

1971

# Water Resources Data for California

## Part 1. Surface Water Records

### Volume 2: Northern Great Basin and Central Valley



**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY**

Prepared in cooperation with the California Department  
of Water Resources and with other agencies

# CALENDAR FOR WATER YEAR 1971

## OCTOBER 1970

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

## NOVEMBER 1970

S	M	T	W	T	F	S
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15	16	17	18	19	20	21
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29	30					

## DECEMBER 1970

S	M	T	W	T	F	S
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## JANUARY 1971

S	M	T	W	T	F	S
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31						

## FEBRUARY 1971

S	M	T	W	T	F	S
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28						

## MARCH 1971

S	M	T	W	T	F	S
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## APRIL 1971

S	M	T	W	T	F	S
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## MAY 1971

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## JUNE 1971

S	M	T	W	T	F	S
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## JULY 1971

S	M	T	W	T	F	S
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

## AUGUST 1971

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

## SEPTEMBER 1971

S	M	T	W	T	F	S
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				4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

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Water-resources records, 1971, for California are in the following reports of the U.S. Geological Survey:

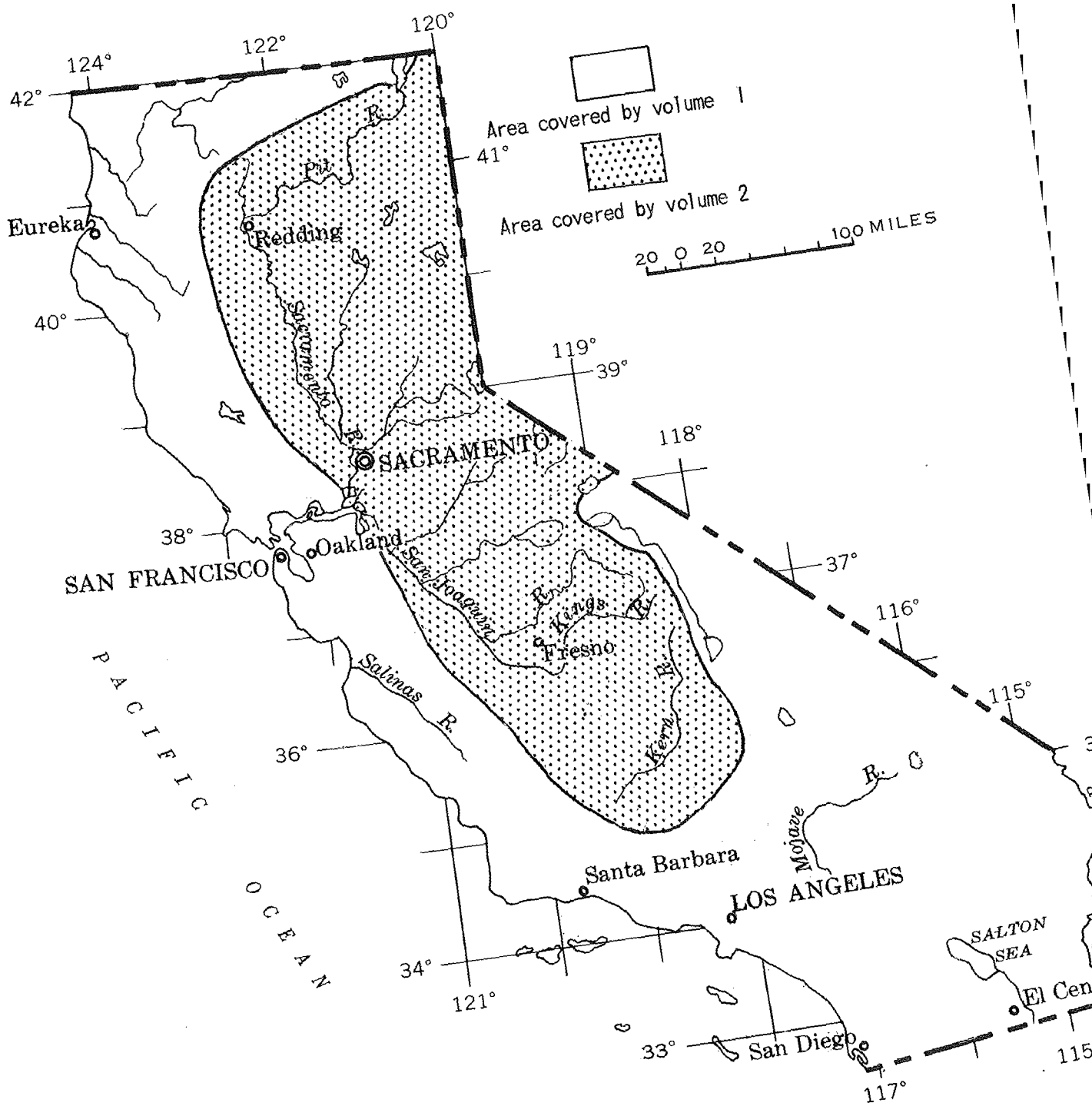
1. Water Resources Data for California  
Part 1: Surface Water Records  
Volume 1: Colorado River Basin, Southern Great Basin, and Pacific Slope Basins excluding Central Valley
2. Water Resources Data for California  
Part 1: Surface Water Records  
Volume 2: Northern Great Basin and Central Valley
3. Water Resources Data for California  
Part 2: Water Quality Records

Copies of these reports may be obtained from District Chief,  
Water Resources Division  
U.S. Geological Survey  
855 Oak Grove Avenue  
Menlo Park, California 94025



Prepared in cooperation with

California Department of Water Resources  
Berrenda Mesa Water District  
Alameda County Flood Control and Water Conservation District  
Alameda County Water District  
Antelope Valley-East Kern Water Agency  
Casitas Municipal Water District  
Coachella Valley County Water District  
Contra Costa County Flood Control and Water Conservation District  
East Bay Municipal Utility District  
Georgetown Divide Public Utility District  
Imperial Irrigation District  
Madera Irrigation District  
Montecito County Water District  
Monterey County Flood Control and Water Conservation District  
Napa County Flood Control and Water Conservation District  
Orange County Flood Control District  
Paradise Irrigation District  
Riverside County Flood Control and Water Conservation District  
Sacramento County Department of Public Works, Water Resources Division  
San Benito County Water Conservation and Flood Control District  
San Bernardino Valley Municipal Water District  
San Bernardino Valley Water Conservation District  
San Diego (county) Department of Sanitation and Flood Control  
San Diego (city) Water Utilities  
San Francisco, City and County Water Department  
San Luis Obispo County Flood Control and Water Conservation District  
San Mateo County  
Santa Barbara City Water Department  
Santa Barbara County Flood Control District  
Santa Barbara County Water Agency  
Santa Clara County Flood Control and Water District  
Santa Cruz, City Water Department  
Santa Cruz County Flood Control and Water Conservation District  
Santa Maria Valley Water Conservation District  
Santa Ynez River Water Conservation District  
Siskiyou County Flood Control and Water Conservation District  
Tehachapi-Cummings County Water District  
Terra Bella Irrigation District  
Tulare County Flood Control District  
Turlock Irrigation District  
United Water Conservation District  
University of California (Berkeley)  
Ventura River Municipal Water District  
Woodbridge Irrigation District  
Yolo County Flood Control and Water Conservation District  
Corps of Engineers, U.S. Army  
Bureau of Reclamation, U.S. Department of the Interior  
National Park Service, U.S. Department of the Interior  
Forest Service, U.S. Department of Agriculture  
Soil Conservation Service, U.S. Department of Agriculture



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## WATER RESOURCES DATA FOR CALIFORNIA, 1971

### PART 1. SURFACE-WATER RECORDS

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#### INTRODUCTION

Surface-water records for the 1971 water year for California, including records of streamflow or reservoir storage at gaging stations, partial-record stations, and miscellaneous sites, are given in this report. Records for a few pertinent gaging stations in bordering States also are included. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey under the direction of R. Stanley Lord, district chief. These data represent that portion of the National Water Data System collected by the Geological Survey and cooperating State and Federal agencies in California.

Through September 30, 1960, the records of discharge and stage of streams and canals and contents and stage of lakes or reservoirs were published in an annual series of Geological Survey water-supply papers entitled "Surface Water Supply of the United States."

Beginning with the 1961 water year, surface-water records have been released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these reports is limited; they are designed primarily for rapid release of data shortly after the end of the water year to meet local needs. The discharge and reservoir storage records for 1961-65 also has been published in a Geological Survey water-supply-paper series entitled "Surface Water Supply of the United States 1961-65." A similar series will be published for water years 1966-70.

## COOPERATION

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

California Department of Water Resources, William R. Gianelli, director.  
Berrenda Mesa Water District, T. D. Johnson, secretary-general manager.  
Alameda County Flood Control and Water Conservation District,  
Paul E. Lanferman, engineer-manager.  
Alameda County Water District, M. P. Whitfield, general manager-chief engineer.  
Antelope Valley-East Kern Water Agency, W. G. Spinarski, manager.  
Casitas Municipal Water District, Robert McKinney, general manager-chief engineer.  
Coachella Valley County Water District, Lowell O. Weeks, general manager-chief engineer.  
Contra Costa County Flood Control and Water Conservation District,  
C. C. Rich, chief engineer.  
East Bay Municipal Utility District, John S. Harnett, general manager.  
Georgetown Divide Public Utility District, C. F. Gierau, general manager.  
Imperial Irrigation District, R. F. Carter, general manager.  
Madera Irrigation District, F. G. Bandy, secretary manager.  
Montecito County Water District, E. A. Elevatorski, general manager.  
Monterey County Flood Control and Water Conservation District,  
Loran Bunte, Jr., district engineer.  
Napa County Flood Control and Water Conservation District, Edward Bernard, chairman.  
Orange County Flood Control District, H. G. Osborne, chief engineer.  
Paradise Irrigation District, C. Phillip Kelly, manager.  
Riverside County Flood Control and Water Conservation District,  
John W. Bryant, chief engineer.  
Sacramento County Department of Public Works, Water Resources Division,  
J. P. Alessandri, chief.  
San Benito County Water Conservation and Flood Control District,  
Ralph G. Towle, secretary.  
San Bernardino Valley Municipal Water District, Jack A. Beaver, general manager.  
San Bernardino Valley Water Conservation District, E. F. Dibble, engineer-secretary.  
San Diego, County of, Department of Sanitation and Flood Control,  
C. J. Houson, director.  
San Diego, City of, Water Utilities, Roy E. Dodson, director.  
San Francisco, City and County Water Department, Arthur H. Frye, Jr., general manager and chief engineer.  
San Luis Obispo County Engineering Department, George Protopapas, county engineer.  
San Mateo County Flood Control District, Vic. K. Sanders, manager.  
Santa Barbara City Water Department, Neil Mendenall, superintendent.  
Santa Barbara County Flood Control District, James Stubchaer, flood control engineer.  
Santa Barbara County Water Agency, Francis H. Beattie, chairman.  
Santa Clara County Flood Control and Water District, Donald K. Currlin, manager-counsel.  
Santa Cruz, City Water Department, Weston L. Webber, director.  
Santa Cruz County Flood Control and Water Conservation District,  
D. A. Porath, district engineer.  
Santa Maria Valley Water Conservation District, Maurice F. Twitchell, secretary.  
Santa Ynez River Conservation District, Andrew T. Petersen, president.  
Siskiyou County Flood Control and Water Conservation District, A. R. Cansino, district engineer.

Tehachapi-Cummings County Water District, Robert J. Jasper, general manager.  
Terra Bella Irrigation District, John E. Boudreau, engineer-manager.  
Tulare County Flood Control District, Jack L. Carlsen, flood control engineer.  
Turlock Irrigation District, R. S. Tillner, secretary-general manager.  
United Water Conservation District, Richard A. Smith, general manager-chief engineer.  
University of California (Berkeley), A. Starker Leopold, professor of zoology.  
Ventura River Municipal Water District, Robert McKinney, general manager-chief engineer.  
Woodbridge Irrigation District, Mabel Hall, secretary.  
Yolo County Flood Control and Water Conservation District, Bill McAnlis, general manager.

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

The following organizations and individuals aided in collecting records: Pacific Power and Light Co., Bear Valley Mutual Water Co., Metropolitan Water District of California, Fontana Union Water Co., Los Angeles City Department of Water and Power, Los Angeles County Flood Control District, Rancho California, Pacific Gas and Electric Co., Placer County Water Agency, Sacramento Municipal Utility District, Southern California Edison Co., Kern County Land and Water Co., Ventura County Flood Control District, Helix, Merced, Modesto, Nevada, Serrano and Carpenter, Oroville-Wyandotte, Oakdale-South San Joaquin, and Vista Irrigation Districts, Solano County Water Agency, and Yuba County Water Agency.

#### DEFINITION OF TERMS

Definition of terms related to streamflow and other hydrologic data, as used in this report, are defined as follows:

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 325,851 gallons.

Cfs-day 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, 1.9835 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

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.

Cubic foot per second (cfs) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second, and is equivalent to 7.48 gallons per second or 448.8 gallons per minute.

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

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 herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

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 gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

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

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

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

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

#### SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

International Hydrological Decade (IHD) River Stations provide a general index of runoff and materials in the water balance (discharge of water, and dissolved and transported solids) of the world. In the United States, IHD Stations provide indices of runoff and of the general distribution of water in the principal river basins of the conterminous United States and Alaska.

#### DOWNSTREAM ORDER AND STATION NUMBERS

Records are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all mainstream stations are listed before the first mainstream station. Stations on tributaries to tributaries are listed in a similar manner. In the list of gaging stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging 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 numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete 8-digit station number for each station, such as 11120800 includes the part number "11", the first two digits, followed by a 6-digit station number. In this report the complete number appears just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

## EXPLANATION OF SURFACE-WATER DATA

### Collection and Computation of Data

The base data collected at gaging stations consists of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that gives a continuous graph of the fluctuations (for digital recorders, a tape punched at 15-, 30-, or 60-minute intervals) or from direct readings on a nonrecording gage. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks on the measurement of stream discharge. (See also SELECTED REFERENCES.) Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is determined by sounding at many points.

For a stream-gaging station rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage heights to the rating table gives the daily mean discharge from which the monthly and the yearly mean discharge are computed. 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 by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

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 determining discharge. Information required for determining 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 determining discharge.

At some stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. Discharge over spillways is computed from a stage-discharge relation curve defined by discharge measurements. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

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 on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, adjoining good record, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of basic data. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the 1971 water year is shown on the reverse side of the front cover to facilitate finding the day of the week for any date.

The description of the gaging station gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD." The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the

Topographic Division of the Geological Survey, unless otherwise qualified. The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. The maximum discharge (or contents) and the maximum gage height, the minimum discharge if there is little or no regulation (or the minimum contents), and the minimum gage height if it is significant are given under "EXTREMES." The minimum daily discharge is given if there is extensive regulation (also the minimum discharge and gage height if they are abnormally low). In the first paragraph headed "Current year:" the data given are for the complete current water year unless otherwise specified. In the second paragraph under "EXTREMES" headed "Period of record:" the data given are for the period of record given in the PERIOD OF RECORD paragraph. Reliable information concerning major floods that occurred outside the period of record is given in the third or last paragraph under "EXTREMES." Unless otherwise qualified, the maximum discharge (or contents) corresponds to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge or contents, it is given separately. Information pertaining to the accuracy of the discharge records, to conditions that affect the natural flow at the gaging station, and availability of Water Quality records, is given under "REMARKS"; for reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir, is also given under "REMARKS."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISIONS (WATER YEARS)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge were revised, that fact is brought out by notations 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 revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

Skeleton capacity tables are published for all reservoirs for which records of contents are published on a daily basis.

The daily tables for stream-gaging stations give the discharge corresponding to the daily mean gage height unless there are large or rapid changes in the discharge during a day. For days having large or rapid changes, discharge for the day is computed by averaging the mean

discharge for several parts of a day. For digital recorders, the daily mean discharge is always the average of the discharges at each punched reading. For stations equipped with nonrecording gages, the daily discharge corresponds to once-daily readings of the gage or to the mean of twice-daily readings; but for periods of rapidly changing stage the discharge is determined from a gage-height graph based on gage readings.

The daily tables for reservoir stations give the contents corresponding to the water-surface elevation at a given time, usually at 2400 each day. For some reservoirs the elevation at a given time is given in the daily table.

The monthly summary is given below the daily table. For stream-gaging stations the line headed "TOTAL" gives the sum of the daily figures; it is the total cubic feet per second per day for the month. 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 expressed in acre-feet (line headed "AC-FT").

For reservoir stations the monthly summary gives the elevation (or gage height) at the end of the month and the change in contents during the month. If elevation or gage height is given in the daily table, the monthly summary gives the contents at the end of the month, rather than the elevation or gage height. For some reservoirs a tabulation of monthly evaporation from the water surface also is included.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges for the calendar and water years; likewise, the minimums in this summary are the minimum daily discharges.

For reservoir stations the yearly summary gives the change in contents for the calendar year and for the water year. For some reservoirs the yearly evaporation also is included.

Peak discharges and their times of occurrence and corresponding gage heights for many stations are listed below the yearly summary. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030 and 1:30 p.m. is 1330.

In a general footnote, introduced by the word "NOTE" certain periods are indicated for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs. Footnotes to reservoir tables may be used to explain the use of new capacity tables or for other special conditions.



### Accuracy of Data

The accuracy of discharge data 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 observations of stage, measurements of discharge, and interpretation of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges is within 5 percent; "good" within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures 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, consumptive use, regulation, evaporation, or other factors. 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 unadjusted losses (consumptive use, evaporation, seepage, etc.) are large in comparison with the observed discharge.

### Publications

Each volume of the 1960 series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States" contains a listing of the numbers of all water-supply papers in which records of surface-water data were published for the area covered by the individual volumes. Each volume also contains a list of water-supply papers that give detailed information on major floods for the area. A new series of water-supply papers containing surface-water records for the 5-year period October 1, 1960, to September 30, 1965, also includes lists of annual and special reports published as water-supply papers.

Records through September 1950 for the area covered by this report have been compiled and published in Water-Supply Papers 1313(9), 1314(10), and 1315 A and B(11); records for October 1950 to September 1960 have been compiled and published in Water-Supply Papers 1733(9), 1734(10), and 1735(11). These reports contain summaries of monthly and annual discharge and monthend storage for all previously published records, as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical. The yearly summary table for each gaging station lists the numbers of the water-supply papers in which daily records were published for that station.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district office.

#### Other Data Available

Data collected at partial-record stations and at miscellaneous sites are given in three tables at the end of the surface-water records in this report. The first is a table of discharge measurements at low-flow partial-record stations, the second is a table of annual maximum stage and discharge at crest-stage stations, and the third is a table of discharge measurements at miscellaneous sites. Occasionally, discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also at the end of this report. Data for most crest-stage partial-record stations in California are not included in this report. They are published separately in an annual report, "Floods from Small Drainage Areas," copies of which may be obtained from the district office.

More detailed information than that published for most of the gaging stations, such as discharge measurements, gage-height records, and rating tables, is on file in the district office. Many gaging-station records in California through 1958 have been analyzed to give several statistical summaries: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year.

At or near some gaging stations, water-quality records also are collected. Data are obtained on the chemical quality of the stream water, on water temperature, on suspended-sediment concentration, and on the particle-size distribution of suspended sediment and bed material. These data are given in Part 2 of this report. Under the "REMARKS" paragraph of the gaging-station description, reference is made to water-quality records collected on a regular basis.

#### HYDROLOGIC CONDITIONS

Total annual runoff during the current year was above normal in northern California, approximately normal in basins at midlatitude of the State, and generally below normal in the southern half of the State. The principal exception to that trend occurred locally in the northern part of south coastal California--roughly between the cities of Los Angeles and Santa Barbara--where major winter storms produced heavy runoff in late November and December. Storage in major reservoirs was well above normal at the start of the water year and remained above normal throughout the year.

The water year started with a warm dry October during which runoff was below normal throughout most of the State. In southern California strong winds and low humidity were contributing factors in the brush and forest fires that burned 350,000 acres.

The first general rains of the season occurred in November, primarily over the northern half of California. The runoff from north coastal streams rose to values well above normal for November, and remained above normal for the entire year. In fact several streams attained daily and

monthly runoff values that exceeded their previously recorded maximum November values. The November runoff from Sierra Nevada basins ranged from well above normal in the north to slightly above normal in the south. Except for the previously mentioned local area north of Los Angeles, November runoff was below normal in southern California.

Heavy storms continued during December and January. Runoff was well above normal throughout most of the State, and moderate flooding occurred in January in north coastal California. The storms of December were accompanied by low temperatures and at high altitudes the precipitation was in the form of snow, in some mountain areas of southern California the snowfall totaled 4 to 6 feet.

Precipitation was generally below normal throughout the State during the months February through May, except for heavy rains in March in northwestern California. As a result of that 4-month precipitation pattern, runoff remained well above normal in north coastal California and declined to about normal in northern Sierra basins. Elsewhere in the State there was a steeper 4-month decline in runoff that was most drastic in the south. In southern California precipitation during the 4-month period had been the lightest recorded in those months since 1888. Low temperatures during the months, February through May, retarded melting of the Sierra snowpack and at the end of May, the water equivalent of the pack ranged from above normal in the north to below normal in the precipitation-deficient south.

Snowmelt at the higher altitudes in the Sierra Nevada became intense in June. Consequently, June runoff from Sierra basins ranged from well above normal in the north to about normal in the south. That same areal trend continued through the months of July and August. As mentioned earlier, runoff in northern California remained above normal during the summer. Summer runoff was below normal throughout southern California except where scattered convectional storms caused heavy runoff in local desert areas of the southeast. Most noteworthy was the flood flow of August 19 in Arch Creek near Earp, where a peak discharge of 7,160 cubic feet per second occurred on a drainage area of 1.52 square miles.

September brought the usual decline of streamflow to low levels, but September runoff was still above normal in the northwest, about normal in the Sierra Nevada, and well below normal in south coastal California.

The areal trend in total annual runoff in California in 1971 is shown in figure 1, where runoff is given as a percentage of the median annual runoff for the 30-year period, 1930-60. The circled figures on the map are the percentages for index stream-gaging stations in the various hydrographic areas. The value, 210 percent for the station on Salmon River at Somes Bar in north coastal California, represents the maximum annual runoff of record for the station.

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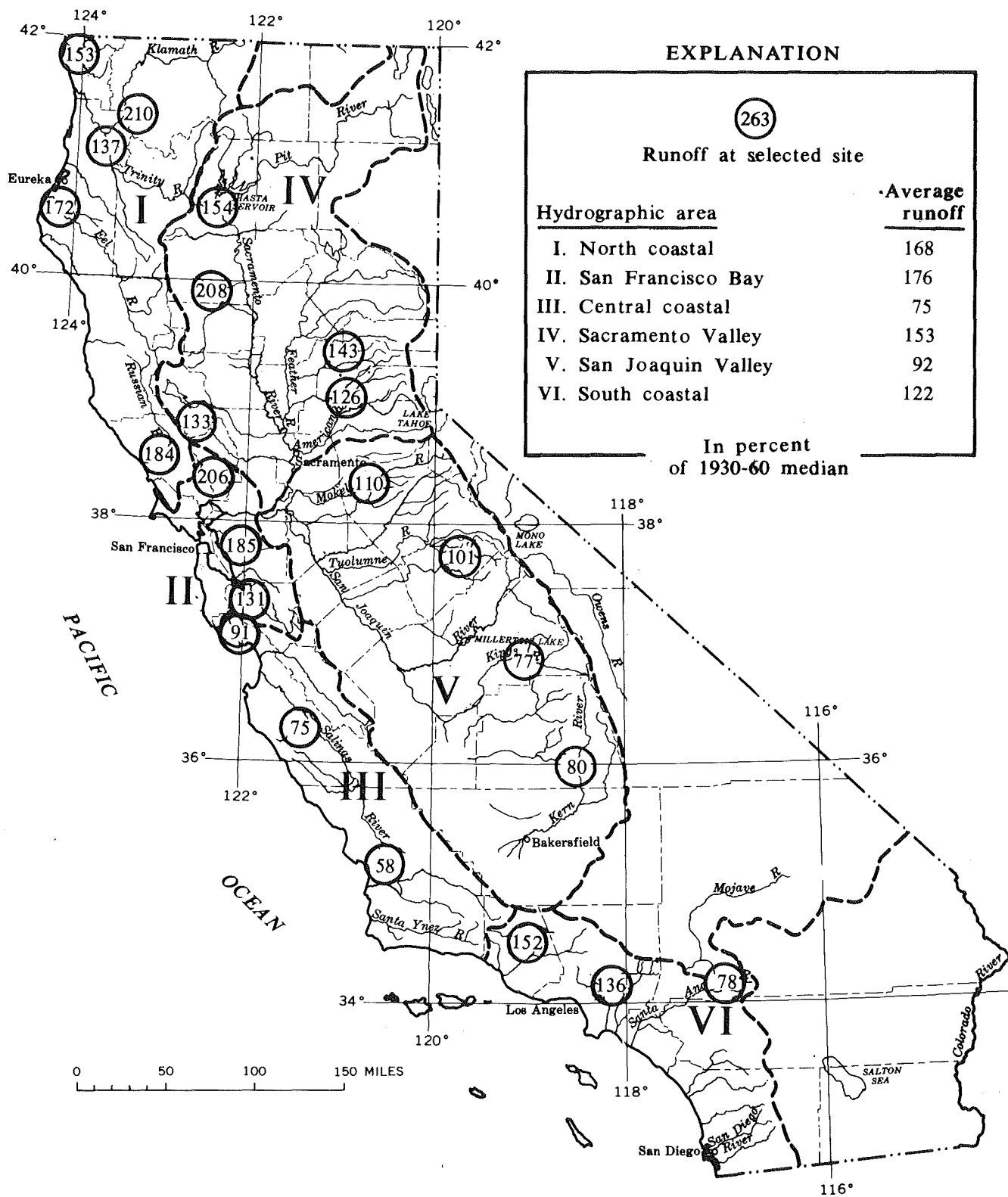


FIGURE 1.--Runoff for the 1971 water year.

## 10289000 VIRGINIA CREEK NEAR BRIDGEPORT CALIF.

LOCATION.--Lat 38°11'30", long 119°12'30", near center of W $\frac{1}{2}$  sec.22, T.4 N., R.25 E., Mono County, on right bank 1.2 miles downstream from Clearwater Creek, 3 miles upstream from mouth, and 4.2 miles southeast of Bridgeport.

DRAINAGE AREA.--63.6 sq mi.

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,700 ft (from topographic map).

AVERAGE DISCHARGE.--18 years, 16.6 cfs (12,030 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 57 cfs Nov. 25 (gage height, 3.44 ft); minimum, 3.2 cfs Oct. 27.  
Period of record: Maximum discharge, 1,300 cfs Dec. 23, 1955 (gage height, 8.40 ft), from rating curve extended above 170 cfs on basis of slope-area measurement of peak flow; minimum, 1.0 cfs Aug. 18, 1960, July 28, 1961.

REMARKS.--Records excellent except those for winter periods, which are poor. Flow partly regulated by Virginia Lakes and other lakes near headwaters. Diversions for irrigation of 3,000 acres above station.

