	1.5	1.7	1.8	1.8	1.7	1.8	1.5	2.6	2.9	2.7	2.9	2.8
28	1.5	1.8	1.8	1.8	1.7	1.8	1.5	2.5	2.9	2.7	2.9	2.8
29	1.4	1.8	1.7	1.8	---	1.8	1.5	2.6	2.9	2.7	2.9	2.8
30	1.3	1.8	1.7	1.7	---	1.8	2.0	2.6	2.9	2.7	2.9	2.8
31	1.3	---	1.7	1.7	---	1.8	---	2.6	---	2.7	2.9	---
TOTAL	46.7	44.9	54.8	54.8	47.0	55.6	89.5	79.8	889.7	84.8	85.1	86.4
MEAN	1.51	1.50	1.77	1.77	1.68	1.79	2.98	2.57	29.7	2.74	2.75	2.88
MAX	2.2	1.8	1.8	1.8	1.7	1.8	37	2.7	156	2.9	3.0	3.0
MIN	1.3	1.4	1.7	1.7	1.6	1.6	1.5	2.4	2.7	2.7	2.1	2.8
AC-FT	93	89	109	109	93	110	178	158	1760	168	169	171

CAL YR 1990 TOTAL 722.1 MEAN 1.98 MAX 2.9 MIN 1.3 AC-FT 1430
WTR YR 1991 TOTAL 1619.1 MEAN 4.44 MAX 156 MIN 1.3 AC-FT 3210

11230560 CHINQUAPIN CREEK AT DIVERSION DAM, NEAR BIG CREEK, CA

LOCATION.--Lat 37°18'11", Long 119°01'08", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, at 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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,260 ft above National Geodetic Vertical Datum of 1929, 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. 25 to July 12. See schematic diagram of upper San Joaquin 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	1.3	1.5	1.3	---	---
2	---	---	---	---	---	---	---	1.3	1.5	1.3	---	---
3	---	---	---	---	---	---	---	1.3	1.3	1.3	---	---
4	---	---	---	---	---	---	---	1.3	1.4	1.3	---	---
5	---	---	---	---	---	---	---	1.3	1.2	1.3	---	---
6	---	---	---	---	---	---	---	1.4	1.2	1.3	---	---
7	---	---	---	---	---	---	---	1.4	1.5	1.3	---	---
8	---	---	---	---	---	---	---	1.3	1.5	1.3	---	---
9	---	---	---	---	---	---	---	1.3	1.6	1.3	---	---
10	---	---	---	---	---	---	---	1.3	1.6	1.2	---	---
11	---	---	---	---	---	---	---	1.3	1.4	1.2	---	---
12	---	---	---	---	---	---	---	1.4	1.3	1.1	---	---
13	---	---	---	---	---	---	---	1.4	1.4	---	---	---
14	---	---	---	---	---	---	---	1.4	1.4	---	---	---
15	---	---	---	---	---	---	---	1.4	1.4	---	---	---
16	---	---	---	---	---	---	---	1.4	1.3	---	---	---
17	---	---	---	---	---	---	---	1.4	1.3	---	---	---
18	---	---	---	---	---	---	---	1.4	1.3	---	---	---
19	---	---	---	---	---	---	---	1.4	1.3	---	---	---
20	---	---	---	---	---	---	---	1.4	1.3	---	---	---
21	---	---	---	---	---	---	---	1.4	1.3	---	---	---
22	---	---	---	---	---	---	---	1.4	1.3	---	---	---
23	---	---	---	---	---	---	---	1.3	1.3	---	---	---
24	---	---	---	---	---	---	---	1.1	1.3	---	---	---
25	---	---	---	---	---	---	1.3	1.2	1.4	---	---	---
26	---	---	---	---	---	---	.82	1.4	1.4	---	---	---
27	---	---	---	---	---	---	.81	1.6	1.4	---	---	---
28	---	---	---	---	---	---	.79	1.6	1.4	---	---	---
29	---	---	---	---	---	---	.79	1.6	1.3	---	---	---
30	---	---	---	---	---	---	1.1	1.6	1.3	---	---	---
31	---	---	---	---	---	---	---	1.5	---	---	---	---
TOTAL	---	---	---	---	---	---	---	42.8	41.1	---	---	---
MEAN	---	---	---	---	---	---	---	1.38	1.37	---	---	---
MAX	---	---	---	---	---	---	---	1.6	1.6	---	---	---
MIN	---	---	---	---	---	---	---	1.1	1.2	---	---	---
AC-FT	---	---	---	---	---	---	---	85	82	---	---	---

11230600 CAMP 62 CREEK AT DIVERSION DAM, NEAR BIG CREEK, CA

LOCATION.--Lat 37°18'13", long 119°01'46", unsurveyed, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 30 ft downstream from diversion dam, 0.7 mi upstream from mouth, 1.7 mi southwest of Mono Hot Springs, and 14.2 mi east of town of Big Creek.

DRAINAGE AREA.--1.97 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,760 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records of fishery release normally are computed only during periods of diversion to Ward tunnel. Diversion during the current year occurred Apr. 26 to July 31. See schematic diagram of upper San Joaquin 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.54	e.60	.46	---	---
2	---	---	---	---	---	---	---	.54	e.60	.42	---	---
3	---	---	---	---	---	---	---	.54	e.60	.40	---	---
4	---	---	---	---	---	---	---	.54	e.60	.44	---	---
5	---	---	---	---	---	---	---	.54	e.55	.44	---	---
6	---	---	---	---	---	---	---	.53	e.55	.44	---	---
7	---	---	---	---	---	---	---	.48	e.55	.44	---	---
8	---	---	---	---	---	---	---	.48	.56	.43	---	---
9	---	---	---	---	---	---	---	.56	.64	.42	---	---
10	---	---	---	---	---	---	---	.55	.62	.42	---	---
11	---	---	---	---	---	---	---	.55	.77	.42	---	---
12	---	---	---	---	---	---	---	.60	.75	.42	---	---
13	---	---	---	---	---	---	---	.64	.74	.42	---	---
14	---	---	---	---	---	---	---	.57	.58	.40	---	---
15	---	---	---	---	---	---	---	.51	.52	.38	---	---
16	---	---	---	---	---	---	---	.44	.54	.38	---	---
17	---	---	---	---	---	---	---	.43	.52	.38	---	---
18	---	---	---	---	---	---	---	.58	.54	.38	---	---
19	---	---	---	---	---	---	---	.55	.51	.38	---	---
20	---	---	---	---	---	---	---	.54	.45	.38	---	---
21	---	---	---	---	---	---	---	.54	.47	.42	---	---
22	---	---	---	---	---	---	---	.52	.52	.54	---	---
23	---	---	---	---	---	---	---	.40	.49	.49	---	---
24	---	---	---	---	---	---	---	.23	.52	.49	---	---
25	---	---	---	---	---	---	---	.44	.52	.49	---	---
26	---	---	---	---	---	---	.24	.59	.52	.49	---	---
27	---	---	---	---	---	---	.54	.61	.51	.49	---	---
28	---	---	---	---	---	---	.54	.70	.51	.46	---	---
29	---	---	---	---	---	---	.54	.67	.53	.46	---	---
30	---	---	---	---	---	---	.54	.68	.48	.44	---	---
31	---	---	---	---	---	---	---	.67	---	.44	---	---
TOTAL	---	---	---	---	---	---	---	16.76	16.86	13.46	---	---
MEAN	---	---	---	---	---	---	---	.54	.56	.43	---	---
MAX	---	---	---	---	---	---	---	.70	.77	.54	---	---
MIN	---	---	---	---	---	---	---	.23	.45	.38	---	---
AC-FT	---	---	---	---	---	---	---	33	33	27	---	---

e Estimated.

SAN JOAQUIN RIVER BASIN

11230670 BOLSILLO CREEK BELOW DIVERSION DAM, NEAR BIG CREEK, CA

LOCATION.--Lat 37°18'40", long 119°02'22", unsurveyed, 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 mi².

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 National Geodetic Vertical Datum of 1929, 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. 24 to July 15 and July 19-22. See schematic diagram of upper San Joaquin 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.56	.61	.56	---	---
2	---	---	---	---	---	---	---	.56	.78	.56	---	---
3	---	---	---	---	---	---	---	.56	1.0	.56	---	---
4	---	---	---	---	---	---	---	.56	1.7	.56	---	---
5	---	---	---	---	---	---	---	.56	1.7	.56	---	---
6	---	---	---	---	---	---	---	.56	.94	.54	---	---
7	---	---	---	---	---	---	---	.56	.61	.54	---	---
8	---	---	---	---	---	---	---	.56	.61	.54	---	---
9	---	---	---	---	---	---	---	.58	.61	.54	---	---
10	---	---	---	---	---	---	---	.59	.61	.54	---	---
11	---	---	---	---	---	---	---	.59	.61	.53	---	---
12	---	---	---	---	---	---	---	.59	.61	.51	---	---
13	---	---	---	---	---	---	---	.59	.61	.51	---	---
14	---	---	---	---	---	---	---	.59	.62	.53	---	---
15	---	---	---	---	---	---	---	.59	.64	.49	---	---
16	---	---	---	---	---	---	---	.59	.64	---	---	---
17	---	---	---	---	---	---	---	.59	.61	---	---	---
18	---	---	---	---	---	---	---	.59	.59	---	---	---
19	---	---	---	---	---	---	---	.59	.59	.40	---	---
20	---	---	---	---	---	---	---	.59	.59	.51	---	---
21	---	---	---	---	---	---	---	.59	.59	.51	---	---
22	---	---	---	---	---	---	---	.59	.57	.46	---	---
23	---	---	---	---	---	---	---	.60	.56	---	---	---
24	---	---	---	---	---	---	---	.77	.80	.56	---	---
25	---	---	---	---	---	---	---	.54	1.3	.56	---	---
26	---	---	---	---	---	---	.56	.59	.56	---	---	---
27	---	---	---	---	---	---	.56	.59	.56	---	---	---
28	---	---	---	---	---	---	.56	.59	.56	---	---	---
29	---	---	---	---	---	---	.56	.61	.56	---	---	---
30	---	---	---	---	---	---	.56	.61	.56	---	---	---
31	---	---	---	---	---	---	---	.61	---	---	---	---
TOTAL	---	---	---	---	---	---	---	19.03	20.92	---	---	---
MEAN	---	---	---	---	---	---	---	.61	.70	---	---	---
MAX	---	---	---	---	---	---	---	1.3	1.7	---	---	---
MIN	---	---	---	---	---	---	---	.56	.56	---	---	---
AC-FT	---	---	---	---	---	---	---	38	41	---	---	---

11231000 LAKE THOMAS A. EDISON NEAR BIG CREEK, CA

LOCATION.--Lat 37°22'13", long 118°59'13", in sec.26, T.6 S., R.27 E., unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in outlet works of dam on Mono Creek at lower end of Vermilion Valley, 18.1 mi northeast of town of Big Creek.

DRAINAGE AREA.--90.0 mi².

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 National Geodetic Vertical Datum of 1929 (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, NGVD. Dead storage negligible. Water is released for diversion to Ward tunnel via Mono Creek diversion works. See schematic diagram of upper San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

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. 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, 66,806 acre-ft, July 17, elevation, 7,608.84 ft; minimum, 12,427 acre-ft, Dec. 9, 10, elevation, 7,563.63 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated July 22, 1955)

7,508.9	0	7,535	513	7,560	9,521	7,610	68,616
7,515	18	7,540	928	7,570	18,137	7,620	85,006
7,520	64	7,545	1,833	7,580	28,515	7,630	102,367
7,525	156	7,550	3,567	7,590	40,454	7,640	120,424
7,530	297	7,555	6,147	7,600	53,769	7,644	127,820

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16731	13731	12527	12813	13018	13446	14920	17892	29524	59434	58297	46838
2	16722	13678	12494	12830	13035	13446	14947	18014	30489	60097	57660	46785
3	16703	13506	12485	12881	13044	13608	14992	18147	31720	60804	56982	46692
4	16675	13352	12477	12916	13052	13722	15063	18291	33007	61518	56207	46653
5	16657	13181	12468	12933	13069	13801	15179	18502	34339	62189	55551	46587
6	16629	13061	12460	12941	13078	13836	15322	18829	35631	62789	54813	46587
7	16601	13035	12443	12958	13078	13888	15440	19235	36853	63438	53981	46600
8	16564	13010	12435	12975	13078	13949	15567	19774	38161	64012	53337	46587
9	16527	12984	12427	12967	13087	14019	15695	20188	39774	64439	52583	46547
10	16361	12958	12427	12967	13087	14098	15586	20497	41319	64851	51822	46494
11	16086	12933	12452	12958	13095	14142	15658	20497	43011	65187	51078	46454
12	15913	12907	12477	12967	13104	14194	15713	20986	44715	65554	50490	46401
13	15886	12881	12485	12975	13112	14264	15649	21330	46361	65863	50040	46335
14	15786	12856	12485	12975	13129	14325	15749	21604	47760	66172	49686	46269
15	15485	12839	12510	13001	13129	14369	15849	21868	49010	66450	49388	46203
16	15215	12813	12519	12984	13155	14395	15950	22309	50190	66667	49078	45832
17	14867	12804	12535	12993	13164	14465	16059	22743	51243	66806	48754	45292
18	14626	12787	12552	12993	13155	14599	16150	22805	52098	66790	48416	45069
19	14343	12770	12594	13001	13164	14653	16241	22701	52918	66327	48080	45043
20	14063	12753	12611	13001	13164	14697	16342	22536	53574	65786	47679	45004
21	13871	12719	12611	13001	13172	14733	16453	22485	54235	65172	47506	44965
22	13862	12694	12636	13001	13181	14760	16555	22443	54884	64546	47465	44928
23	13853	12669	12652	13001	13181	14795	16675	22918	55508	63875	47412	44899
24	13844	12644	12669	13001	13189	14858	16796	23482	56065	63257	47372	44833
25	13836	12627	12677	12993	13198	14983	16916	24323	56550	62638	47318	44794
26	13810	12627	12703	13001	13198	14956	17009	25249	57011	62114	47252	44768
27	13792	12611	12711	13001	13223	14876	17138	26047	57588	61503	47198	44729
28	13783	12586	12736	13010	13309	14795	17279	26829	58020	60789	47145	44676
29	13766	12569	12753	13001	---	14760	17467	27629	58457	60200	47064	44650
30	13731	12552	12762	13001	---	14786	17675	28371	58851	59536	46997	44611
31	13731	---	12779	13010	---	14840	---	28907	---	58909	46918	---
MAX	16731	13731	12779	13010	13309	14983	17675	28907	58851	66806	58297	46838
MIN	13731	12552	12427	12813	13018	13446	14920	17892	29524	58909	46918	44611
a	7565.16	7563.78	7564.05	7564.32	7564.67	7566.42	7569.51	7580.35	7603.55	7603.59	7594.98	7593.23
b	-2907	-1179	+227	+231	+299	+1531	+2835	+11232	+29944	+58	-11991	-2307

CAL YR 1990 b +6141

WTR YR 1991 b +27973

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°21'40", long 118°59'26", unsurveyed, SW 1/4 sec.35, T.6 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 0.6 mi upstream from diversion dam, 1 mi downstream from Lake Thomas A. Edison Dam, and 1.9 mi northeast of Mono Hot Springs.

DRAINAGE AREA.--92.5 mi².

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 7,400 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated by Lake Thomas A. Edison (station 11231000) 1 mi upstream beginning Oct. 12, 1954. No diversion upstream from station. See schematic diagram of upper San Joaquin 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.

AVERAGE DISCHARGE (adjusted for storage).--70 years, 158 ft³/s, 114,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,160 ft³/s, Sept. 26, 1982, gage height, 8.87 ft; minimum daily, 0.3 ft³/s, Nov. 11, 12, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 420 ft³/s, Aug. 3, gage height, 6.45 ft; minimum daily, 4.1 ft³/s, Dec. 12-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	18	23	e4.4	11	11	22	24	24	23	389	53
2	22	e21	23	e4.4	11	11	22	23	24	19	387	53
3	22	e98	19	e4.4	11	12	22	23	24	19	391	53
4	22	100	15	e5.7	11	12	22	23	24	19	420	53
5	22	98	16	e4.8	11	12	22	23	24	18	418	53
6	22	56	17	e4.4	11	12	19	24	24	18	416	53
7	22	21	17	e4.4	11	11	13	24	25	18	416	53
8	22	20	17	e11	11	11	13	26	25	18	416	53
9	22	21	17	e19	11	10	13	26	25	18	416	53
10	e108	21	17	e19	10	10	139	25	25	18	414	54
11	154	21	13	e15	9.9	10	21	24	25	18	412	54
12	e90	22	4.1	e10	9.9	9.9	34	24	26	19	354	54
13	21	22	4.1	e10	9.9	9.3	103	24	26	19	263	54
14	e68	23	4.1	e11	9.9	9.3	22	24	26	19	223	55
15	157	23	4.1	e11	10	9.9	22	24	26	19	199	55
16	157	23	e4.1	e11	10	9.3	22	25	26	19	196	187
17	157	23	4.4	11	10	9.3	21	65	26	19	194	284
18	159	22	e4.4	11	10	9.3	21	169	26	126	194	131
19	159	23	e4.4	11	10	9.3	21	208	26	352	194	33
20	159	23	e4.4	10	10	9.3	21	239	26	368	195	33
21	112	23	e4.4	10	10	9.5	21	201	26	391	119	33
22	18	23	e4.4	10	10	9.9	22	191	26	393	47	34
23	19	23	e4.4	10	10	9.9	22	32	27	395	47	34
24	19	23	e4.4	10	10	9.9	22	107	27	395	47	33
25	18	22	e4.4	10	11	27	22	36	27	395	47	33
26	18	23	e4.4	11	11	73	22	26	27	391	47	33
27	18	23	e4.4	11	11	75	22	25	27	391	47	33
28	18	23	e4.4	11	11	76	23	25	27	393	47	34
29	18	22	e4.4	11	---	54	23	25	27	395	54	34
30	18	22	e4.4	11	---	22	23	25	27	391	53	25
31	18	---	e4.4	11	---	22	---	25	---	391	53	---
TOTAL	1881	926	280.5	308.5	292.6	595.1	837	1785	771	5487	7115	1797
MEAN	60.7	30.9	9.05	9.95	10.4	19.2	27.9	57.6	25.7	177	230	59.9
MAX	159	100	23	19	11	76	139	239	27	395	420	284
MIN	18	18	4.1	4.4	9.9	9.3	13	23	24	18	47	25
AC-FT	3730	1840	556	612	580	1180	1660	3540	1530	10880	14110	3560

CAL YR 1990 TOTAL 22413.5 MEAN 61.4 MAX 405 MIN 4.1 AC-FT 44460
WTR YR 1991 TOTAL 22075.7 MEAN 60.5 MAX 420 MIN 4.1 AC-FT 43790

e Estimated.

11231550 MONO CREEK CONDUIT NEAR MONO HOT SPRINGS, CA

LOCATION.--Lat 37°21'36", long 118°59'54", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank at diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 1.9 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 at diversion dam (station 11231600). Datum of conduit invert is 7,338 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Diversion to Mono-Bear conduit, thence to Ward tunnel and Huntington Lake (station 11236000) via Portal Powerplant for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin 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.

AVERAGE DISCHARGE.--5 years, 101 ft³/s, 73,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 442 ft³/s, Aug. 7, 9, 10, 1989; no flow May 28-31 and June 13-16, 1987, Dec. 5, 1990 to Jan. 7, 1991.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	10	17	e.00	4.9	4.2	16	14	13	13	378	42
2	15	e9.0	17	e.00	4.7	4.0	16	13	13	9.0	376	42
3	15	e92	8.0	e.00	4.8	5.0	16	13	13	9.1	381	42
4	15	94	e1.0	e.00	4.7	5.0	16	13	13	9.0	410	42
5	15	92	e.00	e.00	4.7	5.8	15	13	13	8.0	408	42
6	15	49	e.00	e.00	4.6	6.4	11	14	13	8.0	406	42
7	15	15	e.00	e.00	4.6	5.3	6.7	14	14	8.0	406	42
8	15	14	e.00	e4.5	4.8	5.2	6.6	16	14	8.0	406	42
9	15	15	e.00	e12	4.6	4.2	6.6	16	14	8.0	406	42
10	e101	15	e.00	e13	3.6	4.2	132	15	14	8.1	404	43
11	146	10	e.00	e8.6	3.3	4.2	15	14	14	8.1	402	43
12	e83	11	e.00	e3.3	3.2	4.1	28	14	15	9.1	344	44
13	14	11	e.00	e4.0	3.2	3.5	97	14	16	9.0	253	44
14	e61	12	e.00	e5.1	3.1	3.5	16	14	16	9.0	213	45
15	150	12	e.00	e5.1	3.1	4.1	16	14	16	9.0	189	45
16	150	12	e.00	e5.0	3.0	3.5	16	15	16	9.1	e186	176
17	150	12	e.00	4.9	3.0	3.6	15	55	16	9.1	e184	273
18	152	11	e.00	4.8	2.9	3.6	15	159	16	116	e184	121
19	152	12	e.00	4.8	2.9	3.6	15	198	15	342	e184	23
20	152	12	e.00	3.8	2.9	3.6	15	229	15	358	e185	23
21	103	12	e.00	3.7	2.8	3.8	15	191	15	382	e109	23
22	4.0	12	e.00	3.7	2.8	4.2	16	181	15	384	36	24
23	6.0	12	e.00	3.7	2.9	4.2	16	23	16	385	36	24
24	6.0	12	e.00	3.7	2.9	4.1	16	97	16	384	36	23
25	2.0	11	e.00	3.8	4.0	21	16	27	16	385	36	23
26	2.0	12	e.00	4.8	4.0	67	16	16	16	381	37	23
27	2.0	12	e.00	4.8	4.0	69	16	14	16	381	37	23
28	2.0	12	e.00	4.8	4.1	67	17	14	16	383	37	24
29	6.0	16	e.00	4.8	---	46	17	14	16	385	44	24
30	11	15	e.00	4.8	---	16	16	14	16	381	43	13
31	11	---	e.00	4.9	---	16	---	14	---	381	43	---
TOTAL	1599.0	646.0	43.00	126.40	104.1	404.9	650.9	1472	447	5178.6	6799	1482
MEAN	51.6	21.5	1.39	4.08	3.72	13.1	21.7	47.5	14.9	167	219	49.4
MAX	152	94	17	13	4.9	69	132	229	16	385	410	273
MIN	2.0	9.0	.00	.00	2.8	3.5	6.6	13	13	8.0	36	13
AC-FT	3170	1280	85	251	206	803	1290	2920	887	10270	13490	2940

CAL YR 1990 TOTAL 19318.10 MEAN 52.9 MAX 394 MIN .00 AC-FT 38320
WTR YR 1991 TOTAL 18952.90 MEAN 51.9 MAX 410 MIN .00 AC-FT 37590

e Estimated.

11231600 MONO CREEK AT DIVERSION DAM, NEAR MONO HOT SPRINGS, CA

LOCATION.--Lat 37°21'37", long 118°59'50", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank at diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 1.9 mi northeast of Mono Hot Springs.

DRAINAGE AREA.--92.8 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 7,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow consists of fishery release and spill over diversion dam. Diversion to Mono-Bear conduit, then to Ward tunnel and Huntington Lake (station 11236000) via Portal Powerplant for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--5 years, 8.67 ft³/s, 6,280 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 38 ft³/s, June 21, 1989; minimum daily, 4.1 ft³/s, Dec. 12-16, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	7.8	6.0	e4.4	6.1	6.8	6.2	9.8	11	10	11	11
2	7.2	12	5.8	e4.4	6.3	7.0	6.2	9.9	11	10	11	11
3	7.2	6.4	11	e4.4	6.2	7.0	6.1	9.9	11	9.9	10	11
4	7.2	6.2	e14	e5.7	6.3	7.0	6.4	9.9	11	10	10	11
5	7.2	6.1	e16	e4.8	6.3	6.2	6.5	9.9	11	10	10	11
6	7.1	6.5	e17	e4.4	6.4	5.6	7.8	9.8	11	10	10	11
7	7.0	6.2	e17	e4.4	6.4	5.7	6.3	9.8	11	10	10	11
8	7.0	6.0	e17	e6.5	6.2	5.8	6.4	9.7	11	10	9.9	11
9	7.0	6.0	e17	e7.4	6.4	5.8	6.4	9.6	11	10	9.9	11
10	7.4	6.0	e17	e5.9	6.4	5.8	6.7	9.6	11	9.9	9.8	11
11	7.5	11	e13	6.4	6.6	5.8	6.0	9.6	11	9.9	9.8	11
12	7.3	11	e4.1	6.7	6.7	5.8	6.0	9.7	11	9.9	9.9	10
13	7.1	11	e4.1	6.0	6.7	5.8	6.2	9.8	10	10	10	10
14	7.1	11	e4.1	5.9	6.8	5.8	5.8	9.8	10	10	10	10
15	7.3	11	e4.1	5.9	6.9	5.8	5.8	9.7	10	10	10	10
16	7.3	11	e4.1	6.0	7.0	5.8	5.7	9.6	10	9.9	e10	11
17	7.2	11	e4.4	6.1	7.0	5.7	5.7	9.7	10	9.9	e10	11
18	7.0	11	e4.4	6.2	7.1	5.7	5.7	9.9	10	9.8	e10	9.8
19	6.7	11	e4.4	6.2	7.1	5.7	5.7	10	11	9.5	e10	10
20	6.7	11	e4.4	6.2	7.1	5.7	5.7	10	11	9.5	e10	10
21	8.7	11	e4.4	6.3	7.2	5.7	5.7	9.9	11	9.1	e10	10
22	14	11	e4.4	6.3	7.2	5.7	5.6	10	11	8.8	11	10
23	13	11	e4.4	6.3	7.1	5.7	5.6	8.9	11	10	11	10
24	13	11	e4.4	6.3	7.1	5.8	5.6	9.6	11	11	11	10
25	16	11	e4.4	6.2	7.0	5.8	5.6	9.1	11	10	11	10
26	16	11	e4.4	6.2	7.0	6.0	5.6	9.8	11	10	10	10
27	16	11	e4.4	6.2	7.0	6.0	5.6	11	11	10	10	10
28	16	11	e4.4	6.2	6.9	8.7	5.6	11	11	10	10	10
29	12	5.9	e4.4	6.2	---	7.5	5.5	11	11	10	10	10
30	7.3	6.6	e4.4	6.2	---	6.3	7.2	11	11	10	10	12
31	7.4	---	e4.4	6.1	---	6.3	---	11	---	10	10	---
TOTAL	283.9	279.7	237.3	182.4	188.5	189.8	180.9	308.0	324	307.1	315.3	314.8
MEAN	9.16	9.32	7.65	5.88	6.73	6.12	6.03	9.94	10.8	9.91	10.2	10.5
MAX	16	12	17	7.4	7.2	8.7	7.8	11	11	11	11	12
MIN	6.7	5.9	4.1	4.4	6.1	5.6	5.5	8.9	10	8.8	9.8	9.8
AC-FT	563	555	471	362	374	376	359	611	643	609	625	624

CAL YR 1990 TOTAL 3094.1 MEAN 8.48 MAX 17 MIN 4.1 AC-FT 6140
WTR YR 1991 TOTAL 3111.7 MEAN 8.53 MAX 17 MIN 4.1 AC-FT 6170

e Estimated.

11231700 WARM CREEK AT DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°23'03", long 119°01'33", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank, 40 ft downstream from diversion dam, 3.8 mi north of Mono Hot Springs, and 17 mi northeast of town of Big Creek.

DRAINAGE AREA.--1.76 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records of fishery release normally computed only during periods of diversion to Lake Thomas A. Edison. During the current year, diversion occurred from Apr. 27 to July 29. See schematic diagram of upper San Joaquin 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.40	.32	.38	---	---
2	---	---	---	---	---	---	---	.39	.29	.38	---	---
3	---	---	---	---	---	---	---	.39	.27	.36	---	---
4	---	---	---	---	---	---	---	.39	.30	.36	---	---
5	---	---	---	---	---	---	---	.40	.29	.35	---	---
6	---	---	---	---	---	---	---	.40	.30	.35	---	---
7	---	---	---	---	---	---	---	.38	.35	.36	---	---
8	---	---	---	---	---	---	---	.38	.36	.36	---	---
9	---	---	---	---	---	---	---	.38	.39	.36	---	---
10	---	---	---	---	---	---	---	.36	.40	.36	---	---
11	---	---	---	---	---	---	---	.36	.39	.36	---	---
12	---	---	---	---	---	---	---	.36	.38	.36	---	---
13	---	---	---	---	---	---	---	.37	.36	.36	---	---
14	---	---	---	---	---	---	---	.38	.38	.36	---	---
15	---	---	---	---	---	---	---	.38	.38	.36	---	---
16	---	---	---	---	---	---	---	.38	.38	.36	---	---
17	---	---	---	---	---	---	---	.38	.38	.37	---	---
18	---	---	---	---	---	---	---	.38	.38	.37	---	---
19	---	---	---	---	---	---	---	.38	.38	.39	---	---
20	---	---	---	---	---	---	---	.38	.38	.39	---	---
21	---	---	---	---	---	---	---	.38	.38	.39	---	---
22	---	---	---	---	---	---	---	.36	.38	.37	---	---
23	---	---	---	---	---	---	---	.36	.38	.35	---	---
24	---	---	---	---	---	---	---	.37	.38	.35	---	---
25	---	---	---	---	---	---	---	.35	.38	.32	---	---
26	---	---	---	---	---	---	---	.32	.38	.26	---	---
27	---	---	---	---	---	---	.53	.35	.38	.26	---	---
28	---	---	---	---	---	---	.39	.34	.38	.18	---	---
29	---	---	---	---	---	---	.35	.33	.38	.19	---	---
30	---	---	---	---	---	---	.37	.32	.38	---	---	---
31	---	---	---	---	---	---	---	.32	---	---	---	---
TOTAL	---	---	---	---	---	---	---	11.42	10.86	---	---	---
MEAN	---	---	---	---	---	---	---	.37	.36	---	---	---
MAX	---	---	---	---	---	---	---	.40	.40	---	---	---
MIN	---	---	---	---	---	---	---	.32	.27	---	---	---
AC-FT	---	---	---	---	---	---	---	23	22	---	---	---

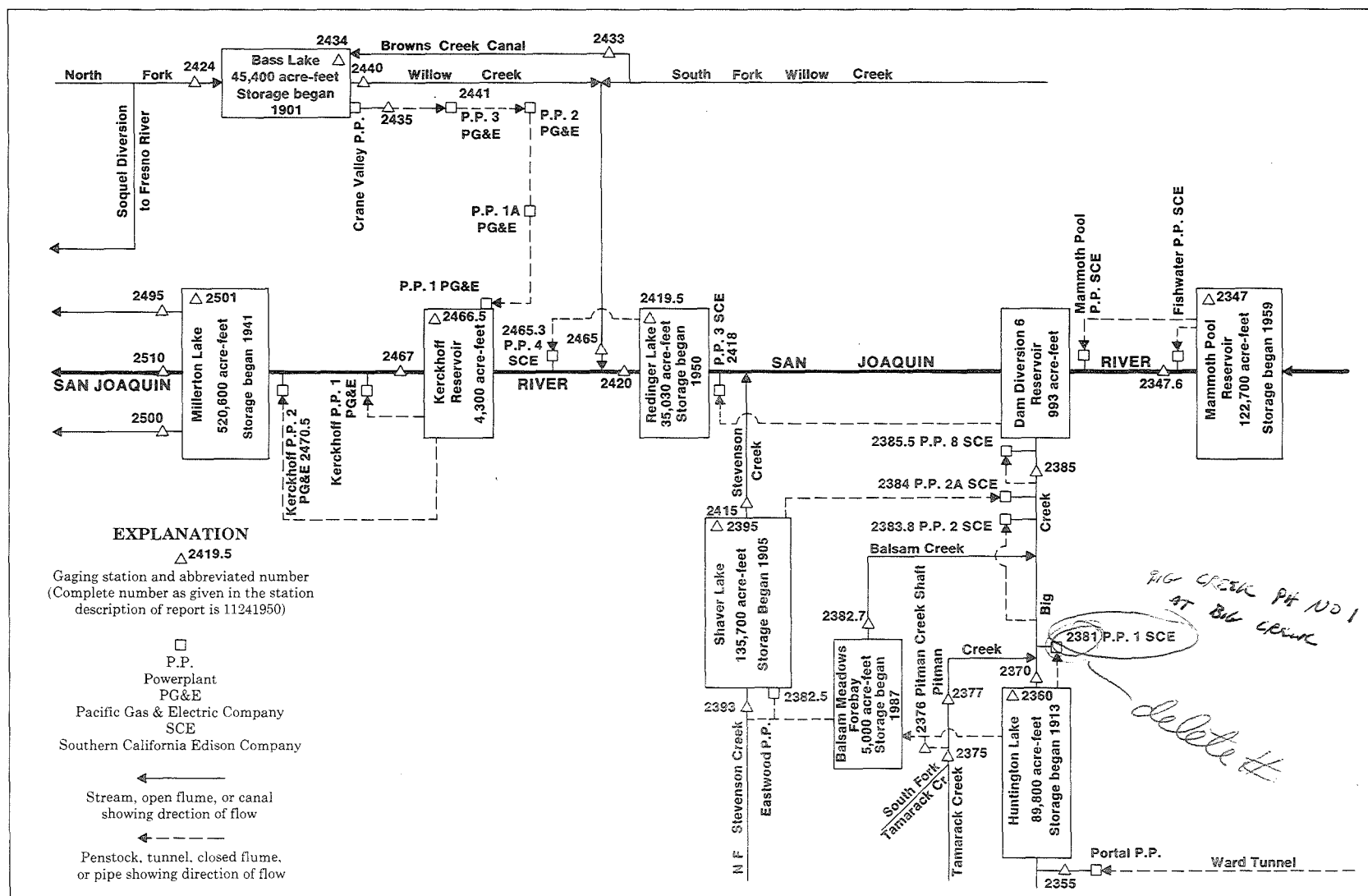


Figure 32. Diversions and storage in lower San Joaquin River basin.

11234700 MAMMOTH POOL RESERVOIR NEAR BIG CREEK, CA

LOCATION.--Lat 37°19'45", long 119°19'40", in SW 1/4 sec.10, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of power tunnel intake near dam on San Joaquin River, 10 mi northwest of town of Big Creek.
DRAINAGE AREA.--995 mi².

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (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, NGVD. Additional storage of 2,780 acre-ft is not available for release. Water is diverted through tunnel for power development; water is returned to river 8.5 mi downstream from dam. See schematic diagram of lower San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

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. 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, 2,956 acre-ft, Feb. 6, 1982, elevation, 3,128.81 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 113,887 acre-ft, June 15, elevation, 3,324.35 ft; minimum, 5,339 acre-ft, Apr. 19, elevation, 3,144.31 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22585	21638	19672	14420	15854	19752	20027	27243	80538	113012	78576	45832
2	22421	21556	19641	14334	15958	20043	19493	30212	82950	113064	77444	45715
3	22235	21578	19660	14464	16049	20684	17489	31749	86685	113127	76243	44762
4	22078	21625	19668	14733	16151	27167	15559	31559	90825	113275	75113	43690
5	21894	21530	19593	14576	16279	34013	14560	32753	94271	113264	73778	42542
6	21707	21392	19549	14704	16409	35168	14123	35492	96565	113285	72530	41300
7	21742	21400	19537	14827	16523	36460	14177	39895	98325	113254	71308	41399
8	21560	21543	19422	14947	16640	36588	12818	45793	100029	112685	70066	41510
9	21311	21625	19184	15051	16751	36734	11525	48890	102270	111814	68849	40370
10	21133	21599	18868	15041	16814	36500	10377	50148	104885	110728	67564	39257
11	21052	21556	18645	14859	16920	36535	8445	50404	107663	109502	66000	38095
12	21044	21383	18688	14966	17023	36222	6177	50473	110436	108729	64535	36988
13	21044	21264	18704	15074	17127	35847	5726	51265	112717	108010	62194	35956
14	21069	21222	18704	15185	17214	35446	5792	51551	113707	107162	60039	34953
15	21122	21226	18555	15300	17309	34852	5829	52442	113887	106146	58302	34091
16	21141	21209	18362	14888	17455	34544	6216	54879	113686	104895	57208	33101
17	21129	20341	18050	14853	17606	34925	5847	58481	112959	103640	57319	32153
18	21163	20382	17898	14966	17731	34689	5473	59051	111636	102540	57408	31429
19	21184	20354	17291	15074	17844	34181	5339	58999	110968	101504	56706	30739
20	21235	20432	16409	15175	17955	33250	6131	58481	109989	100029	55958	29979
21	21243	20444	14908	15280	18069	31711	5604	58361	108986	98374	55406	29254
22	21336	20432	14947	15356	18187	30116	6204	59059	109223	96575	54312	28547
23	21430	20415	14688	15459	18307	28650	7131	62087	109502	94898	53267	26919
24	21521	20238	14601	15546	18424	27374	8620	66896	109213	92815	52350	26383
25	21604	20201	14688	15636	18544	26378	10071	71184	108883	91134	51341	25845
26	21686	20243	14778	15723	18633	25070	12252	74517	108667	89262	50314	24751
27	21764	20222	14862	15750	18848	23758	14859	76508	108883	87400	49378	23939
28	21829	20189	14850	15837	19100	22500	17704	77927	109492	85700	48452	23450
29	21833	20173	14535	15911	---	21400	21040	79510	111468	83969	47373	22874
30	21894	19873	14258	15709	---	20655	23296	80415	112885	81973	46523	22161
31	21903	---	14334	15800	---	20230	---	80098	---	80107	46510	---
MAX	22585	21638	19672	15911	19100	36734	23296	80415	113887	113285	78576	45832
MIN	21044	19873	14258	14334	15854	19752	5339	27243	80538	80107	46510	22161
a	3201.16	3196.32	3180.87	3185.36	3194.38	3197.20	3204.30	3289.32	3323.40	3289.33	3245.78	3201.75
b	-1751	-2030	-5539	+1466	+3300	+1130	+3066	+56802	+32787	-32778	-33597	-24349

CAL YR 1990 b -13924

WTR YR 1991 b -1493

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11234760 SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CA

LOCATION.--Lat 37°19'00", long 119°19'37", in NW 1/4 SW 1/4 sec.14, 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 10 mi northwest of town of Big Creek.

DRAINAGE AREA.--1,003 mi².

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,865.50 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Flow regulated by Mammoth Pool Reservoir (station 11234700) 4,900 ft upstream. Diversions upstream through Ward tunnel (see stations 11229500 and 11235500). See schematic diagrams of upper and lower San Joaquin River basins.

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.--Maximum discharge, 18,400 ft³/s, June 3, 1969, gage height, 18.38 ft; minimum daily, 0.3 ft³/s, Oct. 14, Dec. 5, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 88 ft³/s, Mar. 4, gage height, 3.48 ft; minimum daily, 12 ft³/s, on many days from November through February.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	14	13	e12	13	20	14	17	15	15	15	e15
2	15	13	13	e12	13	14	14	17	15	15	15	e15
3	15	13	12	e12	13	19	14	17	14	15	15	e15
4	15	13	12	e12	13	43	14	18	15	14	15	e14
5	15	13	12	13	13	22	14	18	15	14	15	e14
6	15	12	12	12	13	15	14	18	30	14	15	e14
7	16	12	12	12	13	14	14	16	46	14	15	e14
8	16	12	12	13	13	14	14	15	31	14	15	e14
9	16	12	12	13	13	13	14	16	15	14	15	e14
10	16	12	12	13	13	14	14	16	15	14	15	e15
11	16	12	12	13	13	14	16	16	15	14	15	e15
12	16	12	12	13	13	13	21	16	15	14	14	e15
13	15	12	12	13	13	13	27	16	26	15	14	e14
14	15	12	12	13	13	13	27	15	48	15	14	e14
15	15	12	12	13	13	13	22	15	48	15	15	e14
16	16	13	12	13	13	13	15	15	48	15	15	e15
17	16	13	12	13	13	13	15	15	48	15	15	14
18	16	13	12	13	13	13	15	15	48	15	15	14
19	16	13	12	13	13	13	15	15	31	16	15	14
20	16	13	12	13	12	13	15	15	15	16	15	15
21	16	13	12	13	12	13	15	15	15	16	15	15
22	16	13	12	13	12	13	15	15	14	16	15	15
23	16	13	12	13	12	13	15	16	14	16	15	15
24	16	13	12	13	12	13	15	16	14	16	15	14
25	16	13	e12	13	12	14	15	16	14	16	15	14
26	16	13	e12	13	12	14	16	16	14	16	15	14
27	15	13	e12	13	13	14	16	16	14	16	15	14
28	15	13	e12	13	13	14	16	16	14	16	15	15
29	15	13	e12	13	---	14	17	16	14	15	15	15
30	15	13	e12	13	---	14	17	16	14	15	e15	15
31	15	---	e12	13	---	14	---	15	---	15	e15	---
TOTAL	483	381	374	397	357	469	485	494	694	466	462	434
MEAN	15.6	12.7	12.1	12.8	12.7	15.1	16.2	15.9	23.1	15.0	14.9	14.5
MAX	16	14	13	13	13	43	27	18	48	16	15	15
MIN	15	12	12	12	12	13	14	15	14	14	14	14
AC-FT	958	756	742	787	708	930	962	980	1380	924	916	861

CAL YR 1990 TOTAL 5043 MEAN 13.8 MAX 17 MIN 12 AC-FT 10000
WTR YR 1991 TOTAL 5496 MEAN 15.1 MAX 48 MIN 12 AC-FT 10900

e Estimated.

11235500 WARD TUNNEL OUTLET AT HUNTINGTON LAKE, CA

LOCATION.--Lat 37°15'25", long 119°09'38", in SE 1/4 SW 1/4 sec.5, T.8 S., R.26 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, at tunnel outlet at east end of Huntington Lake, 0.9 mi east of Lakeshore Post Office, and 6 mi northeast 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.

GAGE.--Acoustic-velocity meter values transmitted to Big Creek Powerplant No. 3 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 National Geodetic Vertical Datum of 1929 (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. Tunnel diverts from Florence Lake (station 11229600) to Huntington Lake (station 11236000) via Portal Powerplant, receives diversions from Bear and Mono Creeks (stations 11230500 and 11231550) and at times from several other small tributaries of South Fork San Joaquin River. See schematic diagrams of upper and lower San Joaquin River basins.

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.

AVERAGE DISCHARGE.--64 years, 488 ft³/s, 353,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,080 ft³/s, June 21, 1935; no flow at times many years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	137	.00	.00	3.5	3.5	3.5	114	116	1560	882	807	502
2	.00	.00	.00	3.5	4.0	3.5	118	149	1730	1020	1120	501
3	.00	.00	.00	3.5	3.5	4.0	123	.00	1440	1220	1160	500
4	120	.00	.00	3.5	3.5	1.5	153	48	1410	1360	1160	500
5	.00	70	.00	3.5	3.5	134	140	169	1070	1280	1200	500
6	.00	.00	82	4.0	4.0	4.0	15	139	696	1320	1190	500
7	.00	37	.00	3.5	4.0	3.5	70	258	741	1220	998	500
8	.00	3.5	.00	3.5	4.0	127	17	332	741	1270	1200	501
9	103	4.5	.00	3.5	4.0	3.5	43	203	746	1160	1150	500
10	127	130	.00	118	3.5	3.5	197	100	741	1090	741	500
11	232	.00	.00	3.5	4.0	68	96	96	736	1130	565	439
12	100	.00	.00	3.5	95	62	187	99	913	1190	469	497
13	.00	.00	.00	3.5	3.5	27	514	99	1380	1200	625	461
14	4.0	3.5	.00	3.5	4.0	3.5	96	278	1740	1200	555	469
15	256	3.5	.00	4.0	4.0	174	75	371	1740	1100	534	455
16	185	4.0	.00	4.0	3.5	90	43	620	1560	686	529	428
17	161	125	.00	4.0	4.0	120	54	452	1390	660	539	415
18	154	4.0	.00	96	3.5	140	54	726	1400	776	550	355
19	151	3.5	.00	3.5	3.5	112	20	736	1310	847	514	188
20	194	4.0	.00	3.5	3.5	121	78	731	1410	852	539	209
21	161	3.5	74	3.5	3.5	129	75	741	1020	746	484	151
22	206	3.5	.00	3.5	3.5	121	31	741	736	776	475	200
23	.00	4.0	.00	3.5	98	118	63	741	726	771	514	209
24	.00	119	.00	3.5	3.5	137	48	933	736	731	514	247
25	.00	3.5	.00	4.0	3.5	183	55	1740	706	817	489	110
26	.00	3.5	.00	3.5	3.5	126	63	1740	771	716	474	255
27	.00	3.5	.00	3.5	3.5	245	90	1750	807	736	482	180
28	.00	3.5	.00	3.5	3.5	245	134	1750	837	736	483	187
29	.00	3.5	.00	4.0	---	194	55	1650	736	736	481	149
30	.00	70	4.0	99	---	59	145	1650	746	716	502	32
31	.00	---	4.0	3.5	---	169	---	1640	---	701	502	---
TOTAL	2291.00	610.00	164.00	414.0	288.5	2931.5	2966	20798.00	32275	29645	21545	10640
MEAN	73.9	20.3	5.29	13.4	10.3	94.6	98.9	671	1076	956	695	355
MAX	256	130	82	118	98	245	514	1750	1740	1360	1200	502
MIN	.00	.00	.00	3.5	3.5	1.5	15	.00	696	660	469	32
AC-FT	4540	1210	325	821	572	5810	5880	41250	64020	58800	42730	21100

CAL YR 1990 TOTAL 98939.00 MEAN 271 MAX 749 MIN .00 AC-FT 196200
WTR YR 1991 TOTAL 124568.00 MEAN 341 MAX 1750 MIN .00 AC-FT 247100

11236000 HUNTINGTON LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°14'03", long 119°12'41", 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 mi northeast of town of Big Creek.
DRAINAGE AREA.--80.5 mi².

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 National Geodetic Vertical Datum of 1929 (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, NGVD. Additional storage of 600 acre-ft is not available for release. Huntington-Shaver conduit has diverted water from Huntington Lake to Shaver Lake (station 11239500) since Apr. 21, 1928. Water is used 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 provided 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, 87,993 acre-ft, July 15, elevation, 6,949.18 ft; minimum, 2,534 acre-ft, Mar. 22, 23, elevation, 6,841.00 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Sept. 24, 1964)

6,819.90	0	6,835	1,552	6,870	11,293	6,920	50,812
6,820	8	6,840	2,354	6,880	16,370	6,930	62,555
6,822	142	6,845	3,324	6,890	22,882	6,940	75,344
6,825	382	6,850	4,480	6,900	30,861	6,950	89,166
6,830	899	6,860	7,427	6,910	40,216	6,951	90,606

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73598	67967	61687	57230	41212	7257	3241	6452	69437	86530	86360	86572
2	73177	67687	61515	57136	38329	6292	3432	6452	74085	85993	86544	86501
3	72783	67649	61283	57030	35695	5622	3475	6859	77689	85289	86275	86388
4	72587	64598	61089	57053	33104	5527	3475	6768	80926	85655	86445	86247
5	72208	67383	60883	56935	30465	5408	3410	7223	82707	85881	86572	86148
6	71791	67067	60786	56841	28196	4646	3076	7769	83707	86261	86601	86233
7	71399	66928	60641	56664	26393	3828	2935	8424	83707	86686	86261	86658
8	70985	66713	60471	56570	24958	3324	3036	9075	82970	87339	86459	86885
9	70843	66461	60240	56452	23863	3312	3096	9200	82762	87339	86700	87055
10	70674	66423	60023	56125	22889	3199	3282	9658	82429	87466	86487	86970
11	70493	66109	59891	55634	21867	3199	3251	9940	82623	86828	87239	86885
12	70234	65808	59794	55284	21177	3199	3656	10144	82873	87126	86842	86785
13	69977	65507	59686	55250	20340	3432	5177	10603	83372	87708	87154	86643
14	69733	65206	59614	55203	19558	3432	5191	12170	84573	87268	87339	86487
15	69977	64894	59566	55180	18777	3220	5246	13554	85641	87993	87566	86303
16	70015	64708	59446	54891	18044	2915	5000	15812	86317	87965	87537	86064
17	70015	64832	59326	54601	17602	2975	5000	17694	86601	87523	87509	85810
18	69951	64782	59121	54497	16960	3096	4815	19901	86799	87481	87509	85613
19	69951	64447	58977	54370	16279	2975	4815	22163	85993	87452	87438	85092
20	70105	64285	58738	53944	15379	2740	4894	22846	86289	87126	87424	86035
21	70144	64074	58250	53210	14426	2721	4868	25911	86162	86416	87324	84280
22	70273	64024	58107	52606	13469	2534	4868	28229	86162	85782	87197	84294
23	69977	63974	58071	51824	12954	2534	4842	30396	86106	84755	87197	83749
24	69489	64074	57952	51014	12184	2721	5055	33483	86176	84755	87197	83123
25	69142	63999	57893	50223	11201	2935	5055	39451	86431	85374	87112	82693
26	68949	63566	57821	49612	10185	3540	5109	44291	86970	85036	86984	82762
27	68911	63110	57726	49028	9170	3689	5329	48874	87594	84825	86899	82804
28	68872	62617	57655	48316	8263	3814	6115	53336	87779	84378	86828	82859
29	68681	62249	57549	47641	---	3600	6115	57786	87750	85022	86785	82859
30	68439	61968	57396	46475	---	2674	6360	62188	87310	85627	86714	82609
31	68184	---	57313	43885	---	3220	---	65708	---	85937	86643	---
MAX	73598	67967	61687	57230	41212	7257	6360	65708	87779	87993	87566	87055
MIN	68184	61968	57313	43885	8263	2534	2935	6452	69437	84378	86261	82609
a	6934.50	6929.52	6925.65	6913.59	6862.40	6844.50	6856.70	6932.54	6948.70	6947.73	6948.23	6945.35
b	-5598	-6216	-4655	-13428	-35622	-5043	+3140	+59348	+21602	-1373	+706	-4034

CAL YR 1990 b +5388

WTR YR 1991 b +8827

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°13'19", long 119°12'43", in SW 1/4 NW 1/4 sec.23, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 500 ft upstream from Grouse Creek, 0.8 mi south of main dam of Huntington Lake, and 2.1 mi northeast of town of Big Creek.

DRAINAGE AREA.--81.1 mi².

PERIOD OF RECORD.--June 1925 to September 1970, October 1986 to current year.

REVISED RECORDS.--WSP 1315-A: 1943(M). WSP 1635: 1925-29. WSP 1930: Drainage area.

GAGE.--Water-stage recorder with Parshall flume control. Elevation of gage is 6,600 ft above National Geodetic Vertical Datum of 1929, 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 with releases for fishery maintenance. See schematic diagram of Lower San Joaquin 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 PERIOD OF RECORD.--Maximum discharge, 2,040 ft³/s, June 23, 1925, gage height, 11.3 ft, present datum; minimum daily, 0.1 ft³/s, Jan. 18-21, Aug. 21 to Sept. 24, Oct. 7-18, Dec. 5-16, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15 ft³/s, Mar. 4, gage height, 2.84 ft; minimum daily, 1.1 ft³/s, Feb. 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	2.8	2.8	e2.7	2.3	2.4	4.4	7.9	6.1	3.7	3.6	3.9
2	2.8	2.8	2.8	e2.7	2.2	1.8	4.3	8.0	6.1	3.7	3.6	3.9
3	2.8	2.8	2.8	e2.7	2.2	3.0	4.3	8.0	6.4	3.6	3.6	3.8
4	2.8	2.8	2.8	2.8	2.2	9.3	3.9	8.3	6.4	3.5	3.6	3.8
5	2.8	2.8	2.8	2.7	2.0	6.3	3.7	8.3	6.4	3.5	3.6	4.0
6	2.8	2.8	2.8	2.7	1.9	5.2	3.2	8.7	7.0	3.5	3.6	3.8
7	2.8	2.8	2.8	2.7	1.9	4.7	2.9	9.0	7.0	3.5	3.6	3.8
8	2.8	2.8	2.8	2.7	1.8	4.3	2.9	9.4	7.0	3.6	3.6	3.8
9	2.8	2.8	2.8	2.7	1.7	3.9	3.1	9.4	7.0	3.6	3.6	3.8
10	2.8	2.8	2.8	2.7	1.7	3.4	2.9	9.4	7.0	3.6	3.7	3.8
11	2.8	2.8	2.9	2.7	1.6	e2.8	2.6	9.0	7.0	3.6	3.7	3.8
12	2.7	2.8	2.8	2.7	1.6	1.3	2.6	9.0	6.3	3.6	3.8	3.9
13	2.7	2.8	2.7	2.7	1.6	1.4	2.8	9.7	3.7	3.6	3.8	3.9
14	2.7	2.8	2.7	2.7	1.6	1.3	3.1	9.7	3.7	3.7	3.8	3.9
15	2.7	2.8	2.8	2.6	1.4	1.3	3.0	9.7	3.8	3.7	3.9	3.9
16	2.7	2.8	2.7	2.6	1.4	2.0	2.7	10	3.8	3.7	3.9	3.9
17	2.7	2.8	2.7	2.6	1.3	4.8	2.8	10	3.8	3.7	3.9	3.9
18	2.8	2.8	2.7	2.6	1.2	5.1	3.8	10	3.7	3.8	3.9	3.9
19	2.8	2.8	e2.7	2.6	1.1	5.2	6.1	10	3.6	3.7	3.9	3.9
20	2.8	2.8	e2.7	2.5	1.1	5.2	6.4	10	3.6	3.7	3.9	3.9
21	2.8	2.8	e2.7	2.5	1.3	5.2	6.7	11	3.7	3.7	3.9	3.9
22	2.8	2.8	e2.7	2.5	1.5	5.2	6.7	11	3.7	3.6	3.9	3.8
23	2.8	2.8	e2.7	2.5	1.5	e5.1	7.3	11	3.7	3.6	3.9	3.8
24	2.8	2.9	e2.7	2.5	1.4	e5.2	7.3	11	3.7	3.6	3.9	3.8
25	2.8	2.9	e2.7	2.4	1.5	e5.3	7.0	12	3.7	3.5	3.9	3.8
26	2.8	2.9	e2.7	2.4	1.6	e5.3	7.0	12	3.8	3.5	3.9	3.7
27	2.8	2.8	e2.7	2.4	1.9	e5.3	7.0	13	3.8	3.5	3.9	3.6
28	2.8	2.8	e2.7	2.4	2.8	e5.2	7.6	13	4.0	3.5	3.9	3.7
29	2.8	2.8	e2.7	2.4	---	5.1	8.0	11	4.1	3.5	3.9	3.8
30	2.8	2.8	e2.7	2.4	---	4.5	8.0	6.4	3.8	3.5	3.9	3.8
31	2.8	---	e2.7	2.4	---	4.5	---	6.1	---	3.5	3.9	---
TOTAL	86.2	84.3	85.1	80.2	47.3	130.4	144.1	301.0	147.4	111.4	117.5	115.0
MEAN	2.78	2.81	2.75	2.59	1.69	4.21	4.80	9.71	4.91	3.59	3.79	3.83
MAX	2.8	2.9	2.9	2.8	2.8	9.3	8.0	13	7.0	3.7	3.9	4.0
MIN	2.7	2.8	2.7	2.4	1.1	1.3	2.6	6.1	3.6	3.5	3.6	3.6
AC-FT	171	167	169	159	94	259	286	587	292	221	233	228

CAL YR 1990 TOTAL 968.1 MEAN 2.65 MAX 3.2 MIN 1.9 AC-FT 1920
WTR YR 1991 TOTAL 1449.9 MEAN 3.97 MAX 13 MIN 1.1 AC-FT 2880

e Estimated.

11237500 PITMAN CREEK 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 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 mi².

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 7,005 ft above National Geodetic Vertical Datum of 1929, from Southern California Edison Co. contour 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 below station to Huntington-Shaver conduit. See schematic diagram of lower San Joaquin 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.

AVERAGE DISCHARGE.--64 years, 40.8 ft³/s, 29,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft³/s, Dec. 23, 1955, gage height, 11.20 ft, from rating curve extended above 1,100 ft³/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, 419 ft³/s, May 24, gage height, 6.35 ft; minimum daily, 0.17 ft³/s, Oct. 26-31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.24	.39	.47	.56	1.9	17	131	163	25	2.4	.41
2	.24	.24	.33	.47	.52	2.8	17	78	180	22	2.2	.36
3	.25	.22	.35	.51	.52	2.6	17	62	193	19	2.0	.34
4	.24	.24	e.35	.75	.56	40	25	76	184	17	1.8	.33
5	.22	.25	e.34	.88	.61	95	34	131	160	16	1.8	.32
6	.22	.24	e.33	.70	.64	85	42	185	142	14	1.7	.68
7	.20	.22	e.34	.63	.64	80	47	227	133	13	1.7	.64
8	.20	.25	e.32	.53	.68	49	46	231	126	12	1.6	.59
9	.20	.27	e.31	.52	.71	28	49	172	122	12	1.4	.55
10	.20	.26	e.30	.52	.78	18	53	120	118	11	1.3	.50
11	.20	.24	e.42	.49	.82	18	43	97	109	10	1.2	.51
12	.20	.25	e.52	.51	.89	12	35	105	94	9.3	1.2	.51
13	.20	.25	e.51	.57	.99	11	35	128	80	8.7	1.5	.45
14	.20	.25	e.42	.53	1.1	13	45	137	66	8.4	1.4	.40
15	.20	.27	e.45	.52	1.3	12	52	186	57	8.0	1.4	.35
16	.20	.25	e.42	.58	1.4	11	49	232	51	7.5	1.5	.29
17	.20	.27	e.38	.55	1.3	9.7	46	190	45	7.2	1.4	.26
18	.20	.27	e.42	.56	1.1	11	46	127	40	6.9	1.2	.24
19	.25	.27	e.42	.59	1.1	11	48	113	36	7.0	1.1	.21
20	.25	.35	e.42	.57	1.2	10	42	128	32	7.8	.97	.21
21	.23	.29	e.42	.56	1.3	9.8	40	138	30	7.3	.92	.21
22	.22	.29	e.42	.56	1.3	9.5	41	178	27	6.7	.84	.22
23	.20	.29	e.42	.58	1.4	10	45	233	26	6.3	.77	.21
24	.20	.29	e.42	.59	1.4	12	58	271	25	5.8	.68	.19
25	.19	.20	e.45	.50	1.4	22	52	263	24	5.2	.68	.19
26	.17	.33	e.47	.60	1.5	29	47	224	23	4.3	.61	.20
27	.17	.39	.49	.74	1.4	18	61	188	26	3.6	.60	.21
28	.17	.39	.49	.47	1.4	12	83	182	28	3.2	.60	.22
29	.17	.45	.49	.50	---	12	115	176	52	2.8	.55	.23
30	.17	.47	.43	.51	---	14	145	160	32	2.5	.49	.21
31	.17	---	.45	.50	---	16	---	143	---	2.4	.44	---
TOTAL	6.38	8.49	12.69	17.56	28.52	685.3	1475	5012	2424	291.9	37.95	10.24
MEAN	.21	.28	.41	.57	1.02	22.1	49.2	162	80.8	9.42	1.22	.34
MAX	.25	.47	.52	.88	1.5	95	145	271	193	25	2.4	.68
MIN	.17	.20	.30	.47	.52	1.9	17	62	23	2.4	.44	.19
AC-FT	13	17	25	35	57	1360	2930	9940	4810	579	75	20

CAL YR 1990 TOTAL 6797.63 MEAN 18.6 MAX 158 MIN .10 AC-FT 13480
WTR YR 1991 TOTAL 10010.03 MEAN 27.4 MAX 271 MIN .17 AC-FT 19850

e Estimated.

11237600 PITMAN CREEK SHAFT BELOW TAMARACK CREEK, CA

LOCATION.--Lat 37°11'48", long 119°12'42", 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, 1.3 mi north of Tamarack Mountain, and 1.9 mi east of town of Big Creek.

DRAINAGE AREA.--23.0 mi².

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 6,980 ft above National Geodetic Vertical Datum, from topographic map.

REMARKS.--No estimated daily discharges. Flow consists of diversion into Huntington-Shaver conduit for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin 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 PERIOD OF RECORD.--Maximum daily discharge, 269 ft³/s, May 24, 1991; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	1.9	17	129	162	23	1.5	.00
2	.00	.00	.00	.00	.00	2.8	17	76	178	20	1.3	.00
3	.00	.00	.00	.00	.00	2.6	17	60	191	17	1.1	.00
4	.00	.00	.00	.00	.00	40	25	74	182	15	.88	.00
5	.00	.00	.00	.00	.00	95	33	129	159	14	.88	.00
6	.00	.00	.00	.00	.00	85	40	183	141	12	.78	.00
7	.00	.00	.00	.00	.00	80	45	225	132	11	.78	.00
8	.00	.00	.00	.00	.00	49	44	229	125	10	.68	.00
9	.00	.00	.00	.00	.00	28	47	170	121	10	.51	.00
10	.00	.00	.00	.00	.00	18	51	118	117	9.3	.42	.00
11	.00	.00	.00	.00	.00	18	41	95	108	8.3	.32	.00
12	.00	.00	.00	.00	.00	12	33	103	93	7.9	.32	.00
13	.00	.00	.00	.00	.00	11	33	126	79	7.7	.62	.00
14	.00	.00	.00	.00	.30	13	43	135	65	7.4	.52	.00
15	.00	.00	.00	.00	1.3	12	50	184	56	7.0	.52	.00
16	.00	.00	.00	.00	1.4	11	47	230	50	6.5	.62	.00
17	.00	.00	.00	.00	1.3	9.7	44	188	44	6.2	.52	.00
18	.00	.00	.00	.00	1.1	11	44	125	39	5.9	.32	.00
19	.00	.00	.00	.00	1.1	11	46	111	35	6.0	.22	.00
20	.00	.00	.00	.00	1.2	10	40	126	31	6.8	.09	.00
21	.00	.00	.00	.00	1.3	9.8	38	136	29	6.3	.10	.00
22	.00	.00	.00	.00	1.3	9.5	39	176	26	5.7	.05	.00
23	.00	.00	.00	.00	1.4	10	43	231	25	5.3	.04	.00
24	.00	.00	.00	.00	1.4	12	56	269	24	4.8	.04	.00
25	.00	.00	.00	.00	1.4	22	50	261	23	4.3	.07	.00
26	.00	.00	.00	.00	1.5	29	45	222	22	3.4	.05	.00
27	.00	.00	.00	.00	1.4	18	59	186	25	2.7	.06	.00
28	.00	.00	.00	.00	1.4	12	81	180	27	2.3	.06	.00
29	.00	.00	.00	.00	---	12	112	175	50	1.9	.04	.00
30	.00	.00	.00	.00	---	14	142	159	30	1.6	.00	.00
31	.00	---	.00	.00	---	16	---	142	---	1.5	.00	---
TOTAL	0.00	0.00	0.00	0.00	18.80	685.3	1422	4953	2389	250.8	13.41	0.00
MEAN	.000	.000	.000	.000	.67	22.1	47.4	160	79.6	8.09	.43	.000
MAX	.00	.00	.00	.00	1.5	95	142	269	191	23	1.5	.00
MIN	.00	.00	.00	.00	.00	1.9	17	60	22	1.5	.00	.00
AC-FT	.00	.00	.00	.00	37	1360	2820	9820	4740	497	27	.00

CAL YR 1990 TOTAL 5685.56 MEAN 15.6 MAX 156 MIN .00 AC-FT 11280
WTR YR 1991 TOTAL 9732.31 MEAN 26.7 MAX 269 MIN .00 AC-FT 19300

11237700 PITMAN CREEK NEAR TAMARACK MOUNTAIN, CA

LOCATION.--Lat 37°12'00", long 119°12'55", 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 100 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 mi².

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 90° V-notch control. Elevation of gage is 6,970 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Entire flow except for fishery maintenance 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 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.--Maximum daily discharge, 76 ft³/s, Mar. 27, 1990; no flow, Feb. 15 to Apr. 4, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2.7 ft³/s, Apr. 30; no flow, Feb. 15 to Apr. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.30	.41	e.47	e.56	e.00	e.00	2.4	1.4	1.8	.92	.44
2	.27	.26	.37	e.47	e.52	e.00	e.00	2.0	1.5	1.8	.93	.40
3	.25	.24	.36	e.51	e.52	e.00	e.00	1.9	1.5	1.7	.92	.38
4	.25	.26	.36	e.75	e.56	e.00	e.00	2.0	1.5	1.7	.92	.36
5	.22	.27	.34	e.88	e.61	e.00	e1.1	2.3	1.4	1.7	.92	.36
6	.22	.24	.33	e.70	e.64	e.00	e2.3	2.4	1.4	1.7	.92	.70
7	.22	.22	.34	e.63	e.64	e.00	e2.3	2.4	1.3	1.7	.92	.67
8	.22	.26	.32	e.53	e.68	e.00	e2.3	2.3	1.3	1.7	.92	.61
9	.22	.27	.32	e.52	e.71	e.00	2.3	2.2	1.3	1.7	.89	.59
10	.22	.27	.30	e.52	e.78	e.00	2.3	2.0	1.4	1.7	.88	.54
11	.22	.27	.42	e.49	e.82	e.00	2.1	2.0	1.4	1.7	.88	.54
12	.22	.28	.52	e.51	e.89	e.00	2.1	2.1	1.3	1.4	.88	.53
13	.22	.29	.51	e.57	e.99	e.00	2.2	2.1	1.3	.95	.88	.49
14	.22	.29	.42	e.53	e.80	e.00	2.3	2.1	1.3	.95	.88	.46
15	.22	.29	.45	e.52	e.00	e.00	2.3	2.3	1.3	.99	.88	.43
16	.22	.29	.43	e.58	e.00	e.00	2.3	2.4	1.2	.95	.88	.40
17	.22	.30	.38	e.55	e.00	e.00	2.2	2.4	1.2	.95	.88	.36
18	.22	.30	.42	e.56	e.00	e.00	2.2	2.2	1.2	.95	.88	.32
19	.25	.32	e.42	e.59	e.00	e.00	2.2	2.1	1.1	.95	.88	.30
20	.25	.41	e.42	e.57	e.00	e.00	2.2	1.9	1.1	.99	.88	.29
21	.24	.33	e.42	e.56	e.00	e.00	2.2	1.7	1.1	.99	.82	.27
22	.24	.32	e.42	e.56	e.00	e.00	2.2	1.7	1.1	.95	.79	.29
23	.22	.32	e.42	e.58	e.00	e.00	2.3	1.7	1.1	.95	.73	.27
24	.22	.33	e.42	e.59	e.00	e.00	2.3	1.7	1.1	.95	.64	.25
25	.22	.28	e.45	e.50	e.00	e.00	2.3	1.7	1.1	.92	.61	.24
26	.22	.32	e.47	e.60	e.00	e.00	2.2	1.6	1.1	.92	.56	.24
27	.22	.46	e.49	e.74	e.00	e.00	2.3	1.5	.95	.92	.54	.22
28	.22	.39	e.49	e.41	e.00	e.00	2.4	1.5	1.4	.92	.54	.23
29	.22	.42	e.49	e.50	---	e.00	2.6	1.4	2.0	.92	.51	.22
30	.22	.47	e.43	e.51	---	e.00	2.7	1.4	1.8	.92	.49	.22
31	.22	---	e.45	e.50	---	e.00	---	1.4	---	.92	.46	---
TOTAL	7.10	9.27	12.79	17.50	9.72	0.00	58.20	60.8	39.15	38.26	24.63	11.62
MEAN	.23	.31	.41	.56	.35	.000	1.94	1.96	1.30	1.23	.79	.39
MAX	.29	.47	.52	.88	.99	.00	2.7	2.4	2.0	1.8	.93	.70
MIN	.22	.22	.30	.41	.00	.00	.00	1.4	.95	.92	.46	.22
AC-FT	14	18	25	35	19	.00	115	121	78	76	49	23

CAL YR 1990 TOTAL 1103.69 MEAN 3.02 MAX 76 MIN .10 AC-FT 2190
WTR YR 1991 TOTAL 289.04 MEAN .79 MAX 2.7 MIN .00 AC-FT 573

e Estimated.

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharge. Flow is diverted from Huntington Lake (station 11236000) to Balsam Meadows Forebay, thence 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 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.--Maximum daily discharge, 1,750 ft³/s, May 19, 1989; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	0	0	0	1260	0	0	0	416	827	460	362
2	0	0	0	0	1250	0	0	170	252	1190	666	367
3	0	0	0	0	1205	0	0	0	481	1074	807	284
4	0	0	0	0	1018	198	0	0	706	416	897	295
5	0	0	0	3	1124	147	0	148	1023	650	837	306
6	0	0	0	0	892	0	0	107	852	590	923	339
7	0	0	0	51	746	4	0	295	1336	220	499	307
8	0	0	0	72	504	0	33	242	1392	625	756	329
9	0	0	0	165	31	34	0	295	1412	630	776	283
10	0	0	0	134	70	105	0	187	1316	625	560	384
11	0	0	0	196	77	0	0	0	983	953	14	354
12	0	0	0	0	2	0	0	0	1381	85	721	278
13	0	0	0	0	4	0	0	0	1442	645	403	338
14	0	0	0	22	0	2	0	192	1588	635	118	318
15	0	0	0	0	0	1	127	221	1497	269	497	283
16	0	0	0	75	0	2	0	171	1523	640	494	348
17	0	0	0	35	0	0	0	102	1523	555	304	565
18	0	0	183	45	0	0	138	145	1487	484	514	306
19	0	0	129	231	0	0	0	64	1316	756	286	338
20	0	0	0	187	0	0	0	134	1235	479	383	392
21	0	0	0	207	0	0	0	217	580	590	429	248
22	0	0	277	223	0	0	22	247	0	655	328	333
23	0	0	0	211	0	0	0	229	198	645	397	296
24	0	0	0	284	0	0	143	318	399	258	318	157
25	514	0	0	275	0	0	0	0	459	262	310	254
26	0	0	0	250	0	0	0	358	0	172	329	261
27	0	0	63	237	0	113	94	287	396	403	276	219
28	0	0	11	239	0	0	0	126	635	343	260	127
29	0	0	0	227	---	0	301	335	660	175	345	4
30	0	0	0	345	---	0	22	237	1023	0	196	363
31	0	---	0	1210	---	0	---	99	---	363	277	---
TOTAL	568	0	663	4924	8183	606	880	4926	27511	16214	14380	9038
MEAN	18.3	.000	21.4	159	292	19.5	29.3	159	917	523	464	301
MAX	514	0	277	1210	1260	198	301	358	1588	1190	923	565
MIN	0	0	0	0	0	0	0	0	0	0	14	4
AC-FT	1130	.00	1320	9770	16230	1200	1750	9770	54570	32160	28520	17930

CAL YR 1990 TOTAL 49324 MEAN 135 MAX 563 MIN 0 AC-FT 97830
WTR YR 1991 TOTAL 87893 MEAN 241 MAX 1588 MIN 0 AC-FT 174300

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--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. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records 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.--Maximum discharge, unknown, Apr. 15, 1989, as there was no record of flow over spillway; minimum daily, 0.31 ft³/s, Feb. 4, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.1 ft³/s, Aug. 27, gage height, 0.96 ft; minimum daily, 0.68 ft³/s, Nov. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.91	.87	.81	.75	e.77	.84	.75	.89	1.4	1.2	1.4	1.2
2	.89	.90	.81	.78	e.77	.81	.75	.84	1.4	1.2	1.3	1.2
3	.92	.91	.81	.78	e.77	.81	.75	.81	1.3	1.3	1.2	1.2
4	.89	.84	.81	.78	e.78	.96	.78	.81	1.3	1.3	1.2	1.2
5	.89	.87	.81	.75	e.78	.78	.78	.87	1.3	1.3	1.2	1.3
6	.89	.81	.81	.75	e.78	.73	.78	.89	1.3	1.3	1.2	1.3
7	.87	.70	.80	.75	.78	.73	.78	.89	1.3	1.3	1.2	1.3
8	.85	.68	.78	.78	.76	.73	.78	.87	1.3	1.4	1.2	1.3
9	.87	.70	.81	.75	.78	.71	.81	.78	1.3	1.3	1.2	1.3
10	.89	.70	.84	.74	.81	.71	.81	.73	1.3	1.3	1.1	1.2
11	.89	.70	.81	.74	.82	.71	.81	.73	1.3	1.3	1.2	1.2
12	.89	.70	.80	.78	.81	.73	.81	.75	1.3	1.3	1.3	1.2
13	.89	.71	.78	.79	.84	.73	.81	.78	1.3	1.3	1.2	1.2
14	.87	.71	.78	.81	.84	.73	.81	.81	1.3	1.3	1.3	1.2
15	.87	.71	.77	.84	.87	.73	.81	.84	1.3	1.3	1.4	1.1
16	.89	.73	.75	.81	.87	.73	.81	.84	1.3	1.3	1.3	1.1
17	.89	.73	.78	.81	.87	.75	.81	.84	1.3	1.3	1.2	1.1
18	.85	.73	.76	e.82	.87	.75	.81	.84	1.3	1.3	1.3	1.1
19	.80	.75	.73	e.82	.87	.75	.81	.84	1.3	1.3	1.3	1.1
20	.78	.75	.74	e.81	.87	.73	.81	.87	1.2	1.3	1.3	1.2
21	.84	.75	.75	e.80	.87	.73	.81	.87	1.2	1.2	1.3	1.2
22	.82	.73	.77	e.79	.87	.73	.81	.87	1.2	1.3	1.3	1.2
23	.86	.75	.75	e.79	.87	.75	.81	.87	1.3	1.3	1.2	1.2
24	.88	.78	.78	e.79	.87	.76	.81	.87	1.3	1.3	1.2	1.2
25	.89	.81	.79	e.78	.84	.78	.81	.87	1.3	1.3	1.3	1.2
26	.89	.79	.78	e.77	.84	.78	.81	.89	1.3	1.2	1.2	1.3
27	.89	.78	.78	e.77	.84	.75	.81	.87	1.3	1.3	1.3	1.3
28	.89	.78	.76	e.76	.84	.75	.87	.87	1.3	1.3	1.3	1.3
29	.92	.78	.78	e.76	---	.75	.87	.87	1.3	1.3	1.3	1.3
30	.92	.81	.78	e.75	---	.75	.89	.81	1.3	1.3	1.3	1.3
31	.89	---	.77	e.75	---	.75	---	1.1	---	1.4	1.3	---
TOTAL	27.18	22.96	24.28	24.15	23.15	23.43	24.17	26.28	38.9	40.1	39.0	36.5
MEAN	.88	.77	.78	.78	.83	.76	.81	.85	1.30	1.29	1.26	1.22
MAX	.92	.91	.84	.84	.87	.96	.89	1.1	1.4	1.4	1.4	1.3
MIN	.78	.68	.73	.74	.76	.71	.75	.73	1.2	1.2	1.1	1.1
AC-FT	54	46	48	48	46	46	48	52	77	80	77	72

CAL YR 1990 TOTAL 366.96 MEAN 1.01 MAX 1.5 MIN .68 AC-FT 728
WTR YR 1991 TOTAL 350.10 MEAN .96 MAX 1.4 MIN .68 AC-FT 694

e Estimated.

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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,640 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Huntington Lake (station 11236000) and diversions for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records provided by the Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--5 years, 2.47 ft³/s, 1,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 347 ft³/s, July 13, 1989, gage height, 3.32 ft; minimum daily, 1.3 ft³/s, Nov. 17, 1987, Nov. 24, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13 ft³/s, Mar. 19, gage height, 1.39 ft; minimum daily, 1.3 ft³/s, Nov. 24..

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	3.3	2.3	1.9	1.8	3.3	3.1	2.8	3.1	2.9	2.9	3.0
2	3.2	3.3	1.9	1.9	1.8	2.2	2.6	2.8	3.0	2.9	2.9	3.0
3	3.1	3.3	1.8	2.3	1.7	5.1	2.4	2.7	3.0	2.9	2.9	3.0
4	2.6	3.7	1.8	2.1	1.7	6.0	2.4	2.7	3.0	2.9	2.9	3.0
5	2.6	3.6	1.7	1.8	1.8	3.6	2.3	2.7	3.3	2.9	2.9	3.0
6	2.5	3.2	1.7	1.8	1.7	2.2	2.2	2.6	3.4	2.9	2.9	3.0
7	2.6	3.2	1.7	1.8	1.7	1.9	2.1	2.7	3.3	2.8	2.9	3.0
8	2.5	3.3	1.7	1.8	1.8	1.8	2.1	2.6	3.4	2.9	2.9	3.0
9	2.5	3.3	1.7	1.8	1.7	1.7	2.1	2.6	3.5	2.9	2.9	3.0
10	2.4	3.3	1.7	1.8	2.1	2.0	2.5	2.6	3.3	2.9	2.9	3.0
11	2.6	3.3	1.7	2.2	1.7	2.0	2.4	2.6	3.2	2.9	2.9	2.9
12	2.8	3.4	1.7	2.0	1.7	1.9	2.3	2.5	3.2	2.9	2.9	2.9
13	2.6	3.4	1.8	2.0	1.7	2.4	2.5	2.7	3.3	2.9	2.9	2.9
14	2.9	3.3	1.8	2.0	1.7	2.2	2.3	2.6	3.3	2.9	2.9	2.8
15	2.7	3.3	1.9	1.9	1.6	2.1	2.3	2.8	3.3	2.9	2.9	2.9
16	2.7	3.3	1.9	1.7	1.7	1.9	2.2	3.2	3.3	2.9	2.9	2.9
17	2.7	3.6	1.7	1.7	1.7	2.4	2.3	3.2	3.2	3.0	2.9	2.8
18	2.9	3.1	1.8	1.8	1.7	7.3	2.4	3.4	3.2	3.0	2.9	2.8
19	2.7	3.2	1.8	2.1	1.7	8.3	2.7	3.2	3.2	3.0	2.9	2.9
20	2.9	2.3	1.8	1.9	1.7	4.4	2.7	3.3	3.2	3.0	2.9	2.9
21	2.7	1.4	1.8	1.7	1.6	3.2	2.7	3.3	3.2	2.9	2.9	2.9
22	2.7	1.8	1.7	1.7	1.7	2.7	2.7	3.3	3.1	2.9	2.9	2.9
23	2.9	2.3	1.8	1.7	1.6	2.5	2.8	3.3	3.1	2.9	3.0	2.9
24	2.8	1.3	1.8	1.7	1.7	2.8	2.7	3.2	3.1	2.9	3.0	2.9
25	2.8	1.7	1.8	1.7	1.7	5.9	2.8	3.2	3.2	2.9	3.0	2.9
26	3.1	2.0	1.8	1.7	1.7	4.0	2.8	3.1	3.2	2.9	3.1	2.9
27	3.3	1.9	1.8	2.1	1.8	3.5	2.8	3.1	3.3	2.9	3.1	2.9
28	3.4	1.8	1.8	1.8	2.3	3.0	2.7	3.1	3.3	2.9	3.1	3.0
29	3.4	1.8	1.8	1.7	---	2.9	2.7	3.1	3.1	2.9	3.1	3.0
30	3.4	1.9	1.8	2.2	---	2.7	2.9	3.1	3.0	2.9	3.0	3.0
31	3.3	---	1.8	2.1	---	2.7	---	3.1	---	2.9	3.0	---
TOTAL	88.4	83.6	55.6	58.4	48.8	100.6	75.5	91.2	96.3	90.2	91.2	88.0
MEAN	2.85	2.79	1.79	1.88	1.74	3.25	2.52	2.94	3.21	2.91	2.94	2.93
MAX	3.4	3.7	2.3	2.3	2.3	8.3	3.1	3.4	3.5	3.0	3.1	3.0
MIN	2.4	1.3	1.7	1.7	1.6	1.7	2.1	2.5	3.0	2.8	2.9	2.8
AC-FT	175	166	110	116	97	200	150	181	191	179	181	175

CAL YR 1990 TOTAL 882.4 MEAN 2.42 MAX 4.1 MIN 1.3 AC-FT 1750
WTR YR 1991 TOTAL 967.8 MEAN 2.65 MAX 8.3 MIN 1.3 AC-FT 1920

11239300 NORTH FORK STEVENSON CREEK AT PERIMETER ROAD, NEAR BIG CREEK, CA

LOCATION.--Lat 37°08'14", 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 150 ft upstream from Perimeter Road and 4.8 mi south of town of Big Creek.

DRAINAGE AREA.--4.42 mi².

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

GAGE.--Water-stage recorder, Montana flume and concrete control. Elevation of gage is 5,760 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No diversion upstream from station. Releases for fishery maintenance from Balsam Meadows Forebay enter creek in NE 1/4 NW 1/4 sec.15, T.9 S., R.25 E. See schematic diagram of lower San Joaquin 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 PERIOD OF RECORD.--Maximum discharge, 34 ft³/s, Nov. 28, 1990, gage height, 2.91 ft; minimum daily, 1.6 ft³/s, Feb. 14, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34 ft³/s, Nov. 28, gage height, 2.91 ft; minimum daily, 1.6 ft³/s, Feb. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	2.1	12	4.3	7.0	e3.4	7.2	21	17	7.8	4.5	4.3
2	4.8	3.8	12	4.2	6.6	2.6	7.2	17	17	7.5	4.9	4.3
3	4.5	7.0	12	5.2	6.7	e6.0	8.4	15	17	7.4	5.3	4.3
4	4.2	5.1	12	5.4	6.5	e27	11	16	16	6.7	4.9	4.3
5	4.1	4.9	12	4.7	6.7	e15	13	19	16	6.5	5.0	4.3
6	3.9	4.8	8.9	4.5	6.4	e9.0	13	23	15	6.4	5.0	4.2
7	3.9	4.9	4.8	4.5	6.0	e7.0	12	25	14	6.2	5.2	3.8
8	3.9	4.9	4.4	4.6	5.7	7.1	12	27	14	5.9	4.8	3.8
9	3.9	4.9	4.3	4.4	5.4	6.6	14	25	13	6.3	4.8	3.9
10	3.8	4.9	4.3	5.0	5.1	e6.3	14	21	13	6.1	5.3	4.1
11	3.8	4.9	4.5	5.1	4.8	e6.3	11	18	11	6.5	4.4	4.2
12	3.8	4.9	4.5	4.9	4.6	e6.2	11	18	11	6.0	4.3	4.3
13	3.8	4.9	4.5	4.5	3.6	e6.1	11	20	11	5.2	4.6	4.2
14	3.8	4.8	4.4	4.4	1.6	e6.1	13	20	11	6.2	4.4	4.3
15	3.8	4.7	e4.4	4.4	2.1	e6.1	14	22	10	5.3	4.3	4.2
16	3.8	4.7	e4.4	4.4	2.3	e6.1	13	e25	10	5.0	4.6	4.2
17	3.8	4.7	e4.4	4.4	2.4	e6.1	13	22	9.7	5.5	4.6	4.2
18	3.8	4.7	4.4	4.4	2.0	e6.1	13	20	9.5	5.0	4.5	4.2
19	3.8	4.7	e4.4	4.3	1.8	e6.3	14	18	9.6	5.3	4.5	4.3
20	3.8	5.1	e4.9	4.7	1.9	e6.1	13	19	8.6	5.8	4.5	4.3
21	3.8	5.0	e5.1	4.9	2.1	e6.0	13	20	8.2	5.7	4.5	4.2
22	3.8	4.9	e5.2	5.9	2.1	e6.0	12	22	7.4	5.7	4.4	3.9
23	3.8	4.7	e5.4	9.0	2.2	e6.1	13	24	7.2	5.6	4.4	4.2
24	3.9	4.7	5.2	6.1	2.2	e6.2	14	26	7.2	5.2	4.4	4.5
25	4.0	4.8	4.8	6.0	2.3	e6.2	13	e26	7.3	4.6	4.3	4.2
26	3.8	5.1	4.6	6.3	2.4	e6.4	12	e24	7.1	4.9	4.4	3.9
27	2.4	5.0	4.5	6.6	2.7	e6.5	13	e22	7.6	4.9	4.4	3.9
28	1.9	8.7	4.5	7.7	e3.7	e6.5	15	e20	8.6	5.1	4.4	3.9
29	1.9	9.5	4.5	9.8	---	e6.5	18	e19	9.8	4.5	4.3	3.9
30	1.9	12	4.6	9.6	---	6.7	21	e18	8.4	4.5	4.4	3.9
31	2.0	---	4.5	6.6	---	7.0	---	18	---	4.5	4.3	---
TOTAL	113.3	159.8	184.4	170.8	108.9	221.6	381.8	650	332.2	177.8	142.6	124.2
MEAN	3.65	5.33	5.95	5.51	3.89	7.15	12.7	21.0	11.1	5.74	4.60	4.14
MAX	5.1	12	12	9.8	7.0	27	21	27	17	7.8	5.3	4.5
MIN	1.9	2.1	4.3	4.2	1.6	2.6	7.2	15	7.1	4.5	4.3	3.8
AC-FT	225	317	366	339	216	440	757	1290	659	353	283	246

CAL YR 1990 TOTAL 2093.9 MEAN 5.74 MAX 14 MIN 1.9 AC-FT 4150
WTR YR 1991 TOTAL 2767.4 MEAN 7.58 MAX 27 MIN 1.6 AC-FT 5490

e Estimated.

11239500 SHAVER LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°08'40", long 119°18'08", in 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, 6 mi southwest of town of Big Creek.

DRAINAGE AREA.--29.1 mi².

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 National Geodetic Vertical Datum of 1929 (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, NGVD. 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) through Huntington-Shaver conduit and 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 provided 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, 5,249.38 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 90,449 acre-ft, July 11, elevation, 5,347.80 ft; minimum, 21,178 acre-ft, Dec. 17, elevation, 5,296.90 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Oct. 1, 1967)

5,225	0	5,250	700	5,280	9,189	5,330	60,942
5,230	42	5,255	1,254	5,290	15,598	5,340	76,741
5,235	97	5,260	2,070	5,300	24,004	5,350	94,568
5,240	191	5,265	3,206	5,310	34,455	5,360	114,220
5,245	379	5,270	4,748	5,320	46,797	5,371	137,476

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28930	24576	22323	21542	30348	44161	40738	43637	51931	88144	77482	79637
2	28724	24490	22296	21542	32778	44123	40776	43419	52443	89494	76960	79790
3	28496	24500	22241	21542	35157	44395	40912	42793	53563	90413	77247	79841
4	28279	24500	22123	21712	37171	45484	41099	42125	55015	89935	77044	79892
5	28072	24404	22043	21739	39362	46797	41335	41822	57094	89935	77263	79961
6	27877	24309	21962	21757	41086	46718	41583	41633	58802	89806	77280	80029
7	27724	24204	21900	21864	42554	46797	41796	41645	61482	89420	77398	80097
8	27542	24118	21828	21980	43509	46613	41834	41558	64323	89861	77044	79671
9	27338	24033	21739	22360	43509	46022	42061	41809	67152	89953	76724	79364
10	27145	23939	21596	22652	43598	45747	42175	42125	69706	89880	77836	79620
11	26932	23883	21497	22999	43713	45030	42339	41897	71648	90449	77853	79773
12	26752	23790	21444	23008	43675	44537	42453	41695	73853	89291	78699	79790
13	26522	23696	21408	23008	43649	44136	42604	41834	75790	89255	78511	79909
14	26313	23603	21328	23063	43521	43688	42806	42364	77482	89236	77836	80029
15	26093	23482	21354	23063	43521	43432	43201	43125	79210	88035	78392	80063
16	25933	23417	21283	22917	43521	43099	43368	43329	80924	87345	78477	80200
17	25699	23380	21178	22716	43560	42997	43534	43777	82536	87037	78545	80407
18	25445	23389	21453	22561	43547	42857	43957	44200	84415	85908	78443	80803
19	25269	23361	21676	22917	43547	42655	43944	44433	85621	85352	78494	80872
20	25055	23314	21471	23165	43534	42415	44110	44887	86751	85175	78699	80993
21	24843	23249	21248	23389	43521	41986	44278	45432	86643	85140	79040	81217
22	24623	23249	21801	23659	43509	41683	44446	46022	86284	85175	79176	81562
23	24461	23249	21730	23706	43483	41746	44615	46548	86410	85158	79381	81821
24	24357	23202	21712	23874	43483	41847	45069	47309	86804	84397	79449	81855
25	25318	23249	21712	24071	43457	41695	44991	47497	86894	83725	79517	82047
26	25172	23091	21712	24471	43381	41223	44628	48280	86123	82798	79671	82292
27	25191	22935	21730	24824	43457	41397	44498	48889	86015	82309	79654	82187
28	25181	22752	21748	25074	43803	41074	44161	49214	86410	81752	79585	81872
29	25074	22597	21640	25289	---	40838	44459	49907	86267	80821	79688	81372
30	24814	22479	21578	25630	---	40925	44085	50438	87363	79585	79517	81493
31	24595	---	21578	27897	---	41024	---	50997	---	78511	79500	---
MAX	28930	24576	22323	27897	43803	46797	45069	50997	87363	90449	79688	82292
MIN	24357	22479	21178	21542	30348	40838	40738	41558	51931	78511	76724	79364
a	5300.62	5298.35	5297.35	5303.95	5317.70	5315.50	5317.92	5323.10	5346.11	5341.05	5341.63	5342.79
b	-3405	-2116	-901	+6319	+15906	-2779	+3061	+6912	+36366	-8852	+989	+1993

CAL YR 1990 b -19198

WTR YR 1991 b +53493

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

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 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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 5,200 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Shaver Lake (station 11239500). Flow diverted into basin through Eastwood powerplant (station 11238250). Flow diverted out of basin for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin 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.