REVISIONS.--WSP 1927: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	11	13	12	13	12	22	18	19	26	14	6.5
2	8.4	11	16	11	13	13	23	18	19	26	15	6.1
3	8.4	11	16	11	13	13	23	21	17	27	12	5.9
4	8.8	12	18	11	12	12	23	23	17	26	13	5.7
5	9.1	16	17	11	13	11	25	20	18	26	13	5.8
6	8.8	13	15	13	13	11	24	27	19	23	13	12
7	9.1	13	16	12	12	10	22	27	23	22	11	10
8	8.4	12	17	12	12	12	21	23	31	20	10	9.2
9	8.1	12	16	12	12	13	21	21	35	18	9.3	8.3
10	8.4	12	16	12	13	13	19	21	32	17	8.8	8.0
11	9.4	12	15	11	15	15	20	21	31	16	8.3	7.5
12	8.8	12	13	12	16	16	21	25	30	15	7.9	7.7
13	9.4	9.8	14	11	17	14	22	23	34	15	7.8	7.7
14	9.8	11	13	12	17	15	21	25	37	16	8.0	7.3
15	9.8	11	13	13	17	14	19	26	38	17	8.7	7.4
16	9.8	11	13	15	15	14	20	27	37	19	8.5	7.4
17	9.8	11	13	15	15	14	21	26	38	24	7.7	7.3
18	10	11	12	16	14	13	19	24	39	29	7.5	7.4
19	10	10	14	17	13	14	18	24	35	32	7.3	7.9
20	10	10	13	18	12	16	17	24	33	32	6.8	8.2
21	10	11	15	17	14	20	16	26	33	26	6.5	8.3
22	10	11	12	14	14	23	15	25	32	23	6.8	7.3
23	10	11	12	14	13	24	15	23	33	19	6.7	10
24	10	11	12	14	11	22	15	24	32	17	6.5	9.8
25	10	29	12	13	10	27	17	26	30	16	7.0	9.9
26	9.8	19	13	13	12	30	17	26	30	15	7.1	10
27	8.8	15	14	13	11	22	16	33	38	13	7.2	11
28	9.8	12	13	13	12	24	17	36	37	10	7.7	11
29	10	12	12	13	-----	29	16	29	31	10	8.2	11
30	11	13	12	13	-----	32	17	26	28	12	7.3	11
31	11	-----	12	13	-----	24	-----	23	-----	13	7.0	-----
TOTAL	292.8	375.8	432	407	374	542	582	761	906	620	275.6	252.6
MEAN	9.45	12.5	13.9	13.1	13.4	17.5	19.4	24.5	30.2	20.0	8.89	8.42
MAX	11	29	18	18	17	32	25	36	39	32	15	12
MIN	8.1	9.8	12	11	10	10	15	18	17	10	6.5	5.7
AC-FT	581	745	857	807	742	1,080	1,150	1,510	1,800	1,230	547	501

CAL YR 1970 TOTAL 5,576.3 MEAN 15.3 MAX 63 MIN 5.9 AC-FT 11,060  
WTR YR 1971 TOTAL 5,820.8 MEAN 15.9 MAX 39 MIN 5.7 AC-FT 11,550

PEAK DISCHARGE (BASE, 50 CFS).--Nov. 25 (1500) 57 cfs (3.44 ft).

## 10289500 GREEN CREEK NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°10'25", long 119°14'00", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.29, T.4 N., R.25 E., Mono County, on right bank 130 ft downstream from county road bridge, 0.1 mile upstream from diversion to Summers Creek, and 5.5 miles south of Bridgeport.

DRAINAGE AREA.--19.5 sq mi.

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,850 ft (from topographic map).

AVERAGE DISCHARGE.--18 years, 29.0 cfs (21,010 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 127 cfs June 17, 22, 27 (gage height, 2.59 ft); maximum gage height, 3.12 ft Dec. 25 (backwater from ice); minimum discharge, 2.9 cfs Nov. 16.

Period of record: Maximum discharge, 351 cfs July 4, 1967 (gage height, 3.26 ft); maximum gage height, 4.09 ft Feb. 25, 1962 (backwater from ice); minimum discharge, 1.4 cfs Apr. 4, 1964.

REMARKS.--Records good. Flow regulated by West, Green, East, Summit, and other lakes.

REVISIONS.--WSP 1927: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	6.6	9.2	9.0	11	8.6	16	26	38	84	48	30
2	8.7	6.6	8.6	8.8	11	8.8	16	27	38	84	50	29
3	8.7	6.6	9.0	8.7	10	9.4	17	28	40	88	44	28
4	8.3	7.2	9.0	8.6	9.8	8.7	18	25	44	86	42	28
5	8.3	11	9.0	8.6	9.0	8.2	19	26	45	80	42	26
6	8.0	10	9.4	8.6	9.4	8.0	21	30	52	76	40	30
7	7.5	9.0	11	9.0	9.6	8.3	21	30	63	71	36	32
8	7.5	9.0	12	8.7	9.5	8.0	19	27	84	66	35	29
9	7.2	9.4	11	8.7	9.0	8.3	21	27	104	63	37	26
10	7.2	9.0	10	8.7	9.0	8.3	20	29	96	60	35	24
11	7.2	8.0	11	8.3	9.4	9.0	20	32	94	55	33	24
12	6.9	8.0	11	8.3	9.8	9.4	21	34	101	55	32	23
13	6.9	6.9	10	8.7	11	9.0	24	40	113	55	32	22
14	6.9	8.3	9.6	9.0	11	9.0	23	42	116	58	30	21
15	7.2	8.0	9.4	10	11	9.4	21	49	116	63	30	21
16	7.2	6.9	9.4	11	11	9.8	24	50	116	68	28	20
17	6.9	7.5	9.8	11	11	9.0	24	44	121	84	27	18
18	6.9	7.2	10	11	10	9.0	22	41	121	84	27	18
19	6.9	6.3	12	12	9.8	9.4	20	38	113	96	27	18
20	6.9	6.6	11	16	9.6	9.4	20	41	111	86	26	16
21	7.2	6.9	11	15	9.0	11	18	43	118	76	25	16
22	6.9	6.9	12	14	9.2	11	17	38	121	69	24	15
23	7.2	6.6	11	14	9.4	12	16	36	118	60	24	15
24	7.5	6.9	10	13	10	11	16	42	116	57	23	14
25	7.7	13	10	12	10	14	16	48	111	54	22	14
26	6.9	12	10	11	10	18	15	53	111	53	22	13
27	6.9	9.8	11	11	9.0	16	15	57	121	52	34	12
28	7.7	8.8	11	11	8.2	16	16	53	121	49	36	12
29	7.5	9.0	9.8	11	-----	16	18	48	104	46	35	11
30	7.2	8.4	9.4	11	-----	19	22	45	90	45	33	11
31	6.9	-----	9.4	11	-----	18	-----	42	-----	49	31	-----
TOTAL	229.6	246.4	316.0	326.7	275.7	339.0	576	1,191	2,857	2,072	1,010	616
MEAN	7.41	8.21	10.2	10.5	9.85	10.9	19.2	38.4	95.2	66.8	32.6	20.5
MAX	8.7	13	12	16	11	19	24	57	121	96	50	32
MIN	6.9	6.3	8.6	8.3	8.2	8.0	15	25	38	45	22	11
AC-FT	455	489	627	648	547	672	1,140	2,360	5,670	4,110	2,000	1,220

CAL YR 1970 TOTAL 10,653.6 MEAN 29.2 MAX 151 MIN 6.3 AC-FT 21,130  
WTR YR 1971 TOTAL 10,055.4 MEAN 27.5 MAX 121 MIN 6.3 AC-FT 19,940

10290300 Upper Twin Lake near Bridgeport, Calif.

LOCATION.--Lat 38°09'15", long 119°20'58", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.5, T.3 N., R.24 E., Mono County, at outlet of upper lake dam on Robinson Creek and 10 miles southwest of Bridgeport.

DRAINAGE AREA.--29.5 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (project datum of U.S. Indian Irrigation Service).

EXTREMES.--Current year: Maximum contents, 2,690 acre-ft June 27 (elevation, 7,208.94 ft); minimum observed, 389 acre-ft Nov. 16.  
Period of record: Maximum contents observed, 2,900 acre-ft June 22, July 5, 6, 1967 (elevation, 7,209.58 ft); minimum observed, 62 acre-ft Oct. 31, Nov. 1, 1964 (elevation, 7,200.22 ft).  
No contents Oct. 17, 1961.

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

## ELEVATIONS AND CONTENTS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Oct. 13. . . . .	7201.44	403	-97
Nov. 16. . . . .	7201.39	389	-14
Dec. 21. . . . .	7206.02	1,760	+1,371
Dec. 31. . . . .	-	g 1,860	+100
Calendar year 1970 . . . . .	-	-	-340
Feb. 2. . . . .	7207.30	2,170	+310
Mar. 3. . . . .	7207.25	2,150	-20
Apr. 30. . . . .	7207.54	2,240	+90
May 31. . . . .	7207.81	2,330	+90
June 30. . . . .	7208.50	2,550	+220
July 31. . . . .	7208.03	2,400	-150
Aug. 31. . . . .	7207.50	2,230	-170
Sept. 30. . . . .	7207.18	2,130	-100
Water year 1970-71 . . . . .	-	-	+1,630

g Contents interpolated.

10290400 Lower Twin Lake near Bridgeport, Calif.

LOCATION.--Lat 38°10'05", long 119°19'33", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.33, T.4 N., R.24 E., Mono County, at outlet of lower lake dam on Robinson Creek and 8 miles southwest of Bridgeport.

DRAINAGE AREA.--38.9 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (project datum of U.S. Indian Irrigation Service).

EXTREMES.--Current year: Maximum contents, 4,980 acre-ft June 27, 28 (elevation, 7,202.28 ft); minimum observed, 1,220 acre-ft Oct. 30.  
Period of record: Maximum contents, 5,490 acre-ft June 6, 1969 (elevation, 7,203.51 ft); no contents Nov. 17, 1966.

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

## ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Oct. 12. . . . .	7,193.18	1,270	-120
Oct. 30. . . . .	7,193.05	1,220	-50
Nov. 16. . . . .	7,193.50	1,400	+180
Dec. 21. . . . .	7,193.38	1,350	-50
Dec. 31. . . . .	-	g 1,750	+400
Calendar year 1970 . . . . .	-	-	-2,630
Feb. 2. . . . .	7,197.50	3,000	+1,250
Mar. 3. . . . .	7,200.01	4,020	+1,020
Apr. 30. . . . .	7,198.76	3,500	-520
May 31. . . . .	7,197.68	3,070	-430
June 30. . . . .	7,201.99	4,860	+790
July 31. . . . .	7,201.20	4,520	-340
Aug. 31. . . . .	7,197.21	2,880	-1,640
Sept. 30. . . . .	7,193.37	1,350	-1,530
Water year 1970-71 . . . . .	-	-	-40

g Contents interpolated.

## WALKER LAKE BASIN

10290500 ROBINSON CREEK AT TWIN LAKES OUTLET, NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°10'20", long 119°19'25", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.28, T.4 N., R.24 E., Mono County, on left bank 0.2 mile downstream from Twin Lakes and 8 miles southwest of Bridgeport.

DRAINAGE AREA.--39.1 sq mi.

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 7,050 ft (from topographic map).

AVERAGE DISCHARGE (unadjusted).--18 years, 59.3 cfs (42,960 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 268 cfs June 28 (gage height, 3.65 ft); minimum daily, 0.90 cfs Mar. 2.

Period of record: Maximum discharge, 492 cfs June 20, 1963; maximum gage height, 4.62 ft June 6, 1969; no flow for many days in some years.

Maximum discharge known, 660 cfs June 21, 1911 (gage height, 5.2 ft), at site 2.5 miles downstream.

REMARKS.--Records excellent except those for winter periods, which are fair. Flow regulated by Twin Lakes.

REVISIONS.--WSP 1927: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	18	2.3	1.7	2.3	1.1	20	105	88	214	127	85
2	22	19	2.0	1.6	2.3	.90	20	103	88	205	125	82
3	21	19	2.1	1.5	2.5	1.3	19	101	88	202	121	79
4	21	19	2.3	1.5	2.5	2.0	19	99	88	201	117	77
5	21	19	2.3	1.4	2.5	2.5	20	97	87	197	114	76
6	21	19	2.3	1.4	2.5	3.9	21	95	87	191	111	74
7	21	19	2.3	1.3	2.5	5.3	21	94	88	185	106	73
8	21	19	2.3	1.5	2.7	7.0	22	93	91	177	102	73
9	21	19	2.3	1.5	2.7	9.3	25	92	95	169	99	72
10	20	18	2.3	1.5	2.7	11	31	90	108	161	96	71
11	20	12	2.1	1.4	2.7	13	31	89	111	154	93	71
12	20	3.7	2.1	1.4	2.9	14	31	88	114	151	91	71
13	20	3.4	2.1	1.4	2.9	18	32	86	107	148	100	70
14	21	3.4	2.1	1.4	2.9	19	33	86	114	149	111	69
15	21	3.4	2.1	1.4	2.9	17	55	87	121	154	102	67
16	21	3.4	1.9	1.7	2.9	16	62	87	160	162	95	66
17	21	3.4	2.0	1.9	2.7	16	56	88	194	174	89	65
18	21	3.4	1.8	1.9	2.7	16	57	89	215	187	91	63
19	21	3.4	1.9	1.9	2.9	16	62	89	220	192	102	62
20	21	2.5	1.9	1.9	2.9	16	59	88	207	189	102	61
21	21	2.5	1.9	2.1	2.9	16	53	82	211	183	104	59
22	21	2.5	1.9	2.1	2.9	17	52	83	227	175	103	57
23	21	2.5	1.8	2.1	2.7	18	52	83	235	165	102	56
24	20	2.3	1.8	2.1	2.7	16	50	84	236	156	101	50
25	20	2.5	1.7	2.1	1.9	19	49	85	234	149	98	40
26	19	2.5	1.7	2.1	1.7	21	54	84	234	143	96	39
27	19	2.3	1.7	2.1	2.0	24	69	86	254	139	95	37
28	19	2.3	1.7	2.1	1.6	24	68	88	266	134	93	35
29	19	2.5	1.7	2.3	-----	24	67	89	251	129	92	33
30	19	2.3	1.7	2.3	-----	25	88	87	230	127	90	31
31	18	-----	1.7	2.3	-----	21	-----	86	-----	128	88	-----
TOTAL	634	254.2	61.8	54.9	72.0	430.30	1,298	2,783	4,849	5,190	3,156	1,864
MEAN	20.5	8.47	1.99	1.77	2.57	13.9	43.3	89.8	162	167	102	62.1
MAX	22	19	2.3	2.3	2.9	25	88	105	266	214	127	85
MIN	18	2.3	1.7	1.3	1.6	.90	19	82	87	127	88	31
AC-FT	1,260	504	123	109	143	854	2,570	5,520	9,620	10,290	6,260	3,700
CAL YR 1970	TOTAL	22,767.00	MEAN	62.4	MAX	256	MIN	1.7	AC-FT	45,160		
WTR YR 1971	TOTAL	20,647.20	MEAN	56.6	MAX	266	MIN	.90	AC-FT	40,950		



## 10291500 BUCKEYE CREEK NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°14'20", long 119°19'30", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.4, T.4 N., R.24 E., Mono County, on right bank at Buckeye Hot Springs, 0.6 mile downstream from Eagle Creek, and 5.5 miles southwest of Bridgeport.

DRAINAGE AREA.--44.1 sq mi.

PERIOD OF RECORD.--November 1910 to September 1914 (fragmentary), October 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,900 ft (from topographic map). November 1910 to September 1914, nonrecording gage at site 0.5 mile downstream at different datum.

AVERAGE DISCHARGE.--19 years (1911-12, 1953-71), 58.8 cfs (43,330 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 422 cfs June 27 (gage height, 3.45 ft); minimum, 11 cfs Nov. 13 (but may have been less during periods of ice effect).

1953 to current year: Maximum discharge, 947 cfs Feb. 1, 1963 (gage height, 4.41 ft), from rating curve extended above 360 cfs on basis of slope-area measurement at gage height 4.00 ft and logarithmic plotting; minimum, 3.3 cfs Dec. 12, 1959, result of freezeup.

Flood of June 21, 1911, reached an observed stage of 4.8 ft (discharge not determined), site and datum then in use.

REMARKS.--Records good except those for winter periods, which are poor. No regulation or diversion above station.

REVISIONS.--WSP 1927: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	18	22	18	25	22	37	54	81	204	78	33
2	19	18	20	17	25	20	38	60	78	204	74	32
3	19	18	17	12	23	22	39	66	87	197	69	32
4	19	20	25	13	24	23	42	64	108	189	67	31
5	19	30	20	14	26	23	46	60	133	178	64	30
6	18	23	18	15	26	23	48	66	163	171	59	54
7	18	21	25	16	25	23	45	68	203	163	56	41
8	19	20	28	20	25	23	44	64	231	156	55	33
9	19	21	25	25	25	23	45	66	228	146	53	32
10	19	22	20	23	26	23	46	70	209	139	52	32
11	18	20	24	22	28	23	47	78	221	134	51	31
12	18	20	25	20	29	24	52	90	235	132	52	30
13	18	17	20	21	30	22	57	100	260	132	52	30
14	18	19	20	22	30	21	52	110	253	137	47	30
15	18	18	22	25	31	24	52	120	257	136	45	29
16	18	19	22	40	29	23	56	125	267	140	44	28
17	18	19	20	35	25	23	56	115	256	153	42	28
18	18	19	16	31	23	23	50	105	239	151	41	28
19	18	18	18	27	25	24	48	111	233	134	40	28
20	18	18	14	30	24	26	47	119	250	126	39	26
21	18	19	20	27	21	28	44	122	261	125	38	26
22	18	19	16	24	23	30	42	95	258	116	37	26
23	19	19	13	24	25	30	42	96	246	103	36	25
24	19	19	15	24	26	29	40	135	241	97	36	25
25	19	38	13	25	25	34	40	168	237	94	36	24
26	17	27	18	24	20	37	40	168	240	91	38	24
27	17	24	20	23	20	32	41	158	308	87	41	24
28	19	23	18	23	22	32	44	123	229	86	37	24
29	18	22	21	23	-----	35	46	107	207	83	36	24
30	18	19	18	24	-----	41	50	103	203	80	35	25
31	18	-----	20	24	-----	38	-----	89	-----	79	33	-----
TOTAL	568	627	613	711	706	824	1,376	3,075	6,422	4,163	1,483	885
MEAN	18.3	20.9	19.8	22.9	25.2	26.6	45.9	99.2	214	134	47.8	29.5
MAX	19	38	28	40	31	41	57	168	308	204	78	54
MIN	17	17	13	12	20	20	37	54	78	79	33	24
AC-FT	1,130	1,240	1,220	1,410	1,400	1,630	2,730	6,100	12,740	8,260	2,940	1,760

CAL YR 1970 TOTAL 20,782 MEAN 56.9 MAX 260 MIN 13 AC-FT 41,220  
WTR YR 1971 TOTAL 21,453 MEAN 58.8 MAX 308 MIN 12 AC-FT 42,550

		PEAK DISCHARGE (BASE, 100 CFS)							
DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE		
About 5-16	-	2.97	235	6-27	0200	3.45	422		
5-26	0200	2.86	199	7-17	0100	2.83	193		
6- 9	0100	3.15	297	9- 6	1900	2.45	101		

## 10292000 SWAGER CREEK NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°17'00", long 119°17'50", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 23, T.5 N., R.24 E., Mono County, on right bank 0.8 mile downstream from Yaney Canyon and 4 miles northwest of Bridgeport.

DRAINAGE AREA.--52.8 sq mi.

PERIOD OF RECORD.--June 1911 to September 1915 (fragmentary), October 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,620 ft (from topographic map). June 1911 to September 1915 nonrecording gages at approximately same site at different datums.

AVERAGE DISCHARGE.--19 years (1911-12, 1953-71), 12.6 cfs (9,130 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 58 cfs July 20 (gage height, 2.55 ft); maximum gage height, 3.26 ft Dec. 24 (backwater from ice); minimum discharge, 1.5 cfs Aug. 29.

Period of record: Maximum discharge, 585 cfs Dec. 23, 1955 (gage height, 6.24 ft), from rating curve extended above 175 cfs on basis of slope-area measurement of peak flow; minimum observed, 0.50 cfs Apr. 20, 1912, Feb. 28, 1969.

REMARKS.--Records good except those for winter periods, which are poor. Diversions for irrigation of about 1,000 acres above station.

REVISIONS.--WSP 1927: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	7.9	4.2	9.7	12	9.0	19	23	28	9.4	6.0	3.3
2	7.4	7.9	4.0	8.5	12	8.0	20	23	27	9.0	6.3	3.3
3	7.4	8.0	3.8	6.0	11	9.0	20	29	28	8.1	5.7	3.3
4	7.3	9.0	4.3	6.0	12	11	21	29	28	7.2	6.0	3.9
5	7.5	12	4.0	6.5	12	10	23	27	29	6.3	6.6	3.3
6	7.5	9.7	3.8	6.5	12	11	24	28	29	6.0	7.5	6.9
7	7.7	9.2	8.0	7.0	11	11	23	32	30	6.9	8.7	6.0
8	7.8	8.9	13	8.0	12	12	23	31	30	6.3	8.4	5.7
9	7.9	9.1	12	9.8	12	13	24	29	30	4.2	8.4	5.4
10	7.9	9.1	9.0	9.5	13	13	24	28	29	4.8	6.6	4.5
11	7.9	8.4	10	9.2	15	14	24	30	29	6.0	2.6	4.2
12	7.8	8.3	11	8.0	16	14	28	32	29	5.7	3.9	4.5
13	7.8	6.9	10	7.0	17	14	30	30	29	4.5	6.0	4.2
14	7.8	8.1	11	7.6	17	13	27	30	29	3.6	3.6	4.5
15	7.9	8.2	11	8.6	17	13	27	31	29	4.2	2.1	4.8
16	7.3	8.0	11	11	15	13	28	30	29	8.7	2.7	4.8
17	8.0	8.0	10	16	15	14	27	29	28	11	3.6	6.0
18	8.1	8.1	8.0	18	13	13	24	29	24	17	5.4	6.6
19	7.8	7.7	10	16	12	15	24	24	26	18	6.6	6.6
20	7.9	8.0	7.0	16	10	16	23	18	27	23	6.0	6.6
21	8.0	8.2	12	15	9.0	17	20	21	25	11	4.5	7.5
22	8.0	8.2	10	13	11	18	18	25	25	8.1	4.8	7.5
23	8.1	8.1	7.0	12	12	17	19	24	23	7.2	4.5	7.2
24	7.8	8.3	6.0	12	12	16	18	24	20	4.8	5.4	6.9
25	7.5	17	6.8	12	11	17	19	23	20	2.9	4.8	6.9
26	7.2	12	7.5	12	9.0	23	22	21	22	3.6	3.3	7.2
27	7.4	9.1	9.0	12	8.0	18	22	35	22	3.3	4.2	7.5
28	7.5	9.9	9.0	11	9.0	18	21	37	20	3.9	4.5	7.5
29	8.1	3.1	9.4	11	-----	19	22	33	13	3.9	2.7	7.8
30	8.2	3.7	9.0	11	-----	22	22	31	8.1	5.1	2.3	9.0
31	8.1	-----	9.5	12	-----	20	-----	28	-----	6.0	2.7	-----
TOTAL	240.4	258.1	260.3	327.9	347.0	451.0	686	864	765.1	229.7	156.4	173.4
MEAN	7.75	8.60	8.40	10.6	12.4	14.5	22.9	27.9	25.5	7.41	5.05	5.78
MAX	8.2	17	13	18	17	23	30	37	30	23	8.7	9.0
MIN	7.2	3.1	3.8	6.0	8.0	8.0	18	18	8.1	2.9	2.1	3.3
AC-FT	477	512	516	650	688	895	1,360	1,710	1,520	456	310	344
CAL YR 1970	TOTAL 4,167.6 MEAN 11.4 MAX 34 MIN 2.2 AC-FT 8,270											
WTR YR 1971	TOTAL 4,759.3 MEAN 13.0 MAX 37 MIN 2.1 AC-FT 9,440											

## PEAK DISCHARGE (BASE, 25 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1600	2.15	28	5--	7	2.31	40
11-28	1400	2.23	32	5-27	1400	2.44	51
4-15	2300	2.27	36	7-20	1800	2.55	58

## 10292300 BRIDGEPORT RESERVOIR TRIBUTARY NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°17'15", long 119°12'50", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.16, T.5 N., R.25 E., Mono County, on left bank on upstream side of State Highway 22, 0.5 mile upstream from Rock Springs Canyon, and 2.4 miles north of Bridgeport.

DRAINAGE AREA.--0.79 sq mi.

PERIOD OF RECORD.--Water year 1963 (annual maximum), October 1963 to current year.

GAGE.--Water-stage recorder with rain-gage attachment and crest-stage gage. Altitude of gage is 6,500 ft (from topographic map). Oct. 1, 1962, to Sept. 30, 1963, crest-stage gage at same site and datum.

AVERAGE DISCHARGE.--8 years, 0.083 cfs (60 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5.7 cfs Feb. 5 (gage height, 4.21 ft); no flow most of year.  
Period of record: Maximum discharge, 98 cfs Mar. 16, 1967 (gage height, 10.91 ft); no flow most of time.

REMARKS.--Records of flow poor. No diversion above station. Mean daily flows of 0.05 cfs or less occur at times and are considered to be below reportable stage and are given as no flow.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0							
2					0							
3					0							
4					0							
5					1.5							
6					1.1							
7					0							
8					0							
9					0							
10					0							
11					0							
12					0							
13					0							
14					0							
15					0							
16					0							
17					0							
18					0							
19					0							
20					0							
21					0							
22					0							
23					0							
24					0							
25					0							
26					0							
27					0							
28					0							
29					-----							
30					-----							
31		-----			-----		-----		-----			-----
TOTAL	0	0	0	0	2.6	0	0	0	0	0	0	0
MEAN	0	0	0	0	.093	0	0	0	0	0	0	0
MAX	0	0	0	0	1.5	0	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	5.2	0	0	0	0	0	0	0
CAL YR 1970	TOTAL	22.30	MEAN .061	MAX 5.0	MIN 0	AC-FT 44						
WTR YR 1971	TOTAL	2.60	MEAN .0070	MAX 1.5	MIN 0	AC-FT 5.2						

## WALKER LAKE BASIN

## 10292500 BRIDGEPORT RESERVOIR NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°19'30", long 119°12'40", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.34, T.6 N., R.25 E., Mono County, at Bridgeport Dam on East Walker River, 4.5 miles north of Bridgeport.

DRAINAGE AREA.--358 sq mi.

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

GAGE.--Float gage read once daily. Datum of gage is at mean sea level (project datum).

EXTREMES.--Current year: Maximum contents, 43,070 acre-ft June 28-30, July 5, 21 (elevation, 6,460.21 ft); minimum, 15,030 acre-ft Oct. 1 (elevation, 6,447.71 ft).  
Period of record: Maximum contents, 44,580 acre-ft June 12, 1938, June 25, 26, 1958 (elevation, 6,460.7 ft); no contents during fall of 1929, 1930, 1960.

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 (approximate elevation of bottom of reservoir) and 6,460 ft (crest of spillway). Elevation of sill of outlet gate, 6,412 ft. No dead storage. Figures given herein represent total contents. Water is used for irrigation by Walker River Irrigation District.

COOPERATION.--Elevations and capacity table furnished by Walker River Irrigation District.