AVERAGE DISCHARGE.--5 years, 3.27 ft³/s, 2,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 590 ft³/s, Nov. 10, 1987, gage height, 5.51 ft; minimum daily, 2.2 ft³/s, Dec. 3, 1987, and many days in December 1989 and January 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6.0 ft³/s, Mar. 4, gage height, 3.43 ft; minimum daily, 3.0 ft³/s, many days November through February.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	3.5	3.0	3.0	3.0	3.8	3.8	3.6	3.4	3.7	3.2	3.5
2	3.5	3.5	3.0	3.0	3.1	3.7	3.8	3.6	3.4	3.7	3.2	3.5
3	3.5	3.4	3.0	3.1	3.1	4.1	4.0	3.6	3.4	3.7	3.2	3.5
4	3.5	3.4	3.0	3.1	3.2	5.0	4.0	3.6	3.4	3.8	3.2	3.5
5	3.5	3.4	3.0	3.0	3.2	4.3	4.0	3.5	3.5	3.8	3.2	3.5
6	3.5	3.4	3.0	3.0	3.3	3.8	4.1	3.5	3.5	3.7	3.2	3.5
7	3.5	3.5	3.0	3.0	3.3	3.6	4.0	3.5	3.5	3.7	3.2	3.5
8	3.5	3.5	3.0	3.0	3.3	3.6	4.0	3.5	3.5	4.2	3.4	3.5
9	3.5	3.4	3.0	3.0	3.3	3.6	4.0	3.5	3.5	4.3	3.5	3.5
10	3.5	3.5	3.0	3.0	3.3	3.6	4.0	3.5	3.5	3.4	3.5	3.5
11	3.5	3.5	3.0	3.0	3.3	3.6	3.9	3.5	3.5	3.5	3.5	3.5
12	3.5	3.5	3.0	3.0	3.4	3.6	3.9	3.4	3.5	3.5	3.5	3.5
13	3.5	3.5	3.0	3.0	3.4	3.5	3.8	3.5	3.5	3.5	3.5	3.5
14	3.5	3.5	3.0	3.0	3.4	3.5	3.7	3.5	3.6	3.5	3.6	3.5
15	3.5	3.4	3.0	3.0	3.4	3.5	3.7	3.4	3.6	3.4	3.6	3.5
16	3.5	3.4	3.0	3.0	3.4	3.5	3.7	3.4	3.6	3.4	3.6	3.5
17	3.5	3.5	3.0	3.0	3.4	3.5	3.7	3.4	3.6	3.4	3.6	3.5
18	3.5	3.5	3.0	3.0	3.4	3.5	3.7	3.4	3.6	3.4	3.5	3.5
19	3.4	3.5	3.0	3.0	3.4	3.5	3.7	3.4	3.6	3.4	3.6	3.5
20	3.4	3.3	3.0	3.0	3.4	3.5	3.7	3.4	3.6	3.4	3.5	3.5
21	3.4	3.0	3.0	3.0	3.4	3.5	3.7	3.4	3.6	3.4	3.5	3.5
22	3.4	3.0	3.0	3.0	3.4	3.5	3.7	3.4	3.7	3.4	3.6	3.5
23	3.4	3.0	3.0	3.0	3.4	3.6	3.7	3.4	3.7	3.3	3.6	3.5
24	3.4	3.0	3.0	3.0	3.4	3.6	3.7	3.4	3.7	3.4	3.6	3.5
25	3.5	3.0	3.0	3.0	3.4	3.6	3.7	3.4	3.7	3.4	3.6	3.5
26	3.6	3.0	3.0	3.0	3.4	3.6	3.7	3.4	3.7	3.4	3.6	3.5
27	3.5	3.0	3.0	3.0	3.5	3.5	3.7	3.4	3.7	3.4	3.6	3.5
28	3.5	3.0	3.0	3.0	3.7	3.6	3.6	3.4	3.8	3.3	3.5	3.5
29	3.5	3.0	3.0	3.0	---	3.7	3.6	3.4	3.8	3.3	3.5	3.5
30	3.5	3.0	3.0	3.0	---	3.7	3.6	3.4	3.8	3.3	3.5	3.5
31	3.5	---	3.0	3.0	---	3.8	---	3.4	---	3.3	3.5	---
TOTAL	108.0	99.1	93.0	93.2	93.6	114.0	113.9	107.1	107.5	109.3	107.4	105.0
MEAN	3.48	3.30	3.00	3.01	3.34	3.68	3.80	3.45	3.58	3.53	3.46	3.50
MAX	3.6	3.5	3.0	3.1	3.7	5.0	4.1	3.6	3.8	4.3	3.6	3.5
MIN	3.4	3.0	3.0	3.0	3.0	3.5	3.6	3.4	3.4	3.3	3.2	3.5
AC-FT	214	197	184	185	186	226	226	212	213	217	213	208

CAL YR 1990 TOTAL 1148.0 MEAN 3.15 MAX 3.9 MIN 2.2 AC-FT 2280
WTR YR 1991 TOTAL 1251.1 MEAN 3.43 MAX 5.0 MIN 3.0 AC-FT 2480

11241950 REDINGER LAKE NEAR AUBERRY, CA

LOCATION.--Lat 37°08'42", long 119°26'58", in SW 1/4 sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on upstream face of dam No. 7 on San Joaquin River, 4.2 mi northeast of Auberry.

DRAINAGE AREA.--1,295 mi².

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 National Geodetic Vertical Datum of 1929 (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, NGVD. Additional storage of 8,914 acre-ft not available for release. Water is used for power development in Big Creek powerplant No. 4. See schematic diagram of lower San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

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. 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, 25,740 acre-ft, May 16, elevation, 1,402.18 ft; minimum, 14,736 acre-ft, Jan. 29, elevation, 1,375.35 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Oct. 27, 1950)

1,320	0	1,330	2,014	1,355	8,196	1,380	16,455
1,322	384	1,335	3,116	1,360	9,651	1,385	18,396
1,324	778	1,340	4,282	1,365	11,203	1,390	20,427
1,326	1,180	1,345	5,515	1,370	12,858	1,400	24,748
1,328	1,592	1,350	6,809	1,375	14,610	1,405	27,058

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23596	23777	23914	24327	16319	23198	23976	24676	24363	23976	24654	25579
2	23856	23759	23794	24443	16913	23088	23799	23706	23989	24078	24699	25006
3	23860	23856	23671	24569	17423	23416	24524	23737	23632	24708	24902	25168
4	23808	23940	23526	24820	17891	24636	24211	24074	23473	24875	24906	25195
5	23799	24007	23495	24784	18576	22797	22918	24443	23337	25028	24511	24591
6	23724	23896	23530	24938	19230	21596	23790	25146	23333	25069	24457	24703
7	23658	24136	23368	25082	19866	21494	23486	24825	23552	24596	24735	24775
8	23601	24273	23460	25141	20494	21426	24372	24816	23940	23333	24748	24748
9	23654	24327	23583	24847	21097	21617	24211	24807	23878	24185	24988	24676
10	23552	24273	24074	24703	21834	22353	25305	24875	23627	23821	24640	24762
11	24060	24484	24466	24965	22689	22546	23667	25132	24016	23482	24331	24902
12	23976	24596	24408	25055	23623	21779	25110	25177	24466	23566	24412	25028
13	24096	24618	24309	25168	24105	21894	25110	24425	24893	23412	24358	24533
14	24029	24470	23900	25287	23860	22301	25209	24933	24870	23302	24416	24220
15	24025	24448	23856	25383	23504	22676	25264	25703	24712	23154	24060	23636
16	23843	24744	24078	24924	23513	22922	25146	25740	25001	23193	24269	23023
17	23737	25502	24069	24011	23385	22775	24685	25137	24802	23368	24363	22396
18	23601	25566	23513	23342	23377	22537	24645	25132	24645	23592	24564	22646
19	23385	25538	23508	22931	23403	22905	24367	24861	24546	23508	24708	22797
20	23276	25392	23976	22663	24145	22983	23176	24997	24372	23684	24884	23163
21	23189	25191	24336	22035	24381	23005	22962	25424	24247	23794	24956	23359
22	23066	25337	24300	21532	24439	23535	22009	25378	24640	23918	25114	23447
23	22823	25515	24367	20369	24354	23062	21227	25433	24457	23887	25232	23132
24	22741	25584	24676	19194	24649	23259	21668	24587	23980	24074	25529	23429
25	22702	25643	24793	18131	24730	23337	22383	23936	24322	24430	25543	23451
26	22780	25365	24906	16569	24649	23329	22741	23958	25205	24502	25351	23816
27	22875	25401	23887	16604	23834	23302	23491	24322	25310	24951	25365	23896
28	22914	25110	24118	16030	23211	24105	24304	24546	25177	25006	25447	23927
29	23027	24528	24082	14736	---	23755	24421	24762	24654	24493	25561	23989
30	23364	23794	24042	15340	---	23980	24564	24897	23998	24960	25305	24238
31	23429	---	24176	15858	---	24242	---	24735	---	24852	25474	---
MAX	24096	25643	24906	25383	24730	24636	25305	25740	25310	25069	25561	25579
MIN	22702	23759	23368	14736	16319	21426	21227	23706	23333	23154	24060	22396
a	1397.03	1397.86	1398.72	1378.41	1396.53	1398.87	1399.59	1399.97	1398.32	1400.23	1401.60	1398.86
b	+231	+365	+382	-8318	+7353	+1031	+322	+171	-737	+854	+622	-1236

CAL YR 1990 b +2962

WTR YR 1991 b +1040

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 mi².

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 National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Flow regulated by Redinger Lake (station 11241950). Conduit to powerplant No. 4 diverts 1,000 ft upstream from station. See schematic diagram of lower San Joaquin 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.

AVERAGE DISCHARGE.--40 years, 446 ft³/s, 323,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,200 ft³/s, Dec. 23, 1955, gage height, 54.2 ft, from floodmarks, from rating curve extended above 7,000 ft³/s on basis of computed flow over dam; no flow Sept. 25, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 58 ft³/s, July 9, gage height, 4.54 ft; minimum daily, 5.6 ft³/s, July 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	25	24	22	25	15	6.1	7.1	30	22	27	26
2	24	19	24	22	26	16	6.1	7.1	29	22	27	26
3	25	23	24	22	26	23	7.9	7.1	28	22	27	26
4	25	24	25	22	26	24	9.2	6.9	27	21	26	26
5	25	24	25	22	27	27	9.0	6.9	26	18	24	26
6	25	24	25	21	25	10	8.9	6.9	26	17	26	26
7	25	23	25	21	24	9.1	9.2	6.9	25	17	26	26
8	25	24	24	21	24	8.9	9.2	6.9	25	e40	25	27
9	24	24	24	21	24	8.9	9.1	6.9	24	56	25	25
10	24	24	24	21	23	11	8.9	6.6	23	55	25	23
11	25	24	24	21	23	13	8.5	6.6	22	55	25	23
12	25	23	24	21	23	13	8.4	6.6	22	39	25	23
13	24	24	24	21	24	13	8.4	6.6	24	17	25	22
14	25	24	24	21	24	10	8.4	6.9	25	17	25	22
15	24	24	24	21	24	12	8.5	6.9	25	16	25	22
16	27	24	24	21	24	12	8.7	6.9	25	16	25	22
17	26	24	24	21	23	13	8.7	6.9	24	12	25	22
18	25	24	24	21	23	11	8.8	7.0	24	12	25	22
19	25	23	24	21	23	11	8.9	7.1	25	20	25	22
20	26	24	24	21	22	11	9.8	7.1	25	41	26	22
21	26	24	24	21	22	11	12	7.1	25	41	26	22
22	26	24	24	21	23	10	10	7.1	25	41	26	22
23	26	24	24	22	23	9.7	6.6	7.0	24	23	26	22
24	26	25	24	22	23	9.9	6.5	6.7	25	5.6	26	22
25	26	25	24	24	23	8.8	6.3	6.5	24	28	26	22
26	26	25	24	26	22	7.0	6.2	6.8	24	24	26	22
27	26	25	25	26	22	7.2	7.8	6.8	23	23	26	22
28	26	25	e38	26	22	7.1	17	6.8	23	23	26	22
29	26	25	39	26	---	7.0	e13	6.8	22	26	22	22
30	26	25	25	25	---	6.7	7.3	18	22	26	26	22
31	26	---	22	25	---	6.2	---	30	---	26	26	---
TOTAL	783	719	777	689	663	362.5	263.4	247.5	741	821.6	791	699
MEAN	25.3	24.0	25.1	22.2	23.7	11.7	8.78	7.98	24.7	26.5	25.5	23.3
MAX	27	25	39	26	27	27	17	30	30	56	27	27
MIN	23	19	22	21	22	6.2	6.1	6.5	22	5.6	22	22
AC-FT	1550	1430	1540	1370	1320	719	522	491	1470	1630	1570	1390

CAL YR 1990 TOTAL 7405.7 MEAN 20.3 MAX 60 MIN 5.3 AC-FT 14690
WTR YR 1991 TOTAL 7557.0 MEAN 20.7 MAX 56 MIN 5.6 AC-FT 14990

e Estimated.

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 mi².

PERIOD OF RECORD.--August 1965 to current year.

REVISED RECORDS.--WDR CA-72-2: 1970, 1971. WDR CA-85-3: 1983, 1984(P).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,200 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. No storage upstream from station. Madera Irrigation District has water rights to divert up to 50 ft³/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.

AVERAGE DISCHARGE.--26 years, 25.4 ft³/s, 18,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,750 ft³/s, Jan. 13, 1980, gage height, 7.41 ft, from rating curve extended above 1,100 ft³/s on basis of a step-backwater survey; minimum daily, 0.27 ft³/s, Oct. 4, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1700	*425	*4.50	May 24	2145	190	3.95
May 7	2300	144	3.82				

Minimum daily, 1.1 ft³/s, Oct. 5, 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	2.0	2.2	e1.9	3.9	11	18	55	82	14	4.7	2.7
2	1.3	1.8	2.0	e2.2	4.0	8.1	17	34	93	13	4.6	2.5
3	1.3	1.8	2.0	e3.5	4.2	12	20	31	101	12	4.5	2.5
4	1.2	1.8	2.1	e5.8	4.2	226	28	32	96	11	4.3	2.4
5	1.1	1.7	2.0	e4.5	7.0	95	37	45	81	10	4.4	2.6
6	1.1	1.6	1.9	e4.4	5.8	25	37	58	67	9.7	4.4	3.3
7	1.3	1.6	1.9	e4.6	4.8	20	31	77	58	9.4	4.3	3.0
8	1.3	1.7	1.9	4.4	4.6	16	32	96	53	9.1	4.1	2.8
9	1.3	1.7	1.9	3.8	4.3	13	37	75	52	8.8	4.0	2.7
10	1.2	1.6	1.8	3.8	4.3	11	37	46	49	8.5	3.9	2.6
11	1.2	1.5	2.0	4.0	4.2	e13	29	39	44	8.3	3.9	2.7
12	1.2	1.4	e1.8	4.3	4.2	e12	26	38	39	8.0	3.9	2.6
13	1.2	1.4	e1.8	4.6	4.3	12	28	47	35	7.9	4.3	2.5
14	1.2	1.4	e1.7	4.6	4.7	12	31	42	31	7.8	4.0	2.4
15	1.2	1.4	e1.7	4.5	4.6	12	31	49	28	7.5	4.3	2.4
16	1.2	1.4	e1.8	4.4	5.2	13	29	70	25	7.1	4.6	2.2
17	1.2	1.4	e1.7	4.3	5.7	10	26	68	23	6.9	4.0	2.2
18	1.2	1.4	e1.7	4.2	5.0	28	28	49	21	6.8	3.8	2.2
19	1.4	1.6	e1.6	4.2	4.1	46	29	41	19	6.8	3.6	2.1
20	1.6	2.5	e1.7	4.2	3.9	19	30	37	19	7.5	3.2	2.0
21	1.6	2.3	e1.6	4.1	4.0	12	26	37	17	6.8	3.2	2.0
22	1.4	2.1	e1.6	3.6	4.1	10	36	45	16	6.6	3.1	2.0
23	1.3	2.1	e1.5	4.0	3.8	10	31	69	16	6.3	3.0	2.0
24	1.3	2.0	e1.6	4.1	3.8	9.8	30	106	15	6.1	2.9	2.0
25	1.2	2.0	e1.7	3.9	3.5	e25	28	121	15	6.0	2.8	2.2
26	1.2	2.4	e2.1	4.0	3.4	e66	24	110	15	5.9	2.8	2.2
27	1.2	2.2	e1.7	3.7	3.5	50	24	109	16	5.6	2.8	2.0
28	1.2	2.4	e1.7	3.7	14	18	31	105	22	5.5	2.9	2.1
29	1.2	2.4	e1.8	4.0	---	11	39	103	22	5.3	2.8	2.2
30	1.3	2.4	e1.8	4.2	---	12	53	84	16	5.1	2.8	2.1
31	1.5	---	e1.8	4.0	---	14	---	71	---	4.8	2.7	---
TOTAL	39.4	55.0	56.1	125.5	133.1	851.9	903	1989	1186	244.1	114.6	71.2
MEAN	1.27	1.83	1.81	4.05	4.75	27.5	30.1	64.2	39.5	7.87	3.70	2.37
MAX	1.6	2.5	2.2	5.8	14	226	53	121	101	14	4.7	3.3
MIN	1.1	1.4	1.5	1.9	3.4	8.1	17	31	15	4.8	2.7	2.0
AC-FT	78	109	111	249	264	1690	1790	3950	2350	484	227	141

CAL YR 1990 TOTAL 3765.01 MEAN 10.3 MAX 63 MIN .96 AC-FT 7470
WTR YR 1991 TOTAL 5768.9 MEAN 15.8 MAX 226 MIN 1.1 AC-FT 11440

e Estimated.

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 National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE.--5 years, 14.1 ft³/s, 10,220 acre-ft/yr.

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 ft³/s, Mar. 8, 1989; no flow at times in each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.98	1.4	1.2	41	55	69	58	14	.81	.00
2	.00	.00	.61	1.6	1.3	18	42	66	58	12	.49	.00
3	.00	.00	.00	5.0	1.5	33	48	65	57	11	.96	.00
4	.00	.00	.00	20	1.6	76	67	61	55	9.3	1.7	.00
5	.00	.00	.00	8.8	4.0	73	77	72	50	6.3	.66	.00
6	.00	.00	.00	4.9	4.6	63	74	73	44	3.4	.00	.00
7	.00	.00	.00	2.7	3.5	40	73	71	39	4.9	.00	.00
8	.00	.00	.00	2.7	2.7	31	74	69	35	8.1	.00	.00
9	.00	.00	.00	3.3	2.2	30	73	71	32	8.0	.00	.00
10	.00	.00	.00	3.1	1.9	23	67	69	29	8.0	.00	.00
11	.00	.00	.00	3.0	1.4	21	64	67	26	7.2	.00	.00
12	.00	.00	.17	3.0	1.3	18	60	64	24	5.3	.00	.00
13	.00	.00	.34	3.0	1.3	19	63	67	23	3.7	.00	.00
14	.00	.00	.39	2.5	1.4	16	68	68	20	3.5	.00	.00
15	.00	.00	.18	2.5	1.8	14	70	69	19	3.5	.00	.00
16	.00	.00	1.2	2.6	2.0	14	62	73	17	3.5	.00	.00
17	.00	.00	1.9	2.4	3.3	14	59	70	15	3.3	.00	.00
18	.00	.00	2.7	2.2	4.6	13	59	67	16	3.3	.00	.00
19	.00	.00	2.7	2.0	3.7	16	64	66	15	3.1	.00	.00
20	.00	.00	2.2	1.9	2.9	14	65	63	14	3.2	.00	.00
21	.00	.00	2.3	1.9	2.4	12	59	62	14	3.0	.00	.00
22	.00	.00	1.9	1.5	2.2	12	57	64	13	1.7	.00	.00
23	.00	.00	1.9	1.2	2.0	13	61	70	13	2.2	.00	.00
24	.00	.00	1.9	1.4	1.9	17	66	72	12	3.0	.00	.00
25	.00	.00	1.9	1.3	1.7	16	63	73	11	2.1	.00	.00
26	.00	14	1.8	1.3	1.5	13	56	73	11	2.0	.00	.00
27	.00	35	1.5	1.2	1.5	14	57	77	12	1.8	.00	.00
28	.00	1.0	1.7	1.2	19	15	64	76	19	1.6	.00	.00
29	.00	1.2	1.7	1.2	---	18	70	74	25	1.4	.00	.00
30	.00	.91	1.6	1.3	---	27	69	70	17	1.3	.00	.00
31	.00	---	1.5	1.3	---	39	---	62	---	1.1	.00	---
TOTAL	0.00	52.11	33.07	93.4	80.4	783	1906	2133	793	145.8	4.62	0.00
MEAN	.000	1.74	1.07	3.01	2.87	25.3	63.5	68.8	26.4	4.70	.15	.000
MAX	.00	35	2.7	20	19	76	77	77	58	14	1.7	.00
MIN	.00	.00	.00	1.2	1.2	12	42	61	11	1.1	.00	.00
AC-FT	.00	103	66	185	159	1550	3780	4230	1570	289	9.2	.00

CAL YR 1990 TOTAL 4865.82 MEAN 13.3 MAX 76 MIN .00 AC-FT 9650

WTR YR 1991 TOTAL 6024.40 MEAN 16.5 MAX 77 MIN .00 AC-FT 11950

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 mi².

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 National Geodetic Vertical Datum of 1929 (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 ft³/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.

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, 44,630 acre-ft, June 3-5, elevation, 3,375.72 ft; minimum, 22,570 acre-ft, Nov. 13, elevation, 3,353.69 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27935	25987	22720	22913	23603	24691	32112	40126	44546	42376	34485	30446
2	27916	25703	22720	22913	23620	24813	32330	40398	44570	42159	34196	30446
3	27916	25391	22728	22913	23654	25268	32600	40594	44630	41938	33877	30456
4	27907	25110	22737	23165	23680	26680	32930	40834	44630	41674	33601	30446
5	27898	24813	22737	23199	23739	27287	33275	41096	44630	41434	33305	30427
6	27889	24484	22737	23232	23773	27526	33652	41379	44594	41161	33011	30398
7	27879	24192	22720	23257	23790	27684	33949	41564	44522	40890	32370	30398
8	27861	23892	22728	23266	23807	27823	34237	41685	44450	40725	32420	30369
9	27861	23603	22728	23291	23824	27926	34568	41762	44390	40638	32142	30369
10	27842	23308	22737	23308	23816	28075	34860	41795	44342	40485	31856	30341
11	27814	23005	22728	23333	23824	28186	35102	41839	44330	40224	31562	30331
12	27805	22695	22745	23375	23883	28279	35323	41960	44330	39962	31268	30321
13	27805	22570	22753	23367	23841	28465	35567	42273	44318	39700	30986	30302
14	27786	22578	22753	23392	23875	28605	35845	42524	44318	39428	30715	30283
15	27796	22578	22787	23409	23892	28679	36113	42821	44318	39134	30619	30302
16	27768	22578	22795	23425	23892	28753	36329	43204	44294	38883	30629	30283
17	27758	22586	22842	23442	23926	28995	36566	43381	44498	38610	30619	30264
18	27758	22586	22821	23451	23952	29940	36782	43416	44430	38371	30629	30264
19	27749	22586	22888	23467	23884	29654	37020	43451	44342	38120	30619	30254
20	27740	22611	22896	23484	23773	29702	37281	43475	43889	37880	30609	30245
21	27730	22611	22896	23484	23790	29692	37488	43487	43593	37608	30590	30216
22	27721	22611	22896	23501	23799	29787	37728	43510	43298	37346	30571	30216
23	27721	22628	22896	23510	23807	29901	38164	43605	43134	37085	30571	30216
24	27712	22628	22888	23518	23824	30273	38403	43758	42855	36804	30571	30206
25	27610	22628	22888	23535	23824	30667	38643	43937	42650	36523	30561	30177
26	27379	22678	22888	23544	23833	30879	38839	44103	42456	36221	30542	30015
27	27151	22678	22888	23552	23875	31006	39057	44234	42216	35930	30513	30025
28	26914	22678	22879	23561	24174	31112	39286	44378	42171	35631	30504	29987
29	26716	22703	22888	23569	---	31287	39559	44462	42330	35334	30494	29968
30	26518	22711	22888	23586	---	31503	39842	44510	42433	35039	30485	29987
31	26284	---	22909	23603	---	31758	---	44510	---	34776	30465	---
MAX	27935	25987	22909	23603	24174	31758	39842	44510	44630	42376	34485	30456
MIN	26284	22570	22720	22913	23603	24691	32112	40126	42171	34776	30465	29968
a	3357.99	3353.86	3354.10	3354.92	3355.59	3363.82	3371.49	3375.62	3373.85	3366.80	3362.49	3361.99
b	-1651	-3573	+198	+694	+571	+7584	+8084	+4668	-2077	-7657	-4311	-478

CAL YR 1990 b -399

WTR YR 1991 b +2052

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11243500 PACIFIC GAS & 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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--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 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.

AVERAGE DISCHARGE.--51 years, 68.8 ft³/s, 49,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 167 ft³/s, June 23, 24, 1965; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.76	151	.67	11	.00	.36	1.2	2.2	135	82	142	.00
2	.76	150	.16	11	.00	.73	1.2	2.2	135	143	142	.00
3	.76	150	.34	10	.00	.70	1.2	1.5	136	143	142	.00
4	.76	150	.35	5.3	.00	.77	1.2	.12	136	94	142	.01
5	.35	149	.35	1.1	.00	.76	1.2	.90	141	26	142	.00
6	.35	149	.35	1.1	.00	.69	.68	.91	145	96	139	.01
7	.35	149	11	1.1	.00	.55	.35	62	144	142	142	.01
8	.42	149	.03	1.0	.00	.62	.35	115	144	97	142	.01
9	.70	149	.02	.91	.00	.58	.27	113	125	59	142	.00
10	.76	149	.02	.89	.00	.32	.16	112	113	109	142	.00
11	13	148	.33	.84	.00	.76	e.16	112	113	141	142	.00
12	.02	148	.94	.76	.00	.76	e.16	47	113	139	142	.00
13	.03	66	1.2	.76	.00	.76	e.16	.35	113	139	141	.00
14	.03	.16	1.2	.76	.00	.45	e.16	.35	46	139	141	.00
15	.03	.11	5.6	.76	.00	.16	.16	.35	.00	139	60	.00
16	.06	.12	5.3	.76	.00	.35	.16	.35	.00	139	.16	.00
17	.07	.34	1.2	.76	.00	.67	.16	61	.00	138	.16	.00
18	.06	.58	1.2	.38	.00	4.9	.16	112	81	138	.08	.00
19	.36	1.0	8.0	.01	50	51	.16	112	141	138	.08	.00
20	.81	1.4	12	.11	63	91	.16	114	141	138	.03	.00
21	.81	1.4	12	.32	.81	54	.16	113	141	140	.01	.00
22	.81	1.4	12	.35	.84	.01	.61	112	141	141	.02	.00
23	.82	1.4	12	.35	.86	.02	1.2	112	141	141	.03	.00
24	.86	1.2	12	.34	.96	.43	1.2	112	138	144	.00	.00
25	58	1.0	12	.35	1.2	5.9	1.2	112	139	148	.00	26
26	119	1.0	12	.35	1.2	9.8	1.2	113	141	148	.00	34
27	118	1.0	12	.35	1.2	9.8	1.2	112	141	148	.00	.35
28	118	1.0	12	.21	.86	4.9	1.2	111	55	148	.00	.35
29	107	1.0	12	.00	---	1.0	1.5	132	.00	145	.01	.35
30	90	1.0	11	.00	---	1.2	2.2	145	.00	142	.02	.35
31	125	---	11	.00	---	1.2	---	139	---	142	.01	---
TOTAL	758.74	1872.11	180.26	51.92	120.93	245.15	21.08	2282.23	3139.00	3966	2043.61	61.44
MEAN	24.5	62.4	5.81	1.67	4.32	7.91	.70	73.6	105	128	65.9	2.05
MAX	125	151	12	11	63	91	2.2	145	145	148	142	34
MIN	.02	.11	.02	.00	.00	.01	.16	.12	.00	26	.00	.00
AC-FT	1500	3710	358	103	240	486	42	4530	6230	7870	4050	122

CAL YR 1990 TOTAL 10699.56 MEAN 29.3 MAX 156 MIN .00 AC-FT 21220
WTR YR 1991 TOTAL 14742.47 MEAN 40.4 MAX 151 MIN .00 AC-FT 29240

e Estimated.

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 180400u6, 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 mi²,

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--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 ft³/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.

AVERAGE DISCHARGE.--51 years, 13.3 ft³/s, 9,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,100 ft³/s, Feb. 19, 1986; minimum daily, 0.01 ft³/s, Dec. 4, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16 ft³/s, Mar. 4, gage height, 2.27 ft; minimum daily, 0.02 ft³/s, Oct. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.21	.21	.27	.17	1.5	1.2	2.4	1.5	.93	.42	.23
2	.02	.21	.21	.27	.17	.77	.86	2.6	1.4	.91	.40	.22
3	.04	.22	.20	.38	.17	1.3	.77	2.6	1.4	.88	.39	.29
4	.17	.22	.19	.53	.17	6.7	.72	2.6	1.4	.86	.37	.41
5	.18	.22	.19	.31	.20	2.1	.69	2.6	1.4	.84	.36	.43
6	.18	.22	.21	.27	.18	.78	.69	e2.6	1.4	.82	.34	.38
7	.19	.21	.25	.26	.17	.52	.68	e2.5	1.3	.81	.32	.37
8	.19	.21	.25	.22	.17	.41	.68	e2.5	1.3	.79	.31	.40
9	.19	.21	.24	.22	.17	.35	.94	e2.5	1.3	.77	.29	.45
10	.19	.20	.25	.21	.17	.34	1.2	e2.5	1.3	.76	.28	.45
11	.19	.19	.26	.21	.17	.38	1.2	2.4	1.3	.75	.26	.45
12	.19	.19	.27	.20	.17	.33	1.2	2.4	1.3	.72	.26	.45
13	.19	.23	.27	.19	.17	.58	1.2	2.6	1.2	.70	.25	.45
14	.20	.32	.28	.19	.17	.49	1.2	2.6	1.2	.69	.23	.45
15	.19	.31	.28	.19	.17	.48	1.3	2.3	1.2	.67	.23	.44
16	.20	.28	.28	.19	.15	.43	1.3	2.5	1.2	.66	.22	.40
17	.20	.29	.30	.19	.16	.71	1.5	2.6	1.2	.65	.22	.40
18	.20	.33	.31	.19	.16	2.2	1.6	2.6	1.2	.63	.21	.40
19	.21	.38	.34	.19	.15	3.1	1.8	2.7	1.2	.62	.21	.40
20	.21	.44	.32	.19	.15	1.4	1.9	2.7	1.2	.61	.21	.40
21	.20	.46	.31	.18	.15	1.0	2.1	2.6	1.1	.60	.21	.43
22	.20	.45	.30	.18	.15	.85	2.2	2.2	1.1	.58	.21	.42
23	.20	.36	.29	.19	.15	.80	2.3	1.6	1.1	.57	.21	.32
24	.20	.20	.28	.19	.15	1.5	2.4	1.6	1.1	.56	.21	.31
25	.20	.21	.27	.18	.15	3.2	2.4	1.6	.83	.54	.21	.37
26	.20	.26	.27	.17	.15	1.5	2.4	1.6	.96	.53	.21	.25
27	.20	.21	.27	.17	.17	1.2	2.4	1.6	.97	.51	.21	.25
28	.20	.21	.27	.17	.50	1.2	2.5	1.6	1.1	.49	.21	.26
29	.20	.21	.27	.17	---	1.4	2.5	1.6	1.0	.47	.21	.26
30	.20	.21	.27	.17	---	1.3	2.2	1.6	.95	.46	.22	.26
31	.20	---	.27	.17	---	1.1	---	1.5	---	.44	.22	---
TOTAL	5.55	7.87	8.18	6.81	4.93	39.92	46.03	69.9	36.11	20.82	8.11	11.00
MEAN	.18	.26	.26	.22	.18	1.29	1.53	2.25	1.20	.67	.26	.37
MAX	.21	.46	.34	.53	.50	6.7	2.5	2.7	1.5	.93	.42	.45
MIN	.02	.19	.19	.17	.15	.33	.68	1.5	.83	.44	.21	.22
AC-FT	11	16	16	14	9.8	79	91	139	72	41	16	22

CAL YR 1990 TOTAL 233.54 MEAN .64 MAX 2.0 MIN .02 AC-FT 463
WTR YR 1991 TOTAL 265.23 MEAN .73 MAX 6.7 MIN .02 AC-FT 526

e Estimated.

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 mi².

PERIOD OF RECORD.--January 1952 to September 1988, October 1989 to current year.

GAGE.--Water-stage recorder. Concrete control since Oct. 22, 1964. Datum of gage is 1,174.69 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Flow regulated by Bass Lake (station 11243400) 10 mi upstream and diversion into Pacific Gas & Electric Co. conduit No. 3. See schematic diagram of lower San Joaquin 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.

AVERAGE DISCHARGE.--38 years (water years 1953-88, 1990-91), 65.9 ft³/s, 47,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s, Dec. 23, 1955, gage height, 28.5 ft, from floodmarks, from rating curve extended above 4,700 ft³/s; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,510 ft³/s, Mar. 4, gage height, 12.13 ft; no flow Oct. 1-29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	9.5	.92	1.3	1.4	23	48	44	19	6.6	2.4	.81
2	.00	3.2	.92	1.3	1.3	19	34	33	17	5.2	2.1	.69
3	.00	1.4	.92	1.7	1.4	22	29	29	15	4.2	1.7	.53
4	.00	1.0	.92	7.6	1.5	779	31	27	18	7.1	1.3	.44
5	.00	.67	.92	7.1	1.6	442	36	32	20	6.2	1.0	.34
6	.00	2.8	.92	3.3	2.0	43	45	37	21	5.2	.92	.30
7	.00	12	.92	2.4	2.0	24	33	40	17	4.8	.92	.23
8	.00	9.9	.82	2.0	1.8	17	32	50	16	4.7	.94	.18
9	.00	9.1	.82	1.9	1.7	15	30	42	15	3.5	1.0	1.6
10	.00	5.1	.73	2.6	1.6	13	37	35	11	3.0	.83	2.1
11	.00	3.9	.82	3.3	1.5	14	30	29	9.4	2.7	e.64	.80
12	.00	3.7	.92	2.3	1.5	12	26	27	9.1	2.8	e.61	.42
13	.00	3.5	.92	2.0	1.5	17	27	30	13	2.7	e.59	.38
14	.00	2.5	1.0	1.9	1.6	18	31	33	13	2.3	e.56	.48
15	.00	1.1	1.1	1.9	1.6	15	33	30	9.6	2.9	e.54	.45
16	.00	.72	1.4	1.9	1.7	12	28	32	7.2	3.6	.51	.37
17	.00	.53	1.2	1.8	1.8	14	26	32	6.5	3.5	.60	.28
18	.00	.45	1.2	1.7	2.6	124	26	30	7.1	3.6	.72	.32
19	.00	.42	2.0	1.6	2.4	258	29	27	11	11	.60	.20
20	.00	.45	2.1	1.5	2.2	67	28	25	8.8	5.9	.47	.13
21	.00	.48	1.5	1.4	2.0	37	26	25	9.0	4.4	1.8	.13
22	.00	.62	1.4	1.4	2.0	25	29	26	7.9	9.0	2.0	.13
23	.00	.70	1.1	1.4	1.9	22	31	27	7.8	4.5	1.7	.12
24	.00	.64	1.1	1.3	1.8	21	33	27	7.5	6.4	1.5	.10
25	.00	.64	1.1	1.3	1.9	126	31	28	7.6	3.2	1.9	.09
26	.00	1.0	1.2	1.3	2.1	56	27	26	6.6	2.9	1.9	.07
27	.00	1.3	1.2	1.3	1.8	49	27	26	5.8	2.9	1.0	.06
28	.00	1.0	1.3	1.4	4.6	33	29	22	7.4	2.7	.92	.06
29	.00	.93	1.3	1.4	---	32	34	21	11	2.6	.92	.06
30	3.2	.92	1.2	1.4	---	28	39	21	8.5	2.4	.92	.06
31	3.0	---	1.2	1.4	---	29	---	22	---	5.2	.91	---
TOTAL	6.20	80.17	35.07	66.1	52.8	2406	945	935	342.8	137.7	34.42	11.93
MEAN	.20	2.67	1.13	2.13	1.89	77.6	31.5	30.2	11.4	4.44	1.11	.40
MAX	3.2	12	2.1	7.6	4.6	779	48	50	21	11	2.4	2.1
MIN	.00	.42	.73	1.3	1.3	12	26	21	5.8	2.3	.47	.06
AC-FT	12	159	70	131	105	4770	1870	1850	680	273	68	24

CAL YR 1990 TOTAL 2201.64 MEAN 6.03 MAX 32 MIN .00 AC-FT 4370
WTR YR 1991 TOTAL 5053.19 MEAN 13.8 MAX 779 MIN .00 AC-FT 10020

e Estimated.

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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (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 1 and 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, 4,140 acre-ft, June 7, 1987, Nov. 26, 1989, May 19, 1990, May 20, 23, 1991, elevation, 985.0 ft; minimum, 2,104 acre-ft, Nov. 14-17, 1988, elevation, 970.1 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,140 acre-ft, May 20, 23, elevation, 985.0 ft; minimum, 2,280 acre-ft, Jan. 31, Feb. 7, elevation, 971.6 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3984	3815	3933	3953	2292	3845	3724	3928	3984	3546	3906	3800
2	3937	3984	3855	3800	2292	3968	3287	3668	3937	3891	3739	3664
3	3644	4015	3876	3830	2292	3891	3891	3459	3891	3937	3800	3800
4	3694	3992	3845	3800	2320	3970	3922	3740	4015	4109	3709	3770
5	3895	3968	3830	3984	2370	3709	3679	3935	3815	4093	3668	3800
6	3925	3992	3953	3953	2505	3830	3860	3906	3845	3709	3769	3860
7	3984	3906	3830	3517	2280	3754	3724	3953	4030	3754	3592	3800
8	3906	3860	3815	3459	2322	3830	3953	3800	4125	3620	3679	3694
9	3984	3922	3984	3891	2352	3937	3830	3664	4030	3800	3650	3605
10	3984	3937	3754	3891	2376	3830	4093	3815	4030	3968	3694	3906
11	3937	3906	3896	3990	2401	3922	4062	3800	4030	3992	3739	3739
12	3769	3968	3837	3955	2488	3992	3459	3724	3891	3935	3800	3724
13	3953	3891	3679	3914	3118	3984	3860	3724	3724	3760	3845	3735
14	4030	3984	3992	3845	3590	3664	3860	3715	3679	4062	3830	3800
15	3953	3968	3784	3694	3891	3620	3984	3984	3680	3769	3679	3926
16	3830	3546	3984	3845	3845	3784	3664	3906	3754	3724	3860	3825
17	3992	3605	3891	3679	3605	3739	3891	4062	3724	3784	4030	3876
18	3930	3450	3953	3876	3754	3546	3937	3860	3576	3664	3860	3774
19	4030	3815	3815	4015	3984	3784	3953	3830	3679	3620	3830	3860
20	3998	3922	3784	4015	3968	3784	3906	4140	3664	3459	3953	3679
21	3953	3937	3815	4117	3945	3860	3953	4030	4015	3845	3754	3906
22	3860	3754	3769	3937	3953	3860	3739	3984	4030	3664	3968	3922
23	3968	3605	3815	3968	3970	3852	3724	4140	3992	3724	3937	3724
24	3754	3739	3845	3860	3935	3754	3876	3800	4030	3576	3561	3709
25	3837	3784	3769	3754	3852	3784	3784	3906	4015	3664	3459	3815
26	3845	3953	3754	3953	4015	3664	3968	3830	3906	3561	3709	3769
27	3922	3992	3808	3488	3906	3709	3784	4070	3925	3679	3815	3891
28	3724	3992	3784	3620	3984	3860	3815	4018	3394	3876	3906	3694
29	4062	3800	3745	3287	---	3984	3910	3984	3891	3769	3644	3968
30	3790	3840	4035	2297	---	3769	3968	3968	3830	3694	3815	3876
31	3906	---	3992	2280	---	3891	---	4030	---	3891	3739	---
MAX	4062	4015	4035	4117	4015	3992	4093	4140	4125	4109	4030	3968
MIN	3644	3450	3679	2280	2280	3546	3287	3459	3394	3459	3459	3605
a	983.5	983.1	984.1	971.6	984.0	983.4	983.9	984.3	983.0	983.4	982.4	983.3
b	-47	-66	+152	-1712	+1704	-93	+77	+62	-200	+61	-152	+137

CAL YR 1990 b +748

WTR YR 1991 b -77

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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is 870.11 ft above National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE.--5 years, 25.1 ft³/s, 18,180 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,450 ft³/s, Dec. 21, 1990, gage height, 12.85 ft; minimum daily, 16 ft³/s, May 9-18, 1987, Sept. 29, 30, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,450 ft³/s, Dec. 21, gage height, 12.85 ft; minimum daily, 17 ft³/s, Feb. 8, 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	22	20	20	18	20	20	28	27	27	34	30
2	21	22	20	19	28	19	22	28	27	26	34	30
3	21	22	20	19	27	20	28	26	27	27	34	30
4	21	22	20	20	24	20	29	29	27	27	35	30
5	21	22	20	20	18	19	29	30	27	27	34	30
6	21	22	20	20	18	19	28	30	27	27	34	30
7	21	22	20	19	18	19	28	30	27	27	34	31
8	21	22	20	19	17	18	29	30	27	27	34	30
9	21	22	20	19	17	18	29	30	27	27	34	30
10	21	22	20	20	18	18	29	30	27	27	34	30
11	21	22	20	20	18	18	29	30	27	27	34	30
12	21	22	20	20	18	18	29	29	27	27	34	29
13	21	22	20	20	18	19	28	30	27	27	34	29
14	21	23	20	20	19	19	29	30	27	30	34	29
15	21	23	21	19	19	19	29	30	27	33	34	29
16	21	22	20	19	20	19	29	30	27	33	34	29
17	21	22	20	19	19	19	29	30	27	33	34	29
18	22	22	20	19	19	21	29	29	27	33	34	29
19	21	22	21	19	19	22	29	29	27	33	34	29
20	22	22	20	20	19	20	29	29	27	33	34	28
21	21	22	740	20	19	19	29	28	27	33	34	28
22	21	22	20	20	19	19	29	29	27	34	34	29
23	21	22	20	20	19	19	28	29	27	34	34	29
24	21	22	20	20	19	19	29	29	27	34	34	28
25	21	22	20	19	19	20	29	29	27	34	34	28
26	21	22	19	19	19	20	28	29	27	33	34	28
27	21	22	19	19	19	20	28	29	27	34	34	32
28	21	22	19	19	19	29	28	30	27	34	32	29
29	21	21	19	19	---	20	28	36	27	34	31	28
30	36	20	19	78	---	20	28	31	27	34	30	29
31	22	---	20	31	---	20	---	27	---	34	30	---
TOTAL	669	659	1337	674	543	609	844	913	810	950	1042	879
MEAN	21.6	22.0	43.1	21.7	19.4	19.6	28.1	29.5	27.0	30.6	33.6	29.3
MAX	36	23	740	78	28	29	29	36	27	34	35	32
MIN	21	20	19	19	17	18	20	26	27	26	30	28
AC-FT	1330	1310	2650	1340	1080	1210	1670	1810	1610	1880	2070	1740
CAL YR 1990	TOTAL	10673	MEAN 29.2	MAX 740	MIN 19	AC-FT 21170						
WTR YR 1991	TOTAL	9929	MEAN 27.2	MAX 740	MIN 17	AC-FT 19690						

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.--June 1951 to current year. Monthly discharge only for October 1943 to September 1950 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.

AVERAGE DISCHARGE.--48 years (water years 1944-91), 326 ft³/s, 236,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,330 ft³/s, July 2, 1983; no flow for many days in each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
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	450	380	1160	270
2	.00	.00	.00	.00	.00	.00	.00	.00	434	432	1140	270
3	.00	.00	.00	.00	.00	.00	.00	.00	425	563	1120	289
4	.00	.00	.00	.00	.00	.00	.00	.00	483	620	1120	300
5	.00	.00	.00	.00	.00	.00	.00	.00	515	762	1060	287
6	.00	.00	.00	.00	.00	.00	9.0	.00	499	1000	1010	243
7	.00	.00	.00	.00	.00	.00	.00	.00	490	1110	999	219
8	.00	.00	.00	.00	.00	.00	.00	150	490	1100	997	218
9	.00	.00	.00	.00	.00	.00	.00	200	490	1060	1010	108
10	.00	.00	.00	.00	.00	.00	.00	265	502	1020	1020	.00
11	.00	.00	.00	.00	.00	.00	.00	397	542	996	1020	.00
12	.00	.00	.00	.00	.00	.00	.00	450	560	1010	1000	.00
13	.00	.00	.00	.00	.00	.00	.00	450	560	1020	883	.00
14	.00	.00	.00	.00	.00	.00	.00	418	573	1060	800	.00
15	.00	.00	.00	.00	31	.00	.00	384	580	1080	744	.00
16	.00	.00	.00	.00	.00	.00	.00	375	580	1080	756	.00
17	.00	.00	.00	.00	.00	.00	.00	375	580	1070	796	.00
18	.00	.00	.00	.00	.00	.00	.00	375	580	1040	823	.00
19	.00	.00	.00	.00	.00	.00	.00	375	548	1030	830	.00
20	.00	.00	.00	.00	.00	.00	.00	375	504	1040	830	.00
21	.00	.00	.00	.00	.00	.00	.00	375	464	1050	525	.00
22	.00	.00	.00	.00	.00	.00	.00	375	418	1050	310	.00
23	.00	.00	.00	.00	.00	.00	.00	394	400	1070	297	.00
24	.00	.00	.00	.00	.00	.00	.00	405	387	1100	286	.00
25	.00	.00	.00	.00	.00	.00	.00	421	367	1100	267	.00
26	.00	.00	.00	.00	.00	.00	.00	443	360	1120	254	.00
27	.00	.00	.00	.00	.00	.00	.00	450	334	1160	250	.00
28	.00	.00	.00	.00	.00	.00	.00	466	339	1170	263	.00
29	.00	.00	.00	.00	---	.00	.00	475	350	1150	270	.00
30	.00	.00	.00	.00	---	.00	.00	459	369	1160	270	.00
31	.00	---	.00	.00	---	.00	---	450	---	1150	270	---
TOTAL	0.00	0.00	0.00	0.00	31.00	0.00	9.00	9302.00	14173	30753	22380	2204.00
MEAN	.000	.000	.000	.000	1.11	.000	.30	300	472	992	722	73.5
MAX	.00	.00	.00	.00	31	.00	9.0	475	580	1170	1160	300
MIN	.00	.00	.00	.00	.00	.00	.00	.00	334	380	250	.00
AC-FT	.00	.00	.00	.00	61	.00	18	18450	28110	61000	44390	4370

CAL YR 1990 TOTAL 56343.00 MEAN 154 MAX 1030 MIN .00 AC-FT 111800

WTR YR 1991 TOTAL 78852.00 MEAN 216 MAX 1170 MIN .00 AC-FT 156400

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.

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.

AVERAGE DISCHARGE.--42 years, 1,367 ft³/s, 990,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 5,330 ft³/s, June 25, 1982; no flow for many days in most years.

[illegible]

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 mi².

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 National Geodetic Vertical Datum of 1929 (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.

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, 412,400 acre-ft, June 10, elevation, 554.47 ft; minimum, 156,600 acre-ft, Nov. 19, elevation, 477.87 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	183000	159900	162300	173700	191500	184900	293400	370000	400600	390600	285600	195700
2	182000	159600	162600	173700	188500	186300	296800	371000	402800	388900	281800	194200
3	181500	159200	162900	173700	185400	188200	299700	371500	404900	386700	277800	192500
4	180500	158500	163400	173700	182700	193600	305500	373100	406500	384700	273300	190900
5	179500	158400	163700	173800	181900	200200	312600	374500	408000	382300	268500	190100
6	179000	158300	163900	173800	181400	203600	316900	376000	409400	379300	264200	189000
7	178200	157700	164400	174200	180900	205000	321400	378200	410700	375200	260000	187200
8	177500	157200	164600	174400	180100	207200	323800	379900	411800	372300	256700	185400
9	176600	156900	164700	174300	179500	208800	330700	382200	412200	366700	253900	185100
10	175800	157100	165100	174600	178900	210300	334400	383600	412400	362900	250400	184400
11	174700	157100	165100	174500	178400	212000	340500	384500	411500	359200	246500	184200
12	174100	157200	165300	174500	177800	214400	344200	385000	410300	355200	242700	184000
13	173000	157300	165700	174400	177200	216800	346200	385800	409400	351700	240000	184600
14	172100	157100	165900	174300	177400	219000	348600	385400	409000	347600	237100	185000
15	171300	157200	166500	174300	177700	220900	351700	384300	408400	343900	234700	185400
16	170600	157300	166400	175700	178000	222200	354100	384600	407500	339800	231300	186200
17	169700	157000	167000	177400	178300	224200	356600	384500	406600	335600	227400	186400
18	169100	156700	167900	178300	178200	230700	358700	385300	405300	331000	223900	185300
19	168400	156600	169300	178700	178100	237500	360800	385700	404000	327400	220800	184100
20	167800	156700	170300	179000	177800	242800	363000	385500	403300	324900	217400	183100
21	167300	157100	172100	180000	178100	247000	365000	385500	403100	321700	214500	182100
22	166600	157100	172100	181000	178400	250700	367600	385600	401200	319200	212200	181500
23	166000	157100	172400	182700	178600	254000	369600	385400	400700	316200	210600	182000
24	165400	157100	172300	184600	178500	257400	369900	387000	400100	313200	209300	180500
25	164300	157200	172200	186400	179000	263700	370300	389400	398800	309400	207900	179100
26	163600	157800	172100	187800	179400	269200	369800	391500	396800	306300	206200	178300
27	162700	158200	173200	188500	181100	274100	368800	392700	395300	303400	204200	177400
28	161900	159200	173100	189300	182700	277700	367700	394200	394100	300000	202200	176800
29	161000	160500	173700	191300	---	282300	367700	395200	392700	296800	200600	175700
30	160600	161900	173700	192300	---	286000	369800	396400	391500	292900	199300	174700
31	160100	---	173700	192300	---	288800	---	398200	---	289200	197200	---
MAX	183000	161900	173700	192300	191500	288800	370300	398200	412400	390600	285600	195700
MIN	160100	156600	162300	173700	177200	184900	293400	370000	391500	289200	197200	174700
a	479.35	479.68	484.77	491.77	488.22	522.72	544.23	551.12	549.53	522.84	493.57	485.17
b	-23200	+1800	+11800	+18600	-9600	+106100	+81000	+28400	-6700	-102300	-92000	-22500
c	1010	467	186	271	423	780	1290	2200	2700	3020	1960	1400

CAL YR 1990 b +11100

WTR YR 1991 b -8600

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 mi².

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 National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE (adjusted for change in contents in and evaporation from Millerton Lake and for diversions to Madera and Friant-Kern Canals).--84 years, 2,388 ft³/s, 1,730,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,200 ft³/s, Dec. 11, 1937, gage height, 23.8 ft, site and datum then in use; minimum, 38 ft³/s, regulated, July 29, 1940. Maximum discharge since construction of Friant Dam in 1941, 15,500 ft³/s, Feb. 18, 1986, gage height, 13.41 ft; minimum, 5.5 ft³/s, Oct. 20, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 260 ft³/s, July 25, gage height, 3.04 ft; minimum daily, 36 ft³/s, Mar. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	149	127	102	118	144	50	135	180	190	216	170
2	136	151	127	100	124	144	91	138	179	190	215	168
3	136	150	127	100	120	135	116	146	176	190	217	165
4	136	149	127	100	120	100	131	149	177	190	222	165
5	136	143	127	99	120	70	132	149	176	197	225	167
6	138	131	120	97	118	74	131	149	172	210	226	169
7	139	122	114	96	118	85	129	146	174	210	224	180
8	139	120	114	94	118	99	121	146	177	210	222	177
9	140	120	114	92	118	110	108	158	177	207	218	169
10	139	120	115	92	118	110	101	173	177	207	213	167
11	141	120	115	92	116	109	101	172	176	207	209	163
12	141	121	115	92	111	98	99	172	178	207	207	164
13	141	121	115	92	109	92	99	169	185	207	207	164
14	141	121	116	92	109	90	97	172	187	207	208	164
15	140	120	118	92	108	90	112	172	188	207	210	164
16	148	120	117	92	108	90	130	170	188	209	203	161
17	155	118	108	92	108	95	129	164	188	209	193	156
18	164	118	103	92	108	79	128	172	188	207	190	156
19	181	119	101	92	114	85	129	169	186	204	191	155
20	181	120	83	92	124	120	129	172	187	204	195	152
21	180	121	81	92	122	68	129	172	188	204	187	154
22	179	120	81	92	152	44	130	163	188	205	178	156
23	169	120	82	92	182	38	125	150	188	207	177	161
24	162	120	80	92	182	36	118	149	190	220	170	161
25	161	122	82	96	181	95	118	149	190	243	174	142
26	161	122	83	105	175	127	121	149	190	241	173	148
27	161	122	85	104	153	143	129	149	189	240	172	151
28	161	124	88	106	140	79	129	158	188	238	172	152
29	155	127	101	108	---	64	129	180	190	232	172	151
30	150	126	104	110	---	54	129	182	190	214	172	150
31	149	---	104	110	---	45	---	180	---	220	171	---
TOTAL	4707	3777	3274	2999	3594	2812	3520	4974	5507	6533	6129	4822
MEAN	152	126	106	96.7	128	90.7	117	160	184	211	198	161
MAX	181	151	127	110	182	144	132	182	190	243	226	180
MIN	136	118	80	92	108	36	50	135	172	190	170	142
AC-FT	9340	7490	6490	5950	7130	5580	6980	9870	10920	12960	12160	9560

CAL YR 1990 TOTAL 51982 MEAN 142 MAX 237 MIN 20 AC-FT 103100 MEAN a 985 AC-FT a 713,100
WTR YR 1991 TOTAL 52648 MEAN 144 MAX 243 MIN 36 AC-FT 104400 MEAN a 1269 AC-FT a 918,700

a Adjusted for change in contents and evaporation from Millerton Lake and for diversions to Madera and Friant-Kern canals.

NOTE: Records of evaporation provided by U.S. Bureau of Reclamation, not reviewed by the U.S. Geological Survey.

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 mi².

PERIOD OF RECORD.--Water years 1958-65 (annual maximum), October 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 680 ft above National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE.--25 years, 2.93 ft³/s, 2,120 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,420 ft³/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 ft³/s and maximum (*), from floodmarks:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 1	0500	479	3.24	Mar. 26	1315	1,890	4.66
Mar. 20	0200	*1,940	*4.70				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	e6.6	e3.4	.12	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	e6.4	e3.0	.41	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	e5.8	e2.5	.37	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	e30	e2.2	.18	.00	.00	.00	.00
5	.00	.00	.00	.00	.37	e72	e1.9	.08	.00	.00	.00	.00
6	.00	.00	.00	.00	.07	e5.0	e1.8	.04	.00	.00	.00	.00
7	.00	.00	.00	.00	.06	.14	e1.6	.03	.00	.00	.00	.00
8	.00	.00	.00	.00	.06	.00	e1.5	.02	.00	.00	.00	.00
9	.00	.00	.00	.00	.05	.00	e1.4	.02	.00	.00	.00	.00
10	.00	.00	.00	.00	.03	.00	e1.3	.05	.00	.00	.00	.00
11	.00	.00	.00	.00	.01	.00	e1.2	.05	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	e1.1	.05	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	e1.0	.04	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	e1.0	.04	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	e.99	.05	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	e.98	.03	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	16	e.92	.02	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	79	e.84	.02	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	84	e.88	.02	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	136	.99	.02	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	11	1.3	.02	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	6.3	1.1	.02	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	5.2	.87	.02	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	42	.79	.01	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	45	.76	.01	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	94	.60	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.30	e25	.46	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	2.3	e11	.33	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	e6.2	.26	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	e4.7	.14	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	e3.9	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	3.25	695.24	37.11	1.74	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.12	22.4	1.24	.056	.000	.000	.000	.000
MAX	.00	.00	.00	.00	2.3	136	3.4	.41	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	6.4	1380	74	3.5	.00	.00	.00	.00

CAL YR 1990 TOTAL 72.43 MEAN .20 MAX 34 MIN .00 AC-FT 144
WTR YR 1991 TOTAL 737.34 MEAN 2.02 MAX 136 MIN .00 AC-FT 1460

e Estimated.

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 National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE.--44 years, 256 ft³/s, 185,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 5,570 ft³/s, June 7, 1969; no flow for all or most of each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1991 water year.

11259000 CHOWCHILLA RIVER BELOW BUCHANAN DAM, NEAR RAYMOND, CA

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.

DRAINAGE AREA.--236 mi².

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 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1975 to current year.

INSTRUMENTATION.--Interruptions in record were due to malfunction of the recording instrument. Temperature recorder since October 1975.

REMARKS.--Water temperatures since October 1985 for periods when discharge was less than 1 ft³/s are not reliable and are not published. Loss of record for period when discharge was more than 1 ft³/s, June 18 to July 12, was caused by vandalism. 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 1986-91).--

WATER TEMPERATURE: Maximum recorded, 29.0 °C, May 15, 1987; minimum recorded, 0.5 °C, Dec. 25-27, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: No data available during 1991 water year because of equipment vandalism.

11260815 SAN JOAQUIN RIVER NEAR STEVINSON, CA

WATER-QUALITY RECORDS

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 mi², 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 April 1987 to September 1988 are available in files of the U.S. Geological Survey.

SPECIFIC CONDUCTANCE: Water year 1989 to current year.

WATER TEMPERATURE: Water year 1989 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. Maximum and minimum values are affected by upstream regulation of flow.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 3,340 microsiemens, Nov. 11, Dec. 8, 9, 1990; minimum recorded, 94 microsiemens, Mar. 27, 1991.

WATER TEMPERATURE: Maximum recorded, 31.0 °C, Aug. 9, 10, 1990; minimum recorded, 3.0 °C, Dec. 26, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 3,340 microsiemens, Nov. 11, Dec. 8, 9; minimum recorded, 94 microsiemens, Mar. 27.

WATER TEMPERATURE: Maximum recorded, 29.0 °C, July 4, 5; minimum recorded, 3.0 °C, Dec. 26.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991.

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	3060	2990	3250	3200	---	---	3260	3220	2740	2600	2210	2110
2	3080	3000	3250	3230	---	---	3250	3220	2740	2600	2140	2010
3	3090	3060	3250	3230	---	---	3280	3240	2720	2650	2030	1980
4	3100	3060	3270	3210	---	---	3250	3240	2690	2560	2030	1980
5	3140	3080	3270	3240	---	---	3280	3230	2650	2500	2580	2010
6	3180	3110	3280	3270	---	---	3280	3240	2620	2470	2640	1780
7	3200	3150	3280	3270	---	---	3280	3240	2530	2460	1770	910
8	3180	3160	3310	3270	3340	3330	3280	3240	2530	2340	930	630
9	3230	3170	3290	3280	3340	3320	3270	3240	2440	2280	630	610
10	3220	3160	3290	3230	3330	3290	3270	3230	2370	2310	720	610
11	3210	3160	3340	3280	3320	3280	3260	3220	2260	2190	720	660
12	3210	3190	3330	3200	3290	3270	3260	3220	2230	2150	870	710
13	3200	3180	3300	3290	3280	3270	3230	3220	2160	2050	970	860
14	3220	3170	3310	3300	3280	3270	3230	3220	2100	2030	1100	970
15	3210	3160	3310	3300	3280	3270	3230	3210	2050	1950	1170	1100
16	3200	3150	3320	3280	3280	3260	3220	3200	2030	1940	1330	1170
17	3200	3180	3320	3300	3270	3260	3250	3200	2090	1980	1450	1320
18	3190	3140	3320	3290	3270	3260	3260	3240	2140	2040	1560	1450
19	3180	3140	3330	3300	3270	3250	3260	3240	2150	2120	1660	650
20	3160	3150	---	---	3260	3250	3250	3240	2150	2130	560	120
21	3190	3140	---	---	3260	3220	3260	3240	2150	2140	260	120
22	3210	3130	---	---	3230	3220	3260	3250	2180	2140	160	110
23	3220	3160	---	---	3230	3220	3260	3240	2190	2150	310	160
24	3240	3210	---	---	3260	3220	3260	3220	2190	2180	350	300
25	3220	3180	---	---	3260	3220	3250	3210	2220	2180	450	350
26	3240	3170	---	---	3230	3220	3230	3080	2210	2170	450	96
27	3250	3220	---	---	3230	3220	3190	2920	2210	2170	140	94
28	3250	3190	---	---	3220	3200	3020	2790	2220	2170	230	130
29	3230	3190	---	---	3260	3200	2980	2730	---	---	270	230
30	3250	3190	---	---	3260	3220	2770	2680	---	---	340	270
31	3250	3220	---	---	3260	3220	2790	2680	---	---	420	320
MONTH	3250	2990	---	---	---	---	3280	2680	2740	1940	2640	94

11260815 SAN JOAQUIN RIVER NEAR STEVINSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	490	420	2480	2470	2120	2020	1810	1760	1880	1820	1880	1790
2	590	480	2480	2430	2120	2050	1770	1700	1940	1870	1830	1780
3	680	580	2470	2410	2120	2090	1780	1700	1980	1910	1800	1760
4	820	670	2440	2340	2150	2100	1810	1720	2050	1970	1840	1780
5	920	780	2380	2330	2120	2090	1810	1720	2140	2040	1900	1800
6	1080	910	2340	2270	2060	2010	1830	1760	2220	2140	1990	1880
7	1240	1070	2310	2230	2020	1950	1880	1780	2250	2180	2080	1970
8	1370	1200	2240	2160	1960	1910	1920	1820	2350	2240	2150	2040
9	1400	1340	2220	2160	1920	1900	1940	1880	2390	2320	2280	2140
10	1470	1370	2200	2160	1920	1900	1990	1900	2390	2340	2310	2250
11	1520	1470	2170	2120	1920	1900	2040	1930	2390	2340	2320	2240
12	1600	1500	2160	2060	1920	1900	2010	1980	2330	1750	2350	2290
13	1600	1530	2110	2020	1920	1890	2000	1900	1820	1540	2390	2310
14	1690	1550	2030	1960	1950	1900	1950	1860	1640	1520	2420	2350
15	1760	1680	1970	1920	1960	1910	1920	1820	1690	1580	2470	2410
16	1880	1730	1930	1820	2000	1920	1860	1790	1760	1600	2530	2430
17	1990	1830	1910	1820	2020	1950	1830	1750	1830	1690	2560	2460
18	2050	1950	1930	1860	2160	2010	1830	1760	1800	1690	2630	2510
19	2180	2080	1930	1860	2210	2120	1860	1800	1830	1650	2720	2570
20	2240	2090	1910	1830	2210	2160	1860	1810	1850	1690	2770	2640
21	2190	2140	1870	1830	2210	2130	1900	1820	1790	1690	2780	2680
22	2250	2180	1870	1830	2180	2120	1870	1820	1760	1690	2830	2730
23	2280	2230	1910	1860	2170	2120	1920	1820	1860	1750	2880	2780
24	2340	2240	1910	1860	2180	2130	1930	1860	1910	1850	2930	2820
25	2370	2320	1930	1870	2150	2090	1880	1810	1970	1900	2940	2840
26	2380	2340	1930	1910	2120	1950	1820	1680	1910	1840	3040	2880
27	2440	2380	1960	1920	1950	1820	1680	1630	1840	1770	3040	2950
28	2480	2430	1970	1920	1840	1750	1720	1630	1850	1810	3060	2990
29	2480	2430	1970	1930	1800	1750	1740	1670	1860	1810	3090	3000
30	2480	2470	2000	1960	1800	1750	1810	1720	1880	1810	3110	3000
31	---	---	2050	1970	---	---	1840	1770	1890	1870	---	---
MONTH	2480	420	2480	1820	2210	1750	2040	1630	2390	1520	3110	1760

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	24.5	22.5	18.5	16.5	---	---	4.5	3.5	10.0	9.0	15.5	15.0
2	23.5	22.5	16.5	15.0	---	---	5.0	4.0	10.5	9.5	15.5	15.0
3	23.0	21.5	16.0	14.5	---	---	5.5	5.0	10.5	9.5	15.5	14.5
4	23.5	21.5	15.5	14.0	---	---	5.5	4.5	11.5	10.5	15.0	14.5
5	23.0	21.5	15.0	14.0	---	---	6.0	5.5	13.0	11.0	15.0	14.5
6	22.0	21.0	14.0	13.0	---	---	7.0	6.0	13.0	12.0	15.0	13.5
7	21.0	19.5	13.5	12.5	---	---	8.0	7.0	13.0	12.5	14.5	13.0
8	20.0	18.5	14.0	12.5	9.5	9.0	8.0	7.5	13.5	12.5	14.0	12.5
9	21.0	18.5	14.5	12.5	9.5	8.5	9.0	8.0	13.5	13.0	15.5	13.5
10	21.0	18.5	14.5	12.5	9.5	8.5	9.5	8.5	13.0	12.5	14.5	13.5
11	20.5	18.5	14.0	12.5	9.5	9.0	9.0	8.5	14.0	11.5	15.5	13.0
12	20.5	18.5	14.5	12.5	10.0	9.0	10.0	9.0	14.0	13.0	14.5	13.5
13	20.5	18.5	13.5	12.5	10.0	9.0	10.5	9.0	15.0	13.0	15.0	13.5
14	21.0	19.0	13.5	12.5	9.0	8.5	10.5	10.0	14.5	14.0	15.5	13.5
15	20.5	19.0	14.0	12.5	9.0	8.0	10.5	10.0	15.0	14.5	14.5	13.5
16	20.5	19.0	13.0	11.5	8.5	8.0	11.0	9.5	16.5	15.0	14.0	13.5
17	20.5	19.0	14.0	12.5	8.5	7.5	10.5	9.5	15.5	15.0	13.5	12.5
18	20.0	19.0	14.5	13.0	8.0	7.5	10.5	9.5	15.5	14.5	12.5	12.5
19	19.0	18.5	13.5	12.0	8.0	7.0	11.0	9.5	16.0	14.5	13.0	12.0
20	18.5	17.5	---	---	7.5	7.0	10.5	9.5	15.5	14.5	12.5	11.5
21	19.0	17.0	---	---	6.5	5.0	10.0	9.5	16.0	14.5	12.5	12.0
22	19.5	17.5	---	---	5.0	4.0	10.5	9.0	16.0	14.5	13.0	12.0
23	20.0	18.0	---	---	5.0	4.0	10.0	9.0	16.5	14.5	15.0	12.5
24	20.0	18.0	---	---	4.5	3.5	10.0	9.0	16.5	15.0	14.5	13.5
25	20.0	18.5	---	---	4.5	3.5	10.0	8.5	16.5	15.0	14.5	13.0
26	20.0	18.5	---	---	4.0	3.0	9.5	8.5	16.5	15.0	13.5	10.0
27	20.5	19.0	---	---	4.5	3.5	9.5	9.0	16.0	15.0	11.5	9.5
28	20.5	19.0	---	---	5.5	4.0	10.0	8.5	15.5	15.0	14.0	11.5
29	20.5	19.0	---	---	5.0	4.0	10.0	9.0	---	---	16.5	13.0
30	20.0	18.5	---	---	5.0	4.0	9.5	8.0	---	---	17.5	15.5
31	19.5	18.5	---	---	5.5	4.0	9.5	9.0	---	---	18.5	17.5
MONTH	24.5	17.0	---	---	---	---	11.0	3.5	16.5	9.0	18.5	9.5

11260815 SAN JOAQUIN RIVER NEAR STEVINSON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	/MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	19.0	17.0	20.5	20.0	22.5	21.5	24.5	22.0	27.5	25.5	26.0	24.0
2	19.5	16.5	20.5	19.0	24.0	22.0	25.5	24.0	27.0	24.5	26.5	24.5
3	20.0	16.5	20.0	18.5	24.0	23.0	28.0	25.0	26.5	24.5	27.0	25.0
4	21.5	17.0	19.5	19.0	24.0	23.5	29.0	25.5	26.5	24.0	27.5	25.0
5	20.0	17.5	20.0	19.5	24.5	23.0	29.0	26.0	26.5	24.0	27.5	25.0
6	19.0	18.0	23.0	20.0	24.0	23.0	28.5	25.5	26.5	24.0	27.0	25.0
7	18.0	17.0	22.5	21.0	24.0	23.5	28.0	25.0	26.5	23.5	27.0	24.5
8	18.0	16.0	23.5	21.5	24.5	23.5	27.5	25.0	27.0	24.0	26.0	24.5
9	19.5	16.0	22.5	21.0	25.0	24.5	27.0	24.0	27.5	24.5	25.0	23.0
10	18.5	15.5	21.0	19.5	25.5	25.0	27.0	24.0	26.5	24.5	24.0	22.0
11	15.5	14.0	22.0	20.0	26.0	25.5	27.0	24.0	27.5	24.5	23.5	22.0
12	17.0	14.0	21.0	21.0	26.5	26.0	27.5	24.0	26.5	25.0	24.0	22.0
13	16.5	15.0	21.5	21.0	26.5	25.5	27.0	24.5	26.0	24.0	24.5	22.5
14	20.0	15.5	23.0	20.5	26.5	25.0	26.5	24.0	27.0	25.0	24.5	22.5
15	19.0	16.5	21.5	20.5	25.5	24.5	27.0	24.0	28.0	25.5	24.0	22.5
16	19.0	16.0	22.0	20.5	25.0	24.0	27.0	23.5	28.0	25.0	24.5	22.5
17	20.0	16.0	22.5	20.5	25.0	24.0	26.5	23.0	27.5	25.0	24.5	23.0
18	21.5	17.0	21.5	20.5	25.5	22.5	26.5	23.5	27.5	25.0	25.0	23.0
19	20.5	17.5	20.0	19.5	26.0	22.0	27.0	23.5	27.0	25.0	25.0	23.0
20	19.5	18.0	20.5	19.5	25.0	21.5	26.5	23.5	27.0	25.0	24.5	23.0
21	20.5	18.0	21.0	20.0	25.0	21.5	26.0	23.5	27.0	24.5	24.5	23.0
22	22.0	18.5	21.5	20.5	25.0	21.5	26.5	24.0	26.5	24.5	24.5	23.0
23	22.0	19.0	22.0	21.5	25.0	21.5	28.0	24.5	27.0	24.0	24.5	23.0
24	20.5	19.0	23.5	22.0	24.5	21.5	27.5	24.5	27.0	24.5	24.5	23.0
25	20.5	18.5	24.5	23.0	23.5	21.5	27.0	24.5	26.5	24.5	24.0	23.0
26	20.0	18.5	24.5	23.0	23.5	21.5	27.0	25.0	26.0	24.5	24.0	22.5
27	19.5	18.5	25.0	23.0	22.5	21.0	27.5	25.0	25.5	24.0	24.0	22.5
28	20.0	18.5	24.0	23.0	22.0	21.0	27.5	25.0	25.5	23.5	23.5	22.0
29	21.0	19.0	24.0	23.0	23.5	20.5	28.0	25.5	26.0	23.5	23.5	22.0
30	21.5	19.5	24.0	22.5	25.0	21.5	28.0	26.0	26.5	24.0	24.0	22.0
31	---	---	22.5	21.0	---	---	28.0	26.0	26.0	24.0	---	---
MONTH [B]	22.0	14.0	25.0	18.5	26.5	20.5	29.0	22.0	28.0	23.5	27.5	22.0

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 current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--6 years, 238 ft³/s, 172,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 810 ft³/s, Feb. 20, 1986; minimum daily, 25 ft³/s, Sept. 5, 18, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 459 ft³/s, Mar. 22, elevation, 67.59 ft; minimum daily, 25 ft³/s, Sept. 5, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	200	163	66	57	48	263	272	128	85	162	111	56
2	200	174	68	58	53	343	268	148	92	120	109	71
3	180	183	65	60	73	367	277	136	102	86	113	67
4	191	197	60	61	84	356	270	135	95	81	132	e36
5	183	189	58	59	83	385	259	138	86	84	179	e25
6	163	180	62	55	81	372	249	149	92	108	164	36
7	165	192	58	53	79	249	227	150	98	131	115	46
8	167	194	58	54	76	188	212	136	110	114	111	55
9	186	193	60	56	77	172	207	121	123	124	129	86
10	187	197	59	56	90	183	186	110	134	126	112	72
11	165	179	73	60	107	204	160	103	113	84	108	61
12	144	172	76	59	86	176	149	112	106	82	179	66
13	127	168	76	57	83	165	163	110	86	101	123	70
14	119	155	75	56	80	189	187	122	94	77	90	55
15	116	133	67	60	82	223	195	111	93	84	101	53
16	118	152	59	68	83	267	177	103	96	75	152	52
17	108	156	59	65	81	289	158	110	124	77	169	41
18	114	172	58	62	76	288	157	102	148	84	151	25
19	114	135	58	57	90	299	151	156	123	87	138	29
20	109	117	56	59	82	363	154	156	94	127	127	37
21	113	115	57	61	76	428	166	146	88	124	102	39
22	111	119	59	62	67	451	191	123	92	115	76	50
23	105	111	62	55	73	388	198	112	105	111	66	54
24	102	100	64	60	90	327	177	107	133	77	73	53
25	99	89	67	63	102	307	178	121	102	78	72	46
26	94	84	70	70	86	307	189	133	84	86	84	42
27	112	85	69	75	90	360	185	151	81	98	83	34
28	139	83	66	76	158	374	186	158	97	110	53	34
29	146	73	62	71	---	358	183	122	110	157	48	33
30	142	67	59	65	---	324	156	101	142	128	53	33
31	142	---	59	50	---	297	---	85	---	103	51	---
TOTAL	4361	4327	1965	1880	2336	9262	5887	3895	3128	3201	3374	1457
MEAN	141	144	63.4	60.6	83.4	299	196	126	104	103	109	48.6
MAX	200	197	76	76	158	451	277	158	148	162	179	86
MIN	94	67	56	50	48	165	149	85	81	75	48	25
AC-FT	8650	8580	3900	3730	4630	18370	11680	7730	6200	6350	6690	2890

CAL YR 1990 TOTAL 75396 MEAN 207 MAX 400 MIN 56 AC-FT 149500
WTR YR 1991 TOTAL 45073 MEAN 123 MAX 451 MIN 25 AC-FT 89400

e Estimated.

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 files of the U.S. Geological Survey.

SPECIFIC CONDUCTANCE: Water year 1989 to current year.

WATER TEMPERATURE: Water year 1989 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.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 4,330 microsiemens, Jan. 16, 1991; minimum recorded, 943 microsiemens, Aug. 16, 1991.

WATER TEMPERATURE: Maximum recorded, 31.0 °C, July 14, 1990; minimum recorded, 0.5 °C, Dec. 23, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 4,330 microsiemens, Jan. 16; minimum recorded, 943 microsiemens, Aug. 16.

WATER TEMPERATURE: Maximum recorded, 30.0 °C, June 12; minimum recorded, 0.5 °C, Dec. 23.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1360	1080	1230	1170	2680	2500	3500	3450	3570	3300	---	---
2	1230	989	1240	1150	2560	2400	3450	3410	3590	3310	---	---
3	1330	990	1240	1130	2620	2500	3390	3260	3640	2960	---	---
4	1400	1160	1240	1140	2800	2630	3320	3070	2990	2680	---	---
5	1380	1170	1310	1250	2880	2790	3550	3280	3090	2950	---	---
6	1300	1160	1340	1290	3540	2890	3750	3570	3270	3060	---	---
7	1280	1130	1330	1250	3570	2980	3840	3750	3560	3140	---	---
8	1380	1260	1400	1290	3260	3150	3840	3760	3650	3500	---	---
9	1450	1290	1570	1390	3290	3230	3840	3780	3770	3600	---	---
10	1290	1140	1610	1470	3450	3300	3900	3790	3570	3110	---	---
11	1230	1080	1480	1430	3350	3120	3970	3880	3090	2750	---	---
12	1120	1070	1500	1460	3520	3110	3920	3800	3480	2840	---	---
13	1250	1110	1490	1400	3370	3130	4000	3870	3660	3310	---	---
14	1250	1140	1570	1390	3350	3210	4100	4010	3730	3220	3070	2690
15	1200	1110	1620	1520	3360	3180	4250	3980	3790	3540	2690	2430
16	1250	1160	1770	1610	3680	3340	4330	3300	3740	3520	2510	2150
17	1350	1190	1670	1520	3710	3580	3280	3040	---	---	2250	2160
18	1400	1240	1540	1410	3950	3720	4240	3320	---	---	2240	2140
19	1330	1230	1650	1500	3850	3550	4110	3930	---	---	2290	1990
20	1240	1190	1820	1640	3570	3450	4110	3850	---	---	2070	1950
21	1270	1210	2030	1840	3730	3500	4100	4010	---	---	2230	2060
22	1290	1180	1920	1730	3740	3580	4190	4060	---	---	2370	2200
23	1280	1150	1940	1730	3670	3320	4170	3950	---	---	2390	2210
24	1330	1250	2020	1950	3320	3250	4130	3640	---	---	2440	2380
25	1300	1260	2100	2020	3270	3130	3800	3570	---	---	2410	2370
26	1340	1240	2160	2080	3150	3070	3620	3430	---	---	2470	2390
27	1370	1240	2350	2170	3140	3060	3740	3390	---	---	2480	2380
28	1240	1170	2410	2220	3210	3140	3520	3300	---	---	2500	2410
29	1180	1150	2450	2380	3340	3140	3470	3120	---	---	2490	2370
30	1220	1160	2560	2470	3400	3320	3480	3300	---	---	2520	2450
31	1270	1190	---	---	3520	3390	3340	3290	---	---	2690	2470
MONTH	1450	989	2560	1130	3950	2400	4330	3040	---	---	---	---

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	2850	2700	2930	2380	---	---	---	---	1250	1150	---	---
2	2870	2800	2660	2120	---	---	---	---	1210	1030	---	---
3	2810	2780	2650	2380	---	---	---	---	1180	1090	---	---
4	2940	2780	2390	2200	---	---	---	---	1220	1100	---	---
5	2950	2880	2410	2120	---	---	---	---	1140	1040	---	---
6	2910	2800	2560	2370	---	---	---	---	1080	1030	---	---
7	2990	2810	2650	2320	---	---	---	---	1090	1010	---	---
8	3150	2980	2530	2280	---	---	---	---	1170	1050	---	---
9	3130	3030	2790	2500	---	---	---	---	1330	945	---	---
10	3230	3070	2790	2610	---	---	---	---	1670	1370	---	---
11	3490	3160	2810	2670	---	---	---	---	1620	1380	---	---
12	3830	3480	2870	2480	---	---	---	---	1530	1180	---	---
13	3760	3260	2930	2720	---	---	---	---	1400	1160	---	---
14	3210	2640	2740	2280	---	---	---	---	1320	1120	---	---
15	2610	2510	2940	2550	---	---	---	---	1160	1010	---	---
16	2790	2510	2890	2690	---	---	---	---	1020	943	---	---
17	2970	2720	2700	2320	---	---	---	---	1050	967	---	---
18	3020	2900	3150	2680	---	---	---	---	---	---	---	---
19	3050	2950	3010	1990	---	---	1550	1390	---	---	1850	1350
20	3180	2970	2220	1720	---	---	1380	1240	---	---	2860	1820
21	3180	2600	2350	1980	---	---	1320	1240	---	---	2920	2280
22	2560	2310	2270	1980	---	---	1390	1260	---	---	2950	2440
23	2440	2180	2580	2170	---	---	1270	1220	---	---	2400	2230
24	2430	2150	2460	2170	---	---	1470	1260	---	---	2250	1980
25	2600	2200	2800	2030	---	---	1480	1320	---	---	1920	1670
26	2300	2090	2410	1860	---	---	1460	1390	---	---	2350	1920
27	2420	2190	2430	2100	---	---	1450	1330	---	---	2320	2080
28	2250	2120	2180	1930	---	---	1420	1300	---	---	2450	2140
29	2390	2180	---	---	---	---	1320	1100	---	---	2580	2080
30	2770	2090	---	---	---	---	1200	1140	---	---	2620	2010
31	---	---	---	---	---	---	1290	1210	---	---	---	---
MONTH	3830	2090	---	---	---	---	---	---	---	---	---	---

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	25.5	22.5	16.0	13.5	11.0	8.0	7.0	3.5	12.0	8.0	14.5	13.5
2	23.5	21.5	13.0	11.0	10.5	7.5	7.5	4.5	11.5	9.5	14.5	13.0
3	22.5	19.5	13.0	10.5	9.5	7.5	7.5	6.0	13.0	9.5	14.5	13.5
4	23.5	20.0	13.0	11.0	10.0	7.0	8.0	6.5	13.0	10.5	14.5	13.5
5	23.5	20.5	14.5	12.0	10.5	7.5	9.0	7.5	15.5	12.5	14.0	13.0
6	21.5	19.5	13.0	11.0	10.0	7.5	10.5	8.5	15.0	12.0	14.0	12.0
7	19.0	16.5	12.0	10.0	10.0	7.5	11.5	9.5	13.5	13.0	15.0	12.0
8	19.0	15.5	13.0	10.5	10.0	7.5	11.5	10.0	13.5	12.5	16.0	12.5
9	19.5	16.5	13.5	11.0	10.5	7.5	12.0	10.5	13.0	12.0	16.0	13.5
10	20.0	17.0	13.5	11.5	10.5	8.0	12.0	10.5	13.5	11.0	15.0	13.0
11	20.0	17.5	14.0	12.0	11.0	9.5	11.0	9.5	14.0	11.5	14.5	12.0
12	20.0	17.0	14.5	12.0	12.0	9.5	12.5	9.5	14.5	11.5	14.5	12.5
13	20.5	17.5	14.5	12.5	11.0	9.0	13.0	11.0	16.0	12.0	---	---
14	21.0	17.5	14.0	12.5	9.5	8.0	13.0	12.0	16.5	13.0	15.0	12.5
15	21.0	17.5	14.0	12.0	9.0	7.5	12.0	11.0	16.5	14.0	13.0	12.0
16	21.0	18.0	13.5	12.0	9.5	7.5	12.0	9.5	17.0	14.0	13.5	11.5
17	---	---	15.0	13.0	9.0	6.5	12.0	9.5	16.5	13.5	12.5	11.0
18	19.5	15.0	15.0	13.5	9.0	6.5	12.0	9.0	15.5	12.0	11.5	10.5
19	18.5	16.5	14.0	13.5	9.0	7.5	12.5	9.0	16.5	12.5	13.5	10.5
20	17.5	11.5	13.5	11.0	7.5	5.5	12.0	9.0	17.0	12.5	14.0	11.5
21	18.0	12.5	12.5	10.0	6.0	2.5	11.0	8.5	17.0	13.5	14.0	12.5
22	19.0	14.5	12.5	10.0	3.0	1.0	10.5	7.0	17.0	13.5	15.0	12.5
23	20.0	16.5	12.5	10.0	3.5	.5	10.5	7.0	17.0	13.0	16.0	13.5
24	20.5	17.0	12.5	10.0	4.0	1.0	10.5	7.0	17.5	13.0	15.5	14.0
25	20.0	17.0	12.5	9.5	4.5	1.5	10.5	7.5	18.0	13.5	15.0	13.0
26	20.5	17.0	11.5	9.5	5.0	2.0	11.0	7.5	18.0	14.0	13.0	11.5
27	20.0	17.0	10.0	8.0	5.5	2.5	11.0	8.0	16.0	14.0	14.0	10.5
28	19.5	17.0	10.0	7.5	6.0	3.0	10.0	8.0	14.5	13.5	16.0	12.5
29	19.5	17.0	10.5	7.5	6.0	3.5	10.5	7.5	---	---	17.0	14.5
30	18.5	16.0	11.5	8.5	5.5	2.5	10.5	7.5	---	---	19.0	16.0
31	18.0	16.0	---	---	6.5	3.0	11.5	8.0	---	---	19.5	17.5
MONTH	---	---	16.0	7.5	12.0	.5	13.0	3.5	18.0	8.0	---	---

SAN JOAQUIN RIVER BASIN

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	17.5	16.5	18.5	15.0	25.0	18.0	---	---	27.0	22.5	---	---
2	18.5	15.5	17.0	14.5	27.0	21.0	---	---	27.0	21.5	---	---
3	19.5	15.5	20.0	14.5	27.5	22.0	---	---	26.0	21.5	---	---
4	20.5	17.0	22.0	16.0	26.5	21.0	---	---	25.0	20.5	---	---
5	21.0	18.0	23.5	18.5	24.0	18.5	---	---	23.5	19.0	---	---
6	19.5	17.5	23.0	19.5	25.5	18.5	---	---	24.5	19.5	---	---
7	17.5	15.0	23.5	18.5	26.0	20.0	---	---	26.5	21.0	---	---
8	17.0	13.5	23.0	19.0	27.5	21.5	---	---	27.0	22.0	---	---
9	18.5	14.5	20.0	17.0	28.5	22.5	---	---	27.0	22.5	---	---
10	17.0	14.0	19.0	14.0	29.0	23.5	---	---	27.5	22.5	---	---
11	14.5	10.5	20.5	15.0	29.5	24.0	---	---	28.5	23.0	---	---
12	16.5	11.5	22.0	16.0	30.0	24.5	---	---	25.0	23.0	26.0	19.5
13	19.0	13.5	18.5	16.5	28.5	23.0	---	---	26.5	22.5	26.5	21.0
14	19.5	16.0	20.5	15.5	25.5	21.5	---	---	27.0	23.0	26.5	20.5
15	17.5	15.5	23.5	17.0	26.5	20.5	---	---	27.5	22.5	27.0	20.0
16	18.5	14.0	24.5	20.0	25.5	21.0	---	---	26.5	22.5	---	---
17	19.0	15.0	21.5	18.5	25.0	20.5	---	---	25.5	22.5	---	---
18	19.5	15.5	18.5	16.5	---	---	---	---	---	---	---	---
19	20.0	16.0	21.0	15.5	---	---	26.0	21.0	---	---	28.5	22.0
20	19.0	17.0	22.5	17.5	---	---	25.0	20.0	---	---	27.5	21.0
21	20.5	16.0	24.0	19.5	---	---	26.0	21.0	---	---	27.0	20.0
22	21.0	17.0	26.0	20.5	---	---	28.5	22.5	---	---	27.0	21.0
23	20.5	17.0	26.5	22.0	---	---	29.0	23.5	---	---	26.5	21.0
24	19.5	17.0	26.5	23.0	---	---	29.0	22.5	---	---	26.5	21.0
25	19.0	15.5	26.0	21.5	---	---	28.5	22.0	---	---	25.5	21.5
26	19.0	15.5	24.0	20.0	---	---	29.0	22.5	---	---	26.5	20.0
27	19.0	16.0	24.0	19.5	---	---	29.0	23.0	---	---	26.0	19.5
28	19.0	15.0	25.0	20.0	---	---	28.0	23.5	---	---	26.0	19.0
29	20.5	16.5	24.5	20.0	---	---	29.0	24.5	---	---	26.5	20.0
30	21.0	17.0	23.0	19.0	---	---	29.5	25.0	---	---	27.0	20.5
31	---	---	22.0	16.5	---	---	29.0	24.0	---	---	---	---
MONTH	21.0	10.5	26.5	14.0	---	---	---	---	---	---	---	---

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges and those less than 1.0 ft³/s, which are poor.

AVERAGE DISCHARGE.--6 years, 51.4 ft³/s, 37,240 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 570 ft³/s, Mar. 16, 1986; minimum daily, 0.01 ft³/s, Sept. 24, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 83 ft³/s, Apr. 5, gage height, 5.02 ft; minimum daily, 0.01 ft³/s, Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	7.8	e7.8	11	6.1	9.0	e42	10	.91	52	30	37
2	1.0	7.0	e7.2	14	6.3	17	e44	10	.91	44	27	45
3	3.3	6.1	e6.8	5.7	6.8	26	e54	13	.91	44	25	49
4	4.0	5.3	e6.4	4.8	7.2	40	e58	15	.91	43	30	35
5	4.0	7.6	e6.2	4.8	7.7	44	e70	14	.91	36	32	29
6	4.4	7.6	e6.1	5.0	7.9	46	e60	11	.95	29	39	25
7	2.7	7.6	e6.0	4.8	7.9	61	e54	8.2	1.1	32	34	28
8	2.7	7.6	6.0	4.8	9.0	41	e50	7.2	1.9	39	34	37
9	3.7	8.4	6.0	5.0	8.8	28	e46	7.2	2.2	48	35	38
10	3.7	6.5	6.1	5.6	8.4	28	e44	5.8	2.4	48	37	37
11	3.6	5.8	5.6	6.3	7.5	27	e42	5.0	1.6	46	37	29
12	4.0	5.9	5.5	6.5	7.3	23	e40	4.4	.97	52	37	24
13	3.8	6.0	5.6	6.6	7.1	29	e38	4.1	.81	51	40	15
14	3.8	5.7	6.8	6.6	6.8	24	e35	3.8	.49	46	38	21
15	4.2	6.4	5.9	6.7	6.6	22	e33	3.0	.48	52	38	33
16	4.1	6.9	5.4	6.3	6.4	19	31	2.7	.45	48	40	33
17	3.7	7.1	5.4	6.1	6.2	18	25	2.5	.45	40	e42	17
18	5.3	8.0	5.6	5.9	6.0	17	21	2.3	.45	28	e45	15
19	8.4	8.2	5.7	5.7	6.0	17	19	2.3	.54	32	e48	24
20	9.6	8.2	6.0	5.7	6.0	25	21	2.3	.84	29	e51	31
21	12	7.2	6.5	5.8	6.1	41	25	2.3	1.2	e29	e54	14
22	15	7.2	5.7	5.8	6.1	55	28	2.3	4.6	e30	37	.42
23	15	7.6	4.9	5.4	6.2	55	26	2.3	17	e31	34	.03
24	7.9	7.2	9.5	7.1	6.6	21	22	2.1	25	e32	35	.01
25	7.7	7.2	5.0	5.7	6.6	18	18	1.7	30	e32	34	6.4
26	7.3	7.6	4.8	5.1	6.6	18	14	1.3	23	e33	41	2.7
27	9.2	8.8	4.7	5.3	6.7	21	12	1.3	26	33	49	5.4
28	27	13	4.8	5.7	8.1	23	24	1.2	30	35	47	10
29	15	12.0	4.7	5.7	---	e28	24	1.0	43	35	47	5.3
30	8.6	8.5	4.6	5.8	---	e32	13	.91	57	35	49	.68
31	10	---	4.5	6.0	---	e37	---	.91	---	32	48	---
TOTAL	215.8	226.0	181.8	181.3	195.0	910.0	1033	151.12	276.98	1196	1214	646.94
MEAN	6.96	7.53	5.86	6.17	6.96	29.4	34.4	4.87	9.23	38.6	39.2	21.6
MAX	27	13	9.5	14	9.0	61	70	15	57	52	54	49
MIN	1.0	5.3	4.5	4.8	6.0	9.0	12	.91	.45	28	25	.01
AC-FT	428	448	361	379	387	1800	2050	300	549	2370	2410	1280

CAL YR 1990 TOTAL 6121.16 MEAN 16.8 MAX 61 MIN .07 AC-FT 12140
WTR YR 1991 TOTAL 6437.94 MEAN 17.6 MAX 70 MIN .01 AC-FT 12770

e Estimated.

11262900 MUD SLOUGH NEAR GUSTINE, 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.

SPECIFIC CONDUCTANCE: Water year 1989 to current year.

WATER TEMPERATURE: Water year 1989 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. 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, 1991.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 15,900 microsiemens, Feb. 25; minimum recorded, 560 microsiemens, Oct. 5, 6.

WATER TEMPERATURE: Maximum recorded, 33.5 °C, July 4, 5; minimum recorded, 2.5 °C, Dec. 24.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1090	1050	2120	1950	6930	4370	6080	2580	10400	10000	6120	5220
2	1390	1170	2460	2120	5010	4780	5650	3590	10500	5830	3720	2820
3	1390	1100	2700	2400	5240	4810	5700	3400	8830	5430	3620	3220
4	900	690	2830	2700	5980	4860	5710	5510	7830	6430	3520	3120
5	760	560	2700	2120	6280	4900	5720	5610	6530	5120	7020	3020
6	760	560	2520	2120	5740	4940	5720	5520	5320	5020	3020	2720
7	760	660	2720	2220	5960	4950	5730	5630	5120	4820	3220	2820
8	860	750	2640	2570	5430	5190	5840	5630	4820	3920	3520	3120
9	960	860	2830	2370	5460	5160	5940	5640	4420	4220	3820	3420
10	1010	950	3530	2830	5660	5260	5850	4350	4720	4320	3920	3720
11	1050	950	3830	3430	5880	5380	4660	4450	5820	4620	3820	2820
12	950	840	4130	3730	5820	5510	4670	4560	5520	5320	5520	3220
13	1040	840	4130	3870	5820	5530	4470	4170	6220	5420	---	---
14	1040	940	4310	2630	9030	4780	4780	4280	6220	5520	---	---
15	1040	940	4230	3830	5980	5920	5190	4780	5820	5620	---	---
16	1030	930	4160	3930	5920	5920	5300	5090	10200	5720	---	---
17	1130	930	4110	3910	5920	5920	5320	5200	12600	5920	---	---
18	1030	930	3850	3450	5920	5920	5720	5320	6420	5920	---	---
19	960	900	3550	3050	6030	4720	5980	5760	6220	6020	---	---
20	1050	930	3630	3050	5750	4750	5920	5820	15000	6120	---	---
21	1160	890	3930	3630	6360	5060	8310	5830	15300	6120	---	---
22	930	890	4160	3830	11700	5970	6820	5920	14500	5920	---	---
23	1170	870	4400	4080	9190	6280	6120	5950	15100	6220	---	---
24	1380	1210	4430	4200	9290	2790	6020	2030	15400	13900	---	---
25	---	---	4370	4150	5870	3910	5830	4130	15900	6420	---	---
26	---	---	4900	3380	5940	5730	5830	4430	15700	6520	---	---
27	1560	1130	5510	4430	5980	5780	4130	1930	15800	6220	---	---
28	1120	980	4960	3170	6050	5670	2030	1830	13400	5520	---	---
29	---	---	3880	2980	6250	5840	6130	1930	---	---	---	---
30	---	---	6640	3110	6160	5850	6180	6060	---	---	---	---
31	1950	1620	---	---	6070	5860	---	---	---	---	---	---
MONTH	---	---	6640	1950	11700	2790	---	---	15900	3920	---	---

11262900 MUD SLOUGH NEAR GUSTINE, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	3420	2730	3520	3380	3480	3190
2	---	---	---	---	---	---	3710	3000	3390	3320	3510	3390
3	---	---	---	---	---	---	3800	3210	3500	3330	3360	2890
4	---	---	---	---	---	---	3950	3280	3560	3410	2870	2660
5	---	---	---	---	---	---	3980	3250	3400	3080	3180	2860
6	---	---	---	---	---	---	3870	3190	3360	2800	3340	3170
7	---	---	---	---	---	---	3780	3000	3300	2760	3560	3060
8	---	---	---	---	---	---	3750	3110	3360	2910	3570	3220
9	---	---	---	---	3950	3560	3610	3010	3000	2760	3600	3420
10	---	---	---	---	3980	3020	3640	3040	3170	2800	3450	3220
11	---	---	---	---	7150	3020	3660	3060	3030	2750	3340	3210
12	---	---	---	---	---	---	3740	3130	3350	3030	3280	2940
13	---	---	---	---	---	---	3760	3190	3360	3150	3440	3270
14	---	---	---	---	---	---	3740	3100	3280	3080	3540	3180
15	---	---	---	---	---	---	3710	3160	3290	3150	3570	3200
16	---	---	---	---	---	---	3690	3110	3280	3040	3140	2770
17	---	---	---	---	---	---	3710	3090	3120	2770	2760	2480
18	---	---	---	---	---	---	3930	3280	3300	2810	2850	2500
19	---	---	---	---	---	---	3870	3550	3050	2910	3200	2610
20	---	---	---	---	2990	1810	3540	3130	3290	3000	2320	1430
21	---	---	---	---	3120	1950	3400	3150	3400	3180	1640	1370
22	---	---	---	---	3190	1800	5530	3670	3540	3350	2340	1680
23	---	---	---	---	3070	2150	4190	3520	3550	3430	2550	2280
24	---	---	---	---	2860	2360	3550	3210	3530	3300	2750	2400
25	---	---	---	---	3020	2240	3380	3140	3920	3210	3120	2270
26	---	---	---	---	3040	2130	4320	3400	3210	3010	2150	1640
27	---	---	---	---	2620	2430	4330	3490	3110	2900	1800	1610
28	---	---	---	---	2560	2400	3500	3240	3130	2920	1650	1180
29	---	---	---	---	2900	2400	3490	3320	3140	2230	1180	1140
30	---	---	---	---	3190	2560	3570	3420	3450	2160	1190	1160
31	---	---	---	---	---	---	3560	3410	3500	3390	---	---
MONTH	---	---	---	---	---	---	5530	2730	3560	2160	3600	1140

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

11262900 MUD SLOUGH NEAR GUSTINE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	29.0	22.5	29.5	24.0	26.0	21.5
2	---	---	---	---	---	---	31.5	24.5	29.0	22.0	27.5	22.5
3	---	---	---	---	---	---	32.5	26.5	28.0	22.5	28.0	23.5
4	---	---	---	---	---	---	33.5	27.0	27.0	22.0	27.5	23.5
5	---	---	---	---	---	---	33.5	26.5	26.5	20.5	27.5	24.0
6	---	---	---	---	---	---	32.5	25.5	26.0	20.0	26.5	21.5
7	---	---	---	---	---	---	31.0	23.5	26.0	21.5	27.5	21.0
8	---	---	---	---	30.5	19.0	30.5	24.5	27.0	22.5	28.0	22.5
9	---	---	22.5	12.5	31.0	19.0	29.0	23.0	27.0	23.0	23.5	19.0
10	---	---	23.5	11.0	31.5	19.5	29.0	23.5	27.0	23.5	24.0	17.5
11	---	---	24.0	14.0	32.0	20.0	29.0	23.5	28.0	24.0	25.5	19.0
12	---	---	25.5	15.0	30.0	19.5	29.5	23.5	27.0	23.5	25.5	21.5
13	---	---	20.5	17.0	30.0	19.5	29.5	24.0	27.0	23.5	27.0	21.5
14	---	---	25.5	15.0	---	---	29.0	23.0	27.0	24.0	26.5	21.5
15	---	---	28.0	15.5	---	---	29.0	23.5	28.0	23.5	25.5	21.5
16	---	---	27.0	15.5	---	---	28.5	22.5	27.0	23.5	26.5	22.0
17	---	---	22.0	15.5	---	---	28.5	22.0	27.0	23.5	28.0	22.5
18	---	---	19.5	15.0	---	---	29.0	24.0	27.0	23.0	28.0	23.0
19	---	---	24.5	14.0	---	---	28.0	22.5	27.0	22.5	28.0	23.0
20	---	---	27.0	16.5	---	---	27.5	22.0	27.0	22.5	28.0	22.0
21	---	---	27.0	16.5	---	---	28.5	22.5	27.0	22.0	27.5	20.5
22	---	---	28.5	17.0	---	---	29.5	24.0	26.0	22.0	28.0	20.0
23	---	---	30.0	18.0	27.5	18.5	29.5	24.0	26.0	21.5	28.0	18.5
24	---	---	29.0	18.5	25.0	20.0	29.5	24.0	28.0	22.5	29.5	18.0
25	---	---	26.5	18.0	26.5	18.5	29.5	24.5	27.5	22.5	26.0	19.5
26	---	---	26.5	15.5	26.5	17.5	30.0	24.5	25.5	21.5	28.0	19.5
27	---	---	26.0	16.0	22.0	20.0	30.0	25.0	25.0	20.5	27.0	17.5
28	---	---	27.5	15.0	21.0	19.5	30.0	25.0	25.0	20.0	26.5	19.0
29	---	---	26.0	15.5	24.5	19.5	31.0	25.0	26.5	21.5	28.0	19.5
30	---	---	---	---	27.0	21.0	31.0	26.0	27.0	21.5	27.5	20.0
31	---	---	---	---	---	---	30.5	25.5	26.5	22.0	---	---
MONTH	---	---	---	---	---	---	33.5	22.0	29.5	20.0	29.5	17.5

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA
(Hydrologic bench-mark 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 mi².

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 National Geodetic Vertical Datum of 1929. Prior to Nov. 2, 1916, nonrecording gage at datum 0.55 ft lower.

REMARKS.--No estimated daily discharges. Records good. Up to 5 ft³/s can be diverted upstream from station for Yosemite Valley water supply.

AVERAGE DISCHARGE.--76 years, 346 ft³/s, 250,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft³/s, Dec. 23, 1955, gage height, 12.73 ft, from rating curve extended above 4,000 ft³/s on basis of contracted-opening measurements at gage heights 10.4 and 11.55 ft; minimum, 1.5 ft³/s, Sept. 30, 1926, Sept. 26, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 25	0300	1,980	6.00	June 5	0200	*2,310	*6.33

Minimum daily, 4.4 ft³/s, Oct. 18, 30, Nov. 11-14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	5.1	6.5	5.8	5.2	30	176	639	1050	434	81	10
2	7.2	5.7	6.0	5.7	5.5	29	158	444	1480	546	74	9.6
3	7.0	5.2	6.3	5.9	5.8	38	171	352	1800	657	66	10
4	6.8	5.1	6.1	7.3	5.7	305	240	350	1960	691	60	9.6
5	6.5	4.9	6.0	7.4	6.7	270	355	547	1960	650	54	9.2
6	6.3	4.9	5.9	6.8	9.3	153	419	824	1670	579	49	11
7	6.2	4.6	5.8	6.9	8.2	129	351	1030	1530	470	45	14
8	5.9	4.9	5.7	6.5	8.0	123	315	1310	1570	435	40	19
9	5.7	4.8	5.6	6.5	7.7	123	328	1060	1650	392	36	27
10	5.3	4.6	5.5	6.5	7.7	107	338	717	1760	331	33	30
11	5.1	4.4	5.7	6.6	7.8	102	273	545	1780	304	31	29
12	5.3	4.4	6.1	6.7	7.7	91	230	458	1820	294	29	27
13	4.9	4.4	6.1	7.2	7.8	86	239	624	1660	284	28	25
14	4.6	4.4	5.4	7.5	8.2	78	295	571	1400	268	29	23
15	4.6	4.5	5.4	7.7	8.8	75	330	700	1170	228	29	21
16	4.6	4.5	5.2	7.5	10	70	281	1050	1080	192	30	18
17	4.5	4.5	5.3	7.7	11	71	253	1080	980	169	28	16
18	4.4	4.6	5.7	7.9	9.7	70	241	721	840	151	26	14
19	4.6	4.8	5.5	7.7	9.7	76	247	534	763	156	24	12
20	4.9	5.6	5.0	7.4	9.6	75	236	486	662	165	22	12
21	4.9	7.3	5.5	6.6	9.7	71	231	554	565	145	20	11
22	4.9	6.3	5.9	6.3	10	72	248	783	550	124	19	9.9
23	4.9	5.9	5.7	6.4	10	76	281	1260	545	113	17	9.2
24	4.9	5.6	5.6	6.1	10	75	338	1630	497	116	16	8.8
25	4.8	5.6	5.7	6.0	10	72	324	1740	411	115	15	8.5
26	4.6	6.3	5.8	5.8	10	79	282	1600	366	109	14	7.8
27	4.6	8.1	5.9	5.6	11	78	341	1240	361	102	13	7.8
28	4.6	6.9	6.1	5.4	18	74	382	1240	374	99	12	7.8
29	4.5	7.0	5.9	5.2	---	86	499	1290	445	91	12	8.5
30	4.4	6.6	5.6	5.4	---	120	625	1120	426	86	11	8.8
31	4.6	---	5.6	5.4	---	154	---	900	---	82	11	---
TOTAL	163.3	161.5	178.1	203.4	248.8	3058	9027	27399	33125	8578	974	434.5
MEAN	5.27	5.38	5.75	6.56	8.89	98.6	301	884	1104	277	31.4	14.5
MAX	7.2	8.1	6.5	7.9	18	305	625	1740	1960	691	81	30
MIN	4.4	4.4	5.0	5.2	5.2	29	158	350	361	82	11	7.8
AC-FT	324	320	353	403	493	6070	17910	54350	65700	17010	1930	862

CAL YR 1990 TOTAL 59176.5 MEAN 162 MAX 964 MIN 4.4 AC-FT 117400
WTR YR 1991 TOTAL 83550.6 MEAN 229 MAX 1960 MIN 4.4 AC-FT 165700

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

CHEMICAL DATA: Water years 1968 to current year.

BIOLOGICAL DATA: Water years 1973-81.

WATER TEMPERATURE: Water years 1966-77, 1979 to current year.

SEDIMENT DATA: Water years 1970-71, 1973 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1965 to September 1977, October 1978 to current year.

INSTRUMENTATION.--Temperature recorder October 1965 to September 1977 and since October 1978.

REMARKS.--Interruptions in record were due to malfunction of recording instrument. Water-quality samples were obtained 1.0 mi downstream of the gage at or below Clarks Bridge.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 20.0 °C, July 15, 1979, July 13, 1990; minimum recorded, 0.0 °C, on many days during winter period most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 17.0 °C, July 23, 28, Aug. 25; minimum recorded, 0.5 °C, several days in March and April.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
(NOT PREVIOUSLY PUBLISHED)

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
AUG 24...	1115	1.3	1.0	1.1	<0.4	1.0	<0.4	0.05	1.1

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (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-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV 16...	1205	5.2	40	7.4	7.0	0.20	665	10.8	102	K2	K4
JAN 08...	1235	6.4	44	7.4	2.0	0.30	665	12.0	99	K10	K2
MAY 15...	1530	604	16	6.7	9.5	1.0	655	11.1	113	K1	K3
JUL 17...	0845	172	13	7.1	13.0	0.60	660	10.0	110	22	K18
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 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)
NOV 16...	11	1	3.9	0.37	3.2	36	0.4	0.70	12	10	<1.0
JAN 08...	13	0	4.4	0.40	3.7	37	0.5	0.70	19	15	<1.0
MAY 15...	4	0	1.4	0.16	1.4	40	0.3	0.30	5	4	0.40
JUL 17...	4	0	1.3	0.16	0.90	32	0.2	0.20	6	5	0.60

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 16...	7.0	0.20	9.0	23	0.010	<0.010	1.40	1.40	0.070	0.070	0.40
JAN 08...	9.0	<0.10	9.1	30	<0.010	<0.010	<0.100	<0.100	<0.010	0.020	<0.20
MAY 15...	1.0	<0.10	6.1	22	0.010	<0.010	<0.050	<0.050	0.010	0.020	0.80
JUL 17...	1.0	<0.10	3.5	6	0.010	<0.010	<0.050	<0.050	<0.010	0.020	<0.20

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	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)
NOV 16...	0.090	0.080	0.100	0.090	<10	<1	3	<0.5	<1.0	1	<3
JAN 08...	<0.010	<0.010	<0.010	<0.010	<10	<1	4	<0.5	<1.0	1	<3
MAY 15...	<0.010	<0.010	<0.010	<0.010	50	<1	<2	<0.5	<1.0	<1	<3
JUL 17...	0.020	<0.010	<0.010	<0.010	<10	<1	3	<0.5	<1.0	<1	<3

DATE	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	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)
NOV 16...	1	25	<1	10	2	<0.1	<10	<1	<1	<1.0	64
JAN 08...	<1	50	<1	9	<1	<0.1	<10	1	--	<1.0	79
MAY 15...	3	46	<1	<4	3	<0.1	<10	<1	<1	<1.0	18
JUL 17...	<1	32	<1	<4	2	<0.1	<10	<1	<1	<1.0	16

DATE	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
NOV 16...	<6	3	--	--	--	--	--	--	--	--
JAN 08...	<6	4	1.6	<0.6	2.0	<0.6	1.8	<0.6	0.07	1.3
MAY 15...	<6	8	--	--	--	--	--	--	--	--
JUL 17...	<6	4	<0.6	<0.6	1.0	<0.6	1.0	<0.6	0.05	0.46

SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN									
08...	1210	0.75	8.00	41	7.4	2.0	665	12.0	99
08...	1220	0.95	13.0	42	7.4	2.0	665	12.0	99
08...	1230	0.92	17.0	40	7.4	2.0	665	12.0	99
08...	1240	0.85	20.0	42	7.4	2.0	665	12.0	99
08...	1250	0.70	27.0	44	7.4	2.0	665	12.0	99
MAY									
15...	1525	3.50	59.0	14	6.4	9.5	665	11.2	112
15...	1531	3.80	47.0	15	6.4	9.5	665	11.1	111
15...	1535	3.70	35.0	15	6.6	9.5	665	11.2	112
15...	1540	3.90	24.0	16	6.9	9.5	665	11.0	110
15...	1545	3.50	13.0	16	7.0	9.5	660	10.9	110

* Instantaneous streamflow at the time of cross-sectional measurements: Jan. 08, 6.4 ft³/s; May 15, 604 ft³/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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
NOV						
16...	1205	5.2	7.0	1	0.01	75
JAN						
08...	1235	6.4	2.0	1	0.02	83

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

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

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 mi².

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 National Geodetic Vertical Datum of 1929. 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.

AVERAGE DISCHARGE.--75 years, 608 ft³/s, 440,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,400 ft³/s, Dec. 23, 1955, gage height, 21.52 ft, from floodmarks in well, from rating curve extended above 17,000 ft³/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, 3.3 ft³/s, Sept. 29, Oct. 1, 1924.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 25	0215	3,530	7.63	June 4	0200	*3,560	*7.66

Minimum daily, 16 ft³/s, for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	19	20	17	16	53	381	1320	1890	670	106	27
2	20	19	19	17	17	54	329	927	2520	751	100	26
3	20	19	18	18	18	82	351	756	2930	839	91	25
4	20	19	18	21	17	767	491	757	3130	864	83	25
5	20	19	18	19	21	866	708	1120	3010	823	77	26
6	19	18	18	19	21	407	829	1610	2560	749	72	26
7	19	17	18	18	21	337	710	1950	2320	632	67	28
8	19	18	18	18	20	303	649	2530	2350	574	64	30
9	19	18	18	18	19	292	694	2110	2420	520	59	35
10	18	18	18	17	19	249	748	1420	2540	450	56	40
11	18	18	17	18	19	214	602	1150	2530	399	53	40
12	18	18	18	18	19	192	560	996	2450	380	50	38
13	18	17	18	18	19	189	591	1270	2310	364	50	36
14	17	17	17	18	19	155	681	1180	1970	346	49	34
15	17	17	18	18	20	153	734	1370	1680	310	49	32
16	17	17	18	18	21	140	626	1910	1570	265	49	31
17	16	17	17	18	23	153	559	2040	1410	231	48	29
18	16	17	17	19	23	149	536	1420	1230	207	46	27
19	17	18	18	19	22	155	555	1140	1110	196	42	25
20	17	21	18	19	22	154	543	1050	972	227	41	24
21	17	19	17	18	22	142	505	1110	873	214	40	23
22	17	20	16	18	22	134	542	1450	837	185	38	23
23	17	20	17	17	23	150	617	2190	820	166	37	22
24	17	19	17	18	23	157	747	2840	778	164	35	20
25	17	19	17	17	23	156	711	3100	682	160	33	20
26	17	22	17	17	23	150	605	2910	605	151	32	21
27	17	20	17	17	24	152	712	2460	589	141	31	21
28	17	21	16	16	31	151	798	2230	633	135	30	21
29	17	21	17	16	---	171	1040	2320	790	125	29	21
30	17	21	16	16	---	234	1270	2080	719	116	29	21
31	18	---	16	16	---	320	---	1670	---	110	28	---
TOTAL	553	563	542	551	587	6981	19424	52386	50228	11464	1614	817
MEAN	17.8	18.8	17.5	17.8	21.0	225	647	1690	1674	370	52.1	27.2
MAX	20	22	20	21	31	866	1270	3100	3130	864	106	40
MIN	16	17	16	16	16	53	329	756	589	110	28	20
AC-FT	1100	1120	1080	1090	1160	13850	38530	103900	99630	22740	3200	1620

CAL YR 1990 TOTAL 106651 MEAN 292 MAX 1650 MIN 16 AC-FT 211500
WTR YR 1991 TOTAL 145710 MEAN 399 MAX 3130 MIN 16 AC-FT 289000

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are 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.

AVERAGE DISCHARGE.--11 years (water years 1970-76, 1988-91), 10.2 ft³/s, 7,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 66 ft³/s, June 1, 2, 1975; no flow for several days in summer months of most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	1.6	e.87	e.80	e1.6	1.3	12	38	e35	11	.34	.15
2	.13	1.1	e.81	e.90	e1.6	1.9	12	30	e37	10	.30	.11
3	.15	.95	e.82	e1.7	e1.7	2.2	14	25	e40	9.4	.26	.10
4	.16	.96	e.85	e2.4	e2.1	2.6	18	28	39	e8.5	.25	.09
5	.14	.98	e.79	e1.9	e2.8	e22	26	36	37	e7.9	.24	.08
6	.15	.92	e.77	e1.8	e2.2	20	25	40	34	7.4	.24	.08
7	.15	1.5	e.78	e1.9	e1.9	13	22	41	31	7.0	.24	.08
8	.15	1.2	e.78	e1.7	e1.8	11	22	42	30	6.9	.24	.08
9	.15	1.2	e.76	e1.5	e1.8	10	26	40	29	6.7	.20	.08
10	.15	1.2	e.72	e1.5	e1.8	8.3	25	33	28	6.4	.19	.08
11	.15	1.1	e.86	e1.6	e1.7	8.0	20	29	26	6.3	.19	.08
12	.15	1.0	e.74	e1.7	1.7	7.9	18	29	23	6.0	.15	.08
13	.15	.99	e.72	e1.8	1.8	6.9	21	34	21	5.6	.17	.08
14	.15	.96	e.70	e1.8	2.1	6.2	25	33	19	5.3	.15	.07
15	.15	.97	e.72	e1.8	2.5	6.9	24	35	18	2.4	.15	.06
16	.15	.95	e.74	e1.8	2.7	8.6	20	40	17	.70	.16	.05
17	.15	.94	e.72	e1.7	2.6	7.7	20	39	15	.70	.16	.05
18	.15	.95	e.73	e1.7	2.3	6.3	21	33	14	.70	.16	.05
19	.15	.99	e.67	e1.7	2.2	6.7	23	30	14	.67	.19	.07
20	.15	1.6	e.71	e1.7	2.2	6.1	21	28	13	.51	.15	.15
21	.15	1.2	e.66	e1.6	2.2	6.6	19	28	13	.49	.14	.12
22	.15	1.2	e.66	e1.5	2.0	6.9	22	30	12	.46	.10	.10
23	.14	1.2	e.62	e1.6	1.9	7.8	25	37	12	.46	.09	.08
24	.18	1.3	e.66	e1.6	1.9	7.3	26	41	12	.45	.09	.08
25	.17	1.3	e.70	e1.6	1.8	3.5	23	43	11	.44	.11	.08
26	.16	.93	e.88	e1.5	1.8	6.3	21	e42	11	.43	.23	.06
27	.16	.80	e.76	e1.5	1.8	6.2	25	e40	12	.43	.20	.06
28	.15	1.0	e.71	e1.5	2.5	5.5	30	e38	16	.43	.18	.12
29	.15	e.98	e.73	e1.6	---	7.2	35	e36	16	.40	.16	.15
30	.15	e.98	e.75	e1.7	---	10	39	e33	13	.38	.15	.09
31	.61	---	e.76	e1.6	---	11	---	e31	---	.36	.15	---
TOTAL	5.14	32.95	23.15	50.70	57.0	241.9	680	1082	648	114.81	5.73	2.61
MEAN	.17	1.10	.75	1.64	2.04	7.80	22.7	34.9	21.6	3.70	.18	.087
MAX	.61	1.6	.88	2.4	2.8	22	39	43	40	11	.34	.15
MIN	.13	.80	.62	.80	1.6	1.3	12	25	11	.36	.09	.05
AC-FT	10	65	46	101	113	480	1350	2150	1290	228	11	5.2

CAL YR 1990 TOTAL 2230.59 MEAN 6.11 MAX 34 MIN .13 AC-FT 4420
WTR YR 1991 TOTAL 2943.99 MEAN 8.07 MAX 43 MIN .05 AC-FT 5840

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929 (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. Records, including extremes, represent total contents at 2400 hours.

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, 390,500 acre-ft, June 20, elevation, 742.8 ft; minimum, 66,100 acre-ft, Feb. 28, elevation, 588.4 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107700	100100	89500	76400	69500	66800	149700	203800	315300	387200	325800	245300
2	107400	99800	89500	76000	69400	67600	151900	205200	320800	386800	322700	243300
3	107200	99400	89500	75400	69300	68400	153800	206300	327200	387000	319700	241100
4	107100	e98900	89600	75000	69400	73200	156000	207300	334500	386100	316700	238800
5	107000	e98400	89600	74700	69500	81300	158900	208500	341600	385400	314100	236600
6	106800	e98000	89400	74400	69400	84000	162200	211200	347400	384400	311200	234200
7	106700	e97500	88900	74300	69300	85500	165200	215800	352000	383300	308200	232100
8	106500	e97100	88600	74200	69200	86700	167900	222100	356800	381700	305500	230100
9	106300	e96600	88200	73600	69000	87200	170000	228100	361700	379900	302600	227800
10	106200	e96200	87900	73600	68900	88100	172600	231000	366500	378600	299900	226100
11	106100	e95700	87500	73400	68700	89100	175100	232900	371700	376500	297200	224500
12	105900	e95200	87200	73300	68700	90000	177300	234200	376400	374500	294400	222700
13	105600	e94800	86500	e73100	68400	91500	179400	235900	380600	372600	291700	220700
14	105400	e94400	85000	e72900	68100	92800	181700	238600	383700	370600	289000	219000
15	105000	e93900	83500	e72700	68000	93600	183800	240700	386100	368500	286300	217400
16	104800	e93500	82300	e72600	67900	94400	185400	244200	387800	366800	283500	215100
17	104600	e93100	82000	72400	67700	95300	186700	249400	389000	364300	281100	213700
18	104300	e92700	82000	72200	67600	99400	188100	252500	389800	360900	278700	211900
19	103500	e92200	81900	71900	67300	105200	188100	254700	389800	358500	276500	210200
20	103400	e91800	e82000	71600	67200	109500	189000	256400	390500	355800	274400	208400
21	103300	91400	e81900	71400	67100	e112300	189700	258100	390400	353700	271700	206400
22	103100	91000	e81400	71300	66900	114200	190200	260200	390200	351300	269300	204600
23	103000	90400	e80900	71200	66800	115700	191200	264400	389300	349000	266700	203600
24	102600	90000	e80400	71000	66700	119300	192600	271000	389000	346300	264900	201800
25	102300	89500	e79800	70900	66400	e130700	193400	278700	388700	344000	261900	200600
26	102000	89400	79400	70900	66200	135300	194900	286300	387800	341700	259800	199200
27	101600	89400	78800	70700	66200	138500	195000	292500	387500	339000	256900	197400
28	101300	89400	78300	70500	66100	140900	196200	297900	386800	336800	254800	196200
29	100800	89400	77800	70400	---	143300	198100	303000	387000	333900	252300	195500
30	100700	89500	77400	70200	---	145300	200400	307600	387400	331200	249900	194100
31	100600	---	76900	69900	---	147400	---	311300	---	328700	247600	---
MAX	107700	100100	89600	76400	69500	147400	200400	311300	390500	387200	325800	245300
MIN	100600	89400	76900	69900	66100	66800	149700	203800	315300	328700	247600	194100
a	615.6	607.4	597.5	591.7	588.4	645.6	673.2	717.8	741.9	723.7	693.8	670.2
b	-7200	-11100	-12600	-7000	-3800	+81300	+53000	+110900	+76100	-58700	-81100	-53500
CAL YR 1990	b	-63000										
WTR YR 1991	b	+86300										

e Estimated.

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 current year.

GAGE.--Water-stage recorder and sharp-crested rectangular weir. Elevation of gage is 340 ft above National Geodetic Vertical Datum of 1929, 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 ft³/s, July 21, 1987; no flow for many days in 1988.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	13	1.8	5.7	1.6	1.1	1.6	45	44	52	66	48
2	12	12	1.6	5.7	1.6	1.1	1.6	45	45	53	65	44
3	12	12	1.6	5.7	1.3	1.1	1.6	45	45	53	65	42
4	13	12	1.3	5.7	1.3	1.1	1.6	42	45	53	65	42
5	13	12	1.3	5.7	1.3	1.1	1.6	40	45	52	64	42
6	12	12	1.3	5.7	1.3	1.1	1.6	40	45	52	62	43
7	12	12	1.8	5.7	1.3	1.1	1.6	40	47	52	62	43
8	12	12	1.8	5.7	1.3	1.1	1.6	40	48	52	62	43
9	12	12	1.8	5.7	1.3	1.3	1.4	43	48	53	56	42
10	12	11	1.6	5.7	1.3	1.3	1.3	48	48	52	53	42
11	12	7.7	1.6	5.7	1.3	1.3	2.8	52	48	52	53	43
12	12	7.7	1.6	5.7	1.3	1.6	4.7	52	48	52	53	43
13	12	7.7	1.6	5.7	1.3	1.6	4.7	54	47	53	54	43
14	12	7.7	1.8	5.7	1.3	1.6	4.3	55	47	52	53	43
15	12	7.3	1.8	5.7	1.3	1.6	5.5	49	51	52	53	39
16	12	7.3	2.1	5.3	1.3	1.6	6.5	42	53	53	53	34
17	12	7.7	1.8	5.3	1.3	1.6	6.5	42	54	52	53	32
18	12	3.8	1.8	5.3	1.3	1.6	6.5	42	53	53	54	30
19	12	3.2	1.8	5.3	1.3	1.3	6.5	42	53	52	48	30
20	12	2.9	1.3	5.3	1.3	1.3	6.2	42	54	52	44	32
21	12	2.9	1.3	5.3	1.3	1.3	12	42	53	52	44	32
22	12	2.9	3.5	5.0	1.3	1.1	23	45	54	52	44	32
23	12	2.9	5.3	4.4	1.3	1.1	27	48	53	52	43	32
24	12	2.9	5.7	4.7	1.1	1.1	24	48	54	55	43	32
25	13	2.9	5.7	3.8	1.1	.90	23	48	53	57	43	34
26	13	2.9	5.3	3.5	1.1	.90	31	48	53	56	43	37
27	13	2.3	5.3	2.9	1.1	.90	34	48	53	55	44	36
28	13	1.8	5.3	2.6	1.1	.90	34	48	53	55	47	35
29	13	1.8	5.0	2.1	---	.90	38	46	53	55	50	32
30	12	1.8	5.3	1.8	---	1.1	43	45	53	55	50	30
31	13	---	5.0	1.8	---	1.3	---	45	---	62	50	---
TOTAL	380	208.1	85.8	149.9	36.0	38.00	358.7	1411	1500	1653	1639	1132
MEAN	12.3	6.94	2.77	4.84	1.29	1.23	12.0	45.5	50.0	53.3	52.9	37.7
MAX	13	13	5.7	5.7	1.6	1.6	43	55	54	62	66	48
MIN	12	1.8	1.3	1.8	1.1	.90	1.3	40	44	52	43	30
AC-FT	754	413	170	297	71	75	711	2800	2980	3280	3250	2250

CAL YR 1990 TOTAL 8982.7 MEAN 24.6 MAX 63 MIN 1.3 AC-FT 17820
WTR YR 1991 TOTAL 8591.50 MEAN 23.5 MAX 66 MIN .90 AC-FT 17040

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 mi².

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 North Side 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 National Geodetic Vertical Datum of 1929. See WSP 1930 for history of changes prior to Oct. 1, 1964.

REMARKS.--Records good. Merced Falls Dam diverts water to North Side Canal to irrigate 4,100 acres downstream from station. Flow regulated by Exchequer, McSwain, and Merced Falls powerplants, Lake McClure since 1926, and McSwain Reservoir since 1966, capacity, 9,200 acre-ft.

AVERAGE DISCHARGE (adjusted for diversion to North Side Canal and change in contents in Lake McClure since 1965, and change in contents in McSwain Reservoir since 1969).--90 years, 1,335 ft³/s, 967,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1901-13, 1916-91): Maximum discharge observed, 47,700 ft³/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 ft³/s, Dec. 4, 1950, gage height, 22.6 ft, from floodmarks, site and datum then in use, from rating curve extended above 16,000 ft³/s on basis of computation of peak flow over dam; minimum daily, 3.4 ft³/s, Mar. 5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,990 ft³/s, Aug. 2, gage height, 7.08 ft; minimum daily, 74 ft³/s, Oct. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	172	195	e195	119	204	175	827	884	898	1440	1070
2	86	192	e190	e202	121	201	159	837	954	929	1490	1050
3	85	196	e192	e204	117	209	159	842	980	1060	1530	1030
4	85	198	e190	e218	119	214	160	855	975	1160	1520	1080
5	79	196	e188	e220	117	202	158	865	997	1210	1470	1130
6	77	198	e189	e217	117	202	157	867	1010	1320	1410	1100
7	75	195	e191	e212	115	201	159	847	1010	1340	1420	1070
8	75	194	e189	e210	115	199	157	829	990	1320	1390	1040
9	75	203	e191	e210	115	199	152	832	984	1320	1360	938
10	74	201	e188	e180	115	202	152	838	960	1330	1360	877
11	82	192	e191	e115	115	197	149	855	985	1320	1360	881
12	107	199	e193	110	115	197	152	864	1020	1330	1360	889
13	120	197	e195	112	115	203	153	854	1010	1360	1360	875
14	120	199	e201	109	115	205	153	841	1020	1360	1340	909
15	119	199	e209	110	115	199	165	830	1090	1360	1310	930
16	128	199	e192	111	115	203	336	817	1130	1430	1290	868
17	133	203	e195	110	112	206	486	830	1120	1480	1260	798
18	133	200	e195	108	117	228	497	835	1110	1450	1190	814
19	132	197	e191	109	117	288	591	829	1140	1400	1140	860
20	132	199	e188	101	115	265	684	821	1150	1380	1130	912
21	133	196	e189	107	116	210	600	828	1160	1370	1170	942
22	131	202	e185	105	115	205	578	851	1120	1340	1200	870
23	129	202	e198	101	114	206	644	888	1080	1340	1210	722
24	127	200	e199	113	115	279	694	866	1060	1360	1210	629
25	126	207	e191	113	115	246	700	849	1020	1350	1190	640
26	131	201	e174	107	152	218	700	844	1010	1350	1170	683
27	134	199	e172	108	204	203	696	840	1000	1350	1180	681
28	134	198	e176	106	220	199	708	843	965	1350	1180	674
29	140	196	e185	112	---	195	754	869	923	1350	1180	647
30	146	194	e182	113	---	195	779	896	906	1370	1150	604
31	146	---	e178	117	---	197	---	890	---	1420	1090	---
TOTAL	3481	5924	5882	4365	3472	6577	11807	26279	30763	40707	40060	26213
MEAN	112	197	190	141	124	212	394	848	1025	1313	1292	874
MAX	146	207	209	220	220	288	779	896	1160	1480	1530	1130
MIN	74	172	172	101	112	195	149	817	884	898	1090	604
AC-FT	6900	11750	11670	8660	6890	13050	23420	52120	61020	80740	79460	51990

CAL YR 1990 TOTAL 191092 MEAN 524 MAX 1210 MIN 74 AC-FT 379000 MEAN a 461 AC-FT a 333800
WTR YR 1991 TOTAL 205530 MEAN 563 MAX 1530 MIN 74 AC-FT 407700 MEAN a 705 AC-FT a 510400

e Estimated.

a Adjusted for diversion to Northside Canal and change in contents in Lake McClure and McSwain Reservoir.

11271290 MERCED RIVER AT SHAFFER BRIDGE, NEAR CRESSEY, CA

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.

DRAINAGE AREA.--1,117 mi².

PERIOD OF RECORD.--October 1965 to current year (low flow only).

GAGE.--Water-stage recorder. Datum of gage is 116.79 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. 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 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	107	179	190	63	e182	---	138	99	93	27	56
2	44	122	179	188	73	e179	187	133	88	72	19	58
3	42	166	179	186	84	e180	173	122	73	52	38	58
4	45	194	179	185	83	e182	167	119	49	55	56	45
5	47	193	182	184	108	e186	165	138	39	83	87	40
6	31	191	189	188	107	e182	159	136	36	75	78	54
7	48	188	189	190	103	e180	156	122	50	78	45	55
8	44	186	193	189	99	e180	156	129	34	108	43	71
9	40	179	194	187	96	e178	156	116	50	53	44	73
10	32	188	195	184	96	e178	149	115	73	41	37	65
11	17	190	194	167	96	e184	142	115	57	41	38	70
12	17	184	192	126	96	e182	133	115	35	43	55	75
13	15	185	190	110	90	e180	128	140	38	36	45	95
14	28	186	191	103	91	e182	86	151	40	33	36	96
15	46	189	196	102	93	e192	69	146	39	45	31	100
16	57	193	---	100	91	---	92	123	49	41	40	115
17	62	192	---	94	63	---	90	98	67	39	53	98
18	72	195	197	93	62	---	99	101	51	55	71	87
19	86	195	192	93	63	---	132	150	43	53	97	78
20	97	189	194	94	68	---	143	178	42	42	93	84
21	100	183	190	90	67	---	171	144	43	49	88	89
22	100	182	183	93	70	---	170	154	49	72	76	96
23	88	187	186	91	67	---	162	141	69	54	65	95
24	78	182	186	79	64	---	150	111	69	48	68	104
25	73	178	186	83	59	---	144	106	57	49	71	82
26	72	179	189	91	63	---	132	134	51	55	79	65
27	72	179	189	85	89	---	144	147	52	47	72	50
28	79	179	185	80	169	---	151	142	56	45	75	53
29	87	179	187	73	---	---	144	136	62	52	69	61
30	97	179	190	69	---	---	142	103	86	54	65	65
31	104	---	189	64	---	---	---	98	---	40	59	---
TOTAL	1856	5419	---	3851	2373	---	---	4001	1646	1703	1820	2233
MEAN	59.9	181	---	124	84.7	---	---	129	54.9	54.9	58.7	74.4
MAX	104	195	---	190	169	---	---	178	99	108	97	115
MIN	15	107	---	64	59	---	---	98	34	33	19	40
AC-FT	3680	10750	---	7640	4710	---	---	7940	3260	3380	3610	4430

e Estimated.

11271320 DRY CREEK NEAR SNELLING, CA

LOCATION.--Lat 37°33'18", long 120°27'44", in NE 1/4 SE 1/4 sec.30, T.4 S., R.14 E., Merced County, Hydrologic Unit 18040002, on left bank 650 ft downstream from Fields Road and 2.8 mi northwest of Snelling.

DRAINAGE AREA.--67.6 mi².

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 230 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Small weir upstream from gage regulates storage for stock pond and irrigation pumping.

AVERAGE DISCHARGE.--25 years, 19.0 ft³/s, 13,770 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,710 ft³/s, Jan. 21, 1969, gage height, 17.01 ft; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 19	0315	1,730	9.64	Mar. 24	2330	*2,010	*10.19

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	10	.03	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	8.3	.04	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	6.3	.05	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	31	4.7	.13	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	34	4.0	.18	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	8.7	3.3	.47	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	3.6	2.5	.19	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	2.0	2.1	.08	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	1.2	1.7	.03	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	1.0	1.3	.02	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.95	.93	.01	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.73	.95	.01	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	24	.72	.01	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	27	.92	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	13	1.0	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	8.5	.61	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	5.2	.19	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	166	.10	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	549	.15	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	446	.33	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	96	.51	.03	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	35	.38	.08	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	20	.22	.04	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	251	.14	.02	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	542	.11	.01	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	255	.11	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	129	.13	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	46	.10	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	26	.08	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	19	.05	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	14	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	2754.88	51.93	1.43	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	88.9	1.73	.046	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	549	10	.47	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	5460	103	2.8	.00	.00	.00	.00

CAL YR 1990 TOTAL 667.67 MEAN 1.83 MAX 124 MIN .00 AC-FT 1320
WTR YR 1991 TOTAL 2808.24 MEAN 7.69 MAX 549 MIN .00 AC-FT 5570

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 mi².

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 National Geodetic Vertical Datum of 1929. 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 fair except those for summer months, which are poor. 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).

AVERAGE DISCHARGE.--51 years, 679 ft³/s, 491,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/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, 1,040 ft³/s, Mar. 26, elevation, 60.36 ft; minimum daily, 1.1 ft³/s, July 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	68	152	179	50	106	287	91	67	13	e3.5	52
2	9.2	71	161	175	74	198	266	85	65	15	e2.5	49
3	6.0	79	165	176	100	218	240	102	61	15	e2.0	46
4	4.7	111	164	172	81	214	218	107	57	13	e3.0	40
5	8.7	129	166	174	65	263	198	107	51	13	e5.5	41
6	13	129	166	177	77	260	184	104	40	e6.0	e6.0	43
7	9.7	116	166	180	101	222	180	110	28	10	e8.0	34
8	15	101	165	176	102	203	166	98	24	12	13	44
9	20	96	164	174	105	196	139	97	21	11	e9.0	51
10	15	104	169	178	107	193	124	109	18	11	e7.0	52
11	5.6	127	176	178	91	183	116	121	e15	e9.0	e6.0	65
12	4.3	147	174	173	80	176	98	119	e12	e4.0	e5.0	66
13	17	139	171	151	95	182	88	103	e10	e4.0	e4.0	73
14	15	132	166	133	98	170	102	118	e13	e4.0	e5.0	75
15	21	128	167	119	85	177	91	99	21	e4.5	e10	60
16	24	132	170	109	116	175	54	94	22	e2.0	e8.0	72
17	17	138	173	99	103	180	45	85	20	e1.5	e11	96
18	28	156	176	94	75	198	50	78	21	e1.1	e8.0	117
19	39	164	181	96	55	257	47	75	20	e1.5	27	114
20	50	161	175	95	45	703	86	76	20	e2.5	30	105
21	55	156	174	95	36	826	134	88	18	e2.5	33	84
22	68	160	175	91	30	590	138	99	e12	e2.5	26	94
23	62	159	172	86	24	385	138	99	e10	e3.0	21	118
24	64	160	174	96	26	309	163	101	e10	e3.5	e13	120
25	54	146	178	92	20	307	137	102	21	e4.0	41	86
26	51	138	176	83	20	873	121	96	14	e3.5	37	98
27	56	135	180	86	23	682	108	94	e10	e4.0	36	89
28	60	143	181	92	55	676	113	91	13	e4.5	37	71
29	57	150	171	125	---	442	133	85	18	e3.5	43	84
30	51	153	170	84	---	356	105	78	22	e3.0	49	71
31	60	---	175	57	---	312	---	72	---	e4.5	48	---
TOTAL	980.2	3928	5293	3995	1939	10232	4069	2983	754	191.6	557.5	2210
MEAN	31.6	131	171	129	69.2	330	136	96.2	25.1	6.18	18.0	73.7
MAX	68	164	181	180	116	873	287	121	67	15	49	120
MIN	4.3	68	152	57	20	106	45	72	10	1.1	2.0	34
AC-FT	1940	7790	10500	7920	3850	20300	8070	5920	1500	380	1110	4380

CAL YR 1990 TOTAL 41547.9 MEAN 114 MAX 403 MIN 4.3 AC-FT 82410
WTR YR 1991 TOTAL 37132.3 MEAN 102 MAX 873 MIN 1.1 AC-FT 73650

e Estimated.

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 files of the U.S. Geological Survey.

SPECIFIC CONDUCTANCE: Water year 1989 to current year.

WATER TEMPERATURE: Water year 1989 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 from a canal located 30 ft upstream from the gage.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,270 microsiemens, July 19, 1991; minimum recorded, 66 microsiemens, Apr. 24, 1991.

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, 1,270 microsiemens, July 19; minimum recorded, 66 microsiemens, Apr. 24.

WATER TEMPERATURE: Maximum recorded, 34.0 °C, July 17; minimum recorded, 3.0 °C, several days in December.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	508	454	824	621	458	117	176	136	394	128	---	---
2	591	476	971	706	606	345	321	109	---	---	131	107
3	555	496	888	675	678	328	191	107	---	---	145	114
4	599	472	810	591	908	115	419	112	---	---	---	---
5	759	411	861	567	494	116	241	107	---	---	---	---
6	648	268	926	346	201	111	512	77	---	---	---	---
7	744	239	849	590	171	109	663	110	238	152	236	223
8	670	311	821	108	157	107	534	104	339	212	222	205
9	696	426	192	112	200	106	157	105	421	228	212	204
10	679	419	685	140	176	97	474	106	---	---	207	123
11	699	589	722	375	155	108	508	108	351	250	125	121
12	769	515	532	328	180	113	646	109	435	246	161	119
13	716	504	694	351	180	119	206	125	---	---	306	119
14	883	493	448	359	157	115	196	159	328	248	196	155
15	896	485	460	381	155	117	785	180	281	243	272	184
16	798	346	471	405	153	113	806	193	242	159	336	276
17	442	312	443	372	480	102	207	172	198	167	---	---
18	717	401	446	371	627	103	465	175	235	198	---	---
19	686	492	449	367	525	111	186	180	273	236	---	---
20	766	602	471	299	631	112	185	181	283	260	110	89
21	694	293	743	276	157	110	209	179	285	231	132	100
22	800	542	557	306	341	114	206	182	293	165	107	95
23	746	567	547	278	170	107	286	193	---	---	97	94
24	806	326	568	305	177	114	278	189	---	---	97	94
25	---	---	665	347	166	120	359	206	---	---	120	94
26	807	678	640	320	164	124	391	220	---	---	---	---
27	774	589	733	386	178	124	282	194	---	---	---	---
28	764	617	681	392	165	128	210	185	---	---	152	100
29	761	659	727	364	170	144	246	121	---	---	159	134
30	782	671	530	112	200	130	253	148	---	---	153	135
31	---	---	---	---	170	134	261	234	---	---	140	129
MONTH	---	---	971	108	908	97	806	77	---	---	---	---

11272500 MERCED RIVER NEAR STEVINSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	136	116	126	76	526	322	653	404	452	425	811	138
2	131	112	114	82	677	413	---	---	447	420	443	154
3	141	118	130	90	593	356	1010	485	439	405	364	153
4	160	128	192	87	735	390	738	376	417	389	466	172
5	174	139	175	117	684	582	399	355	475	357	770	218
6	186	155	126	107	990	323	529	385	425	351	512	214
7	193	170	146	105	991	324	483	382	398	345	886	308
8	---	---	133	99	977	576	851	348	361	329	702	259
9	---	---	181	86	733	273	698	350	345	325	567	227
10	---	---	134	94	688	323	795	367	368	262	340	168
11	---	---	226	102	---	---	746	504	323	275	614	161
12	---	---	406	207	---	---	991	725	322	316	598	288
13	---	---	438	122	---	---	1020	710	322	317	544	268
14	---	---	366	163	---	---	---	---	332	317	513	317
15	---	---	528	153	---	---	980	657	325	306	887	320
16	---	---	963	170	---	---	919	697	378	340	629	130
17	295	238	832	512	---	---	1040	645	345	321	592	106
18	233	199	749	335	634	535	---	---	345	313	526	103
19	588	204	362	248	719	332	1270	299	331	258	560	128
20	697	202	556	202	738	354	1070	509	256	232	612	226
21	260	103	567	451	---	---	980	836	245	234	636	447
22	288	117	583	260	---	---	1180	790	933	242	574	348
23	488	143	552	282	745	534	777	551	718	420	731	110
24	224	66	444	259	762	525	541	459	580	264	571	170
25	84	76	591	256	611	363	494	448	597	233	358	155
26	165	82	573	366	538	270	491	449	393	215	491	174
27	162	103	465	318	714	331	486	452	460	207	607	208
28	179	136	473	348	774	359	480	431	493	243	576	270
29	173	97	567	323	664	333	465	423	827	230	606	332
30	215	110	607	503	616	418	455	426	476	170	781	250
31	---	---	742	439	---	---	441	415	696	147	---	---
MONTH	---	---	963	76	---	---	---	---	933	147	887	103

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	24.0	22.0	16.0	13.5	10.5	8.5	5.5	3.5	10.5	8.0	15.0	13.5
2	23.0	20.0	14.0	12.0	10.5	9.0	5.5	4.0	11.0	9.0	15.0	13.5
3	22.5	19.0	15.5	13.0	10.5	9.0	6.0	5.5	12.5	9.5	15.0	13.5
4	23.0	18.5	15.5	13.5	10.0	8.0	6.5	5.5	12.5	11.0	14.5	13.5
5	24.0	18.5	15.5	14.0	9.0	7.5	7.5	6.0	14.5	11.5	14.5	13.0
6	22.0	18.5	14.0	12.5	9.0	7.5	8.5	6.0	14.0	11.5	14.0	11.5
7	20.0	16.0	14.0	12.5	8.5	7.5	9.0	7.5	12.5	11.5	15.0	12.0
8	20.5	16.5	13.5	13.0	8.0	7.0	9.5	8.5	12.5	11.5	15.5	12.0
9	21.0	16.5	13.0	12.5	8.5	7.0	9.5	9.0	12.5	11.5	15.5	12.5
10	20.0	17.0	14.0	12.5	9.0	7.5	10.0	9.0	13.0	10.0	15.0	12.5
11	19.5	16.5	13.5	13.0	9.5	8.5	9.5	8.0	14.0	11.5	15.0	11.5
12	18.5	15.0	14.0	12.5	9.5	8.5	10.5	9.0	14.0	9.5	15.0	12.0
13	20.0	17.0	14.0	12.5	9.5	8.5	11.5	10.0	15.0	12.0	15.0	13.0
14	20.0	17.0	14.0	13.0	8.5	7.5	11.5	11.0	15.5	13.0	15.0	12.0
15	20.5	17.0	14.0	13.0	8.5	7.5	11.0	10.5	15.5	13.5	15.0	12.0
16	19.5	17.5	13.5	13.0	8.5	7.5	11.0	9.5	16.0	14.0	14.5	12.0
17	19.0	16.5	14.0	13.5	8.0	7.0	10.5	9.5	15.5	13.0	15.0	12.5
18	19.5	17.0	14.0	13.5	8.0	7.0	10.5	9.0	15.5	12.5	12.5	11.5
19	19.0	16.0	14.0	13.5	8.5	7.5	11.0	9.0	16.0	12.5	14.0	12.0
20	18.0	15.0	14.0	13.5	7.5	6.0	10.5	9.0	16.0	12.5	13.0	12.0
21	17.5	14.5	12.5	11.0	6.5	4.0	10.0	8.5	16.5	13.0	12.5	11.5
22	19.0	16.0	13.0	11.0	4.5	3.0	9.5	7.5	16.5	13.0	13.5	11.5
23	19.0	16.0	12.5	10.5	4.5	3.0	9.5	7.5	16.5	12.5	14.5	12.5
24	19.0	16.5	12.5	10.5	4.0	3.0	9.5	7.5	17.0	13.0	13.5	12.5
25	19.0	16.5	13.0	10.5	4.0	3.0	9.5	7.5	17.5	13.0	15.0	12.5
26	19.0	16.5	11.5	10.5	4.5	3.0	10.0	8.0	17.0	13.5	13.0	11.5
27	19.0	16.0	11.5	9.5	4.5	3.0	9.5	8.0	16.5	14.0	---	---
28	18.5	16.5	11.0	9.0	5.0	3.5	9.0	7.5	15.0	13.5	13.0	11.0
29	18.5	16.5	11.0	9.5	4.5	3.5	9.5	7.0	---	---	14.5	11.5
30	18.0	15.0	10.5	9.0	4.5	3.0	9.0	6.5	---	---	16.5	13.0
31	17.5	15.5	---	---	4.5	3.5	10.0	8.0	---	---	17.0	14.0
MONTH	24.0	14.5	16.0	9.0	10.5	3.0	11.5	3.5	17.5	8.0	---	---

11272500 MERCED RIVER NEAR STEVINSON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	17.0	14.5	20.5	19.0	24.5	20.0	31.5	24.0	29.0	24.0	26.5	20.5
2	18.5	14.0	19.5	18.5	25.5	21.0	---	---	28.0	22.5	27.0	21.5
3	19.5	15.0	20.0	18.5	25.0	21.5	30.5	24.5	27.0	22.0	27.5	22.5
4	20.5	16.0	21.5	19.5	24.5	21.0	33.0	25.5	25.0	21.5	27.5	24.0
5	20.5	16.0	22.5	20.5	23.0	20.0	30.5	24.0	27.0	21.5	27.5	23.0
6	19.0	16.5	22.5	21.5	23.5	19.5	31.0	24.0	25.0	21.5	26.0	23.0
7	18.5	14.5	23.0	21.5	24.0	20.0	32.5	23.0	25.0	22.0	25.5	21.0
8	---	---	23.0	22.0	25.5	21.0	30.0	25.5	26.5	23.0	25.0	21.0
9	---	---	22.5	20.5	---	---	31.5	24.0	25.5	22.5	23.5	21.0
10	---	---	21.0	19.0	---	---	30.5	24.0	26.0	21.0	22.5	20.0
11	---	---	22.5	20.0	---	---	31.0	23.5	27.0	22.5	23.0	20.5
12	---	---	23.5	19.5	---	---	32.0	23.0	26.0	23.0	23.0	21.0
13	---	---	22.0	20.5	---	---	---	---	25.5	22.5	24.0	21.5
14	---	---	22.5	19.0	26.0	18.5	---	---	26.0	23.0	24.0	21.0
15	---	---	23.5	21.0	25.0	20.5	31.5	23.0	26.5	22.5	24.5	21.5
16	---	---	---	---	24.5	20.0	33.5	24.0	25.5	21.5	24.0	22.0
17	19.5	16.0	21.0	18.5	25.5	20.0	34.0	23.0	25.5	20.5	24.5	23.0
18	19.5	16.5	18.5	17.5	25.5	20.0	33.0	23.0	25.0	21.5	24.5	23.5
19	19.5	17.0	20.5	16.0	28.0	20.5	---	---	24.0	21.0	24.5	23.5
20	19.0	17.5	22.0	18.0	23.0	19.5	31.0	25.0	23.5	20.5	25.0	22.5
21	20.0	17.5	23.0	19.5	---	---	30.5	25.0	23.5	20.0	24.0	22.0
22	20.0	18.0	24.5	20.0	28.0	16.0	29.0	25.0	26.0	19.5	24.5	22.0
23	20.0	19.0	25.0	20.5	28.0	19.0	30.5	24.0	25.0	19.0	24.0	22.5
24	20.0	18.5	25.5	21.0	27.5	18.5	29.5	24.5	28.5	22.0	24.5	22.0
25	19.0	18.0	25.0	21.0	26.5	20.0	29.5	24.5	28.5	20.5	24.0	22.5
26	20.0	18.0	24.0	19.5	27.5	20.0	28.5	24.0	26.5	20.5	24.5	22.0
27	19.5	18.5	23.0	20.0	22.0	18.5	29.0	23.5	25.5	19.0	23.5	21.5
28	20.0	18.5	25.0	19.5	23.5	20.5	28.5	24.0	24.5	18.5	24.0	21.0
29	20.5	19.0	24.0	20.5	26.0	20.5	30.0	24.5	28.5	20.0	25.0	21.5
30	21.0	19.5	24.0	19.5	27.5	21.5	29.5	24.5	27.0	20.5	25.0	21.5
31	---	---	23.0	17.5	---	---	27.5	24.5	25.5	21.5	---	---
MONTH	---	---	---	---	---	---	---	---	29.0	18.5	27.5	20.0

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 mi².

PERIOD OF RECORD.--April 1912 to current year.

SPECIFIC CONDUCTANCE: October 1988 to September 1989.

WATER TEMPERATURE: October 1988 to September 1989.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. 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. Since Aug. 10, 1960, at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. 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.

AVERAGE DISCHARGE.--79 years, 2,005 ft³/s, 1,453,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (river only), 30,700 ft³/s, Mar. 4, 1983, elevation, 65.78 ft; river and Merced River Slough, 34,400 ft³/s, Feb. 26, 1969, elevation, 65.90 ft, present datum; minimum, 15 ft³/s, Aug. 9, 10, 1924.

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, 2,110 ft³/s, Mar. 28, elevation, 52.87 ft; minimum daily, 114 ft³/s, Sept. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192	254	260	271	149	e350	975	314	171	188	161	146
2	199	274	271	269	143	e495	847	289	186	206	156	146
3	195	287	280	277	159	e640	768	302	173	195	151	154
4	179	304	277	274	184	e725	738	310	173	169	148	136
5	188	337	270	265	191	e810	714	322	157	161	161	121
6	193	354	271	274	187	e840	700	326	153	153	191	114
7	185	357	272	283	189	e790	681	337	148	181	190	116
8	184	350	268	290	198	728	636	318	155	193	161	120
9	186	340	267	274	190	620	574	291	166	183	160	145
10	198	340	268	279	197	576	517	289	173	182	170	163
11	200	347	276	282	205	556	474	280	172	179	164	154
12	178	359	293	281	211	540	415	283	157	150	166	141
13	164	362	297	261	194	510	369	273	151	161	198	151
14	163	340	293	239	188	483	382	280	145	169	148	147
15	160	326	289	228	186	498	406	278	150	157	147	133
16	159	304	280	223	197	537	358	258	144	157	154	134
17	158	309	277	222	214	571	323	248	143	141	188	137
18	158	323	275	218	197	607	303	243	167	134	205	136
19	166	348	277	211	173	628	295	235	168	134	195	129
20	179	337	274	202	177	1010	319	266	156	152	201	130
21	184	318	271	192	168	1690	367	277	147	170	195	135
22	194	308	266	184	161	1980	392	268	126	159	179	136
23	201	314	266	178	149	1760	415	245	125	157	155	143
24	203	313	265	177	143	1340	423	238	138	150	142	152
25	198	297	270	178	157	1110	396	238	161	133	153	145
26	192	284	275	179	164	1480	377	235	145	125	156	130
27	186	266	277	186	149	1880	365	246	143	128	173	131
28	205	264	277	185	e225	2010	372	246	136	140	165	126
29	238	268	275	200	---	1680	392	230	155	148	153	125
30	248	262	265	192	---	1370	373	208	175	163	151	122
31	246	---	265	170	---	1150	---	184	---	172	143	---
TOTAL	5879	9446	8507	7144	5045	29964	14666	8357	4659	4990	5180	4098
MEAN	190	315	274	230	180	967	489	270	155	161	167	137
MAX	248	362	297	290	225	2010	975	337	186	206	205	163
MIN	158	254	260	170	143	350	295	184	125	125	142	114
AC-FT	11660	18740	16870	14170	10010	59430	29090	16580	9240	9900	10270	8130

CAL YR 1990 TOTAL 144622 MEAN 396 MAX 885 MIN 150 AC-FT 286900
WTR YR 1991 TOTAL 107935 MEAN 296 MAX 2010 MIN 114 AC-FT 214100

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929. 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. No storage or diversion upstream from station except for minor stock ponds.

AVERAGE DISCHARGE.--59 years, 16.2 ft³/s, 11,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/s, Apr. 2, 1958, gage height, 6.57 ft, site and datum then in use, from rating curve extended above 5,000 ft³/s; no flow for all or parts of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1600	1,250	*6.24	Mar. 24	2330	*1,260	6.02

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	1.7	5.0	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.17	3.1	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	1.8	2.3	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	289	2.0	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	123	1.5	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	16	1.2	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	3.5	.96	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.79	.85	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.02	.72	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.57	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	43	.14	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	29	.09	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	34	.19	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	38	.31	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	23	.29	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	14	.15	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	85	.03	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	445	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	276	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	224	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	79	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	32	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	16	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	8.7	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	1782.68	21.74	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	57.5	.72	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	445	5.0	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	3540	43	.00	.00	.00	.00	.00

CAL YR 1990 TOTAL 0.29 MEAN .001 MAX .29 MIN .00 AC-FT .6
WTR YR 1991 TOTAL 1804.42 MEAN 4.94 MAX 445 MIN .00 AC-FT 3580

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 mi², 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 files of the U.S. Geological Survey.

SPECIFIC CONDUCTANCE: October 1988 to September 1989, January 1990 to current year.

WATER TEMPERATURE: October 1988 to September 1989, January 1990 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.--Interruptions in record were due to malfunction of the recording instrument. Specific conductance data for Sept. 5-30, 1989, published in WDR CA-89-3, are unreliable, should not be used, and have been deleted from the files of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 2,660 microsiemens, Apr. 15, 1991; minimum recorded, 540 microsiemens, Mar. 27, 1991.

WATER TEMPERATURE: Maximum recorded, 32.0 °C, July 4, 1991; minimum recorded, 2.0 °C, Dec. 23, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 2,660 microsiemens, Apr. 15; minimum recorded, 540 microsiemens, Mar. 27.

WATER TEMPERATURE: Maximum recorded, 32.0 °C, July 4; minimum recorded, 2.0 °C, Dec. 23.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1300	1250	1260	1200	1320	1290	1730	1600	2040	1940	2230	2030
2	1350	1260	1270	1250	1310	1250	1730	1690	2100	1900	1990	1700
3	1450	1340	1270	1190	1450	1120	1850	1690	2070	1900	1680	1480
4	1330	1180	1220	1180	1410	1290	1840	1720	2000	1660	1610	1480
5	1290	1160	1200	1130	1410	1380	1750	1680	1890	1590	1600	1250
6	1350	1280	1130	1040	1410	1350	1720	1670	2070	1790	1550	1360
7	1410	1340	1100	960	1460	1400	1710	1660	2090	1850	1700	1560
8	1400	1270	1120	1020	1490	1460	1710	1650	2080	1960	1780	1680
9	1380	1290	1140	1050	1560	1480	1740	1700	2000	1910	1910	1780
10	1440	1330	1160	1090	1560	1490	1800	1730	2100	1940	1910	1860
11	1450	1380	1190	1100	1510	1470	1790	1720	2120	1990	1940	1870
12	1460	1340	1220	1130	1530	1460	1790	1710	2170	1770	1970	1910
13	1390	1330	1180	1080	1600	1430	1840	1730	1900	1730	1980	1860
14	1390	1320	1170	1080	1590	1540	1910	1830	1990	1880	1900	1830
15	1380	1260	1180	1130	1630	1560	1980	1870	2130	1960	1980	1840
16	1320	1200	1280	1190	1590	1550	2040	1940	2170	2100	2030	1940
17	1400	1220	1300	1260	1580	1530	2130	2040	2210	2090	1940	1850
18	1420	1330	1340	1290	1540	1490	2270	2110	2110	2060	1860	1720
19	1400	1250	1350	1230	1570	1510	2240	2040	2250	2050	1750	1660
20	1490	1290	1230	1160	1570	1530	2040	1890	2320	2260	1670	1460
21	1500	1440	1230	1170	1630	1570	2220	2030	2350	2300	1420	640
22	1490	1390	1270	1220	1640	1620	2230	2120	2290	2150	640	550
23	1390	1320	1330	1270	1620	1590	2280	2170	2430	2120	930	590
24	1340	1300	1340	1260	1730	1640	2380	2260	2360	2320	1140	930
25	1350	1300	1290	1260	1750	1710	2340	2240	2590	2290	1240	1000
26	1460	1310	1330	1280	1750	1700	2280	2190	2550	2370	1180	900
27	1480	1430	1370	1320	1710	1630	2300	2220	2430	2180	900	540
28	1500	1450	1390	1340	1630	1600	2250	2210	2190	2110	730	570
29	1450	1330	1380	1350	1610	1590	2220	1930	---	---	930	730
30	1330	1210	1360	1320	1630	1580	2160	1850	---	---	1110	930
31	1220	1170	---	---	1650	1620	1970	1840	---	---	1310	1110
MONTH	1500	1160	1390	960	1750	1120	2380	1600	2590	1590	2230	540

11274570 SAN JOAQUIN RIVER AT PATTERSON BRIDGE, NEAR PATTERSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1430	1310	1980	1550	1870	1720	---	---	1520	1440	1560	1380
2	1560	1430	1970	1600	1910	1810	---	---	1490	1310	1580	1470
3	1680	1560	2140	1970	1930	1790	1760	1650	1410	1250	1580	1450
4	1800	1690	2120	1560	1960	1820	1770	1700	1380	1330	1590	1450
5	1890	1800	2040	1690	2010	1920	1790	1740	1350	1160	1520	1450
6	2000	1880	2070	1640	1990	1730	1840	1470	1410	1300	1560	1450
7	2060	1990	1730	1590	1860	1680	1690	1480	1360	1280	1670	1490
8	2050	2030	1710	1610	1940	1630	1700	1430	1450	1280	1660	1560
9	2160	2050	1720	1510	2010	1800	1450	1330	1510	1420	1630	1480
10	2230	2170	1740	1580	2010	1740	1580	1410	1410	1320	1540	1480
11	2290	2210	1690	1550	1950	1790	1530	1430	1450	1270	1490	1400
12	2370	2290	1680	1590	1910	1780	1490	1320	1550	1400	1500	1420
13	2440	2340	1650	1550	---	---	1560	1430	1560	1470	1470	1420
14	2610	2420	1700	1520	---	---	1630	1500	1550	1420	1480	1350
15	2660	2490	1680	1550	---	---	1640	1470	1590	1500	1470	1270
16	2460	2080	1780	1620	---	---	1600	1520	1620	1370	1280	1160
17	2210	1850	1670	1540	---	---	1660	1460	1530	1460	1450	1280
18	2000	1850	1840	1670	---	---	1670	1550	1530	1390	1420	1280
19	2040	1890	1830	1690	---	---	1670	1360	1530	1340	1400	1210
20	2330	1930	1710	1620	---	---	1610	1460	1550	1450	1320	1210
21	2310	1770	1740	1440	---	---	1600	1400	1650	1560	1360	1200
22	1930	1740	1510	1400	---	---	1480	1290	1690	1600	1400	1230
23	1820	1440	1600	1420	---	---	1450	1340	1690	1610	1510	1370
24	1540	1350	1530	1390	---	---	1470	1370	1780	1590	1560	1380
25	1460	1370	1640	1430	---	---	1430	1300	1840	1650	1590	1480
26	1570	1370	1640	1420	---	---	1550	1400	1670	1530	1540	1320
27	1560	1470	1750	1600	---	---	1600	1470	1680	1550	1470	1330
28	1590	1410	1770	1430	---	---	1590	1390	1650	1480	1470	1320
29	1870	1470	1650	1590	---	---	1490	1310	1550	1420	1480	1320
30	1630	1580	1640	1590	---	---	1630	1490	1520	1340	1530	1420
31	---	---	1720	1620	---	---	1570	1460	1490	1390	---	---
MONTH	2660	1310	2140	1390	---	---	---	---	1840	1160	1670	1160

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	24.5	22.0	15.5	14.0	10.5	8.5	6.5	4.5	11.5	8.5	15.0	14.0
2	23.0	21.5	13.5	11.5	10.0	8.0	7.0	5.0	11.5	9.5	14.5	13.5
3	21.5	19.0	12.5	10.5	9.5	7.5	7.5	6.0	13.0	10.0	14.0	13.0
4	22.5	19.0	13.0	11.0	9.5	7.0	7.5	7.0	13.0	11.0	14.5	13.0
5	22.5	20.0	14.0	11.5	10.0	8.0	8.5	7.5	14.0	12.0	13.5	12.5
6	21.0	19.5	12.5	11.0	10.0	8.0	9.5	8.5	15.0	12.0	13.5	12.0
7	19.0	17.0	12.0	10.0	9.5	8.0	11.0	9.0	14.0	13.0	13.5	12.0
8	18.0	15.5	13.5	10.0	9.5	7.5	11.0	10.0	13.5	13.0	14.5	12.0
9	19.0	15.5	14.5	11.0	9.5	7.5	11.5	10.5	13.0	12.0	15.0	13.0
10	19.5	16.0	14.5	11.0	10.0	8.0	11.5	10.5	13.5	11.5	14.5	13.0
11	19.0	16.5	14.5	11.5	10.5	9.5	11.0	10.0	14.5	11.5	14.0	12.0
12	20.0	16.5	14.5	11.5	11.0	9.5	12.0	10.0	14.5	12.0	13.5	12.5
13	20.0	16.5	14.5	12.0	10.5	9.5	12.0	10.5	16.0	12.5	14.5	13.0
14	20.0	17.0	14.0	12.0	9.5	8.5	13.0	11.5	16.5	13.5	14.5	12.5
15	20.0	17.0	13.5	12.0	9.0	8.0	12.5	11.5	17.0	14.5	13.5	12.0
16	20.0	17.5	13.0	12.0	9.5	8.0	12.0	10.0	17.0	14.5	13.5	12.0
17	19.5	16.0	14.5	12.5	9.0	7.5	12.0	10.0	16.5	14.0	12.5	11.5
18	18.5	17.0	14.5	13.0	9.0	7.5	11.5	9.5	15.5	13.0	12.0	11.0
19	18.0	16.5	14.0	13.0	9.0	8.0	12.0	9.5	17.0	13.0	13.0	11.0
20	17.0	14.5	13.0	11.5	8.0	6.5	11.5	9.5	17.5	13.0	13.5	12.0
21	17.5	14.0	12.5	10.5	6.5	4.0	11.0	9.0	17.5	13.5	12.5	12.0
22	18.5	15.0	12.0	10.5	4.0	2.5	10.5	8.0	17.5	13.5	13.0	11.5
23	18.5	15.5	12.0	10.0	4.0	2.0	10.5	8.0	17.5	13.0	14.0	12.0
24	19.0	16.0	12.0	9.5	4.5	2.5	11.0	8.0	18.0	13.0	14.0	13.0
25	19.5	16.5	11.5	9.5	5.0	3.0	11.0	8.0	18.0	13.5	13.5	12.5
26	19.5	16.5	10.5	9.5	5.5	3.5	11.0	8.0	18.0	13.5	12.5	12.0
27	19.5	16.0	10.0	8.5	6.0	4.0	11.5	8.0	15.5	14.5	12.0	11.0
28	19.5	16.0	10.0	8.0	6.5	4.5	11.0	8.0	15.0	14.0	13.0	11.5
29	18.5	16.5	10.0	8.0	6.0	4.5	11.0	8.0	---	---	14.5	12.5
30	17.5	15.5	10.5	8.5	6.0	4.0	10.5	7.5	---	---	16.5	14.0
31	17.5	15.5	---	---	6.5	4.0	11.0	8.5	---	---	17.5	15.5
MONTH	24.5	14.0	15.5	8.0	11.0	2.0	13.0	4.5	18.0	8.5	17.5	11.0

11274570 SAN JOAQUIN RIVER AT PATTERSON BRIDGE, NEAR PATTERSON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	17.5	16.5	18.5	16.5	24.0	17.5	28.5	23.0	28.0	23.5	26.5	21.5
2	18.0	15.0	17.5	14.5	26.0	20.0	31.0	25.0	26.0	22.5	27.5	22.5
3	18.5	15.5	20.0	14.5	26.0	21.0	31.5	27.0	26.0	22.0	28.0	23.5
4	19.5	16.5	21.5	16.5	25.0	20.0	32.0	27.0	26.5	22.0	28.0	23.5
5	19.5	17.0	22.5	19.0	23.0	18.0	31.5	26.5	26.5	22.5	28.5	24.0
6	19.0	17.5	22.5	19.5	24.5	18.0	29.5	25.0	26.5	22.5	27.5	23.5
7	17.0	15.5	22.0	19.5	25.0	19.0	28.5	24.0	26.5	22.5	27.0	22.5
8	16.5	14.5	---	---	26.0	20.5	28.0	24.0	27.0	23.0	27.0	22.5
9	18.0	15.0	20.0	17.5	27.0	21.5	27.5	23.5	28.0	23.0	25.0	21.5
10	17.0	14.5	19.0	15.5	28.0	22.5	28.0	23.0	27.5	23.0	24.0	20.0
11	15.0	12.0	20.0	16.5	28.5	23.0	27.5	23.5	28.0	24.0	24.5	20.5
12	16.0	12.0	21.0	17.5	28.5	23.5	28.0	23.5	26.5	23.5	25.0	20.5
13	18.5	14.0	18.5	17.0	27.0	22.0	28.0	23.5	26.5	23.0	25.0	20.5
14	20.0	16.0	20.5	16.0	24.5	20.5	27.5	23.0	26.5	23.5	24.5	20.0
15	18.5	16.5	23.0	18.0	25.0	19.5	27.5	23.0	28.5	24.0	25.0	20.0
16	18.0	15.0	23.5	19.5	24.5	20.0	27.0	22.5	27.0	23.5	25.0	20.5
17	19.0	15.0	20.5	17.5	24.0	19.5	26.5	22.5	26.5	22.5	25.5	21.0
18	19.5	16.0	18.0	15.5	25.0	19.5	27.5	22.5	26.5	22.5	26.0	21.5
19	19.5	16.5	19.5	14.5	25.5	19.5	28.0	23.0	26.5	23.0	25.5	21.5
20	19.0	16.5	21.5	16.5	24.5	19.5	27.5	23.0	26.5	22.5	25.5	21.0
21	20.0	16.5	22.5	18.5	25.0	19.5	27.5	23.0	26.5	22.0	24.5	20.5
22	20.0	16.5	24.5	19.5	25.0	19.5	28.5	24.0	26.5	22.0	24.5	21.0
23	20.0	17.0	25.5	21.0	25.0	19.5	29.0	24.0	26.0	21.5	25.0	20.5
24	18.5	16.5	25.5	22.0	25.0	19.5	27.5	23.5	27.5	22.0	26.0	21.0
25	18.5	15.0	24.5	21.0	26.0	19.5	28.0	23.0	27.0	22.5	25.0	22.5
26	19.5	16.5	23.0	19.0	25.5	20.5	29.0	23.5	26.0	22.0	25.5	21.5
27	19.5	16.5	23.0	19.0	23.0	20.5	29.5	23.5	26.0	21.0	24.5	20.5
28	19.5	16.5	24.0	19.0	22.0	20.5	29.0	24.0	25.5	21.0	24.0	20.5
29	20.5	16.5	23.5	19.5	25.0	19.5	29.5	24.5	27.5	22.0	24.5	20.5
30	20.5	16.5	21.5	18.0	26.5	21.0	30.0	25.5	26.5	22.5	25.5	21.5
31	---	---	21.0	16.0	---	---	29.0	25.5	26.0	22.0	---	---
MONTH	20.5	12.0	---	---	28.5	17.5	32.0	22.5	28.5	21.0	28.5	20.0

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 1965, crest-stage gage at site 1.0 mi downstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Some stock ponds and small diversions upstream from station.

AVERAGE DISCHARGE.--26 years, 6.57 ft³/s, 4,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft³/s, Feb. 16, 1959, gage height, 14.68 ft, site and datum then in use, from rating curve extended above 690 ft³/s; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	Unknown	Unknown	Unknown	a	Unknown	*710	*5.26

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.00	e.00	e.00	.00	e.10	e13	.70	.00	.00	.00	.00
2	e.00	e.00	e.00	e.00	.00	e.03	e11	.47	.00	.00	.00	.00
3	e.00	e.00	e.00	e.00	.00	e10	e9.8	.31	.00	.00	.00	.00
4	e.00	e.00	e.00	e.00	.00	e90	e8.0	.17	.00	.00	.00	.00
5	e.00	e.00	e.00	e.00	.00	e20	e7.0	.03	.00	.00	.00	.00
6	e.00	e.00	e.00	e.00	.00	e2.5	e6.5	.00	.00	.00	.00	.00
7	e.00	e.00	e.00	e.00	.00	e.50	e5.8	.00	.00	.00	.00	.00
8	e.00	e.00	e.00	e.00	.00	e.08	e5.4	.00	.00	.00	.00	.00
9	e.00	e.00	e.00	e.00	.00	e.02	e4.6	.00	.00	.00	.00	.00
10	e.00	e.00	e.00	e.00	.00	e.01	e4.3	.00	.00	.00	.00	.00
11	e.00	e.00	e.00	e.00	.00	e.00	e3.9	.00	.00	.00	.00	.00
12	e.00	e.00	e.00	e.00	.00	e.00	e3.5	.00	.00	.00	.00	.00
13	e.00	e.00	e.00	e.00	.00	e.00	e3.1	.00	.00	.00	.00	.00
14	e.00	e.00	e.00	e.00	.00	e.00	e2.9	.00	.00	.00	.00	.00
15	e.00	e.00	e.00	e.00	.00	e.00	e2.6	.14	.00	.00	.00	.00
16	e.00	e.00	e.00	e.00	.00	e.00	e2.5	.22	.00	.00	.00	.00
17	e.00	e.00	e.00	e.00	.00	e.00	e2.4	.22	.00	.00	.00	.00
18	e.00	e.00	e.00	e.00	.00	e23	e2.2	.22	.00	.00	.00	.00
19	e.00	e.00	e.00	e.00	.00	e15	e2.0	.22	.00	.00	.00	.00
20	e.00	e.00	e.00	e.00	.00	e11	e2.5	.24	.00	.00	.00	.00
21	e.00	e.00	e.00	e.00	.00	e15	e3.5	.26	.00	.00	.00	.00
22	e.00	e.00	e.00	e.00	.00	4.7	e3.3	.26	.00	.00	.00	.00
23	e.00	e.00	e.00	e.00	e.00	3.0	e3.1	.22	.00	.00	.00	.00
24	e.00	e.00	e.00	.00	e.00	e30	e2.8	.11	.00	.00	.00	.00
25	e.00	e.00	e.00	.00	e.00	e230	2.6	.05	.00	.00	.00	.00
26	e.00	e.00	e.00	.00	e.00	e100	2.3	.02	.00	.00	.00	.00
27	e.00	e.00	e.00	.00	e.00	e54	2.1	.01	.00	.00	.00	.00
28	e.00	e.00	e.00	.00	e20	e40	1.7	.00	.00	.00	.00	.00
29	e.00	e.00	e.00	.00	---	e32	1.3	.00	.00	.00	.00	.00
30	e.00	e.00	e.00	.00	---	e20	.99	.00	.00	.00	.00	.00
31	e.00	---	e.00	.00	---	e17	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	20.00	717.94	126.69	3.87	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.71	23.2	4.22	.12	.000	.000	.000	.000
MAX	.00	.00	.00	.00	20	230	13	.70	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.99	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	40	1420	251	7.7	.00	.00	.00	.00

CAL YR 1990 TOTAL 319.75 MEAN .88 MAX 98 MIN .00 AC-FT 634
WTR YR 1991 TOTAL 868.50 MEAN 2.38 MAX 230 MIN .00 AC-FT 1720

a Sometime during period Mar. 24, 25.

e Estimated.

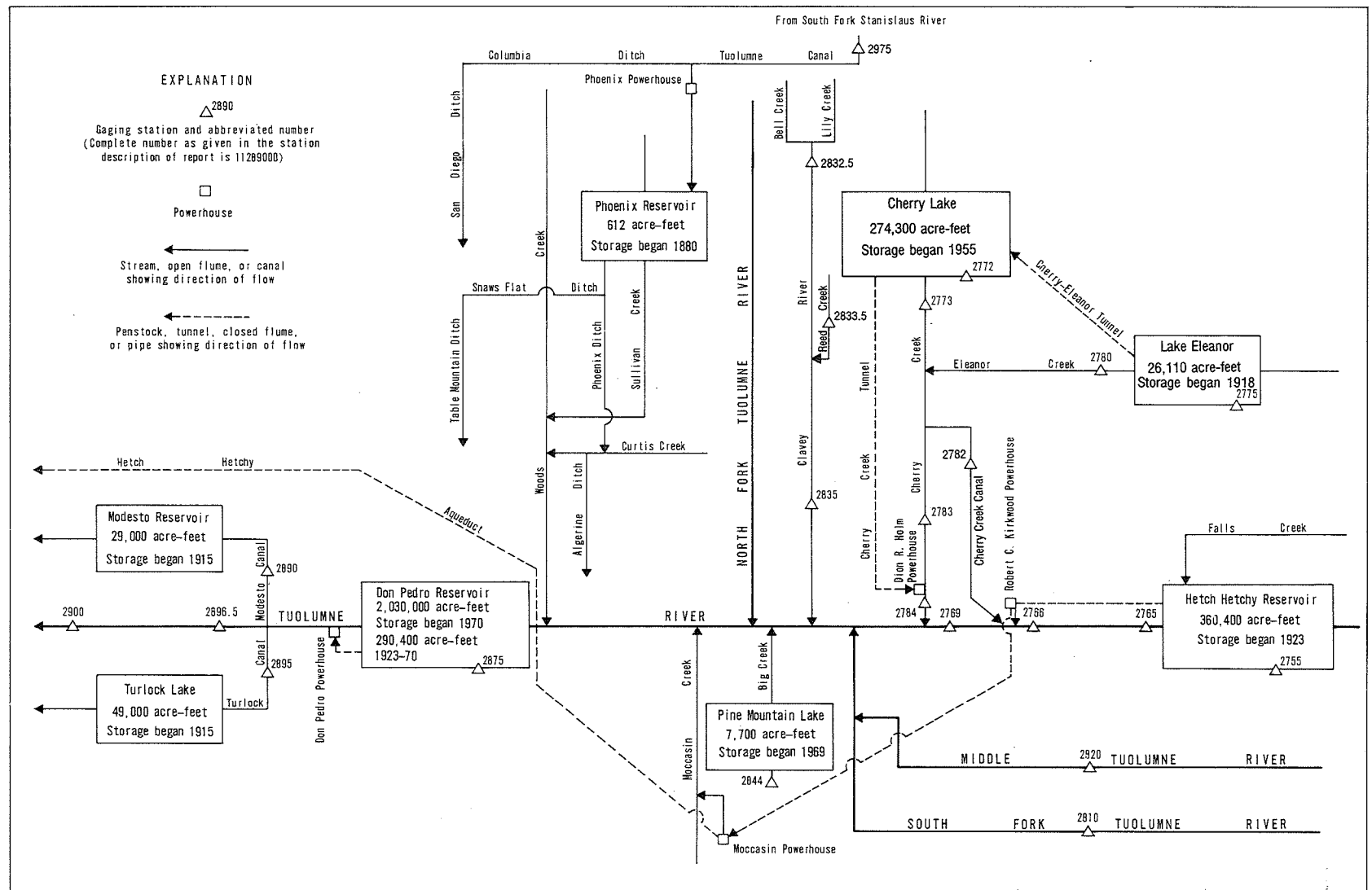


Figure 33. Diversions and storage in Tuolumne River basin.

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 mi².

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 National Geodetic Vertical Datum of 1929. 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 Creek 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 (AT 0800) FOR CURRENT YEAR.--Maximum contents, 333,500 acre-ft, July 8, gage height, 3,792.2 ft; minimum, 24,400 acre-ft, Mar. 1, gage height, 3,561.9 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135900	101000	88800	e58100	32100	24400	49800	84500	191500	327200	311100	269100
2	134900	100900	87900	56900	31600	24500	50800	85700	196800	328200	310000	268200
3	133600	100900	87100	55900	31800	25200	51700	86200	204700	329700	309100	266400
4	132600	100900	86300	54600	31500	25800	52600	86400	214700	330800	308100	265400
5	131500	100800	85500	53400	31200	26600	54500	86800	225500	332000	306600	264100
6	130500	100700	84700	52700	30800	27300	56900	88500	233500	332900	305200	263100
7	129400	100700	83800	52500	30400	27100	58600	92200	240900	333300	303500	262000
8	128300	100700	82900	51900	30100	27900	60200	97200	248000	333500	302400	261200
9	127200	100700	82000	51300	29700	28600	61700	102500	255000	332900	301100	259900
10	126300	100600	81600	50700	29500	29100	63200	105800	263300	332700	299600	258900
11	124900	100600	80600	49700	29300	29800	64100	107900	271600	332600	298300	257700
12	123700	100400	79800	48800	28900	30300	65100	109000	279800	332000	296800	256600
13	122600	100400	78900	48100	28700	30600	65800	110300	288500	331600	295300	255200
14	121400	100400	77800	47600	28400	31000	66400	112300	295500	331200	294000	254400
15	120300	100400	76700	46600	28100	31400	67600	114000	300900	330300	292600	253300
16	119000	100100	75600	45700	27800	31900	68500	116600	305500	329300	291100	252400
17	117700	100100	74900	45000	27500	32100	69100	121200	309400	328300	289600	250900
18	116500	100000	73600	44100	27300	32500	69700	124900	312200	327600	288500	249700
19	115500	100000	72400	43500	27000	32900	70300	126700	315100	326400	287100	248600
20	114200	100000	71100	42500	26700	33400	70900	128100	316800	325500	285600	247400
21	113200	100000	70000	41900	26400	33700	71700	129500	318500	325500	284200	246200
22	112200	e98800	68800	40800	26100	33900	72600	131400	319600	323800	282900	245200
23	110900	97600	66900	39500	25900	34000	73300	134600	320500	322200	281600	244200
24	109700	96400	66800	38600	25500	34700	74600	141100	321700	321100	280400	242600
25	108600	95200	e65600	37800	25300	35400	75800	149300	322400	320200	279100	241300
26	107400	94300	64400	36800	25100	35800	76900	158000	323000	318700	277600	240400
27	106300	93200	63400	36000	24800	35900	77900	165200	323400	317500	276000	239200
28	105100	91900	62200	35400	24600	36500	79200	171400	324000	316400	274400	237500
29	104100	90800	61100	34700	---	36800	80800	178200	324500	315800	273000	236900
30	102800	89800	60200	33800	---	37300	82500	183700	326100	313800	271700	235700
31	101500	---	59300	33000	---	48300	---	188100	---	312400	270300	---
MAX	135900	101000	88800	58100	32100	48300	82500	188100	326100	333500	311100	269100
MIN	101500	89800	59300	33000	24600	24400	49800	84500	191500	312400	270300	235700
a	3644.0	3633.1	3602.0	3572.3	3562.1	3590.0	3626.0	3708.6	3788.3	3781.1	3758.1	3738.1
b	-35900	-11700	-30500	-26300	-8400	+23700	+34200	+105600	+138000	-13700	-42100	-34600

CAL YR 1990 b -82900
WTR YR 1991 b +98300

e Estimated.