REVISIONS (WATER YEARS).--WSP 1180: 1949. WSP 1927: Drainage area.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

6,447	13,990	6,456	31,570
6,450	18,780	6,461	45,490
6,453	24,660		

## CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15,030	16,820	22,890	28,010	31,450	36,900	42,610	38,290	36,760	42,920	39,830	26,640
2	15,100	16,900	22,890	28,120	31,570	37,040	42,610	37,870	36,760	42,760	39,540	26,310
3	15,100	16,980	22,890	28,120	31,820	37,180	42,610	37,590	36,900	42,760	39,260	25,870
4	15,100	17,230	23,000	28,360	31,950	37,460	42,610	37,590	37,040	42,920	38,980	25,320
5	15,170	17,490	23,000	28,470	32,080	37,590	42,760	37,460	37,180	43,070	38,840	24,880
6	15,250	17,580	23,200	28,580	32,330	37,870	42,760	37,180	37,320	42,920	38,570	24,450
7	15,170	17,750	23,520	28,700	32,460	38,010	42,760	37,180	37,460	42,920	38,290	24,140
8	15,170	18,090	23,720	28,820	32,710	38,290	42,610	37,180	37,730	42,760	38,010	23,830
9	15,170	18,180	24,140	29,040	32,840	38,570	42,610	37,180	37,870	42,760	37,730	23,410
10	15,250	18,350	24,350	29,160	32,970	38,980	42,460	37,180	38,150	42,610	37,460	23,100
11	15,250	18,520	24,560	29,280	33,220	39,260	42,310	37,180	38,430	42,460	37,180	22,580
12	15,250	18,610	24,770	29,400	33,480	39,830	42,170	37,320	38,570	42,310	36,760	22,290
13	15,250	18,780	24,990	29,640	33,730	40,120	42,020	37,320	38,710	42,170	36,360	21,990
14	15,320	18,960	25,100	29,760	33,980	40,420	41,880	37,320	38,980	41,880	35,960	21,600
15	15,400	19,060	25,320	29,880	34,380	40,560	41,730	37,320	39,260	41,730	35,570	21,310
16	15,470	19,150	25,540	30,000	34,640	40,850	41,580	37,180	39,540	41,440	35,040	20,920
17	15,550	19,330	25,760	30,120	34,900	41,150	41,440	37,040	39,830	41,440	34,510	20,620
18	15,710	19,420	25,870	30,120	35,170	41,290	41,150	37,040	40,120	41,440	33,980	20,340
19	15,790	19,520	25,980	30,240	35,300	41,580	41,000	36,760	40,710	41,730	33,350	20,160
20	15,870	19,700	26,200	30,360	35,570	41,880	41,000	36,630	41,000	42,310	32,840	19,980
21	15,950	19,800	26,310	30,490	35,830	42,020	40,420	36,360	41,440	43,070	32,200	19,880
22	16,190	19,980	26,420	30,490	35,960	42,170	40,270	36,230	41,290	42,760	31,570	19,800
23	16,190	20,070	26,640	30,610	36,100	42,170	39,980	35,960	42,170	42,460	31,090	19,800
24	16,340	20,250	26,640	30,610	36,360	42,310	39,690	35,830	42,460	42,310	30,490	19,700
25	16,340	20,340	26,860	30,610	36,500	42,310	39,540	35,830	42,610	42,020	30,000	19,700
26	16,340	21,010	26,980	30,610	36,630	42,460	39,400	35,700	42,760	41,880	29,520	19,800
27	16,340	21,890	27,200	30,730	36,760	42,460	39,260	35,830	42,760	41,580	28,930	19,610
28	16,340	22,290	27,320	30,850	36,900	42,610	39,120	36,230	43,070	41,290	28,470	19,610
29	16,420	22,680	27,440	30,970	-----	42,610	38,840	36,360	43,070	40,850	28,010	19,800
30	16,580	22,890	27,550	31,090	-----	42,760	38,570	36,630	43,070	40,420	27,550	19,700
31	16,660	-----	27,780	31,210	-----	42,610	-----	36,630	-----	39,980	27,090	-----
MAX	16,660	22,890	27,780	31,210	36,900	42,760	42,760	38,290	43,070	43,070	39,830	26,640
MIN	15,030	16,820	22,890	28,010	31,450	36,900	38,570	35,700	36,760	39,980	27,090	19,610
(+)	6,448.76	6,452.13	6,454.39	6,455.87	6,458.03	6,460.07	6,458.65	6,457.94	6,460.19	6,459.17	6,454.12	6,450.49
(+)	+1,560	+6,230	+4,890	+3,430	+5,690	+5,710	-4,040	-1,940	+6,440	-3,090	-12,890	-7,390
CAL YR 1970	MAX	27,780	MIN	15,030	+11,200							
WTR YR 1971	MAX	43,070	MIN	15,030	+4,600							

† ELEVATION, IN FEET, AT END OF MONTH.

\* CHANGE IN CONTENTS, IN ACRE-FEET.

LOCATION.--Lat 38°19'40", long 119°12'50", in SW<sup>1</sup>NE<sup>1</sup> sec.34, T.6 N., R.25 E., Mono County, on right bank 1,500 ft downstream from Bridgeport Reservoir, 5 miles north of Bridgeport, and 10 miles upstream from Sweetwater Creek.

PERIOD OF RECORD.--July 1911 to September 1914 (gage heights only), October 1921 to current year.

AVERAGE DISCHARGE (unadjusted), --48 years (1922-24, 1925-71), 138 cfs (99,980 acre-ft per year).

1921 to current year: Maximum discharge, 1,390 cfs 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 cfs Nov. 2-29, Dec. 1-22, 25-28, 1955. Jan. 17-25, 1956.

REMARKS.--Records excellent. Diversions for irrigation of meadow pasture lands near Bridgeport. Flow regulated by Bridgeport Reservoir. Record of chemical analyses for the current year is published in Part 2 of this report.

REVISIONS.--WSP 1927: Drainage area.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	15	9.0	9.5	9.0	8.7	105	212	163	462	296	289
2	62	8.0	9.0	9.5	9.0	8.5	105	242	153	399	296	288
3	54	8.0	9.0	9.5	9.0	8.5	108	230	153	350	296	288
4	54	8.0	9.0	9.5	9.0	8.7	115	208	155	351	299	287
5	54	8.0	8.5	9.5	9.0	9.0	116	208	155	351	335	286
6	54	8.0	8.2	9.5	9.0	8.8	120	204	155	343	334	286
7	54	8.0	8.3	9.5	9.0	8.9	134	190	163	302	326	286
8	54	8.0	8.2	9.5	9.0	9.0	155	184	180	293	311	284
9	54	8.0	8.5	9.5	9.0	9.0	168	170	192	273	311	284
10	54	8.3	8.5	9.5	9.0	9.0	170	170	206	290	311	283
11	54	8.5	8.5	9.5	9.0	9.0	168	170	223	278	311	270
12	46	8.5	8.5	9.5	9.0	9.1	168	172	250	283	319	237
13	40	8.5	8.4	10	9.0	9.0	168	182	275	303	321	237
14	33	8.5	9.2	10	9.0	9.0	168	190	284	322	321	246
15	29	8.5	9.5	10	9.0	9.0	170	196	305	332	315	247
16	19	8.5	9.5	23	9.2	9.0	178	212	311	332	323	237
17	16	8.5	9.5	60	9.1	9.0	180	219	321	333	350	212
18	8.5	8.5	9.5	73	8.6	9.0	186	235	322	333	350	194
19	8.5	8.5	9.5	85	8.7	9.0	186	242	324	319	350	166
20	8.7	8.5	9.5	95	8.5	9.0	190	245	324	303	349	155
21	9.0	8.5	9.5	95	8.5	28	206	245	324	484	351	125
22	9.0	8.6	9.5	95	8.5	69	206	240	336	595	350	117
23	13	8.9	9.5	95	8.5	85	202	226	396	401	350	97
24	24	9.0	9.0	95	8.5	85	184	223	434	353	349	97
25	24	9.0	9.0	95	8.5	86	161	223	434	336	350	96
26	31	9.0	9.0	61	8.5	154	165	221	436	311	349	96
27	62	8.9	9.0	41	8.5	179	172	208	434	311	341	89
28	62	9.0	9.0	41	8.5	123	192	200	466	311	323	72
29	62	9.0	9.5	41	-----	119	204	190	491	310	323	70
30	62	9.0	9.5	26	-----	107	202	182	490	313	315	68
31	38	-----	9.5	9.0	-----	105	-----	180	-----	296	290	-----
TOTAL	1,216.7	261.2	279.8	1,174.0	247.1	1,318.2	4,952	6,419	8,855	10,573	10,115	5,989
MEAN	39.2	8.71	9.03	37.9	8.83	42.5	165	207	295	341	326	200
MAX	64	15	9.5	95	9.2	179	206	245	491	595	351	289
MIN	8.5	8.0	8.2	9.0	8.5	8.5	105	170	153	273	290	68
AC-FT	2,410	518	555	2,330	490	2,610	9,820	12,730	17,560	20,970	20,060	11,880
CAL YR 1970	TOTAL	56,821.7	MEAN	156	MAX	289	MIN	8.0	AC-FT	112,700		
WTR YR 1971	TOTAL	51,400.0	MEAN	141	MAX	595	MIN	8.0				



## 10295500 LITTLE WALKER RIVER NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°21'30", long 119°26'30", in NW¼ sec.22, T.6 N., R.23 E., Mono County, on right bank 0.8 mile north of Sonora Junction, 1.5 miles upstream from mouth, and 14 miles northwest of Bridgeport.

DRAINAGE AREA.--63.0 sq mi.

PERIOD OF RECORD.--April to August 1910, October 1944 to current year. Prior to October 1958, published as East Fork West Walker River near Bridgeport.

GAGE.--Water-stage recorder. Altitude of gage is 6,790 ft (from topographic map). April to August 1910, nonrecording gage at site 1 mile upstream at different datum.

AVERAGE DISCHARGE.--27 years (1944-71), 51.3 cfs (37,170 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 374 cfs June 26 (gage height, 2.17 ft); minimum daily, 12 cfs Dec. 23, 25, Jan. 3.

Period of record: Maximum discharge, 1,510 cfs Jan. 31, 1963 (gage height, 3.22 ft), from rating curve extended above 350 cfs on basis of slope-area measurement at gage height 2.80 ft and logarithmic plotting; maximum gage height recorded, 3.63 ft Jan. 3, 1945, (backwater from ice); minimum discharge recorded, 4.9 cfs Nov. 17, 1948, but may have been less during periods of ice effect.

REMARKS.--Records excellent except those for winter periods, which are poor. Small diversions above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	16	25	18	21	17	39	49	89	179	67	18
2	16	16	24	16	19	16	39	52	87	183	61	17
3	16	16	19	12	19	16	39	59	91	176	57	18
4	16	18	28	13	19	17	41	57	105	170	55	24
5	16	27	22	15	19	17	45	55	118	162	53	25
6	15	20	20	16	19	17	47	59	165	153	50	43
7	15	19	24	17	19	17	46	60	202	148	47	29
8	16	19	30	18	19	18	44	56	216	143	47	25
9	16	20	26	19	19	20	45	58	210	133	48	24
10	16	20	18	18	19	19	42	62	200	125	43	23
11	16	18	19	19	21	21	43	69	205	120	41	22
12	16	18	20	17	23	22	49	75	210	118	42	23
13	16	16	19	15	24	17	52	83	235	113	42	22
14	16	17	18	17	25	18	49	91	240	111	36	22
15	16	18	19	20	27	20	48	106	246	113	35	21
16	16	17	20	40	22	21	51	107	251	118	34	20
17	15	19	18	35	14	21	52	93	246	128	33	20
18	16	17	14	33	17	22	46	87	231	130	33	21
19	15	15	16	30	18	23	44	91	224	118	32	21
20	16	15	13	35	18	25	42	98	242	120	30	20
21	16	16	20	32	16	28	37	102	259	105	30	21
22	16	16	16	25	19	31	35	94	259	94	30	21
23	17	17	12	20	20	32	35	89	251	84	29	21
24	16	17	13	21	19	29	34	102	238	79	28	20
25	16	51	12	22	23	40	36	120	235	77	30	20
26	16	27	13	23	20	54	40	128	246	73	30	20
27	22	24	17	23	15	41	38	140	264	71	29	20
28	27	27	17	22	18	38	38	125	209	67	27	21
29	25	25	20	21	-----	43	40	113	192	62	23	20
30	18	21	18	21	-----	46	44	107	186	64	19	22
31	16	-----	19	21	-----	41	-----	94	-----	74	18	-----
TOTAL	521	602	589	674	551	807	1,280	2,681	6,152	3,611	1,179	664
MEAN	16.8	20.1	19.0	21.7	19.7	26.0	42.7	86.5	205	116	38.0	22.1
MAX	27	51	30	40	27	54	52	140	264	183	67	43
MIN	15	15	12	12	14	16	34	49	87	62	18	17
AC-FT	1,030	1,190	1,170	1,340	1,090	1,600	2,540	5,320	12,200	7,160	2,340	1,320
CAL YR 1970	TOTAL 17,999	MEAN 49.3	MAX 241	MIN 12	AC-FT 35,700							
WTR YR 1971	TOTAL 19,311	MEAN 52.9	MAX 264	MIN 12	AC-FT 38,300							

## PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
6-8	1200	1.94	259	6-26	2200	2.17	374
6-22	2200	2.04	305				

## WALKER LAKE BASIN

10296000 WEST WALKER RIVER BELOW LITTLE WALKER RIVER, NEAR COLEVILLE, CALIF.

LOCATION.--Lat 38°22'47", long 119°26'57", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.9, T.6 N., R.23 E., Mono County, on right bank 150 ft downstream from Little Walker River, 60 ft upstream from bridge on U.S. Highway 395, and 13 miles southeast of Coleville.

DRAINAGE AREA.--180 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 6,591.39 ft above mean sea level, supplementary adjustment of 1958. Oct. 1, 1939, to Sept. 30, 1969, at site 100 ft upstream at same datum. Prior to Oct. 1, 1939, at site 25 ft downstream at datum 1.00 ft higher.

AVERAGE DISCHARGE.--33 years, 259 cfs (187,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,080 cfs June 27 (gage height, 4.98 ft); minimum, 22 cfs Oct. 27. Period of record: Maximum discharge, 6,220 cfs Nov. 20, 1950 (gage height, 8.10 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement of peak flow; minimum, 4.0 cfs Nov. 18, 1948, result of freezeup.

Maximum discharge observed prior to 1938, 5,800 cfs Dec. 11, 1937, by slope-area measurement.

REMARKS.--Records good except those for winter periods, which are poor. Station is above diversions except for a few small ranch ditches. Flow very slightly regulated by Poor Lake Reservoir (capacity unknown) 7 miles upstream. Record of chemical analyses for the current year is published in Part 2 of this report.

REVISIONS.--WSP 1927: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	44	66	58	103	80	190	330	400	972	285	83
2	45	45	49	54	100	78	188	363	388	993	258	78
3	44	44	47	48	95	80	188	377	436	916	234	81
4	44	48	70	50	90	80	191	318	580	860	220	86
5	43	64	80	52	98	80	208	315	742	804	210	84
6	43	59	80	54	97	78	225	333	916	778	195	128
7	42	55	79	58	90	80	214	318	1,180	742	178	137
8	42	54	80	62	90	83	201	315	1,330	700	175	105
9	42	56	80	61	90	83	206	324	1,250	640	173	94
10	42	58	77	61	93	84	209	384	1,140	595	159	89
11	41	54	76	56	99	88	216	495	1,200	570	151	86
12	41	52	76	53	107	92	240	530	1,260	560	163	83
13	41	47	70	50	116	86	282	622	1,380	560	180	80
14	41	50	72	89	122	85	263	694	1,330	580	143	78
15	40	49	73	89	132	88	263	818	1,330	590	130	77
16	40	47	67	93	122	88	302	867	1,390	605	119	73
17	40	47	65	129	117	88	312	646	1,340	640	112	71
18	40	48	64	161	100	80	265	550	1,260	664	109	71
19	40	45	64	156	108	82	234	555	1,200	575	103	70
20	41	46	60	166	100	97	231	634	1,300	540	98	69
21	41	47	70	155	102	103	205	664	1,340	500	97	68
22	41	47	60	138	102	111	185	505	1,340	444	92	66
23	44	47	50	128	99	120	178	500	1,270	396	90	65
24	43	48	54	116	96	113	173	712	1,220	370	87	63
25	43	127	50	111	94	133	171	930	1,230	356	89	60
26	41	89	54	106	84	204	171	965	1,260	339	107	60
27	38	76	56	105	79	175	165	818	1,740	321	110	60
28	41	64	55	105	80	164	173	640	1,200	318	103	60
29	42	58	60	105	-----	169	203	545	986	306	98	50
30	43	50	59	105	-----	175	258	515	965	291	90	53
31	43	-----	62	105	-----	180	-----	444	-----	300	86	-----
TOTAL	1,299	1,665	2,025	2,879	2,805	3,327	6,510	17,026	33,903	17,825	4,444	2,328
MEAN	41.9	55.5	65.3	92.9	100	107	217	549	1,130	575	143	77.6
MAX	47	127	80	166	132	204	312	965	1,740	993	285	137
MIN	38	44	47	48	79	78	165	315	388	291	86	50
AC-FT	2,580	3,300	4,020	5,710	5,560	6,600	12,910	33,770	67,250	35,360	8,810	4,620

CAL YR 1970 TOTAL 87,432 MEAN 240 MAX 1,340 MIN 38 AC-FT 173,400

WTR YR 1971 TOTAL 96,036 MEAN 263 MAX 1,740 MIN 38 AC-FT 190,500

PEAK DISCHARGE (BASE, 1,120 CFS).--June 8 (0100) 1,500 cfs (4.27 ft); June 27 (0600) 2,080 cfs (4.98 ft).



## 10296500 WEST WALKER RIVER NEAR COLEVILLE, CALIF.

LOCATION.--Lat 38°30'55", long 119°27'15", in NW¼NE¼ sec.28, T.8 N., R.23 E., Mono County, on left bank 0.2 mile downstream from Rock Creek and 5 miles southeast of Coleville.

DRAINAGE AREA.--271 sq mi.

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.

GAGE.--Water-stage recorder. Altitude of gage is 5,520' ft (from topographic map). Prior to July 31, 1908, nonrecording gage at site 0.5 mile 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.

AVERAGE DISCHARGE.--42 years (1902-7, 1909-10, 1915-37, 1957-71), 275 cfs (199,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,990 cfs June 27 (gage height, 3.65 ft); minimum, 31 cfs Oct. 27, 1915-38, 1957 to current year: Maximum discharge, 6,500 cfs Dec. 11, 1937, from slope-area measurement of peak flow; minimum, 5 cfs Dec. 3, 1924, Aug. 27, 1931.

REMARKS.--Records good except those for winter periods, which are poor. Station is above diversions except for a few small ranch ditches. Flow very slightly regulated by Poor Lake Reservoir (capacity unknown) 17 miles upstream.

REVISIONS (WATER YEARS).--WSP 880: 1917 (runoff in acre-feet). WSP 1514: 1918, 1923. WSP 1927: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	49	75	84	122	85	192	322	402	918	269	90
2	57	49	73	80	120	85	194	365	384	939	233	88
3	55	49	65	65	116	85	196	388	412	883	205	90
4	55	51	66	67	117	90	201	330	512	820	193	96
5	55	72	70	68	115	92	219	313	645	762	212	96
6	54	69	75	68	113	91	240	347	794	736	209	118
7	53	65	80	68	108	95	234	326	1,040	703	193	149
8	54	61	100	72	105	95	217	317	1,290	664	183	118
9	54	63	108	80	105	94	221	335	1,240	607	193	107
10	53	68	97	84	107	96	224	388	1,100	564	171	100
11	52	64	92	80	112	97	227	490	1,140	541	160	96
12	51	62	92	75	118	106	245	518	1,180	523	157	94
13	50	55	90	70	127	96	288	607	1,410	518	202	92
14	50	59	90	90	134	99	274	664	1,380	535	157	88
15	50	60	95	95	141	102	264	788	1,380	547	143	88
16	50	57	93	100	136	103	299	841	1,450	558	133	85
17	49	56	85	125	120	103	309	632	1,400	595	126	83
18	49	57	80	151	115	98	272	541	1,320	619	121	83
19	48	54	82	163	113	102	240	541	1,250	552	114	83
20	48	56	78	178	116	110	229	607	1,350	506	109	81
21	48	58	85	175	112	116	211	658	1,380	479	107	79
22	48	58	80	157	105	122	199	512	1,390	422	103	79
23	49	57	75	148	109	134	192	490	1,320	370	100	79
24	50	58	70	138	102	129	187	658	1,260	347	96	75
25	50	113	70	132	104	144	187	876	1,260	330	94	74
26	48	121	72	129	85	215	187	925	1,230	322	109	74
27	47	90	75	127	80	195	180	841	1,650	301	114	74
28	47	85	80	125	85	183	187	645	1,200	293	109	75
29	48	80	82	124	-----	185	212	541	953	277	105	67
30	48	70	84	124	-----	209	255	512	925	258	98	67
31	50	-----	86	124	-----	206	-----	442	-----	266	94	-----
TOTAL	1,577	1,966	2,545	3,366	3,142	3,762	6,782	16,760	33,647	16,755	4,612	2,668
MEAN	50.9	65.5	82.1	109	112	121	226	541	1,122	540	149	88.9
MAX	57	121	108	178	141	215	309	925	1,650	939	269	149
MIN	47	49	65	65	80	85	180	313	384	258	94	67
AC-FT	3,130	3,900	5,050	6,680	6,230	7,460	13,450	33,240	66,740	33,230	9,150	5,290

CAL YR 1970 TOTAL 92,651 MEAN 254 MAX 1,380 MIN 47 AC-FT 183,800  
WTR YR 1971 TOTAL 97,582 MEAN 267 MAX 1,650 MIN 47 AC-FT 193,600

## PEAK DISCHARGE (BASE, 1,120 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
6-8	0300	3.10	1,480	6-27	0800	3.65	1,990
6-16	2400	3.25	1,600				

## WALKER LAKE BASIN

## 10297000 TOPAZ LAKE NEAR TOPAZ, CALIF.

LOCATION.--Lat 38°41'35", long 119°31'10", in NW<sup>1</sup>NE<sup>1</sup> sec.33, T.10 N., R.22 E., Douglas County, at outlet works of Topaz Reservoir on West Walker River, 5.5 miles north of Topaz.

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

GAGE.--Float and nonrecording gages read once daily. Datum of gage is at mean sea level (levels by Walker River Irrigation District).

EXTREMES.--Current year: Maximum contents, 59,780 acre-ft July 4 (elevation, 5,005.15 ft); minimum, 17,760 acre-feet Sept. 30 (elevation, 4,983.43 ft).

Period of record: Maximum contents, 60,240 acre-ft June 30, 1941 (elevation, 5,005.35 ft); no contents Oct. 31, 1924, Sept. 22, 24-30, Oct. 1-15, 1960.

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 4,972.3 (lowest practical elevation for diversion through tunnel, bottom of outlet tunnel at elevation 4,970 ft) and 5,005 ft (3 ft below top of levee). Capacity of reservoir increased from about 45,000 to 59,440 acre-ft in October 1937 by an earthfill, rock-faced levee at south end. Figures given herein represent usable contents (there is 65,000 acre-ft of lake volume below the point of controllable storage). Water is used for irrigation in Walker River Irrigation District.

COOPERATION.--Elevations furnished by Walker River Irrigation District.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,980	12,130	4,995	38,100
4,985	20,390	5,000	48,350
4,990	28,970	5,006	61,750

## CONTENTS, IN ACRE-FEET, AT 0800, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18,680	18,200	23,600	30,480	36,690	43,330	50,390	43,560	47,490	59,440	53,290	32,590
2	18,550	18,300	23,940	30,680	36,940	43,470	50,670	43,230	47,710	59,580	52,840	31,870
3	18,420	18,380	24,130	30,800	37,190	43,660	50,870	42,820	47,880	59,650	52,470	31,120
4	18,300	18,480	24,370	30,910	37,400	43,850	51,040	42,630	48,070	59,780	51,920	30,460
5	18,200	18,680	24,710	31,030	37,610	44,050	51,150	42,310	48,500	59,720	51,260	29,850
6	18,050	18,880	24,970	31,150	37,840	44,260	51,280	41,880	49,200	59,670	50,650	29,300
7	17,910	19,050	25,360	31,300	38,100	44,450	51,310	41,530	50,180	59,600	50,070	28,800
8	17,860	19,200	25,660	31,470	38,330	44,630	51,280	41,390	51,420	59,480	49,460	28,310
9	17,830	19,350	25,970	31,690	38,540	44,820	51,180	41,190	52,540	59,300	48,800	27,870
10	17,830	19,520	26,240	31,870	38,780	45,010	51,020	40,970	53,370	59,000	48,240	27,400
11	17,810	19,690	26,500	32,070	39,000	45,220	50,850	40,870	54,170	58,680	47,640	26,950
12	17,810	19,860	26,730	32,300	39,210	45,510	50,700	40,930	54,950	58,250	47,030	26,500
13	17,810	19,990	26,990	32,480	39,470	45,740	50,500	41,110	55,720	57,840	46,390	26,050
14	17,810	20,120	27,230	32,690	39,750	45,950	50,350	41,350	56,530	57,390	45,800	25,620
15	17,810	20,290	27,440	32,780	40,120	46,140	50,130	41,700	57,160	56,980	45,240	25,170
16	17,800	20,410	27,700	32,870	40,340	46,330	49,850	42,200	57,790	56,570	44,630	24,710
17	17,800	20,540	27,890	33,020	40,590	46,540	49,480	42,570	58,390	56,210	43,910	24,210
18	17,780	20,660	28,050	33,240	40,870	46,730	49,160	42,590	58,570	56,170	43,150	23,750
19	17,760	20,810	28,240	33,470	41,150	46,900	48,860	42,350	59,030	56,260	42,410	23,380
20	17,780	20,930	28,430	33,690	41,370	47,070	48,450	42,120	59,440	56,440	41,650	23,040
21	17,780	21,070	28,620	33,940	41,590	47,260	48,000	42,000	59,670	56,730	40,870	22,710
22	17,810	21,200	28,800	34,140	41,860	47,450	47,510	42,100	59,600	57,050	40,030	22,410
23	17,830	21,360	28,990	34,400	42,080	47,680	47,070	42,100	59,550	57,230	39,230	22,170
24	17,850	21,490	29,150	34,650	42,370	47,900	46,560	42,000	59,440	57,110	38,430	21,980
25	17,900	21,680	29,270	34,910	42,610	48,070	46,080	42,280	59,480	56,770	37,570	21,780
26	17,930	22,120	29,390	35,210	42,800	48,260	45,660	43,080	59,480	56,440	36,800	21,520
27	17,950	22,460	29,570	35,470	42,980	48,770	45,260	44,070	59,720	55,990	36,080	21,370
28	17,980	22,750	29,740	35,710	43,190	49,160	44,840	45,320	59,670	55,420	35,390	21,250
29	18,030	23,140	29,920	35,950	-----	49,510	44,380	46,140	59,350	54,860	34,690	21,140
30	18,080	23,530	30,090	36,200	-----	49,830	43,930	46,670	59,390	54,350	34,030	21,050
31	18,130	-----	30,290	36,440	-----	50,110	-----	47,130	-----	53,800	33,310	-----
MAX	18,680	23,530	30,290	36,440	43,190	50,110	51,310	47,130	59,720	59,780	53,290	32,590
MIN	17,760	18,200	23,600	30,480	36,690	43,330	43,930	40,870	47,490	53,800	33,310	21,050
(a)	4,983.65	4,986.85	4,990.75	4,994.14	4,997.54	5,000.82	4,997.90	4,999.43	5,004.98	5,002.50	4,992.44	4,985.39
(b)	-690	+5,400	+6,760	+6,150	+6,750	+6,920	-6,180	+3,200	+12,260	-5,590	-20,490	-12,260

CAL YR 1970 b -17,420  
WTR YR 1971 b +2,230

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

## 10297500 WEST WALKER RIVER AT HOYE BRIDGE, NEAR WELLINGTON, NEV.

LOCATION.--Lat 38°43'40", long 119°25'40", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.17, T.10 N., R.23 E., Douglas County, on left bank 20 ft upstream from Hoyer Bridge, 2 miles upstream from head of Saroni Canal, and 4 miles southwest of Wellington.

DRAINAGE AREA.--533 sq mi.

PERIOD OF RECORD.--April to August 1910 (published as West Walker River near Wellington), July 1920 to September 1923, March 1924 to September 1932, October 1957 to current year. Monthly discharge only for some periods published in WSP 1314.

GAGE.--Water-stage recorder. Altitude of gage is 4,980 ft (from topographic map). April to August 1910, nonrecording gage at same site at different datum. July 1, 1920, to Sept. 30, 1923, water-stage recorder at site 3 miles downstream (1 mile downstream from Saroni Canal) at different datum and supplemental nonrecording gage on Saroni Canal 1 mile downstream from head. Mar. 1, 1924, to Sept. 30, 1932, water-stage recorder at same site at different datum.

AVERAGE DISCHARGE (unadjusted).--24 years (1920-23, 1925-32, 1957-71), 232 cfs (168,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,560 cfs June 27 (gage height, 7.62 ft); minimum, 20 cfs Jan. 3. Period of record: Maximum discharge, 2,180 cfs June 6, 1922; minimum observed, 4.8 cfs Jan. 5, 1961.

REMARKS.--Records excellent except those for some winter periods, which are fair. Flow regulated by off-channel storage in Topaz Reservoir since Jan. 30, 1922. Diversions for irrigation of 10,500 acres above station. Records include releases from Topaz Lake and all return flow from Antelope Valley.