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

b Change in contents, in acre-feet.

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 mi².

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 National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE (prior to diversion to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct).--57 years (water years 1911-67), 999 ft³/s, 723,800 acre-ft/yr; 24 years (water years 1968-91), 379 ft³/s, 274,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft³/s, June 1, 1943, gage height, 13.90 ft; no flow at times in 1968-70.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 158 ft³/s, July 4, gage height, 3.85 ft; minimum daily, 32 ft³/s, several days during November.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	34	34	34	35	35	54	71	102	110	143	149
2	44	34	34	33	35	37	67	80	112	110	145	149
3	44	34	34	37	35	41	67	80	110	110	145	149
4	38	34	34	43	35	51	67	78	110	130	145	132
5	34	34	34	43	36	45	67	78	111	142	144	119
6	34	34	34	43	36	38	67	78	113	142	142	119
7	34	34	34	43	35	33	67	78	111	142	142	119
8	34	34	34	42	35	33	67	78	109	142	143	119
9	34	34	34	37	35	33	67	79	110	142	144	119
10	34	34	34	34	35	33	67	80	108	142	144	118
11	34	34	34	35	35	33	67	81	106	142	144	118
12	34	34	34	36	35	35	67	81	106	143	144	117
13	34	34	33	37	35	35	67	80	106	145	144	117
14	34	34	33	36	35	35	67	80	107	145	144	117
15	34	34	33	35	35	35	66	80	108	145	144	117
16	34	34	35	35	35	35	66	80	108	145	146	108
17	34	34	35	35	35	35	66	80	108	145	150	103
18	34	34	34	35	35	35	66	81	108	145	151	103
19	34	34	35	35	35	39	66	81	108	145	146	100
20	34	35	35	35	35	41	66	81	111	144	142	96
21	34	34	35	34	35	40	66	81	112	144	142	95
22	34	33	34	35	35	39	66	81	110	144	142	96
23	34	32	34	38	35	39	67	81	109	144	142	97
24	37	32	34	38	35	43	67	81	109	144	141	97
25	37	33	33	38	35	49	67	81	109	144	143	97
26	34	32	33	37	35	43	66	81	109	144	145	97
27	34	32	33	37	35	41	66	81	109	144	145	97
28	34	32	37	37	35	43	66	82	109	143	145	97
29	34	32	35	36	---	42	67	82	109	142	145	97
30	34	34	35	35	---	41	68	81	109	142	145	97
31	34	---	34	35	---	42	---	81	---	142	148	---
TOTAL	1095	1007	1058	1143	982	1199	1987	2478	3266	4333	4475	3355
MEAN	35.3	33.6	34.1	36.9	35.1	38.7	66.2	79.9	109	140	144	112
MAX	45	35	37	43	36	51	68	82	113	145	151	149
MIN	34	32	33	33	35	33	54	71	102	110	141	95
AC-FT	2170	2000	2100	2270	1950	2380	3940	4920	6480	8590	8880	6650

CAL YR 1990 TOTAL 22910 MEAN 62.8 MAX 182 MIN 32 AC-FT 45440
WTR YR 1991 TOTAL 26378 MEAN 72.3 MAX 151 MIN 32 AC-FT 52320

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. Water temperature is affected by releases from O'Shaughnessy Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 14.5 °C, Oct. 29-31, 1990; minimum recorded, 4.0 °C, Mar. 25, 1991.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 14.5 °C, Oct. 29-31; minimum recorded, 4.0 °C, Mar. 25.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.0	5.0	8.0	6.5	9.5	8.0	10.5	9.5	11.0	9.5	10.5	9.5
2	6.5	5.0	8.0	7.0	9.5	8.5	10.5	9.0	10.5	9.5	11.0	10.0
3	7.0	4.5	8.5	6.5	9.5	8.0	10.5	9.5	10.5	9.5	11.0	10.5
4	6.5	5.0	8.5	7.0	9.5	8.0	10.5	9.5	10.5	9.5	10.5	10.0
5	6.5	5.0	8.5	7.0	9.5	8.0	11.0	9.5	10.5	9.5	11.0	10.0
6	6.5	5.0	8.5	7.5	9.5	8.5	10.5	9.5	11.0	10.0	11.0	10.0
7	7.0	5.0	9.0	7.0	9.5	8.0	10.5	9.5	10.5	9.5	11.0	10.0
8	7.5	5.0	9.0	7.0	9.5	8.5	10.5	9.5	10.5	10.0	11.0	10.0
9	7.0	5.0	9.0	7.5	9.5	8.5	10.5	10.0	10.5	9.5	11.0	10.0
10	7.0	5.5	9.0	7.5	10.0	8.5	10.5	9.5	10.5	10.0	11.0	10.0
11	8.0	5.5	8.5	7.5	10.0	8.5	11.5	9.5	10.5	9.5	11.0	9.5
12	8.0	6.0	9.0	7.5	9.5	8.5	10.5	10.0	10.5	9.5	11.0	9.5
13	7.5	6.0	8.0	7.0	10.0	8.5	10.5	9.5	11.0	10.0	11.0	10.0
14	8.0	6.5	9.0	7.0	9.5	8.5	10.5	9.5	11.0	10.0	10.5	10.0
15	7.5	6.0	9.0	7.5	10.0	8.5	10.5	9.5	11.0	10.0	11.0	10.0
16	8.0	6.0	9.0	7.5	10.0	8.5	11.0	9.5	11.0	10.0	11.0	10.0
17	8.0	6.0	8.0	7.0	10.0	9.0	10.5	9.5	10.5	9.5	11.0	10.0
18	9.0	6.0	8.0	7.5	10.0	9.0	10.5	9.5	10.5	9.5	11.0	10.0
19	7.5	6.5	9.0	7.5	10.0	8.5	10.5	9.5	10.5	9.5	11.0	10.0
20	7.5	6.5	9.0	7.5	10.0	8.5	10.5	9.5	10.5	9.5	11.0	10.0
21	8.0	6.5	9.0	8.0	10.0	8.5	10.5	9.5	10.5	9.5	11.0	10.0
22	8.0	6.5	9.0	7.5	10.0	8.5	10.5	9.5	10.5	10.0	11.0	10.0
23	8.5	6.5	9.0	7.5	10.0	8.5	10.5	10.0	10.5	9.5	11.0	10.0
24	8.0	6.5	9.0	8.0	10.5	8.5	10.5	9.5	10.5	9.5	11.0	10.0
25	7.5	6.5	9.5	7.5	10.5	9.0	10.5	9.5	10.5	10.0	11.5	10.0
26	8.5	6.5	9.5	7.5	10.0	9.0	10.5	9.5	10.5	9.5	11.0	10.0
27	8.5	6.5	9.0	7.5	9.5	9.0	10.5	10.0	10.5	9.5	11.0	10.0
28	8.5	6.5	9.5	8.0	10.0	9.0	10.5	9.5	10.5	9.5	11.5	10.0
29	8.5	6.5	9.5	8.0	10.5	9.0	11.0	10.0	11.0	10.0	11.0	10.0
30	8.5	6.5	9.0	8.0	10.5	9.5	10.5	9.5	11.0	10.0	11.5	9.5
31	---	---	9.5	8.0	---	---	10.5	10.0	10.5	10.0	---	---
MONTH	9.0	4.5	9.5	6.5	10.5	8.0	11.5	9.0	11.0	9.5	11.5	9.5

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,420 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--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.

AVERAGE DISCHARGE.--21 years, 401 ft³/s, 290,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s, July 7, 1983, gage height, 21.38 ft; minimum daily, 25 ft³/s, Oct. 11, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1943, reached a stage of 22.1 ft, discharge, 12,900 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 326 ft³/s, Mar. 4, gage height, 13.66 ft; minimum daily, 35 ft³/s, on several days in October and November.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	39	e38	39	38	63	e165	89	95	115	140	149
2	50	37	e38	39	40	72	e168	97	121	115	142	149
3	50	35	e38	39	40	94	e157	103	117	114	143	148
4	50	35	e38	45	40	206	e158	98	118	119	143	145
5	41	35	e38	47	46	143	e159	96	119	141	142	123
6	38	35	e38	48	41	80	e145	95	120	141	142	124
7	37	36	e38	48	40	58	e138	95	121	142	142	124
8	37	36	e38	48	39	50	e130	95	117	142	142	123
9	37	36	e38	45	39	46	e118	95	117	141	141	123
10	37	36	e38	40	39	46	e112	96	117	142	141	123
11	36	36	38	39	39	55	e110	95	113	141	141	123
12	36	36	39	40	39	55	e98	94	113	141	141	123
13	35	36	38	40	39	70	e98	96	113	144	141	121
14	35	36	37	40	38	e73	e98	98	113	144	141	121
15	35	36	38	39	38	e72	e98	94	114	143	141	121
16	35	37	40	40	38	e69	e94	93	113	143	142	118
17	35	37	40	39	38	e68	93	95	114	143	148	108
18	35	37	39	39	38	e98	92	104	114	143	148	107
19	36	37	42	38	38	e124	91	104	114	143	146	107
20	36	37	40	38	38	e118	91	102	115	143	140	100
21	35	37	39	38	37	e105	93	100	114	143	140	100
22	35	37	39	38	39	e101	92	98	114	142	140	100
23	35	37	39	40	39	e99	91	97	114	142	140	102
24	35	37	39	42	39	e137	90	97	114	142	140	102
25	39	37	39	43	39	e227	91	93	114	141	141	102
26	37	37	39	41	39	e156	88	93	114	141	144	102
27	35	37	39	41	39	e126	87	94	114	142	145	102
28	35	e37	39	41	44	e137	85	94	116	141	144	102
29	35	e38	39	40	---	e137	84	94	120	141	144	102
30	35	e38	39	40	---	e144	85	92	115	140	144	102
31	37	---	39	39	---	e143	---	91	---	140	145	---
TOTAL	1175	1097	1200	1273	1100	3172	3299	2977	3447	4295	4414	3496
MEAN	37.9	36.6	38.7	41.1	39.3	102	110	96.0	115	139	142	117
MAX	51	39	42	48	46	227	168	104	121	144	148	149
MIN	35	35	37	38	37	46	84	89	95	114	140	100
AC-FT	2330	2180	2380	2520	2180	6290	6540	5900	6840	8520	8760	6930

CAL YR 1990 TOTAL 26106 MEAN 71.5 MAX 175 MIN 35 AC-FT 51780
WTR YR 1991 TOTAL 30945 MEAN 84.8 MAX 227 MIN 35 AC-FT 61380

e Estimated.

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 150 ft upstream from gaging station on right bank. Water temperature is affected by regulation from O'Shaughnessy Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 23.5 °C, July 16, 17, 1990; minimum recorded, 0.0 °C, Dec. 24, 25, 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 21.5 °C, July 3, 4; minimum recorded, 0.0 °C, Dec. 24, 25.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.0	15.5	12.0	10.5	5.0	4.5	2.0	.5	4.0	2.5	9.0	7.5
2	18.0	15.5	10.5	9.0	4.5	4.0	2.5	1.0	4.5	3.0	8.5	7.5
3	18.0	15.5	9.5	8.0	5.0	4.0	3.0	2.0	5.5	4.0	8.0	7.5
4	18.0	15.5	9.5	8.0	5.5	4.0	4.0	3.0	6.0	4.0	8.0	7.0
5	17.5	15.5	9.5	8.0	5.0	4.5	4.0	3.0	6.5	5.0	8.5	7.5
6	18.0	15.5	8.5	7.5	4.5	4.0	4.5	3.0	6.5	4.5	8.5	6.5
7	16.0	15.0	8.0	6.5	5.0	4.0	5.5	4.5	6.5	4.5	8.5	6.0
8	16.0	13.5	8.0	6.5	4.5	4.0	6.0	4.5	7.0	5.0	9.5	6.5
9	16.0	13.5	8.0	6.5	4.5	4.0	6.0	5.0	7.5	5.0	9.0	6.5
10	16.0	13.0	7.5	6.0	6.0	4.5	5.0	4.5	7.5	5.5	9.0	6.0
11	15.0	13.0	8.0	6.5	7.0	6.0	5.5	4.5	7.5	5.5	8.5	6.0
12	15.0	13.0	8.0	7.0	7.5	6.5	6.0	5.0	7.5	5.5	8.5	6.5
13	15.0	12.5	9.0	7.0	7.5	6.0	5.5	4.5	8.0	6.0	7.5	6.0
14	14.5	12.5	9.0	7.5	6.0	5.0	5.0	4.5	8.5	6.0	7.5	6.0
15	15.0	12.5	9.5	8.0	5.5	4.5	5.0	4.0	9.0	7.0	7.0	5.5
16	15.0	12.5	9.5	8.0	5.0	4.5	5.0	4.0	10.0	7.5	8.0	5.5
17	15.0	12.5	10.0	9.0	4.5	4.0	4.5	3.5	9.5	7.5	7.0	5.0
18	14.5	13.0	10.5	9.0	4.0	3.5	4.0	3.5	9.0	6.5	6.0	4.5
19	15.0	13.0	10.0	9.5	4.0	3.0	4.0	3.0	9.0	6.5	6.0	4.5
20	14.0	11.5	9.5	8.5	3.5	2.5	3.5	2.5	9.5	7.0	6.0	4.5
21	13.5	11.5	8.5	7.5	2.5	1.5	3.5	2.5	9.5	7.5	8.0	5.5
22	13.5	11.0	7.5	7.0	1.0	.5	3.0	2.0	9.5	7.0	9.0	6.0
23	13.0	11.5	7.5	6.5	.5	.5	3.0	1.5	9.5	7.0	9.5	7.5
24	13.0	11.5	7.0	6.0	.5	.0	3.0	2.0	10.0	7.0	9.0	7.5
25	13.0	11.0	7.0	6.0	.5	.0	3.0	2.0	10.0	7.0	7.5	5.5
26	13.0	11.5	6.5	6.0	.5	.5	3.0	2.0	10.5	7.5	6.0	5.0
27	12.5	11.0	6.0	5.0	.5	.5	3.0	1.5	9.5	8.0	8.5	5.5
28	13.0	10.5	5.5	4.5	1.0	.5	3.0	1.5	10.0	8.5	9.5	6.0
29	12.0	10.5	5.5	4.5	1.0	.5	3.0	1.5	---	---	11.0	7.5
30	12.0	10.5	5.5	5.0	1.0	.5	3.0	1.5	---	---	11.5	8.0
31	11.5	11.0	---	---	1.0	.5	4.0	2.0	---	---	11.5	9.0
MONTH	18.0	10.5	12.0	4.5	7.5	.0	6.0	.5	10.5	2.5	11.5	4.5

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.0	9.0	13.5	12.0	18.0	13.5	19.5	15.5	19.5	16.0	16.0	13.0
2	11.0	8.0	12.5	11.0	18.0	14.5	20.5	16.5	19.0	16.0	16.5	13.0
3	12.0	8.5	13.5	9.5	19.0	15.0	21.5	16.5	18.5	15.0	17.0	13.5
4	12.0	9.0	14.0	10.0	18.5	15.0	21.5	17.5	18.5	15.0	17.0	14.0
5	12.5	9.5	14.5	11.5	18.5	15.0	21.0	17.5	18.5	15.0	17.0	14.0
6	12.0	10.5	17.0	13.0	18.0	14.0	20.5	17.0	18.5	15.0	15.5	14.5
7	12.5	10.0	17.5	13.5	18.0	14.0	20.0	16.5	18.5	15.0	16.5	14.0
8	13.0	9.5	17.0	14.5	18.0	14.0	19.5	16.0	18.5	15.0	16.0	13.5
9	13.0	10.0	14.5	13.0	18.5	15.0	19.5	16.0	18.5	15.0	16.0	14.0
10	12.5	10.0	14.5	11.5	19.0	15.5	19.5	15.5	17.5	15.0	15.5	13.0
11	12.0	9.0	12.5	11.5	20.0	16.0	19.0	15.5	18.0	14.5	15.5	12.5
12	12.0	8.5	14.5	10.5	20.0	16.0	19.5	15.5	16.5	15.0	15.5	13.0
13	13.0	9.0	12.5	11.5	19.5	16.0	19.0	15.5	18.5	15.0	16.0	13.0
14	12.5	10.0	14.5	10.5	19.0	15.5	19.5	15.5	18.5	15.5	16.0	13.5
15	13.0	10.5	16.0	11.5	19.0	15.0	19.0	15.5	18.0	16.0	16.0	13.5
16	13.0	10.0	16.0	13.0	18.5	15.0	18.5	15.0	18.5	15.0	16.0	13.5
17	13.0	9.5	14.0	12.0	18.0	15.0	18.5	15.0	18.5	15.5	16.5	14.0
18	13.0	9.5	12.0	10.5	17.5	15.0	18.5	15.0	19.0	15.5	17.0	14.0
19	12.5	10.5	13.0	9.5	17.5	14.0	18.0	15.5	18.5	15.5	16.5	14.5
20	11.5	10.5	13.5	10.0	17.5	14.0	17.5	15.0	18.5	15.5	16.5	14.5
21	13.0	10.5	15.5	11.0	17.5	14.0	18.0	14.5	17.5	14.5	17.0	14.5
22	13.5	11.0	17.0	13.0	17.5	14.0	19.0	15.0	16.5	13.0	16.5	14.5
23	14.5	11.0	18.0	14.0	18.0	14.0	19.0	15.5	16.0	13.0	17.0	14.5
24	12.5	11.5	18.5	15.0	18.0	14.5	19.0	15.5	16.5	13.0	16.5	14.0
25	13.0	11.0	19.0	15.5	17.5	14.0	19.0	15.5	16.5	13.5	16.5	14.0
26	14.0	10.5	18.5	15.0	17.5	14.0	19.0	15.0	16.0	13.0	17.0	14.5
27	14.5	11.0	18.5	14.5	15.5	14.5	19.0	15.5	15.5	13.0	16.5	14.5
28	15.5	11.0	18.0	14.5	14.5	13.5	20.0	16.0	15.0	12.0	16.5	14.5
29	16.0	12.0	17.0	14.0	16.0	13.0	20.0	16.0	15.0	12.0	16.0	14.0
30	16.5	12.5	16.5	13.5	18.0	13.5	20.0	16.5	16.0	12.5	16.5	14.0
31	---	---	17.0	13.0	---	---	20.0	16.0	15.5	12.5	---	---
MONTH	16.5	8.0	19.0	9.5	20.0	13.0	21.5	14.5	19.5	12.0	17.0	12.5

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 mi².

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,200 ft above National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE.--25 years, 504 ft³/s, 365,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft³/s, June 4, 1969, gage height, 9.82 ft; minimum daily, 12 ft³/s, Nov. 28-30, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 307 ft³/s, Mar. 4, gage height, 4.13 ft; minimum daily, 33 ft³/s, Nov. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	46	37	38	36	57	159	91	94	123	149	152
2	52	35	37	39	37	70	161	100	121	122	149	153
3	50	34	38	45	38	85	150	109	123	121	149	153
4	48	34	38	60	38	208	149	105	123	125	149	151
5	46	34	37	49	44	157	151	112	125	150	152	125
6	41	43	37	46	39	80	143	101	125	151	151	126
7	37	33	37	46	38	60	135	100	125	151	151	127
8	36	34	37	46	37	50	125	101	125	151	151	124
9	36	35	37	45	36	46	117	100	125	157	151	123
10	38	34	36	40	36	46	113	99	123	155	151	123
11	36	34	36	37	36	53	108	98	118	154	151	123
12	35	34	37	38	36	55	104	97	118	153	151	124
13	35	34	40	38	36	67	101	97	118	153	151	123
14	35	34	38	42	36	73	99	101	118	153	151	123
15	38	34	38	38	36	72	100	97	118	153	151	123
16	38	34	40	38	36	67	99	96	118	153	151	113
17	39	34	40	38	36	66	94	96	118	153	155	108
18	40	34	40	38	36	97	94	108	118	153	155	106
19	38	35	42	37	36	124	93	108	118	153	155	106
20	37	38	45	37	36	119	93	107	120	153	150	99
21	36	38	40	41	35	103	94	103	123	153	149	97
22	35	38	45	38	35	98	94	101	123	153	149	97
23	36	53	40	38	36	100	93	100	123	154	149	98
24	36	50	57	40	36	139	92	99	123	153	149	99
25	38	37	38	41	36	231	92	95	122	153	149	99
26	40	47	52	40	36	154	90	94	121	153	150	99
27	39	46	38	39	35	120	87	97	121	153	151	99
28	38	37	44	39	41	134	87	95	122	153	151	99
29	36	36	41	39	---	135	87	94	130	153	114	99
30	36	35	38	39	---	142	86	97	126	153	147	99
31	48	---	38	38	---	143	---	90	---	150	148	---
TOTAL	1223	1124	1238	1267	1029	3151	3290	3088	3625	4618	4630	3490
MEAN	39.5	37.5	39.9	40.9	36.7	102	110	99.6	121	149	149	116
MAX	52	53	57	60	44	231	161	112	130	157	155	153
MIN	35	33	36	37	35	46	86	90	94	121	114	97
AC-FT	2430	2230	2460	2510	2040	6250	6530	6130	7190	9160	9180	6920

CAL YR 1990 TOTAL 32228 MEAN 88.3 MAX 716 MIN 33 AC-FT 63920
WTR YR 1991 TOTAL 31773 MEAN 87.0 MAX 231 MIN 33 AC-FT 63020

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 mi².

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 National Geodetic Vertical Datum of 1929. 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, 172,100 acre-ft, June 16, gage height, 4,641.6 ft; minimum, 24,800 acre-ft, Jan. 31 to Feb. 3, gage height, 4,525.5 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65300	68000	37400	31900	24800	27600	73700	106900	151900	e160500	e135500	e109300
2	66200	66600	37400	31700	24800	28000	74000	107200	153900	e160300	e134800	e109200
3	66400	65100	37000	31500	24800	28800	74600	107200	156200	e160000	e134200	e108900
4	67300	63700	36600	31400	24900	38000	75600	107000	158600	e159700	e133900	e108400
5	68100	62200	36200	30700	25200	42500	77100	107800	160700	e159000	e133400	e107800
6	69200	60500	35900	29900	25300	45300	79000	109900	162100	e157800	e132500	e107400
7	70300	58900	35500	29200	25400	47400	81100	112400	163300	e156400	e131500	e107200
8	70900	57400	35400	28700	25400	49500	82400	116000	164500	e154900	e130700	e106900
9	71500	55900	35300	27900	25500	51600	83800	118400	166000	e153600	e129700	e106500
10	72000	54400	34900	27500	25500	53500	85200	119600	167500	e152400	e128800	e106100
11	72600	53000	34600	27200	25600	55400	86000	120400	169000	e151800	e128200	e105500
12	73200	51500	34300	27200	25600	56900	86500	121300	170200	e151200	e127400	e105000
13	74200	49900	34200	27200	25700	58500	87600	122300	171300	e150600	e126400	e104500
14	74900	48300	33900	27200	25700	59800	89200	123000	171900	e150200	e125300	e104300
15	75000	46800	33900	27100	25800	60900	90100	124200	172000	e149600	e124300	e104000
16	74600	45200	33900	26900	25900	61900	90700	126300	172100	e148700	e123300	e103600
17	74300	43700	33700	26700	26100	62800	91000	128100	172000	e147700	e122600	e103000
18	74100	42200	33400	26500	26100	63700	91400	128900	171500	e146800	e121900	e102500
19	73900	40700	33300	26500	26200	64400	91800	129500	170700	e146100	e121000	e101800
20	73800	39100	33100	26500	26200	65200	92900	129800	e169500	e145300	e120000	e101300
21	73800	38200	32900	26500	26300	65800	93900	130400	e168300	e145000	e118900	e100800
22	73400	38100	32800	26400	26400	66400	95000	132100	e167100	e144200	e117500	e100600
23	72900	38100	32800	26200	26400	67000	95800	134600	e166100	e143300	e116700	e100000
24	72500	38100	32800	26100	26400	67800	96800	137500	e164900	e142400	e116000	e99500
25	72000	38100	32800	26000	26500	68400	97700	140600	e163500	e141400	e115400	e98900
26	71400	38100	32600	26000	26500	69100	98400	143100	e162100	e140500	e114600	e98400
27	71200	38100	32400	26000	26600	69700	99700	145000	e160900	e139800	e113600	e97800
28	71100	38000	32200	25700	27100	70400	101400	146800	e160800	e139200	e112500	e97500
29	70500	37700	32200	25400	---	71100	103300	148500	e160900	e138400	e111300	e97100
30	69900	37400	32200	25100	---	72100	105600	150100	e160800	e137400	e110400	e96500
31	69300	---	32000	24800	---	73500	---	150700	---	e136500	e109600	---
MAX	75000	68000	37400	31900	27100	73500	105600	150700	172100	160500	135500	109300
MIN	65300	37400	32000	24800	24800	27600	73700	106900	151900	136500	109600	96500
a	4567.0	4538.5	4533.1	4525.5	4528.0	4570.6	4595.5	4627.4	4634.1	4617.6	4598.4	4588.8
b	+4100	-31900	-5400	-7200	+2300	+46400	+32100	+45100	+10100	-24300	-26900	-13100

CAL YR 1990 b -108000

WTR YR 1991 b +31300

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 mi².

PERIOD OF RECORD.--November 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,337.08 ft above National Geodetic Vertical Datum of 1929 (levels by city and county of San Francisco).

REMARKS.--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.

AVERAGE DISCHARGE (since diversion to Dion R. Holm powerplant).--31 years (water years 1961-91), 34.8 ft³/s, 25,210 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,210 ft³/s, July 10, 1974, gage height, 10.53 ft; minimum daily, 0.77 ft³/s, Dec. 1-4, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43 ft³/s, Mar. 4, gage height, 3.97 ft; minimum daily, 4.5 ft³/s, Feb. 20, Apr. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	e7.5	6.1	5.4	5.2	6.8	9.9	4.6	6.3	11	17	17
2	18	e6.8	6.1	5.2	5.4	6.2	9.8	4.6	6.1	16	17	17
3	17	e6.8	6.1	5.3	5.5	10	10	4.6	6.1	18	17	18
4	12	e6.8	6.1	5.5	5.5	23	10	5.2	6.2	18	17	18
5	8.3	e6.8	6.1	5.3	5.9	10	8.7	e5.5	6.4	18	17	18
6	8.3	e7.2	6.1	5.2	5.5	8.0	7.2	e5.5	6.4	18	17	e18
7	8.3	7.2	6.1	5.2	5.5	7.5	7.2	e5.2	6.3	18	17	e22
8	8.3	7.2	5.9	5.2	5.5	7.5	6.7	e5.2	6.1	17	17	e18
9	8.3	7.2	5.9	5.2	5.5	7.3	6.4	e5.2	6.1	17	17	e18
10	7.9	7.2	6.1	5.2	5.5	7.3	6.4	e5.2	6.4	16	17	e18
11	7.9	7.0	6.1	5.2	5.5	7.2	6.1	e5.2	6.3	19	17	e18
12	7.9	6.8	6.1	5.2	5.4	7.2	6.0	e4.9	e6.1	19	17	18
13	7.9	6.8	6.1	5.2	5.5	7.4	5.8	e4.9	e6.1	19	17	17
14	7.9	7.7	6.1	5.2	5.5	7.4	5.8	e4.9	e6.1	19	17	16
15	7.9	8.4	6.1	5.2	5.5	7.2	5.8	e4.9	e6.1	19	17	16
16	7.9	8.3	6.1	5.2	5.5	7.3	5.8	e5.3	e6.1	19	17	16
17	e7.9	8.3	5.8	5.2	5.5	7.4	5.5	4.9	e6.1	19	17	16
18	e7.9	8.3	5.8	5.2	5.5	7.6	5.5	5.0	e6.1	19	17	16
19	e7.9	8.3	5.8	5.2	6.0	7.6	5.5	5.0	e6.1	19	17	16
20	e7.9	8.3	5.8	5.2	4.5	7.6	5.4	4.9	6.1	19	17	16
21	e7.5	8.3	5.8	5.2	4.9	7.5	5.4	5.0	6.1	19	17	16
22	e7.5	8.3	5.6	5.2	5.8	7.6	5.4	5.1	6.1	19	17	16
23	e7.5	8.5	5.5	5.2	5.8	7.8	5.4	5.2	6.1	19	17	16
24	e7.5	8.7	5.6	5.2	5.8	8.4	5.2	5.8	6.1	18	17	16
25	e7.5	8.8	5.7	5.2	5.8	8.3	5.3	6.4	6.1	17	17	16
26	e7.5	8.7	5.8	5.2	5.8	7.9	5.2	6.4	6.1	17	17	16
27	e7.5	8.7	5.7	5.2	5.8	8.1	4.8	6.4	6.1	17	17	16
28	e7.5	8.7	5.7	5.2	6.1	8.1	4.5	6.4	6.1	17	17	16
29	e7.5	7.5	5.6	5.2	---	8.8	4.6	6.4	6.2	17	17	16
30	e7.5	6.4	5.6	5.2	---	9.1	4.6	6.4	6.1	17	17	16
31	e7.5	---	5.5	5.2	---	9.4	---	6.4	---	17	17	---
TOTAL	275.9	231.5	182.5	161.9	155.2	258.5	189.9	166.6	184.7	551	527	507
MEAN	8.90	7.72	5.89	5.22	5.54	8.34	6.33	5.37	6.16	17.8	17.0	16.9
MAX	18	8.8	6.1	5.5	6.1	23	10	6.4	6.4	19	17	22
MIN	7.5	6.4	5.5	5.2	4.5	6.2	4.5	4.6	6.1	11	17	16
AC-FT	547	459	362	321	308	513	377	330	366	1090	1050	1010

CAL YR 1990 TOTAL 3366.5 MEAN 9.22 MAX 19 MIN 4.4 AC-FT 6680
WTR YR 1991 TOTAL 3391.7 MEAN 9.29 MAX 23 MIN 4.5 AC-FT 6730

e Estimated.

11277500 LAKE ELEANOR NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'27", long 119°52'46", 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 mi².

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 National Geodetic Vertical Datum of 1929. 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, 17,100 acre-ft, July 10-19, gage height, 4,650.1 ft; minimum, 22 acre-ft, Jan. 3, 4, gage height, 4,615.3 ft.

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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16300	785	310	27	233	1110	2830	4300	6710	15700	16700	15200
2	15000	758	305	24	237	1280	2860	3990	6980	16000	16600	15200
3	14200	728	295	22	241	1640	2950	3570	7390	16200	16600	15100
4	13100	704	287	22	257	8080	3240	3330	7870	16400	16500	15100
5	12000	672	277	24	311	10300	3660	3520	8320	16600	16500	15000
6	10900	650	268	25	356	9950	3970	4180	8640	16800	16400	15000
7	9800	624	258	27	392	9200	4000	4890	8900	16900	16400	14900
8	8720	611	250	29	426	8410	3920	5750	9190	16900	16400	14900
9	7750	595	227	31	454	7620	3850	6030	9570	17000	16300	14800
10	6750	575	201	32	478	6770	3790	5580	10000	17100	16200	14800
11	5680	560	172	33	494	5840	3440	4980	10500	17100	16200	14700
12	4650	548	143	34	515	5000	3140	4370	10900	17100	16100	14700
13	3640	526	117	35	543	4290	3050	4170	11300	17100	16100	14700
14	2870	509	100	37	554	3610	3170	4200	11600	17100	16100	14600
15	2370	488	89	38	575	3060	3260	4140	11700	17100	16000	14600
16	2070	473	81	44	603	2700	3090	4220	11800	17100	16000	14500
17	1850	453	73	52	632	2500	2950	4530	11800	17100	15900	14500
18	1660	440	66	62	663	2400	2890	4390	11900	17100	15900	14400
19	1520	426	62	73	681	2320	2910	4060	12200	17100	15800	14400
20	1400	417	59	88	700	2250	2970	3770	12500	17000	15800	14400
21	1300	408	55	101	714	2150	3020	3630	12700	17000	15700	14300
22	1220	400	51	118	734	2080	3180	3810	12900	17000	15700	14300
23	1140	387	47	148	754	2060	3330	4320	13100	17000	15700	14200
24	1070	379	44	178	769	2120	3490	4850	13300	17000	15600	14200
25	1020	368	41	215	778	2160	3470	5460	13400	16900	15500	14100
26	972	364	38	231	785	2150	3270	5980	13600	16900	15500	14100
27	928	352	37	235	794	2130	3240	6190	13700	16900	15400	14000
28	887	341	36	237	896	2110	3350	6300	14000	16900	15400	14000
29	847	331	34	235	---	2180	3660	6470	14800	16800	15300	13900
30	818	321	32	235	---	2340	4070	6710	15300	16800	15300	13900
31	805	---	30	235	---	2590	---	6720	---	16700	15200	---
MAX	16300	785	310	237	896	10300	4070	6720	15300	17100	16700	15200
MIN	805	321	30	22	233	1110	2830	3330	6710	15700	15200	13900
a	4626.6	4625.5	4618.0	4625.1	4626.8	4630.3	4632.9	4637.1	4648.0	4649.7	4647.9	4646.4
b	-16195	-484	-291	+205	+661	+1694	+1480	+2650	+8580	+1400	-1500	-1300

CAL YR 1990 b -6
WTR YR 1991 b -3100

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

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map. November 1909 to November 1915, nonrecording gage and water-stage recorder at site 1 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. 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.

AVERAGE DISCHARGE (prior to diversion to Cherry Lake).--50 years (water years 1910-59), 223 ft³/s, 161,400 acre-ft/yr; 32 years (water years 1960-91), 81.7 ft³/s, 59,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s, Nov. 19, 1950, gage height, 14.95 ft, from rating curve extended above 1,600 ft³/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, 60 ft³/s, Mar. 4, gage height, 2.54 ft; minimum daily, 3.5 ft³/s, May 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	5.7	6.7	6.5	5.6	7.2	9.7	5.7	4.6	12	16	16
2	5.5	5.6	6.7	6.3	5.8	7.2	8.6	5.6	4.6	16	16	16
3	6.2	5.6	6.5	6.1	5.9	12	6.8	5.6	4.6	16	16	16
4	5.2	5.6	6.3	5.9	5.9	22	6.0	5.6	4.6	16	16	16
5	5.2	5.6	6.3	6.1	6.5	10	6.3	5.6	4.6	16	16	16
6	5.2	5.6	5.9	6.3	6.3	9.5	5.9	5.6	4.8	16	16	16
7	5.2	5.6	5.6	6.3	6.3	9.1	5.6	4.9	5.4	16	16	16
8	5.7	5.6	5.6	6.1	6.3	7.3	5.6	4.5	5.6	16	16	16
9	5.9	5.6	6.5	5.9	6.3	6.1	5.6	4.6	5.6	16	16	16
10	5.9	5.9	7.2	5.9	6.3	6.0	5.6	4.6	5.6	16	16	16
11	5.9	5.9	7.2	5.9	6.3	5.9	5.6	4.6	5.6	16	16	16
12	5.9	5.9	7.2	6.0	6.3	5.9	5.6	4.6	5.6	16	16	16
13	5.7	5.9	7.2	6.3	6.3	5.9	6.5	4.8	5.6	16	16	16
14	5.8	5.9	7.2	6.3	6.3	5.6	7.2	5.2	5.6	16	16	16
15	5.9	5.9	7.2	6.4	6.3	5.6	7.2	5.2	5.6	16	16	17
16	5.9	5.9	7.2	6.5	6.3	5.6	6.7	5.2	5.6	16	16	17
17	5.9	5.9	7.2	6.3	6.5	6.5	6.3	5.2	5.6	16	16	17
18	5.9	5.9	7.2	6.3	6.7	7.2	6.3	5.2	5.6	16	16	17
19	5.9	6.0	7.2	6.3	6.7	7.2	6.3	5.2	5.6	16	16	17
20	5.7	6.3	7.2	6.3	6.7	7.2	6.3	5.2	5.6	16	16	17
21	5.8	6.3	7.2	6.3	6.7	7.2	6.3	5.2	5.6	16	16	16
22	5.9	6.3	6.9	6.3	5.4	7.2	6.1	4.9	5.8	16	16	16
23	5.6	6.3	6.7	6.3	4.6	7.6	5.9	4.9	5.9	16	16	16
24	5.6	6.3	6.7	6.3	5.5	8.5	5.9	4.9	5.9	16	16	16
25	5.6	6.5	6.7	5.9	6.3	8.3	5.9	4.3	5.9	16	16	16
26	5.6	7.2	6.7	5.6	6.3	7.6	5.9	3.5	5.9	16	16	16
27	5.6	7.2	6.7	5.6	6.3	7.6	5.9	3.9	5.9	16	16	16
28	5.6	7.2	6.5	5.6	6.4	7.8	5.9	4.2	5.9	16	16	16
29	5.6	6.9	6.8	5.6	---	8.7	5.9	4.6	5.9	16	16	16
30	5.6	6.7	7.2	5.6	---	9.1	5.9	4.6	5.6	16	16	16
31	5.6	---	6.8	5.6	---	9.0	---	4.6	---	17	16	---
TOTAL	179.3	182.8	210.2	188.7	173.1	247.6	189.3	152.3	164.3	493	496	486
MEAN	5.78	6.09	6.78	6.09	6.18	7.99	6.31	4.91	5.48	15.9	16.0	16.2
MAX	8.7	7.2	7.2	6.5	6.7	22	9.7	5.7	5.9	17	16	17
MIN	5.2	5.6	5.6	5.6	4.6	5.6	5.6	3.5	4.6	12	16	16
AC-FT	356	363	417	374	343	491	375	302	326	978	984	964

CAL YR 1990 TOTAL 3747.5 MEAN 10.3 MAX 75 MIN 4.6 AC-FT 7430
WTR YR 1991 TOTAL 3162.6 MEAN 8.66 MAX 22 MIN 3.5 AC-FT 6270

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 National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE.--18 years (water years 1957-70, 1988-91), 45.3 ft³/s, 32,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 194 ft³/s, July 30, 1959; no flow at times in 1964, 1969, 1971, 1988-91.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.01	.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	.01	.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	.02	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.02	.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	.00	.00	.04	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.06	.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	.02	.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	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.001	.012	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.02	.09	.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	.06	.8	.00	.00	.00	.00	.00	.00

CAL YR 1990 TOTAL 0.09 MEAN .000 MAX .03 MIN .00 AC-FT .2
WTR YR 1991 TOTAL 0.41 MEAN .001 MAX .09 MIN .00 AC-FT .8

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 mi².

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,272.00 ft above National Geodetic Vertical Datum of 1929 (levels by city and county of San Francisco).

REMARKS.--Records good. 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.

AVERAGE DISCHARGE (since diversion to Dion R. Holm powerplant).--31 years (water years 1961-91), 134 ft³/s, 97,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft³/s, Feb. 1, 1963, gage height, 14.50 ft, from rating curve extended above 4,600 ft³/s; minimum daily, 0.30 ft³/s, Apr. 5, 6, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 289 ft³/s, Mar. 4, gage height, 4.97 ft; minimum daily, 11 ft³/s, Feb. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	15	13	14	12	33	114	32	19	15	31	30
2	22	14	13	14	13	29	101	33	19	30	31	30
3	23	14	13	14	14	47	100	33	18	34	31	30
4	20	14	13	17	13	138	109	32	18	34	31	30
5	14	14	13	14	19	89	125	30	18	34	31	30
6	12	14	13	13	14	48	118	29	17	34	31	31
7	12	14	13	14	13	34	104	28	17	34	31	32
8	12	14	13	14	13	28	93	25	18	34	31	32
9	13	14	13	14	13	24	83	25	17	33	31	31
10	13	14	13	14	13	24	79	25	17	32	30	31
11	13	14	14	14	13	27	66	24	17	34	30	31
12	13	14	14	14	13	25	57	23	16	35	30	31
13	13	14	14	14	12	30	54	23	16	35	31	31
14	13	13	14	14	13	28	56	27	16	35	31	e30
15	13	14	14	14	13	28	56	26	16	35	31	e30
16	13	15	14	14	13	25	52	24	16	35	31	e30
17	13	15	14	14	13	28	48	24	15	35	30	e30
18	13	15	14	13	13	40	45	28	15	34	30	e30
19	13	15	15	13	13	42	43	31	15	34	30	e30
20	13	17	15	13	13	37	42	29	15	35	30	e30
21	13	16	e14	13	12	33	46	27	15	35	30	e30
22	13	16	e13	13	12	32	47	25	15	34	30	e30
23	13	16	e14	13	12	35	47	23	15	34	30	e30
24	13	15	e14	13	11	54	41	22	15	34	30	e30
25	13	16	e14	13	12	69	42	22	14	32	30	e30
26	13	18	14	13	13	49	41	22	14	32	30	e30
27	13	16	14	13	13	44	38	20	15	32	30	e30
28	13	16	14	13	17	49	35	20	16	32	30	e30
29	13	16	14	12	---	55	33	20	18	32	30	e30
30	13	14	14	12	---	69	32	20	16	31	30	e30
31	14	---	14	12	---	87	---	20	---	32	30	---
TOTAL	447	446	425	419	368	1380	1947	792	488	1021	943	910
MEAN	14.4	14.9	13.7	13.5	13.1	44.5	64.9	25.5	16.3	32.9	30.4	30.3
MAX	32	18	15	17	19	138	125	33	19	35	31	32
MIN	12	13	13	12	11	24	32	20	14	15	30	30
AC-FT	887	885	843	831	730	2740	3860	1570	968	2030	1870	1800

CAL YR 1990 TOTAL 8478 MEAN 23.2 MAX 96 MIN 11 AC-FT 16820
WTR YR 1991 TOTAL 9586 MEAN 26.3 MAX 138 MIN 11 AC-FT 19010

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929 (levels by city and county of San Francisco).

REMARKS.--No estimated daily discharges. 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.

AVERAGE DISCHARGE.--28 years, 655 ft³/s, 474,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft³/s, Apr. 11, 1982, gage height, 15.36 ft, from rating curve extended above 4,400 ft³/s on basis of combined peak flow for Cherry Creek near Early Intake (station 11278300) and Dion R. Holm powerplant; minimum daily, 1.6 ft³/s, June 4, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 986 ft³/s, Apr. 1, gage height, 8.32 ft; minimum daily, 13 ft³/s, Feb. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	333	756	23	52	15	46	737	907	921	562	510	46
2	327	752	23	110	15	42	620	923	921	537	474	46
3	269	676	180	132	16	57	603	928	918	557	269	338
4	238	737	190	134	15	152	636	929	918	433	50	260
5	240	796	194	330	24	97	648	920	918	532	449	283
6	81	817	162	249	18	58	518	918	915	941	514	251
7	27	744	166	497	15	46	320	916	917	780	522	146
8	244	817	63	534	15	37	628	915	918	946	537	163
9	264	819	21	462	15	32	610	912	922	942	542	230
10	276	805	218	216	15	31	592	911	913	509	497	179
11	225	781	211	199	14	36	592	911	912	519	177	204
12	228	800	221	26	14	33	556	768	904	522	567	219
13	25	817	116	22	14	41	314	908	910	363	570	279
14	24	824	109	22	14	39	232	911	909	244	537	107
15	272	830	28	156	14	38	554	906	908	519	567	133
16	279	834	23	144	15	34	600	902	905	530	564	280
17	281	809	102	145	15	37	572	903	904	513	471	285
18	227	796	119	113	15	56	603	913	922	528	279	342
19	228	809	124	16	15	58	632	775	923	471	556	340
20	96	834	73	16	16	52	315	907	924	371	573	318
21	23	365	56	15	14	46	262	909	924	205	624	199
22	289	29	17	117	14	43	477	912	924	537	560	167
23	285	28	24	56	14	46	671	911	924	563	610	297
24	294	25	24	88	13	68	618	917	925	541	443	221
25	314	25	23	69	14	90	624	917	913	538	212	276
26	320	31	62	15	15	63	618	915	918	537	559	288
27	153	26	62	15	15	91	349	913	918	421	454	308
28	31	129	66	130	21	61	240	910	919	319	339	196
29	401	143	22	134	---	67	436	912	925	533	343	176
30	340	155	22	146	---	80	491	917	925	541	549	301
31	407	---	61	152	---	94	---	919	---	551	408	---
TOTAL	7041	16809	2805	4512	429	1771	15668	28035	27517	16605	14326	6878
MEAN	227	560	90.5	146	15.3	57.1	522	904	917	536	462	229
MAX	407	834	221	534	24	152	737	929	925	946	624	342
MIN	23	25	17	15	13	31	232	768	904	205	50	46
AC-FT	13970	33340	5560	8950	851	3510	31080	55610	54580	32940	28420	13640

CAL YR 1990 TOTAL 169837 MEAN 465 MAX 925 MIN 17 AC-FT 336900
WTR YR 1991 TOTAL 142396 MEAN 390 MAX 946 MIN 13 AC-FT 282400

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 mi².

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 National Geodetic Vertical Datum of 1929, 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.--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.

AVERAGE DISCHARGE.--68 years, 95.0 ft³/s, 68,830 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft³/s, Dec. 23, 1955, gage height, 11.9 ft, from floodmarks, present datum, from rating curve extended above 3,300 ft³/s on basis of slope-area measurements at gage heights 9.08 and 11.9 ft; minimum, 0.3 ft³/s, Aug 23, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1615	*1,030	*6.54				

Minimum daily, 2.9 ft³/s, Dec. 23, result of ice-effect.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4.6	6.6	6.3	6.6	7.0	69	157	169	154	32	8.6	5.5
2	e4.4	6.6	5.9	7.3	8.1	42	128	122	177	27	8.2	5.4
3	e4.1	6.1	6.2	8.5	8.9	116	131	102	178	24	8.1	5.4
4	e3.9	5.8	6.3	13	8.3	509	160	93	170	20	8.0	5.4
5	3.8	5.6	6.1	12	15	306	201	111	155	20	8.1	5.4
6	3.7	5.4	5.9	10	13	122	209	163	134	19	8.2	5.4
7	3.7	5.2	6.0	9.3	9.8	74	191	200	115	18	9.9	5.4
8	3.8	5.4	5.9	9.3	8.7	57	166	233	114	17	14	5.4
9	3.8	5.4	5.9	9.0	8.2	48	158	213	113	17	7.6	5.4
10	3.8	5.4	6.1	8.8	8.0	44	160	144	106	16	7.4	5.5
11	3.8	5.3	6.1	8.4	7.8	41	130	119	98	16	7.2	5.5
12	3.7	5.2	6.4	8.7	7.8	36	109	105	86	16	6.4	5.5
13	3.7	5.1	6.7	9.1	7.7	49	107	130	77	15	7.1	5.4
14	3.7	5.0	6.5	8.9	7.7	40	121	124	67	15	7.2	5.4
15	3.7	4.9	6.3	8.6	8.0	37	130	135	58	14	7.1	5.4
16	3.7	4.9	6.9	8.2	8.4	32	110	175	53	14	7.4	5.4
17	3.8	4.9	6.5	8.3	8.7	41	98	187	48	14	7.3	5.4
18	3.8	4.9	7.0	8.1	8.8	63	94	142	44	13	6.8	5.4
19	4.0	5.1	8.2	7.7	7.8	56	96	119	41	13	6.4	5.3
20	4.2	6.5	7.2	7.6	7.6	50	99	114	38	14	6.1	5.3
21	4.3	6.9	e5.8	7.5	7.4	44	99	109	35	15	6.0	5.2
22	4.3	6.2	e3.0	7.0	7.4	41	101	129	33	15	6.0	5.2
23	4.2	6.1	e2.9	7.1	7.5	46	104	198	31	13	5.8	5.2
24	7.2	5.9	e4.5	7.4	7.3	116	115	229	29	12	5.8	5.1
25	4.9	6.1	e5.2	7.1	7.2	134	110	232	28	11	5.6	5.0
26	4.2	9.6	e5.3	6.8	7.2	72	95	215	28	12	5.5	5.0
27	4.2	7.1	e6.1	6.8	7.4	59	96	187	27	11	5.5	5.0
28	4.2	6.3	7.0	6.7	18	64	109	172	35	9.2	5.5	4.9
29	4.2	6.6	6.6	6.7	---	74	132	176	53	9.8	5.5	4.9
30	4.2	6.5	6.2	6.9	---	101	159	164	42	9.4	5.5	4.8
31	4.6	---	6.2	7.3	---	127	---	144	---	8.9	5.5	---
TOTAL	128.2	176.6	187.2	254.7	244.7	2710	3875	4855	2367	480.3	219.3	158.5
MEAN	4.14	5.89	6.04	8.22	8.74	87.4	129	157	78.9	15.5	7.07	5.28
MAX	7.2	9.6	8.2	13	18	509	209	233	178	32	14	5.5
MIN	3.7	4.9	2.9	6.6	7.0	32	94	93	27	8.9	5.5	4.8
AC-FT	254	350	371	505	485	5380	7690	9630	4690	953	435	314

CAL YR 1990 TOTAL 11785.4 MEAN 32.3 MAX 162 MIN 2.9 AC-FT 23380
WTR YR 1991 TOTAL 15656.5 MEAN 42.9 MAX 509 MIN 2.9 AC-FT 31050

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation but small diversion upstream from station for irrigation. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--75 years, 76.4 ft³/s, 55,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,920 ft³/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 ft³/s on basis of slope-area measurement of peak flow; no flow at times in 1924, 1931, 1934, 1961, 1977, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 4	0145	*438	*4.28				

Minimum daily, 0.07 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.60	e.80	e1.5	2.2	2.3	22	69	116	242	45	4.1	.62
2	e.58	e.98	e1.4	2.3	2.8	17	55	86	300	37	4.3	.73
3	e.56	e1.5	e1.4	2.5	3.2	44	55	70	313	32	4.4	.59
4	e.54	e1.9	e1.5	3.8	2.9	158	62	65	315	29	4.6	.51
5	e.51	e1.7	e1.5	3.9	5.9	105	74	78	292	26	4.2	.41
6	e.50	e1.6	e1.4	3.2	5.2	40	80	119	253	24	3.8	.32
7	e.50	e1.5	e1.4	2.9	3.6	30	73	152	223	22	3.6	.26
8	e.50	e1.4	e1.4	3.0	3.3	25	68	196	220	20	3.5	.38
9	e.51	e1.4	e1.4	2.8	3.1	26	66	206	222	e18	3.0	.60
10	e.52	e1.4	e1.4	2.6	3.0	24	68	135	205	e16	2.8	.65
11	e.51	e1.5	e1.5	2.5	3.0	19	58	112	192	e16	2.7	.64
12	e.51	e1.5	e1.7	2.5	3.1	18	51	97	172	e15	2.4	.80
13	e.50	e1.4	2.1	2.9	3.1	37	51	122	151	e14	2.5	.56
14	e.50	1.3	2.1	2.8	3.1	20	55	118	127	e13	2.3	.44
15	e.49	1.2	1.8	2.6	3.3	18	59	136	108	e13	2.0	.38
16	e.49	1.2	1.7	2.3	3.5	16	54	187	97	e12	2.3	.31
17	e.48	1.2	1.8	2.6	3.7	23	47	216	84	e11	2.6	.45
18	e.51	1.2	2.0	2.5	3.9	52	46	156	77	10	2.4	.45
19	e.53	1.3	2.3	2.2	3.3	46	47	126	69	10	2.0	.36
20	e.57	1.5	2.0	2.1	3.3	34	49	122	61	9.7	1.5	.27
21	e.58	2.0	e1.8	2.5	3.3	24	51	122	56	13	1.3	.19
22	e.59	1.9	e1.4	1.9	3.3	21	48	156	51	14	1.3	.15
23	e.62	1.7	e1.2	1.8	3.3	23	52	e233	47	11	1.2	.19
24	e.90	1.5	e1.3	2.3	3.2	102	60	e268	44	9.2	1.2	.31
25	e.77	1.7	e1.5	2.3	3.3	121	62	e271	43	8.1	.97	.17
26	e.64	2.5	e1.7	2.1	3.3	43	53	e251	41	7.5	.80	.09
27	e.62	2.2	e1.9	2.0	3.4	32	54	e218	40	6.9	.69	.08
28	e.61	1.6	2.3	2.0	6.6	32	64	e200	53	6.4	.70	.07
29	e.60	e1.5	2.2	2.0	---	35	78	e204	77	5.9	.64	.08
30	e.60	e1.6	2.2	2.0	---	45	99	e190	62	5.3	.69	.11
31	e.61	---	2.1	2.2	---	54	---	e201	---	4.7	.64	---
TOTAL	17.55	45.68	52.9	77.3	98.3	1306	1808	4929	4237	484.7	71.13	11.17
MEAN	.57	1.52	1.71	2.49	3.51	42.1	60.3	159	141	15.6	2.29	.37
MAX	.90	2.5	2.3	3.9	6.6	158	99	271	315	45	4.6	.80
MIN	.48	.80	1.2	1.8	2.3	16	46	65	40	4.7	.64	.07
AC-FT	35	91	105	153	195	2590	3590	9780	8400	961	141	22

CAL YR 1990 TOTAL 9224.20 MEAN 25.3 MAX 206 MIN .04 AC-FT 18300
WTR YR 1991 TOTAL 13138.73 MEAN 36.0 MAX 315 MIN .07 AC-FT 26060

e Estimated.

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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,160 ft above National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE.--5 years, 58.3 ft³/s, 42,240 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,990 ft³/s, Mar. 8, 1989, gage height, 6.97 ft; minimum daily, 0.07 ft³/s, Sept. 9, 15-19, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2145	*1,190	*5.41	May 24	2315	876	4.72
May 8	2030	962	4.92	June 29	0530	321	3.02

Minimum daily, 0.36 ft³/s, Oct. 15, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.66	1.7	1.2	e2.3	e2.7	11	107	370	309	63	4.1	1.1
2	.57	1.5	1.1	e2.5	4.0	9.3	88	193	394	46	3.9	1.0
3	.49	1.2	1.2	e2.8	3.1	18	100	156	393	37	3.9	.92
4	.44	.95	1.2	e3.5	4.2	476	150	168	365	30	3.7	.84
5	.43	.87	1.1	e3.4	6.4	534	209	326	311	25	3.5	.76
6	.44	.81	1.1	e3.3	e6.0	156	228	542	246	22	3.5	.88
7	.43	.90	1.1	e3.1	e5.6	96	187	602	216	22	3.4	1.2
8	.40	.80	1.0	e2.9	e5.0	79	172	717	217	19	3.2	1.0
9	.40	.76	1.1	e2.5	e4.7	83	193	477	218	18	2.9	.98
10	.40	.77	1.1	e2.4	e4.6	66	204	251	205	16	2.7	1.1
11	.40	.75	1.7	e2.2	e4.6	52	142	207	190	15	2.6	1.1
12	.40	.73	1.6	e2.4	e4.5	49	123	189	175	14	2.5	.99
13	.43	.77	1.5	e2.7	4.4	39	147	288	160	13	2.6	.83
14	.41	.70	1.2	e2.9	e4.5	42	195	245	e132	12	2.6	.81
15	.36	.67	1.7	e3.0	e4.6	36	206	384	e113	11	2.7	.75
16	.39	.67	1.9	e3.1	e5.0	40	151	504	98	11	2.7	.66
17	.38	.67	1.6	e2.9	e5.2	33	138	420	85	9.9	2.5	.59
18	.36	.67	1.5	e3.0	e4.8	29	138	230	e72	9.4	2.4	.55
19	.60	1.1	1.7	e2.7	e4.7	33	154	185	e64	9.0	2.2	.51
20	.61	1.8	1.9	e2.6	e4.6	32	164	199	e54	11	2.0	.49
21	.67	1.4	e1.8	e2.6	e4.6	29	151	249	48	11	1.8	.49
22	.60	1.2	e1.7	e2.5	e4.6	31	170	420	44	9.3	1.6	.47
23	.53	1.0	e1.7	e2.5	e4.5	28	195	563	39	8.1	1.4	.43
24	.48	1.0	e1.7	e2.5	e4.4	27	235	616	35	7.3	1.4	.37
25	.45	1.1	e1.7	e2.5	e4.5	23	181	593	32	6.8	1.3	.37
26	.44	1.4	e1.8	e2.4	e4.7	29	149	481	30	6.5	1.2	.42
27	.45	1.4	e1.9	e2.4	e6.0	40	189	372	31	6.1	1.2	.39
28	.46	1.4	e2.1	e2.3	12	41	243	345	82	5.7	1.2	.40
29	.45	1.3	e2.4	e2.3	---	41	368	346	239	5.0	1.2	.41
30	.47	1.3	e2.3	e2.4	---	63	419	331	e106	4.6	1.1	.41
31	1.2	---	e2.2	e2.5	---	97	---	249	---	4.4	1.1	---
TOTAL	15.20	31.29	48.8	83.1	138.5	2362.3	5496	11218	4703	488.1	74.1	21.22
MEAN	.49	1.04	1.57	2.68	4.95	76.2	183	362	157	15.7	2.39	.71
MAX	1.2	1.8	2.4	3.5	12	534	419	717	394	63	4.1	1.2
MIN	.36	.67	1.0	2.2	2.7	9.3	88	156	30	4.4	1.1	.37
AC-FT	30	62	97	165	275	4690	10900	22250	9330	968	147	42

CAL YR 1990 TOTAL 16112.34 MEAN 44.1 MAX 331 MIN .19 AC-FT 31960
WTR YR 1991 TOTAL 24679.61 MEAN 67.6 MAX 717 MIN .36 AC-FT 48950

e Estimated.

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 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 4,575 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1987, at datum 1.00 ft higher.

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.

AVERAGE DISCHARGE.--5 years, 21.9 ft³/s, 15,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 348 ft³/s, Mar. 8, 1989, gage height, 4.13 ft; minimum daily, 0.25 ft³/s, Sept. 9, 10, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 175 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	unknown	*330	unknown	May 8	1945	235	3.80

Minimum daily, 0.56 ft³/s, Oct. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.73	2.8	e1.6	e1.7	e2.3	e9.6	e40	143	102	24	4.5	1.2
2	.66	1.8	e1.5	e1.8	2.9	e7.7	e53	98	104	20	4.1	1.2
3	.64	1.4	e1.3	e1.9	3.3	17	e45	84	101	18	3.9	1.1
4	.60	1.3	e1.4	3.1	3.0	e180	e53	93	94	16	3.9	1.0
5	.57	1.2	e1.4	3.7	9.0	e190	e63	127	85	15	3.8	.97
6	.57	1.1	e1.3	2.6	5.7	e80	e100	170	76	14	3.8	.99
7	.62	1.0	e1.3	2.6	4.0	e57	e90	188	69	13	3.7	1.7
8	.65	1.1	e1.3	2.6	3.7	e48	e80	205	66	12	3.4	1.4
9	.68	1.1	e1.2	2.3	3.4	e52	e84	178	63	12	3.2	1.2
10	.65	1.1	e1.3	2.2	3.4	e36	e90	139	57	11	3.0	1.1
11	.63	1.0	e1.3	2.3	3.4	e32	e83	119	53	11	2.9	1.1
12	.61	1.0	e2.0	2.5	3.3	e28	e75	117	48	11	2.7	1.1
13	.57	e1.0	e1.7	2.8	3.4	e27	e66	135	44	10	2.9	1.0
14	.58	e.94	e1.3	2.7	3.6	e25	e80	127	40	9.6	2.8	.98
15	.58	e.90	e1.4	2.6	3.9	e22	e93	151	36	9.3	2.9	.94
16	.56	e.90	e1.7	2.4	4.3	e24	e83	170	32	8.9	3.0	.89
17	.57	e.90	e2.0	2.4	4.2	e20	e75	158	30	8.7	2.6	.83
18	.57	e.90	e1.6	2.4	3.5	e17	e70	121	27	8.5	2.3	.78
19	.90	e1.2	e1.3	2.3	3.5	e18	e80	105	25	8.3	2.2	.75
20	1.0	e2.3	e1.6	2.1	3.4	e18	e85	106	23	8.9	2.1	.73
21	.84	e2.0	e1.6	2.2	e3.5	e16	e80	114	22	9.3	2.0	.71
22	.77	e1.5	e1.5	2.2	3.4	e17	e90	143	20	8.3	1.9	.70
23	.71	e1.3	e1.4	2.2	3.4	e15	e98	163	19	7.8	1.8	.68
24	.67	e1.3	e1.3	2.2	e3.1	e13	e110	172	19	7.4	1.6	.65
25	.63	e1.3	e1.3	2.1	3.2	e12	e92	169	18	6.6	1.5	.62
26	.61	e1.4	e1.3	2.1	3.1	e13	e88	152	18	6.3	1.4	.63
27	.61	e1.7	e1.4	2.0	3.3	e14	e110	135	18	6.0	1.4	.65
28	.61	e1.8	e1.6	2.0	e10	e15	e120	125	30	5.7	1.5	.66
29	.62	e1.7	e1.7	2.0	---	e20	e150	116	54	5.4	1.4	.66
30	.62	e1.6	e1.7	e2.1	---	e20	e200	117	32	5.1	1.4	.66
31	1.4	---	e1.7	2.3	---	e28	---	102	---	4.8	1.3	---
TOTAL	21.03	40.54	46.0	72.4	110.2	1091.3	2626	4242	1425	321.9	80.9	27.58
MEAN	.68	1.35	1.48	2.34	3.94	35.2	87.5	137	47.5	10.4	2.61	.92
MAX	1.4	2.8	2.0	3.7	10	190	200	205	104	24	4.5	1.7
MIN	.56	.90	1.2	1.7	2.3	7.7	40	84	18	4.8	1.3	.62
AC-FT	42	80	91	144	219	2160	5210	8410	2830	638	160	55

CAL YR 1990 TOTAL 7159.15 MEAN 19.6 MAX 108 MIN .36 AC-FT 14200
WTR YR 1991 TOTAL 10104.85 MEAN 27.7 MAX 205 MIN .56 AC-FT 20040

e Estimated.

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 mi².

PERIOD OF RECORD.--October 1959 to September 1983, October 1986 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,374.08 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No storage or diversion upstream from station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--29 years (water years 1960-83, 1987-91), 256 ft³/s, 185,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft³/s, Jan. 13, 1980, gage height, 21.47 ft, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement at gage height 21.40 ft; minimum daily, 1.2 ft³/s Sept. 11, 12, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2030	*1,770	*10.02				

Minimum daily, 3.9 ft³/s, Sept. 27-29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	8.2	8.4	9.1	10	109	321	644	434	125	12	5.7
2	4.9	9.9	7.9	9.4	11	69	283	452	506	96	12	5.6
3	4.7	8.5	7.7	10	14	138	296	374	505	e78	12	5.5
4	4.7	7.7	7.8	14	13	824	388	367	487	e63	11	5.2
5	4.5	7.3	7.7	14	28	882	494	498	449	e54	11	5.0
6	4.3	6.7	7.7	13	24	340	530	692	386	e54	11	4.8
7	4.3	6.4	7.6	12	17	207	480	803	344	e49	11	5.2
8	4.4	6.4	7.4	13	15	165	446	923	334	e45	11	5.2
9	4.5	6.5	7.4	12	14	162	464	767	332	e41	10	5.4
10	4.5	6.5	7.4	12	14	147	482	497	317	e37	9.7	5.1
11	4.5	6.4	7.7	11	14	120	378	439	298	e34	9.3	5.1
12	4.5	6.3	8.8	11	14	115	328	386	273	e32	9.1	5.2
13	4.4	6.2	9.4	12	13	122	351	494	252	e29	9.1	5.3
14	4.5	6.2	9.0	13	13	107	433	454	213	e27	9.3	5.1
15	4.5	6.2	9.1	12	14	105	469	528	181	e27	9.2	4.9
16	4.5	6.2	9.3	12	15	95	390	671	161	26	9.5	4.7
17	4.5	6.2	9.1	11	16	105	352	641	144	25	9.3	4.6
18	4.6	6.2	9.7	11	17	108	348	461	129	24	8.8	4.5
19	5.2	6.6	11	11	14	129	372	386	117	24	8.4	4.3
20	5.7	9.8	9.6	10	14	127	392	399	105	24	7.9	4.2
21	5.7	10	9.2	10	14	108	398	418	94	27	7.5	4.2
22	5.7	8.9	e8.4	9.3	14	95	422	535	87	25	7.1	4.2
23	5.6	8.3	e8.5	9.5	14	105	439	669	79	22	6.8	4.2
24	5.4	7.9	8.8	10	13	148	497	740	73	20	6.6	4.2
25	5.3	8.0	9.0	9.8	13	189	455	730	69	18	6.3	4.1
26	5.0	11	9.1	9.3	14	129	385	651	65	18	6.0	4.0
27	4.9	9.5	9.3	9.4	14	119	418	538	62	17	6.0	3.9
28	4.8	8.5	9.6	9.0	32	148	465	492	102	16	6.1	3.9
29	4.9	8.5	9.3	8.6	---	161	567	506	342	15	6.3	3.9
30	4.9	8.5	8.9	9.1	---	197	648	486	196	14	6.2	4.0
31	5.6	---	8.9	9.7	---	261	---	421	---	13	6.0	---
TOTAL	150.7	229.5	268.7	336.2	432	5836	12691	17062	7136	1119	271.5	141.2
MEAN	4.86	7.65	8.67	10.8	15.4	188	423	550	238	36.1	8.76	4.71
MAX	5.7	11	11	14	32	882	648	923	506	125	12	5.7
MIN	4.3	6.2	7.4	8.6	10	69	283	367	62	13	6.0	3.9
AC-FT	299	455	533	667	857	11580	25170	33840	14150	2220	539	280

CAL YR 1990 TOTAL 30958.0 MEAN 84.8 MAX 424 MIN 2.8 AC-FT 61410
WTR YR 1991 TOTAL 45673.8 MEAN 125 MAX 923 MIN 3.9 AC-FT 90590

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929 (levels by Boise-Cascade Corp.).

REMARKS.--No estimated daily discharges. Records good. No storage or diversion upstream from station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--22 years, 8.65 ft³/s, 6,270 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft³/s, Feb. 17, 1986, gage height, 7.03 ft, from rating curve extended above 1,100 ft³/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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1630	271	3.98	Mar. 24	2315	*660	*4.92

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	2.0	15	.78	.19	.04	.00	.00
2	.00	.00	.00	.00	.00	3.7	10	.75	.18	.03	.00	.00
3	.00	.00	.00	.00	.00	22	7.4	.81	.16	.02	.00	.00
4	.00	.00	.00	.00	.00	102	5.8	.74	.13	.02	.00	.00
5	.00	.00	.00	.00	.00	40	4.8	.67	.11	.02	.00	.00
6	.00	.00	.00	.00	.00	8.8	4.2	.66	.08	.01	.00	.00
7	.00	.00	.00	.00	.00	3.9	3.6	.57	.06	.01	.00	.00
8	.00	.00	.00	.00	.00	2.3	2.9	.57	.05	.01	.00	.00
9	.00	.00	.00	.00	.00	1.5	2.6	.52	.05	.01	.00	.00
10	.00	.00	.00	.00	.00	1.4	2.3	.56	.04	.01	.00	.00
11	.00	.00	.00	.00	.00	2.8	2.1	.53	.03	.00	.00	.00
12	.00	.00	.00	.00	.00	3.9	1.8	.72	.03	.00	.00	.00
13	.00	.00	.00	.00	.00	33	1.6	1.1	.03	.00	.00	.00
14	.00	.00	.00	.00	.00	23	1.5	1.3	.02	.00	.00	.00
15	.00	.00	.00	.00	.00	16	1.4	1.2	.02	.00	.00	.00
16	.00	.00	.00	.00	.00	10	1.3	1.0	.02	.00	.00	.00
17	.00	.00	.00	.00	.00	18	1.2	.96	.01	.00	.00	.00
18	.00	.00	.00	.00	.00	84	1.1	.97	.01	.00	.00	.00
19	.00	.00	.00	.00	.00	91	1.1	1.0	.01	.00	.00	.00
20	.00	.00	.00	.00	.00	75	1.1	1.0	.01	.00	.00	.00
21	.00	.00	.00	.00	.00	44	1.3	.99	.01	.00	.00	.00
22	.00	.00	.00	.00	.00	25	1.3	.87	.01	.00	.00	.00
23	.00	.00	.00	.00	.00	21	1.1	.62	.01	.00	.00	.00
24	.00	.00	.00	.00	.00	158	1.0	.49	.01	.00	.00	.00
25	.00	.00	.00	.00	.00	267	1.0	.40	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	89	.96	.38	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	49	.98	.31	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	38	.93	.24	.03	.00	.00	.00
29	.00	.00	.00	.00	---	32	.83	.20	.09	.00	.00	.00
30	.00	.00	.00	.00	---	25	.74	.20	.05	.00	.00	.00
31	.00	---	.00	.00	---	18	---	.21	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	1310.3	82.94	21.32	1.45	0.18	0.00	0.00
MEAN	.000	.000	.000	.000	.000	42.3	2.76	.69	.048	.006	.000	.000
MAX	.00	.00	.00	.00	.00	267	15	1.3	.19	.04	.00	.00
MIN	.00	.00	.00	.00	.00	1.4	.74	.20	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	2600	165	42	2.9	.4	.00	.00

CAL YR 1990 TOTAL 289.29 MEAN .79 MAX 14 MIN .00 AC-FT 574
WTR YR 1991 TOTAL 1416.19 MEAN 3.88 MAX 267 MIN .00 AC-FT 2810

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 mi².

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 National Geodetic Vertical Datum of 1929 (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, 1,138,000 acre-ft, June 18-21, elevation, 745.2 ft; minimum, 946,600 acre-ft, Sept. 30, elevation, 720.8 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	990500	976200	1013000	1020000	1003000	995100	1070000	1084000	1123000	1134000	1048000	967200
2	989800	977700	1013000	1020000	1001000	995800	1072000	1084000	1124000	1131000	1045000	964300
3	988200	978500	1014000	1020000	999600	998900	1076000	1083000	1127000	1128000	1042000	961300
4	984500	980000	1014000	1021000	998100	1004000	1079000	1084000	1129000	1126000	1038000	959100
5	981500	981500	1015000	1021000	997400	1008000	1082000	1084000	1130000	1124000	1035000	958300
6	979200	983000	1016000	1022000	997400	1010000	1086000	1084000	1132000	1122000	1032000	957600
7	979200	983700	1016000	1022000	996600	1011000	1088000	1085000	1133000	1122000	1029000	958300
8	978500	985200	1016000	1023000	995800	1012000	1092000	1088000	1132000	1122000	1025000	958300
9	978500	986700	1017000	1024000	995800	1012000	1095000	1090000	1132000	1120000	1022000	956900
10	979200	987500	1016000	1024000	995100	1013000	1098000	1091000	1132000	1116000	1020000	956900
11	979200	989000	1016000	1025000	995100	1013000	1100000	1092000	1131000	1112000	1017000	955400
12	977700	990500	1016000	1025000	995100	1013000	1101000	1094000	1132000	1110000	1015000	954600
13	973200	992000	1017000	1024000	994300	1016000	1101000	1095000	1134000	1108000	1012000	953200
14	971700	992800	1017000	1024000	995100	1015000	1103000	1096000	1136000	1107000	1008000	953200
15	968700	994300	1018000	1023000	995100	1016000	1103000	1097000	1135000	1103000	1007000	952400
16	968700	995100	1019000	1024000	995100	1017000	1104000	1100000	1136000	1101000	1005000	951000
17	969500	996600	1020000	1024000	994300	1018000	1104000	1101000	1137000	1097000	1003000	949500
18	970200	998100	1020000	1023000	994300	1020000	1104000	1101000	1138000	1092000	999600	950200
19	970200	999600	1021000	1023000	994300	1025000	1102000	1101000	1138000	1088000	997400	949500
20	971000	1001000	1021000	1022000	994300	1028000	1102000	1102000	1138000	1085000	992800	949500
21	971000	1003000	1020000	1021000	994300	1030000	1101000	1103000	1138000	1081000	989800	949500
22	971000	1004000	1020000	1020000	994300	1031000	1101000	1106000	1136000	1077000	987500	948800
23	971700	1005000	1020000	1019000	993600	1033000	1099000	1107000	1135000	1074000	986000	948000
24	971700	1007000	1020000	1018000	993600	1038000	1098000	1109000	1136000	1072000	983700	947300
25	972500	1007000	1020000	1017000	993600	1048000	1097000	1110000	1135000	1071000	981500	947300
26	973200	1008000	1020000	1014000	993600	1054000	1095000	1113000	1134000	1067000	980700	947300
27	974000	1010000	1020000	1013000	993600	1057000	1092000	1114000	1134000	1064000	979200	947300
28	974000	1010000	1020000	1011000	993600	1060000	1090000	1115000	1134000	1060000	977700	947300
29	974000	1011000	1020000	1009000	---	1062000	1087000	1118000	1134000	1056000	974000	947300
30	974700	1013000	1020000	1007000	---	1064000	1085000	1120000	1134000	1052000	971000	946600
31	974700	---	1020000	1005000	---	1067000	---	1122000	---	1050000	968700	---
MAX	990500	1013000	1021000	1025000	1003000	1067000	1104000	1122000	1138000	1134000	1048000	967200
MIN	968700	976200	1013000	1005000	993600	995100	1070000	1083000	1123000	1050000	968700	946600
a	724.6	729.7	730.6	734.4	727.1	736.5	738.8	743.3	744.8	734.4	723.8	720.8
b	-17300	+38300	+7000	-15000	-11400	+73400	+18000	+37000	+12000	-84000	-81300	-22100

CAL YR 1990 b -147000

WTR YR 1991 b -45400

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 National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE.--88 years, 412 ft³/s, 298,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,820 ft³/s, July 1, 1935; no flow at times most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	381	.69	.18	14	76	1.6	4.4	576	1180	1040	453	551
2	184	.70	.33	14	18	1.5	4.4	822	445	1190	632	654
3	292	.72	93	54	18	1.6	4.4	584	506	1090	700	590
4	545	.71	24	58	18	1.6	4.4	495	438	735	644	627
5	312	.72	67	13	18	94	4.4	563	433	783	700	635
6	351	.71	96	13	18	94	4.4	619	518	665	654	344
7	445	.72	24	13	18	81	4.3	407	612	170	1030	199
8	404	.72	9.6	13	18	85	4.4	300	1030	300	1300	127
9	202	.72	9.5	13	18	39	4.4	370	970	438	651	388
10	394	.73	118	13	18	1.3	4.4	406	850	619	697	701
11	381	.71	258	13	18	1.1	4.4	367	937	802	614	760
12	898	.71	120	246	18	66	4.6	258	514	781	589	491
13	940	.72	67	333	18	161	4.6	321	192	503	883	542
14	126	.71	.89	320	18	489	4.5	494	601	344	809	371
15	627	.74	.91	396	18	91	4.7	814	513	607	604	327
16	20	.73	.85	319	18	79	4.6	556	484	501	495	270
17	.76	.73	.88	358	18	23	4.6	316	479	792	450	531
18	.71	.74	.90	352	18	5.2	137	380	359	951	462	309
19	.69	.75	.94	514	18	5.1	847	404	491	656	717	437
20	.70	.74	289	342	17	5.2	589	380	363	685	1370	398
21	.71	.77	529	573	17	4.9	361	708	354	846	675	419
22	.71	.78	107	412	17	4.7	482	518	643	889	568	388
23	.71	.78	181	578	17	4.7	314	618	679	821	632	646
24	.72	.78	120	506	18	4.9	320	755	547	652	718	494
25	.72	.79	105	571	17	4.7	560	637	471	758	549	251
26	.72	.80	109	587	18	5.0	579	285	601	916	157	499
27	.70	.80	59	559	111	4.7	586	370	605	746	411	419
28	.69	.80	.54	500	31	4.7	582	407	830	761	601	182
29	.70	.40	.56	489	---	4.7	580	430	687	788	953	217
30	.70	.03	57	378	---	4.6	578	291	719	897	803	468
31	.76	---	52	235	---	4.5	---	703	---	671	658	---
TOTAL	6512.70	21.15	2501.08	8799	663	1378.3	6590.9	15154	18051	22397	21179	13235
MEAN	210	.70	80.7	284	23.7	44.5	220	489	602	722	683	441
MAX	940	.80	529	587	111	489	847	822	1180	1190	1370	760
MIN	.69	.03	.18	13	17	1.1	4.3	258	192	170	157	127
AC-FT	12920	42	4960	17450	1320	2730	13070	30060	35800	44420	42010	26250

CAL YR 1990 TOTAL 132034.54 MEAN 362 MAX 1160 MIN .03 AC-FT 261900

WTR YR 1991 TOTAL 116482.13 MEAN 319 MAX 1370 MIN .03 AC-FT 231000

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 National Geodetic Vertical Datum of 1929 (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.--Records good except those for April to September, which are poor. 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.

AVERAGE DISCHARGE.--93 years, 644 ft³/s, 466,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,400 ft³/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 1989-91.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	610	26	67	143	963	96	44	1240	1470	1280	1120	e1020
2	626	64	72	314	777	62	49	1650	1280	1400	1910	e1230
3	1180	20	72	489	787	62	96	1910	1120	1580	2000	e1310
4	1810	.00	75	267	864	20	141	1440	939	1130	1440	e1040
5	1420	.00	56	232	368	613	85	1510	1010	1540	1840	e450
6	724	.00	55	118	336	31	88	2030	1080	1690	2050	e112
7	8.7	.00	46	186	418	46	91	1950	1480	1260	1920	e110
8	.00	.00	120	142	385	62	83	1650	1660	1180	1790	e90
9	.00	.00	19	157	51	65	115	1740	1760	2140	1420	e325
10	43	.00	312	97	129	149	103	1390	1450	2960	e1580	e190
11	38	.00	259	158	94	121	624	1220	1580	2240	e1300	e310
12	478	.00	248	100	202	49	629	1010	1240	1950	e1620	e235
13	1510	.00	51	112	92	207	582	1530	474	884	e1700	e620
14	911	.00	91	88	112	698	691	1060	727	820	e2150	e270
15	949	1.2	33	105	100	174	1040	831	1800	2030	e1630	e250
16	.00	6.0	29	43	95	68	1330	867	1050	2200	e1310	e670
17	.00	.00	34	58	87	70	1240	1090	877	2580	e1610	e890
18	.00	.00	62	77	81	138	1280	1260	1340	2880	e1730	402
19	.00	4.2	208	88	86	110	1020	1190	1260	2030	e1520	377
20	.00	60	250	325	68	364	929	1570	1500	1430	e1970	417
21	.00	74	522	353	8.3	161	1240	711	1750	2400	e1820	246
22	.00	29	230	290	72	31	606	676	1920	1980	e1500	196
23	.00	15	262	388	75	85	1370	1020	1550	1750	e1320	271
24	.00	4.8	319	217	68	38	1680	1300	1030	1410	e1400	432
25	.00	.00	76	338	95	107	1180	1370	1620	892	e1210	371
26	.00	57	210	584	47	51	1300	1610	1840	e2650	e1010	277
27	.00	373	193	393	118	20	899	1810	1490	1990	e930	15
28	.00	583	231	447	50	19	1080	1630	1310	2130	e1500	372
29	.00	825	405	1150	---	17	1380	684	1040	2400	e2140	237
30	.00	441	326	914	---	20	1240	662	1280	2270	e1550	550
31	3.1	---	203	1000	---	60	---	947	---	1450	e1000	---
TOTAL	10310.80	2583.20	5136	9383	6628.3	3814	22235	40558	39927	56526	48990	13285
MEAN	333	86.1	166	303	237	123	741	1308	1331	1823	1580	443
MAX	1810	825	522	1150	963	698	1680	2030	1920	2960	2150	1310
MIN	.00	.00	19	43	8.3	17	44	662	474	820	930	15
AC-FT	20450	5120	10190	18610	13150	7570	44100	80450	79200	112100	97170	26350

CAL YR 1990 TOTAL 254311.00 MEAN 697 MAX 2660 MIN .00 AC-FT 504400
WTR YR 1991 TOTAL 259376.30 MEAN 711 MAX 2960 MIN .00 AC-FT 514500

e Estimated.

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 mi².

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 National Geodetic Vertical
Datum of 1929 (levels by Turlock Irrigation District).

REMARKS.--No estimated daily discharges. 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 210 ft³/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
following page.

AVERAGE DISCHARGE (River only).--21 years, 894 ft³/s, 647,700 acre-ft/yr.
(Combined river and canals).--21 years, 2,147 ft³/s, 1,556,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 10,400 ft³/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 ft³/s, May 26, 1983; minimum daily, 0.45 ft³/s, Nov. 2, 1970.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 1,780 ft³/s, Apr. 29, gage height, 7.17 ft; minimum
daily, 18 ft³/s, June 7.
Combined flow, maximum daily discharge, 3,860 ft³/s, July 18; minimum daily, 116 ft³/s, Mar. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	129	122	92	94	94	119	1120	32	23	23	22
2	25	128	124	92	95	95	120	667	27	22	24	22
3	26	124	122	92	96	94	121	284	27	20	23	21
4	25	126	122	92	96	97	122	241	60	21	23	25
5	27	127	123	92	95	98	122	239	140	24	23	24
6	26	128	123	92	95	97	122	166	20	24	23	19
7	26	129	123	92	95	93	122	127	18	24	23	20
8	25	125	123	92	95	92	122	132	19	24	22	20
9	19	126	123	92	96	92	122	139	20	24	22	21
10	19	125	123	91	96	92	122	146	24	24	24	21
11	19	125	123	91	96	92	122	128	26	24	24	21
12	23	124	123	91	96	92	122	128	25	25	24	21
13	26	126	99	91	96	92	123	127	25	25	24	21
14	29	131	92	91	96	92	120	134	26	25	22	21
15	80	131	92	91	96	92	124	157	25	25	22	22
16	227	129	92	94	95	92	137	212	25	25	23	22
17	237	129	92	97	95	93	232	630	25	25	23	22
18	229	129	92	96	96	94	231	642	26	28	23	21
19	231	129	92	96	96	94	234	641	26	28	22	21
20	227	126	92	96	97	94	237	622	25	25	23	22
21	229	124	95	96	96	94	245	260	25	26	23	21
22	226	124	92	97	96	94	602	235	26	25	23	21
23	231	124	92	93	96	94	606	248	26	25	23	21
24	230	128	92	94	96	94	621	253	27	25	23	22
25	235	130	92	95	96	96	614	140	25	25	23	21
26	236	130	93	95	96	97	658	127	24	38	24	22
27	236	127	95	94	96	96	1080	128	24	24	25	21
28	232	128	95	91	97	95	1100	123	23	24	26	22
29	232	128	95	92	---	94	1190	141	23	23	27	22
30	236	128	95	93	---	94	1130	138	23	23	25	21
31	137	---	92	94	---	95	---	91	---	23	23	---
TOTAL	4031	3817	3245	2887	2681	2914	10742	8566	887	766	725	643
MEAN	130	127	105	93.1	95.7	94.0	358	276	29.6	24.7	23.4	21.4
MAX	237	131	124	97	97	98	1190	1120	140	38	27	25
MIN	19	124	92	91	94	92	119	91	18	20	22	19
AC-FT	8000	7570	6440	5730	5320	5780	21310	16990	1760	1520	1440	1280

CAL YR 1990 TOTAL 36102 MEAN 98.9 MAX 599 MIN 16 AC-FT 71610
WTR YR 1991 TOTAL 41904 MEAN 115 MAX 1190 MIN 18 AC-FT 83120

11289651 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF TUOLUMNE RIVER, MODESTO CANAL NEAR LA GRANGE, AND TURLOCK CANAL NEAR LA GRANGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1020	156	189	249	1130	192	167	2940	2680	2340	1600	e1590
2	835	193	196	420	890	158	173	3140	1750	2610	2570	e1910
3	1500	145	287	635	901	158	221	2780	1650	2690	2720	e1920
4	2380	127	221	417	978	119	267	2180	1440	1890	2110	e1690
5	1760	128	246	337	481	805	211	2310	1580	2350	2560	e1110
6	1100	129	274	223	449	222	214	2810	1620	2380	2730	e475
7	480	130	193	291	531	220	217	2480	2110	1450	2970	e329
8	429	126	253	247	498	239	209	2080	2710	1500	3110	e237
9	221	127	151	262	165	196	241	2250	2750	2600	2090	e734
10	456	126	553	201	243	242	229	1940	2320	3600	e2300	e912
11	438	126	640	262	208	214	750	1710	2540	3070	e1940	e1090
12	1400	125	491	437	316	207	756	1400	1780	2760	e2230	e747
13	2480	127	217	536	206	460	710	1980	691	1410	e2610	e1180
14	1070	132	184	499	226	1280	815	1690	1350	1190	e2980	e662
15	1660	133	126	592	214	357	1170	1800	2340	2660	e2260	e599
16	247	136	122	456	208	239	1470	1630	1560	2730	e1830	e962
17	238	130	127	513	200	186	1480	2040	1380	3400	e2080	e1440
18	230	130	155	525	195	237	1650	2280	1720	3860	e2210	732
19	232	134	301	698	200	209	2100	2230	1780	2710	e2260	835
20	228	187	631	763	182	463	1750	2570	1890	2140	e3360	837
21	230	199	1150	1020	121	260	1850	1680	2130	3270	e2520	686
22	227	154	429	799	185	130	1690	1430	2590	2890	e2090	605
23	232	140	535	1060	188	184	2290	1890	2250	2600	e1970	938
24	231	134	531	817	182	137	2620	2310	1600	2090	e2140	948
25	236	131	273	1000	208	208	2350	2150	2120	1670	e1780	643
26	237	188	412	1280	161	153	2540	2020	2460	e3600	e1190	798
27	237	501	347	1050	325	121	2570	2310	2120	2760	e1370	455
28	233	712	327	1040	178	119	2760	2160	2160	2910	e2130	576
29	233	953	501	1730	---	116	3150	1250	1750	3210	e3120	476
30	237	569	478	1380	---	119	2950	1090	2020	3190	e2380	1040
31	141	---	347	1330	---	160	---	1740	---	2140	e1680	---
TOTAL	20878	6428	10887	21069	9969	8110	39570	64270	58841	79670	70890	27156
MEAN	673	214	351	680	356	262	1319	2073	1961	2570	2287	905
MAX	2480	953	1150	1730	1130	1280	3150	3140	2750	3860	3360	1920
MIN	141	125	122	201	121	116	167	1090	691	1190	1190	237
AC-FT	41410	12750	21590	41790	19770	16090	78490	127500	116700	158000	140600	53860

CAL YR 1990 TOTAL 422411 MEAN 1157 MAX 3680 MIN 122 AC-FT 837900
WTR YR 1991 TOTAL 417738 MEAN 1144 MAX 3860 MIN 116 AC-FT 828600

e Estimated.