REVISIONS.--WSP 2127: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	49	30	34	41	33	63	376	348	754	475	386
2	106	47	32	31	41	33	67	431	342	745	493	386
3	105	47	37	27	41	34	85	454	344	757	477	384
4	105	33	32	25	41	34	111	448	354	745	461	344
5	103	31	32	25	41	34	116	456	358	721	448	330
6	97	30	33	25	35	34	138	465	374	673	408	310
7	82	30	33	25	34	34	176	459	412	631	384	287
8	68	30	35	27	34	35	181	428	555	643	370	298
9	62	29	35	33	34	34	206	412	709	634	366	304
10	61	25	34	32	34	34	207	414	670	613	366	294
11	61	25	32	32	34	34	209	424	673	619	364	291
12	62	25	32	35	34	35	218	452	727	640	360	279
13	62	25	32	35	34	37	262	477	808	652	344	275
14	61	25	32	37	34	36	275	493	904	649	344	273
15	62	25	32	37	34	36	308	510	934	646	360	285
16	75	25	32	71	34	36	346	560	982	643	364	285
17	75	25	32	96	34	37	350	580	1,030	643	402	275
18	75	26	32	121	34	37	346	595	1,000	646	422	260
19	74	26	32	122	34	36	340	613	934	649	382	240
20	65	26	32	122	34	36	348	595	982	500	374	233
21	60	27	32	122	34	36	350	603	1,150	437	376	214
22	59	27	28	103	34	35	350	573	1,260	348	400	206
23	60	27	27	71	35	40	350	545	1,200	400	398	165
24	60	26	27	55	34	52	348	520	1,090	468	400	160
25	60	28	27	43	34	53	332	503	1,030	468	402	157
26	60	28	27	42	33	53	338	520	1,010	468	384	141
27	60	28	27	42	33	53	330	535	1,260	488	388	125
28	60	30	30	42	34	53	328	486	1,400	505	390	125
29	60	31	32	41	-----	47	348	426	973	477	396	115
30	60	30	32	41	-----	46	352	392	814	479	392	74
31	60	-----	34	41	-----	62	-----	380	-----	477	388	-----
TOTAL	2,226	886	976	1,635	987	1,229	7,778	15,125	24,627	18,218	12,278	7,501
MEAN	71.8	29.5	31.5	52.7	35.3	39.6	259	488	821	588	396	250
MAX	106	49	37	122	41	62	352	613	1,400	757	493	386
MIN	59	25	27	25	33	33	63	376	342	348	344	74
AC-FT	4,420	1,760	1,940	3,240	1,960	2,440	15,430	30,000	48,850	36,140	24,350	14,880
CAL YR 1970	TOTAL 98,450		MEAN 270		MAX 1,240		MIN 25		AC-FT 195,300			
WTR YR 1971	TOTAL 93,466		MEAN 256		MAX 1,400		MIN 25		AC-FT 185,400			

## CARSON RIVER BASIN

10308200 EAST FORK CARSON RIVER BELOW MARKLEEVILLE CREEK, NEAR MARKLEEVILLE, CALIF.

LOCATION.--Lat 38°42'50", long 119°45'50", in SW¼NE¼ sec.15, T.10 N., R.20 E., Alpine County, on right bank 0.5 mile downstream from Markleeville Creek and 1.5 miles north-northeast of Markleeville.

DRAINAGE AREA.--276 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 5,400 ft (from topographic map). Prior to Oct. 1, 1967, at present site at datum 2.00 ft higher.

AVERAGE DISCHARGE.--11 years, 371 cfs (268,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,560 cfs June 26 (gage height, 5.51 ft); minimum, 48 cfs Oct. 27 (but may have been less during cold period in January).

Period of record: Maximum discharge, 15,100 cfs Jan. 31, 1963 (gage height, 10.21 ft, present datum); minimum, 16 cfs Nov. 17, 1961.

REMARKS.--Records good. A few small diversions for irrigation above station. Flow slightly regulated by several small reservoirs (total capacity, 5,000 acre-ft).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	67	121	110	224	135	385	651	714	914	260	128
2	60	67	121	85	220	135	385	672	665	914	224	121
3	60	67	93	65	204	145	390	617	728	858	200	131
4	60	71	117	60	200	163	405	541	818	810	196	135
5	60	156	145	65	196	152	445	535	970	756	188	124
6	60	152	163	72	196	142	483	585	1,230	728	180	128
7	60	114	163	85	184	156	456	604	1,490	686	170	138
8	62	98	200	100	184	156	420	604	1,660	651	166	124
9	64	103	204	120	184	159	435	617	1,590	611	170	121
10	62	131	159	160	192	156	456	778	1,430	578	166	114
11	62	108	156	155	220	166	461	986	1,480	541	156	100
12	62	121	152	150	236	188	505	1,020	1,610	517	184	100
13	62	93	142	140	265	159	572	1,170	1,720	505	188	98
14	62	98	135	130	278	163	553	1,230	1,630	500	156	94
15	60	95	138	140	310	166	535	1,380	1,630	483	145	92
16	62	85	131	159	274	170	617	1,340	1,670	478	149	90
17	62	85	124	341	248	173	611	1,040	1,620	547	145	85
18	62	85	115	440	228	156	511	922	1,510	553	138	85
19	62	78	110	410	224	163	461	962	1,500	483	142	88
20	67	80	112	415	204	188	461	1,070	1,550	489	145	88
21	69	85	110	350	192	212	415	1,080	1,540	435	142	86
22	67	83	100	296	200	236	385	826	1,480	380	142	90
23	71	80	75	256	192	265	370	826	1,390	350	135	92
24	74	83	90	240	180	244	370	1,070	1,310	323	135	90
25	71	415	86	228	188	341	355	1,320	1,270	310	135	90
26	67	328	90	224	149	742	350	1,330	1,510	287	152	90
27	60	192	95	228	135	489	346	1,250	1,820	283	152	90
28	62	163	100	224	135	400	375	1,030	1,240	274	145	91
29	69	156	125	224	-----	400	450	946	1,040	252	142	90
30	71	131	115	224	-----	467	541	922	954	240	135	92
31	69	-----	120	228	-----	435	-----	786	-----	283	128	-----
TOTAL	1,981	3,670	3,907	6,124	5,842	7,422	13,504	28,710	40,769	16,019	5,011	3,085
MEAN	63.9	122	126	198	209	239	450	926	1,359	517	162	103
MAX	74	415	204	440	310	742	617	1,380	1,820	914	260	138
MIN	60	67	75	60	135	135	346	535	665	240	128	85
AC-FT	3,930	7,280	7,750	12,150	11,590	14,720	26,790	56,950	80,870	31,770	9,940	6,120

CAL YR 1970 TOTAL 136,611 MEAN 374 MAX 2,190 MIN 60 AC-FT 271,000  
WTR YR 1971 TOTAL 136,044 MEAN 373 MAX 1,820 MIN 60 AC-FT 269,800

## PEAK DISCHARGE (BASE, 1,300 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-15	2200	4.80	1,700	6-12	2300	5.07	2,010
5-25	2300	4.74	1,630	6-26	2200	5.51	2,560

## 10309000 EAST FORK CARSON RIVER NEAR GARDNERVILLE, NEV.

LOCATION.--Lat 38°50'40", long 119°42'10", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.2, T.11 N., R.20 E., Douglas County, on left bank 0.1 mile downstream from Horseshoe Bend, 2 miles east of Mud Lake Reservoir, 4.5 miles downstream from Bryant Creek, and 7 miles southeast of Gardnerville.

DRAINAGE AREA.--341 sq mi.

PERIOD OF RECORD.--January 1890 to December 1893, October 1900 to December 1906 (gage heights only August to December 1904 and July to December 1905), January 1908 to December 1910, June to October 1917, December 1924 to September 1928, June to September 1929, October 1935 to December 1937, May 1939 to current year. Monthly discharge only for some periods published in WSP 1314.

GAGE.--Water-stage recorder and since July 1, 1955, thermograph attachment. Datum of gage is 4,985.11 ft above mean sea level (levels by Bureau of Reclamation). Prior to May 19, 1939, nonrecording gages at several sites within 2 miles of present site at various datums.

AVERAGE DISCHARGE.--45 years (1890-93, 1900-1903, 1908-10, 1925-28, 1935-37, 1939-71), 393 cfs (284,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,440 cfs June 27 (gage height, 4.29 ft); minimum, 56 cfs Oct. 28, Jan. 3.

Period of record: Maximum discharge, 17,600 cfs Dec. 23, 1955 (gage height, 11.88 ft), from rating curve extended above 6,000 cfs on basis of slope-area measurements at gage heights 9.66 and 11.88 ft; minimum observed, 8 cfs Dec. 4-10, 19-23, 1904.

REMARKS.--Records good. Station is above all diversions in Carson Valley. Diversions for irrigation above station. Flow slightly regulated by several small reservoirs (total capacity, 5,000 acre-ft).

REVISIONS (WATER YEARS).--WSP 1214: 1938(M), 1942-43(M), 1945(M). WSP 1514: 1909-10. WSP 1927: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	75	128	130	234	165	410	724	818	965	266	131
2	66	75	139	120	228	155	405	772	754	965	224	123
3	66	75	88	80	216	186	410	700	797	916	205	129
4	66	77	115	70	210	177	430	610	902	867	197	137
5	68	133	144	80	213	168	470	592	1,010	811	191	127
6	66	165	153	90	210	156	520	664	1,220	772	184	125
7	66	125	168	110	201	171	500	682	1,450	730	171	137
8	68	105	195	140	198	168	450	700	1,610	688	164	129
9	70	103	225	160	198	171	460	682	1,600	640	173	124
10	70	130	168	190	201	171	490	832	1,420	604	166	121
11	70	112	165	183	225	177	495	1,090	1,450	562	158	109
12	70	122	165	165	240	207	535	1,110	1,530	535	173	104
13	68	105	150	156	276	180	634	1,230	1,660	515	195	103
14	68	98	150	144	292	183	610	1,270	1,610	510	157	97
15	68	103	147	147	320	186	574	1,380	1,580	495	149	96
16	68	96	153	159	296	186	694	1,410	1,610	480	145	93
17	70	92	139	332	264	192	700	1,130	1,590	540	145	89
18	70	94	120	485	237	171	568	1,000	1,510	604	140	92
19	70	88	125	445	225	174	505	1,020	1,450	515	141	94
20	72	85	125	455	216	195	500	1,110	1,520	505	145	91
21	77	90	125	384	204	216	455	1,190	1,510	450	143	95
22	75	90	115	320	216	237	410	930	1,470	381	142	98
23	75	88	80	280	207	276	392	902	1,410	353	138	98
24	83	88	100	256	186	268	392	1,100	1,320	326	139	94
25	79	336	90	240	204	312	384	1,310	1,290	310	138	95
26	77	380	100	234	158	853	376	1,380	1,390	291	153	96
27	70	198	100	234	155	550	368	1,340	1,880	276	158	97
28	66	180	115	231	160	440	392	1,160	1,310	275	149	99
29	75	168	150	234	-----	425	480	1,050	1,110	249	145	97
30	77	147	130	231	-----	495	580	1,050	1,010	235	135	107
31	77	-----	135	237	-----	475	-----	916	-----	279	131	-----
TOTAL	2,197	3,823	4,202	6,722	6,190	8,086	14,589	31,036	40,791	16,644	5,060	3,227
MEAN	70.9	127	136	217	221	261	486	1,001	1,360	537	163	108
MAX	83	380	225	485	320	853	700	1,410	1,880	965	266	137
MIN	66	75	80	70	155	155	368	592	754	235	131	89
AC-FT	4,360	7,580	8,330	13,330	12,280	16,040	28,940	61,560	80,910	33,010	10,040	6,400
CAL YR 1970	TOTAL	146,703	MEAN	402	MAX	2,240	MIN	66	AC-FT	291,000		
WTR YR 1971	TOTAL	142,567	MEAN	391	MAX	1,880	MIN	66	AC-FT	282,800		

## PEAK DISCHARGE (BASE, 1,300 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-16	0100	3.56	1,660	6-13	0300	3.80	1,900
5-21	0300	3.16	1,320	6-27	0100	4.29	2,440
5-26	0200	3.46	1,570				

## 10310000 WEST FORK CARSON RIVER AT WOODFORDS, CALIF.

LOCATION.--Lat 38°46'10", long 119°49'55", in NW¼SE¼ sec.34, T.11 N., R.19 E., Alpine County, on left bank 0.3 mile downstream from bridge on State Highway 88-89, 0.6 mile southwest of Woodfords, and 3.8 miles downstream from Willow Creek.

DRAINAGE AREA.--65.6 sq mi.

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 portions of 1910-11) at site 0.7 mile downstream; records not equivalent owing to diversions for irrigation. Monthly discharge only for some periods, published in WSP 1314.

GAGE.--Water-stage recorder. Altitude of gage is 5,760 ft (from river-profile map). Prior to Oct. 1, 1938, nonrecording gage at 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.

AVERAGE DISCHARGE.--40 years (1900-1907, 1938-71), 115 cfs (83,320 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 675 cfs June 26 (gage height, 3.50 ft); minimum, 19 cfs Oct. 27, Sept. 20-26.

Period of record: Maximum discharge, 4,890 cfs Feb. 1, 1963 (gage height, 9.0 ft), on basis of slope-area measurement of peak flow; minimum, about 5 cfs Dec. 23, 1961.

Flood of Dec. 11, 1937, reached a stage of 8.0 ft (present datum), from floodmarks (discharge, 3,500 cfs by slope-area measurement).

REMARKS.--Records good except those for winter periods, which are poor. One small diversion above station for irrigation. Flow slightly regulated by several small reservoirs (total capacity, about 1,500 acre-ft). Record of chemical analyses for the current year is published in Part 2 of this report.

REVISIONS.--WSP 1927: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	22	31	29	69	59	145	345	256	237	48	66
2	25	22	30	25	65	62	154	333	242	232	70	63
3	24	22	31	22	62	60	162	309	250	219	80	64
4	24	22	37	22	60	59	172	267	270	206	92	56
5	25	42	42	24	60	56	192	291	300	194	88	30
6	25	33	44	25	58	59	204	294	330	188	87	24
7	25	25	44	28	54	56	188	294	364	183	60	24
8	25	23	45	30	53	56	179	288	395	174	40	24
9	24	25	44	35	55	56	199	309	392	162	37	28
10	24	30	43	37	57	52	206	354	364	152	35	29
11	24	25	43	35	64	51	209	406	364	148	38	28
12	23	28	43	34	71	47	248	393	374	139	39	26
13	23	25	42	32	84	53	273	402	381	136	37	28
14	23	25	42	35	90	52	267	409	367	132	35	59
15	23	25	42	39	94	52	282	444	360	136	33	60
16	23	23	37	43	83	53	315	420	364	132	45	58
17	23	23	38	84	76	52	279	348	354	154	73	54
18	23	23	37	105	69	52	221	342	345	164	71	24
19	23	23	41	112	62	52	209	348	345	132	66	20
20	23	22	41	112	65	55	216	357	351	127	58	20
21	23	22	40	124	62	60	190	357	348	124	45	20
22	23	22	39	120	60	68	174	315	330	109	24	20
23	23	22	21	110	58	80	179	324	318	98	22	20
24	23	23	25	100	58	77	179	357	303	92	22	20
25	23	139	23	95	58	96	164	395	294	84	27	20
26	23	96	25	88	59	146	164	398	376	80	44	20
27	23	49	28	81	62	120	185	370	409	70	38	24
28	23	41	31	78	59	117	229	339	300	65	29	34
29	23	40	32	76	-----	127	279	318	264	58	28	33
30	23	39	30	73	-----	166	315	306	248	55	35	54
31	23	-----	31	71	-----	158	-----	282	-----	53	66	-----
TOTAL	730	1,001	1,122	1,924	1,827	2,309	6,378	10,714	9,958	4,235	1,512	1,050
MEAN	23.5	33.4	36.2	62.1	65.3	74.5	213	346	332	137	48.8	35.0
MAX	25	139	45	124	94	166	315	444	409	237	92	66
MIN	23	22	21	22	53	47	145	267	242	53	22	20
AC-FT	1,450	1,990	2,230	3,820	3,620	4,580	12,650	21,250	19,750	8,400	3,000	2,080

CAL YR 1970 TOTAL 43,728 MEAN 120 MAX 634 MIN 21 AC-FT 86,730  
WTR YR 1971 TOTAL 42,760 MEAN 117 MAX 444 MIN 20 AC-FT 84,810

PEAK DISCHARGE (BASE, 500 CFS).--May 15 (2330) 553 cfs (3.22 ft); June 26 (2400) 675 cfs (3.50 ft).

## 10336600 UPPER TRUCKEE RIVER NEAR MEYERS, CALIF.

LOCATION.--Lat 38°50'35", long 120°01'25", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.31, T.12 N., R.18 E., El Dorado County, 0.4 mile upstream from mouth of Echo Lake outlet, 1.1 miles southwest of Meyers, and 2.5 miles upstream from Angora Creek.

DRAINAGE AREA.--33.1 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 6,325 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 67.9 cfs (49,190 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,380 cfs June 26 (gage height, 10.09 ft); minimum daily, 5.6 cfs Oct. 6, 7, 14.

Period of record: Maximum discharge, 2,550 cfs Feb. 1, 1963 (gage height, 12.41 ft); minimum, 2.0 cfs Jan. 13, 1961.

REMARKS.--Records good except those for periods of no gage-height record, which are poor. No regulation. Some small diversions above station for domestic use.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	7.8	24	18	20	22	59	156	152	192	30	15
2	5.8	7.8	24	17	20	22	67	165	136	165	28	15
3	5.8	7.8	22	16	20	24	80	144	147	150	26	14
4	5.8	7.8	22	15	20	25	97	118	176	138	25	14
5	5.8	16	24	14	20	23	89	114	208	124	24	14
6	5.6	13	24	15	20	23	77	128	263	110	22	15
7	5.6	11	24	16	21	24	81	127	333	99	21	13
8	6.0	10	24	17	22	26	90	139	379	87	21	13
9	6.0	12	20	18	23	25	91	145	381	81	20	13
10	6.0	14	17	19	25	24	103	192	333	75	19	12
11	6.0	12	18	18	27	25	124	247	343	70	18	12
12	6.0	13	15	19	28	23	114	264	362	66	17	12
13	5.8	11	15	20	25	24	126	270	393	63	16	12
14	5.6	11	15	20	27	25	150	275	373	60	19	12
15	5.8	11	16	19	30	26	139	317	383	58	18	11
16	5.8	10	17	20	28	28	104	333	393	58	18	11
17	5.8	9.5	14	41	26	26	93	259	346	69	17	9.3
18	6.2	9.5	14	35	25	24	96	233	381	63	17	8.8
19	6.2	9.3	14	30	24	25	84	259	370	60	16	8.8
20	6.6	9.0	14	28	23	26	75	282	360	60	16	8.5
21	7.0	9.0	15	26	27	31	72	266	350	56	16	8.5
22	7.0	9.3	14	26	26	36	73	210	320	52	16	8.0
23	7.3	9.3	13	26	24	36	74	236	290	48	16	8.0
24	7.8	9.5	13	24	27	69	73	315	280	45	17	7.8
25	7.3	185	13	22	25	99	67	366	296	42	19	7.8
26	7.3	57	14	21	25	64	67	356	578	40	21	8.5
27	6.8	26	15	21	25	56	68	299	402	39	19	8.5
28	7.0	25	16	22	24	61	77	226	287	38	18	8.8
29	7.5	24	17	22	-----	75	98	196	242	36	17	8.5
30	7.5	22	19	21	-----	66	122	203	201	33	15	9.5
31	8.0	-----	18	21	-----	59	-----	175	-----	32	15	-----
TOTAL	198.5	588.6	544	667	677	1,142	2,730	7,015	9,458	2,309	597	327.3
MEAN	6.40	19.6	17.5	21.5	24.2	36.8	91.0	226	315	74.5	19.3	10.9
MAX	8.0	185	24	41	30	99	150	366	578	192	30	15
MIN	5.6	7.8	13	14	20	22	59	114	136	32	15	7.8
AC-FT	394	1,170	1,080	1,320	1,340	2,270	5,410	13,910	18,760	4,580	1,180	649

CAL YR 1970 TOTAL 27,013.5 MEAN 74.0 MAX 684 MIN 5.6 AC-FT 53,580

WTR YR 1971 TOTAL 26,253.4 MEAN 71.9 MAX 578 MIN 5.6 AC-FT 52,070

## PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1800	6.60	264	5-25	2000	7.70	465
5-2	0100	6.05	204	6-15	2300	7.79	483
5-16	0400	7.42	414	6-26	1700	10.09	1,380

NOTE.--No gage-height record Nov. 28 to Mar. 16.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336625 FALLEN LEAF LAKE NEAR TAHOE VALLEY, CALIF.

LOCATION.--Lat 38°54'00", long 120°04'10", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.11, T.12 N., R.17 E., El Dorado County, on west bank 1.5 miles from outlet and 3.8 miles west-southwest of Tahoe Valley.

DRAINAGE AREA.--16.7 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 6,372.30 ft above mean sea level, supplementary adjustment of 1959.

EXTREMES.--Current year: Maximum gage height, 4.24 ft June 27; minimum, 2.13 ft Nov. 4.

Period of record: Maximum gage height, 5.51 ft Jan. 22, 1970; minimum, 2.13 ft Nov. 4, 1970.

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.

## GAGE HEIGHT, IN FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.79	2.18	3.45	2.54	2.67	2.55	2.82	2.93	3.14	3.68	4.22	3.64
2	2.78	2.16	3.51	2.52	2.66	2.53	2.81	2.94	3.09	3.61	4.22	3.61
3	2.78	2.15	3.43	2.49	2.65	2.51	2.80	3.09	3.06	3.53	4.20	3.58
4	2.77	2.17	3.36	2.47	2.63	2.51	2.80	3.09	3.09	3.45	4.19	3.57
5	2.74	2.35	3.20	2.44	2.62	2.50	2.82	3.08	3.15	3.39	4.18	3.53
6	2.70	2.42	3.08	2.42	2.61	2.48	2.84	3.09	3.26	3.35	4.17	3.47
7	2.67	2.40	3.00	2.41	2.60	2.46	2.84	3.13	3.38	3.34	4.15	3.45
8	2.66	2.40	3.02	2.39	2.59	2.45	2.84	3.13	3.47	3.34	4.15	3.42
9	2.64	2.44	2.95	2.39	2.58	2.43	2.83	3.14	3.49	3.39	4.13	3.40
10	2.62	2.47	2.89	2.36	2.57	2.42	2.84	3.23	3.48	3.44	4.13	3.39
11	2.60	2.52	2.84	2.43	2.57	2.43	2.83	3.34	3.48	3.51	4.11	3.38
12	2.58	2.57	2.78	2.51	2.58	2.56	2.84	3.39	3.51	3.56	4.10	3.37
13	2.56	2.57	2.74	2.61	2.58	2.55	2.86	3.43	3.53	3.61	4.08	3.35
14	2.53	2.55	2.69	2.63	2.60	2.53	2.88	3.47	3.54	3.67	4.06	3.34
15	2.51	2.52	2.71	2.59	2.64	2.51	2.91	3.52	3.55	3.73	4.04	3.32
16	2.49	2.49	2.81	2.59	2.64	2.50	2.94	3.52	3.55	3.80	4.02	3.30
17	2.47	2.48	2.81	2.68	2.64	2.49	2.98	3.45	3.55	3.87	3.99	3.27
18	2.44	2.45	2.77	2.84	2.62	2.48	2.97	3.39	3.53	3.92	3.97	3.23
19	2.40	2.43	2.73	2.90	2.65	2.48	2.95	3.37	3.55	3.97	3.95	3.21
20	2.41	2.42	2.71	2.92	2.63	2.48	2.94	3.38	3.56	4.02	3.91	3.17
21	2.38	2.39	2.68	2.91	2.62	2.47	2.92	3.37	3.54	4.06	3.88	3.15
22	2.37	2.37	2.65	2.89	2.60	2.46	2.89	3.30	3.51	4.08	3.85	3.13
23	2.38	2.35	2.62	2.86	2.58	2.52	2.88	3.28	3.46	4.12	3.84	3.11
24	2.37	2.42	2.60	2.84	2.57	2.52	2.87	3.37	3.44	4.13	3.83	3.07
25	2.33	3.12	2.56	2.80	2.56	2.70	2.86	3.44	3.42	4.15	3.80	3.03
26	2.30	3.23	2.55	2.78	2.54	2.89	2.84	3.48	4.12	4.17	3.83	2.99
27	2.28	3.23	2.54	2.76	2.56	2.87	2.83	3.46	4.21	4.18	3.82	2.97
28	2.26	3.30	2.54	2.73	2.56	2.86	2.84	3.37	4.06	4.18	3.80	2.92
29	2.23	3.33	2.58	2.72	-----	2.85	2.86	3.29	3.90	4.19	3.76	2.94
30	2.22	3.35	2.56	2.70	-----	2.84	2.91	3.26	3.78	4.20	3.73	2.94
31	2.19	-----	2.54	2.69	-----	2.83	-----	3.21	-----	4.22	3.68	-----
MEAN	2.50	2.57	2.84	2.64	2.60	2.57	2.87	3.29	3.51	3.80	3.99	3.28
MAX	2.79	3.35	3.51	2.92	2.67	2.89	2.98	3.52	4.21	4.22	4.22	3.64
MIN	2.19	2.15	2.54	2.36	2.54	2.42	2.80	2.93	3.06	3.34	3.68	2.92

CAL YR 1970 MEAN .66 MAX 5.35 MIN 2.15  
WTR YR 1971 MEAN 3.04 MAX 4.22 MIN 2.15



## 10336626 TAYLOR CREEK NEAR TAHOE VALLEY, CALIF.

LOCATION.--Lat 38°55'20", long 120°03'35", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.2, T.12 N., R.17 E., El Dorado County, on left bank 0.1 mile downstream from Fallen Leaf Lake outlet and 3.0 miles west of Tahoe Valley.

DRAINAGE AREA.--16.7 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 6,361.08 ft above mean sea level.

EXTREMES.--Current year: Maximum discharge, 277 cfs June 27 (gage height, 4.53 ft); minimum daily, 1.7 cfs Oct. 2, 3.

Period of record: Maximum discharge, 1,070 cfs Jan. 22, 1970 (gage height, 5.63 ft); minimum daily, 0.20 cfs Oct. 4-7, 1969.

REMARKS.--Records excellent. Flow regulated by Fallen Leaf Lake Dam.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	14	56	28	37	26	44	59	107	175	7.2	8.2
2	1.7	13	66	28	36	25	45	67	92	163	7.4	8.2
3	1.7	13	104	26	35	25	45	76	86	151	6.9	8.2
4	1.9	13	200	25	34	25	45	80	86	139	6.8	8.2
5	4.7	16	139	24	33	23	45	80	92	129	6.8	8.2
6	7.7	19	100	23	32	23	47	82	112	104	8.1	8.2
7	7.4	19	83	22	31	22	49	86	147	76	11	8.2
8	7.4	19	75	22	30	21	48	92	179	61	11	7.9
9	7.4	22	69	21	29	20	50	92	198	24	10	8.0
10	7.2	24	61	24	29	20	54	101	195	7.9	9.2	7.7
11	9.7	24	56	23	30	20	48	129	193	7.4	9.2	7.7
12	12	25	51	26	30	23	48	157	198	7.2	9.2	7.7
13	12	25	47	31	31	26	50	171	208	6.8	8.9	7.7
14	12	26	43	35	31	25	52	179	213	7.0	8.7	7.8
15	12	27	40	35	33	23	54	195	208	6.6	8.4	8.1
16	12	25	47	31	33	23	61	203	213	6.6	8.2	8.0
17	12	24	52	33	32	22	66	188	215	6.6	8.2	8.2
18	12	23	49	43	33	21	66	169	210	6.6	8.3	8.4
19	12	23	46	54	34	21	63	157	210	6.2	8.4	8.4
20	12	22	45	58	32	21	65	159	213	6.2	8.4	8.4
21	12	22	40	59	31	21	60	163	213	6.0	8.4	8.4
22	12	21	38	58	30	21	56	147	205	6.0	8.2	8.4
23	12	20	35	55	29	23	54	133	193	6.0	8.2	8.4
24	15	20	33	53	29	24	53	145	181	5.8	8.2	8.4
25	18	26	31	49	28	31	51	173	159	6.0	8.2	8.4
26	17	43	31	47	26	47	50	195	161	6.0	8.2	8.4
27	16	46	30	44	26	53	48	195	269	6.0	8.2	8.4
28	15	43	30	42	28	50	48	173	253	6.0	8.2	8.4
29	15	48	32	40	-----	48	49	149	223	6.0	8.2	8.4
30	15	51	30	39	-----	50	52	133	198	5.9	8.2	8.4
31	15	-----	29	38	-----	47	-----	125	-----	6.5	8.2	-----
TOTAL	328.7	756	1,788	1,136	872	870	1,566	4,253	5,430	1,163.3	260.7	245.4
MEAN	10.6	25.2	57.7	36.6	31.1	28.1	52.2	137	181	37.5	8.41	8.18
MAX	18	51	200	59	37	53	66	203	269	175	11	8.4
MIN	1.7	13	29	21	26	20	44	59	86	5.8	6.8	7.7
AC-FT	652	1,500	3,550	2,250	1,730	1,730	3,110	8,440	10,770	2,310	517	487

CAL YR 1970 TOTAL 20,963.6 MEAN 57.4 MAX 964 MIN 1.7 AC-FT 41,580  
WTR YR 1971 TOTAL 18,669.1 MEAN 51.1 MAX 269 MIN 1.7 AC-FT 37,030

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CALIF.

LOCATION.--Lat 39°06'26", long 120°09'40", in NE $\frac{1}{4}$  sec.36, T.15 N., R.16 E., Placer County, on right bank about 300 ft upstream from bridge on State Highway 89, 1,000 ft upstream from Lake Tahoe, and 4.6 miles south of Tahoe City.

DRAINAGE AREA.--11.2 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 6,240 ft (from topographic map). Oct. 1, 1964, to Aug. 27, 1970, at site 400 ft downstream at datum 12 ft lower. Prior to Oct. 1, 1964, at site 400 ft downstream at datum 10.25 ft lower.

AVERAGE DISCHARGE.--11 years, 39.0 cfs (28,260 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 585 cfs June 26 (gage height, 3.38 ft); minimum daily, 1.9 cfs Oct. 3, 4.

Period of record: Maximum discharge, 2,100 cfs Dec. 22 or 24, 1964, from indirect measurement of peak flow; maximum gage height, 9.90 ft Dec. 22, 1964; minimum discharge, 0.30 cfs Sept. 19, 1968.

REMARKS.--Records good except those for winter months, which are fair. No known diversion or regulation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.6	18	8.7	20	23	38	96	83	116	12	3.6
2	2.1	2.5	16	8.0	20	15	40	106	78	111	11	3.4
3	1.9	2.5	15	7.0	19	17	42	101	87	99	9.9	3.4
4	2.0	3.7	15	7.0	18	16	45	87	100	92	9.2	3.2
5	2.1	31	15	8.0	17	15	50	92	130	86	8.6	3.2
6	2.1	12	15	10	17	13	56	90	172	81	8.1	3.2
7	2.1	8.6	16	10	17	14	52	83	210	78	7.8	3.0
8	2.3	7.5	16	9.1	17	14	46	102	223	72	7.5	3.0
9	2.2	17	15	9.0	17	14	50	120	206	66	7.3	3.0
10	2.2	18	14	9.3	17	14	55	157	194	60	6.7	3.0
11	2.3	18	13	9.5	19	14	49	167	201	55	6.4	2.8
12	2.2	25	12	9.0	20	16	54	167	216	51	6.1	2.8
13	2.2	13	12	8.5	26	17	62	186	218	50	5.8	2.8
14	2.2	11	11	9.0	28	16	61	202	208	49	5.5	2.7
15	2.1	9.7	11	9.5	30	15	71	218	217	48	5.1	2.7
16	2.1	8.6	10	10	29	14	86	200	228	46	5.1	2.5
17	2.1	7.8	9.5	35	27	14	82	159	222	46	4.8	2.5
18	2.1	7.5	9.0	40	24	13	63	151	206	45	4.6	2.5
19	2.3	7.1	8.6	42	25	13	58	159	213	39	4.5	2.5
20	3.0	6.7	8.4	40	19	14	60	184	210	34	4.3	2.5
21	2.7	6.7	8.2	38	21	15	52	161	201	31	4.1	2.4
22	3.2	6.4	8.0	36	20	16	47	132	187	27	4.1	2.4
23	3.2	6.2	8.0	33	19	16	44	169	176	24	4.1	2.4
24	3.0	7.8	8.0	30	19	16	44	223	165	22	4.0	2.4
25	2.8	116	8.2	28	19	24	41	245	153	20	3.9	2.4
26	2.7	51	8.4	27	17	48	38	225	276	19	3.9	2.2
27	2.6	29	10	26	20	42	38	171	210	17	4.1	2.4
28	2.6	24	8.9	24	24	39	47	136	149	16	3.9	2.4
29	2.6	21	9.1	22	-----	38	62	127	126	14	3.8	2.4
30	2.7	17	9.4	21	-----	40	79	121	119	14	3.6	3.0
31	2.8	-----	9.4	20	-----	39	-----	99	-----	13	3.4	-----
TOTAL	74.5	504.9	355.1	603.6	585	634	1,612	4,636	5,384	1,541	183.2	82.7
MEAN	2.40	16.8	11.5	19.5	20.9	20.5	53.7	150	179	49.7	5.91	2.76
MAX	3.2	116	18	42	30	48	86	245	276	116	12	3.6
MIN	1.9	2.5	8.0	7.0	17	13	38	83	78	13	3.4	2.2
AC-FT	148	1,000	704	1,200	1,160	1,260	3,200	9,200	10,680	3,060	363	164

CAL YR 1970 TOTAL 17,480.4 MEAN 47.9 MAX 1,020 MIN 1.9 AC-FT 34,670

WTR YR 1971 TOTAL 16,196.0 MEAN 44.4 MAX 276 MIN 1.9 AC-FT 32,120

## PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-14	2000	2.34	277	6-7	2000	2.41	295
5-25	2000	2.53	326	6-26	1730	3.38	585

## 10336780 TROUT CREEK NEAR TAHOE VALLEY, CALIF.

LOCATION.--Lat 38°55'12", long 119°58'17", in SE $\frac{1}{4}$  sec.3, T.12 N., R.18 E., El Dorado County, on left bank 15 ft upstream from Martin Avenue bridge, 500 ft upstream from Heavenly Valley Creek, and 1.8 miles east of Tahoe Valley.

DRAINAGE AREA.--36.7 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 6,250 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 38.1 cfs (27,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 226 cfs June 27 (gage height, 9.19 ft); minimum, 10 cfs Mar. 12, but may have been less during periods of ice effect.

Period of record: Maximum discharge, 535 cfs Feb. 1, 1963 (gage height, 11.14 ft), from rating curve extended above 110 cfs on basis of computation of peak flow (weir formula) and logarithmic projection. No flow for part of Sept. 11, 1966.

REMARKS.--Records good except those for winter periods, which are fair. Minor diversion for local water supply.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	22	25	21	22	20	44	68	84	130	48	28
2	18	22	25	20	22	19	44	70	80	128	45	27
3	18	21	24	19	21	20	45	67	81	124	44	27
4	18	22	25	17	22	21	47	63	82	120	43	26
5	18	40	25	16	23	20	51	65	85	116	43	26
6	18	30	28	18	23	19	56	67	92	112	43	25
7	19	27	28	19	24	20	55	71	102	107	40	25
8	19	25	28	20	24	22	51	70	110	103	40	25
9	19	28	28	21	25	22	53	71	112	98	39	24
10	19	28	25	22	24	20	58	79	112	94	37	23
11	19	25	25	21	25	21	60	88	115	90	35	23
12	19	27	23	20	26	19	62	90	120	85	35	22
13	19	21	20	19	25	18	65	92	126	82	34	22
14	18	22	19	20	26	19	64	95	131	80	33	23
15	18	20	19	23	27	21	67	100	138	78	33	22
16	18	20	20	30	26	21	69	107	147	76	33	22
17	19	19	27	52	26	22	66	90	153	76	32	22
18	19	19	23	41	25	23	57	87	155	79	31	22
19	20	18	21	36	24	23	54	89	154	75	31	22
20	21	19	20	33	23	23	56	92	161	76	30	22
21	21	19	19	31	22	25	52	95	163	73	30	22
22	21	20	18	27	23	28	49	88	164	69	30	22
23	22	20	17	23	23	31	49	91	163	64	32	22
24	24	21	17	23	22	31	50	94	157	61	31	22
25	22	67	17	23	22	42	47	100	153	59	35	22
26	22	39	17	23	22	61	48	106	166	57	49	23
27	20	28	18	23	21	52	49	108	186	54	45	23
28	22	26	19	24	21	45	50	98	154	51	35	24
29	22	25	21	23	-----	45	55	93	143	50	34	24
30	22	23	22	23	-----	52	60	92	136	49	29	26
31	23	-----	21	22	-----	48	-----	89	-----	49	28	-----
TOTAL	615	763	684	753	659	873	1,633	2,675	3,925	2,565	1,127	708
MEAN	19.8	25.4	22.1	24.3	23.5	28.2	54.4	86.3	131	82.7	36.4	23.6
MAX	24	67	28	52	27	61	69	108	186	130	49	28
MIN	18	18	17	16	21	18	44	63	80	49	28	22
AC-FT	1,220	1,510	1,360	1,490	1,310	1,730	3,240	5,310	7,790	5,090	2,240	1,400

CAL YR 1970 TOTAL 15,844 MEAN 43.4 MAX 170 MIN 17 AC-FT 31,430  
WTR YR 1971 TOTAL 16,980 MEAN 46.5 MAX 186 MIN 16 AC-FT 33,680

## PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-16	0100	7.88	124	6-21	0400	8.52	173
5-25	2300	7.77	116	6-27	0100	9.19	226

## PYRAMID AND WINNEMUCCA LAKES BASIN

10337000 LAKE TAHOE AT TAHOE CITY, CALIF.

LOCATION.--Lat 39°10'50", long 120°06'55", in NE<sup>1</sup>SE<sup>1</sup>NE<sup>1</sup> sec.5, T.15 N., R.17 E., Placer County, on U.S. Coast Guard pier at Lake Forest and 1.8 miles northeast of Lake Tahoe outlet dam on Truckee River at Tahoe City.

DRAINAGE AREA.--505 sq mi 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."

GAGE.--Water-stage recorder. Datum of gage is 6,220.00 ft above mean sea level, datum of Bureau of Reclamation (6,218.86 ft, supplementary adjustment of 1959). 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.

EXTREMES.--Current year: Maximum elevation, 6,229.02 ft July 20; minimum, 6,226.82 ft Nov. 24.

Period of record: Maximum elevation, 6,231.26 ft July 14, 15, 17, 18, 1907; minimum, 6,221.74 ft Dec. 26, 1934.

REMARKS.--Lake levels regulated by a 17-gate concrete dam at outlet of lake; storage began about 1874. Figures given herein represent usable contents. Usable capacity, 744,600 acre-ft between elevations 6,223 (natural rim of lake) and 6,229.1 ft (maximum permissible elevation by Federal Court decree). Water is used for domestic and recreational purposes in Lake Tahoe area and for irrigation and power in downstream areas. Lake elevations are referred to Bureau of Reclamation datum because that datum is used as the official reference point by all local, State, and Federal agencies. One intermittent transmountain diversion from Echo Lake to South Fork American River for power and irrigation. Since October 1968, some sewage has been transported out of the basin into Carson River basin.

REVISIONS.--WRD 1967: Drainage area.

## ELEVATION, IN FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.39	6.91	7.21	7.53	7.47	7.30	7.62	7.89	8.67	8.98	8.93	8.39
2	7.38	6.92	7.27	7.51	7.47	7.30	7.62	7.93	8.68	8.97	8.90	8.39
3	7.37	6.86	7.27	7.45	7.44	7.28	7.62	7.97	8.68	8.96	8.87	8.36
4	7.35	6.92	7.35	7.46	7.44	7.28	7.63	8.01	8.68	8.95	8.85	8.34
5	7.31	6.95	7.35	7.46	7.43	7.28	7.63	8.00	8.68	8.94	8.86	8.32
6	7.30	7.00	7.35	7.43	7.42	7.28	7.62	8.02	8.70	8.94	8.85	8.28
7	7.25	6.98	7.33	7.42	7.43	7.27	7.64	8.07	8.72	8.94	8.84	8.23
8	7.26	6.95	7.41	7.42	7.42	7.26	7.65	8.07	8.74	8.94	8.83	8.25
9	7.22	6.98	7.40	7.41	7.41	7.25	7.63	8.09	8.75	8.92	8.84	8.22
10	7.23	6.96	7.40	7.46	7.41	7.24	7.65	8.10	8.77	8.94	8.83	8.21
11	7.19	6.95	7.39	7.43	7.40	7.20	7.66	8.13	8.78	8.95	8.82	8.20
12	7.20	6.99	7.39	7.47	7.38	7.38	7.67	8.19	8.80	8.94	8.80	8.19
13	7.16	6.97	7.38	7.57	7.38	7.36	7.68	8.17	8.83	8.97	8.77	8.19
14	7.17	6.97	7.38	7.54	7.37	7.35	7.70	8.22	8.86	8.96	8.77	8.19
15	7.13	6.92	7.40	7.51	7.37	7.35	7.71	8.27	8.88	8.96	8.74	8.18
16	7.13	6.95	7.56	7.55	7.37	7.35	7.71	8.27	8.88	8.97	8.73	8.15
17	7.12	6.92	7.55	7.55	7.36	7.33	7.73	8.28	8.89	8.98	8.70	8.13
18	7.10	6.91	7.55	7.55	7.36	7.33	7.75	8.31	8.89	8.98	8.68	8.08
19	7.06	6.92	7.53	7.55	7.36	7.33	7.75	8.33	8.90	8.98	8.66	8.06
20	7.08	6.88	7.51	7.55	7.35	7.33	7.75	8.35	8.92	8.99	8.63	8.06
21	7.02	6.88	7.53	7.54	7.36	7.33	7.77	8.37	8.92	8.98	8.60	8.02
22	7.03	6.98	7.54	7.53	7.35	7.30	7.78	8.40	8.92	8.97	8.58	7.99
23	7.03	6.86	7.52	7.53	7.34	7.36	7.77	8.41	8.92	8.97	8.57	7.96
24	7.03	6.90	7.50	7.51	7.30	7.35	7.80	8.44	8.91	8.96	8.56	7.92
25	6.98	7.05	7.51	7.50	7.33	7.45	7.81	8.50	8.91	8.95	8.55	7.89
26	6.98	7.03	7.50	7.50	7.32	7.58	7.86	8.50	8.99	8.94	8.56	7.88
27	6.95	7.00	7.50	7.49	7.34	7.60	7.87	8.55	8.96	8.95	8.54	7.83
28	6.96	7.10	7.50	7.48	7.32	7.60	7.87	8.57	8.99	8.95	8.53	7.82
29	6.95	7.12	7.52	7.48	-----	7.60	7.87	8.59	8.99	8.94	8.50	7.83
30	6.93	7.13	7.51	7.48	-----	7.60	7.88	8.62	8.98	8.94	8.49	7.78
31	6.92	-----	7.51	7.48	-----	7.60	-----	8.66	-----	8.94	8.46	-----
MEAN	7.13	6.96	7.44	7.49	7.38	7.37	7.72	8.27	8.84	8.96	8.70	8.11
MAX	7.39	7.13	7.56	7.57	7.47	7.60	7.88	8.66	8.99	8.99	8.93	8.39
MIN	6.92	6.86	7.21	7.41	7.30	7.20	7.62	7.89	8.67	8.92	8.46	7.78
(a)	-58,800	+25,700	+46,500	-3,600	-19,600	+34,300	+34,300	+95,900	+39,300	-4,900	-59,000	-83,500
(b)	477,000	502,700	549,200	545,600	526,000	560,300	594,600	690,500	729,800	724,900	665,900	582,400

CAL YR 1970 a -5,000  
WTR YR 1971 a +46,600

a Change in contents, in acre-feet.

b Contents, in acre-feet, at end of month.

NOTE.--Add 6,220 ft to obtain elevation above mean sea level, Bureau of Reclamation datum, at 2400 hours.

## 10337500 TRUCKEE RIVER AT TAHOE CITY, CALIF.

LOCATION.--Lat 39°10'00", long 120°08'40", in NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.7, T.15 N., R.17 E., Placer County, on left bank 510 ft downstream from dam at outlet of Lake Tahoe at Tahoe City.

DRAINAGE AREA.--506 sq mi.

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."

GAGE.--Water-stage recorder. Datum of gage is 6,216.75 ft above mean sea level. Prior to Nov. 12, 1912, nonrecording gage at site 370 ft upstream at different datum. Nov. 12, 1912, to Sept. 30, 1937, nonrecording gage, Oct. 1, 1937, to Aug. 21, 1957, water-stage recorder at datum 2.26 ft higher and Aug. 22, 1957, to July 10, 1960, at datum 2.42 ft higher; all at site 270 ft upstream.

AVERAGE DISCHARGE (unadjusted).--71 years (1900-71), 247 cfs (179,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,240 cfs June 26, 27 (gage height, 6.78 ft); minimum daily, 41 cfs Nov. 26.

Period of record: Maximum discharge, 2,630 cfs June 19, 1969 (gage height, 9.32 ft); no flow for parts of many years.

REMARKS.--Records excellent. Flow regulated by Lake Tahoe (operating capacity, 744,600 acre-ft).

REVISIONS.--WSP 2127: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	309	245	192	250	619	304	67	76	310	1,230	306	398
2	292	246	227	252	617	303	69	76	504	1,230	306	397
3	282	246	217	251	617	303	70	76	619	1,230	306	380
4	282	221	207	252	616	302	71	75	610	1,230	306	367
5	282	194	206	251	616	302	72	74	610	1,040	305	366
6	281	183	204	250	616	301	72	75	610	724	305	365
7	281	177	184	413	616	301	71	74	432	425	305	365
8	280	175	170	574	615	273	71	75	312	266	305	364
9	258	176	171	570	615	246	73	75	451	89	304	363
10	244	177	170	571	615	246	74	76	616	76	304	363
11	243	134	171	586	614	247	73	77	616	76	304	362
12	211	73	170	621	614	252	73	77	616	71	303	362
13	101	68	171	645	614	256	73	77	616	71	302	362
14	61	106	171	647	614	256	74	78	786	71	301	362
15	147	105	171	636	615	230	75	78	1,090	71	302	362
16	202	160	174	647	444	209	76	77	1,220	70	301	362
17	202	204	175	647	305	208	74	76	1,220	70	286	334
18	202	234	175	641	305	207	71	75	1,220	70	296	301
19	202	252	174	633	306	207	72	75	1,230	69	297	300
20	203	252	172	622	306	206	72	76	1,230	68	297	300
21	277	252	187	622	306	207	71	75	1,230	68	297	299
22	312	252	211	623	305	153	71	74	1,230	68	296	298
23	332	252	213	622	305	118	71	74	1,230	67	295	298
24	345	284	231	622	305	87	71	75	1,230	67	311	298
25	343	163	252	622	303	73	71	232	1,230	67	369	298
26	343	41	251	622	303	83	71	309	1,230	104	401	298
27	343	106	251	622	303	78	71	310	1,240	143	417	299
28	342	149	252	620	303	69	72	309	1,230	197	429	298
29	342	150	252	619	-----	65	73	309	1,230	283	429	266
30	283	151	251	619	-----	67	75	309	1,230	305	411	207
31	245	-----	251	619	-----	65	-----	309	-----	306	399	-----
TOTAL	8,072	5,428	6,274	16,791	13,332	6,224	2,160	3,903	27,228	9,922	10,095	9,994
MEAN	260	181	202	542	476	201	72.0	126	908	320	326	333
MAX	345	284	252	647	619	304	76	310	1,240	1,230	429	398
MIN	61	41	170	250	303	65	67	74	310	67	286	207
AC-FT	16,010	10,770	12,440	33,300	26,440	12,350	4,280	7,740	54,010	19,680	20,020	19,820
CAL YR 1970	TOTAL 161,689		MEAN 443		MAX 1,790		MIN 40		AC-FT 320,700			
WTR YR 1971	TOTAL 119,423		MEAN 327		MAX 1,240		MIN 41		AC-FT 236,900			

## 10338500 DONNER CREEK AT DONNER LAKE, NEAR TRUCKEE, CALIF.

LOCATION.--Lat 39°19'25", long 120°14'00", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.17, T.17 N., R.16 E., Nevada County, on left bank 10 ft downstream from bridge on Donner Memorial State Park Road, 0.2 mile downstream from outlet of Donner Lake, 0.7 mile upstream from Cold Creek, and 2.5 miles west of Truckee.

DRAINAGE AREA.--14.6 sq mi.

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.

GAGE.--Water-stage recorder. Altitude of gage is 5,930 ft (from topographic map). 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.

AVERAGE DISCHARGE (unadjusted).--34 years (1929-35, 1936-37, 1939-42, 1943-52, 1955-57, 1958-71), 33.4 cfs (24,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 280 cfs May 28 (gage height, 3.61 ft); minimum daily, 5.8 cfs Sept. 8-10.

Period of record: Maximum daily discharge, 700 cfs (estimated) Nov. 21, 1950; maximum gage height observed, 4.55 ft Dec. 25, 1964; no flow at times in most years.

REMARKS.--Records good. Flow regulated by dam at outlet of Donner Lake (usable capacity, 9,500 acre-ft).

REVISIONS.--WSP 2127: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	117	62	24	41	35	77	19	100	52	8.4	7.9
2	35	98	65	23	40	33	58	20	66	42	8.4	7.9
3	37	82	62	21	40	32	48	20	42	39	8.4	7.0
4	37	71	62	20	39	31	50	21	31	39	8.4	6.6
5	36	74	58	19	38	30	52	21	31	40	8.4	6.2
6	36	71	54	18	37	29	57	21	31	31	7.9	6.6
7	37	64	51	18	36	28	62	21	48	15	7.9	6.2
8	39	57	51	17	36	27	63	21	97	8.8	7.9	5.8
9	39	53	51	17	35	27	66	21	154	12	7.9	5.8
10	38	55	47	19	34	26	73	21	154	15	7.9	5.8
11	38	51	44	22	35	26	73	85	152	14	7.9	6.2
12	38	51	41	27	36	33	73	160	158	13	7.5	6.2
13	36	50	39	34	37	38	76	213	158	10	7.5	6.2
14	41	43	36	33	39	37	79	229	130	7.9	7.5	31
15	47	38	34	30	42	35	85	232	100	7.9	7.5	51
16	46	35	40	29	43	34	44	229	144	9.3	7.5	50
17	44	31	41	35	43	33	20	226	152	10	7.9	50
18	43	28	39	47	42	32	20	185	126	9.9	7.9	49
19	43	26	36	54	44	31	20	154	117	9.3	7.9	48
20	42	23	35	58	42	30	18	152	117	9.3	7.9	47
21	46	21	35	58	41	31	18	152	117	9.3	7.9	67
22	107	19	33	57	39	31	18	152	111	9.3	7.9	85
23	136	18	31	55	38	34	18	152	91	9.3	7.9	83
24	130	19	29	52	36	39	18	154	88	9.3	7.9	82
25	124	45	27	50	36	46	18	160	88	9.3	7.9	79
26	119	63	25	48	35	70	18	208	88	9.3	7.9	77
27	113	60	25	46	34	77	18	247	102	9.3	8.4	77
28	107	59	25	45	35	77	18	268	113	8.8	8.4	111
29	122	61	27	43	-----	77	18	238	97	8.4	7.9	138
30	144	60	26	42	-----	79	18	210	70	8.4	7.9	134
31	138	-----	25	42	-----	79	-----	173	-----	8.4	7.9	-----
TOTAL	2,063	1,543	1,256	1,103	1,073	1,267	1,294	4,185	3,073	493.5	246.4	1,343.4
MEAN	66.5	51.4	40.5	35.6	38.3	40.9	43.1	135	102	15.9	7.95	44.8
MAX	144	117	65	58	44	79	85	268	158	52	8.4	138
MIN	25	18	25	17	34	26	18	19	31	7.9	7.5	5.8
AC-FT	4,090	3,060	2,490	2,190	2,330	2,510	2,570	8,300	6,100	979	489	2,660
CAL YR 1970	TOTAL 17,424.70		MEAN 47.7		MAX 464		MIN .80		AC-FT 34,560			
WTR YR 1971	TOTAL 18,940.30		MEAN 51.9		MAX 268		MIN 5.8		AC-FT 37,570			

## 10339400 MARTIS CREEK NEAR TRUCKEE, CALIF.

LOCATION.--Lat 39°20'20", long 120°07'00", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.8, T.17 N., R.17 E., Nevada County, on left bank 0.8 mile upstream from mouth and 3.5 miles northeast of Truckee.

DRAINAGE AREA.--41.0 sq mi.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,700 ft (from topographic map).

AVERAGE DISCHARGE.--13 years, 24.4 cfs (17,680 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 258 cfs Mar. 26 (gage height, 3.13 ft); minimum, 2.3 cfs June 16 (regulation at Martis Creek Dam).

Period of record: Maximum discharge, 1,880 cfs Feb. 1, 1963 (gage height, 6.16 ft); minimum, 1.1 cfs July 19, 20, 1961.

REMARKS.--Records good. Flow subject to regulation by Martis Creek Dam since June 1971.

REVISIONS.--WSP 2127: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	12	14	13	17	12	105	84	60	17	10	9.1
2	7.2	12	13	12	17	10	107	95	54	17	8.1	9.0
3	7.6	12	12	8.0	15	12	111	128	51	18	7.6	9.4
4	7.7	16	17	8.0	16	15	117	120	49	17	7.4	9.7
5	6.8	44	23	8.0	18	13	129	104	49	17	7.2	10
6	6.7	19	23	8.0	19	12	144	102	49	16	7.7	9.7
7	8.1	16	23	9.0	17	13	133	97	51	15	9.4	8.6
8	7.8	14	26	11	17	16	122	116	52	15	10	9.1
9	8.0	15	31	14	17	16	125	108	52	14	8.1	8.5
10	8.9	16	27	16	17	16	128	111	48	14	8.2	8.4
11	9.7	15	26	20	17	18	107	120	46	13	9.8	8.3
12	9.0	19	20	20	18	24	111	123	45	12	11	9.4
13	9.4	15	15	18	19	20	111	129	42	13	10	8.4
14	9.2	14	14	17	20	21	111	131	40	13	9.5	8.3
15	9.6	14	16	17	23	22	119	131	36	13	10	8.6
16	9.4	13	18	20	20	24	122	125	33	12	8.6	8.1
17	9.9	13	15	23	21	25	119	108	36	13	8.1	8.0
18	10	13	11	32	20	26	93	98	35	15	8.8	8.6
19	9.8	13	11	33	19	25	84	93	33	13	9.2	9.4
20	13	13	12	29	17	27	84	94	31	20	9.0	8.7
21	11	13	13	23	16	33	81	106	28	24	8.7	9.7
22	11	13	11	20	17	38	70	109	26	13	9.4	9.9
23	13	13	8.6	18	17	58	64	95	24	12	8.8	9.9
24	13	14	9.0	17	19	68	71	90	22	12	9.3	9.5
25	12	60	8.8	17	18	80	69	92	21	13	9.6	10
26	11	37	9.0	17	15	213	76	90	27	9.8	10	11
27	10	20	10	17	14	163	76	99	29	9.3	12	10
28	11	18	13	17	13	128	68	91	22	9.3	10	11
29	12	19	15	17	-----	128	69	81	20	8.7	10	11
30	12	15	14	17	-----	146	73	75	18	9.1	9.0	14
31	13	-----	14	17	-----	122	-----	67	-----	9.6	8.5	-----
TOTAL	304.3	540	492.4	533.0	493	1,544	2,999	3,212	1,129	426.8	283.0	283.3
MEAN	9.82	18.0	15.9	17.2	17.6	49.8	100	104	37.6	13.8	9.13	9.44
MAX	13	60	31	33	23	213	144	131	60	24	12	14
MIN	6.7	12	8.6	8.0	13	10	64	67	18	8.7	7.2	8.0
AC-FT	604	1,070	977	1,060	978	3,060	5,950	6,370	2,240	847	561	562

CAL YR 1970 TOTAL 10,414.3 MEAN 28.5 MAX 384 MIN 4.0 AC-FT 20,660  
WTR YR 1971 TOTAL 12,239.8 MEAN 33.5 MAX 213 MIN 6.7 AC-FT 24,280

PEAK DISCHARGE (BASE, 170 CFS).--Mar. 26 (1400) 258 cfs (3.13 ft); Apr. 5 (1900) 190 cfs (2.84 ft).