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.--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, 19.5 °C, several days in June, July and September; minimum recorded, 9.0 °C, Dec. 23.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.0	13.5	12.0	11.0	10.0	9.5	10.5	10.0	11.5	10.0	11.5	10.5
2	16.0	13.0	11.5	10.5	10.0	9.5	10.5	10.0	11.0	10.5	11.5	10.5
3	16.0	13.0	11.5	10.5	10.0	9.5	10.5	10.5	11.5	10.5	11.0	10.5
4	16.0	13.0	11.5	10.5	10.0	9.5	11.5	10.5	11.5	10.5	11.5	11.0
5	15.5	13.0	11.5	10.5	10.0	9.5	11.0	11.0	12.0	11.0	11.5	10.0
6	16.0	13.5	11.5	10.5	10.0	9.5	11.0	10.5	12.0	10.5	11.5	9.5
7	15.5	12.5	11.5	10.5	10.5	9.5	11.0	10.5	11.5	10.5	11.5	10.0
8	15.0	12.0	11.0	10.5	10.5	9.5	11.0	11.0	12.0	10.5	12.0	10.5
9	15.5	12.0	11.5	10.5	10.5	9.5	11.5	11.0	11.5	10.5	11.5	10.5
10	15.5	12.5	11.5	10.5	10.5	10.0	11.5	10.5	11.5	10.5	12.0	10.5
11	15.5	12.0	11.5	10.0	10.5	10.0	11.0	10.5	11.5	10.5	12.0	10.5
12	15.0	12.0	11.5	10.5	11.0	10.5	11.5	10.5	11.5	10.5	11.5	10.5
13	15.0	12.0	11.5	10.5	10.5	10.5	11.0	11.0	12.0	10.5	11.5	10.0
14	15.0	12.0	11.0	10.5	10.5	10.0	11.0	10.5	11.5	10.5	11.0	10.0
15	13.5	11.5	11.0	10.5	10.0	10.0	10.5	10.5	11.5	10.5	11.0	10.0
16	13.0	12.0	11.0	10.5	10.0	9.5	11.0	10.5	12.0	11.0	11.5	10.0
17	13.0	11.5	11.5	10.5	10.0	9.5	11.0	10.0	12.0	10.5	10.5	10.0
18	12.0	12.0	11.5	10.5	10.0	9.5	11.5	10.5	12.0	10.5	10.5	10.0
19	12.5	11.5	11.0	10.5	10.0	9.5	11.0	10.5	12.0	10.5	11.5	10.0
20	12.5	11.5	11.0	10.0	10.0	9.5	11.0	10.0	12.0	10.5	11.5	10.0
21	12.5	11.5	10.5	10.0	10.0	9.5	11.0	10.0	12.0	10.5	11.0	10.0
22	12.5	11.5	10.5	10.0	10.5	9.5	11.0	10.0	12.0	10.5	11.5	10.0
23	12.5	11.5	10.5	9.5	10.0	9.0	11.0	10.0	12.0	10.5	12.0	10.5
24	12.5	11.5	10.5	9.5	10.5	9.5	11.0	10.0	12.0	10.5	11.5	11.0
25	12.5	11.5	10.5	10.0	10.5	10.0	11.0	10.0	12.5	10.5	11.5	10.5
26	12.5	11.5	10.5	10.0	10.5	9.5	11.0	10.0	12.0	10.5	11.0	9.5
27	12.5	11.5	10.0	9.5	11.0	9.5	11.0	10.0	11.0	11.0	11.5	9.5
28	12.0	11.5	10.0	9.5	10.5	10.0	11.0	10.0	11.5	10.5	12.0	10.0
29	12.0	11.0	10.0	9.5	10.5	10.0	11.0	10.0	---	---	12.5	10.5
30	12.0	11.0	10.0	9.5	11.0	10.0	11.0	10.0	---	---	13.5	11.0
31	11.5	11.5	---	---	11.0	10.0	11.0	10.0	---	---	13.5	11.0
MONTH	16.0	11.0	12.0	9.5	11.0	9.0	11.5	10.0	12.5	10.0	13.5	9.5

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.5	11.5	10.5	10.0	16.0	11.0	18.5	14.0	19.0	15.5	18.5	15.0
2	13.0	11.0	10.5	10.0	17.0	12.5	19.5	14.5	18.5	14.5	19.0	15.0
3	13.0	11.0	12.0	10.0	17.0	13.0	19.5	15.0	18.5	14.5	19.5	15.5
4	13.0	11.5	12.0	10.0	14.0	12.5	19.5	15.0	18.5	14.5	19.0	15.5
5	13.0	11.5	12.0	10.0	14.0	11.0	19.5	15.0	19.0	14.5	18.5	15.0
6	13.0	11.5	13.0	10.5	16.5	10.5	19.5	15.5	19.0	15.0	19.5	16.5
7	13.0	11.0	13.0	10.0	18.5	14.0	19.5	15.5	18.5	15.0	19.5	16.0
8	13.0	11.0	12.5	10.5	19.5	15.0	19.0	15.5	19.0	15.0	19.5	16.0
9	13.5	11.5	12.5	10.0	19.5	15.5	19.0	15.0	19.0	15.0	18.5	15.0
10	12.5	11.0	12.0	10.0	19.0	15.5	19.0	15.0	18.5	15.0	18.0	15.0
11	12.0	10.5	12.0	10.5	18.5	14.0	18.5	15.0	19.0	15.0	18.0	14.5
12	12.0	10.5	12.5	10.0	17.5	13.5	19.0	15.0	17.0	15.0	18.5	14.5
13	12.0	10.5	11.0	10.5	17.5	13.0	19.5	15.0	19.0	14.5	18.0	15.0
14	12.0	10.5	12.5	10.5	17.5	13.0	19.0	15.0	19.0	15.5	18.0	14.5
15	11.5	10.5	13.0	10.0	17.5	13.0	19.0	15.0	18.0	15.5	18.0	14.5
16	12.0	10.0	12.5	10.5	17.5	13.0	19.0	15.0	19.0	15.0	18.0	14.5
17	11.5	10.0	11.0	10.5	16.5	12.5	19.0	15.0	19.0	15.0	18.5	15.0
18	11.5	10.0	10.5	10.5	17.5	13.0	19.0	14.5	19.0	15.0	18.5	15.0
19	11.0	10.0	11.5	10.5	17.5	13.0	18.5	14.5	19.0	15.0	18.5	15.0
20	11.0	10.0	11.5	10.5	17.5	13.0	18.5	14.5	19.0	15.0	18.0	15.0
21	11.5	10.0	12.0	10.5	17.5	13.0	19.0	14.5	19.0	15.0	18.0	14.5
22	11.5	10.0	12.0	10.5	17.5	13.0	19.0	15.0	18.5	14.5	18.0	14.5
23	11.0	10.0	12.5	10.5	17.5	13.5	19.5	15.0	18.5	14.5	18.0	14.5
24	10.5	10.0	12.5	10.5	17.5	13.5	19.0	15.0	19.0	14.5	18.0	14.5
25	11.0	10.0	13.0	10.5	17.5	13.5	19.0	14.5	18.5	15.0	17.0	14.5
26	11.0	10.0	13.0	10.5	17.0	13.5	19.0	15.0	18.0	14.5	18.0	14.5
27	11.0	10.0	13.5	10.5	14.5	13.0	19.0	15.0	18.0	14.5	18.0	14.5
28	11.0	10.0	13.0	10.5	14.0	13.0	19.0	15.5	17.5	14.0	17.5	14.5
29	11.0	10.0	12.0	10.5	17.5	12.5	19.5	15.5	18.0	14.5	17.5	14.5
30	11.0	10.0	12.5	11.0	18.0	13.5	19.5	15.5	18.5	15.0	18.0	14.5
31	---	---	13.5	11.0	---	---	19.5	15.5	19.0	15.0	---	---
MONTH	13.5	10.0	13.5	10.0	19.5	10.5	19.5	14.0	19.0	14.0	19.5	14.5

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 mi².

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 National Geodetic Vertical Datum of 1929 (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.--Records good except for estimated daily discharges, which are poor. Flow regulated by reservoirs and powerplants upstream from station. In addition to diversions into Modesto and Turlock Canals (stations 11289000 and 11289500), there are diversions for irrigation of about 1,300 acres between station above La Grange Dam and at Modesto. See REMARKS for Tuolumne River below La Grange Dam (station 11289650). See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--52 years (water years 1896, 1941-91), 1,363 ft³/s, 987,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1895-96, 1941-91).--Maximum discharge observed, 57,000 ft³/s, Dec. 9, 1950, elevation, 69.19 ft; minimum, 56 ft³/s, Aug. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,830 ft³/s, Mar. 27, elevation, 42.74 ft; minimum daily, 66 ft³/s, June 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	281	187	e152	167	236	237	1250	217	e72	102	118
2	139	225	184	e152	178	183	228	1190	185	e82	95	125
3	123	198	187	e152	167	203	230	783	156	e81	106	117
4	116	194	191	e152	164	188	215	552	137	e80	104	114
5	110	192	190	e160	238	189	202	453	137	e80	108	110
6	114	191	188	e160	185	188	199	421	138	e80	113	100
7	116	196	188	e155	176	193	194	382	172	e86	119	101
8	125	198	184	e155	163	186	192	287	134	e100	111	96
9	126	195	183	e160	161	174	190	266	119	e116	104	104
10	118	189	186	e160	160	176	197	257	122	e92	106	110
11	117	188	204	e158	160	171	197	258	107	e78	107	127
12	105	190	190	e156	159	175	195	249	100	e82	115	133
13	114	191	191	e152	158	186	186	235	91	e130	118	132
14	111	194	186	e150	158	183	186	228	81	e120	127	125
15	124	202	176	e150	154	186	188	245	79	e120	129	129
16	128	195	171	e150	151	200	200	270	66	e130	127	120
17	173	190	169	e150	153	205	205	285	e70	116	130	132
18	258	191	170	e156	159	193	246	551	e73	106	126	120
19	280	192	177	e154	160	389	296	658	e80	97	115	118
20	275	197	175	e152	164	805	323	663	e72	104	120	116
21	277	197	171	e150	164	1180	355	651	e82	109	111	118
22	281	189	170	e150	164	531	366	493	e80	135	119	125
23	283	185	169	e142	157	331	516	377	e78	127	121	114
24	287	183	165	e140	155	302	606	362	e76	114	113	121
25	295	191	164	e140	152	592	646	353	e72	106	127	124
26	298	199	e160	e140	153	952	640	316	e80	120	125	130
27	295	200	e155	e150	167	1250	696	261	e73	111	122	123
28	291	196	e155	e170	200	814	1010	239	e80	113	121	134
29	287	192	e155	171	---	436	1160	224	e78	123	127	128
30	289	192	e155	164	---	325	1280	217	e80	126	120	116
31	308	---	e155	168	---	272	---	228	---	116	111	---
TOTAL	6118	5913	5451	4771	4647	11594	11581	13204	3115	3252	3599	3580
MEAN	197	197	176	154	166	374	386	426	104	105	116	119
MAX	308	281	204	171	238	1250	1280	1250	217	135	130	134
MIN	105	183	155	140	151	171	186	217	66	72	95	96
AC-FT	12140	11730	10810	9460	9220	23000	22970	26190	6180	6450	7140	7100

CAL YR 1990 TOTAL 71799 MEAN 197 MAX 589 MIN 100 AC-FT 142400
WTR YR 1991 TOTAL 76825 MEAN 210 MAX 1280 MIN 66 AC-FT 152400

e Estimated.

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.

SPECIFIC CONDUCTANCE: October 1988 to current year.

WATER TEMPERATURE: October 1988 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Water year 1989 to current year.

WATER TEMPERATURE: Water year 1989 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1985.

REMARKS.--Interruptions in record were due to malfunction of the recording instruments. 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, 546 microsiemens, June 24, 1991; 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, 546 microsiemens, June 24; minimum recorded, 54 microsiemens, Apr. 29 to May 3.

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

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	267	251	129	112	185	170	221	215	201	192	189	117
2	272	250	143	122	187	171	222	210	205	175	203	187
3	303	257	152	143	201	172	213	205	198	190	229	163
4	295	260	162	150	199	179	211	205	199	191	207	201
5	302	279	176	154	207	185	210	204	179	123	219	207
6	294	273	185	161	211	191	210	206	204	181	225	219
7	285	269	257	173	211	189	211	205	216	202	245	219
8	293	252	203	173	213	191	210	204	223	213	243	235
9	287	245	229	183	209	189	214	210	219	208	237	230
10	300	283	197	183	205	183	214	211	210	206	232	208
11	307	291	202	173	186	170	219	211	211	206	218	208
12	317	303	184	174	174	168	218	214	211	205	220	214
13	325	268	190	176	174	168	218	208	213	207	222	204
14	315	291	208	176	186	174	210	203	213	209	226	218
15	312	268	204	172	196	186	205	199	217	209	266	218
16	287	266	206	186	198	190	204	198	217	209	260	230
17	294	235	205	177	192	186	203	196	215	208	230	180
18	310	262	189	167	195	190	203	199	212	206	216	194
19	284	220	181	149	193	188	204	199	214	206	216	186
20	235	174	177	164	203	192	200	190	216	208	197	145
21	173	130	168	156	214	203	200	193	224	218	171	127
22	137	127	169	155	226	212	199	193	224	218	169	151
23	132	118	160	137	226	215	202	196	226	218	185	171
24	150	126	194	135	224	218	204	195	222	212	197	131
25	146	126	259	137	220	210	205	195	214	208	225	153
26	132	129	296	233	215	207	209	175	214	206	187	137
27	139	114	315	275	216	206	186	178	210	169	195	129
28	123	115	272	235	210	204	182	175	197	163	161	139
29	120	112	243	217	209	199	185	177	---	---	189	163
30	118	111	217	184	216	204	198	187	---	---	198	191
31	143	111	---	---	219	213	200	188	---	---	---	---
MONTH	325	111	315	112	226	168	222	175	226	123	---	---

11290000 TUOLUMNE RIVER AT MODESTO, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	58	54	276	168	433	279	315	261	319	239
2	---	---	58	54	303	171	307	281	265	245	369	243
3	---	---	68	54	327	187	297	271	288	206	328	232
4	---	---	86	66	329	201	319	261	296	230	340	232
5	---	---	108	86	328	215	337	279	292	220	388	234
6	---	---	122	104	346	196	461	269	300	234	321	241
7	---	---	136	124	332	194	309	235	316	256	338	245
8	---	---	158	136	340	190	287	247	366	258	404	252
9	---	---	163	152	375	204	335	253	278	254	352	252
10	---	---	165	153	255	215	290	257	389	240	311	243
11	---	---	173	163	297	243	294	244	379	239	359	235
12	---	---	177	163	389	243	318	278	371	241	374	235
13	---	---	185	166	418	252	316	244	323	215	388	232
14	---	---	185	169	428	254	282	242	265	201	388	246
15	---	---	173	169	468	260	314	246	331	221	357	231
16	189	179	183	165	447	243	357	248	413	221	502	265
17	187	179	193	167	427	273	423	227	337	225	484	344
18	189	177	174	138	491	265	425	249	256	220	428	238
19	175	159	138	81	423	283	501	243	316	232	383	253
20	163	137	79	71	384	270	473	228	388	234	379	229
21	137	129	85	71	384	296	464	248	272	206	372	238
22	143	127	95	77	474	310	474	182	292	204	416	238
23	157	108	106	86	512	326	320	186	244	196	406	243
24	106	82	117	102	546	316	342	226	260	214	401	241
25	86	80	131	118	530	322	256	226	252	203	413	245
26	80	76	136	131	482	308	268	228	227	203	400	288
27	80	74	199	137	410	306	309	254	331	209	384	242
28	82	60	161	143	315	229	281	235	309	221	357	235
29	64	54	240	151	345	223	271	251	359	225	421	205
30	62	54	250	158	331	257	283	243	344	226	394	248
31	---	---	256	162	---	---	265	243	348	242	---	---
MONTH	---	---	256	54	546	168	501	182	413	196	502	205

11290000 TUOLUMNE RIVER AT MODESTO, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	24.5	21.0	16.0	14.0	11.0	9.0	7.0	4.5	11.0	7.5	15.5	13.5
2	23.0	20.5	15.0	13.0	10.5	8.5	7.5	5.5	11.0	8.5	15.5	13.5
3	23.5	19.5	15.5	12.5	10.0	8.5	8.0	6.5	13.0	9.0	14.0	13.0
4	23.5	19.5	16.0	12.5	10.5	8.0	11.5	8.0	12.5	10.0	15.0	13.0
5	23.0	20.5	16.0	12.5	11.0	8.5	14.0	10.0	13.0	11.5	15.0	12.5
6	21.5	19.5	15.0	12.0	10.5	8.0	14.0	12.0	13.5	11.0	16.0	11.0
7	20.5	18.0	14.5	11.0	10.5	8.0	15.0	13.0	12.5	11.0	17.0	11.5
8	20.0	16.5	15.0	11.5	10.5	7.5	15.0	13.5	13.0	11.5	17.5	11.5
9	20.5	16.5	15.5	12.5	10.0	7.5	16.0	14.0	13.0	11.5	16.5	12.0
10	21.0	16.0	15.5	12.5	10.0	8.0	16.5	14.0	14.5	11.5	15.5	12.0
11	20.5	16.5	15.0	12.5	10.5	9.5	15.0	14.0	15.5	11.5	17.0	11.5
12	21.0	16.0	15.5	12.0	11.0	9.5	16.5	14.0	15.5	11.5	14.5	12.0
13	20.0	16.0	15.0	12.5	10.5	9.0	16.5	14.5	16.5	12.0	16.5	12.5
14	21.0	16.5	15.0	12.5	10.0	8.0	16.0	15.0	17.0	12.5	16.0	12.0
15	19.5	15.0	14.5	13.0	9.5	8.5	15.0	13.5	16.5	13.0	15.0	11.0
16	20.5	16.0	---	---	10.5	8.5	14.5	10.0	17.5	13.0	14.5	11.0
17	20.0	16.5	---	---	10.0	8.0	12.0	9.5	17.5	13.0	12.0	11.5
18	19.0	18.5	---	---	10.0	7.5	12.0	9.0	17.0	12.5	12.5	11.0
19	18.5	15.5	---	---	9.5	7.5	12.5	9.5	18.0	12.5	13.0	11.0
20	18.0	16.5	13.5	11.0	8.5	6.5	11.5	9.0	17.5	12.5	11.5	10.0
21	18.0	15.5	13.5	11.0	7.0	5.0	11.5	8.5	17.0	13.0	11.0	10.0
22	17.5	15.5	13.5	11.0	6.0	4.0	11.0	8.0	18.0	13.0	13.5	10.5
23	17.5	15.0	13.0	10.5	6.0	4.0	11.0	7.5	18.0	12.5	15.0	11.5
24	17.5	14.5	12.5	10.0	6.0	3.5	11.0	7.5	18.5	12.5	13.5	12.0
25	18.0	16.5	12.0	9.5	6.0	3.5	11.0	7.5	18.5	13.0	13.0	11.5
26	17.5	16.5	11.5	9.5	6.0	3.5	11.0	7.5	18.5	13.0	11.5	9.5
27	17.5	16.0	11.0	8.5	6.0	3.5	11.0	7.5	15.0	14.0	10.0	9.0
28	17.5	16.5	10.5	8.0	6.5	3.5	10.0	7.5	15.5	13.5	13.0	10.0
29	18.0	16.0	10.5	8.0	6.5	4.0	10.5	7.0	---	---	15.0	11.5
30	18.0	15.5	11.0	8.5	6.0	3.5	10.5	7.0	---	---	17.0	12.5
31	17.5	15.5	---	---	6.5	3.5	11.0	8.0	---	---	18.0	14.0
MONTH	24.5	14.5	---	---	11.0	3.5	16.5	4.5	18.5	7.5	18.0	9.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	17.5	14.0	14.5	13.5	26.5	19.5	32.0	22.0	31.0	23.0	28.5	21.5
2	19.0	13.5	14.5	12.5	27.5	21.0	33.5	24.5	30.0	21.5	29.0	22.0
3	20.5	14.5	15.0	12.5	27.5	21.0	34.5	26.0	29.0	21.5	29.5	23.0
4	21.0	15.5	17.0	13.5	28.0	20.5	34.5	26.5	29.0	21.0	29.5	23.0
5	21.5	16.0	19.0	15.5	27.0	20.0	34.5	26.0	28.5	21.0	30.0	23.5
6	20.0	16.0	20.5	17.0	27.5	19.5	33.0	25.0	28.5	21.0	28.0	23.5
7	19.5	14.5	22.0	18.0	28.0	20.5	32.0	23.5	29.5	22.0	28.5	22.0
8	20.0	14.0	22.5	18.0	29.5	21.0	31.5	23.5	30.0	22.5	28.5	22.0
9	21.5	15.0	21.5	16.5	31.0	22.0	30.5	23.0	30.5	22.5	26.0	20.5
10	20.0	15.0	22.0	16.0	31.0	23.5	31.5	23.0	30.5	22.5	26.0	19.5
11	18.0	12.5	21.5	17.0	32.5	23.5	31.5	23.0	31.0	23.5	26.0	20.0
12	19.5	13.0	22.5	17.0	31.5	24.0	32.0	23.0	27.5	23.0	26.5	20.5
13	21.5	14.0	19.5	17.0	31.0	22.0	31.5	23.0	29.5	23.0	27.0	21.0
14	21.5	15.0	22.0	16.0	29.5	21.5	31.5	23.0	29.0	23.5	26.5	20.5
15	18.5	14.5	24.0	17.5	30.5	21.0	30.0	22.5	29.5	23.5	27.0	20.5
16	20.0	13.5	23.5	18.5	29.0	20.0	30.5	22.5	29.0	22.5	27.5	21.0
17	20.5	14.5	20.0	17.5	29.0	20.0	30.0	22.0	28.5	22.0	27.5	21.5
18	20.5	15.0	17.5	17.0	29.0	20.5	31.0	22.0	28.5	21.5	28.0	21.5
19	19.5	16.0	17.5	15.5	29.0	20.0	31.0	23.0	29.0	21.5	28.0	22.0
20	18.5	16.5	16.0	13.5	29.0	19.5	30.5	22.5	28.5	21.5	27.5	21.5
21	20.0	16.0	18.0	15.0	28.0	19.5	31.0	22.5	28.5	21.0	27.0	21.0
22	20.5	16.5	21.0	17.0	27.5	18.5	31.0	23.5	27.5	21.0	27.0	21.0
23	18.5	16.0	23.0	18.5	28.0	18.5	31.0	23.5	28.0	20.5	27.0	21.0
24	16.5	15.5	24.0	20.0	27.5	18.5	30.5	23.0	29.0	21.5	27.0	21.0
25	16.0	14.0	24.5	20.5	28.0	18.5	31.0	22.5	28.0	21.0	25.0	21.5
26	16.0	14.0	24.5	20.0	25.5	19.0	31.5	23.0	27.0	20.5	26.5	21.0
27	16.5	14.0	25.0	19.5	23.0	19.5	32.0	23.5	25.5	19.5	24.5	20.5
28	16.0	14.0	25.5	19.5	22.0	20.0	31.5	23.5	27.0	19.0	25.5	20.0
29	16.0	13.5	24.0	19.5	26.0	19.0	32.0	24.5	28.0	21.5	26.0	20.5
30	16.0	13.5	23.5	19.5	29.0	19.5	32.5	25.0	28.5	22.0	27.0	21.0
31	---	---	24.0	18.0	---	---	31.5	24.5	28.0	21.5	---	---
MONTH	21.5	12.5	25.5	12.5	32.5	18.5	34.5	22.0	31.0	19.0	30.0	19.5

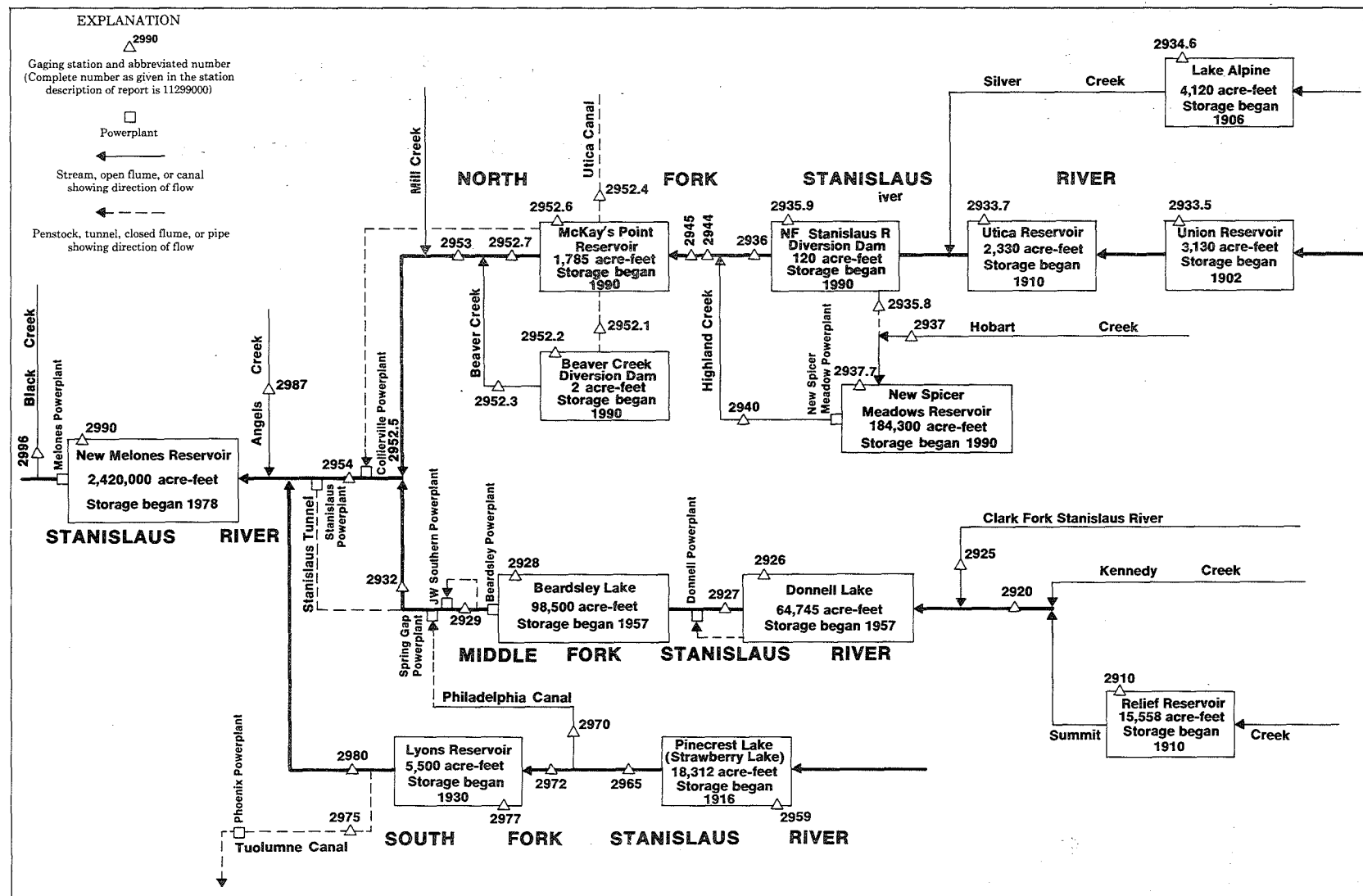


Figure 34. Diversions and storage in Stanislaus River basin.

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 upstream side of dam, 200 ft from left abutment of dam, 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 mi².

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. Elevation of gage is 7,340 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam completed in 1910. Usable capacity, 15,558 acre-ft between elevations 7,198.63 ft, invert of outlet, and 7,338 ft, top of flashboards in spillway. The spillway crest is at an elevation of 7,330 ft, or gage sloping distance of 13.7 ft. Figures given herein 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.

Capacity table (sloping distance, in feet, and contents, in acre-ft)
(Based on survey by Pacific Gas & Electric Co. in 1942)

160	0	60	6,259
140	55	40	9,197
120	579	20	12,639
100	1,863	4	15,726
80	3,815		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4527	---	---	---	---	---	---	---	---	---	14981	---
2	---	---	---	---	---	---	---	---	---	15554	14744	---
3	---	---	962	---	---	---	---	---	---	15554	14526	---
4	---	---	---	---	257	---	---	---	12879	15554	14308	---
5	---	1088	---	---	---	293	---	---	13172	15554	---	---
6	---	---	---	---	---	---	---	4865	13375	15554	13820	---
7	---	---	---	---	---	---	---	---	13468	15554	13579	---
8	3930	---	---	---	---	---	2217	---	13652	---	13357	---
9	---	---	---	---	---	---	---	---	13936	15516	13135	---
10	---	---	832	---	---	---	---	---	---	15516	12897	---
11	---	---	---	---	261	703	---	---	14625	15554	12676	---
12	---	---	---	---	---	---	---	---	14882	15554	---	---
13	---	1088	---	---	---	---	---	---	15217	15554	12140	---
14	---	---	---	442	---	---	---	---	15315	15554	11992	---
15	2885	---	---	---	---	---	2885	---	15315	---	11807	---
16	---	---	---	---	---	---	---	---	15315	15537	11598	5742
17	---	---	---	---	---	---	---	---	---	15516	11372	---
18	---	---	---	---	---	---	---	---	15217	15516	11170	---
19	---	1038	---	---	270	---	---	---	15157	15516	---	---
20	---	---	---	---	---	---	---	9437	15059	15554	10657	---
21	---	---	---	399	---	---	---	---	15059	15554	10482	---
22	1951	---	---	---	---	---	---	---	15079	---	10256	---
23	---	---	---	225	---	---	---	---	15138	15554	10083	4621
24	---	---	---	---	---	---	---	---	---	15537	9874	---
25	---	---	---	---	270	---	---	---	15079	15516	---	---
26	---	---	---	---	---	---	---	---	15138	15537	9421	---
27	---	---	---	---	---	---	---	---	15157	15496	9213	---
28	---	---	---	248	---	---	---	12860	15315	15516	9002	---
29	1190	---	---	---	---	---	3702	---	15554	---	8800	---
30	---	---	---	---	---	---	---	---	15554	15395	8641	3348
31	---	---	748	---	---	---	---	---	---	15177	---	---

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 mi².

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 National Geodetic Vertical Datum of 1929.

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.

AVERAGE DISCHARGE.--(unadjusted) 53 years, 133 ft³/s, 96,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,700 ft³/s, Nov. 20, 1950, gage height, 6.66 ft; maximum gage height, 6.67 ft, May 29, 1983; minimum daily, 7.1 ft³/s, Jan. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 630 ft³/s, May 30, gage height, 4.94 ft; minimum daily, 7.3 ft³/s, Feb. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	19	17	15	11	11	24	88	380	230	156	114
2	65	18	17	16	10	12	24	68	364	267	154	113
3	65	16	18	16	10	12	34	58	397	288	151	114
4	64	17	17	16	10	65	51	61	428	274	150	113
5	64	16	17	16	10	36	49	80	429	249	149	114
6	64	14	17	16	12	24	44	119	400	221	147	126
7	63	12	17	15	11	24	42	164	374	190	146	123
8	82	13	17	15	10	e22	41	223	376	171	144	116
9	97	12	17	15	9.6	20	44	170	403	158	143	114
10	95	12	17	15	9.2	20	44	120	433	128	142	113
11	94	12	18	15	8.9	e17	37	93	438	113	141	112
12	93	12	17	15	8.4	e17	34	81	432	118	141	111
13	93	14	16	15	8.2	e17	35	87	429	125	134	110
14	92	18	e17	15	8.2	e16	42	81	408	117	112	109
15	91	18	19	15	8.5	e16	44	98	378	104	124	108
16	90	18	e18	e14	8.5	e16	40	136	360	95	134	106
17	89	18	e17	14	8.5	e17	38	141	340	82	132	105
18	88	18	16	13	8.1	18	36	105	326	74	132	105
19	90	19	17	15	8.0	16	37	84	298	73	130	104
20	86	19	e13	15	7.7	15	38	77	239	109	129	103
21	85	18	e13	e14	7.7	15	40	78	190	92	128	102
22	76	18	e13	e13	7.7	15	43	110	192	82	127	101
23	70	18	e14	14	7.7	15	49	173	199	78	126	119
24	69	18	e15	e13	7.6	19	55	219	203	70	125	136
25	68	18	16	12	7.3	20	51	226	178	59	125	135
26	68	18	16	e12	7.4	18	49	315	147	57	124	120
27	67	18	16	e11	7.4	17	53	404	132	55	126	49
28	66	19	16	e11	8.2	16	59	408	117	49	120	132
29	43	18	15	e11	---	21	75	414	170	70	114	131
30	18	18	15	12	---	26	90	473	220	129	115	86
31	19	---	15	11	---	26	---	457	---	157	114	---
TOTAL	2270	496	503	435	246.8	619	1342	5411	9380	4084	4135	3344
MEAN	73.2	16.5	16.2	14.0	8.81	20.0	44.7	175	313	132	133	111
MAX	97	19	19	16	12	85	90	473	438	288	156	136
MIN	18	12	13	11	7.3	11	24	58	117	49	112	49
AC-FT	4500	984	998	863	490	1230	2660	10730	18610	8100	8200	6630

CAL YR 1990 TOTAL 26434 MEAN 72.4 MAX 290 MIN 12 AC-FT 52430
WTR YR 1991 TOTAL 32265.8 MEAN 88.4 MAX 473 MIN 7.3 AC-FT 64000

e Estimated.

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 2.8 mi northwest of Dardanelle.

DRAINAGE AREA.--67.5 mi².

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,507.3 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

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

AVERAGE DISCHARGE.--41 years, 150 ft³/s, 108,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,350 ft³/s, Nov. 20, 1950, gage height, 11.88 ft, from rating curve extended above 1,300 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 9.8 ft³/s, Sept. 11-15, 26-30, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 25	2000	675	5.25	June 11	2045	719	5.39
June 3	2100	*762	*5.52				

Minimum daily, 10 ft³/s, Dec. 22, 23, result of ice-effect.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	e20	23	e27	e14	18	46	149	321	140	33	20
2	16	e23	27	e28	e15	17	41	118	436	138	32	20
3	16	e18	25	e30	e16	20	47	108	535	129	31	20
4	16	e16	21	e29	17	170	67	117	574	120	30	20
5	16	e14	21	e28	18	111	97	164	536	110	30	20
6	16	e12	23	e28	17	56	99	227	469	93	30	31
7	16	e11	24	35	16	44	81	297	447	90	29	38
8	16	e12	25	29	16	41	79	408	460	82	28	24
9	16	e17	25	27	16	41	86	285	496	79	27	23
10	16	e15	20	26	16	36	90	208	539	73	27	23
11	16	e14	20	27	16	35	75	177	544	68	27	23
12	16	e15	19	26	16	35	69	169	536	64	26	21
13	16	e15	18	22	16	32	74	183	480	60	27	21
14	16	e15	16	18	17	37	90	166	383	57	27	20
15	16	16	e15	17	18	32	94	216	337	54	29	20
16	16	16	e13	16	19	44	80	298	297	52	28	20
17	16	16	e12	17	17	29	74	269	273	50	26	19
18	19	16	e13	17	16	29	72	196	254	48	25	19
19	22	18	19	16	17	29	77	172	226	50	24	18
20	18	18	e17	e14	16	28	79	161	195	60	24	18
21	e17	17	e14	e15	17	27	76	163	185	51	23	18
22	e15	31	e10	e14	17	27	79	234	176	47	22	18
23	e15	32	e10	e14	17	28	89	363	167	46	22	17
24	e15	34	e15	e15	16	28	106	462	152	42	21	17
25	e15	35	e19	e14	16	25	94	516	138	41	21	17
26	e15	18	e22	e14	17	37	87	465	132	39	21	18
27	e15	29	e25	e13	18	35	96	395	134	39	21	18
28	e15	30	e25	e13	20	33	101	393	138	39	21	18
29	e15	24	e27	e13	---	36	127	391	162	37	21	18
30	e15	20	e26	e13	---	38	147	335	137	35	21	17
31	e17	---	e24	e13	---	46	---	261	---	33	20	---
TOTAL	501	587	613	628	467	1244	2519	8071	9859	2072	794	614
MEAN	16.2	19.6	19.8	20.3	16.7	40.1	84.0	260	329	66.8	25.6	20.5
MAX	22	35	27	35	20	170	147	516	574	140	33	38
MIN	15	11	10	13	14	17	41	108	132	33	20	17
AC-FT	994	1160	1220	1250	926	2470	5000	16010	19560	4110	1570	1220

CAL YR 1990 TOTAL 25921 MEAN 71.0 MAX 353 MIN 10 AC-FT 51410
WTR YR 1991 TOTAL 27969 MEAN 76.6 MAX 574 MIN 10 AC-FT 55480

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929 (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, 84,900 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, 64,000 acre-ft, June 18, 19, gage height, 4,915.2 ft; minimum, 3,900 acre-ft, Apr. 18, gage height, 4,730.9 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20000	15600	12200	9830	10600	12000	13400	10900	44400	61500	47500	38000
2	19700	15200	12200	9860	10600	12000	12400	11100	45900	61400	46900	37900
3	19300	15300	12000	9720	10700	12200	11500	11200	47900	61400	46400	37500
4	19000	15300	11700	9410	10700	13600	10700	11400	50100	61400	46700	37100
5	18700	15000	11700	9460	10800	15200	10300	12400	52100	61200	46200	36700
6	18800	14500	11800	9470	10800	15700	9860	13600	53700	61000	45600	36300
7	19000	14100	11800	9510	10900	16000	9310	15400	55100	60600	45000	36700
8	18800	13700	11900	9620	10900	16300	8670	17600	56600	60100	44400	36900
9	18500	13300	11900	9670	11000	16500	8090	19200	58200	59500	43900	36600
10	18300	13300	12000	9730	11000	16800	7510	20100	60100	59000	43300	36200
11	17900	13300	12100	9780	11100	17000	6780	20600	61800	58300	43500	35700
12	17600	13000	12100	9840	11100	17200	5960	21100	63500	57500	43000	35300
13	17700	12600	12100	9900	11100	17400	5170	21900	63700	56800	42400	34900
14	17900	12200	12100	9950	11200	17600	4540	22200	63600	56500	41700	35100
15	17700	11900	12300	9950	11200	17700	4080	22900	63900	55900	41100	35300
16	17900	11500	12300	9950	11300	17900	4150	24300	63800	55300	40400	34900
17	18000	11500	12400	9950	11400	18000	4040	26200	63800	54700	40700	34500
18	17800	11600	12300	10000	11400	18200	3900	27600	64000	54100	41000	34200
19	17600	11600	12400	10100	11400	18400	4570	28800	64000	53500	40600	33800
20	17700	11700	12300	10100	11500	18500	5240	29200	63900	53000	40300	33300
21	17900	11800	11800	10100	11500	18600	5880	29100	63800	53300	39900	33500
22	17700	11800	11600	10200	11600	18800	6200	29600	63700	52900	39500	33700
23	17500	11700	11400	10200	11600	18900	7000	30800	63500	52300	39100	33300
24	17200	11800	11000	10300	11600	19100	7460	32500	63400	51700	39300	33900
25	16900	11900	10800	10300	11700	19100	7460	34300	63100	51000	39600	32500
26	16600	11900	10500	10400	11700	18300	7480	36100	62700	50300	39200	32100
27	16800	12000	10100	10400	11800	17500	8290	37700	62300	49600	38800	31600
28	16900	12000	9630	10400	11900	16400	9160	39200	61900	49800	38400	31700
29	16600	12100	9660	10500	---	15300	9550	40700	61800	49100	38000	32000
30	16300	12100	9710	10500	---	14300	10200	42100	61600	48500	37600	31600
31	15900	---	9770	10500	---	13800	---	43300	---	48000	37800	---
MAX	20000	15600	12400	10500	11900	19100	13400	43300	64000	61500	47500	38000
MIN	15900	11500	9630	9410	10600	12000	3900	10900	44400	48000	37600	31600
a	4780.2	4764.1	4756.1	4759.0	4764.1	4771.4	4757.7	4862.7	4909.6	4875.2	4847.4	4829.6
b	-4500	-3800	-2330	+730	+1400	+1900	-3600	+33100	+18300	-13600	-10200	-6200

CAL YR 1990 b +770

WTR YR 1991 b +11200

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 mi².

PERIOD OF RECORD.--February 1956 to current year. Prior to October 1965, published as Middle Fork Stanislaus River at Hells Half Acre bridge.

GAGE.--Water-stage recorder. Datum of gage is 3,418.31 ft above National Geodetic Vertical Datum of 1929 (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), and diversion around station through Donnell powerplant. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--35 years, 254 ft³/s, 184,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/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 ft³/s on basis of slope-area measurement at gage height 12.20 ft; minimum daily, 3.3 ft³/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 ft³/s by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,160 ft³/s, June 13, gage height, 6.69 ft; minimum daily, 19 ft³/s, many days December through February.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	23	20	19	19	35	106	227	174	53	36	38
2	22	21	20	19	20	32	99	172	176	47	40	38
3	22	21	20	20	21	55	104	150	169	43	39	38
4	22	21	20	21	20	351	130	152	156	40	39	38
5	22	21	20	20	26	222	169	205	140	38	38	37
6	22	21	20	19	22	90	183	272	123	37	38	39
7	22	20	20	19	21	63	165	303	110	35	38	39
8	21	20	20	20	21	54	158	336	102	34	38	38
9	21	20	20	20	21	53	162	279	96	47	37	37
10	21	20	20	19	20	51	165	216	89	47	37	37
11	21	20	20	19	20	48	126	193	82	46	37	37
12	21	20	20	19	20	45	111	178	128	45	36	37
13	21	20	20	19	20	47	119	213	722	44	37	36
14	21	20	20	19	20	44	146	205	775	43	36	36
15	21	20	21	19	20	43	158	237	402	42	36	36
16	21	20	20	19	20	41	136	272	486	41	36	36
17	21	20	20	19	20	43	122	261	395	41	35	35
18	21	20	20	19	21	45	116	207	244	40	35	35
19	22	20	22	19	21	46	123	188	247	40	35	35
20	21	22	21	19	20	44	132	201	201	43	40	35
21	21	20	20	19	20	42	131	214	77	43	40	35
22	21	20	22	19	20	42	145	240	70	41	40	34
23	21	20	22	19	20	43	158	285	54	39	40	34
24	21	20	20	19	20	50	177	302	50	38	39	34
25	21	20	20	19	20	50	167	294	52	37	39	35
26	21	22	20	19	20	48	148	258	47	37	38	35
27	21	20	20	19	20	47	160	224	46	36	38	34
28	21	20	19	19	24	49	170	207	55	36	38	34
29	21	20	19	19	---	55	207	194	93	35	38	34
30	21	20	19	19	---	66	225	222	63	37	38	34
31	22	---	19	19	---	83	---	182	---	36	38	---
TOTAL	660	612	624	595	577	2027	4418	7089	5624	1261	1169	1080
MEAN	21.3	20.4	20.1	19.2	20.6	65.4	147	229	187	40.7	37.7	36.0
MAX	22	23	22	21	26	351	225	336	775	53	40	39
MIN	21	20	19	19	19	32	99	150	46	34	35	34
AC-FT	1310	1210	1240	1180	1140	4020	8760	14060	11160	2500	2320	2140

CAL YR 1990 TOTAL 19228 MEAN 52.7 MAX 251 MIN 19 AC-FT 38140
WTR YR 1991 TOTAL 25736 MEAN 70.5 MAX 775 MIN 19 AC-FT 51050

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 mi².

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 National Geodetic Vertical Datum of 1929 (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 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, 73,700 acre-ft, July 15, gage height, 3,361.6 ft; minimum, 24,000 acre-ft, Feb. 27 to Mar. 2, minimum gage height, 3,270.3 ft, Feb. 28.

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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47000	50500	45600	27700	25700	24000	33300	40700	53200	70400	68600	53500
2	47200	50900	45500	27600	25700	24000	34000	40900	53800	70600	68400	52900
3	47500	50800	45400	27800	25600	24100	34700	41000	54400	70800	68200	52500
4	47700	50800	44900	28100	25500	24800	35500	41100	54900	71000	67200	52100
5	47900	51100	44000	28000	25500	25300	36300	40900	55300	71100	67000	51700
6	47900	51400	43000	27900	25400	25400	37200	41200	55600	71200	66700	51400
7	47800	51800	42100	27800	25400	25400	38000	41400	56000	71500	66500	50400
8	47900	52200	41100	27700	25300	25400	38700	41900	56300	71700	66300	49400
9	48100	52500	40100	27600	25200	25400	39600	42200	56800	71800	66000	49100
10	48300	52400	39100	27500	25200	25500	40400	42300	57100	71900	65900	48800
11	48500	52300	38200	27400	25100	25500	41100	42500	57300	72000	64900	48500
12	48800	52600	37200	27400	25000	25500	41800	42500	57700	72300	64600	48200
13	48700	52800	36200	27300	24900	25600	42400	42800	59100	73000	64500	47900
14	48600	53200	35300	27200	24900	25600	43100	43100	60700	73500	64200	46900
15	48800	53500	34300	27100	24800	25500	43800	43500	61700	73700	64000	46000
16	48500	54000	33300	27000	24700	25500	43800	44000	62800	73500	63900	45700
17	48200	53900	32300	26900	24700	25500	43800	43800	63700	73300	62800	45400
18	48200	53800	31600	26900	24600	25500	43800	43900	64200	73200	61700	45000
19	48400	53400	30700	26800	24500	25600	43100	43800	64800	73000	61300	44800
20	48300	52600	29900	26700	24500	25600	42500	44300	65300	72800	60900	44500
21	48300	51800	29500	26600	24400	25600	41800	45000	65600	71800	60400	43600
22	48400	51000	28800	26500	24300	25500	41500	45800	66400	71600	60100	42600
23	48400	50200	28200	26400	24300	25500	40900	46700	67100	71400	59700	42300
24	48600	49400	28000	26400	24200	25600	40900	47600	67600	71100	58600	42100
25	48700	48600	27900	26300	24100	25800	41200	48500	67700	70900	57600	41800
26	49000	47800	27800	26200	24100	26900	41200	49300	67900	70700	57200	41500
27	48900	47000	27900	26100	24000	27800	40600	49900	68100	70500	56800	41200
28	48800	46200	28100	26000	24000	29100	40000	50600	68400	69500	56400	40200
29	49100	45800	28000	26000	---	30400	40300	51300	69200	69300	56000	39300
30	49600	45700	27900	25900	---	31800	40500	52000	70100	69000	55600	39100
31	50100	---	27800	25800	---	32700	---	52600	---	68800	54500	---
MAX	50100	54000	45600	28100	25700	32700	43800	52600	70100	73700	68600	53500
MIN	47000	45700	27800	25800	24000	24000	33300	40700	53200	68800	54500	39100
a	3322.4	3314.3	3278.8	3274.4	3270.3	3289.0	3304.6	3326.8	3355.9	3354.0	3330.2	3301.8
b	+3300	-4400	-17900	-2000	-1800	+8700	+7800	+12100	+17500	-1300	-14300	-15400

CAL YR 1990 b -5300

WTR YR 1991 b -7700

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 Pinecrest.

DRAINAGE AREA.--316 mi².

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 National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Records good. Diversion from Beardsley Afterbay Dam, 0.5 mi upstream, to J.W. Southern powerplant, 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 Districts.

AVERAGE DISCHARGE (includes diversion to J.W. Southern powerplant).--34 years (water years 1958-91), 628 ft³/s, 455,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,080 ft³/s, May 30, 1983, gage height, 12.30 ft; minimum daily, 3.0 ft³/s, Oct. 10, 11, 1958.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 153 ft³/s, several days during June and July, gage height, 3.97 ft; minimum daily, 51 ft³/s, Nov. 16.
Combined flow, maximum daily discharge, 606 ft³/s, Aug. 15; minimum daily, 51 ft³/s, Nov. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	53	60	60	56	56	97	139	143	146	143	148
2	55	54	58	61	56	55	126	138	143	146	143	148
3	56	53	58	61	56	55	126	138	141	146	144	147
4	56	54	57	60	55	56	126	140	144	147	144	147
5	56	e54	58	59	55	56	125	141	146	146	144	148
6	57	e54	57	61	58	57	132	e139	147	147	144	147
7	57	e55	58	59	55	57	136	e139	146	147	143	145
8	58	e55	58	59	56	57	137	e140	147	146	144	148
9	57	e54	58	59	55	56	137	e140	146	145	143	148
10	56	e55	57	60	54	56	139	e140	145	147	143	148
11	55	e55	56	59	55	57	140	e140	147	146	143	148
12	54	e55	56	58	55	58	139	e140	147	145	143	148
13	54	e56	58	58	55	59	138	e140	145	144	142	148
14	54	e55	59	60	55	59	136	e140	148	144	142	147
15	56	54	59	59	53	59	139	e141	149	147	142	148
16	54	51	59	58	54	61	138	e142	148	145	142	147
17	57	53	58	60	54	61	139	e143	148	144	143	148
18	55	52	58	59	56	62	139	e144	148	143	145	147
19	53	53	58	58	54	61	137	e145	148	143	145	148
20	55	54	60	59	56	61	139	e145	148	146	146	148
21	54	54	63	59	53	60	140	e146	148	146	146	148
22	54	54	66	61	55	61	136	e146	149	145	146	148
23	54	54	65	61	54	61	138	e145	149	144	146	148
24	54	53	66	60	54	61	137	144	149	145	147	148
25	53	54	62	60	55	61	136	143	149	144	147	148
26	54	55	61	60	56	62	139	147	148	145	147	148
27	53	55	61	59	57	60	137	148	147	143	147	148
28	54	59	60	58	55	62	138	148	148	143	146	149
29	54	58	60	58	---	58	137	148	141	142	147	148
30	53	58	60	59	---	58	136	147	145	145	147	148
31	52	---	60	56	---	57	---	144	---	142	147	---
TOTAL	1700	1633	1844	1838	1542	1820	4039	4420	4397	4494	4481	4432
MEAN	54.8	54.4	59.5	59.3	55.1	58.7	135	143	147	145	145	148
MAX	58	59	66	61	58	62	140	148	149	147	147	149
MIN	52	51	56	56	53	55	97	138	141	142	142	145
AC-FT	3370	3240	3660	3650	3060	3610	8010	8770	8720	8910	8890	8790

CAL YR 1990 TOTAL 33135 MEAN 90.8 MAX 163 MIN 51 AC-FT 65720
WTR YR 1991 TOTAL 36640 MEAN 100 MAX 149 MIN 51 AC-FT 72680

e Estimated.

SAN JOAQUIN RIVER BASIN

11292901 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MIDDLE FORK STANISLAUS RIVER AND
J. W. SOUTHERN POWERPLANT BELOW BEARDSLEY DAM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	53	60	60	56	56	270	489	508	472	599	566
2	151	54	58	61	56	55	435	486	508	548	601	564
3	151	53	239	61	56	55	456	487	537	549	565	543
4	152	54	432	60	55	56	462	495	526	522	561	530
5	152	e54	497	59	55	56	158	494	552	553	596	534
6	58	e54	528	61	58	57	427	e496	554	507	596	531
7	57	e55	526	59	55	57	442	e507	551	405	602	534
8	115	e55	520	59	56	57	458	e509	502	551	600	538
9	153	e54	523	59	55	56	459	e508	498	550	605	529
10	153	e55	520	60	54	56	462	e508	548	554	570	511
11	150	e55	519	59	55	57	467	e508	556	552	576	541
12	131	e55	518	58	55	58	481	e508	551	504	596	537
13	54	e56	519	58	55	59	480	e508	548	245	600	528
14	54	e55	520	60	55	59	482	e508	553	182	601	519
15	125	54	520	59	53	59	484	e511	504	453	606	518
16	179	51	521	58	54	61	483	e509	506	581	599	515
17	187	53	513	60	54	61	485	e372	553	573	571	517
18	203	52	507	59	56	62	484	e256	552	576	567	453
19	148	266	507	58	54	61	482	e257	555	583	593	506
20	55	429	498	59	56	61	485	e428	555	550	582	506
21	54	429	492	59	53	60	486	e509	490	550	566	506
22	156	429	495	61	55	61	482	e510	250	589	559	506
23	205	429	483	61	54	61	484	e508	249	594	553	506
24	159	428	349	60	54	61	489	511	427	593	538	506
25	200	429	236	60	55	61	482	509	554	597	561	498
26	106	430	233	60	56	62	486	513	553	595	581	525
27	53	430	234	59	57	60	487	514	551	562	563	506
28	54	434	198	58	55	62	487	513	488	562	565	521
29	54	230	60	58	---	58	487	513	242	592	560	506
30	53	58	60	59	---	58	494	512	246	598	565	506
31	52	---	60	56	---	57	---	509	---	604	535	---
TOTAL	3684	5393	11945	1838	1542	1820	13706	14965	14767	16446	17932	15606
MEAN	119	180	385	59.3	55.1	58.7	457	483	492	531	578	520
MAX	205	434	528	61	58	62	494	514	556	604	606	566
MIN	52	51	58	56	53	55	158	256	242	182	535	453
AC-FT	7310	10700	23690	3650	3060	3610	27190	29680	29290	32620	35570	30950

CAL YR 1990 TOTAL 103013 MEAN 282 MAX 581 MIN 51 AC-FT 204300
WTR YR 1991 TOTAL 119644 MEAN 328 MAX 606 MIN 51 AC-FT 237300

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 70 ft³/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. 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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	40	27	28	27	28	28	30	52	---	---	55
2	55	28	27	29	28	27	29	32	53	---	---	46
3	55	28	28	29	28	27	30	28	---	---	56	31
4	56	29	29	29	28	27	33	25	---	---	53	---
5	56	30	32	29	28	27	38	28	---	---	---	---
6	55	30	32	29	28	26	29	48	---	62	---	---
7	55	30	31	29	28	26	28	54	---	58	---	54
8	55	29	29	28	28	26	28	52	55	---	---	53
9	55	29	30	29	28	26	28	55	55	---	---	53
10	55	28	28	29	28	26	29	56	---	---	56	55
11	57	27	28	29	28	26	27	55	---	---	55	56
12	56	27	28	29	28	27	30	54	---	---	---	54
13	55	27	29	28	28	27	29	55	---	54	---	52
14	54	27	28	28	28	27	31	55	---	53	---	53
15	54	28	27	27	28	27	33	54	54	---	---	53
16	55	28	28	27	28	27	32	53	55	---	---	53
17	56	28	28	27	28	26	31	53	---	---	57	53
18	56	27	28	27	28	26	29	52	---	---	55	53
19	56	30	27	27	28	27	31	51	---	---	---	54
20	56	35	28	27	28	27	32	53	---	55	---	54
21	62	30	28	27	28	27	32	53	---	55	---	53
22	59	29	29	27	28	27	30	52	54	---	---	53
23	55	29	29	27	28	27	30	51	54	---	---	53
24	54	28	28	27	28	26	33	52	---	---	55	53
25	55	27	28	27	28	27	31	52	---	---	55	53
26	55	27	28	27	28	26	29	54	---	---	---	54
27	54	27	28	27	28	26	31	54	---	54	---	52
28	53	27	28	27	28	27	31	53	---	54	---	52
29	54	28	28	27	---	28	30	53	54	---	---	52
30	56	28	28	27	---	27	30	54	55	---	---	52
31	54	---	29	27	---	27	---	51	---	---	53	---
TOTAL	1717	865	883	861	783	828	912	1522	---	---	---	---
MEAN	55.4	28.8	28.5	27.8	28.0	26.7	30.4	49.1	---	---	---	---
MAX	62	40	32	29	28	28	38	56	---	---	---	---
MIN	53	27	27	27	27	26	27	25	---	---	---	---
AC-FT	3410	1720	1750	1710	1550	1640	1810	3020	---	---	---	---

11293350 UNION RESERVOIR NEAR BIG MEADOWS, CA

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.

DRAINAGE AREA.--13.8 mi².

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 in the summer months. Datum of gage is 6,823.4 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete and rock dam completed in 1902. Usable capacity, 3,130 acre-ft between gage heights -1.9 ft, invert of outlet, and 26.9 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.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1954)

0	4	20	1,756
5	81	25	2,754
10	359	27.6	3,283
15	938		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES[illegible]

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.

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 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. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Stanislaus River basin.

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

[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.--Discharge computed as difference between flow at North Fork Stanislaus River diversion tunnel below Hobart Creek and Hobart Creek at North Fork Stanislaus River diversion tunnel outlet (station 11293700). Datum of tunnel invert is 6,684 ft above National Geodetic Vertical Datum of 1929 (levels by Calaveras County Water District).

REMARKS.--Records good except for estimated daily discharges, which are poor. 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, 479 ft³/s, Apr. 8, 1989; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	1.5	e.01	e.01	e.01	e.01	20	178	153	18	.00	6.1
2	e.03	1.1	e.01	e.01	e.01	e.01	18	95	222	11	.00	6.2
3	55	e.60	e.01	e.01	e.01	e.01	22	63	227	5.7	.00	6.2
4	27	e.45	e.01	e.01	e.01	85	35	94	218	2.2	.00	7.4
5	31	e.20	e.01	e.01	e.01	56	52	200	182	.23	.00	15
6	37	e.05	e.01	e.01	e.01	15	53	302	135	.01	.02	17
7	36	e.02	e.01	e.01	e.01	6.3	42	336	118	.01	.04	17
8	29	e.01	e.01	e.01	e.01	3.7	38	376	114	.01	.03	17
9	1.9	e.01	e.01	e.01	e.01	6.3	43	253	115	.01	.01	16
10	e.03	e.01	e.01	e.01	e.01	2.8	39	131	109	.01	.00	16
11	e.01	e.01	e.01	e.01	e.01	1.7	20	104	104	.01	.01	16
12	e.01	e.00	e.01	e.01	e.01	3.8	16	85	88	.01	.01	19
13	e.01	e.00	e.01	e.01	e.01	3.2	32	151	73	.01	.02	19
14	e.01	e.00	e.01	e.01	e.01	2.1	49	131	52	.01	3.9	19
15	e.01	e.00	e.01	e.01	e.01	1.6	48	180	38	.01	6.3	18
16	e.01	e.00	e.01	e.01	e.02	1.0	32	303	31	.01	6.3	18
17	e.01	e.00	e.01	e.01	e.02	1.1	25	283	27	.02	6.3	17
18	e.01	e.00	e.01	e.01	e.01	1.1	23	159	23	.01	6.5	16
19	e.01	e.00	e.01	e.01	e.02	.87	30	110	16	.01	6.6	16
20	e.01	e.01	e.01	e.01	e.01	.61	32	117	11	.00	6.6	15
21	e.01	e.01	e.01	e.01	e.09	.58	26	123	7.2	.02	6.6	14
22	e.01	e.01	e.01	e.01	e.04	.51	38	214	4.2	.02	6.6	14
23	e.01	e.01	e.01	e.01	e.03	.61	51	342	2.1	.01	6.6	14
24	e.01	e.01	e.01	e.01	e.27	.97	49	411	.31	.01	6.6	14
25	e.01	e.01	e.01	e.01	e.20	.68	30	369	.00	.01	6.7	14
26	e.01	e.01	e.01	e.01	e.10	.58	28	310	.00	.01	6.7	16
27	e.05	e.01	e.01	e.01	e.10	.47	43	220	.00	.01	6.6	16
28	.85	e.01	e.01	e.01	e.03	.43	54	204	.09	.00	6.6	15
29	.89	e.01	e.01	e.01	---	2.8	75	198	22	.01	6.6	14
30	.84	e.01	e.01	e.01	---	8.7	116	203	25	.01	6.6	13
31	1.8	---	e.01	e.01	---	17	---	143	---	.01	6.5	---
TOTAL	232.55	4.07	0.31	0.31	1.09	225.54	1179	6388	2116.90	37.40	115.34	440.9
MEAN	7.50	.14	.010	.010	.039	7.28	39.3	206	70.6	1.21	3.72	14.7
MAX	55	1.5	.01	.01	.27	85	116	411	227	18	6.7	19
MIN	.01	.00	.01	.01	.01	.01	16	63	.00	.00	.00	6.1
AC-FT	461	8.1	.6	.6	2.2	447	2340	12670	4200	74	229	875

CAL YR 1990 TOTAL 9447.89 MEAN 25.9 MAX 257 MIN .00 AC-FT 18740
WTR YR 1991 TOTAL 10741.41 MEAN 29.4 MAX 411 MIN .00 AC-FT 21310

e Estimated.

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.

GAGE.--Water-stage recorder. Prior to Sept. 14, 1990, contents estimated on basis of periodic observations of non-recording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (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 11293570). 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 122 acre-ft, Sept. 10, 11, 1990, elevation, 6,695.1 ft; minimum observed, 5 acre-ft, Feb. 1, 28, Mar. 1, 1990, elevation, 6,676.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 113 acre-ft, May 23, elevation, 6,694.4 ft; minimum, 11 acre-ft on many days from November to March, elevation, 6,678.9 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Calaveras County Water District in July 1989)

6,672	0	6,685	31	6,695	120
6,675	4	6,690	67	6,695.1	122
6,680	12				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	28	11	11	11	11	32	51	73	31	19	29
2	103	28	11	11	11	11	32	44	78	30	19	30
3	35	28	11	11	11	11	34	43	77	29	19	30
4	33	28	11	11	11	60	38	58	65	28	18	31
5	36	24	11	11	11	33	40	81	56	27	18	31
6	35	17	11	11	11	30	38	104	52	26	18	31
7	35	13	11	11	11	29	37	89	50	24	18	31
8	30	12	11	11	11	30	37	83	51	23	18	31
9	21	12	11	11	11	29	39	55	51	22	18	31
10	17	12	11	11	11	28	33	49	49	22	18	31
11	15	12	11	11	11	29	31	45	46	22	18	32
12	14	12	11	11	11	29	33	50	43	21	18	32
13	14	11	11	11	11	28	39	57	40	21	26	32
14	14	11	11	11	11	28	41	55	40	21	30	32
15	14	11	11	11	11	28	36	76	36	20	30	32
16	16	11	11	11	11	28	33	81	34	20	30	32
17	16	11	11	11	11	28	32	62	35	20	29	32
18	18	11	11	11	11	28	35	53	33	20	29	32
19	18	11	11	11	11	28	36	51	31	20	30	32
20	17	11	11	11	11	28	32	52	30	21	30	31
21	17	11	11	11	11	27	37	59	29	21	30	31
22	17	11	11	11	11	28	38	89	29	21	30	31
23	19	11	11	11	11	28	43	113	28	20	30	31
24	23	11	11	11	11	28	36	94	28	20	30	31
25	26	11	11	11	11	28	32	95	27	20	30	32
26	27	11	11	11	11	28	39	71	26	20	30	32
27	28	11	11	11	11	24	39	65	26	20	29	31
28	28	11	11	11	11	28	46	66	30	20	30	31
29	28	11	11	11	---	29	48	61	33	19	30	31
30	28	11	11	11	---	31	62	62	32	19	30	31
31	28	---	11	11	---	32	---	54	---	19	30	---
MAX	103	28	11	11	11	60	62	113	78	31	30	32
MIN	14	11	11	11	11	11	31	43	26	19	18	29
a	6684.1	6678.9	6678.9	6678.9	6678.9	6685.1	6689.5	6688.3	6685.1	6681.7	6684.4	6684.8
b	-6	-17	0	0	0	+21	+30	-8	-22	-13	+11	+1

WTR YR 1991 b -3

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

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. 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, 530 ft³/s, Apr. 21, 1989, gage height 5.12 ft; minimum daily, 2.8 ft³/s, Dec. 9, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26 ft³/s, Oct. 3, gage height, 3.14 ft; minimum daily, 2.8 ft³/s, Dec. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	14	3.1	3.2	e3.8	e8.1	e18	e22	e20	17	14	17
2	23	14	3.0	3.3	e4.2	e7.6	e18	e20	e22	17	14	17
3	22	14	3.0	e3.5	e4.2	e8.3	e18	e19	e22	17	14	17
4	16	14	3.0	e3.5	e4.2	e10	e19	e20	e22	17	14	17
5	16	14	e3.0	e3.6	e4.7	e20	e20	e22	e21	17	14	18
6	16	12	3.0	e3.6	e4.7	e18	e20	e23	e20	17	14	20
7	16	9.3	e3.0	e3.6	e4.5	e17	e19	e23	e20	16	13	20
8	16	7.8	3.0	e3.6	e4.5	e17	e19	e23	e20	16	13	18
9	14	7.2	2.8	e3.6	e4.5	e17	e19	e22	e19	15	13	18
10	11	7.0	3.0	e3.6	e4.5	e17	e19	e20	e19	15	13	18
11	10	7.0	e3.3	e3.7	e4.7	e17	e18	e19	e19	15	13	18
12	9.5	6.9	e3.2	e3.8	e4.6	e17	e18	e19	e19	14	13	18
13	9.1	6.8	e3.2	e4.0	e4.8	e17	e19	e21	e18	14	14	18
14	8.9	6.8	3.1	e4.0	e5.5	e17	e19	e20	e18	14	16	18
15	8.8	6.7	e3.0	e3.9	e6.2	e17	e19	e21	e17	14	17	19
16	9.4	6.5	e3.3	e3.9	e6.0	e17	e19	e23	e17	14	17	19
17	9.6	5.6	3.4	e3.9	e5.7	e17	e18	e23	e17	14	17	19
18	10	5.0	3.3	e3.9	e5.0	e17	e18	e21	e17	14	17	19
19	e11	e4.8	e3.1	e4.0	e4.7	e17	e18	e19	e17	14	17	19
20	11	e5.1	e3.2	e4.0	e4.9	e17	e18	e20	17	15	17	19
21	10	e4.0	e3.3	e3.9	e4.9	e17	e18	e20	17	15	17	18
22	10	e3.7	e3.4	e3.9	e4.9	e17	e19	e22	17	14	17	18
23	10	3.7	e3.7	e3.8	e4.8	e17	e19	e23	17	14	17	18
24	12	3.6	3.7	e3.9	e4.7	e17	e19	e24	16	14	17	18
25	13	e3.6	3.4	e4.0	e4.7	e17	e19	e23	16	14	17	18
26	13	3.9	3.4	e4.0	e4.9	e17	e19	e23	16	14	17	18
27	14	3.6	3.4	e4.0	e4.9	e17	e19	e22	16	14	17	19
28	14	3.3	3.4	e4.0	e6.2	e17	e19	e21	17	14	17	19
29	14	e3.2	3.2	e4.0	---	e18	e20	e22	18	14	17	19
30	14	3.2	3.2	e4.0	---	e18	e21	e22	18	14	17	19
31	14	---	2.9	e4.0	---	e19	---	e20	---	14	17	---
TOTAL	404.3	210.3	99.0	117.7	135.9	501.0	565	662	549	461	481	550
MEAN	13.0	7.01	3.19	3.80	4.85	16.2	18.8	21.4	18.3	14.9	15.5	18.3
MAX	23	14	3.7	4.0	6.2	20	21	24	22	17	17	20
MIN	8.8	3.2	2.8	3.2	3.8	7.6	18	19	16	14	13	17
AC-FT	802	417	196	233	270	994	1120	1310	1090	914	954	1090

CAL YR 1990 TOTAL 5335.9 MEAN 14.6 MAX 84 MIN 2.8 AC-FT 10580
WTR YR 1991 TOTAL 4736.2 MEAN 13.0 MAX 24 MIN 2.8 AC-FT 9390

e Estimated.

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 mi².

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

GAGE.--Water-stage recorder and culvert control. Elevation of gage is 6,680 ft above National Geodetic Vertical
 Datum of 1929, from topographic map.

REMARKS.--Records fair. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38 ft³/s, Mar. 28, 1989, gage height, 1.45 ft; no flow for
 many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May	7	1915	*20				*1.16

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.50	8.2	1.9	.25	.00	.00
2	.00	.00	.00	.00	.00	.00	.59	4.5	1.8	.16	.00	.00
3	.00	.00	.00	.00	.00	.00	.78	3.4	1.6	.11	.00	.00
4	.00	.00	.00	.00	.00	6.1	1.2	5.4	1.3	.09	.00	.00
5	.00	.00	.00	.00	.00	6.9	1.8	9.8	1.1	.07	.00	.00
6	.00	.00	.00	.00	.00	2.4	4.3	13	.91	.05	.00	.00
7	.00	.00	.00	.00	.00	.40	3.5	14	.76	e.04	.00	.00
8	.00	.00	.00	.00	.00	.25	2.7	14	.68	e.03	.00	.00
9	.00	.00	.00	.00	.00	.19	3.3	9.5	.61	e.03	.00	.00
10	.00	.00	.00	.00	.00	.17	4.1	6.5	.51	e.02	.00	.00
11	.00	.00	.00	.00	.00	.13	2.6	5.0	.44	e.02	.00	.00
12	.00	.00	.00	.00	.00	.12	2.1	5.1	.38	e.02	.00	.00
13	.00	.00	.00	.00	.00	.12	2.7	6.7	.35	e.01	.00	.00
14	.00	.00	.00	.00	.00	.10	4.0	6.9	.31	e.01	.00	.00
15	.00	.00	.00	.00	.00	.09	4.1	8.8	.26	e.01	.00	.00
16	.00	.00	.00	.00	.03	.08	2.9	9.2	.24	e.01	.00	.00
17	.00	.00	.00	.00	.00	.08	2.4	7.1	.21	e.01	.00	.00
18	.00	.00	.00	.00	.00	.08	2.3	4.2	.18	e.01	.00	.00
19	.00	.00	.00	.00	.07	.10	2.8	3.8	.15	e.01	.00	.00
20	.00	.00	.00	.00	.15	.12	3.1	4.4	.14	e.23	.00	.00
21	.00	.00	.00	.00	.15	.14	2.9	5.5	.13	.18	.00	.00
22	.00	.00	.00	.00	.36	.16	3.7	6.7	.11	.07	.00	.00
23	.00	.00	.00	.00	.61	.19	5.4	7.4	.10	.03	.00	.00
24	.00	.00	.00	.00	.83	.23	5.9	6.8	.09	e.02	.00	.00
25	.00	.00	.00	.00	.60	.27	4.3	5.8	.09	e.02	.00	.00
26	.00	.00	.00	.00	.10	.27	3.7	4.0	.08	e.01	.00	.00
27	.00	.00	.00	.00	.00	.26	5.3	3.0	.12	e.01	.00	.00
28	.00	.00	.00	.00	.00	.28	6.8	2.6	.28	e.01	.00	.00
29	.00	.00	.00	.00	---	.31	9.2	2.3	.62	e.01	.00	.00
30	.00	.00	.00	.00	---	.35	9.7	2.7	.36	e.01	.00	.00
31	.00	---	.00	.00	---	.41	---	2.0	---	e.01	.00	---
TOTAL	0.00	0.00	0.00	0.00	2.90	20.30	108.67	198.3	15.81	1.57	0.00	0.00
MEAN	.0000	.0000	.0000	.0000	.10	.65	3.62	6.40	.53	.051	.0000	.0000
MAX	.00	.00	.00	.00	.83	6.9	9.7	14	1.9	.25	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.50	2.0	.08	.01	.00	.00
AC-FT	.00	.00	.00	.00	5.8	40	216	393	31	3.1	.00	.00

CAL YR 1990 TOTAL 423.46 MEAN 1.16 MAX 11 MIN .00 AC-FT 840
 WTR YR 1991 TOTAL 347.55 MEAN .95 MAX 14 MIN .00 AC-FT 689

e Estimated.

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 eastsoutheast of Big Meadows.

DRAINAGE AREA.--45.4 mi².

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Vertical Geodetic Datum of 1929 (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, 130,506 acre-ft, June 9, 1990, elevation, 6,582.9 ft; minimum, 47,739 acre-ft, Mar. 1, 1991, elevation, 6,516.7 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 100,541 acre-ft, June 18, elevation, 6,563.7 ft; minimum, 47,739 acre-ft, Mar. 1, elevation, 6,516.7

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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82407	71962	65875	58495	52130	47739	49251	60152	89970	99817	90482	77780
2	81993	71547	65394	58277	51893	47830	49342	60544	91039	99811	89976	77321
3	81716	71547	65287	58038	51682	48012	49400	61004	92251	99831	89563	76837
4	81232	71409	65127	57825	51476	48931	49637	61596	93310	99709	89151	76174
5	81093	71201	64914	57588	51276	49489	50073	62579	94095	99456	88739	75722
6	80747	70717	64700	57446	51157	49586	50468	63861	94840	99251	88252	75171
7	80401	70509	64486	57113	51039	49670	50833	65287	95682	98909	87959	74709
8	80056	70371	64433	56757	50802	49778	51244	66815	96632	98549	87417	74285
9	79848	70095	64060	56615	50565	49749	51656	67724	97470	98284	86925	73801
10	79433	69680	63899	56496	50446	49849	51977	68319	98335	97951	86602	73376
11	79156	69612	63686	56282	50327	49804	52224	68817	98881	97872	86127	72885
12	78534	69345	63739	56141	50209	49856	52437	69394	99367	97651	85616	72398
13	78396	69270	63329	56022	50023	49905	52775	70133	99773	97278	85275	72049
14	77842	68918	63232	55927	49840	49955	53331	70973	100033	96982	84771	71394
15	77496	68811	62940	55667	49748	49882	53657	72059	100387	96557	84372	70960
16	77081	68491	62843	55333	49566	49794	53890	73372	100414	96106	84069	70307
17	76527	68437	62648	55096	49470	49716	54171	74496	100515	95766	83759	69571
18	76182	68277	62405	54894	49292	49690	54397	75272	100541	95418	83445	69086
19	75974	68224	62137	54716	49109	49643	54708	75929	100375	95057	82998	68579
20	75628	67850	61604	54480	48926	49547	54989	76481	100302	94851	82641	68123
21	75214	67637	61177	54361	48744	49401	55347	77169	100344	94589	82180	67772
22	74937	67423	61153	54124	48562	49313	55676	78232	100203	94338	81828	67480
23	74729	67370	60833	53910	48379	49201	56153	79839	100035	94050	81288	67166
24	74314	67156	60703	53768	48196	49256	56583	81628	99774	93885	80928	66762
25	74176	67103	60508	53554	48105	49261	56798	83233	99686	93539	80565	66320
26	73761	66836	60323	53317	48012	49296	57308	84389	99498	93226	80037	65913
27	73415	66729	59581	53198	47911	49280	57641	85569	99226	92776	79560	65566
28	73138	66569	59462	52961	47751	49279	58011	86563	99303	92246	79304	65315
29	72723	66142	58988	52723	---	49182	58719	87433	99549	91839	79126	65063
30	72308	66088	58806	52551	---	49088	59483	88186	99797	91450	78783	64615
31	72101	---	58632	52367	---	49214	---	89070	---	90910	78152	---
MAX	82407	71962	65875	58495	52130	49955	59483	89070	100541	99831	90482	77780
MIN	72101	66088	58632	52367	47751	47739	49251	60152	89970	90910	78152	64615
a	6542.0	6536.3	6528.7	6522.2	6516.8	6518.7	6529.5	6555.4	6563.2	6556.9	6546.7	6534.8
b	-10998	-6013	-7456	-6265	-4616	+1463	+10269	+29587	+10727	-8887	-12758	-13537

WTR YR 1991 b -18484

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 eastsoutheast of Big Meadows.

DRAINAGE AREA.--45.4 mi².

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 1930: 1953. WRD CA-89-3: Drainage area, 1987(M), 1988(M).

GAGE.--Acoustic-flow meter. Elevation of gage is 6,362 ft above National Geodetic Vertical Datum of 1929, 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 (station 11293770). Penstock diverts from New Spicer Meadow Reservoir to New Spicer Meadow powerplant. 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.

AVERAGE DISCHARGE.--39 years, 122 ft³/s, 88,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft³/s, Jan. 31, 1963, gage height, 11.88 ft, site and datum then in use, from rating curve extended above 1,200 ft³/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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,090 ft³/s, June 26; minimum daily, 18 ft³/s, for several days in May and June.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	271	88	142	104	105	72	51	21	19	112	220	249
2	264	88	151	104	105	66	56	22	19	115	206	260
3	267	86	124	97	105	79	71	22	19	115	199	279
4	211	84	99	90	103	46	50	22	19	115	198	278
5	161	89	99	88	89	22	32	22	19	124	260	277
6	148	100	98	86	94	42	21	22	19	128	245	250
7	156	102	99	93	100	57	21	22	19	132	198	220
8	196	102	98	98	100	54	21	22	18	137	250	219
9	201	104	98	97	100	48	21	22	18	138	256	225
10	204	100	98	96	100	36	21	22	37	141	219	247
11	202	100	98	95	100	38	21	22	59	148	221	244
12	165	100	97	95	100	38	21	22	50	148	225	247
13	149	105	98	94	100	26	20	23	50	148	227	260
14	164	106	98	94	101	41	20	20	50	148	219	273
15	234	105	97	94	97	79	20	18	50	148	202	273
16	234	106	98	93	93	87	21	19	50	149	187	333
17	234	105	97	94	98	91	21	19	78	152	187	368
18	130	106	123	93	98	91	20	19	99	152	187	340
19	166	105	249	93	96	100	20	19	99	156	189	319
20	161	106	305	94	97	91	20	20	99	166	217	281
21	163	101	164	93	96	91	21	34	99	167	248	214
22	154	98	96	92	97	89	20	45	98	168	248	202
23	150	98	94	94	96	88	21	31	103	178	224	202
24	149	98	93	94	97	89	21	18	113	183	200	202
25	136	98	91	101	96	89	21	18	113	181	224	244
26	134	98	150	104	97	86	21	18	128	199	204	264
27	139	103	193	102	96	84	21	19	113	246	152	186
28	139	105	143	102	96	77	21	19	96	271	144	152
29	143	116	100	103	---	67	21	19	75	253	143	152
30	191	134	99	105	---	66	22	19	78	259	190	268
31	125	---	102	104	---	65	---	19	---	250	249	---
TOTAL	5541	3036	3791	2986	2752	2095	779	679	1906	5127	6538	7528
MEAN	179	101	122	96.3	98.3	67.6	26.0	21.9	63.5	165	211	251
MAX	271	134	305	105	105	100	71	45	128	271	260	368
MIN	125	84	91	86	89	22	20	18	18	112	143	152
AC-FT	10990	6020	7520	5920	5460	4160	1550	1350	3780	10170	12970	14930
a	8930	4050	5540	4550	5460	4160	1550	1160	3750	10170	12970	14910

CAL YR 1990 TOTAL 44139 MEAN 121 MAX 514 MIN 21 AC-FT 87550
WTR YR 1991 TOTAL 42758 MEAN 117 MAX 368 MIN 18 AC-FT 84810

a Diversion, in acre-feet, through New Spicer Meadow powerplant, provided by Calaveras County Water District.

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 Dorrrington.

DRAINAGE AREA.--149 mi².

PERIOD OF RECORD.--January to September 1991.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,930 ft above National Geodetic Vertical Datum of 1929, 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 ft³/s, Mar. 4, 1991, gage height, 12.81 ft; minimum daily, 110 ft³/s, Feb. 6, 1991.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	e130	e170	e320	607	497	213	284	308
2	---	---	---	---	e130	e140	e290	417	520	217	270	309
3	---	---	---	---	e130	e300	e350	355	505	208	256	337
4	---	---	---	---	e140	e1300	410	390	468	201	255	337
5	---	---	---	---	e140	e300	494	596	418	198	283	337
6	---	---	---	---	e110	e230	481	804	365	204	337	335
7	---	---	---	---	e130	e210	435	867	324	200	257	281
8	---	---	---	---	e125	e200	411	928	306	206	268	278
9	---	---	---	---	e125	e190	432	726	293	207	345	271
10	---	---	---	---	e125	e175	444	518	275	201	278	306
11	---	---	---	---	e125	e150	335	458	299	214	276	306
12	---	---	---	---	e125	e150	299	424	259	213	282	305
13	---	---	---	---	e125	e155	345	543	240	211	287	309
14	---	---	---	---	e130	e130	441	507	218	208	278	331
15	---	---	---	---	e130	e170	466	628	198	208	274	332
16	---	---	---	---	e120	e190	382	742	185	206	245	344
17	---	---	---	---	e125	e190	337	687	179	208	244	432
18	---	---	---	---	e120	e200	317	502	219	209	244	391
19	---	---	---	---	e120	e200	357	442	211	212	246	424
20	---	---	---	---	e120	e190	390	465	205	234	252	344
21	---	---	---	---	e120	e180	384	523	199	237	308	292
22	---	---	---	---	e120	e180	413	656	193	227	308	260
23	---	---	---	---	e120	e210	442	799	188	235	301	258
24	---	---	---	---	e120	e220	490	824	201	244	258	258
25	---	---	---	---	e120	e210	419	798	201	240	263	266
26	---	---	---	---	e125	e190	354	690	208	250	297	352
27	---	---	---	---	e130	e200	411	590	194	286	211	275
28	---	---	---	---	e160	e205	458	546	237	332	194	203
29	---	---	---	---	---	e220	583	515	324	326	193	204
30	---	---	---	---	---	e250	617	636	216	306	199	248
31	---	---	---	---	---	e290	---	501	---	327	306	---
TOTAL	---	---	---	---	3540	7295	12307	18684	8345	7188	8299	9233
MEAN	---	---	---	---	126	235	410	603	278	232	268	308
MAX	---	---	---	---	160	1300	617	928	520	332	345	432
MIN	---	---	---	---	110	130	290	355	179	198	193	203
AC-FT	---	---	---	---	7020	14470	24410	37060	16550	14260	16460	18310

e Estimated.

SAN JOAQUIN RIVER BASIN

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1914 to September 1925, November 1928 to current year. Yearly discharge only for some years, 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 National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to September 1922, nonrecording gage at same site at datum 0.05 ft lower.

REMARKS.--No estimated daily discharges. Records good. 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.

AVERAGE DISCHARGE,--74 years, 419 ft³/s, 303,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft³/s, Jan. 31, 1963, gage height, 15.00 ft, from floodmarks, from rating curve extended above 14,000 ft³/s on basis of slope-area measurement at gage height 13.8 ft; minimum daily, 5.5 ft³/s, Dec. 6, 7, 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,290 ft³/s, Mar. 4, gage height, 6.27 ft; minimum daily, 104 ft³/s, Feb. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	316	148	153	124	115	163	325	602	462	189	253	271
2	277	123	169	125	122	106	281	394	493	196	241	272
3	314	120	178	124	122	187	330	327	478	186	226	297
4	275	118	127	117	120	1230	383	340	441	178	225	298
5	207	117	119	111	137	681	476	535	392	174	240	298
6	188	122	118	108	104	255	477	759	340	181	310	301
7	175	130	117	111	116	212	421	827	299	178	228	251
8	212	126	117	120	116	188	394	902	280	183	228	247
9	226	129	117	120	114	188	408	741	268	184	313	241
10	232	125	116	119	114	170	433	498	252	179	245	271
11	230	123	121	118	115	144	321	435	269	190	245	273
12	212	122	120	117	114	138	280	382	238	190	249	272
13	175	122	118	117	114	144	311	520	219	188	255	273
14	171	128	116	116	116	114	404	476	200	186	247	295
15	228	128	120	116	118	143	446	581	183	185	248	295
16	253	128	118	114	114	168	359	733	168	184	218	301
17	255	128	117	114	113	186	313	708	158	186	217	390
18	236	127	117	114	115	188	292	496	195	187	216	351
19	149	129	192	114	111	197	326	416	191	187	217	385
20	192	133	322	114	110	181	360	443	186	205	217	302
21	189	128	289	112	111	175	356	489	179	212	270	268
22	191	120	123	113	111	172	385	620	173	201	271	231
23	179	118	124	113	110	183	409	783	168	206	269	230
24	178	117	127	106	110	206	471	818	178	214	228	229
25	178	120	119	105	110	203	403	794	180	213	227	229
26	159	123	116	114	110	188	329	698	185	217	268	315
27	168	118	245	115	111	180	380	577	175	247	191	251
28	171	126	219	113	129	184	413	525	210	296	172	183
29	171	124	127	114	---	202	539	498	298	294	170	180
30	220	147	119	114	---	238	589	615	202	268	169	198
31	193	---	125	116	---	279	---	484	---	294	263	---
TOTAL	6520	3767	4525	3568	3222	7193	11614	18016	7660	6378	7336	8198
MEAN	210	126	146	115	115	232	387	581	255	206	237	273
MAX	316	148	322	125	137	1230	589	902	493	296	313	390
MIN	149	117	116	105	104	106	280	327	158	174	169	180
AC-FT	12930	7470	8980	7080	6390	14270	23040	35730	15190	12650	14550	16260
CAL YR 1990	TOTAL 82302		MEAN 225	MAX 608	MIN 92	AC-FT 163200						

11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1990 to September 1991 (discontinued).

INSTRUMENTATION.--Temperature recorder since June 1990.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 23.0 °C, July 5, 27-30, 1991; minimum recorded, 1.0 °C, several days in December 1990, January and March 1991.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 23.0 °C, July 5, 27-30; minimum recorded, 1.0 °C, several days in December, January and March.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA--Continued

WATER-QUALITY RECORDS

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

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 eastsoutheast of Arnold.

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,188.0 ft above National Geodetic Vertical Datum of 1929 (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, 138 ft³/s, May 8, 1991; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	20	109	64	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	16	82	61	.00	.00	.00
3	.00	.00	.00	.00	.00	21	21	66	54	.00	.00	.00
4	.00	.00	.00	.00	.00	58	32	68	43	.00	.00	.00
5	.00	.00	.00	.00	.00	.50	49	92	37	.00	.00	.00
6	.00	.00	.00	.00	.00	13	64	116	34	.00	.00	.00
7	.00	.00	.00	.00	.00	11	47	130	26	.00	.00	.00
8	.00	.00	.00	.00	.00	4.0	47	138	25	.00	.00	.00
9	.00	.00	.00	.00	.00	3.9	62	123	21	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	68	95	12	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	38	85	11	.00	.00	.10
12	.00	.00	.00	.00	.00	.00	38	71	7.6	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	39	85	3.7	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	62	79	3.4	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	73	90	1.6	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	55	104	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	44	106	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	41	87	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	44	78	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	50	82	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	61	81	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	70	91	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	76	106	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	85	114	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	83	113	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	64	102	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	74	88	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	83	79	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	99	72	16	.00	.00	.00
30	.00	.00	.00	.00	---	1.8	109	90	.00	.00	.00	.00
31	.00	---	.00	.00	---	7.7	---	77	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	120.90	1714	2899	420.30	0.00	0.00	0.10
MEAN	.0000	.0000	.0000	.0000	.0000	3.90	57.1	93.5	14.0	.0000	.0000	.003
MAX	.00	.00	.00	.00	.00	58	109	138	64	.00	.00	.10
MIN	.00	.00	.00	.00	.00	.00	16	66	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	240	3400	5750	834	.00	.00	.2

WTR YR 1991 TOTAL 5154.30 MEAN 14.1 MAX 138 MIN .00 AC-FT 10220

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 eastsoutheast of Arnold.

DRAINAGE AREA.--29.3 mi².

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Calaveras County Water District).

REMARKS.--Reservoir is formed by concrete gravity-type dam completed in July 1989. Usable capacity, 2 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. 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, 13 acre-ft, Mar. 4, 1991 and May 7, 1991, maximum elevation, 4,192.2 ft, Mar. 4, 1991; minimum, 7.3 acre-ft, Sept. 9-30, 1991, minimum elevation, 4,182.7 ft, Sept. 29, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 13 acre-ft, Mar. 4, May 7, maximum elevation, 4,192.2 ft, Mar. 4; minimum, 7.3 acre-ft, Sept. 9-30, minimum elevation, 4,182.7 ft, Sept. 29.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Calaveras County Water District in July 1989)

4,186	10	4,189	11	4,191.5	12
4,187	10	4,191	12		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	10	9.9	10	9.9	11	12	11	12	10	10	9.9
2	9.9	10	10	10	10	10	12	11	12	10	9.9	9.9
3	9.9	9.9	10	10	10	12	12	12	12	10	10	9.9
4	9.9	9.9	10	10	10	13	11	12	11	10	9.9	9.9
5	9.9	9.9	9.9	10	10	11	12	12	12	10	10	9.9
6	9.9	9.9	10	10	10	12	12	12	12	10	10	9.9
7	9.9	9.9	10	10	10	12	12	13	12	10	9.9	10
8	9.9	9.9	10	10	10	12	12	11	12	10	9.9	9.9
9	9.9	9.9	10	10	9.9	11	12	12	12	10	9.9	7.3
10	9.9	9.9	10	10	9.9	12	11	12	12	10	9.9	7.3
11	9.9	9.9	10	10	9.9	12	12	12	12	10	9.9	7.3
12	9.9	9.9	10	10	10	11	12	12	11	10	9.9	7.3
13	9.9	9.9	10	10	9.9	10	12	12	12	10	9.9	7.3
14	9.9	9.9	9.9	10	10	10	12	12	12	10	9.9	7.3
15	9.9	9.9	10	10	10	10	12	12	11	10	9.9	7.3
16	9.9	9.9	10	10	10	10	11	12	11	10	9.9	7.3
17	9.9	9.9	10	10	10	10	12	12	10	10	9.9	7.3
18	9.9	9.9	10	10	10	10	12	12	10	10	9.9	7.3
19	10	10	10	10	9.9	10	12	12	10	10	9.9	7.3
20	9.9	10	10	9.9	10	10	12	12	10	10	9.9	7.3
21	9.9	10	9.9	9.9	10	10	12	12	10	10	9.9	7.3
22	9.9	10	9.9	10	10	10	12	12	10	10	9.9	7.3
23	9.9	9.9	9.9	10	10	10	12	12	10	10	9.9	7.3
24	9.9	9.9	10	10	10	10	12	12	10	10	9.9	7.3
25	9.9	10	10	10	10	10	12	12	10	10	9.9	7.3
26	9.9	10	10	10	10	10	12	12	10	10	9.9	7.3
27	9.9	10	10	9.9	10	11	12	12	10	10	9.9	7.3
28	9.9	10	10	10	10	11	12	12	12	10	9.9	7.3
29	9.9	10	9.9	10	---	12	12	12	12	10	9.9	7.3
30	9.9	10	9.9	10	---	12	12	12	12	10	9.9	7.3
31	10	---	9.9	10	---	12	---	12	---	10	9.9	---
MAX	10	10	10	10	10	13	12	13	12	10	10	10
MIN	9.9	9.9	9.9	9.9	9.9	10	11	11	10	10	9.9	7.3
a	4187.3	4187.0	4186.9	4187.0	4187.7	4190.8	4189.7	4189.7	4189.7	4187.0	4186.9	4182.8
b	0	0	-0.1	+0.1	0	+2.0	0	0	0	-2.0	-0.1	-2.6

WTR YR 1991 b -2.7

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 eastsoutheast of Arnold.

DRAINAGE AREA.--29.3 mi².

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Acoustic-velocity meter. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Calaveras County Water District).