## PYRAMID AND WINNEMUCCA LAKES BASIN

10339900 ALDER CREEK NEAR TRUCKEE, CALIF.

LOCATION.--Lat 39°22'07", long 120°10'54", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.34, T.18 N., R.16 E., Nevada County, on right bank 0.6 mile upstream from Prosser Creek Reservoir and 2.5 miles north of Truckee.

DRAINAGE AREA.--7.47 sq mi.

PERIOD OF RECORD.--October 1958 to September 1969, October 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,800 ft (from topographic map).

AVERAGE DISCHARGE.--12 years, 9.39 cfs (6,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 98 cfs May 13 (gage height, 2.39 ft); maximum gage height, 3.27 ft Jan. 20 (backwater from ice); minimum discharge, 0.49 cfs Nov. 20.

Period of record: Maximum discharge, 730 cfs Jan. 31, 1963 (gage height, 5.86 ft), from rating curve extended above 36 cfs on basis of computation of peak flow through culvert; no flow for some periods in most years.

REMARKS.--Records good. No upstream diversions or regulation.

REVISIONS.--WSP 2127: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	1.7	2.9	2.0	3.5	3.0	28	47	31	8.0	2.3	1.2
2	.82	1.8	2.8	2.0	3.5	2.7	28	50	28	6.9	2.2	1.2
3	.84	1.9	2.7	2.0	3.8	3.0	30	51	26	6.5	2.0	1.2
4	.86	2.2	2.9	2.0	3.5	3.2	30	47	26	5.8	2.0	1.2
5	.88	3.5	3.1	2.1	3.4	3.0	34	49	27	5.4	2.0	1.2
6	.90	2.2	3.0	2.1	3.4	2.8	37	46	29	5.4	1.8	1.1
7	.90	2.0	3.0	2.1	3.4	3.0	36	48	32	5.2	1.8	1.1
8	.90	1.9	3.1	2.0	3.5	3.0	35	55	34	5.0	1.6	1.1
9	.90	2.1	3.2	1.8	3.5	3.1	38	58	35	4.8	1.6	1.0
10	.90	2.3	3.0	2.7	3.5	3.1	37	63	33	4.8	1.6	1.0
11	.92	2.0	3.0	2.0	3.7	3.1	34	64	32	4.4	1.6	.94
12	.94	2.5	2.7	1.9	4.2	4.0	38	68	31	4.4	1.7	1.0
13	.96	2.3	2.7	1.8	4.6	4.2	39	76	30	4.2	1.6	.85
14	.98	2.1	2.5	1.9	5.4	3.4	40	75	28	4.2	1.6	.94
15	1.0	1.9	2.4	2.0	6.5	3.4	46	74	28	4.2	1.6	.94
16	1.0	1.8	2.9	2.2	6.5	3.7	49	67	28	3.7	1.6	.94
17	1.0	1.7	2.5	3.0	6.5	3.8	44	60	27	3.8	1.6	.94
18	1.0	1.5	2.1	4.2	6.5	4.0	35	55	24	4.0	1.6	.94
19	1.0	1.3	2.2	6.0	6.2	3.8	33	55	22	3.4	1.6	1.0
20	1.1	1.2	2.2	9.8	5.8	4.2	33	56	21	3.2	1.6	1.1
21	1.2	1.4	2.2	8.3	5.2	5.0	28	54	19	3.2	1.5	1.0
22	1.5	1.4	2.2	5.6	4.8	5.8	25	49	16	3.0	1.5	1.1
23	1.8	1.4	2.2	5.0	4.6	11	24	48	15	2.8	1.5	1.0
24	2.2	2.0	2.2	4.8	4.2	16	24	51	14	2.8	1.5	1.0
25	1.8	20	2.2	4.4	4.4	20	21	51	12	2.7	1.6	1.1
26	1.6	5.8	2.2	4.0	4.0	40	19	55	16	2.5	1.5	1.3
27	1.5	3.5	2.2	3.8	3.5	33	19	51	15	2.5	1.6	1.4
28	1.5	3.1	2.2	3.8	3.2	28	25	43	12	2.4	1.4	1.3
29	1.5	3.1	2.1	3.7	-----	30	32	38	9.9	2.3	1.4	1.5
30	1.5	3.0	2.0	3.5	-----	33	40	38	8.7	2.3	1.3	1.8
31	1.6	-----	2.0	3.5	-----	31	-----	36	-----	2.3	1.7	-----
TOTAL	36.30	84.6	78.6	106.0	124.8	320.3	981	1,678	709.6	126.1	51.1	33.39
MEAN	1.17	2.82	2.54	3.42	4.46	10.3	32.7	54.1	23.7	4.07	1.65	1.11
MAX	2.2	20	3.2	9.8	6.5	40	49	76	35	8.0	2.3	1.8
MIN	.80	1.2	2.0	1.8	3.2	2.7	19	36	8.7	2.3	1.3	.85
AC-FT	72	168	156	210	248	635	1,950	3,330	1,410	250	101	66

WTR YR 1971 TOTAL 4,329.79 MEAN 11.9 MAX 76 MIN .80 AC-FT 8,590

PEAK DISCHARGE (BASE, 25 CFS)						NOTE.--Discharges for Oct. 1 to Nov. 18 are estimated.	
DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1600	1.71	32	5-13	1800	2.39	98
3-26	1330	1.83	45	6-7	1900	1.72	35
4-16	2000	1.97	55	6-26	1730	1.69	33



10340300 Prosser Creek Reservoir near Boca, Calif.

LOCATION.--Lat 39°22'45", long 120°08'25", in NW 1/4 sec. 30, T.18 N., R.17 E., Nevada County, in control house at Prosser Creek Dam on Prosser Creek, 1.5 miles upstream from mouth, and 3 miles west of Boca.

DRAINAGE AREA.--50.5 sq mi.

PERIOD OF RECORD.--January 1963 to current year.

GAGE.--Water-stage recorder with surface follower and telemark. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Current year: Maximum contents observed, 30,000 acre-ft July 19 (elevation, 5,742.97 ft); minimum observed, 7,250 acre-ft Oct. 30 (elevation 5,699.40 ft).

Period of record: Maximum contents observed, 30,760 acre-ft May 22, 1963 (elevation, 5,743.95 ft); minimum observed, 1,350 acre-ft Apr. 9, 1969 (elevation, 5,672.30 ft).

REMARKS.--Reservoir is formed by rolled-earth and rockfill dam. Storage began Jan. 30, 1963. Usable capacity, 28,640 acre-ft between elevations, 5,660.6 (top of inactive storage) and 5,741.2 ft (spillway crest). Inactive storage, 1,200 acre-ft (includes 83 acre-ft dead storage) below elevation 5,660.6 ft. Elevation of streambed at dam axis, 5,622 ft. Figures given herein represent usable contents. Reservoir is used for flood control, enhancement of fishery, and recreation.

COOPERATION.--Records furnished by Bureau of Reclamation.

## MONTH-END ELEVATIONS AND CONTENTS AT 0800 HOURS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Oct. 31 . . . . .	5,699.46	7,270	-7,940
Nov. 30 . . . . .	5,701.19	7,810	+540
Dec. 31 . . . . .	5,701.18	7,800	-10
Calendar year 1970 . . . . .	-	-	+290
Jan. 31 . . . . .	5,701.09	7,780	-20
Feb. 28 . . . . .	5,700.75	7,670	-110
Mar. 31 . . . . .	5,703.81	8,670	+1,000
Apr. 30 . . . . .	5,723.58	17,320	+8,650
May 31 . . . . .	5,718.53	14,720	-2,600
June 30 . . . . .	5,739.95	27,710	+12,990
July 31 . . . . .	5,742.24	29,430	+1,720
Aug. 31 . . . . .	5,741.28	28,700	-730
Sept. 30 . . . . .	5,732.07	22,320	-6,380
Water year 1970-71 . . . . .	-	-	+7,110

## PYRAMID AND WINNEMUCCA LAKES BASIN

10340500 PROSSER CREEK NEAR BOCA, CALIF.

LOCATION.--Lat 39°22'10", long 120°07'10", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.32, T.18 N., R.17 E., Nevada County, on left bank 0.2 mile upstream from mouth, 1.0 mile downstream from Prosser Creek Dam, and 2 miles southwest of Boca.

DRAINAGE AREA.--53.6 sq mi.

PERIOD OF RECORD.--October 1902 to June 1903 (gage heights only), October 1942 to December 1950, June 1951 to current year. 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. Monthly discharge only for October 1942 to December 1950, published in WSP 1734.

GAGE.--Water-stage recorder. Datum of gage is 5,572.62 ft above mean sea level (levels by Bureau of Reclamation). April 1889 to November 1890 and October 1902 to June 1903, nonrecording gages at same site at different datums. October 1942 to December 1950, water-stage recorder at approximately same site at different datum. June 1951 to September 1956, water-stage recorder at present site at datum 2.00 ft higher.

AVERAGE DISCHARGE (adjusted for storage).--28 years (1942-50, 1951-71), 87.2 cfs (63,180 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 880 cfs May 12 (gage height, 5.10 ft); minimum, 2.4 cfs Nov. 2. 1942 to current year: Maximum discharge, 4,560 cfs Dec. 23, 1955 (gage height, 10.13 ft, present datum), from rating curve extended above 910 cfs on basis of slope-area measurement of peak flow; maximum gage height, 11.0 ft, from floodmarks, (present datum) Nov. 20, 1950 (discharge, 4,320 cfs by slope-area measurement); minimum discharge, 0.4 cfs July 18, 1961, result of work on dam upstream.

REMARKS.--Records good. Flow regulated by Prosser Creek Dam since Jan. 31, 1963.

REVISIONS.--WSP 2127: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	10	91	27	50	56	212	19	230	14	68	19
2	121	9.6	56	27	58	55	214	20	163	15	64	18
3	121	11	27	27	58	55	217	20	125	28	60	17
4	122	11	28	27	58	55	218	20	56	46	56	17
5	139	12	28	27	58	55	218	19	15	69	54	17
6	147	11	28	38	58	55	218	18	15	86	50	16
7	194	11	47	44	57	55	221	179	15	102	47	15
8	219	11	59	44	57	55	222	269	15	114	44	15
9	158	11	59	44	57	55	171	268	121	122	43	15
10	125	11	59	44	57	55	142	516	187	125	40	14
11	127	10	59	45	58	56	142	646	188	127	38	14
12	110	10	59	45	58	58	145	796	188	125	36	14
13	156	39	59	45	58	57	145	865	188	123	35	14
14	215	60	58	43	59	56	69	860	188	128	32	14
15	178	59	59	44	59	57	21	859	186	122	30	125
16	96	59	59	44	60	57	20	855	186	123	29	192
17	98	59	57	45	88	57	21	849	187	125	27	190
18	99	60	57	46	105	56	19	838	134	137	26	190
19	99	60	57	46	104	57	18	679	101	139	25	190
20	102	60	57	104	104	57	18	598	101	142	28	208
21	186	60	57	139	103	58	18	480	48	135	29	218
22	236	60	57	139	73	40	18	415	15	127	27	216
23	242	60	56	139	55	31	19	415	14	119	25	216
24	230	61	56	139	56	32	19	323	14	109	24	234
25	228	84	56	139	56	34	19	272	14	102	24	244
26	171	92	56	80	56	154	21	274	14	94	23	244
27	134	136	56	44	56	214	20	277	14	90	23	244
28	90	163	39	44	56	211	19	275	14	84	22	242
29	61	159	28	44	-----	214	19	275	14	80	22	216
30	31	113	28	44	-----	215	19	276	14	75	21	248
31	10	-----	28	44	-----	213	-----	247	-----	72	19	-----
TOTAL	4,364	1,572.6	1,580	1,851	1,832	2,535	2,862	12,722	2,764	3,099	1,091	3,636
MEAN	141	52.4	51.0	59.7	65.4	81.8	95.4	410	92.1	100	35.2	121
MAX	242	163	91	139	105	215	222	865	230	142	68	248
MIN	10	9.6	27	27	50	31	18	18	14	14	19	14
AC-FT	8,660	3,120	3,130	3,670	3,630	5,030	5,680	25,230	5,480	6,150	2,160	7,210
MEAN a	11.7	61.5	50.7	59.4	63.4	98.1	241	368	310	128	23.3	13.9
AC-FT a	720	3,660	3,120	3,650	3,520	6,030	14,330	22,630	18,470	7,870	1,430	830

CAL YR 1970	TOTAL 38,549.4	MEAN 106	MAX 242	MIN 8.8	AC-FT 76,460	MEAN a 106	AC-FT a 76,750
WTR YR 1971	TOTAL 39,908.6	MEAN 109	MAX 865	MIN 9.6	AC-FT 79,160	MEAN a 119	AC-FT a 86,270

a Adjusted for change in storage in Prosser Creek Reservoir.

## 10342000 LITTLE TRUCKEE RIVER NEAR HOBART MILLS, CALIF.

LOCATION.--Lat 39°30'05", long 120°16'35", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.14, T.19 N., R.15 E., Sierra County, on left bank 0.5 mile upstream from Independence Creek and 7.5 miles northwest of Hobart Mills.

DRAINAGE AREA.--36.5 sq mi.

PERIOD OF RECORD.--December 1946 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,290 ft (from topographic map). Prior to Nov. 9, 1962, at site 100 ft downstream at datum 0.63 ft lower. Nov. 9, 1962, to Dec. 22, 1964, at site 100 ft downstream at datum 0.78 ft lower. Dec. 23, 1964, to Aug. 5, 1965, twice monthly observations referred to bridge 75 ft upstream at present datum.

AVERAGE DISCHARGE.--24 years (1947-71), 91.0 cfs (65,930 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,200 cfs June 26 (gage height, 4.53 ft); minimum, 1.6 cfs Sept. 6. Period of record: Maximum discharge, 7,910 cfs Feb. 1, 1963 (gage height, 7.76 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurements at gage heights 6.97 and 7.68 ft (adjusted to datum used in 1963); minimum, 0.40 cfs Oct. 19, 1966.

REMARKS.--Records good except those for winter months, which are fair. One transmountain diversion to Sierra Valley above station.

REVISIONS.--WSP 2127: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	7.5	37	26	49	38	77	215	243	319	40	3.6
2	1.9	7.5	40	23	47	35	77	252	215	314	35	3.6
3	2.1	7.5	36	20	44	38	81	248	239	293	32	3.6
4	2.1	9.5	42	18	45	37	89	227	288	275	23	3.6
5	2.1	44	49	17	46	35	101	223	368	270	10	2.1
6	2.1	33	39	17	42	30	121	227	466	261	9.5	1.7
7	2.1	18	35	18	42	36	118	227	554	248	8.5	2.6
8	2.1	16	34	19	42	36	113	334	619	231	8.0	2.6
9	2.1	25	35	20	42	36	121	319	602	211	7.5	2.6
10	2.1	36	34	22	42	35	126	385	602	200	7.5	2.8
11	2.1	23	34	22	43	34	110	446	637	172	6.5	2.8
12	2.3	42	32	25	44	40	113	473	628	159	6.0	2.6
13	2.3	28	32	28	50	44	134	570	655	149	5.4	2.6
14	2.3	25	32	27	53	46	159	586	610	153	5.1	2.8
15	2.3	23	33	28	57	42	189	594	619	156	5.1	3.9
16	2.3	20	60	32	55	36	207	570	664	156	5.1	3.9
17	2.3	19	99	35	53	34	196	466	673	175	4.8	3.6
18	2.3	17	75	55	50	35	156	440	619	215	4.8	3.9
19	2.5	16	47	73	50	35	137	459	628	165	4.5	3.9
20	3.0	15	37	73	50	39	140	509	637	149	4.5	3.9
21	3.3	15	34	69	49	39	129	523	562	132	4.2	3.9
22	5.1	15	35	64	47	37	113	379	502	110	4.2	3.9
23	9.5	15	34	62	43	49	108	390	473	94	4.2	3.6
24	9.0	20	30	62	43	57	105	538	434	81	4.2	3.6
25	7.5	159	28	65	43	62	96	682	402	73	4.5	3.9
26	7.5	105	25	65	41	89	92	700	658	67	4.2	4.2
27	6.0	67	25	61	40	89	89	570	673	60	4.2	4.5
28	6.0	47	26	57	42	75	101	421	428	57	3.9	4.5
29	6.0	49	25	55	-----	77	126	362	339	52	3.9	4.5
30	6.5	39	23	52	-----	85	159	350	319	47	3.6	6.0
31	7.0	-----	24	50	-----	81	-----	288	-----	43	3.6	-----
TOTAL	117.7	963.0	1,171	1,260	1,294	1,481	3,683	12,973	15,356	5,087	277.5	105.3
MEAN	3.80	32.1	37.8	40.6	46.2	47.8	123	418	512	164	8.95	3.51
MAX	9.5	159	99	73	57	89	207	700	673	319	40	6.0
MIN	1.9	7.5	23	17	40	30	77	215	215	43	3.6	1.7
AC-FT	233	1,910	2,320	2,500	2,570	2,940	7,310	25,730	30,460	10,090	550	209

CAL YR 1970 TOTAL 35,368.6 MEAN 96.9 MAX 2,080 MIN 1.8 AC-FT 70,150  
WTR YR 1971 TOTAL 43,768.5 MEAN 120 MAX 700 MIN 1.7 AC-FT 86,810

## PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-13	2100	4.08	682	6-16	2300	4.18	780
5-25	2300	4.22	822	6-26	2000	4.53	1,200

## PYRAMID AND WINNEMUCCA LAKES BASIN

10343000 INDEPENDENCE CREEK NEAR TRUCKEE, CALIF.

LOCATION.--Lat 39°27'20", long 120°17'15", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.35, T.19 N., R.15 E., Sierra County, on left bank 0.3 mile downstream from Independence Lake outlet, 6.5 miles northwest of Hobart Mills, and 10 miles north-northwest of Truckee.

DRAINAGE AREA.--7.63 sq mi.

PERIOD OF RECORD.--November 1902 to September 1907, November 1909 to June 1910, August 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,940 ft (from topographic map). July 1, 1904, to June 30, 1910, water-stage recorder 75 ft downstream from Independence Lake outlet; prior to July 1, 1904, water-stage recorder 600 ft downstream at approximately same datum.

AVERAGE DISCHARGE (unadjusted).--8 years (1902-7, 1968-71), 35.4 cfs (25,650 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 174 cfs June 20 (gage height, 4.79 ft); minimum daily, 2.1 cfs Oct. 31, Nov. 1, 2.

Period of record: Maximum discharge observed, 286 cfs June 23, 1907 (gage height, 3.9 ft, site and datum then in use); no flow Sept. 28 to Nov. 10, 1905, June 1, 1906.

REMARKS.--Records excellent. Flow regulated by Independence Lake (usable capacity, 17,300 acre-ft in 1950).

REVISIONS.--WSP 2127: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.1	11	10	10	11	11	13	89	116	16	7.6
2	3.6	2.1	11	10	10	11	11	13	89	97	15	6.7
3	3.6	2.4	11	10	10	11	11	13	69	88	15	6.7
4	3.6	2.4	11	10	10	11	11	13	45	69	15	6.7
5	3.6	47	10	9.8	10	11	11	13	39	61	14	5.9
6	3.6	101	10	9.8	10	11	11	13	39	61	13	5.4
7	3.6	109	11	9.8	11	11	11	13	40	61	12	5.4
8	3.8	108	11	9.8	11	11	11	14	47	62	10	38
9	3.8	108	11	10	11	12	11	15	54	62	9.5	54
10	4.0	108	10	9.8	10	12	11	16	59	53	9.5	54
11	3.8	107	10	10	10	12	11	16	83	45	9.0	54
12	4.0	106	10	10	10	13	12	16	103	45	9.0	54
13	4.0	105	10	9.0	11	11	12	18	127	45	8.7	54
14	4.2	104	10	10	11	11	12	18	130	45	9.0	53
15	4.2	103	11	11	11	11	12	19	130	45	8.4	54
16	4.2	102	12	11	11	11	12	18	130	45	8.1	54
17	3.8	101	10	10	11	11	12	25	131	40	8.1	53
18	4.0	100	10	10	11	11	12	33	132	38	8.1	53
19	3.8	100	9.6	10	11	11	12	46	141	38	7.8	53
20	3.4	99	10	10	11	11	12	43	161	38	7.3	52
21	3.2	97	11	10	11	11	12	30	165	38	7.3	52
22	3.1	97	10	10	11	11	12	49	165	38	7.0	52
23	3.1	96	10	10	11	11	12	70	159	38	6.7	51
24	2.9	95	10	10	11	11	12	75	128	35	6.7	52
25	2.4	97	10	10	11	11	12	80	120	24	6.7	51
26	2.4	96	10	10	11	11	12	79	120	24	6.4	51
27	2.2	51	10	10	11	11	12	78	118	24	6.7	51
28	2.2	11	10	10	11	11	12	88	118	24	7.0	50
29	2.2	10	11	10	-----	11	12	98	117	24	7.0	50
30	2.2	11	10	10	-----	11	12	96	117	24	7.3	50
31	2.1	-----	10	10	-----	11	-----	92	-----	20	7.3	-----
TOTAL	104.0	2,278.0	321.6	310.0	299	346	349	1,223	3,165	1,467	288.6	1,234.4
MEAN	3.35	75.9	10.4	10.0	10.7	11.2	11.6	39.5	106	47.3	9.31	41.1
MAX	4.2	109	12	11	11	13	12	98	165	116	16	54
MIN	2.1	2.1	9.6	9.0	10	11	11	13	39	20	6.4	5.4
AC-FT	206	4,520	638	615	593	686	692	2,430	6,280	2,910	572	2,450
CAL YR 1970	TOTAL	9,462.6	MEAN	25.9	MAX	109	MIN	2.1	AC-FT	18,770		
WTR YR 1971	TOTAL	11,385.6	MEAN	31.2	MAX	165	MIN	2.1	AC-FT	22,580		

## 10343500 SAGEHEN CREEK NEAR TRUCKEE, CALIF.

LOCATION.--Lat 39°25'54", long 120°14'07", in NE 1/4 sec. 7, T.18 N., R.16 E., Nevada County, on left bank 2.2 miles upstream from bridge on State Highway 89 and 7.5 miles north of Truckee.

DRAINAGE AREA.--10.8 sq mi.

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,320 ft (from topographic map). Prior to Dec. 2, 1953, nonrecording gage at site 100 ft upstream at different datum.

AVERAGE DISCHARGE.--18 years, 12.6 cfs (9,130 acre-ft per year); median of yearly mean discharges, 10 cfs (7,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 165 cfs May 15 (gage height, 3.38 ft); minimum daily, 2.9 cfs Oct. 1, 14, 15.

Period of record: Maximum discharge, 765 cfs Feb. 1, 1963 (gage height, 4.64 ft, from floodmarks), from rating curve extended above 110 cfs on basis of slope-area measurement at gage height 4.28 ft; minimum, 0.6 cfs Aug. 8, 1960, Aug. 7, 1961, result of temporary regulation.

REMARKS.--Records good. No storage or diversion above station. Records of chemical analyses and suspended-sediment discharge for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	3.9	7.1	5.0	6.1	5.4	15	43	48	32	6.8	3.9
2	3.0	3.8	6.5	5.0	6.1	5.9	15	49	46	30	6.5	3.9
3	3.0	3.8	6.9	4.5	5.6	5.7	16	54	47	29	6.2	3.9
4	3.0	5.9	7.9	4.0	5.9	5.4	18	51	50	27	6.0	3.8
5	3.0	20	6.9	4.0	5.6	5.2	22	54	54	26	5.9	3.7
6	3.0	9.2	6.7	4.5	5.9	5.2	25	50	57	24	5.7	3.7
7	3.1	6.5	6.5	4.8	5.7	5.2	24	54	61	23	5.5	3.7
8	3.1	5.9	7.3	5.0	5.7	5.2	23	71	62	21	5.3	3.7
9	3.2	7.5	7.5	5.0	5.7	5.2	26	75	60	20	5.3	3.6
10	3.1	7.3	6.7	5.2	5.6	5.2	26	88	60	19	5.2	3.5
11	3.1	7.3	6.4	5.2	6.3	5.3	25	87	59	18	5.5	3.5
12	3.1	7.3	6.2	5.0	6.6	5.1	30	94	59	17	5.4	3.4
13	3.1	5.6	6.1	6.5	7.1	5.4	33	116	58	16	4.9	3.3
14	2.9	5.3	5.9	12	7.4	5.1	36	117	57	15	4.7	3.3
15	2.9	5.0	5.8	5.9	7.7	5.1	42	119	57	14	4.6	3.3
16	3.0	5.0	5.6	5.2	7.4	5.2	45	102	59	13	4.5	3.3
17	3.0	4.8	6.0	8.7	7.0	5.3	37	85	58	24	4.4	3.4
18	3.2	4.6	5.8	10	6.8	5.1	29	80	57	21	4.4	3.5
19	3.2	4.4	5.7	9.2	6.3	5.2	29	82	57	16	4.3	3.5
20	4.1	4.3	5.7	8.9	6.3	5.8	28	87	56	15	4.2	3.5
21	3.8	4.4	5.7	8.1	6.1	6.3	24	80	54	13	4.1	3.6
22	4.3	4.6	5.5	7.6	6.1	6.9	22	72	51	12	4.1	3.5
23	4.2	4.7	5.5	7.0	6.1	11	23	76	49	11	4.2	3.5
24	4.2	9.2	5.2	6.8	6.1	11	22	86	46	10	4.2	3.5
25	3.9	38	5.4	6.5	6.1	14	20	92	43	9.6	4.3	3.6
26	3.7	14	5.2	6.5	5.9	25	19	93	69	9.1	4.4	4.0
27	3.5	9.4	5.2	6.3	5.6	18	20	84	54	8.6	4.5	4.0
28	3.5	7.8	5.2	6.3	5.7	16	23	70	44	8.3	4.1	3.9
29	3.6	8.0	5.0	6.3	-----	17	29	66	38	7.8	4.0	4.2
30	3.8	6.7	5.0	6.3	-----	18	36	63	35	7.6	3.9	4.5
31	4.0	-----	5.0	6.1	-----	16	-----	54	-----	7.0	3.9	-----
TOTAL	104.5	234.2	187.1	197.4	175.7	265.4	782	2,354	1,605	524.0	151.0	109.7
MEAN	3.37	7.81	6.04	6.37	6.28	8.56	26.1	77.2	53.5	16.9	4.87	3.66
MAX	4.3	38	7.9	12	7.7	25	45	119	69	32	6.8	4.5
MIN	2.9	3.8	5.0	4.0	5.7	5.1	15	43	35	7.0	3.9	3.3
AC-FT	207	465	371	392	349	526	1,550	4,750	3,180	1,040	300	218

CAL YR 1970 TOTAL 5,499.7 MEAN 15.1 MAX 153 MIN 2.9 AC-FT 10,510  
WTR YR 1971 TOTAL 6,730.0 MEAN 18.4 MAX 119 MIN 2.9 AC-FT 13,350

PEAK DISCHARGE (BASE, 50 CFS)							
DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1330	2.68	60	6-7	1915	2.79	72
4-15	1745	2.66	56	6-26	1615	3.15	126
5-15	1730	3.38	165	7-17	2045	2.89	83
5-27	1345	3.02	100				

Peaks for water year 1969 not previously published:

PEAK DISCHARGE (BASE, 50 CFS)							
DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
1-20	1700	2.76	60	5-13	1530	3.70	243
4-22	1830	2.89	82				

## PYRAMID AND WINNEMUCCA LAKES BASIN

10344300 Stampede Reservoir near Boca, Calif.

LOCATION.--Lat 39°28'15", long 120°06'15", in SE  $\frac{1}{4}$  sec. 29, T.19 N., R.17 E., Sierra County, in control house on Stampede Dam on Little Truckee River, just downstream from mouth of Davies Creek and 6.2 miles north of Boca.

DRAINAGE AREA.--136 sq mi.

PERIOD OF RECORD.--August 1969 to current year.

GAGE.--Water-stage recorder with mercury-column manometer. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Current year: Maximum contents, 182,500 acre-ft (elevation, 5,935.6 ft) July 20; minimum, 86,530 acre-ft (elevation, 5,896.2 ft) several days in October and November.

Period of record: Maximum contents, 182,500 acre-ft (elevation, 5,935.6 ft) July 20, 1971; minimum, (since June, 1970), 86,530 acre-ft (elevation, 5,896.2 ft) several days in October and November 1970.

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 storage, 5,010 acre-ft (includes 660 acre-ft dead storage) below elevation 5,798.3 ft. Elevation of streambed at dam axis, 5,737.0 ft. Figures given herein represent total contents. Reservoir is used for flood control, municipal water supply, enhancement of fishery, and recreation.

COOPERATION.--Records furnished by Bureau of Reclamation.

## MONTH-END ELEVATIONS AND TOTAL CONTENTS AT 0800 HOURS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Oct. 31 . . . . .	5,896.2	86,590	-1,110
Nov. 30 . . . . .	5,898.9	91,710	+5,120
Dec. 31 . . . . .	5,900.6	95,000	+3,290
Calendar year 1970 . . . . .	-	-	+75,630
Jan. 31 . . . . .	5,902.4	98,690	+3,690
Feb. 28 . . . . .	5,904.4	102,700	+4,010
Mar. 31 . . . . .	5,908.2	110,900	+8,200
Apr. 30 . . . . .	5,915.1	127,000	+16,100
May 31 . . . . .	5,927.1	158,000	+31,000
June 30 . . . . .	5,934.0	177,800	+19,800
July 31 . . . . .	5,934.9	180,500	+2,700
Aug. 31 . . . . .	5,931.2	169,600	-10,900
Sept. 30 . . . . .	5,923.8	149,000	-20,600
Water year 1970-71 . . . . .	-	-	+61,300

LOCATION.--Lat 39°26'10", long 120°05'00", in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.3, T.18 N., R.17 E., Nevada County, on left bank 1 mile upstream from Boca Reservoir, 1.5 miles upstream from Dry Creek, and 3.5 miles north of Boca.

PERIOD OF RECORD.--June 1903 to October 1910, September 1939 to current year. Published as "at Pine Station" June 1903 to December 1907 and as "at Starr" January 1908 to October 1910. Monthly discharge only for some periods, published in WSP 1314 and 1734.

AVERAGE DISCHARGE (adjusted for storage),--39 years (1903-10, 1939-71), 196 cfs (142,000 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 623 cfs Sept. 11 (gage height, 2.23 ft); minimum daily, 29 cfs Sept. 1-6.  
Period of record: Maximum discharge, 13,300 cfs Feb. 1, 1963 (gage height, 9.00 ft), from rating curve extended above 1,600 cfs on basis of slope-area measurement of peak flow; minimum daily, 0.30 cfs Sept. 16-21, 1969.

REMARKS.--Records excellent. Flow regulated by Independence Lake (capacity, 17,500 acre-ft) and one transmountain diversion to Sierra Valley and Stampede Reservoir (capacity, 226,500 acre-ft).

REVISIONS (WATER YEARS).--WSP 1564: 1903-4, 1906-7, 1910, drainage area at site used 1903-7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	30	37	35	37	37	67	434	537	427	241	29
2	30	31	38	35	37	36	67	437	537	426	242	29
3	30	31	36	35	37	37	68	285	478	425	241	29
4	30	31	37	35	37	37	70	138	427	424	242	29
5	30	35	36	35	37	37	73	251	427	247	241	29
6	30	32	36	35	37	37	74	348	426	93	241	29
7	30	55	36	35	38	37	73	347	427	91	241	114
8	30	82	37	35	38	37	70	354	427	90	241	295
9	30	91	37	35	38	37	70	348	427	90	241	515
10	30	92	37	36	38	37	71	348	427	90	241	621
11	30	96	36	36	39	38	67	352	427	90	241	623
12	30	93	36	37	40	44	67	352	427	135	241	622
13	30	86	36	36	40	46	67	352	427	185	241	619
14	30	96	36	36	41	40	157	351	427	185	241	617
15	30	96	36	36	41	39	287	350	427	185	241	558
16	30	96	39	36	41	40	320	349	427	185	187	400
17	30	96	36	41	40	42	318	348	427	188	134	398
18	30	96	35	42	39	42	313	347	427	186	134	398
19	30	96	35	41	39	42	389	346	427	185	134	398
20	31	96	35	40	38	44	464	347	427	179	134	398
21	31	96	35	38	38	48	463	348	427	199	134	398
22	31	96	35	37	38	52	463	348	427	199	133	398
23	31	65	35	37	38	64	518	344	427	228	134	398
24	31	37	35	37	37	66	559	394	427	262	134	397
25	30	41	35	37	37	77	560	439	427	262	134	397
26	30	39	35	37	36	97	506	439	427	236	75	397
27	30	37	35	37	36	77	463	496	427	198	30	398
28	30	38	35	37	37	71	404	544	427	196	30	397
29	30	37	35	37	-----	75	330	544	426	177	30	398
30	30	37	35	37	-----	81	384	539	427	142	30	445
31	31	-----	35	37	-----	72	-----	537	-----	186	30	-----
TOTAL	936	1,980	1,112	1,140	1,069	1,566	7,802	11,756	13,079	6,391	5,234	10,773
MEAN	30.2	66.0	35.9	36.8	38.2	50.5	260	379	436	206	169	359
MAX	31	96	39	42	41	97	560	544	537	427	242	623
MIN	30	30	35	35	36	36	67	138	426	90	30	29
AC-FT	1,860	3,930	2,210	2,260	2,120	3,110	15,480	23,320	25,940	12,680	10,380	21,370

CAL YR 1970	TOTAL 33,623.6	MEAN 92.1	MAX 462	MIN 1.2	AC-FT 66,690
WTR YR 1971	TOTAL 62,838.0	MEAN 172	MAX 623	MIN 29	AC-FT 124,600

## PYRAMID AND WINNEMUCCA LAKES BASIN

## 10344490 BOCA RESERVOIR AT BOCA, CALIF.

LOCATION.--Lat 39°23'20", long 120°05'40", in NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.28, T.18 N., R.17 E., Nevada County, in control house at Boca Dam on Little Truckee River 1,800 ft upstream from mouth and 0.5 mile northwest of Boca.

DRAINAGE AREA.--172 sq mi.

PERIOD OF RECORD.--December 1938 to current year. Monthend contents only for December 1938 to September 1957, published in WSP 1734.

GAGE.--Pressure gage with mercury column read once daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Current year: Maximum contents, 40,900 acre-ft June 28 (elevation, 5,605.00 ft); minimum, 26,750 acre-ft Oct. 1 (elevation, 5,589.05 ft).

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).

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 8, 1938. Usable capacity, 40,900 acre-ft between elevations 5,521 (outlet sill) and 5,605 ft (top of spillway gates). Elevation of spillway (gate open) is 5,589.01 ft. Dead storage, 240 acre-ft. Figures given herein represent usable contents. Water is used for irrigation in the State of Nevada and for power development.

COOPERATION.--Daily elevations furnished by Washoe County Water Conservation District.

REVISIONS.--WSP 1634: Drainage area.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

5,580	20,020
5,590	27,510
5,600	36,150
5,605	40,900

## CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26,750	28,040	31,900	32,380	32,160	32,340	32,560	33,700	37,500	40,800	39,730	34,240
2	26,790	28,080	31,990	32,380	32,250	32,380	32,290	33,790	37,730	40,850	39,780	34,330
3	26,830	28,120	32,120	32,290	32,340	32,380	32,600	33,970	38,010	40,850	39,680	34,330
4	26,910	28,200	32,210	32,250	32,380	32,380	32,950	34,200	38,010	40,850	39,490	34,200
5	26,910	28,320	32,210	31,990	32,380	32,380	33,260	34,420	38,110	40,800	39,400	34,060
6	26,990	28,410	32,210	31,820	32,340	32,380	33,350	34,960	38,160	40,800	39,250	33,920
7	26,990	28,490	32,210	31,640	32,290	32,380	33,350	35,460	38,160	40,800	39,010	33,560
8	27,070	28,650	32,250	31,470	32,290	32,340	33,300	35,690	38,200	40,800	38,820	33,260
9	27,070	28,740	32,250	31,220	32,250	32,340	33,260	35,820	38,200	40,800	38,630	33,300
10	27,110	28,940	32,290	31,090	32,210	32,340	33,080	35,920	38,250	40,800	38,440	33,300
11	27,110	29,110	32,290	30,830	32,290	32,340	32,820	35,960	38,250	40,800	38,250	33,440
12	27,190	29,360	32,290	30,870	32,250	32,340	32,560	35,960	38,300	40,750	37,960	33,560
13	27,230	29,400	32,290	—	32,290	32,560	32,560	36,010	38,300	40,750	37,730	33,560
14	27,230	29,690	32,290	31,000	32,290	32,640	32,520	36,010	38,300	40,750	37,450	33,560
15	27,310	29,730	32,290	31,000	32,290	32,640	32,210	36,010	38,340	40,800	37,260	33,440
16	27,310	29,900	32,340	31,000	32,290	32,680	32,030	36,010	38,340	40,800	37,070	33,440
17	27,350	30,070	32,420	31,000	32,290	32,780	31,900	35,920	38,390	40,800	36,890	33,220
18	27,390	30,280	32,420	31,090	32,340	32,820	31,690	35,920	38,390	40,800	36,610	32,990
19	27,430	30,400	32,420	31,260	32,340	32,820	31,510	35,920	38,390	40,750	36,380	32,820
20	27,510	30,570	32,470	31,300	32,340	32,860	31,690	35,920	38,390	40,750	36,100	32,640
21	27,590	30,740	32,470	31,470	32,340	32,910	31,770	35,870	38,390	40,750	35,780	32,600
22	27,630	30,960	32,470	31,470	32,380	32,990	32,120	35,820	38,390	40,750	35,460	32,420
23	27,630	31,090	32,470	31,510	32,380	33,040	32,420	35,820	38,390	40,750	35,180	32,290
24	27,670	31,260	32,470	31,600	32,380	33,120	32,560	35,780	38,580	40,700	34,920	32,080
25	27,750	31,260	32,470	31,690	32,420	33,170	32,640	35,870	39,060	40,560	34,690	31,990
26	27,800	31,470	32,560	31,860	32,420	33,300	32,820	35,960	39,830	40,410	34,510	31,820
27	27,800	31,470	32,640	31,860	32,420	33,260	33,080	36,060	40,360	40,220	34,150	31,690
28	27,840	31,600	32,640	31,990	32,420	33,120	33,260	36,330	40,900	40,070	34,150	31,470
29	27,880	31,690	32,730	31,990	-----	32,990	33,520	36,700	40,800	39,980	34,200	31,260
30	28,000	31,770	32,600	32,080	-----	32,950	33,610	36,980	40,800	39,730	34,240	31,090
31	28,000	-----	32,470	32,120	-----	32,820	-----	37,220	-----	39,640	34,280	-----
MAX	28,000	31,770	32,730	32,380	32,420	33,300	33,610	37,220	40,900	40,850	39,780	34,330
MIN	26,750	28,040	31,900	30,830	32,160	32,340	31,510	33,700	37,500	39,640	34,150	31,090
(†)	5,590.60	5,595.10	5,595.90	5,595.50	5,595.85	5,596.30	5,597.20	5,601.15	5,604.90	5,603.70	5,597.95	5,594.30
(*)	+1,330	+3,770	+700	-350	+300	+400	+790	+3,610	+3,580	-1,160	-5,360	-3,190
CAL YR 1970	MAX 32,730	MIN 18,620	± +10,430									
WTR YR 1971	MAX 40,900	MIN 26,750	± +4,420									

† ELEVATION, IN FEET, AT END OF MONTH.

\* CHANGE IN CONTENTS, IN ACRE-FEET.



## 10344500 LITTLE TRUCKEE RIVER AT BOCA, CALIF.

LOCATION.--Lat 39°23'10", long 120°05'40", in NE $\frac{1}{4}$  sec. 28, T.18 N., R.17 E., Nevada County, on right bank 800 ft upstream from mouth, 1,000 ft downstream from Boca Dam, and 0.3 mile northwest of Boca.

DRAINAGE AREA.--172 sq mi.

PERIOD OF RECORD.--April to October 1890 (monthly discharge only), January 1911 to September 1915, January 1939 to current year. Monthly discharge only for January 1939 to September 1957, published in WSP 1734.

GAGE.--Water-stage recorder. Altitude of gage is 5,500 ft (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.

AVERAGE DISCHARGE (unadjusted).--36 years (1911-15, 1939-71), 187 cfs (135,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 706 cfs Sept. 13 (gage height, 3.89 ft); minimum daily, 0.29 cfs Oct. 1.

Period of record: Maximum discharge, 8,800 cfs Dec. 24, 1955, from records of Washoe County Water Conservation District; no flow many days in most years.

REMARKS.--Records excellent. Flow regulated by Boca Reservoir (capacity, 40,900 acre-ft), Independence Lake (capacity, 17,500 acre-ft), one transmountain diversion to Sierra Valley, and Stampede Reservoir (capacity, 220,200 acre-ft).

REVISIONS.--WSP 1564: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	1.6	2.1	71	2.9	38	323	424	394	409	188	2.1
2	2.4	1.7	2.1	34	2.9	37	122	430	397	424	258	2.1
3	1.7	1.7	20	34	8.2	37	3.0	253	400	430	298	57
4	1.6	1.5	30	101	54	38	3.0	104	400	430	308	97
5	1.6	1.6	30	145	54	38	122	98	400	220	310	96
6	1.6	1.5	30	145	53	38	206	101	400	91	328	150
7	1.5	1.3	33	145	53	38	245	245	400	72	335	258
8	1.5	1.5	30	142	53	38	260	333	403	72	338	355
9	1.5	1.5	30	138	53	38	295	335	403	78	335	520
10	1.5	1.6	30	138	44	38	318	355	403	77	333	592
11	1.5	1.7	29	63	37	38	310	370	403	77	352	600
12	1.5	1.7	29	2.4	37	38	243	370	403	142	358	604
13	1.5	1.7	28	2.5	37	38	188	370	403	171	355	634
14	1.5	1.7	28	2.4	37	38	373	370	403	171	352	697
15	1.5	1.7	28	2.4	38	38	483	370	403	171	295	576
16	1.5	1.8	28	2.4	38	38	476	367	406	186	260	497
17	1.6	2.0	28	2.5	38	38	469	367	406	201	255	490
18	1.6	2.0	28	2.5	38	38	458	367	406	199	253	479
19	1.6	1.8	27	2.5	38	45	415	367	403	199	250	472
20	1.6	1.8	26	2.7	38	52	403	364	403	199	268	465
21	1.6	1.5	26	2.7	38	52	364	364	412	186	278	458
22	1.6	1.3	27	2.7	38	80	323	364	412	199	273	479
23	1.6	1.5	27	2.7	38	129	437	364	335	263	268	486
24	1.6	1.7	27	2.7	38	145	532	364	213	310	263	476
25	1.6	2.1	27	2.9	38	204	540	367	124	318	230	465
26	1.6	1.8	27	2.9	38	313	469	370	98	315	225	458
27	1.6	2.0	27	2.9	38	355	400	373	98	275	90	493
28	1.6	2.1	27	2.9	38	346	349	379	400	255	1.8	497
29	1.6	2.1	64	2.9	-----	340	305	385	409	250	1.8	520
30	1.5	2.1	93	2.9	-----	335	376	391	409	208	1.7	576
31	1.5	-----	93	2.9	-----	330	-----	391	-----	186	1.8	-----
TOTAL	47.99	51.6	981.2	1,209.4	1,058.0	3,408	9,810.0	10,472	10,949	6,784	7,663.1	12,551.2
MEAN	1.55	1.72	31.7	39.0	37.8	110	327	338	365	219	247	418
MAX	2.4	2.1	93	145	54	355	540	430	412	430	358	697
MIN	.29	1.3	2.1	2.4	2.9	37	3.0	98	98	72	1.7	2.1
AC-FT	95	102	1,950	2,400	2,100	6,760	19,460	20,770	21,720	13,460	15,200	24,900
CAL YR 1970	TOTAL	32,261.58	MEAN	88.4	MAX	432	MIN	.15	AC-FT	63,990		
WTR YR 1971	TOTAL	64,985.49	MEAN	178	MAX	697	MIN	.29	AC-FT	128,900		

## PYRAMID AND WINNEMUCCA LAKES BASIN

10346000 TRUCKEE RIVER AT FARAD, CALIF.

LOCATION.--Lat 39°25'41", long 120°01'59", in NE $\frac{1}{4}$  sec.12, T.18 N., R.17 E., Nevada County, on left bank 0.5 mile upstream from Mystic Canyon, 0.7 mile downstream from Farad powerplant, 2.5 miles north of Floriston, 3.4 miles downstream from Bronco Creek, and 3.5 miles upstream from California-Nevada State line.

DRAINAGE AREA.--932 sq mi.

PERIOD OF RECORD.--March to October 1890 (monthly discharge only), September 1899 to current year. 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. Monthly discharge only for January 1944 to July 1957, published in WSP 1734.

GAGE.--Water-stage recorder. Datum of gage is 5,153.21 ft above mean sea level (Bureau of Reclamation bench mark). March to October 1890, nonrecording gage at site 7 miles upstream at different datum. Sept. 7, 1899, to May 31, 1909, nonrecording gage at approximately present location at different datum. June 1, 1909, to July 31, 1912, nonrecording gage at site 2.5 miles downstream at different datum. Aug. 1, 1912, to Dec. 31, 1937, water-stage recorder at site 4.1 miles upstream at different datum. Jan. 1, 1938, to Aug. 27, 1957, water-stage recorder at approximately present location at different datum.

AVERAGE DISCHARGE.--72 years (1899-71), 798 cfs (578,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,470 cfs June 26 (gage height, 6.36 ft); minimum, 267 cfs Nov. 5, 1899 to current year: Maximum discharge, 17,500 cfs Nov. 21, 1950 (gage height, 14.5 ft, present datum, from floodmarks), from slope-area measurement of peak flow; minimum, 28 cfs Dec. 18, 1930.

REMARKS.--Records excellent. Flow regulated by Lake Tahoe, Prosser Creek, Stampede and Boca Reservoirs, Donner and Independence Lakes, and by several powerplants. Records of chemical analyses for this station and chemical analyses and water temperatures for Truckee River at Floriston (11345900) are published in Part 2 of this report. No appreciable inflow between sampling point and gaging station.

REVISIONS.--WSP 1714: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	518	457	432	496	830	564	1,160	1,110	1,600	2,260	680	491
2	523	437	483	449	813	554	1,000	1,190	1,540	2,250	716	491
3	505	424	453	432	824	564	841	1,100	1,690	2,230	753	527
4	505	424	470	496	864	559	864	916	1,680	2,210	753	550
5	514	514	461	550	864	554	1,000	864	1,690	1,950	753	545
6	523	432	457	587	858	550	1,160	898	1,840	1,460	764	578
7	559	385	466	621	858	550	1,170	1,060	1,930	1,150	769	665
8	597	363	466	813	852	545	1,140	1,430	1,820	916	769	758
9	550	373	483	818	852	509	1,150	1,440	1,970	769	758	893
10	474	420	453	830	852	505	1,180	1,770	2,280	680	753	970
11	474	370	445	791	864	509	1,100	2,130	2,310	650	764	976
12	453	377	432	742	875	559	1,070	2,360	2,370	665	774	982
13	420	296	424	774	893	550	1,040	2,610	2,380	680	764	1,000
14	397	325	420	774	910	541	1,120	2,670	2,390	680	753	1,070
15	385	328	420	764	928	532	1,260	2,740	2,690	675	706	1,090
16	400	321	432	791	881	500	1,300	2,720	2,990	675	660	1,090
17	404	389	432	875	675	505	1,250	2,480	3,000	695	650	1,070
18	412	393	424	1,070	670	500	1,090	2,350	2,860	711	635	1,010
19	408	424	412	1,010	675	505	988	2,180	2,830	685	640	1,000
20	420	424	404	1,010	655	527	988	2,140	2,840	690	655	1,010
21	487	424	408	1,010	645	545	910	2,080	2,750	660	665	1,010
22	665	420	424	988	621	569	818	1,780	2,670	626	660	1,060
23	706	420	428	964	587	587	881	1,790	2,520	645	655	1,070
24	732	428	428	952	583	660	994	1,880	2,340	670	645	1,070
25	716	841	453	893	583	700	988	2,040	2,210	665	665	1,070
26	675	559	457	835	569	1,340	934	2,250	2,510	650	700	1,070
27	621	424	457	835	569	1,360	858	2,160	2,440	655	626	1,090
28	592	532	445	830	573	1,230	824	2,030	2,390	645	532	1,120
29	564	527	457	830	-----	1,210	830	1,960	2,340	706	527	1,160
30	569	474	487	830	-----	1,290	958	1,900	2,280	716	518	1,180
31	483	-----	500	830	-----	1,230	-----	1,770	-----	685	491	-----
TOTAL	16,251	12,925	13,813	24,490	21,223	21,403	30,866	57,798	69,150	30,004	21,153	27,666
MEAN	524	431	446	790	758	690	1,029	1,864	2,305	968	682	922
MAX	732	841	500	1,070	928	1,360	1,300	2,740	3,000	2,260	774	1,180
MIN	385	296	404	432	569	500	818	864	1,540	626	491	491
AC-FT	32,230	25,640	27,400	48,580	42,100	42,450	61,220	114,600	137,200	59,510	41,960	54,880
CAL YR 1970	TOTAL 350,129			MEAN 959	MAX 4,750	MIN 296	AC-FT 694,500					
WTR YR 1971	TOTAL 346,742			MEAN 950	MAX 3,000	MIN 296	AC-FT 687,800					

## 10348000 TRUCKEE RIVER AT RENO, NEV.

LOCATION.--Lat 39°31'55", long 119°47'05", in NW¼ sec.7, T.19 N., R.20 E., Washoe County, on left bank 400 ft downstream from Kietzke Lane bridge, 0.5 mile downstream from Scott Island, 1.5 miles east of Reno Post Office, and 5 miles upstream from Steamboat Creek.

DRAINAGE AREA.--1,067 sq mi.

PERIOD OF RECORD.--July 1906 to September 1921, June 1925 to September 1926, January 1930 to December 1935, January to December 1943, January 1946 to current year. Monthly discharge only for some periods, published in WSP 1314 and 1734.

GAGE.--Water-stage recorder. Datum of gage is 4,431.97 ft above mean sea level (levels by Corps of Engineers). July 1906 to September 1946, nonrecording gage at site 1 mile upstream at different datum.

AVERAGE DISCHARGE.--45 years (1906-21, 1925-26, 1930-34, 1946-71), 680 cfs (492,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,230 cfs June 27 (gage height, 6.59 ft); minimum, 153 cfs Oct. 16. Period of record: Maximum discharge, 20,800 cfs Dec. 23, 1955; maximum gage height, 13.83 ft Nov. 21, 1950; no flow Sept. 12, 14-24, 26-30, 1926.

REMARKS.--Records good until July 27 and poor thereafter. Flow regulated by Lake Tahoe, Prosser Creek, Stampede and Boca Reservoirs, Donner and Independence Lakes, and by several powerplants. Many diversions above station.

REVISIONS.--WSP 1714: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	229	425	410	475	870	553	1,150	852	1,510	2,050	440	202
2	227	410	505	420	884	537	1,050	962	1,370	2,040	460	199
3	218	395	445	377	864	550	787	1,000	1,530	2,030	460	209
4	209	395	560	385	905	541	815	764	1,480	2,000	465	279
5	212	480	485	505	912	542	910	665	1,430	1,830	468	300
6	238	485	465	520	905	524	1,150	701	1,540	1,280	481	350
7	247	357	475	565	898	530	1,160	766	1,710	969	486	450
8	312	323	500	798	898	527	1,120	1,260	1,570	658	489	600
9	308	315	505	822	891	496	1,110	1,260	1,690	556	501	800
10	229	381	455	884	898	481	1,170	1,490	2,020	396	513	850
11	212	334	430	828	912	482	1,050	2,010	2,050	350	493	850
12	218	345	410	739	926	592	1,020	2,210	2,100	326	530	850
13	191	254	400	780	947	577	1,040	2,420	2,160	346	538	800
14	199	251	395	780	975	545	1,080	2,440	2,160	336	548	800
15	189	280	385	768	996	526	1,180	2,500	2,410	335	480	800
16	184	267	420	786	989	500	1,260	2,540	2,740	342	380	820
17	194	308	410	1,120	712	498	1,200	2,310	2,790	380	360	820
18	207	338	395	1,270	690	483	1,050	2,180	2,680	429	350	800
19	209	361	385	1,180	690	481	895	1,980	2,600	378	360	800
20	212	373	395	1,140	670	507	836	1,890	2,640	367	380	794
21	229	357	381	1,160	660	532	781	2,020	2,530	445	411	754
22	435	345	385	1,090	642	562	626	1,620	2,430	336	392	851
23	550	345	410	1,050	590	640	600	1,600	2,330	303	386	913
24	591	341	405	1,020	571	745	766	1,690	2,130	334	376	889
25	575	762	430	975	577	707	783	1,830	2,000	327	407	906
26	555	717	435	877	549	1,650	765	2,160	2,140	308	480	913
27	470	390	440	870	554	1,530	641	2,110	2,370	309	534	922
28	470	530	430	870	564	1,330	623	1,950	2,140	330	298	938
29	445	565	415	858	-----	1,240	583	1,850	2,170	360	283	1,010
30	545	495	470	864	-----	1,340	671	1,780	2,070	380	251	1,090
31	470	-----	475	870	-----	1,280	-----	1,680	-----	420	213	-----
TOTAL	9,779	11,924	13,506	25,646	22,139	22,028	27,872	52,490	62,490	21,250	13,213	21,559
MEAN	315	397	436	827	791	711	929	1,693	2,083	685	426	719
MAX	591	762	560	1,270	996	1,650	1,260	2,540	2,790	2,050	548	1,090
MIN	184	251	381	377	549	481	583	665	1,370	303	213	199
AC-FT	19,400	23,650	26,790	50,870	43,910	43,690	55,280	104,100	123,900	42,150	26,210	42,760
CAL YR 1970	TOTAL 305,308	MEAN 836	MAX 5,470	MIN 184	AC-FT 605,600							
WTR YR 1971	TOTAL 303,896	MEAN 833	MAX 2,790	MIN 184	AC-FT 602,800							

NOTE.--Gage-height record after July 27 is doubtful because of construction of highway overpass in channel.

## HONEY LAKE BASIN

## 10356500 SUSAN RIVER AT SUSANVILLE, CALIF.

LOCATION.--Lat 40°25'03", long 120°40'15", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.31, T.30 N., R.12 E., Lassen County, on left bank 0.5 mile west of Susanville and 1.1 miles upstream from Piute Creek.

DRAINAGE AREA.--184 sq mi.

PERIOD OF RECORD.--June 1900 to December 1905 (gage height only. August 1901 to January 1903), March to May 1913 (gage heights, only), February 1917 to June 1921, October 1950 to current year. Published as "near Susanville" 1900-1905. Discharge records for August to December 1901 and January 1903, published in WSP 300, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder. Datum of gage is 4,225.72 ft above mean sea level. Prior to Oct. 1, 1950, nonrecording gages at several sites in vicinity of old powerplant 0.9 mile upstream at various datums.

AVERAGE DISCHARGE.--27 years (1900-1901, 1903-5, 1917-20, 1950-71), 99.8 cfs (72,310 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,520 cfs Mar. 26 (gage height, 6.10 ft), from rating curve extended as explained below; minimum daily, 7.8 cfs Oct. 1.

Period of record: Maximum discharge, 5,850 cfs Jan. 24, 1970 (gage height, 8.89 ft, 10.4 ft, from floodmarks), from rating curve extended above 1,000 cfs on basis of slope-area measurement at gage height 6.62 ft and contracted-opening measurement at gage height, 8.89 ft; no flow Aug. 15, 1961.