REMARKS.--Entire flow of Beaver Creek in excess of 16.5 ft³/s required for fishery release can be diverted through tunnel and penstock to tyrbine at McKay's Point Reservoir (stations 11295210 and 11295260). Capacity of tunnel and penstock is 400 ft³/s and flow in excess of that amount is either released or spilled at Beaver Creek diversion dam to the creek. 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, 762 ft³/s, Mar. 4, 1991; minimum daily, 2.5 ft³/s, Sept. 11-15, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 762 ft³/s, Mar. 4; minimum daily, 2.7 ft³/s, Oct. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	8.4	4.4	4.5	4.6	19	19	19	19	18	4.5	3.0
2	3.0	5.2	4.1	4.7	6.7	16	19	19	19	14	4.4	2.9
3	3.0	4.5	4.7	4.8	7.0	18	19	19	19	12	4.3	2.8
4	2.8	4.2	4.4	5.8	6.1	158	19	19	19	11	4.3	2.8
5	2.7	4.1	4.4	5.6	14	110	19	19	19	10	4.4	2.8
6	2.8	3.9	4.3	5.1	8.6	18	19	19	19	9.8	4.5	2.9
7	3.0	3.8	4.3	5.7	7.0	19	19	19	19	9.3	4.4	5.9
8	3.0	3.9	4.3	5.8	6.6	19	19	21	20	8.9	4.2	4.4
9	3.0	3.9	4.2	5.4	6.1	19	19	19	20	8.6	4.0	e3.5
10	3.0	3.9	4.5	5.2	5.8	19	19	19	20	8.3	3.8	e3.0
11	3.0	3.9	5.5	5.2	5.6	19	19	19	20	8.1	3.8	e3.0
12	3.0	3.8	5.7	5.4	5.5	19	19	19	20	7.9	3.8	e3.0
13	2.9	3.8	5.1	5.7	5.3	17	19	19	20	7.5	4.0	e3.0
14	3.0	3.8	4.6	5.6	5.6	16	19	19	20	7.5	4.1	e3.0
15	3.0	3.8	4.4	5.5	6.0	16	19	19	20	7.0	4.2	e3.0
16	2.9	3.8	4.8	5.4	6.4	14	19	19	19	6.8	4.1	e3.0
17	2.9	3.8	4.7	5.3	6.4	15	19	19	19	6.7	3.8	e3.0
18	3.1	3.8	4.9	5.2	6.1	14	19	19	17	6.6	3.7	e3.0
19	4.5	4.5	4.7	4.9	5.6	16	19	19	16	6.5	3.6	e3.0
20	4.0	6.2	4.7	4.6	5.4	14	19	19	15	7.4	3.6	e3.0
21	3.6	5.0	4.7	4.6	5.3	13	19	19	15	8.5	3.5	e3.0
22	3.4	4.6	3.9	4.6	5.2	12	19	19	14	7.1	3.4	e3.0
23	3.4	4.5	4.1	4.5	5.1	14	19	19	13	6.4	3.3	e3.0
24	3.4	4.4	4.2	4.6	5.1	14	19	19	13	6.0	3.2	e3.0
25	3.3	4.7	4.5	4.5	5.0	11	19	19	12	5.8	3.0	e3.0
26	3.4	5.5	4.5	4.4	4.9	14	19	19	12	5.6	3.0	e3.0
27	3.4	4.4	4.5	4.3	5.0	17	19	19	12	5.5	3.1	e3.0
28	3.4	4.8	4.5	4.2	11	19	19	19	17	5.2	3.3	e3.0
29	3.4	4.7	4.3	4.3	---	19	19	19	20	5.1	3.3	e3.0
30	3.4	4.7	4.1	4.6	---	19	19	19	20	4.9	3.2	e3.0
31	5.9	---	4.3	5.0	---	19	---	19	---	4.7	3.1	---
TOTAL	101.6	134.3	140.3	155.0	177.0	746	570	591	527	246.7	116.9	94.0
MEAN	3.28	4.48	4.53	5.00	6.32	24.1	19.0	19.1	17.6	7.96	3.77	3.13
MAX	5.9	8.4	5.7	5.8	14	158	19	21	20	18	4.5	5.9
MIN	2.7	3.8	3.9	4.2	4.6	11	19	19	12	4.7	3.0	2.8
AC-FT	202	266	278	307	351	1480	1130	1170	1050	489	232	186

WTR YR 1991 TOTAL 3599.8 MEAN 9.86 MAX 158 MIN 2.7 AC-FT 7140

e Estimated.

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--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 ft³/s, Oct. 17, 1989; no flow, Feb. 4-15, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e46	41	46	49	68	71	e54	e75	63	e12	51	39
2	e46	38	50	47	78	54	e58	e75	67	e12	39	39
3	e46	38	50	47	78	58	e62	e75	72	e16	40	39
4	e46	37	50	48	79	68	e62	e75	71	e22	40	40
5	e46	38	50	48	79	68	e62	e76	68	e22	40	41
6	e46	38	50	48	79	76	e62	e76	67	e22	40	41
7	46	38	49	48	79	76	e62	e77	e65	e18	41	41
8	46	38	49	48	79	78	e65	e78	e66	e12	41	41
9	46	38	49	49	79	78	e67	e78	e67	e11	41	41
10	45	38	49	48	79	78	e67	e78	66	e23	41	41
11	45	38	49	48	79	78	e69	e78	67	e18	40	41
12	45	38	49	48	79	77	e74	e78	67	e27	40	42
13	45	38	49	48	80	e78	e75	e77	67	e27	40	42
14	45	38	49	48	80	e74	e75	e76	68	e23	40	41
15	45	38	49	49	80	e72	e76	e77	68	e17	39	41
16	45	38	48	49	80	e75	e77	e77	69	e17	39	41
17	45	38	48	49	e78	e76	e77	e77	69	17	39	41
18	45	38	49	50	80	e76	e77	e72	69	47	40	41
19	45	38	51	50	80	e70	e77	e64	74	75	40	41
20	45	38	51	50	81	e67	e77	e66	83	75	40	41
21	45	38	51	49	80	e71	e77	e68	85	75	40	41
22	46	38	51	50	80	e73	e77	e67	84	75	40	41
23	45	38	52	50	80	e73	e77	e67	84	74	40	42
24	45	38	51	50	80	e64	e56	67	84	74	40	42
25	45	38	50	50	80	e54	e72	68	e83	74	40	41
26	45	38	50	50	80	e66	e72	68	e82	74	40	41
27	45	38	50	50	78	e71	e73	70	e82	74	40	41
28	45	38	50	49	79	e67	e74	71	e82	74	40	41
29	45	39	50	50	---	e67	e75	70	e82	74	40	41
30	45	39	50	50	---	e64	e75	67	e55	74	40	41
31	45	---	49	50	---	e59	---	63	---	74	40	---
TOTAL	1405	1144	1538	1517	2211	2177	2103	2251	2176	1329	1251	1227
MEAN	45.3	38.1	49.6	48.9	79.0	70.2	70.1	72.6	72.5	42.9	40.4	40.9
MAX	46	41	52	50	81	78	77	78	85	75	51	42
MIN	45	37	46	47	68	54	54	63	55	11	39	39
AC-FT	2790	2270	3050	3010	4390	4320	4170	4460	4320	2640	2480	2430

CAL YR 1990 TOTAL 19734.00 MEAN 54.1 MAX 86 MIN .00 AC-FT 39140
WTR YR 1991 TOTAL 20329 MEAN 55.7 MAX 85 MIN 11 AC-FT 40320

e Estimated.

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--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, 1,080 ft³/s, May 24, 1991; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	266	89	63	.00	57	93	250	667	392	260	192	.00
2	179	155	.00	153	.00	.00	186	487	77	285	199	27
3	246	.00	79	72	.00	66	288	280	483	277	60	296
4	187	.00	53	43	15	840	337	268	500	22	.00	320
5	226	67	54	.00	23	885	540	267	488	202	293	256
6	.00	.00	59	.00	30	105	462	759	486	.00	311	239
7	65	96	26	57	.00	86	301	870	270	.00	195	.00
8	190	82	9.3	32	.00	229	354	1010	37	143	248	16
9	142	59	.00	55	.00	128	346	873	38	167	249	238
10	129	.00	77	27	.00	73	423	666	256	140	.00	276
11	148	.00	53	48	.00	56	308	327	285	219	15	268
12	350	.00	52	.00	.00	74	268	40	195	255	224	264
13	19	109	97	.00	.00	53	158	497	200	.00	248	322
14	.00	81	99	42	29	57	257	464	93	.00	219	62
15	166	61	9.1	37	.00	60	464	647	.00	155	229	.00
16	119	81	.00	38	.00	52	313	775	.00	158	153	325
17	194	.00	75	38	.00	57	213	772	120	190	.00	360
18	139	.00	72	122	.00	85	315	311	54	203	33	353
19	202	78	79	.00	19	94	342	82	149	138	157	316
20	.00	106	249	.00	.00	92	196	412	75	.00	166	330
21	96	123	228	35	.00	82	162	591	69	.00	296	22
22	170	.00	19	45	.00	80	353	500	.00	212	274	25
23	148	102	5.9	35	.00	24	470	901	.00	184	295	242
24	152	.00	128	38	.00	111	545	1080	148	145	.00	350
25	143	.00	.00	116	.00	134	419	754	253	162	.00	286
26	179	164	126	.00	.00	207	329	623	191	209	193	304
27	.00	68	107	.00	34	109	230	392	40	.00	189	268
28	.00	94	78	31	67	12	247	442	47	.00	303	.00
29	262	82	.00	42	---	72	574	517	50	231	371	.00
30	101	72	.00	28	---	94	614	624	53	294	242	264
31	81	---	105	36	---	220	---	770	---	231	.00	---
TOTAL	4299.00	1769.00	2002.30	1170.00	274.00	4330.00	10264	17668	5049.00	4482.00	5354.00	6029.00
MEAN	139	59.0	64.6	37.7	9.79	140	342	570	168	145	173	201
MAX	350	164	249	153	67	885	614	1080	500	294	371	360
MIN	.00	.00	.00	.00	.00	.00	158	40	.00	.00	.00	.00
AC-FT	8530	3510	3970	2320	543	8590	20360	35040	10010	8890	10620	11960

WTR YR 1991 TOTAL 62690.30 MEAN 172 MAX 1080 MIN .00 AC-FT 124300

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 mi².

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Calaveras County Water District).

REMARKS.--Reservoir is formed by concrete arch-type dam completed in July 1989. Usable capacity, 1,785 acre-ft between elevations 3,280.0 ft, minimum operating head, and 3,370.0 ft, crest of spillway. Water is diverted 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. 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, 2,080 acre-ft, Mar. 4, 1991, elevation, 3,370.5 ft; minimum, 702 acre-ft, May 10, 1991, elevation, 3,311.1 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,080 acre-ft, Mar. 4, elevation, 3,370.5 ft; minimum, 702 acre-ft, May 10, elevation, 3,311.1 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Calaveras County Water District in July 1989)

3,280	280	3,340	1,240	3,370	2,065
3,300	490	3,360	1,770	3,370.5	2,080
3,320	820				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1858	1699	1677	1941	1951	1884	1307	1203	1203	1806	1473	1486
2	1889	1504	1833	1804	1980	1908	1345	1026	1833	1553	1431	1831
3	1891	1623	1869	1769	1993	1969	1317	1039	1845	1345	1600	1688
4	1906	1656	1861	1766	1990	2080	1308	1095	1751	1508	1874	1495
5	1769	1562	1846	1832	2001	1663	1153	1460	1573	1399	1652	1438
6	1936	1668	1815	1878	1962	1782	1139	1450	1334	1632	1513	1419
7	1982	1596	1839	1852	1977	1815	1254	1402	1322	1871	1448	1776
8	1900	1549	1891	1874	1986	1549	1248	1261	1600	1871	1315	2069
9	1908	1542	1938	1854	1999	1474	1300	1049	1876	1837	1307	1937
10	1945	1656	1899	1891	2010	1467	1279	702	1773	1835	1583	1782
11	1960	1764	1882	1876	2016	1439	1219	879	1656	1719	1868	1640
12	1618	1850	1876	1945	2029	1383	1136	1356	1603	1477	1793	1509
13	1773	1766	1800	1997	2038	1364	1277	1366	1495	1753	1663	1255
14	1915	1737	1708	2012	2010	1300	1423	1356	1603	1965	1572	1567
15	1891	1724	1762	2016	2021	1273	1357	1233	1724	1938	1464	1998
16	1975	1692	1839	1991	2023	1282	1338	1130	1842	1915	1453	1807
17	1951	1804	1764	2006	2030	1307	1416	987	1771	1845	1734	1715
18	1984	1895	1717	1889	2047	1304	1293	1272	1846	1688	1911	1560
19	1802	1878	1796	1951	2016	1306	1192	1796	1769	1576	1887	1550
20	1967	1820	1807	2008	2023	1293	1363	1833	1782	1775	1853	1344
21	1991	1719	1804	2004	2023	1279	1605	1625	1789	1941	1683	1684
22	1917	1817	1841	1995	2025	1252	1600	1824	1882	1769	1527	1927
23	1845	1739	1887	2006	2027	1339	1437	1578	1962	1615	1377	1752
24	1775	1822	1751	1999	2038	1338	1341	1132	1867	1546	1647	1345
25	1697	1913	1815	1878	2040	1315	1150	1198	1598	1451	1909	1087
26	1517	1753	1661	1941	2047	1136	1066	1291	1428	1316	1913	968
27	1692	1719	1726	1997	1991	1075	1244	1540	1467	1531	1805	778
28	1859	1661	1819	2010	1904	1202	1442	1672	1573	1886	1427	994
29	1544	1618	1906	2004	---	1245	1366	1596	1869	1829	996	1194
30	1638	1641	1965	2017	---	1315	1304	1553	1969	1592	709	907
31	1710	---	1880	2016	---	1276	---	1077	---	1517	1083	---
MAX	1990	1910	1960	2020	2050	2080	1600	1830	1970	1960	1910	2070
MIN	1520	1500	1660	1770	1900	1070	1070	702	1200	1320	709	778
a	3357.3	3354.9	3362.8	3368.1	3364.0	3339.8	3341.2	3329.8	3366.4	3351.2	3330.1	3321.7
b	-170	-69	+239	+136	-112	-628	+28	-227	+892	-452	-434	-176

WTR YR 1991 b -973

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, on right bank, 500 ft downstream from McKay's Point Dam and 4.5 mi northeast of Avery.

DRAINAGE AREA.--166 mi².

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

GAGE.--Water-stage recorder, crest-stage gage and rectangular steel weir. Prior to Nov. 1, 1989, concrete control. Elevation of gage is 3,400 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. 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 from right bank of North Fork Stanislaus River at McKay's Point Dam to Utica Canal and Collierville powerplant. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,050 ft³/s, Mar. 4, 1991, gage height, 2.68 ft, from rating curve extended above 36 ft³/s on basis of computation of flow over dam and discharge through minimum release valve; minimum daily, 3.4 ft³/s, Nov. 25, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,050 ft³/s, Mar. 4, gage height, 2.68 ft; minimum daily, 16 ft³/s, Mar. 9.

REVISIONS.--The maximum discharge for water year 1990 has been revised to 448 ft³/s, May 3, 1990, gage height, 2.53 ft; revised daily discharges, in cubic feet per second, and monthly mean for periods in 1990 water year are given below. These figures supersede those published in the report for 1990.

Daily discharges:

Feb. 15..... 29		Apr. 24..... 27		May 3..... 135		May 4..... 27
	TOTAL	MEAN	MAX	MIN	AC-FT	
May 1990	705	22.7	135	18	1400	
Wtr Yr 1990	6166.3	16.9	135	3.4	12230	

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	19	20	e18	22	22	19	23	22	22	22	23
2	23	21	20	e18	21	18	19	22	22	21	22	23
3	23	22	19	e18	20	18	19	22	22	20	22	27
4	23	23	20	e18	21	325	18	22	21	19	23	29
5	23	23	19	e18	17	25	18	22	21	19	23	27
6	23	23	20	e18	18	18	18	23	21	19	22	26
7	23	23	20	e18	19	18	18	22	21	19	22	23
8	22	23	20	e18	20	17	19	22	21	19	23	24
9	22	23	20	e18	20	16	19	21	22	18	23	27
10	22	23	19	e18	20	17	19	21	21	18	23	29
11	22	23	18	e18	21	17	19	21	21	18	23	29
12	22	23	17	e18	21	17	19	21	21	19	23	29
13	22	23	18	e18	21	18	19	21	21	19	23	29
14	22	22	18	e18	20	19	19	21	21	19	23	29
15	24	22	18	e18	20	18	18	21	21	20	22	29
16	23	22	18	18	21	20	18	20	21	20	23	29
17	25	22	18	18	20	19	18	20	21	20	23	28
18	23	22	18	18	20	20	18	20	21	20	23	28
19	22	21	18	19	21	19	18	20	21	20	23	28
20	22	19	18	19	21	19	19	21	21	20	23	28
21	22	19	18	19	21	19	19	21	21	19	23	29
22	22	20	18	19	21	20	19	20	21	20	23	28
23	22	20	19	19	21	19	19	23	22	20	23	28
24	22	20	19	19	21	19	19	24	22	21	23	28
25	22	20	18	20	21	21	22	24	22	21	24	28
26	22	19	18	20	22	19	27	23	22	21	24	28
27	22	19	18	20	25	19	24	23	21	21	24	28
28	23	19	18	20	23	19	24	23	21	22	24	28
29	26	19	19	20	---	19	24	22	22	22	23	29
30	24	19	e18	22	---	19	23	22	22	22	22	28
31	22	---	e18	22	---	19	---	22	---	22	23	---
TOTAL	703	636	577	582	579	892	591	673	640	620	710	826
MEAN	22.7	21.2	18.6	18.8	20.7	28.8	19.7	21.7	21.3	20.0	22.9	27.5
MAX	26	23	20	22	25	325	27	24	22	22	24	29
MIN	22	19	17	18	17	16	18	20	21	18	22	23
AC-FT	1390	1260	1140	1150	1150	1770	1170	1330	1270	1230	1410	1640
CAL YR 1990	TOTAL 7098.7	MEAN 19.4	MAX 135	MIN 5.1	AC-FT 14080							
WTR YR 1991	TOTAL 8029	MEAN 22.0	MAX 325	MIN 16	AC-FT 15930							

e Estimated.

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 mi².

PERIOD OF RECORD.--February 1990 to current year.

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 National Geodetic Vertical Datum of 1929, 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 for Beaver Creek below diversion dam 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, 483 ft³/s, Mar. 4, 1991; minimum daily, 22 ft³/s, on several days in December 1990 and January 1991.

REVISIONS.--Revised daily discharges, in cubic feet per second, for periods in the 1990 water year are given below. These figures supersede those published in the report for 1990.

Daily discharges:

Feb. 15..... 42

Apr. 24..... 44

May 3..... 153

May 4..... 45

May 1990

TOTAL
1222MEAN
39.4MAX
153MIN
31AC-FT
2420

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	27	24	e22	27	41	38	42	41	40	26	26
2	26	26	24	e23	28	34	38	41	41	35	26	26
3	26	26	24	e23	27	36	38	41	41	32	26	30
4	26	27	24	e24	27	483	37	41	40	30	27	32
5	26	27	23	e24	31	135	37	41	40	29	27	30
6	26	27	24	e23	27	36	37	42	40	29	26	29
7	26	27	24	e24	26	37	37	41	40	28	26	29
8	25	27	24	e24	27	36	38	43	41	28	27	28
9	25	27	24	e23	26	35	38	40	42	27	27	30
10	25	27	23	e23	26	36	38	40	41	26	27	32
11	25	27	23	e23	27	36	38	40	41	26	27	32
12	25	27	23	e23	26	36	38	40	41	27	27	32
13	25	27	23	e24	26	35	38	40	41	26	27	32
14	25	26	23	e24	26	35	38	40	41	26	27	32
15	27	26	22	e23	26	34	37	40	41	27	26	32
16	26	26	23	23	27	34	37	39	40	27	27	32
17	28	26	23	23	26	34	37	39	40	27	27	31
18	26	26	23	23	26	34	37	39	38	27	27	31
19	26	25	23	24	27	35	37	39	37	26	27	31
20	26	25	23	24	26	33	38	40	36	27	27	31
21	26	24	23	24	26	32	38	40	36	27	26	32
22	25	25	22	24	26	32	38	39	35	27	26	31
23	25	24	23	23	26	33	38	42	35	26	26	31
24	25	24	23	24	26	33	38	43	35	27	26	31
25	25	25	22	24	26	32	41	43	34	27	27	31
26	25	24	22	24	27	33	46	42	34	27	27	31
27	25	23	22	24	30	36	43	42	33	26	27	31
28	26	24	22	24	34	38	43	42	38	27	27	31
29	29	24	23	24	---	38	43	41	42	27	26	32
30	27	24	e22	27	---	38	42	41	42	27	25	31
31	28	---	e22	27	---	38	---	41	---	27	26	---
TOTAL	802	770	713	736	756	1638	1161	1264	1167	865	823	920
MEAN	25.9	25.7	23.0	23.7	27.0	52.8	38.7	40.8	38.9	27.9	26.5	30.7
MAX	29	27	24	27	34	483	46	43	42	40	27	32
MIN	25	23	22	22	26	32	37	39	33	26	25	26
AC-FT	1590	1530	1410	1460	1500	3250	2300	2510	2310	1720	1630	1820

WTR YR 1991 TOTAL 11615 MEAN 31.8 MAX 483 MIN 22 AC-FT 23040

e Estimated.

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 mi².

PERIOD OF RECORD.--July 1967 to current year.

REVISED RECORDS.--WDR CA-80-3; 1979.

GAGE.--Water-stage recorder. Datum of gage is 1,077.21 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Prior to Oct. 1, 1982, published at datum 47.21 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Many diversions upstream from station for hydroelectric powerplants. Small diversions for domestic water supply. Stanislaus tunnel 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.

AVERAGE DISCHARGE.--River only: 24 years, 822 ft³/s, 595,500 acre-ft/yr.
Combined river and powerplant: 24 years, 1,259 ft³/s, 912,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 46,200 ft³/s, Feb. 19, 1986, gage height, 23.5 ft, from outside highwater mark, from rating curve extended above 10,000 ft³/s on basis of computation of peak flow over a weir; minimum daily, 9.4 ft³/s, Aug. 7, 1977.
Combined flow, maximum discharge, 46,700 ft³/s, Feb. 19, 1986; minimum daily, 27 ft³/s, July 20, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 2,010 ft³/s, Mar. 4, gage height, 10.61 ft; minimum daily, 52 ft³/s, Dec. 25, 29.
Combined flow, maximum discharge, 1,690 ft³/s, May 8; minimum daily, 80 ft³/s, Nov. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	345	174	117	54	119	204	486	883	484	385	312	78
2	261	208	56	206	64	128	395	694	197	433	314	104
3	324	58	128	129	68	232	496	464	567	421	163	366
4	264	57	106	102	82	1110	574	441	599	139	80	390
5	307	172	104	59	118	e800	811	439	593	315	389	415
6	81	59	116	58	109	e170	758	936	589	115	430	371
7	142	148	82	112	68	e160	563	1090	394	93	317	87
8	267	137	70	92	66	e290	604	1230	167	243	370	96
9	227	115	54	112	65	245	597	1090	144	293	371	322
10	207	59	131	84	65	189	672	867	351	265	102	373
11	225	58	106	104	65	176	526	509	401	344	97	361
12	424	56	105	59	64	182	464	218	321	381	320	345
13	105	158	146	59	63	207	356	659	319	106	369	414
14	79	132	151	99	96	193	460	639	225	82	341	139
15	241	113	68	94	68	190	680	804	126	244	350	83
16	195	133	59	110	63	164	524	934	104	269	272	418
17	270	55	126	94	63	181	411	951	224	301	104	455
18	218	55	128	173	63	241	502	500	184	315	116	448
19	286	129	138	57	83	264	526	251	269	248	250	407
20	81	163	300	56	61	244	387	571	201	102	276	422
21	173	176	e290	88	61	216	363	749	193	84	409	102
22	254	57	e72	98	61	196	572	658	118	303	389	105
23	226	153	e60	88	61	135	695	1040	96	292	404	330
24	229	57	e180	93	61	301	770	1240	232	252	97	445
25	220	57	e52	165	61	481	724	914	364	271	81	374
26	255	223	e180	55	61	435	577	767	304	325	282	394
27	79	123	e160	54	89	303	442	542	170	101	293	358
28	79	145	e130	83	140	198	457	574	190	82	412	81
29	339	133	e52	94	---	254	782	637	195	322	486	79
30	182	124	e53	82	---	282	833	753	158	409	351	352
31	164	---	e160	92	---	425	---	898	---	354	96	---
TOTAL	6749	3487	3680	2905	2108	8796	17007	22942	8479	7889	8643	8714
MEAN	218	116	119	93.7	75.3	284	567	740	283	254	279	290
MAX	424	223	300	206	140	1110	833	1240	599	433	486	455
MIN	79	55	52	54	61	128	356	218	96	82	80	78
AC-FT	13390	6920	7300	5760	4180	17450	33730	45510	16820	15650	17140	17280

CAL YR 1990 TOTAL 92108 MEAN 252 MAX 730 MIN 46 AC-FT 182700
WTR YR 1991 TOTAL 101399 MEAN 278 MAX 1240 MIN 52 AC-FT 201100

e Estimated.

11295401 STANISLAUS RIVER NEAR HATHAWAY PINES, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF STANISLAUS RIVER AND STANISLAUS TUNNEL AT OUTLET,
NEAR HATHAWAY PINES, CA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	501	187	156	94	e149	241	733	1330	957	747	789	551
2	418	235	e92	e244	e95	e161	870	1200	677	881	794	563
3	481	85	e288	e167	e98	280	982	905	1050	908	638	813
4	417	e82	498	142	e112	1190	1080	889	1080	609	563	857
5	462	e193	542	98	166	e868	1310	894	1080	756	861	882
6	e163	e80	601	97	e140	e209	1260	1350	1050	620	919	837
7	e205	173	567	e148	98	e197	1060	1580	918	555	795	441
8	374	162	550	e126	95	e322	1100	1690	640	715	861	371
9	385	139	537	e146	94	e275	1090	1550	605	778	860	776
10	363	e83	612	121	e93	e221	1170	1340	800	735	580	957
11	373	e83	585	e142	e91	209	998	966	884	822	571	809
12	552	e81	584	96	e90	e213	929	688	838	830	791	1190
13	e134	e182	627	e95	e89	e239	836	1130	796	354	839	668
14	e107	e157	632	e137	e124	e226	877	1090	689	236	831	849
15	e317	e139	549	130	96	e222	1140	1280	614	573	832	632
16	347	e158	539	e142	e90	e198	981	1300	582	746	750	907
17	421	e81	602	128	e90	e216	912	1190	724	803	569	1200
18	376	e226	597	e208	e89	e278	957	744	652	761	608	711
19	418	e300	608	e90	e111	e304	956	580	779	754	733	1090
20	114	546	764	e89	e88	e287	844	1040	662	586	754	980
21	201	565	e744	e122	e88	e255	840	1250	648	530	867	551
22	330	447	e529	e133	e86	e245	1020	1120	377	786	849	910
23	381	542	e510	e124	e87	e193	1160	1500	335	766	849	569
24	342	447	e534	e128	e87	e367	1240	1660	527	755	535	1130
25	373	448	e258	e200	e86	e554	1230	1400	884	707	566	931
26	363	614	e384	e90	e87	e506	1020	1210	759	840	693	867
27	109	514	e364	e89	e116	e366	900	1000	664	570	770	1110
28	91	540	e325	e117	172	e275	909	1040	618	583	863	311
29	350	394	e94	127	---	355	1250	1120	442	776	923	769
30	186	161	e94	116	---	396	1290	1210	390	895	809	897
31	169	---	e197	124	---	545	---	1370	---	858	572	---
TOTAL	9823	8044	14563	4010	2907	10413	30944	36616	21721	21835	23234	24129
MEAN	317	268	470	129	104	336	1031	1181	724	704	749	804
MAX	552	614	764	244	172	1190	1310	1690	1080	908	923	1200
MIN	91	80	92	89	86	161	733	580	335	236	535	311
AC-FT	19480	15960	28890	7950	5770	20650	61380	72630	43080	43310	46080	47860
CAL YR 1990	TOTAL 192703	MEAN 528	MAX 1180	MIN 80	AC-FT 382200							
WTR YR 1991	TOTAL 208239	MEAN 571	MAX 1690	MIN 80	AC-FT 413000							

e Estimated.

11295900 PINECREST LAKE AT PINECREST, CA

LOCATION.--Lat 38°11'59", long 119°59'11", 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 mi².

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.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (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. 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, 18,312 acre-ft, many days during May to July of most years, elevation, 5,617.5 ft; minimum, 3,157 acre-ft, Mar. 3, 4, 1991, elevation, 5,546.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,312 acre-ft, many days, elevation, 5,617.5 ft; minimum, 3,157 acre-ft, Mar. 3, 4, elevation, 5,546.6 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated 1938)

5,498.7	0	5,520	792	5,550	3,534	5,580	8,576
5,500	53	5,530	1,558	5,560	4,738	5,600	13,537
5,510	278	5,540	2,475	5,570	6,395	5,617.5	18,312

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9953	6022	4750	4423	e3968	3190	5693	9281	18222	18312	17035	16074
2	9823	5909	4738	4411	3951	3168	5710	9519	18312	18312	17007	16048
3	9759	5836	4712	4411	3915	3157	5728	9735	18312	18312	16979	16021
4	9711	5781	4699	4411	3856	3157	5764	9953	18312	18312	16951	15940
5	9543	5710	4687	4399	3845	4498	5799	10245	18312	18312	16923	15887
6	9376	5640	4687	4399	3833	4750	5836	10491	18312	18282	16895	15833
7	9186	5555	4674	4386	3810	4869	5872	11112	18312	18222	16867	15780
8	8997	5454	4674	4384	3786	4994	6395	11995	18312	18133	16839	15726
9	8786	5373	4661	4411	3751	5125	6539	12505	18312	18074	16783	15646
10	8576	5309	4649	4411	3728	5185	6621	12993	18312	18015	16756	15566
11	8414	5246	4636	4399	3682	5231	6704	13226	18312	17927	16728	15433
12	8231	5170	4623	4399	3648	5246	6788	13459	18312	17839	16673	15352
13	8117	5051	4611	4386	3613	5277	6893	13667	18312	17731	16645	15219
14	7982	4994	4598	4386	3579	5293	7041	13981	18312	17664	16618	15410
15	7870	4910	4598	4374	3545	5309	7212	14269	18312	17548	16590	14981
16	7758	4829	4586	4374	3522	5325	7342	14848	18312	17519	16563	14848
17	7670	4802	4573	4370	3500	5325	7407	15166	18312	17462	16508	14716
18	7648	4789	4560	4361	3477	5341	7494	15780	18312	17404	16480	14611
19	7626	4789	4548	4361	3455	5341	7560	15940	18312	17376	16453	14426
20	7516	4776	4548	4361	3432	5357	7626	16182	18312	17347	16426	14242
21	7342	4776	4535	4349	3410	5373	7648	16426	18312	17319	16398	14111
22	7191	4776	4523	4337	3376	5521	7736	16728	18312	17319	16371	13928
23	7062	4763	4510	4312	3354	5555	7847	17290	18312	17290	16344	13719
24	6914	4763	4498	4288	3310	5589	7959	18015	18282	17262	16290	13537
25	6725	4763	4498	4202	3288	5623	8072	18045	18252	17233	16263	13355
26	6559	4776	4485	4166	3266	5640	8208	18045	18222	17233	16236	13174
27	6416	4776	4485	4130	3238	5658	8322	18104	18193	17205	16209	13019
28	6375	4776	4473	4094	3211	5675	8391	18163	18282	17176	16182	12839
29	6294	4776	4461	4058	---	5675	8669	18282	18312	17148	16155	12659
30	6195	4763	4448	4022	---	5693	9044	18282	18312	17120	16128	12454
31	6098	---	4436	3986	---	5693	---	18163	---	17063	16101	---
MAX	9953	6022	4750	4423	3968	5693	9044	18282	18312	18312	17035	16074
MIN	6098	4763	4436	3986	3211	3157	5693	9281	18193	17063	16101	12454
a	5568.5	5560.2	5557.6	5553.9	5547.1	5566.3	5582.0	5617.0	5617.5	5613.2	5609.7	5595.8
b	-4245	-1335	-327	-450	-775	+2482	+3351	+9119	+149	-1249	-962	-3647

CAL YR 1990 b -674
WTR YR 1991 b +2111

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE.--58 years (water years 1912-16, 1939-91), 125 ft³/s, 90,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft³/s, Nov. 21, 1950, gage height, 9.25 ft, from rating curve extended above 1,100 ft³/s on basis of contracted-opening measurement of peak flow at bridge 0.3 mi downstream from station; minimum, 1.3 ft³/s, Nov. 22, 23, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 785 ft³/s, May 25, gage height, 4.79 ft; minimum daily, 6.1 ft³/s, Nov. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	44	7.3	7.7	20	21	61	104	386	110	17	15
2	90	42	7.3	7.7	20	21	60	76	583	89	17	15
3	90	42	7.3	7.7	20	24	61	55	628	77	17	26
4	90	42	7.3	7.7	20	35	65	48	606	67	16	34
5	89	42	7.3	7.7	20	31	76	82	554	61	17	34
6	89	42	7.3	7.3	20	20	85	123	476	60	16	34
7	88	41	7.0	7.3	20	17	82	151	430	63	16	34
8	91	41	6.9	7.3	20	16	81	187	440	63	16	34
9	96	41	6.9	7.3	20	19	85	139	461	62	16	52
10	97	41	6.9	6.9	20	19	87	94	460	60	15	64
11	80	41	6.9	6.9	20	17	63	82	445	62	15	64
12	64	41	6.9	6.9	20	16	50	78	416	63	15	64
13	61	40	6.9	6.9	20	15	52	99	378	63	15	64
14	61	40	6.9	6.9	20	15	61	83	236	62	15	63
15	60	40	6.9	6.9	20	14	65	120	206	44	15	63
16	52	19	6.9	6.9	20	14	57	159	209	33	15	63
17	17	6.3	6.9	6.9	20	13	52	140	185	32	15	63
18	10	6.2	6.9	6.9	20	14	55	97	166	25	15	84
19	48	6.1	7.3	6.9	20	13	60	83	149	21	15	96
20	69	6.2	7.3	6.9	20	17	63	84	125	23	15	96
21	69	6.6	7.3	16	20	24	60	91	111	23	15	96
22	69	7.3	7.3	20	20	24	61	140	101	21	15	95
23	68	7.3	7.3	20	20	24	67	233	94	20	15	94
24	68	7.3	7.3	20	20	24	70	423	89	20	15	94
25	68	7.4	7.3	20	20	25	57	679	72	19	15	94
26	68	7.7	7.3	20	20	25	53	593	62	19	15	93
27	48	7.7	7.3	20	20	24	59	490	65	19	15	93
28	41	7.7	7.3	20	20	43	70	410	85	20	15	93
29	46	7.7	7.3	20	---	55	94	451	285	20	15	92
30	45	7.5	7.5	20	---	57	106	422	169	19	15	92
31	45	---	7.7	20	---	59	---	318	---	17	15	---
TOTAL	2068	738.0	222.2	359.6	560	755	2018	6334	8672	1357	478	1998
MEAN	66.7	24.6	7.17	11.6	20.0	24.4	67.3	204	289	43.8	15.4	66.6
MAX	97	44	7.7	20	20	59	106	679	628	110	17	96
MIN	10	6.1	6.9	6.9	20	13	50	48	62	17	15	15
AC-FT	4100	1460	441	713	1110	1500	4000	12560	17200	2690	948	3960

CAL YR 1990 TOTAL 21659.2 MEAN 59.3 MAX 274 MIN 6.1 AC-FT 42960
WTR YR 1991 TOTAL 25559.8 MEAN 70.0 MAX 679 MIN 6.1 AC-FT 50700

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 National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE.--52 years, 42.0 ft³/s, 30,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 66 ft³/s, June 16, 1984; no flow at times in some years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	1.0	1.2	1.0	.00	.79	55	57	58	58	10	6.4
2	56	1.0	1.2	1.0	.21	.91	55	56	59	58	9.7	6.4
3	56	1.0	1.2	.05	3.1	1.0	55	50	58	58	9.3	19
4	42	1.1	1.2	.00	5.1	1.1	56	43	57	58	9.0	28
5	28	1.4	1.2	.00	5.4	1.2	57	50	57	57	8.9	27
6	33	1.3	1.2	.00	5.4	1.0	58	56	57	56	8.1	28
7	33	1.2	1.2	.00	5.6	1.0	58	56	56	57	8.2	28
8	36	1.3	1.2	.00	5.7	1.1	58	58	58	58	8.4	28
9	37	1.2	1.2	.00	5.8	1.2	58	57	57	58	7.9	43
10	12	1.1	1.1	.00	5.8	1.2	56	57	58	55	7.6	58
11	12	1.1	1.2	.00	5.8	1.6	55	58	57	56	7.2	57
12	14	1.1	1.2	.00	5.8	2.9	55	58	58	58	6.4	57
13	14	1.1	1.2	.00	6.1	4.8	54	58	58	57	6.4	57
14	14	1.1	1.2	.00	6.1	4.9	54	58	55	56	8.2	57
15	3.4	1.2	1.2	.00	5.9	4.8	54	57	56	40	7.4	56
16	2.4	.74	1.2	.01	5.8	5.5	57	57	57	26	7.4	56
17	13	.80	1.1	.29	5.8	6.2	58	56	57	26	7.3	56
18	12	.83	1.2	.70	5.8	6.3	58	55	58	20	7.2	57
19	20	.89	1.2	.84	5.8	6.5	58	57	58	16	7.2	59
20	13	.96	1.2	.95	5.9	10	58	58	57	16	7.1	59
21	.95	1.1	1.2	7.3	5.8	20	58	58	57	16	6.8	59
22	2.6	1.2	1.2	20	5.7	20	57	58	58	5.3	8.6	59
23	3.6	1.2	1.2	11	5.7	21	56	58	59	.00	8.1	59
24	5.3	1.2	1.2	13	5.6	22	58	58	58	.00	8.2	59
25	9.6	1.2	1.2	13	5.7	22	57	57	58	6.6	7.0	59
26	1.0	1.2	1.2	13	3.0	22	53	57	56	12	6.9	39
27	1.0	1.2	1.2	7.6	.94	22	57	57	56	12	6.9	58
28	1.0	1.2	1.2	1.7	.76	36	57	58	58	12	6.5	58
29	.97	1.2	1.2	.00	---	52	58	58	58	12	6.6	58
30	.97	1.2	1.2	.00	---	53	46	59	56	11	6.9	58
31	1.0	---	1.2	.00	---	54	---	57	---	11	7.0	---
TOTAL	534.79	33.32	37.0	91.44	134.11	408.00	1684	1747	1720	1041.90	238.4	1408.8
MEAN	17.3	1.11	1.19	2.95	4.79	13.2	56.1	56.4	57.3	33.6	7.69	47.0
MAX	56	1.4	1.2	20	6.1	54	58	59	59	58	10	59
MIN	.95	.74	1.1	.00	.00	.79	46	43	55	.00	6.4	6.4
AC-FT	1060	66	73	181	266	809	3340	3470	3410	2070	473	2790

CAL YR 1990 TOTAL 11247.33 MEAN 30.8 MAX 61 MIN .74 AC-FT 22310
WTR YR 1991 TOTAL 9078.76 MEAN 24.9 MAX 59 MIN .00 AC-FT 18010

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No records computed above 50 ft³/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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	43	4.8	7.7	25	23	11	---	---	---	6.8	7.5
2	37	40	4.8	6.8	21	22	10	24	---	39	7.4	7.3
3	37	40	4.7	7.0	17	28	11	10	---	25	7.5	7.6
4	36	40	4.7	6.8	16	44	15	6.0	---	16	7.6	8.5
5	35	41	4.7	6.4	17	38	25	32	---	8.6	7.5	9.0
6	35	40	4.8	6.3	16	22	35	---	---	7.4	7.9	8.3
7	34	39	4.6	6.4	16	17	33	---	---	9.1	7.7	8.3
8	36	39	4.6	6.7	16	16	31	---	---	8.0	7.5	8.3
9	41	40	4.6	6.5	15	18	36	---	---	6.7	7.5	8.4
10	43	39	4.9	6.3	15	19	38	43	---	6.7	7.6	7.8
11	40	39	5.1	6.0	15	17	16	29	---	7.9	8.0	8.2
12	39	40	4.9	4.6	15	14	4.9	20	---	7.3	8.5	7.8
13	39	39	4.8	4.6	15	12	5.9	49	---	7.2	8.9	7.9
14	39	39	4.9	4.5	16	11	13	27	---	7.3	7.3	7.8
15	39	39	4.7	11	15	11	17	---	---	7.2	7.8	7.7
16	35	23	4.7	15	15	8.7	7.5	---	---	7.5	7.7	7.6
17	7.7	5.0	4.8	9.1	15	8.1	5.1	---	---	7.5	7.7	7.6
18	8.0	4.7	4.8	9.1	15	8.4	5.6	49	---	7.3	7.7	27
19	25	5.0	4.6	9.2	15	8.1	7.3	29	---	7.2	7.7	41
20	40	4.9	4.6	14	15	7.0	11	30	---	8.8	7.7	40
21	---	3.7	5.0	20	16	6.4	8.7	36	---	8.7	7.3	40
22	---	4.9	5.8	21	16	6.1	10	---	---	17	7.0	39
23	---	5.1	5.6	21	16	5.9	14	---	42	22	7.1	39
24	---	5.0	5.6	25	15	5.8	20	---	36	21	7.5	38
25	---	5.1	5.2	34	16	5.5	7.2	---	19	14	7.7	38
26	40	5.2	4.9	34	18	5.1	4.5	---	8.9	7.4	7.6	---
27	36	4.9	4.1	34	20	4.9	7.4	---	10	7.5	7.4	37
28	37	4.9	4.0	33	22	7.5	16	---	22	7.3	7.4	37
29	41	4.9	4.6	32	---	6.0	---	---	---	7.3	7.3	36
30	42	4.9	5.7	32	---	7.0	---	---	---	7.0	7.3	37
31	44	---	9.2	32	---	8.6	---	---	---	7.0	7.3	---
TOTAL	---	688.2	154.8	472.0	464	421.1	---	---	---	---	234.9	---
MEAN	---	22.9	4.99	15.2	16.6	13.6	---	---	---	---	7.58	---
MAX	---	43	9.2	34	25	44	---	---	---	---	8.9	---
MIN	---	3.7	4.0	4.5	15	4.9	---	---	---	---	6.8	---
AC-FT	---	1370	307	936	920	835	---	---	---	---	466	---

e Estimated.

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 National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE.--54 years, 28.6 ft³/s, 20,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 59 ft³/s, May 11, 1975; no flow at times in some years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	17	15	23	16	14	20	42	45	45	37	37
2	30	17	15	23	16	13	32	42	46	45	37	36
3	27	17	15	21	16	14	43	42	45	37	37	36
4	24	17	18	20	16	15	43	42	44	27	37	36
5	23	17	19	20	15	14	43	42	44	26	37	36
6	23	16	18	20	14	13	43	42	43	25	36	36
7	23	15	18	20	14	13	43	42	43	25	36	35
8	23	15	18	20	14	13	43	42	44	25	36	35
9	23	15	18	20	14	13	42	43	47	26	36	36
10	23	15	18	19	14	15	42	43	43	26	37	36
11	23	15	18	18	14	15	42	43	44	28	36	36
12	23	15	18	18	13	13	42	43	44	30	36	37
13	23	15	18	18	13	16	41	43	44	30	36	35
14	23	16	21	17	13	18	41	43	44	29	36	34
15	2.0	16	26	16	13	18	41	43	44	29	36	34
16	.00	16	20	16	13	18	41	43	45	29	36	34
17	.00	16	16	16	13	18	41	43	44	29	37	34
18	.00	15	18	16	13	18	41	44	43	29	37	34
19	17	15	25	16	13	18	41	43	43	29	36	33
20	35	15	27	16	13	18	41	43	45	29	36	33
21	35	15	27	16	13	18	41	42	46	29	36	33
22	2.2	15	27	16	13	18	41	43	46	29	36	33
23	.00	15	27	16	13	18	41	43	47	30	36	33
24	.00	15	27	16	13	19	41	43	36	32	36	34
25	11	15	27	15	13	19	41	47	28	33	36	34
26	36	15	26	15	13	19	41	42	27	34	36	34
27	36	15	26	15	13	19	42	43	26	34	36	34
28	36	15	26	15	13	19	42	43	26	34	36	34
29	25	15	26	15	---	19	41	44	38	36	36	34
30	17	15	26	15	---	20	42	45	47	37	36	34
31	17	---	24	16	---	20	---	45	---	37	37	---
TOTAL	610.20	465	668	543	384	515	1219	1333	1251	963	1125	1040
MEAN	19.7	15.5	21.5	17.5	13.7	16.6	40.6	43.0	41.7	31.1	36.3	34.7
MAX	36	17	27	23	16	20	43	47	47	45	37	37
MIN	.00	15	15	15	13	13	20	42	26	25	36	33
AC-FT	1210	922	1320	1080	762	1020	2420	2640	2480	1910	2230	2060

CAL YR 1990 TOTAL 10588.20 MEAN 29.0 MAX 48 MIN .00 AC-FT 21000
WTR YR 1991 TOTAL 10116.20 MEAN 27.7 MAX 47 MIN .00 AC-FT 20070

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, on upstream side of dam near radial spill gates and 1.6 mi west of Long Barn.

DRAINAGE AREA.--66.8 mi².

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 National Geodetic Vertical Datum of 1929 (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. Figures given, including extremes, represent total contents. 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 observed, 6,287 acre-ft, May 25, gage height, 90.37 ft; minimum observed, 980 acre-ft, Jan. 22, gage height, 44.23 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1930)

20	210	60	2,070
25	309	70	3,153
30	437	80	4,541
40	786	90	6,219
50	1,299	92.5	6,680

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1570	---	---	1545	1035	1505	3244	3662	5945	6219	4722	2645
2	---	2595	---	1502	1047	1559	3326	3637	6241	6199	4654	2580
3	1577	---	---	1464	1057	1751	3393	3731	6260	6171	4586	2514
4	1592	2681	2704	1437	1069	2115	3479	3739	6204	6144	4517	2448
5	1607	---	2670	1408	1103	2276	3595	3704	6118	6107	4448	2383
6	---	2738	---	1377	1118	2335	3720	3735	6015	6062	4382	2320
7	1645	---	---	1353	1131	2371	3831	3844	5986	6019	4317	2256
8	1653	2819	---	1323	1142	2398	3915	3743	6157	5977	4249	2191
9	---	---	2542	1293	1153	2417	3995	4231	6179	5933	4180	2126
10	1638	2913	2487	1265	1162	2452	4081	4251	6168	5886	4111	2059
11	---	---	2463	1238	1172	2473	4115	4237	6169	5838	4041	1993
12	1739	2972	2433	1213	1184	2494	4105	4192	6155	5785	3973	1920
13	---	---	2403	1188	1197	2526	4082	4202	6137	5732	3909	1857
14	---	3056	2363	1165	1210	2539	4069	4189	6040	5683	3842	1794
15	1813	---	2316	1143	1224	2555	4066	4184	6168	5632	3777	1733
16	---	3128	2281	1121	1237	2564	4053	4326	6234	5582	3711	1672
17	---	---	2250	1098	1252	2587	4017	4471	6223	5534	3646	1608
18	1855	3104	2223	1073	1265	2609	3979	4507	6213	5482	3578	1557
19	1951	---	2182	1046	1276	2628	3943	4500	6193	5430	3513	1560
20	---	3056	2133	1017	1289	2631	3915	4480	6171	5379	3445	1565
21	---	---	2084	987	1300	2653	3898	4461	6162	5329	3382	1571
22	---	2984	2033	980	1313	2671	3867	4497	6148	5283	3314	1574
23	2127	2984	1980	986	1325	2687	3839	4745	6113	5256	3246	1580
24	---	---	1929	992	1336	2742	3835	5331	6095	5221	3180	1584
25	2427	---	1880	998	1347	2790	3821	6287	6095	5184	3115	1584
26	---	2913	1831	1003	1359	2807	3787	6173	6058	5120	3047	1613
27	---	---	1781	1008	1375	2815	3745	6062	6019	5060	2981	1616
28	---	---	1735	1004	1416	2839	3711	6006	6006	4997	2917	1616
29	2406	2830	1685	1009	---	2890	3707	6173	6258	4931	2849	1616
30	---	2807	1635	1017	---	2977	3771	6182	6243	4861	2780	1614
31	2500	---	1590	1026	---	3088	---	5992	---	4794	2712	---
MAX	---	---	---	1545	1416	3088	4115	6287	6260	6219	4722	2645
MIN	---	---	---	980	1035	1505	3244	3637	5945	4794	2712	1557
a	---	---	54.27	45.15	51.81	69.47	74.75	88.75	90.13	90.00	66.27	54.59
b	---	---	---	-564	+390	+1672	+683	+2221	+251	-1449	-2082	-1098

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

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 mi².

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 National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE.--54 years, 81.4 ft³/s, 58,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,900 ft³/s, Nov. 21, 1950, gage height, 9.3 ft, from rating curve extended above 2,400 ft³/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, 878 ft³/s, May 26, gage height, 5.03 ft; minimum daily, 0.49 ft³/s, Mar. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	2.3	2.2	2.4	2.4	.86	2.6	2.5	311	33	2.7	2.5
2	2.4	2.4	2.2	2.5	2.4	.63	2.5	2.5	371	5.6	2.6	2.5
3	2.4	2.3	2.2	2.5	2.5	1.0	2.5	2.5	607	2.6	2.6	2.5
4	2.4	2.3	2.3	2.5	2.5	1.0	2.5	2.5	624	2.4	2.6	2.5
5	2.4	2.3	2.3	2.5	2.7	.56	2.5	2.6	596	2.5	2.6	2.5
6	2.5	2.3	2.3	2.5	2.4	.49	2.5	2.6	494	2.5	2.7	2.5
7	2.5	2.3	2.3	2.5	2.2	.66	2.4	2.6	391	2.5	2.6	2.5
8	2.5	2.3	2.3	2.5	2.2	.56	2.3	2.7	285	2.6	2.5	2.5
9	2.5	2.3	2.3	2.5	2.2	.88	2.4	2.7	397	2.6	2.5	2.5
10	2.5	2.3	2.4	2.4	2.2	.74	2.5	2.7	418	2.5	2.5	2.5
11	2.5	2.3	2.5	2.4	2.2	.74	2.5	2.7	394	2.5	2.5	2.5
12	2.5	2.3	2.5	2.4	2.0	.74	2.5	2.7	367	2.4	2.5	2.3
13	2.5	2.3	2.5	2.4	1.8	.92	2.5	2.7	334	2.3	2.5	2.3
14	2.5	2.3	2.4	2.4	2.0	.76	2.5	2.7	238	2.3	2.5	2.1
15	3.3	2.3	2.3	2.3	2.1	.74	2.5	2.6	41	2.3	2.5	2.2
16	3.4	2.3	2.4	2.3	2.1	.74	2.5	2.6	100	2.3	2.5	2.3
17	3.3	2.3	2.5	2.3	2.1	.80	2.5	2.7	105	2.5	2.5	2.3
18	3.3	2.4	2.5	2.3	2.1	.92	2.5	2.7	82	2.6	2.5	2.3
19	2.9	2.5	2.5	2.3	2.1	.92	2.5	2.6	69	2.7	2.5	2.5
20	2.5	2.5	2.5	2.3	2.0	1.7	2.5	2.5	41	2.8	2.5	2.5
21	2.5	2.5	2.5	2.3	2.1	2.4	2.6	2.5	18	2.8	2.5	2.5
22	3.4	2.5	2.5	2.3	2.1	2.5	2.5	2.5	10	2.8	2.5	2.5
23	3.1	2.4	2.5	2.3	2.1	2.5	2.5	2.5	9.6	2.8	2.5	2.4
24	2.9	2.4	2.5	2.3	2.0	2.7	2.6	2.5	5.4	2.7	2.5	2.3
25	2.7	2.4	2.6	2.5	2.0	2.6	2.7	178	2.4	2.8	2.5	2.3
26	2.4	2.4	2.7	2.7	1.5	2.5	2.6	656	2.5	2.7	2.5	2.3
27	2.3	2.2	2.8	2.5	.73	2.5	2.5	516	2.5	2.7	2.5	2.3
28	2.3	2.2	2.8	2.4	.62	2.5	2.5	373	2.6	2.7	2.5	2.3
29	2.3	2.2	2.8	2.4	---	2.5	2.5	316	53	2.7	2.5	2.3
30	2.3	2.2	2.8	2.4	---	2.5	2.5	380	116	2.7	2.5	2.3
31	2.3	---	2.6	2.4	---	2.5	---	345	---	2.7	2.5	---
TOTAL	81.7	70.0	76.5	74.7	57.35	44.06	75.2	2826.4	6487.0	113.6	78.4	71.8
MEAN	2.64	2.33	2.47	2.41	2.05	1.42	2.51	91.2	216	3.66	2.53	2.39
MAX	3.4	2.5	2.8	2.7	2.7	2.7	2.7	656	624	33	2.7	2.5
MIN	2.3	2.2	2.2	2.3	.62	.49	2.3	2.5	2.4	2.3	2.5	2.1
AC-FT	162	139	152	148	114	87	149	5610	12870	225	156	142

CAL YR 1990 TOTAL 1916.2 MEAN 5.25 MAX 181 MIN 2.2 AC-FT 3800
WTR YR 1991 TOTAL 10056.71 MEAN 27.6 MAX 656 MIN .49 AC-FT 19950

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 200 ft downstream from diversion dam and 1.2 mi southwest of Murphys.

DRAINAGE AREA.--6.01 mi².

PERIOD OF RECORD.--October 1990 to September 1991.

GAGE.--Water-stage recorder and 90° V-notch weir. Elevation of gage is 2,040 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No records computed above 2.5 ft³/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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.1	2.2	2.2	---	---	---	---	---	---	---	---
2	1.3	.93	2.2	---	---	---	---	---	---	2.0	2.4	e1.5
3	1.3	1.2	2.0	---	---	---	---	---	---	2.1	2.3	e1.5
4	1.2	1.1	1.5	2.3	---	---	---	---	---	2.5	---	---
5	1.0	1.0	1.6	1.5	---	---	---	---	---	---	e1.9	e1.4
6	1.0	1.4	1.5	1.5	---	---	---	---	---	---	e1.5	1.3
7	1.1	2.0	1.5	1.5	---	---	---	---	---	---	e1.5	1.2
8	1.1	1.8	1.5	1.5	---	---	---	---	---	2.2	e1.5	1.1
9	1.0	1.7	1.5	1.5	---	---	---	---	---	2.3	e1.5	1.0
10	1.1	1.7	1.9	1.5	---	---	---	---	---	2.3	e1.5	1.1
11	1.0	1.8	---	1.9	---	---	---	---	---	2.2	e1.5	1.2
12	1.0	1.7	---	---	---	---	---	---	---	2.2	e1.4	1.2
13	.95	1.7	---	---	---	---	---	---	---	2.3	e1.4	1.2
14	.95	1.8	---	---	---	---	---	---	---	2.4	e1.4	1.1
15	.95	1.7	---	---	---	---	---	---	---	2.2	e1.3	1.2
16	.93	1.7	---	---	---	---	---	---	---	---	e1.3	1.4
17	.90	1.6	---	---	---	---	---	---	---	---	e1.3	1.2
18	.98	1.5	---	2.5	---	---	---	---	---	---	e1.3	1.3
19	1.0	1.5	---	1.4	---	---	---	---	---	---	e1.3	1.2
20	1.1	1.5	---	1.3	---	---	---	---	---	---	e1.3	1.2
21	1.1	1.5	---	1.3	---	---	---	---	---	---	e1.5	1.2
22	1.1	1.7	---	1.4	---	---	---	---	---	---	e2.2	1.1
23	1.2	1.6	---	1.6	---	---	---	---	---	---	e1.5	1.1
24	1.2	1.6	---	1.3	---	---	---	---	---	---	e1.5	1.2
25	1.1	1.6	---	1.4	---	---	---	---	---	---	e1.4	1.0
26	1.1	1.5	---	2.2	---	---	---	---	---	---	e1.5	1.2
27	1.1	1.5	---	---	---	---	---	---	---	---	e1.5	1.3
28	1.1	1.8	---	---	---	---	---	---	---	---	e1.5	1.2
29	1.1	2.3	1.7	---	---	---	---	---	---	---	e1.5	1.1
30	1.1	2.4	1.9	---	---	---	---	---	---	---	e1.6	1.1
31	1.2	---	2.5	---	---	---	---	---	---	---	e1.6	---
TOTAL	33.36	47.93	---	---	---	---	---	---	---	---	---	---
MEAN	1.08	1.60	---	---	---	---	---	---	---	---	---	---
MAX	1.3	2.4	---	---	---	---	---	---	---	---	---	---
MIN	.90	.93	---	---	---	---	---	---	---	---	---	---
AC-FT	66	95	---	---	---	---	---	---	---	---	---	---

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929 (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 a powerplant to Tulloch Reservoir (station 11299995) where it is used for irrigation. Records for the 1971 water year represent contents at 1630 hours. Records given herein, 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, 279,500 acre-ft, Sept. 15, 1991, elevation, 802.05 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 448,400 acre-ft, Apr. 15, elevation, 846.20 ft; minimum, 279,500 acre-ft, Sept. 15, elevation, 802.05 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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	377800	374700	364700	386200	371500	373900	425000	433200	422600	400300	337600	287500
2	378600	375100	364900	386800	369900	374900	427300	432100	421200	399100	335700	286200
3	379400	374200	363700	387100	370200	376800	429800	431200	420700	398100	333800	285300
4	379600	372800	364200	386200	369700	382100	432400	429800	420800	396300	332000	284600
5	380400	371700	365300	386400	370200	386600	435800	428900	420900	394600	330200	284000
6	380800	370400	366700	386600	370500	387700	438500	428300	421300	392600	328200	283100
7	381200	369200	366800	387000	370800	388500	441300	428500	420200	390500	326200	282200
8	381900	368800	368000	386600	371200	389500	444200	429300	419100	387900	325300	283200
9	382600	368000	369100	386900	371400	389500	445700	430600	418400	385700	323600	284800
10	383400	365600	370300	387100	371700	390200	447200	431800	418400	383300	321500	284100
11	383300	365800	371600	387600	371900	391000	447500	431700	419000	380800	319300	283300
12	383100	365300	373000	386100	372200	391700	448000	431400	419000	378100	317200	281800
13	380700	363800	373200	386300	372500	392400	448100	431400	418700	375500	315600	280600
14	379000	363900	373500	386600	372800	393400	448300	431200	417800	372700	314100	280100
15	378000	364200	374800	386900	371700	394300	448400	430300	416600	369800	312100	279500
16	377000	362500	375900	387200	370800	394600	447600	429200	416100	367500	310200	281200
17	376300	361200	377200	386700	371000	395700	447000	428900	415100	365200	308300	282800
18	375200	361300	378500	386200	371300	397300	446200	428100	416700	363000	306400	284600
19	374400	361800	379800	385600	371500	399100	444100	426500	418400	359600	304000	286400
20	372600	362100	381300	385800	371800	401100	442300	425300	418400	358700	302700	288200
21	371200	361400	381700	384600	372100	402400	441200	425200	419800	357700	301800	289400
22	371700	362300	382800	382900	371700	403500	440600	424200	420700	356800	300900	290600
23	372600	361900	383900	383100	371900	404500	440000	423300	421400	355900	299400	291500
24	373400	362800	384300	383300	372200	407000	438700	423600	417100	353900	296700	292800
25	374100	363900	384900	380600	372400	411300	437500	423000	413800	352100	294700	294200
26	374800	363700	385800	379400	372700	414800	437500	423500	411600	350300	293500	295500
27	373900	362700	386600	379600	373200	417100	436000	423200	409000	347400	292200	296800
28	374100	363700	386100	378300	372600	418600	435000	422700	404900	345200	290600	297300
29	374600	364700	385300	376600	---	419800	434800	422400	403400	343000	290200	296000
30	375200	365100	385500	374800	---	421500	433300	422500	402000	341200	289300	296300
31	375700	---	385900	373300	---	423100	---	423200	---	339700	288500	---
MAX	383400	375100	386600	387600	373200	423100	448400	433200	422600	400300	337600	297300
MIN	371200	361200	363700	373300	369700	373900	425000	422400	402000	339700	288500	279500
a	828.68	825.98	831.27	828.07	827.90	840.32	842.72	840.34	835.24	819.26	804.76	807.05
b	-2000	-10600	+20800	-12600	-700	+50500	+10200	-10100	-21200	-62300	-51200	+7800
c	1760	731	322	432	707	673	1540	2220	2850	3600	2620	2150

CAL YR 1990 b -377500

WTR YR 1991 b -81400

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.

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 mi².

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 National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. No regulation or diversion upstream from station. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--8 years, 5.93 ft³/s, 4,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft³/s, Feb. 19, 1986, gage height, 9.10 ft, from rating curve extended above 2,500 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1415	222	3.68	Mar. 26	0845	*536	*4.21
Mar. 20	1145	390	4.01				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	4.7	8.2	1.2	.30	.00	.00	.00
2	.00	.00	.00	.00	.00	4.6	6.9	1.3	.30	.00	.00	.00
3	.00	.00	.00	.00	.04	29	6.0	1.3	.27	.00	.00	.00
4	.00	.00	.00	.00	.04	72	5.2	1.1	.24	.00	.00	.00
5	.00	.00	.00	.00	.51	13	4.6	1.1	.22	.00	.00	.00
6	.00	.00	.00	.00	.30	4.6	4.2	.96	.19	.00	.00	.00
7	.00	.00	.00	.00	.24	2.3	3.8	.88	.16	.00	.00	.00
8	.00	.00	.00	.00	.19	1.4	3.2	.86	.14	.00	.00	.00
9	.00	.00	.00	.00	.18	1.1	2.9	.84	.10	.00	.00	.00
10	.00	.00	.00	.00	.18	1.6	2.8	.77	.07	.00	.00	.00
11	.00	.00	.00	.00	.18	2.1	2.6	.74	.05	.00	.00	.00
12	.00	.00	.00	.00	.15	1.3	2.5	.76	.01	.00	.00	.00
13	.00	.00	.00	.00	.15	18	2.5	.79	.00	.00	.00	.00
14	.00	.00	.00	.00	.13	6.6	2.3	.89	.00	.00	.00	.00
15	.00	.00	.00	.00	.13	4.4	2.2	.74	.00	.00	.00	.00
16	.00	.00	.00	.00	.13	2.9	2.1	.70	.00	.00	.00	.00
17	.00	.00	.00	.00	.13	12	2.1	.70	.00	.00	.00	.00
18	.00	.00	.00	.00	.11	22	2.0	1.0	.00	.00	.00	.00
19	.00	.00	.00	.00	.10	44	1.8	1.0	.00	.00	.00	.00
20	.00	.00	.00	.00	.10	171	2.2	.80	.00	.00	.00	.00
21	.00	.00	.00	.00	.10	31	2.2	.69	.00	.00	.00	.00
22	.00	.00	.00	.00	.10	13	1.9	.57	.00	.00	.00	.00
23	.00	.00	.00	.00	.10	11	1.8	.50	.00	.00	.00	.00
24	.00	.00	.00	.00	.10	84	1.8	.45	.00	.00	.00	.00
25	.00	.00	.00	.00	.10	165	1.8	.40	.00	.00	.00	.00
26	.00	.00	.00	.00	.10	249	2.1	.37	.00	.00	.00	.00
27	.00	.00	.00	.00	.10	62	1.7	.36	.00	.00	.00	.00
28	.00	.00	.00	.00	.67	28	1.4	.33	.00	.00	.00	.00
29	.00	.00	.00	.00	---	16	1.3	.34	.00	.00	.00	.00
30	.00	.00	.00	.00	---	12	1.3	.39	.00	.00	.00	.00
31	.00	---	.00	.00	---	9.3	---	.37	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	4.36	1098.9	87.4	23.20	2.05	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.16	35.4	2.91	.75	.068	.000	.000	.000
MAX	.00	.00	.00	.00	.67	249	8.2	1.3	.30	.00	.00	.00
MIN	.00	.00	.00	.00	.00	1.1	1.3	.33	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	8.6	2180	173	46	4.1	.00	.00	.00

CAL YR 1990 TOTAL 285.36 MEAN .78 MAX 17 MIN .00 AC-FT 566
WTR YR 1991 TOTAL 1215.91 MEAN 3.33 MAX 249 MIN .00 AC-FT 2410

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 mi².

PERIOD OF RECORD.--November 1957 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (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, 66,100 acre-ft, Aug. 19, 25, maximum elevation, 509.3 ft, Aug. 19; minimum, 37,400 acre-ft, Sept. 29, elevation, 480.7 ft.

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 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61500	55500	55000	55100	56200	55900	60000	62200	64100	65400	65400	64600
2	61100	54600	54700	54800	56500	55700	59800	62500	64500	65400	65200	64700
3	60900	54600	56200	54600	55200	56000	59500	62200	65100	65200	65100	64700
4	61200	55100	56400	55700	55700	56100	59500	62300	65500	65100	64900	64700
5	60900	55300	56000	55500	55600	55900	59400	61800	65600	64900	65100	64600
6	60500	55600	55700	55300	55600	55400	59400	62100	65500	64700	65500	65000
7	60000	55900	56300	55100	55600	55000	59400	62500	64900	64600	65800	64600
8	58000	55400	56000	55500	55400	54500	58400	62800	65000	65300	65200	62100
9	57000	55400	55700	55400	55400	55300	58600	62500	65100	65400	65300	59700
10	55600	56800	55500	55100	55300	55100	58000	62100	65300	65200	65400	60000
11	55000	55600	55200	54700	55200	54900	57900	62200	65700	65100	65500	60400
12	54700	55100	54300	56400	54900	54600	57800	62000	65100	65100	65100	61300
13	55900	55900	55400	56100	54600	55700	57600	62200	65000	64800	64700	62300
14	56200	55400	56100	56000	54400	55500	57500	62200	65000	65100	64700	62000
15	56300	54600	56000	55600	55700	55200	57600	62800	65100	65400	65400	61700
16	56400	56000	55700	55300	56700	55500	58100	64300	65100	65400	65900	59400
17	56200	56700	55400	55600	56400	55600	57500	64100	65100	65200	65700	57600
18	55900	55900	55100	55600	56100	55600	57600	63400	65200	64800	65700	55500
19	55900	55100	54800	55300	55900	56100	58700	63000	62900	64900	66100	53300
20	56400	55200	54600	54700	55600	57100	59300	62800	60700	64800	65900	51300
21	56800	56300	55400	55300	55300	57200	59200	63000	58500	64800	65300	49000
22	56200	55500	55100	56400	55800	57100	59100	63400	56300	65200	64700	46800
23	55800	56200	54800	55400	55600	56900	59100	63600	54000	65600	65000	45400
24	55500	55500	55200	54400	55300	57600	59700	63700	57300	65600	65900	43900
25	55100	54700	54900	56300	55100	58600	60900	63700	59900	64800	66100	42400
26	54800	55400	54600	56500	54800	60200	61300	63600	61500	64800	65700	41000
27	55900	56600	54200	55200	54600	60500	61600	63800	62800	65400	65500	39700
28	55500	55800	55200	55300	55900	60500	61400	63900	65700	65100	65900	38500
29	55100	55200	56100	55500	---	60400	61000	63900	65500	65300	65500	37400
30	54700	54600	55800	55900	---	60300	61700	64100	65100	65300	65700	37500
31	54400	---	55400	55900	---	60200	---	63800	---	65200	65000	---
MAX	61500	56800	56400	56500	56700	60500	61700	64300	65700	65600	66100	65000
MIN	54400	54600	54200	54400	54400	54500	57500	61800	54000	64600	64700	37400
a	499.1	499.4	500.1	500.5	500.6	504.4	505.7	507.4	508.5	508.5	508.4	480.9
b	-6800	+200	+800	+500	0	+4300	+1500	+2100	+1300	+100	-200	-27500

CAL YR 1990 b +900
WTR YR 1991 b -23700

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 mi².

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1972 to current year.

INSTRUMENTATION.--Temperature recorder since June 1972.

REMARKS.--Interruptions in record were due to malfunction of recording instrument. Water temperature is affected by regulation from Tulloch powerplant.

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, 20.0 °C, Sept. 29, 30; minimum recorded, 9.5 °C, on many days from January to March.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.0	17.0	17.0	17.0	13.5	13.5	10.0	10.0	9.5	9.5	10.0	9.5
2	17.0	17.0	17.0	17.0	13.5	13.5	10.0	10.0	9.5	9.5	10.0	9.5
3	17.0	17.0	17.0	17.0	13.5	13.5	10.0	9.5	9.5	9.5	10.0	10.0
4	17.0	17.0	17.0	16.5	13.5	13.5	9.5	9.5	9.5	9.5	10.0	10.0
5	17.0	17.0	16.5	16.5	13.5	13.0	9.5	9.5	9.5	9.5	10.0	10.0
6	17.0	17.0	16.5	16.5	13.0	13.0	9.5	9.5	10.0	9.5	10.0	10.0
7	17.0	17.0	16.5	16.5	13.0	13.0	9.5	9.5	10.0	9.5	10.0	10.0
8	17.0	17.0	16.5	16.0	13.0	12.5	9.5	9.5	10.5	9.5	10.0	10.0
9	17.0	17.0	16.0	16.0	13.0	12.5	9.5	9.5	---	---	10.0	10.0
10	17.0	17.0	16.0	16.0	12.5	12.5	9.5	9.5	---	---	10.0	10.0
11	17.0	17.0	16.0	15.5	12.5	12.5	9.5	9.5	---	---	10.0	10.0
12	17.0	17.0	16.0	15.5	12.5	12.5	9.5	9.5	9.5	9.5	10.0	10.0
13	17.0	17.0	15.5	15.5	12.5	12.5	9.5	9.5	9.5	9.5	10.0	10.0
14	17.0	17.0	15.5	15.5	12.5	12.5	9.5	9.5	9.5	9.5	10.0	10.0
15	17.0	17.0	15.5	15.5	12.5	12.0	9.5	9.5	9.5	9.5	10.0	10.0
16	17.0	17.0	15.5	15.5	12.0	12.0	9.5	9.5	9.5	9.5	10.0	10.0
17	17.0	17.0	15.5	15.5	12.0	12.0	9.5	9.5	9.5	9.5	10.0	10.0
18	17.0	17.0	15.5	15.5	12.0	12.0	9.5	9.5	9.5	9.5	10.0	10.0
19	17.0	17.0	15.5	15.0	12.0	12.0	9.5	9.5	9.5	9.5	10.5	10.0
20	17.0	17.0	15.0	15.0	12.0	11.5	9.5	9.5	9.5	9.5	10.5	10.0
21	17.0	17.0	15.0	15.0	11.5	11.5	9.5	9.5	10.0	9.5	10.0	10.0
22	17.0	17.0	15.0	15.0	11.5	11.5	9.5	9.5	10.0	9.5	10.5	10.0
23	17.0	17.0	15.0	14.5	11.0	11.0	9.5	9.5	10.0	9.5	10.5	10.0
24	17.0	17.0	14.5	14.5	11.0	11.0	9.5	9.5	10.0	9.5	10.5	10.0
25	17.0	17.0	14.5	14.5	11.0	10.5	9.5	9.5	10.0	9.5	10.0	10.0
26	17.0	17.0	14.5	14.5	10.5	10.5	9.5	9.5	10.0	9.5	10.5	10.0
27	17.0	17.0	14.5	14.0	10.5	10.5	9.5	9.5	10.0	9.5	10.5	10.0
28	17.0	17.0	14.0	14.0	10.5	10.5	9.5	9.5	10.0	9.5	10.5	10.0
29	17.0	17.0	14.0	14.0	10.5	10.0	9.5	9.5	---	---	10.5	10.0
30	17.0	17.0	14.0	13.5	10.0	10.0	9.5	9.5	---	---	10.5	10.0
31	17.0	17.0	---	---	10.0	10.0	9.5	9.5	---	---	10.5	10.0
MONTH	17.0	17.0	17.0	13.5	13.5	10.0	10.0	9.5	---	---	10.5	9.5

11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.5	10.0	11.5	11.5	12.0	12.0	14.0	14.0	17.0	17.0	19.5	19.5
2	10.5	10.0	11.5	11.5	12.5	12.0	14.0	14.0	17.5	17.0	19.5	19.5
3	10.5	10.0	11.5	11.5	12.5	12.0	14.0	14.0	17.5	17.5	19.5	19.5
4	10.5	10.5	11.5	11.5	12.5	12.0	14.0	14.0	17.5	17.5	19.5	19.5
5	10.5	10.5	11.5	11.5	12.5	12.5	14.0	14.0	17.5	17.5	19.5	19.5
6	10.5	10.5	11.5	11.5	12.5	12.5	14.5	14.0	17.5	17.5	19.5	19.5
7	10.5	10.5	11.5	11.5	12.5	12.5	14.5	14.0	18.0	17.5	19.5	19.5
8	10.5	10.5	11.5	11.5	12.5	12.5	14.5	14.5	18.0	18.0	19.5	19.5
9	10.5	10.5	11.5	11.5	12.5	12.5	14.5	14.5	18.0	18.0	19.5	19.5
10	10.5	10.5	11.5	11.5	12.5	12.5	---	---	18.0	18.0	19.5	19.5
11	10.5	10.5	11.5	11.5	12.5	12.5	---	---	18.0	18.0	19.5	19.5
12	11.0	10.5	11.5	11.5	13.0	12.5	---	---	18.5	18.0	19.5	19.5
13	11.0	11.0	11.5	11.5	13.0	12.5	15.0	15.0	18.5	18.5	19.5	19.5
14	11.0	11.0	11.5	11.5	13.0	13.0	15.0	15.0	18.5	18.5	19.5	19.5
15	11.0	11.0	12.0	11.5	13.0	13.0	15.5	15.0	18.5	18.5	19.5	19.5
16	11.0	11.0	12.0	11.5	13.0	13.0	15.5	15.5	18.5	18.5	19.5	19.5
17	11.0	11.0	12.0	11.5	13.0	13.0	15.5	15.5	18.5	18.5	19.5	19.5
18	11.0	11.0	12.0	11.5	13.0	13.0	15.5	15.5	19.0	18.5	19.5	19.5
19	11.0	11.0	12.0	12.0	13.0	13.0	16.0	15.5	19.0	19.0	19.5	19.5
20	11.5	11.0	12.0	11.5	13.0	13.0	16.0	16.0	19.0	19.0	19.5	19.5
21	11.5	11.0	12.0	11.5	13.0	13.0	16.0	16.0	19.0	19.0	19.5	19.5
22	11.5	11.0	12.0	12.0	13.5	13.0	16.0	16.0	19.0	19.0	19.5	19.5
23	11.5	11.5	12.0	12.0	13.5	13.5	16.0	16.0	19.0	19.0	19.5	19.5
24	11.5	11.5	12.0	12.0	13.5	13.5	16.5	16.0	19.5	19.0	19.5	19.5
25	11.5	11.5	12.0	12.0	13.5	13.5	16.5	16.5	19.5	19.0	19.5	19.5
26	11.5	11.5	12.0	12.0	13.5	13.5	16.5	16.5	19.5	19.0	19.5	19.5
27	11.5	11.5	12.0	12.0	13.5	13.5	16.5	16.5	19.0	19.0	19.5	19.5
28	11.5	11.5	12.0	12.0	13.5	13.5	16.5	16.5	19.5	19.0	19.5	19.5
29	11.5	11.5	12.0	12.0	14.0	13.5	17.0	16.5	19.5	19.0	20.0	19.5
30	11.5	11.5	12.0	12.0	14.0	14.0	17.0	17.0	19.5	19.5	20.0	19.5
31	---	---	12.0	12.0	---	---	17.0	17.0	19.5	19.5	---	---
MONTH	11.5	10.0	12.0	11.5	14.0	12.0	---	---	19.5	17.0	20.0	19.5

11300500 SOUTH SAN JOAQUIN CANAL NEAR KNIGHTS FERRY, CA

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.

PERIOD OF RECORD.--May 1914 to current year. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 334.18 ft above National Geodetic Vertical Datum of 1929 (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 good. Canal diverts from right bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale and South San Joaquin Irrigation Districts.

AVERAGE DISCHARGE.--77 years, 442 ft³/s, 320,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,320 ft³/s, Aug. 10-17, 1978; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	7.0	7.4	5.1	756	e3.0	.00	740	951	864	e1040	e746
2	4.9	259	7.0	5.1	758	e2.0	.00	1050	951	864	e1050	e745
3	4.6	425	6.7	5.1	559	e2.0	.00	1110	951	e863	e1050	e745
4	5.8	427	6.4	5.1	134	e2.0	.00	1120	951	e865	e1050	e654
5	5.7	428	6.3	4.7	3.4	e2.0	.00	1120	964	e866	e1050	e603
6	5.7	427	4.3	4.6	3.1	e3.0	.00	1010	970	e868	e1050	e604
7	5.7	430	1.8	4.6	e2.0	e2.0	.00	697	971	e868	e1020	e604
8	5.7	430	3.3	4.6	e2.0	e2.0	.00	581	971	e868	e1030	e604
9	316	431	3.0	4.6	e2.0	2.4	240	510	971	e869	e1050	e605
10	616	433	2.7	4.6	e2.0	3.5	640	440	963	e867	e1050	e592
11	618	433	10	4.4	e3.0	3.4	812	439	960	e867	e1050	e586
12	676	434	85	4.4	e3.0	3.2	830	440	961	e927	e1050	e586
13	709	307	135	4.4	e4.0	3.3	841	440	962	e961	e1050	e586
14	707	246	49	4.4	e3.0	3.2	841	704	963	e961	e1050	e587
15	706	246	1.2	4.2	e3.0	3.0	907	907	963	e978	e1050	e587
16	706	246	1.2	4.1	e3.0	2.5	1010	618	964	e1010	e994	e587
17	708	246	1.2	225	e3.0	2.0	1070	378	964	e1010	e961	e587
18	709	246	1.2	327	e3.0	1.7	1100	378	964	e1010	e961	e587
19	710	246	1.2	329	e3.0	1.9	1120	378	901	e1010	e950	e587
20	711	246	1.2	329	e3.0	2.7	1130	378	861	e1010	e935	e588
21	517	246	1.2	330	e3.0	1.7	1130	635	861	e1010	e934	e589
22	162	246	1.2	330	e3.0	1.4	1130	1010	862	e1010	e932	e590
23	6.3	246	1.2	330	e3.0	2.6	1130	1120	862	e1060	e931	e581
24	6.1	247	1.2	454	e3.0	4.2	1130	1130	863	e1090	e930	e576
25	6.0	248	1.0	522	e3.0	4.1	835	1130	863	e1100	e929	e581
26	6.0	248	1.0	524	e3.0	2.0	499	1130	863	e1100	e928	e581
27	6.0	248	1.0	524	e3.0	.05	470	1130	863	e1100	e927	e581
28	5.9	248	3.0	662	e3.0	.00	470	1130	865	e1100	e910	e577
29	5.7	249	5.1	753	---	.00	469	1020	864	e1100	e799	e573
30	6.5	102	5.1	754	---	.00	469	951	864	e1060	e747	e419
31	7.3	---	5.1	755	---	.00	---	951	---	e1040	e747	---
TOTAL	8671.9	8921.0	361.2	7222.0	2276.5	66.85	18273.00	24775	27707	30176	30205	18018
MEAN	280	297	11.7	233	81.3	2.16	609	799	924	973	974	601
MAX	711	434	135	755	758	4.2	1130	1130	971	1100	1050	746
MIN	4.6	7.0	1.0	4.1	2.0	.00	.00	378	861	863	747	419
AC-FT	17200	17690	716	14320	4520	133	36240	49140	54960	59850	59910	35740

CAL YR 1990 TOTAL 194408.75 MEAN 533 MAX 1180 MIN .00 AC-FT 385600

WTR YR 1991 TOTAL 176673.45 MEAN 484 MAX 1130 MIN .00 AC-FT 350400

e Estimated.

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 National Geodetic Vertical Datum of 1929, 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.--Records good. Canal diverts water from left bank of Stanislaus River at Goodwin Dam 0.3 mi upstream for irrigation in Oakdale Irrigation District.

AVERAGE DISCHARGE.--77 years, 171 ft³/s, 123,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 556 ft³/s, July 8-11, 1967; maximum discharge, 595 ft³/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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	10	3.9	5.4	.52	.34	.10	332	448	406	470	379
2	.04	10	3.4	1.9	2.4	.11	.08	332	448	403	460	379
3	.01	10	3.3	.00	2.9	.36	.01	332	448	414	456	379
4	.01	10	4.5	.00	.91	.29	.01	331	448	437	457	379
5	2.6	10	4.2	.00	.05	.16	.01	346	447	451	457	380
6	3.9	10	4.1	.00	.00	.10	.01	374	447	452	456	380
7	3.6	10	4.2	.00	.00	.05	.01	393	448	452	456	380
8	3.4	10	4.4	.00	e.00	.01	.01	388	438	452	457	380
9	3.3	10	4.4	.00	e.00	.01	.04	397	432	467	457	381
10	3.2	10	4.2	.00	e.00	.05	.06	402	383	475	462	380
11	3.2	10	4.4	.00	e.00	.04	.10	415	e.38	476	469	365
12	2.9	e11	2.0	.00	.00	.01	14	426	e.01	476	469	353
13	2.9	e11	.02	.00	.05	.45	22	426	e.00	476	469	353
14	2.9	e11	.00	.00	.11	.17	25	427	e.00	477	456	352
15	2.9	e12	.07	.00	.00	.07	83	427	e.00	478	449	352
16	2.9	e12	.00	.00	.00	.01	204	428	e.00	480	449	352
17	2.9	12	.00	.00	.00	.17	268	434	e.00	482	450	352
18	2.9	12	.00	.00	.00	.31	295	427	.00	481	450	351
19	2.9	7.9	.00	.00	.00	.85	315	420	.00	481	450	349
20	2.9	4.4	.00	.00	.00	1.7	333	427	.00	476	445	350
21	2.9	4.4	1.2	.00	.00	.77	333	423	.00	473	439	350
22	2.9	4.4	5.3	.00	.00	.33	333	422	.00	473	439	350
23	2.9	4.1	5.3	.00	.00	.19	333	422	36	474	440	345
24	2.8	3.9	5.4	.00	.00	.64	334	422	88	474	441	339
25	2.6	3.9	5.4	.00	.00	1.2	344	422	139	474	441	340
26	4.7	3.8	5.4	.00	.00	2.0	352	421	183	474	441	340
27	10	3.9	5.4	.00	.00	1.1	358	420	233	474	441	340
28	13	3.7	5.4	.00	.15	.62	359	420	286	474	416	340
29	13	3.9	5.2	.00	---	.29	359	420	333	474	379	340
30	11	3.9	5.4	.00	---	.17	345	438	378	475	379	162
31	10	---	5.4	.00	---	.16	---	448	---	475	379	---
TOTAL	125.34	243.2	101.89	7.30	7.09	12.73	5009.44	12562	6063.39	14406	13779	10572
MEAN	4.04	8.11	3.29	.24	.25	.41	167	405	202	465	444	352
MAX	13	12	5.4	5.4	2.9	2.0	359	448	448	482	470	381
MIN	.01	3.7	.00	.00	.00	.01	.01	331	.00	403	379	162
AC-FT	249	482	202	14	14	25	9940	24920	12030	28570	27330	20970

CAL YR 1990 TOTAL 73173.33 MEAN 200 MAX 498 MIN .00 AC-FT 145100
WTR YR 1991 TOTAL 62889.38 MEAN 172 MAX 482 MIN .00 AC-FT 124700

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929.

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.

AVERAGE DISCHARGE.--34 years, 766 ft³/s, 555,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft³/s, Dec. 24, 1964, gage height, 28.85 ft in gage well, 31.2 ft outside, from floodmarks; minimum daily, 0.12 ft³/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 ft³/s, by computation of flow over Goodwin Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,820 ft³/s, Apr. 27, gage height, 10.86 ft; minimum daily, 51 ft³/s, Oct. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	160	162	155	154	145	136	290	128	255	207	156
2	163	160	163	157	154	139	136	209	156	259	211	152
3	163	160	163	154	155	138	136	209	158	259	208	152
4	163	162	163	155	156	141	136	211	160	332	208	160
5	164	162	163	155	156	143	136	214	106	341	208	174
6	166	162	164	155	157	144	136	210	107	379	161	210
7	190	163	163	156	156	138	136	218	110	379	166	209
8	989	163	163	155	157	143	136	212	103	382	165	203
9	203	163	163	156	154	138	129	214	110	387	160	204
10	51	163	163	158	152	140	138	213	147	316	154	160
11	52	160	162	156	151	139	136	214	141	313	155	157
12	85	161	105	155	155	137	137	216	190	259	156	159
13	165	161	54	155	154	150	138	215	214	258	155	157
14	135	161	128	155	154	142	140	213	210	257	141	158
15	52	160	157	155	154	137	144	218	257	258	130	153
16	53	161	156	155	155	137	131	220	258	205	128	151
17	114	161	155	157	155	147	139	862	258	207	176	130
18	162	163	155	155	155	145	130	868	212	208	178	129
19	162	162	155	158	155	151	128	874	210	208	166	127
20	163	160	155	156	155	155	134	863	202	208	130	128
21	159	160	156	155	155	144	128	185	203	211	128	129
22	163	161	158	155	155	142	132	178	202	210	136	129
23	161	161	158	158	155	142	132	180	202	213	129	134
24	161	161	154	157	155	148	157	181	204	207	134	129
25	160	161	155	158	155	151	180	178	207	205	131	129
26	162	160	157	155	155	156	179	141	209	231	131	151
27	160	162	158	158	155	141	864	104	207	254	107	157
28	162	163	158	157	156	137	855	106	252	251	154	154
29	163	161	156	154	---	136	852	106	255	249	157	155
30	162	161	158	154	---	136	882	106	251	257	152	154
31	161	---	156	153	---	136	---	106	---	204	151	---
TOTAL	5334	4839	4736	4827	4335	4418	7073	8534	5629	8162	4873	4650
MEAN	172	161	153	156	155	143	236	275	188	263	157	155
MAX	989	163	164	158	157	156	882	874	258	387	211	210
MIN	51	160	54	153	151	136	128	104	103	204	107	127
AC-FT	10580	9600	9390	9570	8600	8760	14030	16930	11170	16190	9670	9220

CAL YR 1990 TOTAL 131340 MEAN 360 MAX 1020 MIN 51 AC-FT 260500
WTR YR 1991 TOTAL 67410 MEAN 185 MAX 989 MIN 51 AC-FT 133700

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.--Interruptions in record were due to malfunction of the recording instrument. 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, 21.0 °C, Sept. 30; minimum recorded, 8.5 °C, Jan. 1.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.5	18.0	16.5	16.0	13.0	13.0	9.0	8.5	9.5	9.0	10.5	10.5
2	18.0	18.0	16.0	15.5	13.0	12.5	9.5	9.0	9.5	9.5	10.5	10.5
3	18.0	18.0	16.5	16.0	12.5	12.5	9.5	9.0	10.0	9.5	10.5	10.5
4	18.5	18.0	16.5	16.0	12.5	12.5	10.0	9.5	10.5	9.5	10.5	10.5
5	18.5	18.0	16.5	16.0	12.5	12.5	9.5	9.5	11.0	10.0	10.5	10.5
6	18.0	17.5	16.0	15.5	12.5	12.0	10.0	9.5	10.5	10.0	10.5	10.0
7	17.5	17.5	16.0	15.5	12.5	12.0	10.0	10.0	10.5	10.0	10.5	10.0
8	17.5	17.5	16.0	15.5	12.0	12.0	10.0	10.0	11.0	10.0	11.5	10.5
9	17.5	17.0	16.0	15.5	12.0	12.0	10.0	10.0	11.0	10.5	11.0	10.5
10	17.0	16.5	15.5	15.5	12.5	12.0	10.0	9.5	11.0	10.5	11.0	10.5
11	17.0	16.5	15.5	15.0	12.5	12.5	10.0	9.5	10.5	10.5	11.0	10.5
12	17.5	16.5	15.5	15.5	12.5	12.0	10.0	10.0	10.5	10.0	11.0	10.5
13	17.5	17.0	---	---	12.0	11.5	10.5	10.0	11.0	10.5	10.5	10.5
14	17.5	17.0	---	---	12.0	11.0	10.5	10.5	10.5	10.5	11.0	10.0
15	17.5	17.0	---	---	11.5	11.5	10.5	10.0	10.5	10.5	11.0	10.0
16	17.5	17.0	---	---	11.5	11.0	10.0	9.5	10.5	10.5	11.5	10.5
17	17.5	16.5	---	---	11.5	11.0	10.0	9.5	11.0	10.5	11.0	10.5
18	17.5	17.0	---	---	11.0	11.0	10.0	9.5	10.5	10.0	10.5	10.5
19	17.5	17.0	---	---	11.0	11.0	10.0	9.5	10.5	10.0	11.0	10.5
20	17.0	16.5	---	---	11.0	10.5	10.0	9.5	10.5	10.0	11.5	10.0
21	17.0	17.0	---	---	10.5	10.0	10.0	9.5	10.5	10.5	11.0	10.5
22	17.0	17.0	14.5	14.0	10.0	9.5	10.0	9.5	10.5	10.5	11.5	10.5
23	17.5	17.0	14.5	14.0	9.5	9.0	10.0	9.5	11.0	10.5	12.0	10.5
24	17.5	17.0	14.5	14.0	9.5	9.0	10.0	9.5	11.0	10.5	12.0	11.0
25	17.5	17.0	14.5	14.0	9.5	9.0	9.5	9.5	11.0	10.5	11.5	11.0
26	17.5	16.5	14.0	14.0	9.5	9.0	9.5	9.5	11.0	10.5	11.0	10.5
27	17.0	17.0	14.0	13.5	9.5	9.0	9.5	9.5	10.5	10.5	11.0	10.5
28	17.0	17.0	13.5	13.5	9.5	9.0	9.5	9.5	10.5	10.0	11.5	10.5
29	17.0	16.5	13.5	13.5	9.5	9.0	9.5	9.0	---	---	12.5	11.0
30	17.0	17.0	13.5	13.0	9.5	9.0	9.5	9.0	---	---	13.0	11.5
31	17.0	16.5	---	---	9.0	9.0	9.5	9.0	---	---	13.0	11.5
MONTH	18.5	16.5	---	---	13.0	9.0	10.5	8.5	11.0	9.0	13.0	10.0

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.5	11.5	12.5	11.5	13.5	11.5	---	---	---	---	20.0	19.5
2	13.0	11.5	12.0	11.5	13.5	12.0	---	---	---	---	20.0	19.5
3	13.0	12.0	12.5	11.5	13.5	12.0	---	---	---	---	20.5	20.0
4	13.5	12.0	12.5	11.5	13.5	12.0	---	---	---	---	20.5	20.0
5	13.5	12.0	12.5	11.5	13.5	12.0	---	---	---	---	20.5	20.0
6	14.0	11.5	13.0	11.5	14.0	12.0	---	---	---	---	20.5	20.0
7	12.0	11.5	---	---	14.0	12.5	---	---	---	---	20.5	20.0
8	12.5	12.0	---	---	14.5	12.5	---	---	---	---	20.5	20.0
9	13.5	12.0	---	---	14.5	13.0	---	---	---	---	20.0	19.5
10	13.0	11.0	---	---	14.5	13.0	---	---	---	---	20.0	19.5
11	11.5	10.0	---	---	14.5	13.0	---	---	---	---	20.0	19.5
12	11.5	10.5	---	---	14.5	13.5	---	---	---	---	20.5	20.0
13	12.0	11.0	---	---	14.0	13.0	---	---	---	---	20.5	20.0
14	12.0	11.5	---	---	14.0	13.0	---	---	---	---	20.5	19.5
15	12.0	11.0	---	---	14.0	13.0	---	---	---	---	20.0	20.0
16	12.0	11.0	---	---	14.0	13.5	---	---	---	---	20.5	20.0
17	12.5	11.0	---	---	14.0	13.0	---	---	---	---	20.5	20.0
18	12.5	11.5	---	---	14.0	13.5	---	---	---	---	20.5	20.0
19	12.5	11.5	---	---	14.0	13.5	---	---	---	---	20.5	20.0
20	12.0	11.5	---	---	14.0	13.5	---	---	---	---	20.5	20.0
21	13.0	11.5	---	---	14.0	13.5	---	---	---	---	20.5	20.0
22	13.0	11.5	---	---	14.5	13.5	---	---	20.0	19.0	20.5	20.0
23	12.5	11.5	---	---	14.5	13.5	---	---	20.0	19.0	20.5	20.0
24	12.0	11.5	---	---	14.5	13.5	---	---	20.0	19.0	20.5	20.0
25	12.5	11.5	---	---	14.5	13.5	---	---	20.0	19.0	20.5	20.0
26	12.5	11.5	---	---	14.5	14.0	---	---	20.0	19.0	20.5	20.0
27	13.0	11.5	---	---	14.5	14.0	---	---	20.0	19.0	20.5	20.0
28	13.0	11.5	---	---	14.5	14.0	---	---	20.0	19.0	20.5	20.0
29	13.5	11.5	---	---	15.0	14.0	---	---	20.0	19.5	20.5	20.0
30	13.5	11.5	---	---	15.0	14.0	---	---	20.0	19.5	21.0	20.5
31	---	---	---	---	---	---	---	---	20.0	19.5	---	---
MONTH	14.0	10.0	---	---	15.0	11.5	---	---	---	---	21.0	19.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	21.5	19.5	15.5	14.5	11.0	10.0	7.5	6.0	10.0	8.0	12.5	12.0
2	21.0	19.0	15.0	13.5	11.0	9.5	8.0	6.5	10.0	8.5	12.5	11.5
3	21.0	18.5	14.5	12.5	11.0	9.5	---	---	11.0	9.0	12.0	11.5
4	21.5	18.5	14.5	12.5	11.0	9.5	---	---	11.0	9.0	---	---
5	21.0	19.0	15.0	13.0	11.0	10.0	---	---	12.5	11.0	---	---
6	20.5	18.5	14.5	13.0	11.0	9.5	---	---	---	---	12.0	11.0
7	19.0	17.5	14.0	12.0	10.5	9.5	---	---	---	---	12.0	10.5
8	18.0	16.5	14.5	12.5	10.5	9.0	---	---	---	---	12.5	10.0
9	18.5	16.5	14.5	12.5	10.5	9.0	---	---	---	---	12.0	11.0
10	19.0	16.0	14.5	12.5	11.0	9.5	---	---	---	---	11.5	10.5
11	18.5	16.0	14.5	13.0	11.5	11.0	---	---	---	---	12.0	10.5
12	18.5	15.5	14.5	13.0	12.0	11.0	---	---	---	---	11.5	11.0
13	18.5	16.0	14.5	13.0	11.0	10.0	---	---	---	---	12.0	11.0
14	18.5	16.0	14.5	13.5	---	---	---	---	13.0	11.0	12.0	11.0
15	18.5	16.0	14.5	13.5	---	---	---	---	13.0	11.5	11.0	10.0
16	19.0	16.5	14.5	13.0	10.0	9.5	---	---	13.5	11.5	11.5	10.0
17	18.0	16.0	14.5	13.5	9.5	8.5	---	---	13.5	11.5	11.0	10.5
18	17.5	17.0	14.5	13.5	---	---	---	---	13.0	10.5	11.0	11.0
19	18.0	16.5	14.0	13.5	---	---	---	---	13.0	10.5	11.5	11.0
20	17.0	15.5	13.5	12.5	8.5	7.5	10.0	8.5	13.0	10.5	11.5	11.0
21	17.5	15.0	12.5	11.5	7.5	6.0	9.5	8.0	13.0	11.0	12.0	10.5
22	17.5	15.5	12.5	11.0	6.0	5.0	9.0	7.5	13.5	11.0	12.5	11.0
23	18.0	16.0	12.5	11.0	6.0	5.0	9.5	7.5	13.5	11.0	13.5	11.5
24	18.0	16.0	12.5	11.0	6.0	5.0	9.5	7.5	13.5	11.0	13.0	12.0
25	18.0	16.0	12.5	11.0	6.5	5.0	9.5	7.5	14.0	11.0	12.5	12.0
26	18.0	16.5	12.0	11.0	7.0	5.5	9.5	8.0	13.5	11.0	12.0	11.0
27	18.0	15.5	11.0	10.0	7.0	5.5	9.5	7.5	12.5	11.5	11.0	10.0
28	18.0	16.0	11.5	10.0	7.5	6.0	9.5	7.5	12.5	11.5	12.5	11.0
29	17.5	16.0	11.5	10.0	7.0	6.0	9.0	7.5	---	---	13.0	11.5
30	17.0	15.0	11.5	10.0	7.0	5.5	9.5	7.5	---	---	14.5	12.5
31	17.0	15.5	---	---	7.0	6.0	10.0	8.0	---	---	15.0	13.5
MONTH	21.5	15.0	15.5	10.0	---	---	---	---	---	---	---	---

11302500 STANISLAUS RIVER AT OAKDALE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	15.0	14.0	15.0	12.5	21.5	17.0	22.0	18.5	23.0	20.0	24.5	20.5
2	15.0	13.5	15.0	13.5	22.0	18.0	22.5	19.5	22.5	19.5	24.5	21.0
3	15.5	13.5	16.0	12.5	22.0	18.0	23.0	20.0	22.0	19.5	25.5	22.0
4	16.0	14.0	17.5	14.0	21.5	17.5	22.5	20.0	22.0	19.0	25.5	22.0
5	16.5	14.5	17.5	15.0	21.5	17.5	22.0	19.0	22.5	19.5	25.5	22.0
6	16.0	15.0	18.5	15.5	21.5	17.5	21.0	18.5	23.0	19.5	24.0	22.0
7	15.5	14.0	18.5	15.5	22.0	18.0	20.5	18.0	23.5	20.0	23.5	21.0
8	15.5	13.5	18.5	16.0	23.0	18.5	20.5	17.5	24.0	20.5	23.0	21.0
9	16.0	13.5	17.0	14.5	23.5	19.5	20.0	17.0	24.5	20.5	22.0	20.0
10	15.5	14.0	17.0	14.0	24.5	20.0	20.5	17.0	24.5	20.5	22.0	19.5
11	14.5	13.0	16.5	14.0	24.0	20.0	20.5	18.0	25.0	21.0	22.5	19.5
12	15.0	13.0	17.0	14.0	23.5	20.0	21.5	18.0	23.0	21.0	23.0	20.0
13	15.5	13.5	15.5	14.5	21.5	18.5	22.0	19.0	24.5	21.0	23.0	20.0
14	16.0	14.0	17.0	13.5	21.0	17.5	21.5	19.0	24.5	21.5	23.0	20.0
15	15.5	14.0	18.5	14.5	20.5	17.0	21.5	18.5	25.0	21.5	23.0	20.0
16	16.0	13.0	18.0	15.5	20.0	17.0	22.0	18.5	24.5	21.0	23.5	20.5
17	16.5	13.0	16.0	12.0	19.5	16.5	22.5	19.0	24.0	21.0	24.0	21.0
18	16.5	13.0	12.5	11.5	20.0	16.5	22.5	19.5	23.5	20.5	24.0	20.5
19	16.5	13.5	14.0	11.5	20.0	16.5	22.5	20.0	23.5	20.5	24.0	21.0
20	15.5	14.0	15.0	12.5	20.0	16.5	22.0	19.0	24.0	20.5	23.5	20.5
21	16.0	14.0	18.0	13.0	20.0	16.5	22.5	19.5	24.0	20.5	23.5	20.5
22	16.5	14.5	20.0	16.0	20.5	16.5	23.0	20.0	23.5	20.5	23.5	20.5
23	16.0	15.0	20.5	16.5	20.5	16.5	23.5	20.5	24.0	20.0	23.5	20.5
24	15.5	14.5	20.5	17.5	20.0	16.5	23.0	20.0	24.5	20.5	23.0	20.0
25	15.0	14.0	20.5	17.0	20.0	16.5	23.0	20.0	24.0	20.5	22.5	20.5
26	15.5	14.0	19.5	16.5	19.5	17.0	23.5	20.0	23.5	20.0	22.5	20.0
27	15.5	13.0	20.5	16.0	17.5	17.0	23.0	20.5	23.0	19.5	22.5	20.0
28	14.5	12.0	21.0	16.5	17.0	16.0	23.0	20.0	23.0	19.5	22.5	20.0
29	15.0	12.5	19.5	17.0	19.0	15.5	23.5	20.5	24.0	20.5	23.0	20.0
30	15.0	12.5	19.5	16.5	21.0	17.5	23.5	21.0	24.0	21.0	23.0	20.5
31	---	---	20.0	15.5	---	---	23.5	20.5	24.0	20.5	---	---
MONTH	16.5	12.0	21.0	11.5	24.5	15.5	23.5	17.0	25.0	19.0	25.5	19.5

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 mi².

PERIOD OF RECORD.--October 1940 to current year. April to September 1940 in reports of California Department of Water Resources.

SPECIFIC CONDUCTANCE: Water year 1989.

WATER TEMPERATURE: Water year 1989.

GAGE.--Water-stage recorder. Datum of gage is 0.72 ft above National Geodetic Vertical Datum of 1929. 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 (see REMARKS for station 11302000). South San Joaquin and Oakdale Canals (stations 11300500 and 11301000) divert at Goodwin Dam 34 mi upstream. Diversions for irrigation of 57,250 acres in vicinity of Oakdale. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--51 years, 999 ft³/s, 723,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,500 ft³/s, Dec. 24, 1955, gage height, 63.25 ft; minimum daily, 0.11 ft³/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, 1,040 ft³/s, May 21, gage height, 41.29 ft; minimum daily, 163 ft³/s, June 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	258	412	253	193	178	205	210	851	210	305	282	192
2	218	405	220	191	184	222	205	529	200	293	276	202
3	232	404	214	191	193	214	199	379	236	284	280	191
4	214	408	212	190	208	223	196	340	207	288	287	191
5	201	413	210	188	235	233	193	330	204	325	277	184
6	191	408	205	187	217	216	190	321	191	345	267	211
7	201	406	205	188	193	194	187	300	186	399	233	254
8	204	413	204	189	188	183	185	311	178	422	213	279
9	652	412	201	189	185	178	183	307	171	424	219	252
10	540	409	200	187	182	177	177	292	168	423	207	243
11	303	410	211	188	179	180	177	281	163	388	197	228
12	276	408	209	186	179	176	181	286	174	368	208	207
13	205	408	262	183	178	187	181	306	171	367	211	203
14	205	411	243	184	177	216	179	295	232	314	192	186
15	324	409	184	187	177	205	176	288	204	318	205	193
16	289	409	189	187	175	187	176	296	233	308	181	195
17	318	410	184	188	175	181	181	290	264	286	190	194
18	378	407	190	186	175	196	194	642	260	253	197	182
19	437	410	188	181	172	247	193	797	250	272	215	192
20	444	420	185	185	170	329	192	838	253	291	221	219
21	420	417	184	189	170	471	206	859	222	272	192	225
22	416	414	185	182	170	335	208	455	232	285	180	216
23	408	414	186	178	173	255	210	326	225	261	181	181
24	406	416	188	178	171	238	206	302	221	276	188	179
25	402	418	190	178	171	328	229	290	212	262	179	188
26	403	428	190	180	172	482	256	265	209	250	192	176
27	403	428	191	181	173	602	265	253	236	262	180	184
28	401	433	192	181	194	430	616	204	243	309	177	184
29	402	434	194	186	---	294	773	191	280	323	186	225
30	402	416	186	180	---	245	810	192	317	301	211	263
31	406	---	189	178	---	223	---	203	---	297	235	---
TOTAL	10559	12410	6244	5739	5114	8052	7534	11819	6552	9771	6659	6219
MEAN	341	414	201	185	183	260	251	381	218	315	215	207
MAX	652	434	262	193	235	602	810	859	317	424	287	279
MIN	191	404	184	178	170	176	176	191	163	250	177	176
AC-FT	20940	24620	12380	11380	10140	15970	14940	23440	13000	19380	13210	12340

CAL YR 1990 TOTAL 163199 MEAN 447 MAX 1050 MIN 167 AC-FT 323700
WTR YR 1991 TOTAL 96672 MEAN 265 MAX 859 MIN 163 AC-FT 191700

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 mi², includes about 2,100 mi² 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 National Geodetic Vertical Datum of 1929. 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.

AVERAGE DISCHARGE.--63 years (water years 1924, 1930-91), 4,540 ft³/s, 3,289,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge recorded, 79,000 ft³/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 ft³/s, Aug. 10, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,130 ft³/s, Mar. 28, elevation, 12.69 ft; minimum daily, 436 ft³/s, Sept. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1000	1130	1050	959	613	876	2080	2000	659	640	546	558
2	909	1120	963	952	615	1010	1840	1940	661	596	510	548
3	856	1090	936	939	740	1050	1680	1580	648	536	506	565
4	806	1080	926	924	800	1180	1570	1280	625	531	611	488
5	810	1080	926	921	947	1280	1480	1080	566	500	628	436
6	818	1080	895	917	1020	1380	1420	980	565	518	603	446
7	839	1090	860	909	959	1320	1380	913	537	552	581	512
8	930	1120	846	913	926	1300	1340	875	565	641	580	564
9	950	1120	843	916	913	1250	1280	852	545	718	559	582
10	1290	1100	854	916	888	1180	1180	784	530	747	555	564
11	1080	1110	884	905	879	1130	1060	750	512	699	536	563
12	958	1110	951	905	865	1100	951	774	507	650	561	549
13	911	1130	956	882	890	1080	843	784	511	621	536	563
14	880	1150	979	870	868	1080	839	708	520	609	526	562
15	883	1140	973	834	819	1080	809	687	587	669	513	596
16	973	1130	930	789	790	1060	755	720	612	646	478	624
17	994	1110	920	794	758	1090	702	751	648	593	495	588
18	962	1110	911	793	769	1150	642	816	630	572	580	565
19	1020	1120	911	798	755	1200	632	1230	633	567	670	552
20	1090	1130	917	799	682	1430	649	1500	596	571	582	584
21	1110	1160	918	778	632	2180	861	1620	551	619	528	549
22	1100	1140	908	726	589	2980	965	1630	503	637	472	616
23	1100	1130	911	722	548	2850	907	1250	517	597	472	637
24	1050	1120	913	712	554	2620	1070	1060	550	562	491	550
25	1050	1120	904	704	564	2420	1140	1020	527	559	488	561
26	1070	1110	901	693	559	2780	1130	966	506	509	554	573
27	1080	1120	901	668	580	3310	1120	931	511	523	525	617
28	1050	1110	900	695	698	3980	1230	849	539	525	499	666
29	1060	1110	911	666	---	3510	1650	783	581	600	468	715
30	1050	1090	931	672	---	2880	1840	739	604	578	492	729
31	1110	---	942	634	---	2410	---	663	---	530	514	---
TOTAL	30789	33460	28471	25305	21220	55146	35045	32515	17046	18415	16659	17222
MEAN	993	1115	918	816	758	1779	1168	1049	568	594	537	574
MAX	1290	1160	1050	959	1020	3980	2080	2000	661	747	670	729
MIN	806	1080	843	634	548	876	632	663	503	500	468	436
AC-FT	61070	66370	56470	50190	42090	109400	69510	64490	33810	36530	33040	34160

CAL YR 1990 TOTAL 426026 MEAN 1167 MAX 1970 MIN 685 AC-FT 845000
WTR YR 1991 TOTAL 331293 MEAN 908 MAX 3980 MIN 436 AC-FT 657100

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.

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. Daily record for specific conductance and water temperature were obtained from river water pumped into a circulation tank located in a shelter house on the left bank.

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, 1,720 microsiemens, Apr. 16; minimum recorded, 330 microsiemens, Mar. 28.

WATER TEMPERATURE: Maximum recorded, 32.5 °C, July 4; minimum recorded, 6.0 °C, May 2.

SEDIMENT CONCENTRATION: Maximum daily mean, 619 mg/L, Mar. 27; minimum daily mean, 6 mg/L, Jan. 1.

SEDIMENT LOAD: Maximum daily, 5,530 tons, Mar. 27; minimum daily, 16 tons, Jan. 1.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (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- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
NOV 13...	1400	1120	750	7.6	14.0	0.20	765	10.2	99	260	K29	150
JAN 09...	1335	916	980	7.8	12.0	15	--	--	--	K20	K64	200
MAR 12...	1115	1100	1290	7.9	12.5	25	765	9.8	92	1500	120	280
MAY 14...	1315	710	870	8.4	18.0	23	760	13.2	140	110	130	200
JUL 16...	1230	649	815	8.9	23.5	51	760	12.5	148	K150	K63	190
SEP 11...	1215	582	873	9.0	22.0	24	760	16.4	189	1200	--	200
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 AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	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)
NOV 13...	51	32	18	79	52	3	2.7	126	0	103	91	110
JAN 09...	55	42	22	100	52	3	3.5	171	0	140	120	150
MAR 12...	130	60	31	160	55	4	4.9	180	0	150	240	200
MAY 14...	81	42	23	100	52	3	3.0	145	0	119	110	140
JUL 16...	87	40	21	94	52	3	2.6	87	17	99	100	130
SEP 11...	69	44	22	100	52	3	2.8	120	20	132	110	140

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	FLUORIDE, 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 TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 13...	0.20	15	417	410	0.57	<0.010	<0.010	<0.100	<0.100	<0.010	0.040	0.20
JAN 09...	0.20	19	596	553	0.81	0.050	0.050	2.80	2.70	0.150	0.150	0.70
MAR 12...	0.20	16	780	812	1.06	0.050	0.050	2.20	2.20	0.070	0.070	0.60
MAY 14...	0.10	15	527	512	0.72	0.050	0.030	1.40	1.50	0.020	0.010	1.3
JUL 16...	0.20	11	471	463	0.64	0.070	0.040	0.870	0.840	0.040	0.020	1.5
SEP 11...	0.10	12	500	512	0.68	0.040	0.030	0.350	0.360	0.020	<0.010	1.5

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	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)
NOV 13...	<0.010	0.020	<0.010	<0.010	10	1	44	<0.5	<1.0	1	<3	2
JAN 09...	0.120	0.080	0.120	0.080	--	--	--	--	--	--	--	--
MAR 12...	0.130	0.150	0.150	0.150	<10	1	71	0.5	<1.0	<1	<3	1
MAY 14...	0.230	0.080	0.110	0.080	<10	2	57	<0.5	<1.0	<1	<3	4
JUL 16...	0.280	0.090	0.160	0.090	--	--	--	--	--	--	--	--
SEP 11...	0.340	0.120	0.130	0.090	<10	3	49	<0.5	<1.0	<1	<3	1

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	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)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 13...	13	<1	9	30	<0.1	<10	1	<1	<1.0	380	<6	5
JAN 09...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 12...	8	<1	18	73	<0.1	<10	2	4	<1.0	780	<6	5
MAY 14...	6	<1	12	53	<0.1	<10	1	1	<1.0	520	<6	6
JUL 16...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	12	<1	11	47	<0.1	<10	1	<1	<1.0	540	<6	5

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR									
12...*	1130	2.50	148	1390	7.8	12.5	765	10.2	96
12...*	1140	2.20	202	1330	7.9	12.5	765	9.7	91
12...*	1155	2.20	267	1360	7.9	12.5	765	9.6	90
12...*	1200	5.00	305	1280	7.9	12.5	765	9.7	91
12...*	1210	4.30	330	1210	7.9	12.5	765	9.8	92
SEP									
11...*	1256	1.80	49.0	936	9.0	22.0	760	16.0	184
11...*	1302	2.45	83.0	906	9.0	22.0	760	16.6	191
11...*	1304	2.35	110	872	9.0	22.0	760	16.2	186
11...*	1309	1.80	143	840	9.1	22.5	760	16.6	193
11...*	1313	3.50	193	802	9.1	22.5	760	16.4	190

* Instantaneous discharge at the time of cross-sectional measurements: Mar. 12, 1,100 ft³/s; Sept. 11, 582 ft³/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	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								
15...	1315	871	19.5	36	85	95	97	100
NOV								
13...	1400	1120	14.0	21	64	93	95	100
DEC								
11...	1405	896	10.5	21	51	94	--	--
JAN								
09...	1335	916	12.0	35	87	97	99	100
FEB								
13...	1530	891	16.0	51	123	95	98	100
MAR								
12...	1135	1100	12.5	90	267	94	--	--
APR								
17...	1720	697	19.5	65	122	98	--	--
MAY								
14...	1335	715	18.0	68	131	95	--	--
JUN								
19...	1755	657	24.0	114	202	96	--	--
JUL								
16...	1205	649	23.0	132	231	100	--	--
SEP								
11...	1235	582	22.5	71	112	98	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 .062 MM	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											
12...	1200	5	1100	12.5	4	7	11	48	90	99	100
SEP											
11...	1245	5	582	22.5	--	1	10	62	96	100	--

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	914	859	643	624	916	827	1040	1020	1110	978	1090	965
2	998	885	668	612	949	919	1050	1030	1010	917	1200	966
3	995	928	699	650	970	952	1100	1050	1090	873	1170	1050
4	1070	926	738	697	979	949	---	---	1060	994	1060	956
5	1070	972	730	700	985	967	---	---	1120	1010	1030	967
6	995	923	708	690	1000	964	---	---	1050	902	1060	875
7	1030	975	702	677	1010	990	---	---	1210	951	1120	960
8	960	899	695	670	1010	979	---	---	1140	1020	1300	1100
9	973	710	708	676	1010	993	---	---	1210	1130	1340	1220
10	737	618	723	684	1030	996	---	---	1170	1090	1370	1290
11	863	735	720	689	1040	993	---	---	1220	1100	1380	1280
12	905	825	749	717	---	---	---	---	1300	1190	1390	1260
13	965	895	758	730	---	---	---	---	---	---	1390	1350
14	960	916	744	720	982	942	---	---	---	---	1410	1300
15	952	900	721	711	---	---	---	---	---	---	1300	1250
16	890	807	730	702	---	---	---	---	---	---	1330	1260
17	843	774	749	701	---	---	1120	1040	---	---	1340	1320
18	829	742	782	748	---	---	1100	993	---	---	1330	1250
19	755	713	783	767	---	---	1000	941	---	---	1280	1180
20	716	663	805	777	830	804	1080	990	---	---	1160	857
21	717	642	777	719	842	803	1090	964	---	---	828	698
22	725	707	748	720	829	754	1070	928	---	---	666	400
23	732	704	772	750	---	---	1130	981	---	---	473	400
24	718	701	788	769	---	---	1180	1050	---	---	713	486
25	710	689	808	789	1070	764	1170	1010	---	---	821	718
26	696	676	810	782	---	---	1230	1060	1210	1090	842	575
27	681	658	797	772	---	---	1240	1070	1140	1070	691	551
28	700	667	799	779	---	---	1200	1060	1120	1050	542	330
29	707	653	820	796	1120	1080	1170	1080	---	---	548	411
30	724	693	831	813	1070	1050	1120	1030	---	---	680	553
31	691	646	---	---	1060	1010	1170	1070	---	---	870	692
MONTH	1070	618	831	612	---	---	---	---	---	---	1410	330
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	984	862	---	---	891	787	845	742	912	812	919	548
2	1070	974	---	---	889	766	947	799	879	817	916	537
3	1140	1060	375	339	895	777	957	913	962	893	964	863
4	1200	1130	581	374	947	827	994	851	917	792	963	564
5	1280	1200	651	553	992	916	1020	888	892	764	1010	591
6	1280	1260	734	612	957	898	983	885	894	849	959	854
7	1290	1270	773	685	947	868	1090	974	959	820	888	828
8	1310	1280	766	725	960	809	1100	817	921	845	864	788
9	1340	1290	813	742	958	785	847	772	861	830	956	835
10	1360	1330	859	797	970	863	803	718	894	817	973	801
11	1350	1330	959	833	964	922	818	681	972	906	---	---
12	1500	1320	920	834	1050	953	852	797	967	906	938	864
13	1520	1480	853	809	1060	951	823	696	922	862	888	842
14	1500	1430	942	854	992	866	830	651	987	889	915	864
15	1540	1410	978	934	887	801	817	736	1050	957	918	854
16	1720	1550	935	839	903	837	852	799	1050	913	859	796
17	1620	1400	878	783	856	753	848	802	1030	942	863	791
18	1420	1350	854	680	807	713	932	845	938	807	936	772
19	1330	1130	674	526	859	719	992	885	850	782	940	898
20	1150	1090	527	453	979	835	973	843	953	782	976	853
21	1190	980	468	433	1040	958	890	804	925	808	982	919
22	1250	1060	---	---	1130	1030	929	845	951	890	958	900
23	1040	988	601	483	1090	926	929	871	984	897	1000	836
24	973	749	696	576	929	859	878	799	968	889	1090	926
25	748	654	691	614	924	851	858	820	955	896	1090	991
26	648	616	661	579	1010	895	913	845	948	849	1030	989
27	627	606	672	608	1070	863	910	796	1000	932	1030	926
28	642	621	836	668	960	840	850	777	998	921	961	882
29	655	640	857	794	907	853	824	765	1050	963	971	884
30	---	---	858	801	858	77	835	753	1010	821	962	848
31	---	---	903	837	---	---	874	781	986	590	---	---
MONTH	---	---	---	---	1130	713	1100	651	1050	590	---	---

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	25.0	22.5	16.5	14.0	11.5	9.5	---	---	12.0	9.0	15.5	13.5
2	24.0	21.5	14.5	12.5	11.0	9.0	---	---	12.5	10.0	15.0	13.5
3	23.0	20.0	14.5	12.5	10.5	8.5	---	---	14.0	10.5	14.5	13.5
4	23.5	20.0	15.0	12.0	10.0	8.0	---	---	13.0	11.5	15.0	13.5
5	23.0	20.5	15.5	13.0	10.5	8.5	---	---	13.5	12.5	14.0	12.5
6	22.0	19.5	14.5	12.0	10.5	8.5	---	---	14.5	12.0	14.5	11.5
7	20.5	18.0	13.5	11.5	10.0	8.0	---	---	13.5	12.5	15.0	12.0
8	19.5	17.0	14.0	11.5	10.0	8.0	---	---	13.0	12.5	15.5	12.5
9	19.5	16.5	14.5	12.0	10.0	8.0	---	---	13.0	12.0	15.5	13.0
10	20.0	16.5	14.5	12.0	9.0	8.0	---	---	14.0	11.5	14.5	13.0
11	20.0	17.5	14.5	12.5	10.5	9.0	---	---	15.0	12.0	14.5	11.5
12	20.5	17.0	15.0	12.5	---	---	---	---	15.5	12.5	14.0	12.5
13	20.5	17.5	14.5	12.5	---	---	---	---	---	---	15.0	12.5
14	21.0	17.5	14.0	13.0	---	---	---	---	---	---	15.5	12.5
15	20.5	17.5	14.5	12.5	---	---	---	---	---	---	14.0	12.0
16	20.5	18.0	13.5	12.5	---	---	---	---	---	---	14.0	11.5
17	20.0	17.5	15.0	13.0	---	---	12.5	10.0	---	---	13.0	12.0
18	18.5	17.5	15.0	13.0	---	---	13.0	10.0	---	---	13.0	11.5
19	19.0	17.0	14.0	13.5	---	---	13.0	10.5	---	---	14.0	12.0
20	18.0	16.0	13.5	12.0	---	---	13.0	10.0	---	---	14.5	12.5
21	18.5	15.5	13.5	11.5	---	---	13.0	9.5	---	---	13.5	12.0
22	18.5	16.0	13.5	11.5	---	---	11.5	9.0	---	---	13.5	11.5
23	19.0	16.5	13.0	11.0	---	---	12.5	8.5	---	---	14.5	12.5
24	19.5	16.5	13.0	10.5	---	---	12.0	8.5	---	---	14.0	13.0
25	19.5	17.0	12.5	10.5	---	---	11.5	8.0	---	---	14.0	12.5
26	19.5	17.0	12.0	10.0	---	---	12.0	8.5	---	---	12.5	11.5
27	19.5	17.0	11.0	9.5	---	---	12.5	8.5	15.0	14.0	13.5	11.0
28	19.5	17.0	11.0	9.0	---	---	12.5	9.0	15.0	13.5	13.5	11.5
29	19.0	16.5	10.5	9.0	---	---	12.0	8.5	---	---	15.5	12.5
30	18.5	16.0	11.5	9.5	---	---	11.5	8.0	---	---	19.5	14.0
31	18.0	16.0	---	---	---	---	11.5	9.0	---	---	18.0	12.0
MONTH	25.0	15.5	16.5	9.0	---	---	---	---	---	---	19.5	11.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	17.5	16.0	12.5	8.0	25.5	19.5	29.0	22.5	28.5	23.0	28.0	22.5
2	18.5	15.5	16.5	6.0	27.0	21.5	31.5	24.5	26.5	21.0	28.5	23.0
3	19.5	16.0	18.5	14.5	26.5	21.5	32.0	26.0	26.5	21.0	28.5	24.5
4	20.5	17.0	20.5	15.5	26.5	20.5	32.5	26.0	26.5	21.0	28.5	24.0
5	21.5	17.0	22.0	17.5	25.5	20.0	31.5	25.5	27.0	21.5	28.5	23.5
6	16.5	13.5	22.5	19.0	25.5	19.0	28.5	19.5	26.5	21.5	27.5	23.5
7	14.0	10.5	23.5	19.5	26.5	20.0	27.0	18.5	28.0	22.0	27.0	22.5
8	16.0	10.5	21.5	18.5	28.0	21.5	29.0	18.5	28.5	22.5	26.0	22.5
9	17.5	11.0	20.5	16.5	29.5	22.5	27.5	22.5	28.5	23.0	24.5	21.0
10	15.5	12.0	20.5	16.5	30.0	23.0	28.5	22.5	29.5	23.0	24.5	20.0
11	13.0	8.5	21.5	17.5	31.5	23.0	29.0	22.5	30.5	23.5	---	---
12	17.5	11.5	21.5	17.5	28.5	23.5	30.0	23.0	29.5	23.5	24.5	19.5
13	20.0	15.0	19.0	17.5	27.0	21.5	30.0	22.5	28.5	21.5	24.5	20.0
14	20.5	16.5	21.5	16.5	26.0	21.0	29.5	21.5	27.5	24.5	24.0	19.5
15	19.0	16.0	24.0	18.0	26.0	20.5	27.0	21.5	29.0	23.5	24.5	19.5
16	19.5	15.0	23.5	19.5	25.0	20.0	27.0	22.0	28.0	23.0	24.5	20.5
17	20.0	15.5	20.0	17.5	25.5	20.0	27.5	22.0	27.5	22.5	25.0	20.5
18	20.5	16.0	17.0	14.0	24.5	20.5	28.0	22.0	26.5	22.5	25.5	21.0
19	21.0	16.5	19.0	11.0	24.5	19.5	28.0	22.5	26.5	22.5	25.0	21.0
20	20.0	17.0	21.0	13.5	25.0	19.0	28.0	22.5	27.0	22.5	24.5	20.5
21	20.5	17.5	23.0	15.5	24.5	19.0	29.0	23.0	27.0	22.0	24.0	20.0
22	21.5	17.5	23.0	17.0	24.5	19.0	29.5	24.0	26.5	21.5	24.0	20.0
23	20.5	17.0	24.5	19.5	24.0	18.5	29.5	24.0	27.0	21.0	24.0	20.0
24	18.5	16.5	25.5	21.5	24.0	18.5	28.5	23.0	28.0	22.5	24.5	20.0
25	18.5	15.5	25.0	21.5	25.0	19.0	29.0	22.5	26.5	21.5	23.0	21.0
26	20.0	16.5	24.0	20.0	24.5	19.5	30.0	23.0	25.5	21.5	23.5	19.5
27	18.5	13.5	24.0	20.0	22.5	19.5	30.0	23.5	26.5	20.5	23.0	19.0
28	20.0	13.5	24.5	19.5	21.5	20.0	30.5	24.0	27.0	21.5	23.0	19.0
29	21.5	16.0	23.0	20.0	25.0	19.0	31.0	24.5	28.0	23.0	23.5	19.5
30	21.0	12.5	21.5	19.0	27.0	20.5	31.0	25.5	27.5	23.5	25.5	19.5
31	---	---	23.0	17.5	---	---	30.0	24.5	26.5	23.0	---	---
MONTH	21.5	8.5	25.5	6.0	31.5	18.5	32.5	18.5	30.5	20.5	---	---

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	1000	59	159	1130	30	92	1050	15	43
2	909	55	135	1120	20	60	963	14	36
3	856	54	125	1090	18	53	936	17	43
4	806	48	104	1080	21	61	926	20	50
5	810	46	101	1080	27	79	926	24	60
6	818	51	113	1080	22	64	895	23	56
7	839	42	95	1090	28	82	860	14	33
8	930	33	83	1120	31	94	846	11	25
9	950	33	85	1120	27	82	843	13	30
10	1290	37	129	1100	32	95	854	15	35
11	1080	30	87	1110	22	66	884	21	50
12	958	30	78	1110	23	69	951	25	64
13	911	36	89	1130	27	82	956	26	67
14	880	34	81	1150	39	121	979	22	58
15	883	36	86	1140	41	126	973	16	42
16	973	41	108	1130	38	116	930	14	35
17	994	50	134	1110	28	84	920	11	27
18	962	50	130	1110	29	87	911	11	27
19	1020	44	121	1120	36	109	911	16	39
20	1090	37	109	1130	32	98	917	17	42
21	1110	27	81	1160	25	78	918	14	35
22	1100	32	95	1140	24	74	908	12	29
23	1100	34	101	1130	35	107	911	12	30
24	1050	31	88	1120	35	106	913	9	22
25	1050	31	88	1120	22	67	904	11	27
26	1070	33	95	1110	27	81	901	9	22
27	1080	37	108	1120	24	73	901	9	22
28	1050	36	102	1110	27	81	900	10	24
29	1060	35	100	1110	16	48	911	12	30
30	1050	40	113	1090	14	41	931	11	28
31	1110	38	114	---	---	---	942	10	25
TOTAL	30789	---	3237	33460	---	2476	28471	---	1156
JANUARY			FEBRUARY			MARCH			
1	959	6	16	613	19	31	876	122	293
2	952	7	18	615	25	42	1010	214	583
3	939	12	30	740	35	71	1050	133	376
4	924	16	40	800	52	114	1180	225	721
5	921	20	50	947	127	327	1280	360	1260
6	917	24	59	1020	86	240	1380	334	1250
7	909	29	71	959	58	152	1320	153	545
8	913	37	91	926	45	109	1300	116	407
9	916	40	99	913	49	121	1250	110	371
10	916	34	84	888	48	115	1180	98	312
11	905	29	71	879	47	112	1130	85	259
12	905	29	71	865	48	112	1100	88	261
13	882	33	79	890	51	123	1080	78	227
14	870	37	87	868	53	124	1080	84	245
15	834	37	83	819	45	100	1080	67	195
16	789	29	62	790	42	90	1060	63	180
17	794	21	45	758	44	90	1090	71	209
18	793	22	47	769	44	91	1150	92	286
19	798	25	54	755	40	82	1200	104	337
20	799	26	56	682	28	52	1430	136	525
21	778	26	55	632	29	49	2180	251	1530
22	726	21	41	589	28	45	2980	318	2540
23	722	18	35	548	26	38	2850	260	2000
24	712	18	35	554	25	37	2620	257	1820
25	704	16	30	564	30	46	2420	313	2050
26	693	14	26	559	29	44	2780	397	3030
27	668	12	22	580	32	50	3310	619	5530
28	695	14	26	698	63	119	3980	350	3730
29	666	18	32	---	---	---	3510	228	2160
30	672	18	33	---	---	---	2880	192	1520
31	634	18	31	---	---	---	2410	169	1060
TOTAL	25305	---	1579	21220	---	2726	55146	---	35812

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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	2080	160	899	2000	136	734	659	57	101
2	1840	169	840	1940	123	644	661	62	111
3	1680	137	621	1580	102	435	648	57	100
4	1570	136	577	1280	84	290	625	47	79
5	1480	125	499	1080	89	260	566	48	73
6	1420	125	479	980	98	259	565	53	81
7	1380	124	462	913	85	210	537	49	71
8	1340	112	405	875	82	194	565	63	96
9	1280	102	353	852	73	168	545	76	112
10	1180	132	421	784	71	150	530	107	153
11	1060	102	292	750	73	148	512	116	160
12	951	78	200	774	75	157	507	117	160
13	843	77	175	784	76	161	511	118	163
14	839	83	188	708	66	130	520	111	156
15	809	77	168	687	63	117	587	113	179
16	755	60	122	720	83	161	612	113	187
17	702	59	123	751	78	158	648	115	201
18	642	62	107	816	80	176	630	116	197
19	632	71	121	1230	96	319	633	127	195
20	649	93	155	1500	103	417	596	133	214
21	861	259	612	1620	109	477	551	132	196
22	965	158	409	1630	107	471	503	120	163
23	907	116	284	1250	94	317	517	112	156
24	1070	134	387	1060	86	246	550	103	153
25	1140	127	391	1020	95	262	527	95	135
26	1130	120	366	966	90	235	506	77	105
27	1120	116	351	931	91	229	511	93	128
28	1230	116	385	849	113	259	539	131	191
29	1650	118	526	783	103	218	581	129	202
30	1840	135	671	739	94	188	604	104	170
31	---	---	---	663	71	127	---	---	---
TOTAL	35045	---	11589	32515	---	8317	17046	---	4388
JULY			AUGUST			SEPTEMBER			
1	640	87	150	546	162	239	558	122	184
2	596	115	185	510	130	179	548	107	158
3	536	144	208	506	129	176	565	59	90
4	531	133	191	611	150	247	488	103	136
5	500	130	175	628	132	224	436	44	52
6	518	114	159	603	157	256	446	40	48
7	552	122	182	581	151	237	512	72	100
8	641	143	247	580	126	197	564	56	85
9	718	138	268	559	143	216	582	69	108
10	747	125	252	555	164	246	564	104	158
11	699	129	243	536	182	263	563	87	112
12	650	136	239	561	188	285	549	89	132
13	621	113	189	536	158	229	563	69	105
14	609	100	156	526	138	196	562	85	129
15	669	119	215	513	132	183	596	95	153
16	646	130	230	478	121	156	624	79	133
17	593	139	223	495	133	178	588	53	84
18	572	149	230	580	147	230	565	54	82
19	567	154	236	670	139	251	552	63	94
20	571	141	217	582	122	192	584	58	91
21	619	132	221	528	137	195	549	60	89
22	637	141	243	472	138	176	616	87	145
23	597	174	280	472	121	154	637	79	136
24	562	135	205	491	133	176	550	103	153
25	559	115	174	488	130	171	561	107	162
26	509	100	137	554	116	174	573	91	141
27	523	127	179	525	91	129	617	62	90
28	525	92	130	499	89	120	666	84	151
29	600	119	193	468	77	97	715	104	201
30	578	155	242	492	73	97	729	106	209
31	530	160	229	514	113	157	---	---	---
TOTAL	18415	---	6428	16659	---	6026	17222	---	3711
YEAR	331293		87445						

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 mi².

PERIOD OF RECORD.--Water years 1964-66, 1971 to current year.

WATER DISCHARGE: Water years 1961-90.

CHEMICAL DATA: Water years 1964-66.

WATER TEMPERATURE: Water year 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER DISCHARGE: January 1961 to September 1990.

WATER TEMPERATURE: October 1970 to current year.

INSTRUMENTATION.--Temperature recorder since October 1970.

REMARKS.--Water temperature is affected by regulation from New Hogan Dam.

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, 22.5 °C, Oct. 1, 4, 5; minimum recorded, 4.0 °C, Dec. 22-25, 29-31, Jan. 1.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.5	20.5	17.5	16.5	10.0	9.0	5.5	4.0	8.5	5.5	11.5	10.5
2	21.5	19.0	17.0	16.0	10.0	8.5	6.0	4.5	9.5	7.0	11.5	10.0
3	22.0	18.0	17.0	15.5	10.0	8.0	6.5	5.5	10.0	8.0	12.0	10.5
4	22.5	21.0	16.5	15.5	9.5	8.5	7.5	6.0	10.5	8.0	14.0	11.5
5	22.5	21.0	16.5	15.0	9.5	8.5	6.5	6.0	11.0	10.0	13.0	11.5
6	22.0	20.5	15.5	14.5	9.5	8.0	7.5	6.5	11.0	9.5	12.5	9.5
7	22.0	20.5	15.5	14.5	9.0	8.0	7.5	7.0	11.0	8.5	12.0	9.0
8	22.0	20.0	15.5	14.0	9.0	7.5	7.5	7.5	11.0	9.0	13.0	9.0
9	21.5	20.0	15.0	13.5	9.0	7.5	8.5	7.5	10.5	8.5	12.0	10.0
10	21.5	20.0	15.0	13.5	9.5	8.0	7.5	6.5	10.5	8.0	11.5	9.5
11	21.0	19.5	15.0	13.5	10.0	9.5	7.0	6.5	10.5	8.5	12.0	9.0
12	21.0	19.5	14.5	13.5	10.0	9.5	8.5	7.0	10.5	8.5	11.5	10.0
13	21.0	19.0	14.5	13.5	9.5	8.5	8.5	7.5	11.5	8.5	12.0	9.5
14	20.5	19.0	14.0	13.0	8.5	7.5	8.5	8.0	11.5	10.0	11.5	9.0
15	20.5	18.5	14.0	12.5	8.0	7.5	8.5	6.5	12.0	10.5	12.0	9.0
16	20.0	18.5	13.0	12.0	8.0	7.0	7.5	6.0	11.5	10.0	12.5	9.5
17	20.0	18.5	14.0	12.5	8.0	7.0	7.5	6.0	11.5	9.5	11.5	9.5
18	19.5	18.5	13.5	12.0	8.5	7.0	7.5	5.5	11.0	8.5	10.5	9.0
19	20.0	18.5	13.0	12.5	8.5	7.5	7.5	6.0	11.5	9.0	12.0	9.5
20	19.5	18.0	12.5	11.0	7.0	5.5	7.5	6.0	11.5	9.0	11.5	9.0
21	19.5	18.0	11.5	10.5	6.0	4.5	7.0	5.5	11.5	9.5	12.5	10.0
22	19.0	17.5	11.5	10.5	5.0	4.0	7.0	5.0	11.5	9.5	13.5	9.5
23	19.0	17.5	11.5	10.5	5.0	4.0	7.0	5.0	11.5	9.0	15.0	11.0
24	19.0	17.5	11.5	10.0	5.5	4.0	7.0	5.5	12.5	9.5	12.0	10.0
25	19.0	17.5	11.5	10.0	5.5	4.0	7.0	5.5	12.5	9.5	12.0	7.0
26	19.0	17.0	11.5	10.5	5.5	4.5	7.0	5.5	12.5	10.0	9.5	7.0
27	18.5	17.0	10.5	9.0	6.0	4.5	7.0	5.5	11.0	10.5	13.5	7.0
28	18.5	17.0	10.0	9.0	5.5	4.5	7.0	5.5	11.5	11.0	14.5	9.5
29	18.5	17.0	10.5	9.0	5.5	4.0	7.0	5.5	---	---	15.0	11.0
30	18.0	16.5	11.0	9.5	5.0	4.0	7.0	6.0	---	---	17.0	12.0
31	17.5	16.5	---	---	5.5	4.0	8.5	5.5	---	---	16.5	13.5
MONTH	22.5	16.5	17.5	9.0	10.0	4.0	8.5	4.0	12.5	5.5	17.0	7.0

11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	15.0	13.5	16.5	14.5	13.0	10.5	14.0	12.0	15.0	12.5	16.0	14.0
2	15.0	12.0	15.0	13.5	13.0	10.5	14.0	12.0	15.0	12.5	16.0	14.0
3	16.5	12.5	16.0	12.5	13.0	10.5	14.0	12.0	15.0	12.5	---	---
4	17.0	13.5	17.5	13.5	13.0	10.5	14.0	12.0	15.0	13.0	---	---
5	17.0	13.5	18.0	15.0	13.0	10.5	14.5	12.0	15.0	13.0	---	---
6	16.0	14.0	19.0	16.5	13.0	10.5	14.0	12.0	15.0	13.0	---	---
7	15.5	12.0	18.0	16.0	13.0	10.5	14.0	12.0	15.0	13.0	---	---
8	16.0	11.5	15.0	10.5	12.0	11.0	13.5	12.0	15.5	13.0	---	---
9	16.5	12.5	11.5	10.5	12.5	11.5	14.0	13.0	16.0	15.0	---	---
10	15.5	13.0	11.5	10.5	13.0	11.5	14.5	13.5	16.5	15.5	18.5	18.0
11	15.5	12.0	11.0	10.5	13.5	11.5	14.0	13.0	16.0	15.5	18.0	16.5
12	16.0	12.0	11.5	10.5	13.0	11.5	14.0	13.0	16.5	15.5	17.5	16.5
13	17.0	13.0	11.0	10.5	12.5	11.0	14.0	13.0	16.5	15.5	18.0	16.5
14	16.5	13.5	12.0	10.5	13.0	11.5	14.5	13.0	16.0	15.0	18.0	16.5
15	15.0	13.0	12.0	10.5	13.0	12.0	14.5	13.5	16.0	14.5	18.0	16.5
16	14.5	11.5	12.0	10.0	13.0	11.5	14.5	13.5	15.5	14.0	18.5	15.5
17	16.5	12.0	11.0	10.0	13.0	11.5	14.5	13.0	15.5	14.0	18.0	15.0
18	16.0	13.0	10.5	10.0	14.0	11.5	15.5	13.0	17.0	14.0	17.5	15.0
19	14.5	13.0	12.5	10.0	13.5	11.0	15.5	12.5	16.5	13.5	17.5	15.5
20	16.0	13.5	12.5	10.0	13.0	11.0	14.5	12.0	16.0	13.5	17.5	15.5
21	17.5	14.0	12.5	10.0	13.5	11.0	15.0	12.5	15.5	13.5	17.5	15.5
22	18.0	15.0	12.5	10.5	13.5	10.5	15.0	12.5	15.5	13.5	17.5	15.5
23	16.5	14.5	12.5	10.5	13.5	11.0	14.5	12.5	15.5	13.5	17.5	16.0
24	15.0	14.0	12.5	10.5	14.0	11.0	15.0	12.5	15.5	13.5	18.0	16.0
25	14.0	12.5	12.5	10.5	14.0	11.0	15.0	12.5	15.5	13.5	18.0	16.0
26	16.0	13.0	12.5	10.0	13.5	11.0	15.0	12.5	15.5	13.5	18.0	16.0
27	17.0	13.5	12.5	10.5	12.5	11.5	15.0	13.0	15.5	14.0	18.0	16.0
28	17.5	13.5	12.5	10.5	12.0	11.5	15.0	13.0	15.5	14.0	18.0	16.0
29	18.5	15.0	11.5	10.0	13.5	11.5	15.0	13.0	16.0	14.0	18.5	16.5
30	17.5	15.0	12.0	10.5	14.0	11.5	15.5	13.0	15.5	14.0	18.5	16.5
31	---	---	12.5	10.0	---	---	15.0	13.0	15.5	14.0	---	---
MONTH	18.5	11.5	19.0	10.0	14.0	10.5	15.5	12.0	17.0	12.5	---	---

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 National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE.--40 years, 2,523 ft³/s, 1,828,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,940 ft³/s, Aug. 11, 1969; no flow for many days in some years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2300	858	1210	2650	2990	1120	3980	898	1390	836	1690	2430
2	2300	796	959	2650	3210	795	4010	903	1700	1400	1690	2440
3	2290	1570	957	2630	3220	1290	3970	900	1190	1670	1670	1940
4	2290	1810	1290	2020	3220	3090	3990	895	833	1670	1680	1650
5	1820	1280	1840	1770	3230	4080	4020	895	825	1690	1670	1630
6	1510	964	2230	1780	3520	4070	4040	893	825	1720	1250	1120
7	1070	1480	2620	1730	4040	4070	3830	891	827	1190	890	1370
8	870	1790	2610	2250	4050	4070	4040	892	1210	893	1350	1630
9	868	1790	3320	2450	3320	4070	4000	891	1240	891	1690	1510
10	870	1790	3270	2470	3230	4070	3890	1920	927	1230	1680	1650
11	870	1790	2840	1910	2780	4070	3900	2410	665	1710	1680	2070
12	868	1780	2600	1690	2480	4070	3890	2460	552	1710	1680	2410
13	868	1570	2140	1700	2480	4040	3900	2460	788	1710	1670	1300
14	844	1130	1840	1700	2470	4040	3900	1430	797	1710	1670	1910
15	842	884	2420	2260	2480	4050	3900	870	793	1700	1670	2420
16	843	1480	2660	2190	2480	4030	3930	870	794	1700	1670	2420
17	842	1790	2660	.00	2480	4030	3430	867	790	1690	1670	2420
18	844	1800	2650	.00	2460	4030	2760	867	792	2220	1670	2430
19	864	1170	2670	299	2480	4050	2520	862	818	2500	1680	2430
20	873	966	2050	1320	2460	4050	2510	1850	828	2090	1680	1950
21	868	1450	1830	1600	2430	3940	2540	2450	819	1730	1680	1620
22	875	1790	1840	1600	1830	3980	2030	2460	792	1730	1670	1610
23	872	1790	2240	1600	1600	4030	1220	1950	797	1720	1680	1630
24	869	1790	2510	1600	1600	4020	905	1120	803	1690	1660	1640
25	871	1790	2500	2120	1600	4050	898	831	820	1690	1680	1660
26	868	1800	2390	2550	1610	4050	897	828	841	1680	1650	1650
27	869	1790	2430	2540	1610	4070	893	824	837	1680	1650	1660
28	901	2280	2460	2080	1610	4030	893	830	847	1680	1650	1650
29	867	2620	2470	2130	---	3980	895	1390	839	1680	1650	1650
30	866	2050	2480	2520	---	4010	900	1150	837	1690	2030	1650
31	852	---	2590	2540	---	4020	---	826	---	1720	2430	---
TOTAL	34324	47638	70576	58349.00	72970	115365	86481	39583	26816	50620	51430	55550
MEAN	1107	1588	2277	1882	2606	3721	2883	1277	894	1633	1659	1852
MAX	2300	2620	3320	2650	4050	4080	4040	2460	1700	2500	2430	2440
MIN	842	796	957	.00	1600	795	893	824	552	836	890	1120
AC-FT	68080	94490	140000	115700	144700	228800	171500	78510	53190	100400	102000	110200

CAL YR 1990 TOTAL 1129088 MEAN 3093 MAX 4380 MIN 796 AC-FT 2240000
WTR YR 1991 TOTAL 709702.00 MEAN 1944 MAX 4080 MIN .00 AC-FT 1408000

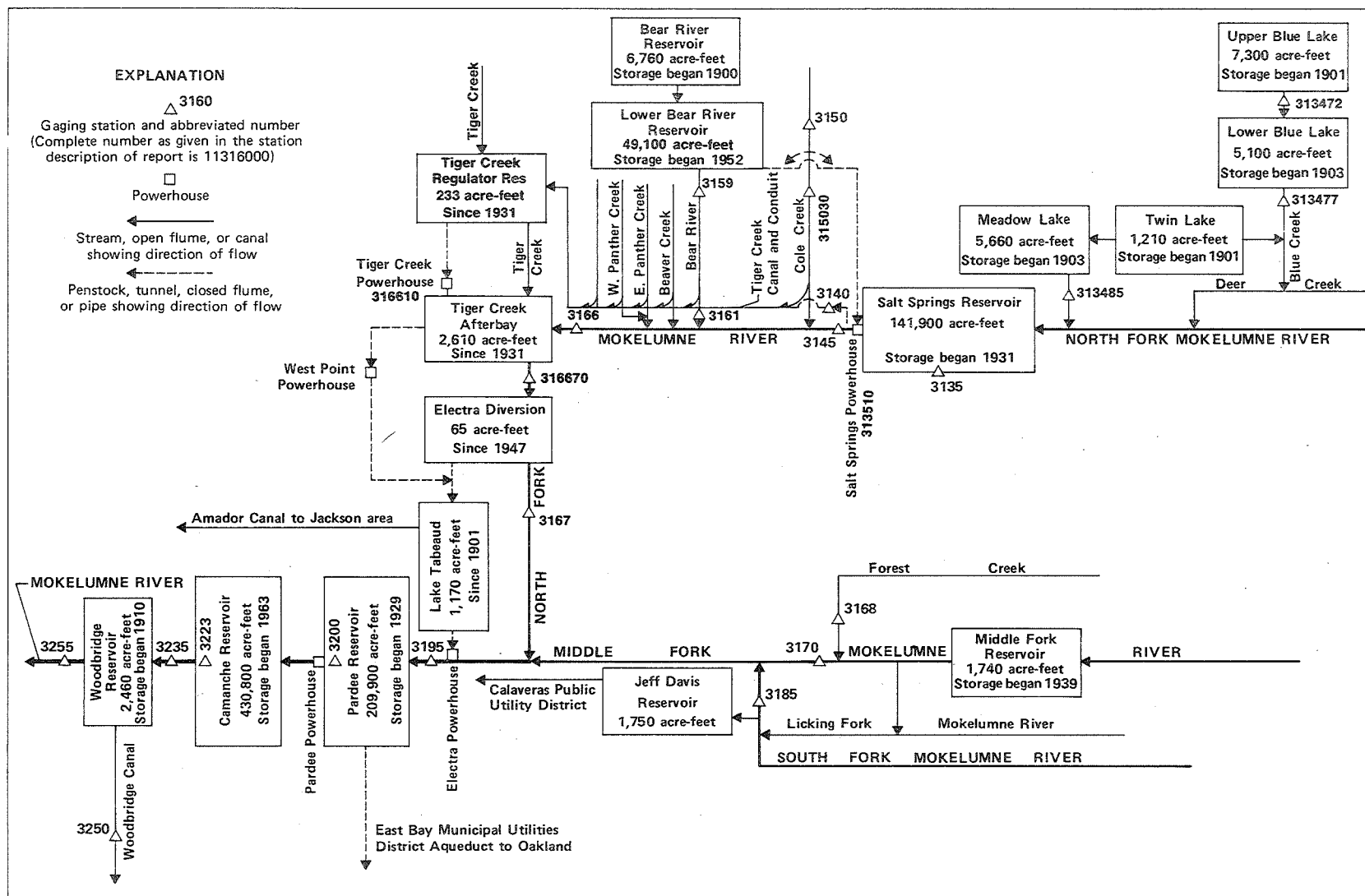


Figure 35. Diversions and storage in Mokelumne River basin.

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 mi².

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 National Geodetic Vertical Datum of 1929, 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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.1	.70	---	---	---	---	---	4.7	2.7	11	11
2	2.1	1.3	.69	---	---	---	---	---	5.1	6.9	11	11
3	2.2	.55	.70	---	---	---	---	---	5.3	11	11	10
4	2.1	.54	.70	---	---	---	---	---	5.5	11	10	10
5	2.1	.53	.70	---	---	---	---	---	5.2	11	11	11
6	2.1	.50	.71	---	---	---	---	---	5.1	11	11	11
7	2.1	.50	.71	---	---	---	---	---	4.6	10	11	11
8	2.0	.51	.70	---	---	---	---	---	3.2	10	11	11
9	2.0	.53	.70	---	---	---	---	---	2.8	10	11	11
10	2.0	.55	.69	---	---	---	---	---	2.5	11	11	11
11	2.0	.55	---	---	---	---	---	---	1.2	11	11	11
12	2.0	.55	---	---	---	---	---	---	1.2	11	11	11
13	2.0	.55	---	---	---	---	---	---	2.9	11	11	10
14	2.0	.55	---	---	---	---	---	---	5.8	11	11	10
15	2.0	.55	---	---	---	---	---	---	3.0	11	11	10
16	2.0	.55	---	---	---	---	---	---	2.8	11	10	10
17	2.0	.55	---	---	---	---	---	---	2.7	11	10	10
18	2.0	.55	---	---	---	---	---	---	2.6	11	10	10
19	2.3	.57	---	---	---	---	---	---	2.5	11	11	9.9
20	2.3	.61	---	---	---	---	---	---	2.6	11	11	9.9
21	2.3	.62	---	---	---	---	---	---	2.8	11	11	9.9
22	2.2	.62	---	---	---	---	---	---	2.8	11	11	9.7
23	2.1	.62	---	---	---	---	---	---	2.8	11	11	10
24	2.1	.62	---	---	---	---	---	9.7	2.7	11	11	10
25	2.1	.63	---	---	---	---	---	10	2.7	11	11	10
26	2.0	.70	---	---	---	---	---	10	2.6	11	11	10
27	2.0	.69	---	---	---	---	---	10	2.7	11	11	9.9
28	2.0	.69	---	---	---	---	---	7.0	2.7	11	11	9.9
29	2.0	.68	---	---	---	---	---	4.3	3.1	11	11	9.8
30	2.0	.70	---	---	---	---	---	4.1	2.9	11	11	9.7
31	2.0	---	---	---	---	---	---	4.1	---	11	11	---
TOTAL	64.1	19.76	---	---	---	---	---	---	99.1	325.6	337	308.7
MEAN	2.07	.66	---	---	---	---	---	---	3.30	10.5	10.9	10.3
MAX	2.3	2.1	---	---	---	---	---	---	5.8	11	11	11
MIN	2.0	.50	---	---	---	---	---	---	1.2	2.7	10	9.7
AC-FT	127	39	---	---	---	---	---	---	197	646	668	612

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 mi².

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 National Geodetic Vertical Datum of 1929, 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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	2.8	.92	---	---	---	---	---	17	11	11	11
2	7.3	1.8	.94	---	---	---	---	---	17	11	11	11
3	5.8	.84	1.0	---	---	---	---	---	17	11	11	11
4	5.1	.73	1.0	---	---	---	---	---	17	11	11	11
5	4.6	.68	1.0	---	---	---	---	---	17	11	11	11
6	4.1	.70	1.1	---	---	---	---	---	17	11	11	12
7	3.9	.63	1.1	---	---	---	---	---	17	11	11	12
8	3.6	.61	1.2	---	---	---	---	---	17	11	11	12
9	3.2	.61	1.1	---	---	---	---	---	17	11	11	12
10	3.3	.61	.88	---	---	---	---	---	17	11	11	12
11	3.5	.61	.84	---	---	---	---	---	17	11	11	12
12	3.3	.61	.86	---	---	---	---	---	17	11	11	12
13	3.1	.61	.86	---	---	---	---	---	17	11	11	12
14	2.9	.61	---	---	---	---	---	---	17	11	11	12
15	2.8	.61	---	---	---	---	---	---	17	11	11	12
16	2.7	.61	---	---	---	---	---	---	17	11	11	12
17	2.7	.61	---	---	---	---	---	---	17	11	11	12
18	2.7	.61	---	---	---	---	---	---	17	11	11	12
19	3.1	.64	---	---	---	---	---	---	17	11	11	12
20	3.1	.71	---	---	---	---	---	---	17	11	11	12
21	3.1	.71	---	---	---	---	---	---	17	11	11	12
22	3.1	.71	---	---	---	---	---	---	17	11	11	12
23	3.1	.71	---	---	---	---	---	---	17	11	11	12
24	3.0	.71	---	---	---	---	---	13	16	11	11	12
25	2.9	.71	---	---	---	---	---	13	16	11	11	12
26	2.7	.81	---	---	---	---	---	13	16	11	11	12
27	2.6	.81	---	---	---	---	---	13	16	11	11	12
28	2.5	.83	---	---	---	---	---	11	15	11	11	12
29	2.4	.89	---	---	---	---	---	10	13	11	11	12
30	2.3	.92	---	---	---	---	---	9.9	11	11	11	12
31	2.6	---	---	---	---	---	---	14	---	11	11	---
TOTAL	110.2	24.05	---	---	---	---	---	---	494	341	341	355
MEAN	3.55	.80	---	---	---	---	---	---	16.5	11.0	11.0	11.8
MAX	9.1	2.8	---	---	---	---	---	---	17	11	11	12
MIN	2.3	.61	---	---	---	---	---	---	11	11	11	11
AC-FT	219	48	---	---	---	---	---	---	980	676	676	704

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 mi².

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 National Geodetic Vertical Datum of 1929, 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 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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	23	17	---	---	---	---	---	13	7.4	28	18
2	15	24	17	---	---	---	---	---	13	6.2	29	17
3	15	23	---	---	---	---	---	---	13	10	25	17
4	15	22	---	---	---	---	---	---	13	15	20	17
5	15	22	---	---	---	---	---	---	13	15	20	22
6	15	23	---	---	---	---	---	---	14	15	20	27
7	16	23	---	---	---	---	---	---	14	15	20	27
8	16	21	---	---	---	---	---	---	14	15	20	27
9	16	21	---	---	---	---	---	---	14	15	20	27
10	16	20	---	---	---	---	---	---	14	15	20	28
11	15	20	---	---	---	---	---	---	14	15	20	28
12	15	20	---	---	---	---	---	---	14	14	19	27
13	15	20	---	---	---	---	---	---	15	14	19	27
14	15	19	---	---	---	---	---	---	12	15	19	26
15	15	20	---	---	---	---	---	---	9.1	15	19	26
16	15	20	---	---	---	---	---	---	9.7	15	19	25
17	15	19	---	---	---	---	---	---	9.8	15	19	25
18	15	19	---	---	---	---	---	---	9.8	15	19	25
19	16	19	---	---	---	---	---	---	10	15	19	25
20	16	20	---	---	---	---	---	---	11	15	20	24
21	15	20	---	---	---	---	---	---	10	15	20	24
22	18	19	---	---	---	---	---	---	8.7	15	19	24
23	23	19	---	---	---	---	---	---	7.3	15	19	25
24	23	18	---	---	---	---	---	16	6.1	15	19	26
25	22	18	---	---	---	---	---	16	6.1	20	18	26
26	22	19	---	---	---	---	---	16	6.5	28	18	26
27	22	19	---	---	---	---	---	16	7.1	29	18	27
28	22	18	---	---	---	---	---	15	7.5	28	19	26
29	22	18	---	---	---	---	---	13	8.0	29	18	26
30	22	17	---	---	---	---	---	14	8.2	29	18	27
31	23	---	---	---	---	---	---	14	---	28	18	---
TOTAL	540	603	---	---	---	---	---	---	324.9	527.6	618	742
MEAN	17.4	20.1	---	---	---	---	---	---	10.8	17.0	19.9	24.7
MAX	23	24	---	---	---	---	---	---	15	29	29	28
MIN	15	17	---	---	---	---	---	---	6.1	6.2	18	17
AC-FT	1070	1200	---	---	---	---	---	---	644	1050	1230	1470

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 mi².

PERIOD OF RECORD.--March 1931 to current year. Prior to October 1964, records published as usable contents.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--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 at 1400 hours. 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, 142,050 acre-ft, June 3, 1989, elevation, 3,958.2 ft; no contents at times in 1932-33, 1945, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 138,410 acre-ft, July 3, elevation, 3,954.4 ft; minimum, 7,165 acre-ft, Mar. 1, elevation, 3,739.3 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	3,959	142,821

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 1400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53729	25960	e18501	10902	8587	7165	18317	40254	108340	138030	125269	110413
2	53295	24702	e18300	10760	8587	7256	18651	41220	111716	138030	124905	110326
3	52618	24274	e18110	10620	8488	7278	18801	42087	e115200	138410	124450	109547
4	52312	23893	e17830	10480	8340	8587	19063	42742	119041	138030	123905	109202
5	51763	23431	e17639	10452	8365	11985	e20300	44067	122727	137650	123451	108857
6	50815	23015	e17465	10342	8389	12814	20559	46156	124541	137175	122998	108512
7	50015	22684	17259	10204	8414	13160	e20800	48474	125908	136985	122546	108771
8	49064	22316	17151	10095	e8389	13446	22112	51702	127099	136512	122094	108168
9	48474	21910	e16700	9960	8365	13930	22643	54414	128202	136039	121643	107396
10	47889	21829	e16350	9826	8340	e14250	23389	56115	129957	135567	121643	107224
11	47250	21749	e16000	9719	8316	14489	23767	57655	130978	135189	121013	106711
12	46557	21668	e15700	9640	8316	14655	24020	58761	132188	134436	120474	106028
13	45871	21508	e15300	9534	8316	14789	24189	60345	132936	133779	119936	105432
14	44908	21388	e15000	9403	8292	14990	24530	61751	134061	133498	118952	104753
15	43901	21269	e14700	9335	8267	15126	25566	62970	134719	e133200	118595	103991
16	42797	21189	e14300	9221	8267	15329	26401	65304	135661	132842	117971	103485
17	41761	21189	e13950	9221	8292	15466	e27100	68455	136039	132375	117437	102727
18	40629	20952	13606	9169	8340	15638	27835	70019	136417	132282	116815	102224
19	39194	20833	e13200	9144	8267	15776	e28500	e71600	136512	e131700	116018	101470
20	38250	e20650	e12800	9067	8194	15880	e29300	72974	136512	131164	115311	100803
21	37626	e20498	e12400	8990	7978	e16000	30096	74507	136512	e130800	e114700	100137
22	36598	e20470	e12000	8863	7764	16123	e30600	75610	136796	130513	114166	99722
23	35331	e20242	e12050	8863	e7750	16369	31228	78809	136512	130049	113201	99142
24	34234	e20110	e12100	8863	e7730	e16500	32185	82672	136796	129401	112676	98482
25	33153	e19986	e12150	8863	7717	e16700	33251	87315	136512	128755	112327	97987
26	32185	e19665	e12220	8863	7508	e16900	34036	91185	136512	128018	111978	97248
27	31228	e19423	12288	8813	7278	17079	e34700	94397	136133	127374	111804	96511
28	30283	e19140	11985	8762	7188	17259	35784	97659	136606	126915	111194	95940
29	29165	e18866	11657	8737	---	17439	37059	100969	137555	126457	111194	94883
30	28017	e18764	11305	8687	---	17729	38563	103569	138030	125361	110934	93993
31	26845	---	e11045	e8637	---	18096	---	105772	---	125452	e110673	---
MAX	53729	25960	18501	10902	8587	18096	38563	105772	138030	138410	125269	110413
MIN	26845	18764	11045	8637	7188	7165	18317	40254	108340	125361	110673	93993
a	3797.4	3778.9	e3754.5	e3745.5	3739.4	3775.9	3821.6	3918.2	3954.0	3940.5	e3923.9	3904.0
b	-27694	-8081	-7719	-2408	-1449	+10908	+20467	+67209	+32258	-12578	-14779	-16680

CAL YR 1990 MAX 109029 MIN 11045 b -33582
WTR YR 1991 MAX 138410 MIN 7165 b +39454

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 National Geodetic Vertical Datum of 1929, 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, records include Bear River and Cole Creek diversion to Salt Springs No. 2 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.

AVERAGE DISCHARGE.--60 years, 361 ft³/s, 261,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 577 ft³/s, June 22, 1945; no flow at times in many years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	401	543	46	47	4.5	83	259	22	225	521	361	394
2	391	437	46	47	28	94	215	86	225	390	484	393
3	435	191	43	46	46	97	238	91	226	445	483	393
4	406	191	44	46	25	79	242	74	222	528	488	393
5	501	192	46	46	155	49	246	75	211	528	484	393
6	499	192	110	45	200	47	227	145	221	528	471	371
7	497	189	121	45	190	48	213	249	250	527	466	164
8	489	177	53	46	110	47	229	247	258	531	504	472
9	495	118	50	47	.00	46	236	247	258	531	308	533
10	493	49	234	46	.00	46	232	112	335	531	101	550
11	494	49	402	46	126	47	236	.58	451	529	525	546
12	501	48	402	46	196	48	250	.74	485	522	547	548
13	500	47	403	46	193	47	257	93	504	507	551	550
14	495	46	224	48	193	47	135	189	516	479	551	549
15	406	47	46	47	111	46	.31	174	514	189	551	544
16	492	47	46	22	.00	45	.00	176	514	310	548	537
17	514	47	282	5.6	.00	45	.00	107	514	348	547	543
18	514	47	397	4.5	.00	46	.00	.40	515	540	538	544
19	507	47	400	4.1	68	48	.00	.36	512	541	544	544
20	500	47	403	3.9	147	48	.00	126	513	542	536	532
21	501	47	375	3.9	188	48	.00	230	508	542	512	518
22	511	47	47	4.1	110	48	.00	231	501	538	494	507
23	515	47	46	4.1	.00	46	.00	231	485	527	474	503
24	522	47	109	4.1	.00	46	.00	232	472	514	454	500
25	525	47	46	3.9	59	48	.00	232	472	518	423	497
26	526	70	45	3.7	94	48	.00	232	467	509	405	492
27	519	95	79	3.7	94	61	.00	231	454	497	394	495
28	524	95	142	3.7	93	72	.00	233	255	247	287	171
29	529	95	142	3.6	---	72	.00	234	6.9	217	63	524
30	525	66	140	4.0	---	74	.00	229	192	217	399	541
31	432	---	83	5.7	---	197	---	225	---	194	384	---
TOTAL	15159	3407	5052	778.6	2430.50	1863	3215.31	4755.08	11281.9	14087	13877	14241
MEAN	489	114	163	25.1	86.8	60.1	107	153	376	454	448	475
MAX	529	543	403	48	200	197	259	249	516	542	551	550
MIN	391	46	43	3.6	.00	45	.00	.36	6.9	189	63	164
AC-FT	30070	6760	10020	1540	4820	3700	6380	9430	22380	27940	27530	28250
a	3450	0	1750	36	3270	0	0	5110	12370	12700	12350	11280

CAL YR 1990 TOTAL 124608.28 MEAN 341 MAX 551 MIN .00 AC-FT 247200 a 60040
WTR YR 1991 TOTAL 90147.39 MEAN 247 MAX 551 MIN .00 AC-FT 178800 a 62310

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 mi².

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 National Geodetic Vertical Datum of 1929, 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.--No estimated daily discharges. 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.

AVERAGE DISCHARGE (combined flow of North Fork Mokelumne River and Tiger Creek powerplant conduit minus Bear River and Cole Creek diversion).--65 years, 471 ft³/s, 341,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s, Nov. 21, 1950; gage height, 17.20 ft, from rating curve extended above 3,900 ft³/s on basis of computations of flow over dam and discharge through powerplant; minimum daily, 0.3 ft³/s, Mar. 31, Apr. 1, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 671 ft³/s, June 10, gage height, 4.54 ft; minimum daily, 20 ft³/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	40	23	22	23	22	22	30	33	35	40	38
2	42	39	23	22	26	22	20	25	33	38	39	38
3	43	34	22	22	29	22	21	21	34	40	39	38
4	41	35	22	21	25	23	22	20	57	35	39	38
5	41	33	22	22	28	22	22	20	282	35	38	38
6	40	28	23	22	32	21	21	22	486	34	38	38
7	40	21	24	22	31	21	21	22	618	35	38	40
8	41	21	26	22	28	20	21	22	661	36	38	39
9	41	23	25	22	24	21	22	22	664	36	44	39
10	41	24	22	22	24	22	22	32	586	36	49	38
11	41	24	24	23	27	22	22	42	465	35	39	38
12	41	24	22	22	22	22	22	43	432	35	39	38
13	40	23	21	22	22	23	22	44	217	35	38	38
14	40	23	22	22	22	22	25	23	40	35	38	38
15	40	22	22	21	23	21	28	21	35	35	38	37
16	42	22	22	23	24	21	27	22	35	35	38	37
17	41	22	22	23	24	21	28	21	35	50	38	40
18	41	22	22	22	24	22	29	21	35	61	39	40
19	40	22	22	22	23	22	29	22	37	41	39	40
20	40	22	22	22	24	21	30	23	39	37	38	38
21	40	22	23	22	23	20	30	21	37	36	38	37
22	40	22	22	22	22	20	31	21	37	36	38	37
23	42	22	22	22	22	21	26	22	36	36	38	37
24	41	22	23	22	22	22	22	23	36	36	38	39
25	40	22	22	23	23	21	22	23	36	36	39	39
26	40	21	22	24	21	21	22	22	36	36	38	39
27	40	21	23	24	21	22	23	22	35	36	38	40
28	39	21	22	23	22	21	23	22	39	35	45	48
29	39	21	21	23	---	22	23	22	48	35	50	42
30	39	21	21	23	---	21	24	27	46	37	38	40
31	42	---	22	24	---	22	---	32	---	40	39	---
TOTAL	1260	739	696	693	681	666	722	775	5210	1158	1225	1166
MEAN	40.6	24.6	22.5	22.4	24.3	21.5	24.1	25.0	174	37.4	39.5	38.9
MAX	43	40	26	24	32	23	31	44	664	61	50	48
MIN	39	21	21	21	21	20	20	20	33	34	38	37
AC-FT	2500	1470	1380	1370	1350	1320	1430	1540	10330	2300	2430	2310

CAL YR 1990 TOTAL 11676 MEAN 32.0 MAX 51 MIN 21 AC-FT 23160
WTR YR 1991 TOTAL 14991 MEAN 41.1 MAX 664 MIN 20 AC-FT 29730

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 mi².

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 National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE.--63 years, 64.0 ft³/s, 46,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,140 ft³/s, Dec. 23, 1964, gage height, 10.21 ft, site and datum then in use, from rating curve extended above 900 ft³/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, 1,070 ft³/s, Mar. 4, gage height, 4.07 ft, minimum daily, 0.08 ft³/s, Oct. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.77	.29	.38	.85	11	e55	144	235	30	.81	.18
2	e.08	.41	.26	.38	.89	9.1	43	82	274	23	.81	.16
3	e.09	.29	.26	.38	1.3	12	e55	62	264	18	.76	.18
4	e.09	.27	.26	.38	2.2	405	e70	80	240	15	.76	.18
5	e.10	.25	.26	.41	3.6	182	e95	174	191	13	.76	.16
6	e.10	.22	.26	.41	4.5	88	121	259	154	9.8	.65	.14
7	e.10	.21	.26	.41	13	54	89	295	145	7.8	.57	.18
8	e.12	.21	.25	.41	10	52	83	295	151	6.2	.57	.21
9	e.12	.21	.26	.44	7.8	47	98	193	157	5.2	.57	.20
10	e.12	.21	.27	.42	5.6	33	98	113	148	4.8	.55	.18
11	.12	.21	.33	.45	4.8	29	61	89	131	4.4	.43	.22
12	.13	.21	.35	.45	4.3	e26	50	84	109	4.0	.43	.23
13	.18	.21	.34	.49	3.9	22	e80	134	89	3.5	.46	.19
14	.18	.21	.29	.52	5.8	e22	e105	117	70	3.0	.50	.11
15	.15	.19	.26	.50	9.2	21	e85	202	57	2.8	.48	.11
16	.15	.18	.40	.47	9.3	e19	e70	256	48	2.6	.45	.11
17	.23	.18	.67	.45	8.5	19	e58	193	42	2.3	e.40	.10
18	.27	.18	.39	.49	e5.6	18	51	110	37	2.2	e.30	.10
19	.50	.25	.34	.51	e4.9	17	e80	96	32	2.1	e.30	.09
20	.35	.39	.37	.50	e4.9	16	e80	110	26	2.1	e.28	.12
21	.29	.29	.38	e.80	e5.4	15	e95	120	23	2.1	e.26	.14
22	.23	.27	.38	e1.3	5.4	e15	e110	221	21	1.9	e.24	.14
23	.21	.26	.38	1.4	5.1	15	e130	336	20	2.3	e.24	.14
24	.20	.25	.38	1.1	4.9	14	e105	338	18	2.5	.22	.14
25	.19	.23	.38	1.1	4.7	14	e75	330	17	2.3	.21	.14
26	.15	.32	.38	1.1	5.3	e15	e70	250	16	1.8	.18	.14
27	.16	.30	.36	1.1	5.6	21	e80	213	15	1.5	.18	.15
28	.16	.30	.35	1.2	7.3	18	e100	218	21	1.2	.18	.16
29	.13	.31	.38	1.0	---	26	e140	193	e90	1.1	.18	.13
30	.13	.31	.36	.98	---	42	156	273	e49	1.0	.19	.13
31	.53	---	.35	.78	---	e60	---	162	---	.92	.21	---
TOTAL	5.64	8.10	10.45	20.71	154.64	1357.1	2588	5742	2890	180.42	13.13	4.56
MEAN	.18	.27	.34	.67	5.52	43.8	86.3	185	96.3	5.82	.42	.15
MAX	.53	.77	.67	1.4	13	405	156	338	274	30	.81	.23
MIN	.08	.18	.25	.38	.85	9.1	43	62	15	.92	.18	.09
AC-FT	11	16	21	41	307	2690	5130	11390	5730	358	26	9.0

CAL YR 1990 TOTAL 10779.97 MEAN 29.5 MAX 195 MIN .04 AC-FT 21380
WTR YR 1991 TOTAL 12974.75 MEAN 35.5 MAX 405 MIN .08 AC-FT 25740

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 3, 1987, nonrecording gage at same site and datum.

REMARKS.--No records computed above 3.9 ft³/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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.21	1.0	.45	.46	.82	3.5	3.8	3.5	3.7	3.6	.95	.30
2	.16	.54	.41	.46	.97	3.5	3.8	3.4	---	3.6	.95	.30
3	.12	.39	.40	.47	1.4	3.6	3.9	3.3	3.9	3.5	.89	.29
4	.10	.35	.36	.50	2.2	---	3.9	3.3	3.8	3.5	.85	.25
5	.10	.34	.35	.52	3.3	---	---	3.4	3.7	3.4	.84	.23
6	.11	.30	.35	.50	3.3	3.8	---	---	3.7	3.3	.83	.22
7	.13	.30	.34	.49	3.4	3.7	---	---	3.7	3.3	.81	.23
8	.11	.28	.34	.52	3.5	3.7	---	---	3.7	3.2	.78	.25
9	.10	.27	.34	.52	3.5	3.7	---	---	3.7	3.3	.72	.25
10	.10	.27	.36	.52	3.5	3.6	---	e3.3	3.7	3.3	.68	.25
11	.09	.27	.47	.56	3.5	3.6	3.9	e3.3	3.7	3.3	.64	.31
12	.09	.27	.49	.59	3.5	3.6	3.8	e3.3	3.7	3.3	.64	.32
13	.12	.27	.47	.68	3.4	3.6	3.9	e3.3	3.6	3.3	.64	.30
14	.14	.27	.39	.71	3.5	3.7	---	e3.3	3.6	3.3	.64	.25
15	.13	.27	.40	.68	3.5	3.7	---	e3.3	3.6	3.3	.64	.25
16	.11	.26	.42	.62	3.5	3.7	3.9	e3.3	3.7	3.2	.64	.25
17	.12	.27	.42	.61	3.5	3.6	3.8	e3.5	3.8	2.7	.62	.21
18	.15	.27	.43	.65	3.5	3.7	3.8	3.8	3.8	2.5	.58	.20
19	.48	.36	.47	.64	3.5	3.7	3.8	3.8	3.7	2.3	.55	.20
20	.39	.56	.53	.62	3.5	3.7	3.8	3.9	3.6	2.6	.52	.18
21	.32	.47	.54	.91	3.5	3.7	3.7	3.9	3.6	2.7	.51	.18
22	.27	.45	.53	2.4	3.4	3.7	3.8	---	3.6	2.3	.46	.18
23	.22	.40	.52	1.5	3.4	3.6	3.6	---	3.6	2.8	.46	.16
24	.20	.39	.52	1.2	3.4	3.6	3.6	---	3.6	2.3	.43	.16
25	.19	.38	.50	1.1	3.4	3.7	3.5	---	3.5	2.1	.42	.16
26	.16	.49	.49	.99	3.4	3.7	3.5	---	3.5	1.9	.35	.16
27	.16	.47	.49	.93	3.4	3.7	3.5	---	3.5	1.7	.35	.16
28	.18	.47	.50	.90	3.4	3.7	3.4	---	3.5	1.5	.34	.16
29	.16	.46	.50	.85	---	3.7	3.5	---	3.7	1.4	.30	.16
30	.15	.46	.49	.81	---	3.7	3.5	---	3.6	1.2	.30	.16
31	.56	---	.47	.79	---	3.7	---	3.7	---	1.1	.30	---
TOTAL	5.63	11.55	13.74	23.70	88.09	---	---	---	---	84.8	18.63	6.68
MEAN	.18	.38	.44	.76	3.15	---	---	---	---	2.74	.60	.22
MAX	.56	1.0	.54	2.4	3.5	---	---	---	---	3.6	.95	.32
MIN	.09	.26	.34	.46	.82	---	---	---	---	1.1	.30	.16
AC-FT	11	23	27	47	175	---	---	---	---	168	37	13

e Estimated.

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 mi².

PERIOD OF RECORD.--December 1987 to current year (low-flow periods 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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 3, 1987, nonrecording gage at same site and datum.

REMARKS.--No records computed above 5.9 ft³/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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	3.9	3.1	2.8	---	---	---	---	---	4.8	4.9	4.7
2	4.5	2.9	3.1	2.9	---	---	---	---	---	4.8	4.8	4.7
3	4.5	2.8	3.0	2.9	---	---	---	---	---	4.8	4.8	4.7
4	4.5	2.8	2.9	2.9	---	---	---	---	---	4.7	4.8	4.5
5	4.5	2.9	2.9	2.9	---	---	---	---	---	4.7	4.8	---
6	4.5	2.8	2.9	2.9	---	---	---	---	---	4.7	4.7	---
7	4.5	2.8	2.9	2.9	---	---	---	---	---	4.7	4.7	---
8	4.5	2.9	2.9	2.9	---	---	---	5.3	---	4.7	---	4.9
9	4.4	3.0	2.9	2.9	---	---	---	5.3	---	4.7	---	4.8
10	4.5	3.0	2.9	2.9	---	---	---	5.3	---	4.6	---	4.8
11	4.6	3.0	2.9	2.9	---	---	---	5.3	---	4.6	5.0	4.8
12	4.6	3.0	2.9	2.9	---	---	---	5.3	---	4.6	5.0	4.8
13	4.6	3.0	2.9	3.0	---	---	---	5.3	---	4.5	4.9	4.7
14	4.6	3.0	2.9	2.9	---	---	---	5.3	---	4.5	4.9	4.7
15	4.6	3.0	2.9	5.0	---	---	---	5.3	---	4.9	4.9	4.7
16	4.6	3.0	2.9	---	---	---	---	5.2	---	5.2	4.9	4.7
17	4.6	3.0	2.9	---	---	---	---	5.2	---	5.1	5.0	4.7
18	4.7	3.0	2.9	---	---	---	---	5.2	---	5.1	5.0	4.7
19	4.7	3.1	2.9	---	---	---	---	5.2	---	5.1	4.9	4.7
20	4.7	3.1	3.0	---	---	---	---	5.2	---	5.2	4.9	4.6
21	4.7	3.1	3.0	---	---	---	---	5.2	---	5.2	5.0	4.6
22	4.8	3.1	2.9	---	---	---	---	5.2	---	5.2	5.0	4.6
23	---	3.1	2.9	---	---	---	---	4.4	---	5.1	5.0	4.5
24	---	3.0	2.9	---	---	---	---	3.2	---	5.0	4.9	4.5
25	4.9	3.1	2.9	---	---	---	---	3.3	4.6	5.0	5.0	4.5
26	4.7	3.1	2.9	---	---	---	---	3.5	4.3	5.0	4.9	---
27	4.6	3.1	2.9	---	---	---	---	---	---	5.0	---	---
28	4.6	3.1	2.9	---	---	---	---	---	---	5.0	---	---
29	4.6	3.1	2.9	---	---	---	---	---	---	5.0	---	e4.8
30	4.6	3.1	2.9	---	---	---	---	---	4.8	4.9	4.8	e4.8
31	4.8	---	2.9	---	---	---	---	---	---	4.9	4.8	---
TOTAL	---	90.9	90.6	---	---	---	---	---	---	151.3	---	---
MEAN	---	3.03	2.92	---	---	---	---	---	---	4.88	---	---
MAX	---	3.9	3.1	---	---	---	---	---	---	5.2	---	---
MIN	---	2.8	2.9	---	---	---	---	---	---	4.5	---	---
AC-FT	---	180	180	---	---	---	---	---	---	300	---	---

e Estimated.

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 mi².

PERIOD OF RECORD.--December 1987 to current year (low-flow periods 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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 8, 1987, nonrecording gage at same site and datum.

REMARKS.--No records computed above 10 ft³/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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	5.4	5.2	5.2	6.5	6.6	5.4	7.0	4.9	---	5.1	5.1
2	5.5	5.2	5.2	5.1	6.2	6.5	5.1	7.4	---	---	5.1	5.1
3	5.3	5.1	5.2	5.1	6.1	6.3	5.1	7.4	---	---	5.1	5.1
4	5.2	5.2	5.2	5.1	6.1	5.6	5.1	7.2	---	5.1	5.2	5.1
5	5.2	5.2	5.3	5.1	7.9	6.7	5.0	7.2	---	5.1	5.2	5.1
6	5.1	5.2	6.1	5.0	8.6	6.0	5.4	6.5	---	5.1	5.1	5.1
7	5.1	5.1	6.3	5.0	7.0	5.9	5.7	5.7	---	5.1	5.1	5.3
8	5.1	5.0	5.3	5.0	6.4	5.7	5.4	5.1	---	5.1	5.1	6.3
9	5.1	5.1	5.3	5.0	6.3	5.7	5.1	5.1	---	5.1	6.6	5.2
10	5.1	4.9	5.3	5.0	6.3	5.7	5.1	6.0	---	5.1	6.1	5.0
11	5.1	4.9	5.1	5.0	6.3	5.7	5.1	6.4	6.6	5.1	6.6	5.0
12	5.1	4.9	5.2	5.1	6.2	5.6	5.1	6.3	5.2	5.1	5.1	5.0
13	5.1	4.7	5.1	5.0	6.0	5.6	5.2	7.6	5.3	5.1	5.1	5.0
14	5.1	5.0	5.9	5.0	6.0	5.6	---	6.9	5.2	5.1	5.1	5.0
15	5.3	5.5	5.8	4.9	6.3	5.6	---	5.4	5.1	5.1	5.1	5.0
16	5.9	5.6	5.8	5.5	6.1	5.6	---	5.5	5.1	5.1	5.1	5.0
17	5.1	5.6	6.3	6.0	6.2	5.6	---	6.5	5.1	e6.0	5.1	5.1
18	5.0	5.6	5.0	6.1	6.1	5.6	---	6.4	5.1	e6.0	5.1	5.1
19	5.1	5.7	5.0	6.1	6.4	5.6	---	6.4	5.1	e6.9	5.1	5.0
20	5.1	5.7	5.0	6.0	6.4	5.6	---	6.2	5.1	e5.5	5.1	5.0
21	5.1	5.7	7.0	6.2	6.1	5.6	---	5.1	5.2	5.2	5.1	5.0
22	5.1	5.7	5.0	6.4	6.2	5.5	6.8	5.2	5.3	5.2	5.1	5.0
23	5.1	5.7	5.0	6.5	5.9	5.5	6.8	5.1	5.2	5.2	5.0	5.0
24	5.1	5.7	5.6	6.5	5.9	5.5	6.8	5.0	5.1	5.2	5.0	5.0
25	5.1	5.7	4.9	6.5	5.9	5.5	6.9	5.0	5.2	5.2	5.0	5.0
26	5.1	6.1	4.8	6.5	6.0	5.4	6.9	5.0	5.1	5.2	5.0	5.0
27	5.1	5.9	5.3	6.5	6.0	5.4	6.8	5.0	5.1	5.2	---	5.0
28	5.1	5.3	6.5	6.5	6.0	5.4	6.8	5.1	---	5.2	---	5.3
29	5.1	5.3	6.5	6.5	---	5.5	6.8	5.4	---	5.2	---	7.4
30	5.1	5.3	6.5	6.5	---	5.6	6.8	5.6	---	5.2	7.7	5.0
31	5.1	---	5.8	6.5	---	5.9	---	5.4	---	5.1	5.1	---
TOTAL	160.7	161.0	171.5	176.4	177.4	177.6	---	185.1	---	---	---	155.3
MEAN	5.18	5.37	5.53	5.69	6.34	5.73	---	5.97	---	---	---	5.18
MAX	6.0	6.1	7.0	6.5	8.6	6.7	---	7.6	---	---	---	7.4
MIN	5.0	4.7	4.8	4.9	5.9	5.4	---	5.0	---	---	---	5.0
AC-FT	319	319	340	350	352	352	---	367	---	---	---	308

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--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.

AVERAGE DISCHARGE.--6 years, 223 ft³/s, 161,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft³/s, Feb. 19, 1986, gage height, 8.98 ft, from rating curve extended above 7,700 ft³/s; minimum daily, 30 ft³/s, Aug. 6, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,240 ft³/s, Mar. 4, gage height, 4.37 ft; minimum daily, 36 ft³/s, Dec. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	69	44	e60	47	94	127	135	156	86	57	51
2	54	57	46	e65	50	90	112	129	439	75	55	53
3	55	54	46	e60	57	132	111	111	526	79	53	52
4	57	51	44	e56	53	506	117	106	450	71	51	51
5	55	50	44	54	76	462	129	111	386	68	49	50
6	54	50	43	52	64	107	144	125	613	67	49	59
7	54	46	46	58	59	80	134	143	686	66	47	65
8	54	43	46	53	56	72	123	174	746	66	46	56
9	52	42	48	48	52	68	121	171	740	66	50	53
10	52	45	46	47	50	68	124	141	713	66	56	53
11	53	44	47	47	50	72	111	146	586	65	54	53
12	53	45	48	49	51	71	104	137	573	63	50	52
13	52	45	45	49	48	86	104	148	463	63	49	52
14	51	43	43	47	48	78	122	147	123	63	50	51
15	50	44	47	46	49	71	173	126	103	62	50	51
16	51	44	47	45	49	65	158	165	98	61	51	50
17	53	42	44	47	49	70	149	171	92	62	52	51
18	53	43	46	47	50	82	143	156	88	87	52	52
19	58	43	50	46	49	85	144	137	85	80	52	52
20	55	48	45	45	49	79	150	134	87	69	51	51
21	53	44	36	45	48	75	153	126	84	64	50	50
22	53	44	36	46	47	67	117	129	81	63	50	50
23	55	44	37	46	47	69	116	158	79	59	49	49
24	56	44	e45	46	46	96	114	244	77	59	51	49
25	56	45	e58	45	46	113	118	209	76	59	52	51
26	56	53	e57	46	47	93	113	223	75	58	52	51
27	56	45	e56	48	46	85	109	169	71	57	51	60
28	55	42	e54	49	55	91	110	156	89	57	59	71
29	54	43	e53	49	---	92	116	157	113	56	73	62
30	54	44	e52	51	---	96	126	189	97	56	61	53
31	59	---	e57	51	---	102	---	155	---	57	50	---
TOTAL	1678	1396	1456	1543	1438	3417	3792	4728	8595	2030	1622	1604
MEAN	54.1	46.5	47.0	49.8	51.4	110	126	153	286	65.5	52.3	53.5
MAX	59	69	58	65	76	506	173	244	746	87	73	71
MIN	50	42	36	45	46	65	104	106	71	56	46	49
AC-FT	3330	2770	2890	3060	2850	6780	7520	9380	17050	4030	3220	3180
a	30490	7280	10120	1910	5340	6120	10480	12780	25310	30320	27390	27970

CAL YR 1990 TOTAL 26147 MEAN 71.6 MAX 175 MIN 36 AC-FT 51860 a 258100
WTR YR 1991 TOTAL 33299 MEAN 91.2 MAX 746 MIN 36 AC-FT 66050 a 195500

e Estimated.

a Diversion, in acre-feet, to Tiger Creek powerplant, provided by Pacific Gas & 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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 50 ft³/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 the 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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	20	12	12	13	14	13	---	21	20	21	22
2	21	15	12	12	13	13	13	14	---	21	21	21
3	21	12	12	12	13	13	14	14	---	20	21	21
4	20	12	12	12	13	25	13	13	---	20	21	22
5	21	12	12	12	13	---	13	14	---	20	21	21
6	20	12	12	12	13	13	13	14	---	20	21	21
7	21	13	12	13	13	13	12	14	---	20	21	21
8	21	13	12	13	13	13	12	14	---	20	21	22
9	21	13	12	13	13	13	12	14	---	21	21	22
10	21	13	12	13	13	13	12	13	---	21	21	21
11	21	13	12	13	13	13	14	13	---	21	21	21
12	21	13	12	13	13	13	14	13	---	21	21	21
13	21	13	12	13	13	13	14	13	---	21	21	21
14	21	13	12	13	13	13	14	13	20	22	21	21
15	21	12	12	13	13	13	14	13	20	21	21	21
16	21	12	12	13	13	13	14	14	19	21	22	21
17	21	12	12	12	13	13	14	14	19	21	22	21
18	21	12	12	12	13	13	14	14	21	22	22	21
19	21	12	12	13	13	13	14	13	21	21	22	21
20	21	12	13	13	13	13	14	13	21	22	21	21
21	21	12	13	13	13	13	13	13	21	22	21	21
22	21	12	13	13	13	13	13	13	21	21	20	21
23	21	12	13	13	13	13	---	13	21	21	21	22
24	21	12	13	13	13	13	---	13	21	21	21	22
25	20	12	13	13	13	13	---	13	21	21	21	22
26	20	13	13	13	13	13	---	13	21	21	22	22
27	20	13	13	14	13	13	---	13	21	21	22	23
28	20	12	13	14	13	13	---	13	21	21	22	23
29	20	12	13	13	---	13	---	13	21	21	22	23
30	20	12	13	13	---	13	---	13	20	21	22	23
31	20	---	13	13	---	13	---	17	---	21	22	---
TOTAL	642	381	384	397	364	---	---	---	---	648	660	646
MEAN	20.7	12.7	12.4	12.8	13.0	---	---	---	---	20.9	21.3	21.5
MAX	21	20	13	14	13	---	---	---	---	22	22	23
MIN	20	12	12	12	13	---	---	---	---	20	20	21
AC-FT	1270	756	762	787	722	---	---	---	---	1290	1310	1280

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 30 ft³/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 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	17	12	12	13	13	15	13	21	17	17	17
2	17	14	12	12	13	13	15	12	26	17	17	17
3	17	11	12	12	12	13	13	12	---	19	17	17
4	17	11	12	12	12	---	12	13	---	20	17	17
5	17	12	12	12	13	---	13	13	---	18	17	17
6	17	11	12	12	13	18	13	12	---	17	19	17
7	20	11	12	12	13	16	12	12	---	17	19	17
8	19	12	12	13	13	15	12	12	---	17	17	17
9	18	12	12	13	13	14	12	12	---	17	17	17
10	18	12	12	13	13	13	12	11	---	17	17	17
11	19	12	12	13	13	13	12	11	---	17	17	17
12	19	12	12	12	12	13	12	12	---	17	17	17
13	18	12	12	23	12	13	12	13	---	17	17	17
14	18	12	12	21	12	13	12	14	22	17	17	17
15	18	12	12	13	12	13	12	13	18	18	17	17
16	17	12	12	13	12	13	12	13	17	18	17	17
17	17	12	12	12	12	13	12	13	17	17	17	17
18	17	12	12	12	12	13	12	13	17	18	17	17
19	17	12	12	13	13	13	12	13	17	17	17	17
20	17	12	12	13	13	13	12	13	17	17	18	17
21	17	12	12	12	13	13	12	13	17	18	18	17
22	18	12	12	12	13	15	12	13	17	18	18	17
23	18	12	12	13	13	15	12	13	17	18	18	17
24	18	12	12	13	13	15	14	12	17	18	18	17
25	18	13	12	13	13	16	13	12	17	18	18	17
26	18	13	12	13	13	15	12	13	17	18	18	17
27	18	12	12	13	13	15	14	13	17	17	18	17
28	18	12	12	13	13	15	14	13	17	17	18	18
29	18	12	12	13	---	15	13	13	17	17	17	18
30	18	12	12	13	---	15	13	13	17	17	17	17
31	18	---	12	13	---	15	---	17	---	17	17	---
TOTAL	551	365	372	409	355	---	378	395	---	542	540	512
MEAN	17.8	12.2	12.0	13.2	12.7	---	12.6	12.7	---	17.5	17.4	17.1
MAX	20	17	12	23	13	---	15	17	---	20	19	18
MIN	17	11	12	12	12	---	12	11	---	17	17	17
AC-FT	1090	724	738	811	704	---	750	783	---	1080	1070	1020

CAL YR 1990 TOTAL 5617 MEAN 15.4 MAX 27 MIN 11 AC-FT 11140

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 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 2,950 ft above National Geodetic Vertical Datum of 1929, 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.

AVERAGE DISCHARGE.--31 years, 22.7 ft³/s, 16,450 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,020 ft³/s, Feb. 19, 1986, gage height, 8.12 ft, from rating curve extended above 500 ft³/s on basis of slope-area measurement at gage height 7.41 ft; minimum daily, 0.11 ft³/s, Aug. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 120 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1415	*154	*4.42				

Minimum daily, 0.40 ft³/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.94	3.4	2.4	2.7	2.0	11	31	25	11	4.5	1.4	.76
2	.90	2.8	2.2	3.0	2.4	9.2	24	23	10	4.0	1.3	.74
3	.84	2.6	2.6	3.0	2.8	21	22	21	9.7	3.1	1.4	.68
4	.73	2.6	2.5	3.0	2.4	68	23	20	9.2	2.6	1.3	.60
5	.62	2.8	2.4	2.8	5.0	35	26	20	8.7	2.6	1.4	.60
6	1.0	2.5	2.3	2.4	3.3	15	27	20	8.3	2.8	1.6	.67
7	.99	2.5	2.3	2.8	2.7	11	25	21	7.9	3.0	1.8	.88
8	.97	2.5	2.3	2.9	2.5	9.5	24	22	7.6	3.0	1.7	.98
9	.87	2.5	2.3	2.6	2.3	8.6	24	23	7.2	2.8	1.5	1.0
10	.91	2.4	2.5	2.4	2.3	8.4	24	21	6.8	2.6	1.4	1.0
11	.92	2.4	2.8	2.4	2.3	8.8	22	20	6.0	2.7	1.3	1.1
12	.89	2.4	2.9	2.4	2.2	8.7	20	18	4.9	2.6	1.3	1.1
13	.87	2.3	2.7	2.4	2.1	12	20	19	4.5	2.2	1.4	1.2
14	.77	2.3	2.4	2.3	2.1	10	21	19	4.8	1.7	1.6	1.2
15	.72	2.3	2.4	2.3	2.2	9.4	22	17	4.4	2.0	1.7	1.1
16	.84	2.3	2.4	2.2	2.2	9.6	21	17	4.4	2.5	1.6	.84
17	.84	2.3	2.7	2.2	2.2	12	20	20	4.2	2.3	1.3	.96
18	.99	2.2	2.6	2.1	2.2	15	20	21	4.0	2.2	.91	.90
19	2.1	2.3	2.6	2.0	2.1	15	19	20	4.0	2.2	1.0	.80
20	2.0	2.9	2.7	2.0	2.0	12	20	19	4.0	2.3	.85	.78
21	1.8	2.7	2.6	1.8	1.9	11	24	18	4.0	2.2	.86	.51
22	1.7	2.5	3.2	2.0	1.9	10	24	17	4.0	2.1	.81	.68
23	1.5	2.5	3.8	2.2	1.9	12	23	16	3.9	2.0	.80	.79
24	1.5	2.5	3.9	2.2	1.9	23	24	16	4.0	1.8	.54	.72
25	1.3	2.7	3.9	2.1	1.9	21	26	16	3.6	1.3	.49	.73
26	1.3	3.3	3.9	2.2	1.8	15	25	15	3.5	1.6	.45	.82
27	1.2	2.6	3.8	2.3	1.8	16	23	14	3.9	1.6	.56	.89
28	1.2	2.7	3.7	2.3	3.3	20	23	13	6.0	1.2	.71	.78
29	1.2	2.7	3.7	2.4	---	22	23	12	7.5	1.3	.76	.70
30	1.3	2.7	3.7	2.9	---	23	23	13	5.2	1.3	.75	.40
31	2.5	---	3.2	2.1	---	23	---	12	---	1.4	.78	---
TOTAL	36.21	77.2	89.4	74.4	65.7	505.2	693	568	177.2	71.5	35.27	24.91
MEAN	1.17	2.57	2.88	2.40	2.35	16.3	23.1	18.3	5.91	2.31	1.14	.83
MAX	2.5	3.4	3.9	3.0	5.0	68	31	25	11	4.5	1.8	1.2
MIN	.62	2.2	2.2	1.8	1.8	8.4	19	12	3.5	1.2	.45	.40
AC-FT	72	153	177	148	130	1000	1370	1130	351	142	70	49

CAL YR 1990 TOTAL 2284.79 MEAN 6.26 MAX 33 MIN .39 AC-FT 4530
WTR YR 1991 TOTAL 2417.99 MEAN 6.62 MAX 68 MIN .40 AC-FT 4800

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 mi².

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 National Geodetic Vertical Datum of 1929, 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.--Records fair except for period with ice effect, Dec. 26 to Jan. 7, which is poor. 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 ft³/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 ft³/s; because of leakage, only 5 ft³/s may reach Licking Fork Mokelumne River. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--80 years, 62.6 ft³/s, 43,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,920 ft³/s, Feb. 19, 1986, gage height, 9.19 ft, from rating curve extended above 3,100 ft³/s; no flow for many days in 1931 and Sept. 9, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1600	*170	*2.83				

Minimum daily, 1.8 ft³/s, Aug. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	8.3	5.6	e4.6	4.8	22	51	62	43	12	6.3	3.2
2	4.6	7.4	5.0	e4.8	5.6	20	45	60	44	16	6.3	3.1
3	4.5	7.1	4.9	e5.0	6.4	30	64	58	42	16	5.9	3.0
4	4.6	6.7	5.2	e5.1	6.1	76	66	57	28	11	4.6	2.7
5	4.6	7.3	5.0	e5.4	10	44	64	58	27	12	5.5	3.0
6	4.7	6.7	4.8	e5.5	7.6	25	72	57	26	13	5.3	3.4
7	4.9	6.4	4.3	e5.9	6.1	20	70	54	31	16	5.4	4.0
8	5.1	5.9	4.5	6.1	6.1	17	67	63	16	16	5.5	3.6
9	5.1	6.0	4.6	5.6	6.0	16	64	66	26	15	5.2	3.5
10	5.0	6.0	4.8	5.2	5.7	16	64	63	40	13	4.4	4.4
11	5.1	5.7	6.3	5.0	5.6	17	62	58	48	11	4.2	4.1
12	5.4	6.2	7.1	5.2	5.4	17	58	57	16	10	4.4	4.5
13	5.3	6.0	6.0	5.0	5.4	28	58	56	16	9.6	5.1	5.1
14	5.2	5.4	5.7	4.8	5.4	24	60	52	30	7.5	5.9	4.9
15	5.1	5.1	6.0	4.6	5.4	21	59	54	19	8.8	7.5	4.8
16	5.4	4.9	6.3	4.7	5.4	20	51	52	18	12	7.6	4.6
17	5.4	4.9	5.7	4.5	5.7	26	55	59	28	13	5.1	4.2
18	5.5	5.2	6.5	4.5	5.1	37	47	64	19	12	3.3	3.9
19	6.5	5.3	7.4	4.4	5.1	35	56	60	19	11	2.5	3.6
20	6.8	4.8	5.9	4.4	5.0	29	62	57	17	5.5	2.3	4.1
21	5.8	4.2	4.9	4.6	4.9	25	63	55	17	5.1	1.9	5.8
22	5.1	3.7	5.5	4.5	4.8	22	61	49	16	4.9	2.3	4.7
23	4.7	3.6	5.7	4.4	4.8	23	61	53	16	4.7	3.5	2.8
24	4.5	3.5	5.8	4.3	4.8	54	63	57	16	4.8	3.3	2.8
25	4.5	4.1	6.0	4.5	4.7	69	63	57	15	5.0	2.4	2.9
26	4.3	7.3	e5.8	4.3	4.7	46	67	56	15	5.6	2.1	3.5
27	4.2	5.4	e5.9	4.2	4.9	43	64	52	16	5.5	1.8	3.7
28	4.2	5.3	e6.0	4.0	8.1	51	62	49	19	4.4	2.0	3.7
29	4.0	5.5	e4.8	3.8	---	50	58	47	19	4.1	2.7	3.4
30	4.4	5.6	e4.3	4.3	---	48	57	46	14	4.9	3.1	3.0
31	5.6	---	e4.5	5.0	---	45	---	45	---	6.1	3.6	---
TOTAL	154.9	169.5	170.8	148.2	159.6	1016	1814	1733	716	295.5	131.0	114.0
MEAN	5.00	5.65	5.51	4.78	5.70	32.8	60.5	55.9	23.9	9.53	4.23	3.80
MAX	6.8	8.3	7.4	6.1	10	76	72	66	48	16	7.6	5.8
MIN	4.0	3.5	4.3	3.8	4.7	16	45	45	14	4.1	1.8	2.7
AC-FT	307	336	339	294	317	2020	3600	3440	1420	586	260	226

CAL YR 1990 TOTAL 7311.1 MEAN 20.0 MAX 83 MIN 2.5 AC-FT 14500
WTR YR 1991 TOTAL 6622.5 MEAN 18.1 MAX 76 MIN 1.8 AC-FT 13140

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map. October 1933 to Sept. 19, 1957, at site 1,100 ft downstream at different datum.

REMARKS.--Records good, except for estimated daily discharges and those less than 1.0 ft³/s, which are poor. The middle fork ditch can divert 10 ft³/s from the Middle Fork Mokelumne River which, due to leakage, delivers about 5 ft³/s to the Licking Fork Mokelumne River. There are two pumps with a combined capacity of 8.9 ft³/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.

AVERAGE DISCHARGE.--58 years, 82.0 ft³/s, 59,410 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,300 ft³/s, Feb. 19, 1986, gage height, 12.48 ft, from rating curve extended above 2,700 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1745	*390	*4.51				

Minimum daily, 0.14 ft³/s, July 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	4.2	.44	e2.1	2.9	48	84	70	25	9.7	2.9	1.2
2	1.9	4.3	.35	e2.2	3.3	42	71	63	23	8.2	2.8	1.2
3	1.7	3.6	.35	e2.0	4.7	61	63	58	21	7.1	2.8	1.1
4	1.5	3.9	2.6	e1.9	4.3	206	64	54	22	6.1	2.3	.90
5	1.7	4.2	4.3	e1.8	11	141	71	55	23	5.4	2.0	.85
6	1.4	3.7	4.3	1.7	7.7	50	81	58	21	4.6	2.5	.92
7	1.4	3.2	4.4	2.5	4.3	29	73	62	20	4.1	2.7	.85
8	1.4	3.1	3.9	3.0	3.1	21	66	63	19	4.0	3.0	.81
9	1.3	3.4	3.8	2.8	2.6	17	64	62	19	3.7	2.6	.91
10	1.4	3.4	3.8	2.6	2.2	16	66	58	16	3.5	2.6	1.1
11	1.5	3.2	4.4	2.1	1.9	23	58	52	13	3.4	2.5	1.1
12	1.8	3.2	4.8	1.8	1.8	17	53	48	12	3.3	2.1	1.5
13	1.5	3.1	4.9	1.9	1.5	73	52	48	12	4.3	2.1	.85
14	1.4	3.1	1.3	2.1	1.4	49	56	52	12	6.7	2.3	1.2
15	1.3	3.5	1.3	1.7	1.6	41	60	46	14	6.4	2.2	1.1
16	1.5	3.6	2.1	1.4	1.4	28	56	44	14	5.5	2.4	1.2
17	1.5	3.4	1.7	1.5	1.4	35	53	51	13	1.7	2.2	1.1
18	1.6	3.1	1.1	1.1	1.4	85	51	58	13	1.8	2.1	.95
19	1.9	3.2	1.6	1.1	1.3	65	51	54	13	1.5	2.0	.79
20	2.0	4.0	2.2	1.0	1.3	55	53	53	12	1.4	1.9	.73
21	2.4	3.6	3.8	.88	1.1	44	64	49	12	1.6	1.6	.70
22	2.4	.69	4.0	.85	.83	35	67	43	12	1.3	1.6	.66
23	2.4	3.4	e3.7	.85	.72	33	65	42	12	.79	1.5	.61
24	2.3	3.8	e3.5	.68	.64	95	67	40	11	.48	1.4	.51
25	2.2	4.3	e3.3	.81	.80	230	71	39	11	.26	1.3	.54
26	2.4	5.8	e3.2	.86	.45	120	67	36	11	.33	1.6	.53
27	2.2	2.2	e2.9	1.8	.36	90	65	33	11	.14	1.4	.52
28	2.1	.94	e2.7	3.5	4.9	90	63	30	14	1.8	1.4	.50
29	2.1	.59	e2.5	2.4	---	80	65	28	21	4.2	1.4	.53
30	2.3	.68	e2.3	3.9	---	73	67	31	12	4.0	1.3	.72
31	3.0	---	e2.2	2.6	---	70	---	29	---	3.5	1.2	---
TOTAL	57.5	96.40	87.74	57.43	70.90	2062	1907	1509	464	110.80	63.7	26.18
MEAN	1.85	3.21	2.83	1.85	2.53	66.5	63.6	48.7	15.5	3.57	2.05	.87
MAX	3.0	5.8	4.9	3.9	11	230	84	70	25	9.7	3.0	1.5
MIN	1.3	.59	.35	.68	.36	16	51	28	11	.14	1.2	.50
AC-FT	114	191	174	114	141	4090	3780	2990	920	220	126	52

CAL YR 1990 TOTAL 6537.41 MEAN 17.9 MAX 159 MIN .22 AC-FT 12970
WTR YR 1991 TOTAL 6512.65 MEAN 17.8 MAX 230 MIN .14 AC-FT 12920

e Estimated.

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 mi².

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 National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE.--65 years (water years 1904, 1928-91), 979 ft³/s, 709,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,700 ft³/s, Dec. 3, 1950, gage height, 23.5 ft, present datum; minimum observed, 5 ft³/s, Aug. 13-15, 17, 18, 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,030 ft³/s, Mar. 5, gage height, 10.07 ft; minimum daily, 16 ft³/s, Jan. 24, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	462	492	104	73	104	293	618	390	428	643	503	392
2	329	539	83	111	30	398	507	472	728	559	538	423
3	529	210	61	116	131	300	579	390	991	353	498	403
4	430	296	87	98	109	893	644	354	997	620	507	388
5	454	215	116	57	120	1240	623	302	946	620	460	394
6	550	241	46	52	309	415	651	399	931	532	505	463
7	459	206	132	51	289	186	679	625	995	599	493	188
8	483	170	96	84	228	145	615	670	1210	616	487	307
9	505	120	87	126	77	189	570	605	1200	577	329	585
10	460	106	221	97	21	123	563	498	1250	552	219	530
11	576	106	378	88	42	178	468	293	1050	554	329	586
12	508	106	435	87	197	112	532	238	1060	644	581	527
13	454	105	419	93	228	404	539	483	1150	557	619	582
14	525	51	303	92	275	238	353	395	711	572	614	558
15	529	57	63	68	186	232	314	462	693	567	589	557
16	509	123	89	59	53	159	394	528	587	559	555	565
17	475	51	258	137	49	278	251	337	586	325	577	546
18	561	49	374	21	83	305	261	473	536	98	572	554
19	513	89	473	17	46	319	285	289	591	549	530	513
20	558	87	390	44	169	324	224	353	594	358	482	544
21	564	80	463	17	210	200	475	586	600	585	556	503
22	501	63	162	114	167	170	309	450	596	600	595	650
23	564	44	88	17	33	349	170	458	502	622	489	492
24	564	19	93	16	105	362	278	785	497	558	373	488
25	516	41	92	52	29	658	331	662	605	531	467	490
26	596	189	89	18	127	588	329	549	524	570	386	502
27	535	102	62	16	149	450	371	487	457	556	523	477
28	518	131	91	124	145	409	312	514	359	569	175	174
29	576	103	119	34	---	328	290	621	258	482	261	562
30	585	108	164	33	---	364	288	616	122	517	273	531
31	498	---	141	20	---	468	---	726	---	488	431	---
TOTAL	15886	4299	5779	2032	3711	11077	12823	15010	21754	16532	14516	14474
MEAN	512	143	186	65.5	133	357	427	484	725	533	468	482
MAX	596	539	473	137	309	1240	679	785	1250	644	619	650
MIN	329	19	46	16	21	112	170	238	122	98	175	174
AC-FT	31510	8530	11460	4030	7360	21970	25430	29770	43150	32790	28790	28710

CAL YR 1990 TOTAL 159638 MEAN 437 MAX 773 MIN 19 AC-FT 316600
WTR YR 1991 TOTAL 137893 MEAN 378 MAX 1250 MIN 16 AC-FT 273500

11320000 PARDEE RESERVOIR NEAR VALLEY SPRINGS, CA

LOCATION.--Lat 38°15'25", long 120°50'59", in NW 1/4 SW 1/4 sec.26, T.5 N., R.10 E., Amador County, Hydrologic Unit 18040012, at Pardee Dam on the Mokelumne River, 4.5 mi north of Valley Springs.

DRAINAGE AREA.--578 mi².

PERIOD OF RECORD.--October 1961 to current year. March 1929 to September 1930 (lake elevation only), October 1930 to September 1933, published in reports of U.S. Geological Survey. October 1933 to September 1961, in files of East Bay Municipal Utility District.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District).

REMARKS.--Reservoir is formed by a curved concrete gravity dam, completed in 1929. Storage began Mar. 9, 1929. Usable capacity, 194,100 acre-ft between elevations 393.50 ft, diversion tunnel invert, and 567.65 ft, spillway crest. Dead storage, 15,800 acre-ft. Water is released from reservoir for municipal use in the area on the east side of San Francisco Bay. Small intermittent diversions are made to Jackson Valley Irrigation District. Prior to Oct. 1, 1985, records, including extremes, represent contents at 2400 hours. Records from Oct. 1, 1985 through July 24, 1989, including extremes, represent total contents at 0800 hours. Records from July 25, 1989, including extremes, represent contents at 2400 hours. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records provided by East Bay Municipal Utility District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 219,300 acre-ft, Dec. 23, 1955, Feb. 19, 1986, elevation, 571.72 ft; minimum, 47,000 acre-ft, Mar. 25, 1977, elevation, 454.98 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 185,200 acre-ft, June 13-15, elevation, 556.22 ft; minimum, 136,800 acre-ft, Feb. 28, elevation, 530.21 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey provided by East Bay Municipal Utility District in 1930)

450	43,400	480	69,200	510	105,700	540	153,800	570	215,300
460	50,900	490	80,100	520	120,400	550	172,700	580	239,100
470	59,500	500	92,930	530	136,500	560	193,200		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173000	172700	162700	156700	143600	137200	150400	162500	176000	179600	176900	171800
2	172500	173100	162300	156400	143200	137500	151100	162900	176900	179500	177000	171500
3	172500	173000	161800	156000	142900	137900	152000	163100	177900	179000	176900	171100
4	172300	173000	161400	155600	142700	139300	152900	163300	178500	179100	176900	170700
5	172100	172800	161100	155200	142400	141200	153900	163400	178900	179100	176700	170300
6	172200	172700	160600	154800	142500	141600	154700	163700	179300	179000	176700	170100
7	172100	172500	160300	154400	142600	141500	155800	164400	179900	179000	176700	169400
8	172000	172200	159800	154000	142600	141200	156600	165200	180800	179000	176700	168900
9	172000	171900	159500	153700	142200	141100	157500	165800	181800	179100	176400	169000
10	171800	171500	159300	153300	141700	140900	158300	166300	182800	179100	175800	169000
11	171900	171100	159600	152900	141300	140700	158800	166300	183500	179000	175400	169100
12	171900	170700	159900	152600	141200	140500	159400	166200	184200	179200	175500	169100
13	171700	170400	160200	152200	141100	141000	160000	166700	185200	179200	175900	169200
14	171700	169900	160300	151900	141100	141000	160400	166900	185200	179100	176200	169400
15	171700	169400	160000	151400	141000	141000	160600	167300	185200	179100	176400	169600
16	171700	169000	159500	151000	140500	140800	161000	167800	185000	179100	176400	169700
17	171500	168600	159400	150700	140100	141100	161100	168000	184800	178600	176400	170000
18	171600	168100	159700	150200	139700	141300	161200	168500	184500	177700	176400	170300
19	171500	167600	160000	149700	139200	141500	161200	168500	184300	177600	176300	170400
20	171600	167200	160200	149200	139000	142000	161200	168700	184100	177100	176100	170600
21	171600	166800	160600	148700	138800	142000	161600	169300	183900	177200	176000	170800
22	171500	166300	160400	148300	138700	141800	161700	169700	183700	177200	176000	171200
23	171600	165800	160000	147900	138300	142300	161500	170100	183300	177200	175800	171300
24	171600	165200	159600	147300	137900	143500	161500	171100	182900	177300	175400	171300
25	171600	164800	159200	146900	137400	144900	161700	171900	182800	177200	175100	171500
26	171800	164600	158800	146300	137100	146500	161800	172400	182400	177300	174700	171700
27	171700	164200	158400	145800	136900	147400	162100	172900	182000	177300	174600	171700
28	171700	163900	158000	145500	136800	148000	162200	173300	181500	177200	173800	171200
29	171600	163500	157600	145000	---	148500	162200	174000	180700	177200	173100	171500
30	171700	163100	157400	144500	---	148900	162200	174700	179700	177200	172500	171700
31	172100	---	157100	144000	---	149500	---	175600	---	177000	172200	---
MAX	173000	173100	162700	156700	143600	149500	162200	175600	185200	179600	177000	171800
MIN	171500	163100	157100	144000	136800	137200	150400	162500	176000	177000	172200	168900
a	549.72	545.02	541.08	534.44	530.21	537.57	544.54	551.49	553.50	552.19	549.73	549.47
b	-1000	-9000	-6000	-13100	-7200	+12700	+12700	+13400	+4100	-2700	-4800	-500
c	824	348	130	153	219	334	825	929	1392	1588	1290	1154
d	17586	17324	17549	17109	15158	15111	13301	16231	16389	17096	16542	15932

CAL YR 1990 b -29800

WTR YR 1991 b -1400

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, provided by East Bay Municipal Utility District; not reviewed by U.S. Geological Survey.

d Diversion, in acre-feet, from Pardee Reservoir to East Bay Municipal Utility District and to Jackson Valley Irrigation District provided by East Bay Municipal Utility District; not reviewed by U.S. Geological Survey.

SAN JOAQUIN RIVER BASIN

11322300 CAMANCHE RESERVOIR NEAR CLEMENTS, CA

LOCATION.--Lat 38°13'31", long 121°01'17", in NE 1/4 SE 1/4 sec.6, T.4 N., R.9 E., San Joaquin County, Hydrologic Unit 18040005, at Camanche Dam on the Mokelumne River, 4.3 mi northeast of Clements.

DRAINAGE AREA.--621 mi².

PERIOD OF RECORD.--December 1963 to current year.

REVISED RECORDS.--WDR CA-85-3: 1984.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 18, 1963. Usable capacity, 430,300 acre-ft between elevations 104.00 ft, invert of emergency valve release, and 235.50 ft, spillway crest. Dead storage, 534 acre-ft. Camanche Reservoir provides holdover storage to meet downstream water requirements and flood control on the Mokelumne River. Prior to July 1, 1984, records, including extremes, represent total contents at 2400 hours. Records from July 1, 1984, through July 24, 1989, including extremes, represent total contents at 0800 hours. Records from July 25, 1989, including extremes, represent total contents at 2400 hours. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records provided by East Bay Municipal Utility District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 439,100 acre-ft, Feb. 22, 1986, elevation, 236.57 ft; minimum since reservoir first filled, 8,530 acre-ft, Oct. 5, 1988, elevation, 124.47 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 175,100 acre-ft, Oct. 15, elevation, 194.17 ft; minimum, 111,300 acre-ft, Aug. 15-17, elevation, 178.74 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey provided by East Bay Municipal Utility District in 1964)

120	4,970	170	82,600
130	13,600	190	156,200
140	25,000	220	320,900
150	38,900	235.5	430,900
160	57,100	240	465,900

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172900	169400	156200	149800	143800	139600	139400	130100	114900	116400	114200	112700
2	173000	168700	156000	149800	143900	139500	139200	129600	113900	116600	113900	112900
3	173100	168000	155900	149600	143700	139600	139000	129200	113900	116600	113700	113000
4	173200	167300	155700	149500	143800	139800	138900	128900	114100	116600	113600	113100
5	173400	166600	155600	149300	143800	139700	138700	128500	114400	116600	113300	113200
6	173400	165900	155400	149100	143600	139500	138500	128000	114600	116500	113200	113100
7	173500	165200	155200	149000	143300	139300	138200	127500	114900	116500	112900	113100
8	173600	164600	154900	148900	143200	139200	138000	127000	115100	116400	112700	113100
9	174000	163900	154800	148700	143000	139000	137700	126300	115400	116200	112400	113000
10	174300	163200	154500	148400	142800	138700	137200	125800	115600	116200	112300	113200
11	174400	162600	154500	148200	142600	138500	136900	125300	115700	116200	112000	113300
12	174600	162000	154400	148100	142400	138400	136600	124800	115800	116100	112000	113400
13	174800	161300	154100	147800	142200	138400	136400	124300	115800	116100	111700	113400
14	175000	160600	153800	147700	142100	138100	136100	124000	115800	116000	111500	113400
15	175100	159900	153700	147300	141900	137900	135700	123500	115800	115900	111300	113500
16	174900	159500	153500	147200	141700	137600	135300	123000	115900	115800	111300	113500
17	174600	159400	153200	147000	141400	137600	135000	122500	115900	115800	111300	113700
18	174400	159100	153100	146900	141200	137500	134600	122000	115900	115800	111500	113700
19	174100	158900	152800	146700	141100	137300	134200	121600	115900	115700	111500	113700
20	173900	158600	152500	146400	140800	137400	133900	121100	115900	115700	111600	113700
21	173700	158400	152100	146200	140600	137300	133600	120700	115900	115700	111600	113700
22	173600	158200	151900	146000	140400	137200	133200	120200	115900	115600	111600	113700
23	173400	158000	151600	145800	140300	137200	132900	119800	115900	115600	111700	113700
24	173200	157700	151400	145600	140000	138500	132500	119300	115900	115400	111800	113700
25	172900	157600	151300	145400	139900	138900	132200	118800	115900	115300	111900	113700
26	172300	157300	151100	145200	139600	139800	131900	118300	115900	115100	111900	113700
27	171900	157100	150900	144900	139600	140200	131600	117700	115900	114900	112000	113700
28	171400	156900	150700	144700	139600	140100	131300	117200	116100	114900	112100	113700
29	171000	156700	150400	144500	---	140000	131000	116600	116100	114700	112200	113700
30	170500	156500	150200	144300	---	139900	130600	116000	116200	114500	112400	113700
31	170100	---	150000	144100	---	139800	---	115500	---	114300	112500	---
MAX	175100	169400	156200	149800	143900	140200	139400	130100	116200	116600	114200	113700
MIN	170100	156500	150000	144100	139600	137200	130600	115500	113900	114300	111300	112700
a	193.09	190.07	188.56	187.18	186.09	186.12	183.85	179.88	180.09	179.56	179.08	179.41
b	-2700	-13600	-6500	-5900	-4500	+200	-9200	-15100	+700	-1900	-1800	+1200
c	2152	1045	372	482	729	1040	1611	2127	2693	2832	2504	2253

CAL YR 1990 b -24700

WTR YR 1991 b -59100

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, provided by East Bay Municipal Utility District; not reviewed by U.S. Geological Survey.

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 mi².

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).

GAGE.--Water-stage recorder. Datum of gage is 82.71 ft above National Geodetic Vertical Datum of 1929. See WSP 1930 for history of changes prior to Oct. 1, 1961.

REMARKS.--No estimated daily discharges. 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 ft³/s with Pardee Reservoir full, are the largest of several diversions upstream from the station. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--24 years (water years 1905-28), 1,111 ft³/s, 804,300 acre-ft/yr; 63 years (water years 1929-91), 796 ft³/s, 576,700 acre-ft/yr, adjusted for change in contents in and evaporation from Camanche Reservoir since 1963. Storage and diversion by East Bay Municipal Utility District began in March 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,800 ft³/s, Nov. 21, 1950, gage height, 24.40 ft, site and datum then in use; no flow on several days in 1924. Maximum discharge since construction of Camanche Dam in 1963, 6,060 ft³/s, Feb. 19, 1986, gage height, 11.21 ft; minimum daily, 23 ft³/s, Oct. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 487 ft³/s, Oct. 25, gage height, 4.39 ft; minimum daily, 89 ft³/s, several days in February through April.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	302	101	95	94	93	89	150	253	288	282	189
2	132	302	101	95	95	92	89	156	251	253	278	197
3	132	302	101	95	95	94	90	166	251	241	275	208
4	129	302	101	95	93	106	92	170	255	241	275	210
5	122	302	101	95	95	91	92	185	264	239	274	211
6	115	302	101	95	94	89	92	192	278	240	275	211
7	110	302	101	95	92	89	90	198	279	244	282	211
8	110	302	101	95	93	89	89	204	281	240	288	211
9	103	302	101	95	95	89	117	213	293	235	273	202
10	92	302	101	93	94	89	134	221	313	226	263	197
11	92	302	101	95	92	89	132	222	322	223	258	185
12	94	302	101	96	92	97	132	220	324	234	241	168
13	92	300	101	98	92	140	131	216	328	243	235	148
14	92	298	101	98	92	134	129	212	326	245	231	132
15	154	300	101	97	92	131	129	211	322	234	219	116
16	298	190	101	95	92	131	140	203	321	225	216	116
17	292	104	101	95	92	136	148	201	322	227	207	116
18	287	104	99	96	92	135	148	202	334	227	199	116
19	289	104	98	97	92	134	149	202	336	227	197	116
20	289	104	98	97	90	123	150	207	334	227	209	115
21	289	101	98	96	90	98	148	217	330	240	217	114
22	289	101	98	95	90	95	153	215	330	251	215	114
23	289	101	98	95	90	97	137	215	330	262	217	114
24	289	101	98	95	89	183	134	219	330	269	225	115
25	378	102	98	95	89	146	137	222	348	268	223	116
26	480	101	98	95	89	181	136	221	357	276	223	118
27	476	101	98	95	89	120	137	219	352	287	214	119
28	475	101	98	96	90	96	135	227	354	288	207	119
29	473	101	96	98	---	92	134	231	344	275	200	119
30	384	101	95	94	---	91	144	237	318	267	191	119
31	302	---	95	94	---	89	---	251	---	270	189	---
TOTAL	7280	6139	3082	2960	2574	3459	3757	6425	9380	7712	7298	4542
MEAN	235	205	98.4	95.5	91.9	112	125	207	313	249	235	151
MAX	480	302	101	98	95	183	153	251	357	288	288	211
MIN	92	101	95	93	89	89	89	150	251	223	189	114
AC-FT	14440	12180	6110	5870	5110	6860	7450	12740	18610	15300	14480	9010

CAL YR 1990 TOTAL 71529 MEAN 196 MAX 480 MIN 84 AC-FT 141900 MEAN a 197 AC-FT a 142700
WTR YR 1991 TOTAL 64608 MEAN 177 MAX 480 MIN 89 AC-FT 128100 MEAN a 123 AC-FT a 88840

a Adjusted for change in contents and evaporation from Camanche Reservoir.

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 National Geodetic Vertical Datum of 1929 (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.

AVERAGE DISCHARGE.--65 years, 126 ft³/s, 91,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 482 ft³/s, July 8, 1953; no flow at times in each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	.00	.00	.00	.00	.00	.00	68	118	221	147	109
2	57	.00	.00	.00	.00	.00	.00	77	116	191	149	108
3	55	.00	.00	.00	.00	.00	.00	80	118	170	155	106
4	49	.00	.00	.00	.00	.00	.00	80	116	133	168	104
5	37	.00	.00	.00	.00	.00	.00	77	130	131	174	104
6	32	.00	.00	.00	.00	.00	.00	81	135	137	177	104
7	34	.00	.00	.00	.00	.00	.00	98	132	130	172	104
8	32	.00	.00	.00	.00	.00	.00	108	135	131	167	100
9	22	.00	.00	.00	.00	.00	e7.0	123	136	125	155	98
10	5.0	.00	.00	.00	.00	.00	13	119	132	128	149	99
11	5.0	.00	.00	.00	.00	.00	25	119	150	127	147	98
12	.50	.00	.00	.00	.00	.00	34	115	159	125	147	98
13	.00	.00	.00	.00	.00	.00	38	107	170	127	138	96
14	.00	.00	.00	.00	.00	.00	40	90	190	129	117	83
15	.00	.00	.00	.00	.00	.00	46	92	190	134	116	38
16	.00	.00	.00	.00	.00	.00	54	100	186	138	120	.00
17	.00	.00	.00	.00	.00	.00	65	102	186	132	117	.00
18	.00	.00	.00	.00	.00	.00	71	102	183	132	112	.00
19	.00	.00	.00	.00	.00	.00	65	101	186	127	109	.00
20	.00	.00	.00	.00	.00	.00	56	98	191	132	111	.00
21	.00	.00	.00	.00	.00	.00	53	100	215	131	114	.00
22	.00	.00	.00	.00	.00	.00	54	106	204	129	117	.00
23	.00	.00	.00	.00	.00	.00	56	112	192	127	126	.00
24	.00	.00	.00	.00	.00	.00	61	108	194	129	127	.00
25	.00	.00	.00	.00	.00	.00	58	109	201	139	121	.00
26	.00	.00	.00	.00	.00	.00	58	104	221	146	109	.00
27	.00	.00	.00	.00	.00	.00	54	103	229	144	114	.00
28	.00	.00	.00	.00	.00	.00	48	105	234	143	119	.00
29	.00	.00	.00	.00	---	.00	50	110	233	151	116	.00
30	.00	.00	.00	.00	---	.00	61	118	230	154	110	.00
31	.00	---	.00	.00	---	.00	---	121	---	147	110	---
TOTAL	386.50	0.00	0.00	0.00	0.00	0.00	1067.00	3133	5212	4340	4130	1449.00
MEAN	12.5	.000	.000	.000	.000	.000	35.6	101	174	140	133	48.3
MAX	58	.00	.00	.00	.00	.00	71	123	234	221	177	109
MIN	.00	.00	.00	.00	.00	.00	.00	68	116	125	109	.00
AC-FT	767	.00	.00	.00	.00	.00	2120	6210	10340	8610	8190	2870

CAL YR 1990 TOTAL 27091.50 MEAN 74.2 MAX 250 MIN .00 AC-FT 53740
WTR YR 1991 TOTAL 19717.50 MEAN 54.0 MAX 234 MIN .00 AC-FT 39110

e Estimated.

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to current year (low-flow records only 1924-25).

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 14.9 ft above National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District). See WSP 2130 for history of changes prior to July 26, 1968.

REMARKS.--Records good except for estimated daily discharges, which are fair. 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.

AVERAGE DISCHARGE (since start of diversion through East Bay Municipal Utility District aqueduct).--62 years (water years 1929-91), 591 ft³/s, 428,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft³/s, Nov. 22, 1950, gage height, 29.58 ft, from rating curve extended above 6,200 ft³/s on basis of contracted-opening measurement of peak flow; minimum daily, 0.23 ft³/s, Nov. 15, 1977. Maximum discharge since construction of Camanche Dam in 1963, 5,340 ft³/s, Mar. 8, 1986, gage height, 23.19 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 709 ft³/s, Nov. 1, gage height, 10.09 ft; minimum daily, 17 ft³/s, Mar. 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	254	45	41	43	61	36	24	28	33	28	24
2	26	245	44	43	62	48	34	25	28	30	21	24
3	25	243	44	42	51	53	34	25	28	30	20	24
4	24	245	43	41	51	45	34	25	28	30	21	24
5	25	241	41	42	75	48	33	25	28	30	20	24
6	29	e245	40	42	50	44	32	26	28	31	19	25
7	25	e251	40	47	47	42	32	26	29	32	19	25
8	26	e249	39	45	43	41	26	26	29	33	21	26
9	27	e248	39	47	42	40	22	26	28	32	24	26
10	31	250	44	46	44	47	26	26	27	33	25	26
11	31	245	66	44	44	42	32	26	28	32	25	26
12	34	245	42	43	42	42	32	26	30	31	24	26
13	37	241	40	42	40	33	32	26	31	31	24	26
14	35	243	38	40	39	24	28	27	32	31	23	25
15	181	246	43	44	41	20	28	25	30	31	23	22
16	431	253	39	45	39	19	28	25	26	32	24	30
17	354	133	40	46	36	22	26	26	26	31	23	37
18	244	70	41	46	37	25	25	26	26	31	22	42
19	243	59	40	46	39	26	25	26	27	30	22	52
20	243	52	40	43	41	21	26	26	27	30	22	50
21	245	51	39	42	38	17	32	26	29	29	22	47
22	246	50	37	42	37	17	35	29	28	28	23	45
23	244	50	36	44	39	17	37	29	28	29	24	44
24	247	48	37	43	36	46	30	28	28	29	24	47
25	246	56	37	44	35	128	27	27	29	29	24	51
26	310	52	39	43	36	101	27	28	30	30	23	51
27	349	47	40	43	39	119	27	27	34	30	24	50
28	353	46	40	43	54	64	28	27	35	31	25	49
29	358	46	40	43	---	44	29	28	42	31	25	47
30	362	45	39	43	---	39	27	28	41	31	24	46
31	297	---	39	43	---	36	---	28	---	31	24	---
TOTAL	5353	4749	1271	1348	1220	1371	890	818	888	952	712	1061
MEAN	173	158	41.0	43.5	43.6	44.2	29.7	26.4	29.6	30.7	23.0	35.4
MAX	431	254	66	47	75	128	37	29	42	33	28	52
MIN	24	45	36	40	35	17	22	24	26	28	19	22
AC-FT	10620	9420	2520	2670	2420	2720	1770	1620	1760	1890	1410	2100

CAL YR 1990 TOTAL 18985 MEAN 52.0 MAX 431 MIN 13 AC-FT 37660
WTR YR 1991 TOTAL 20633 MEAN 56.5 MAX 431 MIN 17 AC-FT 40930

e Estimated.

11325500 MOKELUMNE RIVER AT WOODBRIDGE, 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 1975-81.

SPECIFIC CONDUCTANCE: Water years 1952-58, 1975-77.

WATER TEMPERATURE: Water years 1951-58, 1961-1986.

SEDIMENT DATA: Water years 1975 to current year.

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 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (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- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
DEC 13...	0930	39	51	7.4	9.5	5.9	760	11.0	97	93	760	19
MAR 13...	1100	22	58	7.5	12.0	5.5	760	10.3	96	120	1500	18
JUN 12...	1045	29	53	7.5	21.5	3.8	760	8.2	93	K15	1300	19
SEP 09...	1000	26	55	7.5	21.0	1.3	755	8.9	101	K1	K11000	20
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 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 13...	0	5.0	1.5	2.9	24	0.3	1.2	24	19	1.7	2.6	<0.10
MAR 13...	0	4.7	1.5	3.0	25	0.3	1.0	24	20	2.3	2.8	0.10
JUN 12...	1	4.8	1.6	3.2	26	0.3	1.1	21	17	3.5	3.0	0.10
SEP 09...	2	5.5	1.6	3.3	25	0.3	1.0	23	19	3.2	3.7	<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 TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)
DEC 13...	7.7	--	35	0.06	0.010	<0.010	0.100	0.100	0.030	0.030	0.40	0.050
MAR 13...	7.6	--	36	0.04	0.010	<0.010	0.180	0.180	0.060	0.050	0.30	0.040
JUN 12...	8.3	35	37	0.05	0.010	0.010	0.150	0.150	0.030	0.030	0.40	0.040
SEP 09...	9.1	32	40	0.04	<0.010	<0.010	0.170	0.170	0.020	<0.010	0.30	0.020

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	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)
DEC 13...	0.020	0.020	0.020	<10	1	19	<0.5	<1.0	<1	<3	3	51
MAR 13...	0.030	0.030	0.020	20	<1	20	<0.5	<1.0	<1	<3	1	57
JUN 12...	0.020	<0.010	<0.010	40	<1	22	<0.5	<1.0	<1	<3	2	52
SEP 09...	0.020	<0.010	<0.010	<10	<1	23	<0.5	<1.0	<1	<3	2	39

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	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)	ZINC, DIS- SOLVED (UG/L AS ZN)
DEC 13...	<1	<4	16	<0.1	<10	1	<1	<1.0	53	<6	13
MAR 13...	<1	<4	15	<0.1	<10	<1	<1	<1.0	52	<6	5
JUN 12...	<1	<4	7	<0.1	<10	<1	<1	<1.0	57	<6	7
SEP 09...	<1	<4	8	<0.1	<10	<1	<1	<1.0	59	<6	<3

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 (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)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR											
13...*	1037	1.28	6.50	58	7.4	12.0	760	10.3	96	11	94
13...*	1039	1.60	11.5	58	7.4	12.0	760	10.4	97	9	100
13...*	1041	1.65	17.0	57	7.4	12.0	760	10.4	97	10	98
13...*	1043	1.61	24.0	57	7.4	12.5	760	10.3	97	9	100
13...*	1045	1.65	29.5	55	7.4	12.0	760	10.3	96	8	100
JUN											
12...*	1020	1.30	5.50	53	7.4	21.5	760	8.2	93	6	94
12...*	1023	1.95	13.5	53	7.4	21.5	760	8.2	93	4	92
12...*	1026	1.80	19.5	53	7.4	21.5	760	8.2	93	6	92
12...*	1030	2.20	24.5	53	7.4	21.5	760	8.2	93	6	86
12...*	1035	1.10	30.5	53	7.4	21.5	760	8.1	92	6	96

* Instantaneous streamflow at the time of cross-sectional measurements: Mar. 13, 22 ft³/s; June 12, 29 ft³/s

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 13...	0930	39	9.5	14	1.5	90
MAR 13...	1100	22	12.0	9	0.54	98
JUN 12...	1045	29	21.5	6	0.47	92
SEP 09...	1000	26	21.0	3	0.21	98

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 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map. Feb. 1 to May 31, 1924, nonrecording gage at site 0.2 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. 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 of the flow at low stages. Some water is released from Jenkinson Lake for irrigation downstream from station.

AVERAGE DISCHARGE (adjusted for change in contents, evaporation, and diversion from Jenkinson Lake).--37 years (water years 1955-91), 82.5 ft³/s, 59,770 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,680 ft³/s, Feb. 16, 1982, gage height, 14.50 ft, from rating curve extended above 5,000 ft³/s; no flow Aug. 7-18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 77 ft³/s, Mar. 4, 24, gage height, 2.96 ft; minimum daily, 1.6 ft³/s, September 22-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	4.4	4.0	5.6	3.9	30	23	6.6	5.7	4.4	3.6	1.9
2	2.3	4.5	4.0	4.3	5.0	25	19	6.7	5.3	11	3.5	1.8
3	2.2	4.2	3.7	4.2	6.6	16	15	5.7	5.1	12	3.4	1.8
4	2.1	3.8	3.8	4.0	4.8	29	13	5.3	5.3	10	3.4	1.7
5	2.1	3.5	3.8	3.9	15	26	12	5.4	6.7	9.4	3.4	1.7
6	2.1	3.2	3.8	4.0	6.1	10	11	5.2	10	8.8	3.3	1.7
7	2.1	3.0	3.8	5.7	4.7	6.6	11	5.0	10	8.4	3.3	1.8
8	2.1	3.0	3.8	7.0	4.3	5.8	9.3	4.8	12	8.0	3.3	1.7
9	2.1	3.0	3.6	4.9	4.1	5.1	8.4	4.6	13	7.6	3.2	1.7
10	2.1	3.0	3.6	4.5	4.1	5.3	7.4	4.9	9.0	7.3	3.1	1.8
11	2.1	3.0	4.6	4.4	4.0	6.9	7.4	6.6	5.9	7.1	2.9	1.8
12	2.1	3.0	4.9	4.4	4.0	7.6	7.0	6.4	4.5	6.8	2.7	1.8
13	2.1	3.0	4.0	4.4	4.0	21	6.4	7.5	4.2	6.4	2.8	1.9
14	2.1	3.0	3.8	4.1	4.0	18	6.9	8.6	4.0	6.2	2.8	1.9
15	2.1	3.0	4.0	4.1	4.0	13	7.7	6.7	3.9	5.9	2.8	1.8
16	2.1	3.0	4.4	4.1	4.0	9.8	7.1	6.8	3.9	5.6	3.0	1.8
17	2.1	3.0	3.9	4.1	4.0	10	6.7	9.3	3.8	5.6	2.9	1.8
18	2.2	3.0	3.6	4.1	4.0	18	6.5	15	3.8	5.6	2.8	1.8
19	3.0	3.0	3.5	4.1	4.0	21	6.0	12	3.8	5.4	2.7	1.7
20	3.5	4.6	3.5	4.0	4.0	18	6.1	8.7	3.8	5.4	2.6	1.7
21	3.4	4.1	2.9	3.9	3.9	16	7.0	8.0	3.8	5.6	2.5	1.7
22	3.1	4.0	3.5	3.8	3.8	12	5.8	7.3	3.8	5.3	2.4	1.6
23	2.8	3.8	4.2	3.7	3.8	15	5.1	6.4	3.8	3.5	2.3	1.6
24	2.8	3.8	4.4	3.9	3.8	45	5.4	6.0	3.8	2.8	2.2	1.6
25	2.7	4.5	4.3	3.9	3.8	55	9.0	5.2	3.8	2.5	2.1	1.6
26	2.7	7.3	4.3	3.8	3.8	34	10	5.1	3.8	2.3	2.1	1.6
27	2.7	4.3	4.1	3.7	3.8	25	7.5	5.6	3.8	2.3	2.1	1.6
28	2.6	4.0	4.3	3.7	5.1	24	7.3	5.5	7.4	2.5	2.1	1.6
29	2.5	4.0	4.9	3.5	---	22	7.2	5.4	10	4.1	2.1	1.6
30	2.5	4.0	4.9	3.7	---	22	6.6	7.2	5.2	4.0	2.0	1.6
31	3.1	---	5.3	4.1	---	21	---	6.5	---	3.9	2.0	---
TOTAL	75.9	111.0	125.2	131.6	130.4	593.1	267.8	210.0	172.9	185.7	85.4	51.7
MEAN	2.45	3.70	4.04	4.25	4.66	19.1	8.93	6.77	5.76	5.99	2.75	1.72
MAX	3.5	7.3	5.3	7.0	15	55	23	15	13	12	3.6	1.9
MIN	2.1	3.0	2.9	3.5	3.8	5.1	5.1	4.6	3.8	2.3	2.0	1.6
AC-FT	151	220	248	261	259	1180	531	417	343	368	169	103
a	-1846	-641	-800	-849	-255	+3435	+6226	+4326	-410	-1957	-2394	-2633
b	1763	527	707	855	499	453	380	645	1567	1605	1940	2301
c	125	35	11	21	51	24	87	131	246	284	253	207

CAL YR 1990 TOTAL 2062.9 MEAN 5.65 MAX 32 MIN 1.0 AC-FT 4090 MEAN d 25.1 AC-FT d 18170
WTR YR 1991 TOTAL 2140.7 MEAN 5.86 MAX 55 MIN 1.0 AC-FT 4250 MEAN d 29.2 AC-FT d 21170

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.

d 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 mi².

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 National Geodetic Vertical Datum of 1929. 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 ft³/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.

AVERAGE DISCHARGE.--84 years, 487 ft³/s, 352,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,100 ft³/s, Feb. 17, 1986, gage height, 14.76 ft, from rating curve extended above 34,000 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 24	2230	*6,670	*7.47				

Minimum daily, 0.68 ft³/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	11	20	18	16	246	489	412	255	89	8.3	2.2
2	7.3	12	19	18	27	459	528	405	246	69	9.0	3.2
3	6.9	19	19	19	35	364	464	365	241	58	8.5	2.9
4	6.8	22	18	19	53	870	446	329	232	53	8.1	2.4
5	6.4	19	17	20	86	1510	471	317	217	46	9.1	2.0
6	5.7	16	18	20	113	564	548	340	203	39	9.2	2.5
7	5.3	15	18	22	78	336	628	367	184	36	8.8	1.8
8	5.8	14	19	25	54	243	585	390	169	35	8.8	2.1
9	5.8	14	17	36	42	192	537	397	160	32	9.6	1.2
10	5.0	13	17	34	36	173	525	366	151	31	9.0	1.7
11	5.7	13	20	28	32	212	497	323	137	29	8.3	1.5
12	5.8	14	21	25	30	190	439	295	122	28	8.8	.95
13	5.3	15	25	24	28	876	408	279	108	27	8.3	1.4
14	4.9	14	27	24	28	570	407	317	100	25	8.6	1.4
15	5.5	14	25	24	27	453	427	292	94	24	7.4	1.9
16	5.6	14	24	24	26	366	422	291	87	23	8.3	2.7
17	5.2	14	23	22	26	327	387	332	79	21	7.8	3.0
18	5.8	14	22	21	26	432	360	374	71	20	7.4	2.9
19	6.8	15	20	21	26	425	337	361	66	20	8.3	2.2
20	6.9	17	20	21	26	645	344	315	62	19	7.7	2.6
21	7.8	19	22	21	25	516	371	302	58	18	6.6	2.0
22	11	20	19	21	24	335	390	297	55	18	5.7	1.8
23	14	21	14	20	23	333	391	311	52	18	5.7	1.9
24	12	20	13	19	23	2560	408	332	50	17	4.6	1.7
25	10	21	15	18	23	3540	441	342	48	16	4.5	1.5
26	9.9	27	17	17	22	2390	449	336	46	15	4.4	1.1
27	9.8	36	17	17	23	1310	421	308	45	14	3.8	1.5
28	9.5	33	17	17	27	803	402	282	48	12	3.5	1.5
29	9.2	26	17	16	---	611	396	270	109	11	2.8	.94
30	9.0	22	17	17	---	514	407	267	143	10	3.2	.68
31	9.8	---	18	16	---	469	---	303	---	9.7	2.6	---
TOTAL	231.7	544	595	664	1005	22834	13325	10217	3638	882.7	216.7	57.17
MEAN	7.47	18.1	19.2	21.4	35.9	737	444	330	121	28.5	6.99	1.91
MAX	14	36	27	36	113	3540	628	412	255	89	9.6	3.2
MIN	4.9	11	13	16	16	173	337	267	45	9.7	2.6	.68
AC-FT	460	1080	1180	1320	1990	45290	26430	20270	7220	1750	430	113

CAL YR 1990 TOTAL 41411.1 MEAN 113 MAX 910 MIN 1.9 AC-FT 82140
WTR YR 1991 TOTAL 54210.27 MEAN 149 MAX 3540 MIN .68 AC-FT 107500

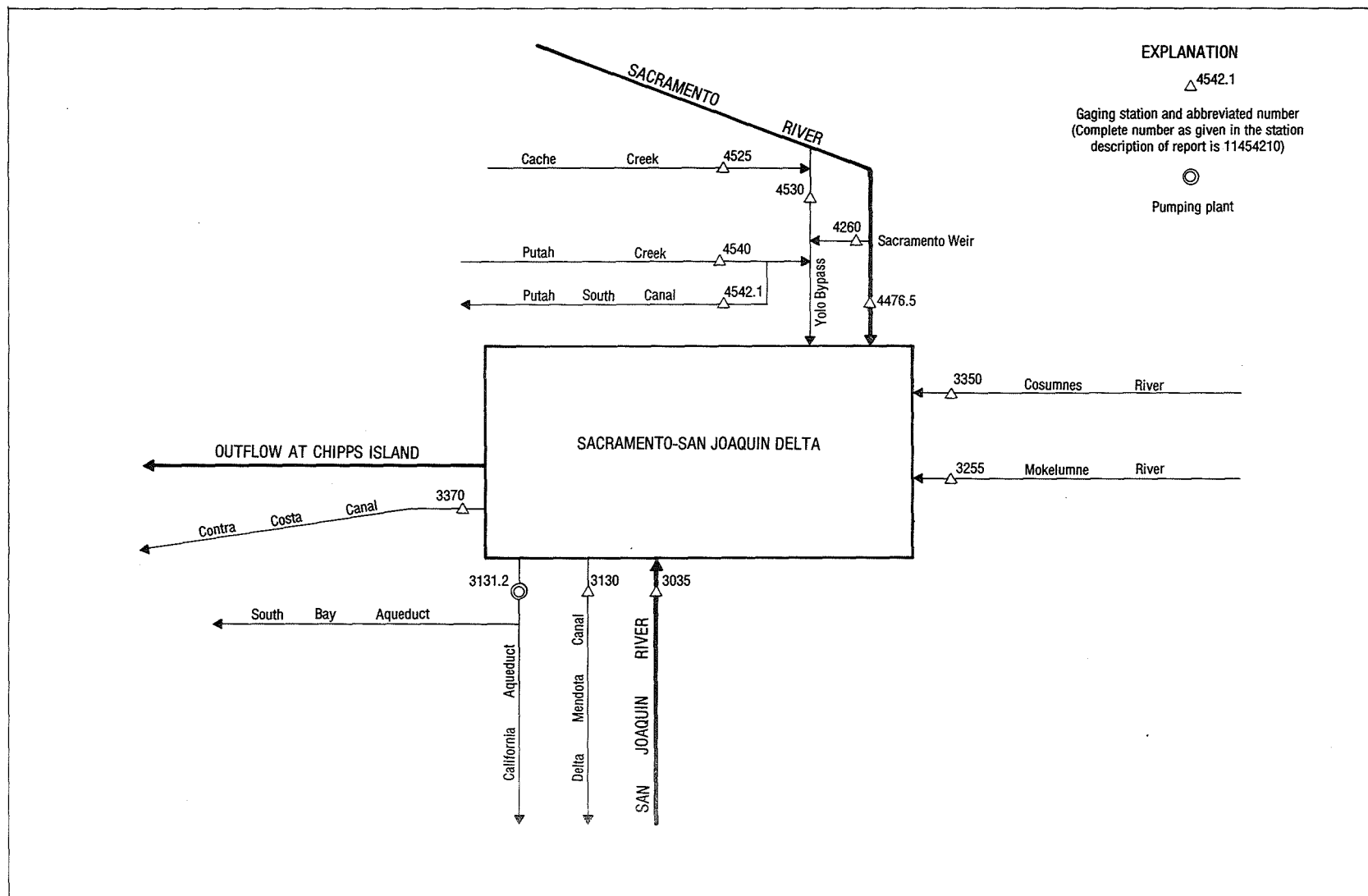


Figure 36. Principal inflows and diversions, Sacramento-San Joaquin Delta.

SACRAMENTO-SAN JOAQUIN DELTA, INFLOWS AND DIVERSIONS

LOCATION.--See schematic diagram of inflows and diversions, Sacramento-San Joaquin Delta.

PERIOD OF RECORD.--October 1971 to current year. Data for periods prior to October 1971 can be obtained from published records for stations tabulated below.

REMARKS.--Minor inflow streams and diversions are not included. Total for water year may not equal the sum of the individual months because of rounding.

COOPERATION.--Records for Delta-Mendota, Contra Costa, and Putah South Canals provided by U.S. Bureau of Reclamation; Records for California Aqueduct and Sacramento Weir spill provided by California Department of Water Resources; not reviewed by the U.S. Geological Survey.

SUMMARY OF PRINCIPAL INFLOWS AND DIVERSIONS IN THE
SACRAMENTO-SAN JOAQUIN DELTA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Inflows, in thousands of acre-feet

Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Month Apr.	May	June	July	Aug.	Sept.	Water year
11303500 SAN JOAQUIN RIVER NEAR VERNALIS												
61.07	66.37	56.47	50.19	42.09	109.4	69.51	64.49	33.81	36.53	33.04	34.16	657.1
11325500 MOKELUMNE RIVER AT WOODBRIDGE												
10.62	9.42	2.52	2.67	2.42	2.72	1.77	1.62	1.76	1.89	1.41	2.10	40.93
11335000 COSUMNES RIVER AT MICHIGAN BAR												
.46	1.08	1.18	1.32	1.99	45.29	26.43	20.27	7.22	1.75	.43	.11	107.5
11426000 SACRAMENTO WEIR SPILL												
0	0	0	0	0	0	0	0	0	0	0	0	0
11447650 SACRAMENTO RIVER AT FREEPORT												
468.6	459.5	665.2	552.4	451.7	1584	647.4	450.8	531.4	585.0	585.1	592.0	7573
11453000 YOLO BYPASS NEAR WOODLAND ¹												
0	0	0	0	0	49.75	0	0	0	0	0	0	0
11454000 PUTAH CREEK NEAR WINTERS												
14.15	6.46	5.33	6.41	7.65	4.00	12.02	28.49	31.87	34.08	29.34	23.04	202.8
TOTAL												
554.9	542.8	730.7	613	505.8	1795	757.1	565.7	606.1	659.2	649.3	651.4	8631

Diversions, in thousands of acre-feet

Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Month Apr.	May	June	July	Aug.	Sept.	Water year
11313000 DELTA-MENDOTA CANAL												
68.08	94.49	140.0	115.7	144.7	228.8	171.5	78.51	53.19	100.4	102.0	110.2	1408
11313120 CALIFORNIA AQUEDUCT (DELTA PUMPING PLANT)												
138.8	129.6	165.8	180.1	97.88	363.8	269.8	78.74	51.67	44.80	126.1	131.8	1779
11337000 CONTRA COSTA CANAL												
11.36	8.86	9.10	8.98	7.62	6.82	5.94	7.97	9.23	10.64	10.30	9.58	106.4
11454210 PUTAH SOUTH CANAL												
12.24	4.12	3.31	4.09	5.60	1.46	8.41	24.52	28.15	29.43	25.53	19.39	166.2
TOTAL												
230.5	237.1	318.2	308.9	255.8	600.9	455.6	189.7	142.2	185.3	263.9	271.0	3460

¹Flow not computed below 1,000 ft³/s.

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 1991

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Date	Annual maximum	
						Gage height (feet)	Discharge (ft ³ /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	1974-91	3-19-91	7.21	16
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, 1974-91	3-19-91	23.80	e401
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, 1985-91	3-19-91	3.45	164

a Published as a miscellaneous measurement.

e Estimated.

d Computed as continuous record.

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 1991

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water year)	Measurements	
					Date	Discharge (ft ³ /s)
Pyramid and Winnemucca Lakes basin						
390954120103700 Truckee River at Rampart, near Tahoe City, CA	Pyramid Lake	Lat 39°09'54", long 120°10'37", in SW 1/4 NE 1/4 sec.11, T.15 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 2 mi downstream from Lake Tahoe and about 2.2 mi west of Tahoe City.	--	--	11-19-90	0.68
391108120113900 Truckee River above Bear Creek, near Alpine Meadows, CA	Pyramid Lake	Lat 39°11'08", long 120°11'39", in SW 1/4 SW 1/4 sec.34, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 1.7 mi southeast of Squaw Valley and about 3.1 mi northwest of Tahoe City.	--	--	11-19-90	1.01
391125120114900 Bear Creek at mouth, near Alpine Meadows, CA	Truckee River	Lat 39°11'25", long 120°11'49", in NW 1/4 SW 1/4 sec.34, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 1.5 mi southeast of Squaw Valley and about 3.3 mi northwest of Tahoe City.	--	--	11-19-90	.45
391146120115000 Truckee River at Highway 89 Bridge, near Squaw Valley, CA	Pyramid Lake	Lat 39°11'46", long 120°11'50", in NE 1/4 NE 1/4 sec.33, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 1.1 mi southeast of Squaw Valley and about 3.5 mi northwest of Tahoe City.	--	--	11-19-90	2.01
391240120115000 Truckee River above Squaw Creek, near Squaw Valley, CA	Pyramid Lake	Lat 39°12'40", long 120°11'50", in NW 1/4 NW 1/4 sec.27, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 1 mi northeast of Squaw Valley and about 4.2 mi northwest of Tahoe City.	--	--	11-19-90	2.26
10337855 Squaw Creek at Highway 89, near Squaw Valley, CA	Truckee River	Lat 39°12'42", long 120°11'57", in NE 1/4 NE 1/4 sec.28, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 1 mi northeast of Squaw Valley and about 4.2 mi northwest of Tahoe City.	--	--	11-19-90	.47
391319120115500 Deer Creek 200 ft above mouth, near Squaw Valley, CA	Truckee River	Lat 39°13'19", long 120°11'55", in SE 1/4 NE 1/4 sec.21, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 1.3 mi northeast of Squaw Valley and about 4.7 mi northwest of Tahoe City.	--	--	11-19-90	.89
391326120120900 Silver Creek at Highway 89, near Squaw Valley, CA	Truckee River	Lat 39°13'26", long 120°12'09", in SW 1/4 NE 1/4 sec.21, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 1.4 mi northeast of Squaw Valley and about 4.9 mi northwest of Tahoe City.	--	--	11-19-90	.15
391352120121300 Truckee River tributary 0.4 mi upstream from Pole Creek, near Squaw Valley, CA	Truckee River	Lat 39°13'52", long 120°12'13", in SW 1/4 SE 1/4 sec.16, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 1.9 mi northeast of Squaw Valley and about 5.4 mi northwest of Tahoe City.	--	--	11-19-90	e.04
391402120122100 Pole Creek at mouth, near Squaw Valley, CA	Truckee River	Lat 39°14'02", long 120°12'21", in SW 1/4 NE 1/4 sec.16, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 2.1 mi northeast of Squaw Valley and about 5.7 mi northwest of Tahoe City.	--	--	11-19-90	.26

e Estimated.

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water year)	Measurements	
					Date	Discharge (ft ³ /s)
Pyramid and Winnemucca Lakes basin--Continued						
391529120123300 Deep Creek above mouth, near Truckee, CA	Truckee River	Lat 39°15'29", long 120°12'33", in SE 1/4 SW 1/4 sec.4, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 400 ft upstream from Truckee River and about 5 mi southwest of Truckee.	--	--	11-19-90	0.57
391551120123200 Truckee River above Rocky Wash, near Truckee, CA	Pyramid Lake	Lat 39°15'51", long 120°12'32", in SE 1/4 NW 1/4 sec.4, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 500 ft upstream from Rocky Wash and about 4.6 mi southwest of Truckee.	--	--	11-19-90	5.7
391557120123200 Rocky Wash at mouth, near Truckee, CA	Truckee River	Lat 39°15'57", long 120°12'32", in SE 1/4 NW 1/4 sec.4, T.16 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 200 ft upstream from Truckee River and about 4.5 mi southwest of Truckee.	--	--	11-19-90	.08
391642120122100 Cabin Creek at Highway 89, near Truckee, CA	Truckee River	Lat 39°16'42", long 120°12'21", in NW 1/4 SE 1/4 sec.33, T.17 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 200 ft upstream from Truckee River and about 3.6 mi southwest of Truckee.	--	--	11-19-90	.14
10337900 Truckee River tributary near Truckee, CA	Truckee River	Lat 39°16'48", long 120°12'21", in SW 1/4 NE 1/4 sec.33, T.17 N., R.16 E., Placer County, Hydrologic Unit 16050102, about 200 ft upstream from Truckee River and about 3.5 mi southwest of Truckee.	--	--	11-19-90	.08
10338010 Truckee River above Donner Creek, near Truckee, CA	Pyramid Lake	Lat 39°18'58", long 120°12'00", in SE 1/4 SE 1/4 sec.16, T.17 N., R.16 E., Nevada County, Hydrologic Unit 16050102, about 0.4 mi upstream from Donner Creek and about 1.2 mi southwest of Truckee.	--	--	11-19-90	5.80
10339003 Donner Creek at mouth, near Truckee, CA	Truckee River	Lat 39°18'59", long 120°12'02", in SE 1/4 SE 1/4 sec.16, T.17 N., R.16 E., Nevada County, Hydrologic Unit 16050102, about 50 ft upstream from Truckee River and about 1.2 mi southwest of Truckee.	--	--	11-19-90	3.89
10339010 Truckee River at Highway 267, Truckee, CA	Pyramid Lake	Lat 39°19'36", long 120°11'00", in NE 1/4 NE 1/4 sec.15, T.17 N., R.16 E., Nevada County, Hydrologic Unit 16050102, at California State Highway 267 bridge at Truckee.	--	--	11-19-90	10.4
391950120100200 Truckee River above Trout Creek, near Truckee, CA	Pyramid Lake	Lat 39°19'50", long 120°10'02", in SW 1/4 SE 1/4 sec.11, T.17 N., R.16 E., Nevada County, Hydrologic Unit 16050102, about 0.2 mi upstream from Trout Creek and about 0.9 mi east of Truckee.	--	--	11-19-90	14.0
391956120095200 Trout Creek at mouth, near Truckee, CA	Truckee River	Lat 39°19'56", long 120°09'52", in SE 1/4 SE 1/4 sec.16, T.17 N., R.16 E., Nevada County, Hydrologic Unit 16050102, about 50 ft upstream from Truckee River and about 1.0 mi northeast of Truckee.	--	--	11-19-90	.02
392018120080300 Truckee River at Polaris, near Truckee, CA	Pyramid Lake	Lat 39°20'18", long 120°08'03", in SE 1/4 NW 1/4 sec.7, T.17 N., R.17 E., Nevada County, Hydrologic Unit 16050102, at Polaris, about 0.2 mi south of old U.S. Highway 40 and about 2.7 mi northeast of Truckee.	--	--	11-19-90	17.7

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water year)	Measurements	
					Date	Discharge (ft ³ /s)
Pyramid and Winnemucca Lakes basin--Continued						
10339400 Martis Creek near Truckee, CA	Truckee River	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, 0.2 mi downstream from Martis Creek Lake Dam, 1.8 mi upstream from mouth, and 3.5 mi east of Truckee.	--	1959-90	10-01-90 11-05-90 12-26-90 01-29-91 02-26-91 03-29-91 04-29-91 06-03-91 07-16-91 08-12-91	4.35 5.02 5.02 4.69 5.45 11.4 20.1 9.60 3.30 2.34
10339405 Martis Creek near mouth, near Truckee, CA	Truckee River	Lat 39°20'56", long 120°07'02", in NE 1/4 SW 1/4 sec.5, T.17 N., R.17 E., Nevada County, Hydrologic Unit 16050102, about 350 ft upstream from Truckee River and about 3.8 mi northeast of Truckee.	--	--	11-19-90	5.67
10339498 Truckee River at Old U.S. Highway 40 Bridge, below Truckee, CA	Pyramid Lake	Lat 39°21'11", long 120°07'17", in SW 1/4 NW 1/4 sec.5, T.17 N., R.17 E., Nevada County, Hydrologic Unit 16050102, at upstream side of old U.S. Highway 40 bridge and about 3.5 mi northeast of Truckee.	--	--	11-19-90	27.5
392133120064000 Union Valley Creek at mouth, near Truckee, CA	Truckee River	Lat 39°21'33", long 120°07'17", in NW 1/4 NE 1/4 sec.5, T.17 N., R.17 E., Nevada County, Hydrologic Unit 16050102, about 300 ft upstream from Truckee River and about 4.2 mi northeast of Truckee.	--	--	11-19-90	.02
392213120065800 Prosser Creek at mouth, near Truckee, CA	Truckee River	Lat 39°22'13", long 120°06'58", in SE 1/4 NW 1/4 sec.32, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, about 200 ft upstream from Truckee River and about 4.6 mi northeast of Truckee.	--	--	11-19-90	9.53
392215120065600 Truckee River below Prosser Creek, near Truckee, CA	Pyramid Lake	Lat 39°22'15", long 120°06'56", in NE 1/4 NW 1/4 sec.32, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, about 300 ft downstream from Prosser Creek and about 4.7 mi northeast of Truckee.	--	--	11-20-90	44.8
392304120053400 Truckee River below Little Truckee River, near Truckee, CA	Pyramid Lake	Lat 39°23'04", long 120°05'34", in SW 1/4 NE 1/4 sec.28, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, about 200 ft downstream from Little Truckee River, about 0.4 mi south of Boca Reservoir, and about 6.3 mi northeast of Truckee.	--	--	11-19-90	41.8
392152120041700 Juniper Creek at mouth, near Hirschdale, CA	Truckee River	Lat 39°21'52", long 120°04'17", in NW 1/4 SE 1/4 sec.34, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, about 400 ft upstream from Truckee River and about 0.4 mi southeast of Hirschdale	--	--	11-19-90	.36
392156120041400 Truckee River below Juniper Creek, near Hirschdale, CA	Pyramid Lake	Lat 39°21'56", long 120°04'14", in NE 1/4 SE 1/4 sec.34, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, about 300 ft downstream from Juniper Creek and about 0.4 mi southeast of Hirschdale.	--	--	11-19-90	45.6

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water year)	Measurements	
					Date	Discharge (ft ³ /s)
Pyramid and Winnemucca Lakes basin--Continued						
392224120014600 Gray Creek at mouth, near Floriston, CA	Truckee River	Lat 39°22'24", long 120°01'46"., in NE 1/4 NE 1/4 sec.36, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, about 400 ft upstream from Truckee River and about 1.6 mi southwest of Floriston.	--	--	11-19-90	5.24
392257120011100 Truckee River above Bronco Creek, near Floriston, CA	Pyramid Lake	Lat 39°22'57", long 120°01'11", in SE 1/4 NW 1/4 sec.31, T.18 N., R.18 E., Nevada County, Hydrologic Unit 16050102, about 400 ft upstream from Bronco Creek and about 0.9 mi south of Floriston.	--	--	11-20-90	48.1
392303120011000 Bronco Creek at mouth, near Floriston, CA	Truckee River	Lat 39°23'03", long 120°01'10", in SE 1/4 NW 1/4 sec.31, T.18 N., R.18 E., Nevada County, Hydrologic Unit 16050102, about 300 ft upstream from Truckee River and about 0.7 mi south of Floriston.	--	--	11-20-90	3.74
10345909 Truckee River at Floriston Dam, near Floriston, CA	Pyramid Lake	Lat 39°23'48", long 120°01'24", in SE 1/4 NW 1/4 sec.30, T.18 N., R.18 E., Nevada County, Hydrologic Unit 16050102, at Floriston Dam about 0.2 mi northwest of Floriston.	--	--	11-20-90	51.1
392555120014800 Canyon 24 at mouth, near Floriston, CA	Truckee River	Lat 39°25'55", long 120°01'48", in NE 1/4 NE 1/4 sec.12, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, about 100 ft upstream from Truckee River, about 0.8 mi north of Farad Powerhouse, and about 2.6 mi northwest of Floriston	--	--	11-20-90	.04
392556120013000 Mystic Canyon Creek at mouth, near Floriston, CA	Truckee River	Lat 39°25'56", long 120°01'30", in SW 1/4 SW 1/4 sec.7, T.18 N., R.18 E., Nevada County, Hydrologic Unit 16050102, about 200 ft upstream from Truckee River, about 0.9 mi northeast of Farad Powerhouse, and about 2.6 mi northwest of Floriston.	--	--	11-20-90	.35
392639120002600 Puny Dip Canyon at mouth, near Floriston, CA	Truckee River	Lat 39°26'39", long 120°00'26", in NE 1/4 NE 1/4 sec.7, T.19 N., R.18 E., Nevada County, Hydrologic Unit 16050102, about 150 ft upstream from Truckee River, and about 3.5 mi northeast of Floriston.	--	--	11-20-90	.29
392706120001500 Truckee River above Fleish Power Diversion, near Verdi, NV	Pyramid Lake	Lat 39°27'06", long 120°00'15", in NE 1/4 SE 1/4 sec.6, T.18 N., R.18 E., Nevada County, Hydrologic Unit 16050102, about 0.4 mi upstream from Deep Canyon Creek and about 4.5 mi southwest of Verdi.	--	--	11-20-90	61.9
392724120002300 Deep Canyon Creek at mouth, near Verdi, NV	Truckee River	Lat 39°27'24", long 120°00'23", in NE 1/4 NE 1/4 sec.6, T.18 N., R.18 E., Nevada County, Hydrologic Unit 16050102, about 100 ft upstream from Truckee River, and about 4.8 mi southwest of Verdi.	--	--	11-20-90	.77

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Location	Drainage area (mi ²)	Measured previously (water year)	Measurements		
				Date	Gage height (feet)	Discharge (ft ³ /s)
Buena Vista Lake basin						
11187500	Lat 35°38'32", long 118°28'09",	--	1910-14a,	10-04-90	--	(b)
Borel Canal	in SW 1-4 NE 1-4 sec.30, T.26 S.,		1925-90a	1-14-91	--	(b)
below Isabella	R.33 E., Kern County, Hydrologic			2-06-91	5.09	138
Dam, CA	Unit 18030001, on right bank,			3-14-91	6.77	355
	500 ft downstream from Isabella			4-15-91	7.18	424
	Dam and 3 mi upstream from point			6-13-91	8.33	605
	where canal crosses Erskine			8-01-91	8.36	590
	Creek.					
11191000	Lat 35°38'21", long 118°29'02",	2,074	1945-90a	10-12-90	4.89	123
Kern River	in SW 1-4 NW 1-4 sec.30, T.26 S.,			11-06-90	4.80	117
Below Isabella	R.33 E., Kern County, Hydrologic			1-16-91	4.92	124
Dam, CA	Unit 18030003, on right bank			2-07-91	3.60	24.6
	200 ft downstream from highway			3-14-91	4.26	71.9
	bridge, 0.6 mi downstream from			4-15-91	3.00	4.83
	Isabella Dam, and 1.6 mi south-			6-12-91	7.10	643
	west of town of Lake Isabella.			7-25-91	6.56	473
Tulare Lake basin						
11204680	Lat 36°03'34", long 118°55'22",	--	1952-90a	10-02-90	.48	6.27
Pioneer Ditch	in SW 1-4 NW 1-4 sec.35, T.21 S.,			11-15-90	.40	3.84
below Success Dam,	R.28 E., Tulare County, Hydrologic			1-04-91	.10	.55
CA	Unit 18030006, on left bank			2-15-91	.20	1.94
	0.1 mi downstream from Success			4-03-91	--	(b)
	Dam and 5.5 mi east of Porterville.			4-05-91	.20	1.73
				5-15-91	.91	17.1
				5-15-91	.74	11.7
				7-02-91	.89	16.1
				8-21-91	.76	12.7
11204900	Lat 36°03'23", long 118°55'22",	393	1953-90a	10-03-90	1.48	1.26
Tule River	in NW 1-4 SW 1-4 sec.35, T.21 S.,			11-15-90	2.44	18.5
below Success Dam,	R.28 E., Tulare County, Hydrologic			1-04-91	1.24	.12
CA	Unit 18030012, on right bank			2-15-91	2.25	13.6
	1,000 ft downstream from Success			4-03-91	1.26	.26
	Dam and 5 mi east of Porterville.			5-15-91	4.96	230
				7-03-91	3.16	44.3
				8-21-91	3.18	43.7
11210850	Lat 36°24'55", long 119°00'22",	--	1963-90a	11-29-90	1.82	14.2
Lemoncove Ditch	in SW 1-4 SW 1-4 sec.25, T.17 S.,			11-29-90	1.82	13.6
below Terminus Dam,	R.27 E., Tulare County, Hydrologic			11-29-90	1.20	1.17
CA	Unit 18030007, on right bank.75 ft			1-08-91	1.18	1.02
	downstream from outlet tunnel of			2-20-91	1.40	4.01
	Terminus Dam and 2.4 mi northeast			4-04-91	--	(b)
	of Lemoncove.			5-16-91	1.58	7.67
				7-02-91	1.60	8.21
				8-22-91	1.58	8.23
11210930	Lat 36°24'48", long 119°00'47",	--	1962-90a	10-03-90	.74	11.0
Foothill Ditch	in NW 1-4 NW 1-4 sec.35, T.17 S.,			11-28-90	.06	.15
below Terminus Dam,	R.27 E., Tulare County, Hydrologic			1-08-91	.32	3.00
CA	Unit 18030012, on left bank 0.7 mi			2-20-91	.44	5.36
	downstream from Terminus Dam and			4-03-91	.38	3.58
	2.1 mi northeast of Lemoncove.			5-16-91	.87	14.7
				7-01-91	.97	14.4
				8-22-91	.83	14.1
11210950	Lat 36°24'51", long 119°00'42",	561	1962-90a	11-28-90	.42	9.81
Kaweah River	in SE 1-4 SE 1-4 sec.26, T.17 S.,			1-08-91	.27	4.28
below Terminus Dam,	R.27 E., Tulare County, Hydrologic			2-20-91	.45	11.7
CA	Unit 18030012, on left bank 0.6 mi			4-03-91	.65	20.8
	downstream from Terminus Dam and			5-16-91	1.65	108
	2.2 mi northeast of Lemoncove.			7-01-91	6.04	1,910
				8-23-91	.89	35.4

a Operated as a continuous-record gaging station.

b No flow.

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Location	Drainage area (mi ²)	Measured previously (water year)	Measurements		
				Date	Gage height (feet)	Discharge (ft ³ /s)
Tulare Lake basin--Continued						
11221500	Lat 36°49'50", long 119°20'07",	1,545	1954-90a	10-05-90	1.18	117
Kings River	in SW 1-4 NW 1-4 sec.2, T.13 S.,			11-08-90	.84	69.8
below Pine Flat Dam,	R.24 E., Fresno County, Hydrologic			12-20-90	.98	86.1
CA	Unit 18030012, on right bank			2-05-91	1.40	151
	0.6 mi downstream from Pine Flat			3-20-91	.49	28.9
	Dam and 2.9 mi northeast of Piedra.			4-11-91	2.34	358
				5-02-91	4.48	1,570
				8-27-91	2.87	498
11259000	Lat 37°12'56", long 119°59'25",	236	1922-23a,	10-03-90	--	(b)
Chowchilla River	in SE 1-4 SW 1-4 sec.22. T.8 S.,		1931-72a,	1-02-91	--	(b)
below Buchanan Dam,	R.18 E., Madera County, Hydrologic		1976-90a	3-01-91	--	(b)
near Raymond, CA	Unit 18040007, on left bank			4-04-91	1.14	.04
	1,800 ft downstream from Buchanan			5-02-91	--	(b)
	Dam and 4.6 mi west of Raymond.			6-21-91	5.35	311
				7-01-91	6.19	544
				9-27-91	--	(b)
San Joaquin River basin						
11308900	Lat 38°08'53", long 120°49'26", in	363	1961-90a	10-15-90	1.05	55.1
Calaveras River	NW 1-4 NE 1-4 sec.1, T.3 N.,			11-13-90	.98	39.4
below New Hogan	R.10 E., Calaveras County,			12-12-90	.49	3.71
Dam near Valley	Hydrologic Unit 18040011, on right			1-15-91	.47	3.03
Springs, CA	bank at county road bridge, 0.5 mi			2-13-91	.53	5.08
	upstream from Cosgrove Creek, 0.8 mi			3-13-91	.56	5.84
	downstream from New Hogan Dam, and			4-11-91	.55	4.95
	3.0 mi south of Valley Springs.			5-13-91	1.56	188
				6-12-91	1.38	128
				7-10-91	1.61	206
				8-13-91	1.54	187
				9-09-91	1.76	251
				9-09-91	1.76	258

a Operated as a continuous-record gaging station.

b No flow.

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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