REMARKS.--Records good. Flow regulated by McCoy Flat Reservoir and Hog Flat Reservoir (combined usable capacity, 25,300 acre-ft). Diversions for irrigation of 1,400 acres above station. Records of chemical analyses for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	14	37	34	165	55	334	321	527	98	93	21
2	7.9	14	37	33	162	54	330	307	459	93	92	19
3	7.9	14	37	27	154	54	308	392	408	87	90	19
4	8.0	15	46	23	144	51	285	463	341	83	88	18
5	8.0	39	57	22	141	46	271	493	309	79	86	17
6	7.9	40	71	22	145	45	307	491	282	76	87	16
7	8.5	36	95	22	140	45	309	496	268	73	95	15
8	8.7	26	136	23	137	45	287	539	221	69	97	15
9	8.7	40	166	31	132	46	305	557	184	68	97	15
10	8.7	63	84	50	134	47	399	562	180	66	95	15
11	8.8	47	65	87	136	55	310	573	177	67	93	15
12	8.8	67	54	52	138	437	303	593	173	65	92	15
13	9.0	39	57	52	136	266	313	578	169	88	89	15
14	9.7	29	46	58	135	161	302	551	164	95	89	14
15	9.3	25	43	55	133	128	326	529	161	101	85	14
16	9.3	22	42	64	130	124	338	504	157	104	79	14
17	9.4	21	41	297	105	124	353	449	160	106	75	13
18	9.7	20	38	457	93	100	285	409	161	119	72	13
19	10	19	36	254	87	94	256	380	151	120	67	14
20	12	18	33	238	81	103	259	345	140	140	65	14
21	13	18	30	230	75	124	229	342	115	127	63	14
22	15	20	27	223	71	144	204	316	102	114	61	14
23	18	20	26	214	66	726	196	298	89	109	60	14
24	23	20	26	202	66	531	185	263	80	106	60	13
25	16	46	26	194	64	499	173	216	83	103	59	13
26	15	52	27	187	57	1,460	181	243	243	101	69	16
27	14	39	28	178	57	589	192	282	192	99	69	18
28	13	36	29	175	56	452	217	432	135	96	55	16
29	13	43	30	172	-----	398	256	486	117	96	51	17
30	14	42	32	168	-----	385	288	581	104	92	47	23
31	14	-----	33	166	-----	353	-----	530	-----	91	35	-----
TOTAL	346.1	944	1,535	4,010	3,140	7,741	8,301	13,521	6,052	2,931	2,355	469
MEAN	11.2	31.5	49.5	129	112	250	277	436	202	94.5	76.0	15.6
MAX	23	67	166	457	165	1,460	399	593	527	140	97	23
MIN	7.8	14	26	22	56	45	173	216	80	65	35	13
AC-FT	686	1,870	3,040	7,950	6,230	15,350	16,470	26,820	12,000	5,810	4,670	930
CAL YR 1970	TOTAL 51,509.8		MEAN 141	MAX 3,460	MIN 7.0	AC-FT 102,200						
WTR YR 1971	TOTAL 51,345.1		MEAN 141	MAX 1,460	MIN 7.8	AC-FT 101,800						

## 10358470 WILLOW CREEK TRIBUTARY NEAR SUSANVILLE, CALIF.

LOCATION.--Lat 40°29'48", long 120°33'30", in SW $\frac{1}{4}$  sec.31, T.31 N., R.13 E., Lassen County, on left bank at culvert on State Highway 139 and 7.5 miles northeast of Susanville.

DRAINAGE AREA.--3.08 sq mi.

PERIOD OF RECORD.--Water years 1963-65 (annual maximum), October 1965 to September 1971 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder with recording rain-gage attachment and crest-stage gages. Altitude of gage is 4,890 ft (from topographic map). July 16, 1962, to Aug. 30, 1965, crest-stage gages at same site and datum.

AVERAGE DISCHARGE.--6 years, 0.66 cfs (478 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 60 cfs Mar. 26 (gage height, 4.07 ft); no flow for several months.

Period of record: Maximum discharge, 183 cfs Jan. 23, 1970 (gage height, 7.51 ft); no flow for several months in each year.

REMARKS.--Records fair. No storage or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.01	0	.48	.04	2.2	.78	7.2			
2		0	0	0	.40	0	2.2	.84	2.0			
3		0	0	0	.32	.14	2.1	.96	2.6			
4		0	0	0	.29	.10	2.1	1.3	4.4			
5		.06	0	0	.29	.01	2.2	1.2	2.5			
6		0	.45	0	.32	0	2.4	1.1	1.8			
7		0	.72	0	.29	.03	2.3	1.0	.71			
8		0	1.0	0	.29	.03	2.1	1.1	.57			
9		.07	1.2	0	.26	.06	2.7	.90	.52			
10		0	.44	1.2	.36	.10	2.3	.72	.52			
11		.03	.14	6.6	.52	.29	1.4	.78	.48			
12		.01	.04	2.0	.67	1.9	1.4	.84	.48			
13		0	0	0	.96	1.8	1.2	.67	.40			
14		0	0	1.3	.90	1.2	1.2	.62	.40			
15		0	0	.67	.96	1.2	1.2	.62	.36			
16		0	0	2.6	.90	2.5	1.2	.57	.36			
17		0	0	23	.46	2.2	1.5	.57	.29			
18		0	0	13	.32	1.5	1.1	.57	.26			
19		0	0	4.6	.26	1.5	.96	.52	.23			
20		0	0	2.4	.23	2.2	1.0	.52	.20			
21		0	0	2.3	.14	2.9	1.1	.62	.14			
22		0	0	1.4	.14	4.0	.96	.44	.12			
23		0	0	.96	.12	14	.96	.44	.06			
24		0	0	.67	.20	4.8	.84	.52	.04			
25		0	0	.48	.12	8.4	.84	.44	.06			
26		0	0	.44	.03	24	.84	.40	.84			
27		0	0	.44	.01	5.4	.78	.62	.29			
28		.02	0	.40	.20	4.2	.72	1.9	.12			
29		.05	0	.48	-----	4.2	.72	3.8	.04			
30		.02	0	.40	-----	4.0	.72	5.0	.02			
31		-----	0	.40	-----	2.8	-----	2.5	-----			-----
TOTAL	0	.26	4.00	65.74	10.44	95.50	43.24	32.86	28.01	0	0	0
MEAN	0	.009	.13	2.12	.37	3.08	1.44	1.06	.93	0	0	0
MAX	0	.07	1.2	23	.96	24	2.7	5.0	7.2	0	0	0
MIN	0	0	0	0	.01	0	.72	.40	.02	0	0	0
AC-FT	0	.5	7.9	130	21	189	86	65	56	0	0	0
(a)	.36	3.92	2.24	-	.10	3.83	.48	2.75	1.61	0	0	0

CAL YR 1970 TOTAL 202.66 MEAN .56 MAX 38 MIN 0 AC-FT 402  
WTR YR 1971 TOTAL 280.05 MEAN .77 MAX 24 MIN 0 AC-FT 555

a Precipitation, in inches (some precipitation falling as snow may not be included).

## 10358500 WILLOW CREEK NEAR SUSANVILLE, CALIF.

LOCATION.--Lat 40°29'21", long 120°32'10", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.5, T.30 N., R.13 E., Lassen County, on left bank 4 miles upstream from Peters Valley Creek and 8 miles northeast of Susanville.

DRAINAGE AREA.--90.0 sq mi, excludes that of Eagle Lake basin.

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,836.27 ft above mean sea level, unadjusted.

AVERAGE DISCHARGE.--21 years, 34.5 cfs (25,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 513 cfs Jan. 18 (gage height, 4.88 ft); minimum daily, 13 cfs Sept. 7-9.

Period of record: Maximum discharge, 816 cfs Feb. 1, 1963 (gage height, 5.59 ft), from rating curve extended above 540 cfs; minimum, 8.1 cfs Nov. 16, 1951.

REMARKS.--Records good. Diversions for irrigation of 5,200 acres above station. Some flow at times enters Willow Creek from Eagle Lake through an abandoned tunnel.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	33	43	44	63	35	82	47	216	22	31	14
2	21	33	39	35	63	42	84	47	208	23	30	14
3	26	33	35	32	55	42	77	47	163	24	30	14
4	29	33	42	31	54	44	70	51	140	24	30	14
5	29	37	46	32	55	43	65	51	125	25	28	14
6	29	37	72	34	55	43	62	49	109	24	28	14
7	28	38	104	37	52	42	60	49	95	24	27	13
8	27	37	118	40	50	41	59	50	86	23	27	13
9	27	37	140	42	49	40	58	49	75	23	27	13
10	18	39	111	56	50	40	65	47	60	24	27	14
11	28	42	91	73	50	40	60	47	50	27	28	14
12	31	43	73	42	51	74	57	35	44	34	25	15
13	30	40	60	46	52	154	41	27	39	38	25	15
14	29	39	53	43	51	167	36	24	33	42	24	15
15	31	37	50	47	52	127	35	23	30	42	25	14
16	29	37	44	65	48	116	35	24	29	41	26	14
17	29	35	44	192	49	96	42	24	28	39	26	14
18	29	34	44	477	46	76	47	24	27	39	26	14
19	29	34	43	448	46	70	47	15	25	39	26	14
20	30	34	41	306	43	65	46	16	24	39	25	15
21	30	34	31	180	44	62	50	18	24	35	26	28
22	31	34	26	128	44	65	48	19	22	40	27	32
23	32	34	30	120	44	103	49	20	21	39	27	32
24	33	36	35	103	43	89	58	22	19	38	27	32
25	34	36	36	88	41	84	61	24	17	37	27	32
26	34	36	37	80	33	309	60	24	20	36	28	33
27	34	36	38	73	42	300	57	26	23	36	20	33
28	34	39	40	69	39	176	54	37	24	35	16	34
29	34	46	38	67	-----	128	51	68	22	33	15	34
30	34	50	44	65	-----	106	49	124	22	33	14	35
31	34	-----	45	63	-----	90	-----	167	-----	33	14	-----
TOTAL	914	1,113	1,693	3,158	1,364	2,909	1,665	1,295	1,820	1,011	782	606
MEAN	29.5	37.1	54.6	102	48.7	93.8	55.5	41.8	60.7	32.6	25.2	20.2
MAX	34	50	140	477	63	309	84	167	216	42	31	35
MIN	18	33	26	31	33	35	35	15	17	22	14	13
AC-FT	1,810	2,210	3,360	6,260	2,710	5,770	3,300	2,570	3,610	2,010	1,550	1,200

CAL YR 1970 TOTAL 17,921 MEAN 49.1 MAX 684 MIN 13 AC-FT 35,550  
WTR YR 1971 TOTAL 18,330 MEAN 50.2 MAX 477 MIN 13 AC-FT 36,360

PEAK DISCHARGE (BASE, 200 CFS)							
DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
1-18	1730	4.88	513	3-26	2200	4.43	359
3-13	2045	3.83	211	6-1	1445	3.96	239

## 10359100 SHAFFER CREEK NEAR LITCHFIELD, CALIF.

LOCATION.--Lat 40°23'30", long 120°18'23", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.8, T.29 N., R.15 E., Lassen County, at culvert on U.S. Highway 395, 4.3 miles east of Litchfield, and 5.0 miles northwest of Wendal.

DRAINAGE AREA.--5.63 sq mi.

PERIOD OF RECORD.--August 1963 to September 1969 (annual maximum), October 1969 to current year.

GAGE.--Water-stage recorder with recording rain-gage attachment, and crest-stage gages. Altitude of gage is 4,110 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 75 cfs Jan. 17 (gage height, 7.77 ft); no flow for several months.

Period of record: Maximum discharge, 389 cfs Jan. 23, 1970 (gage height, 12.16 ft, from well floodmarks), from rating table based on theoretical computations through culverts and a road overflow computation above 11.05 ft.

REMARKS.--Records good above 1.0 cfs and fair below. No diversions above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	.23	.19	.01	.09	0	28			
2			0	0	.15	.01	.08	0	4.5			
3			0	0	.13	.01	.04	0	2.9			
4			0	0	.10	0	.03	0	2.4			
5			1.3	0	.09	0	.02	0	2.0			
6			3.9	0	.07	0	.02	0	1.6			
7			2.8	0	.05	0	.02	0	1.3			
8			1.3	0	.03	0	.02	0	1.0			
9			1.2	0	.02	0	.02	0	.76			
10			.21	.50	.01	0	.01	0	.54			
11			.07	8.5	0	0	0	0	.35			
12			.05	3.5	0	1.4	0	0	.29			
13			.02	.60	0	.42	0	0	.17			
14			0	.47	0	.15	0	0	.12			
15			0	.37	0	.04	0	0	.08			
16			0	7.2	.01	.02	0	0	.05			
17			0	41	.01	.02	0	0	.03			
18			0	11	0	.02	0	0	.02			
19			0	4.2	0	.02	0	0	.02			
20			0	2.7	0	.02	0	0	.01			
21			0	1.7	0	.02	0	0	0			
22			0	1.3	0	.02	0	0	0			
23			0	1.1	0	.02	0	0	0			
24			0	.84	0	.02	0	0	0			
25			0	.64	0	.02	0	0	0			
26			0	.54	0	1.6	0	0	1.0			
27			0	.44	0	.48	0	0	.37			
28			.30	.35	0	.26	0	0	.18			
29			1.2	.29	-----	.24	0	.83	.03			
30			1.5	.26	-----	.19	0	4.4	0			
31		-----	.50	.21	-----	.12	-----	14	-----			-----
TOTAL	0	0	14.35	87.94	.86	5.13	.35	19.23	47.72	0	0	0
MEAN	0	0	.46	2.84	.031	.17	.012	.62	1.59	0	0	0
MAX	0	0	3.9	41	.19	1.6	.09	14	28	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	28	174	1.7	10	.7	38	95	0	0	0
(a)	.07	1.76	-	-	.05	1.31	.33	2.10	1.26	.28	.20	.17
CAL YR 1970	TOTAL	156.51	MEAN .43	MAX 34	MIN 0	AC-FT 310						
WTR YR 1971	TOTAL	175.58	MEAN .48	MAX 41	MIN 0	AC-FT 348						

a Precipitation, in inches (some precipitation falling as snow may not be included).

## EAGLE LAKE BASIN

10359300 PINE CREEK NEAR SUSANVILLE, CALIF.

LOCATION.--Lat 40°39'54", long 120°47'25", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.1, T.32 N., R.10 E., Lassen County, on right bank 0.3 mile upstream from Eagle Lake and 1 miles northwest of Susanville.

DRAINAGE AREA.--226 sq mi.

PERIOD OF RECORD.--October 1960 to September 1966, October 1967 to September 1968, October 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,120 ft (from topographic map). Prior to September 1968, at site 1.0 mile upstream at different datum.

AVERAGE DISCHARGE.--9 years (1960-66, 67-68, 69-71), 21.5 cfs (15,580 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 521 cfs Apr. 10 (gage height, 4.90 ft); no flow for several months.

Period of record: Maximum discharge, 936 cfs Jan. 24, 1970 (gage height, 5.60 ft), from rating curve extended above 360 cfs on basis of computation of peak flow over weir; no flow for several months in each year.

Flood of May 18, 1967, reached a stage of 5.29 ft (discharge, 826 cfs).

REMARKS.--No storage or diversion above station except for minor stock ponds.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	.20	0	177	226	154	1.7		
2				0	.10	0	177	186	161	1.0		
3				0	0	0	194	206	143	.60		
4				0	0	0	213	235	117	.10		
5				0	0	0	262	233	108	0		
6				0	0	0	342	203	88	0		
7				0	0	0	386	169	66	0		
8				0	0	0	322	169	47	0		
9				0	0	0	360	187	36	0		
10				0	0	0	475	161	28	0		
11				0	0	0	390	143	23	0		
12				0	.20	0	364	142	18	0		
13				0	.90	0	359	141	12	0		
14				0	1.9	0	355	126	8.8	0		
15				0	3.5	0	404	116	7.4	0		
16				0	3.8	0	448	107	6.0	0		
17				0	3.0	0	480	94	4.3	0		
18				0	3.2	0	427	87	3.0	0		
19				0	2.0	0	324	79	2.4	0		
20				0	1.6	0	283	67	2.0	0		
21				0	1.0	0	256	60	1.3	0		
22				0	.30	0	207	58	.90	0		
23				0	0	9.4	182	57	.70	0		
24				0	0	87	172	49	.40	0		
25				0	0	161	164	47	.10	0		
26				0	0	189	180	59	1.2	0		
27				12	0	169	214	67	2.4	0		
28				57	0	216	244	99	2.7	0		
29				23	-----	207	276	131	3.3	0		
30				.30	-----	239	269	142	2.6	0		
31		-----		.20	-----	228	-----	134	-----	0		-----
TOTAL	0	0	0	92.50	21.70	1,505.4	8,906	3,980	1,050.50	3.40	0	0
MEAN	0	0	0	2.98	.78	48.6	297	128	35.0	.11	0	0
MAX	0	0	0	57	3.8	239	480	235	161	1.7	0	0
MIN	0	0	0	0	0	0	164	47	.10	0	0	0
AC-FT	0	0	0	183	43	2,990	17,670	7,890	2,080	6.7	0	0
CAL YR 1970	TOTAL	14,662.20	MEAN	40.2	MAX	884	MIN	0	AC-FT	29,080		
WTR YR 1971	TOTAL	15,559.50	MEAN	42.6	MAX	480	MIN	0	AC-FT	30,860		



LOCATION.--Lat 41°52'57", long 120°10'26", in SE $\frac{1}{4}$  sec.6, T.46 N., R.16 E., Modoc County, on right bank 0.9 mile downstream from Mill Creek and 2.0 miles northwest of Fort Bidwell.

PERIOD OF RECORD.--October 1960 to current year. Prior to October 1961, published as Bidwell Creek near Fort Bidwell.

GAGE.--Water-stage recorder. Altitude of gage is 5,000 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 22.1 cfs (16,010 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 345 cfs Jan. 17 (gage height, 4.57 ft); minimum daily, 3.5 cfs Oct. 1, 2.

Period of record: Maximum discharge, 682 cfs Dec. 24, 1964 (gage height, 5.64 ft), from rating curve extended above 105 cfs on basis of slope-area measurement of maximum flow; minimum, 1.4 cfs Nov. 5, 1960.

REVISIONS.--Figures of maximum discharge for the water year 1969 and 1970 have been revised to 196 cfs May 11, 1969 (gage height, 4.07 ft) and 178 cfs Jan. 23, 1970 (gage height, 4.06 ft), superseding figures published in WRD Calif. 1969, 1970.

REMARKS.--Less than 2 cfs diverted upstream for irrigation. No storage above station.

REMARKS.--Less than 2 cfs diverted upstream for irrigation, no storage above station.  
COOPERATION.--Records furnished by the California Department of Water Resources and reviewed by Geological Survey.

REVISIONS.--Revised figures of discharge, in cubic feet per second, for high-water periods in water years 1969 and 1970, superseding figures published in WRD Calif. 1969, 1970 are given herewith:

1969		1970	
May 10	145	Jan. 22	136
11	160	23	124
12	184	24	124
13	172		
14	157		

MONTH	CFS-DAYS	MAX	MIN	MEAN	AC-FT
May 1969	3,490	184	71	113	6,920
WTR YR 1969	9,092.1	184	2.9	24.9	18,030
CAL YR 1969	8,858.7	184	3.1	24.3	17,570
January 1970	881.6	136	3.8	28.4	1,750
WTR YR 1970	8,177.3	136	3.1	22.4	16,220

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	5.2	11	6.1	30	15	45	74	136	70	14	7.5
2	3.5	5.0	10	5.8	30	12	43	82	122	66	13	7.4
3	3.6	5.0	9.9	5.8	28	18	44	108	116	61	13	7.4
4	3.5	5.4	9.7	5.8	25	14	46	146	116	56	12	7.5
5	3.7	9.2	11	5.6	24	13	51	153	114	52	12	7.3
6	3.9	7.1	13	5.6	21	14	57	139	118	49	12	7.6
7	4.0	6.2	14	5.8	20	13	57	141	128	46	11	7.8
8	4.0	9.4	13	5.8	18	13	53	164	141	44	11	7.2
9	4.0	30	12	6.3	17	13	55	194	142	41	11	6.9
10	4.1	12	11	7.2	19	13	57	199	164	37	10	6.7
11	3.9	11	11	6.8	20	13	52	202	153	34	10	6.7
12	4.9	10	9.3	6.5	21	15	49	211	139	30	9.8	6.5
13	3.9	8.2	9.4	6.3	24	14	49	213	135	28	9.6	6.4
14	4.0	7.3	7.7	6.3	25	13	54	201	132	26	9.4	6.4
15	3.9	6.6	6.8	6.1	27	12	60	193	132	25	9.1	6.4
16	4.0	6.2	7.4	9.8	25	12	64	176	133	24	8.9	6.3
17	4.0	5.9	7.1	119	24	13	64	163	130	23	8.9	6.4
18	4.5	5.8	7.1	189	22	15	57	157	126	22	8.8	6.5
19	4.4	5.7	7.4	140	21	14	55	152	123	22	8.6	6.4
20	5.0	5.6	7.4	112	20	13	54	145	120	21	8.4	6.4
21	5.0	5.6	7.4	90	22	17	51	140	119	20	8.3	6.5
22	5.4	6.3	7.3	74	19	29	46	135	117	19	8.4	6.4
23	6.2	9.0	6.8	64	18	90	43	138	115	18	8.3	6.3
24	5.5	27	6.8	54	18	84	40	154	111	17	8.0	6.0
25	5.4	29	6.8	45	17	67	38	168	117	16	7.8	6.2
26	5.2	19	6.5	37	19	75	41	173	130	16	7.6	8.2
27	5.1	15	6.5	33	18	63	47	175	111	15	7.6	8.2
28	5.9	13	6.5	31	17	53	54	175	95	15	7.4	8.0
29	5.7	12	6.3	30	-----	52	63	189	85	14	7.4	9.6
30	5.3	11	6.3	29	-----	56	70	183	75	14	7.3	8.9
31	5.3	-----	6.3	30	-----	50	-----	152	-----	14	7.7	-----
TOTAL	139.3	313.7	268.7	1,178.6	609	908	1,559	4,995	3,695	955	296.3	212.0
MEAN	4.49	10.5	8.67	38.0	21.8	29.3	52.0	161	123	30.8	9.56	7.07
MAX	6.2	30	14	189	30	90	70	213	164	70	14	9.6
MIN	3.5	5.0	6.3	5.6	17	12	38	74	75	14	7.3	6.0
AC-FT	276	622	533	2,340	1,210	1,800	3,090	9,910	7,330	1,890	588	421
CAL YR 1970	TOTAL	8,475.6	MEAN	23.2	MAX	136	MIN	3.5	AC-FT	16,810		
WTR YR 1971	TOTAL	15,129.6	MEAN	41.5	MAX	213	MIN	3.5	AC-FT	30,010		

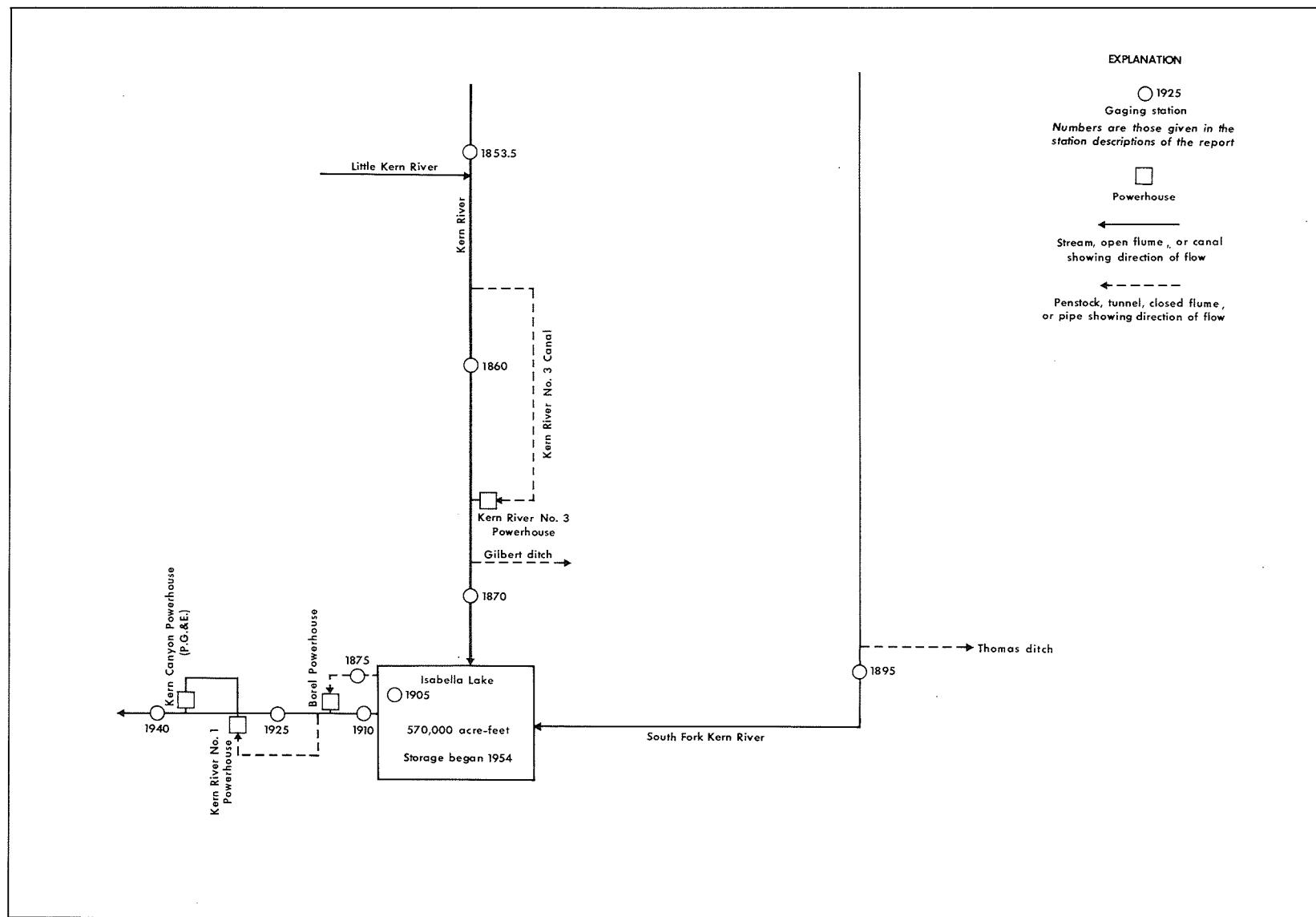


FIGURE 2.--Schematic diagram showing diversions and storage in Kern River basin.

## 11185350 KERN RIVER NEAR QUAKING ASPEN CAMP, CALIF.

LOCATION.--Lat 36°08'04", long 118°25'49", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.32, T.20 S., R.33 E., Tulare County, Sequoia National Forest, on right bank 0.4 mile upstream from Little Kern River, and 6.8 miles east of Quaking Aspen Camp.

DRAINAGE AREA.--530 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 4,693 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--11 years, 561 cfs (406,400 acre-ft per year); median of yearly mean discharges, 470 cfs (340,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,660 cfs June 17 (gage height, 5.32 ft); minimum daily, 130 cfs Sept. 24, 25.

Period of record: Maximum discharge, 9,360 cfs Dec. 6, 1966 (gage height, 10.89 ft in gage well, 12.9 ft, outside from floodmarks), from rating curve extended above 6,600 cfs on basis of slope-area measurement of maximum flow; minimum, 61 cfs Jan. 20, 1962.

REMARKS.--Records good. No regulation or diversion above station. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	156	206	196	262	223	406	383	560	722	318	163
2	148	154	241	200	259	214	403	409	540	714	377	158
3	148	154	208	165	252	227	406	409	533	702	380	154
4	152	158	227	159	248	223	412	397	570	678	336	150
5	154	173	232	171	250	210	432	400	644	619	308	146
6	154	176	225	178	245	210	460	429	786	577	286	146
7	152	176	223	188	240	210	435	444	898	556	271	161
8	152	171	229	214	236	214	426	420	1,010	530	252	167
9	152	171	232	210	236	214	429	426	1,150	504	243	159
10	150	171	219	202	240	216	432	438	1,190	472	245	154
11	150	167	216	192	248	216	435	450	1,170	454	236	150
12	150	167	210	194	264	225	460	469	1,210	438	234	146
13	148	161	206	192	280	243	488	491	1,300	429	238	146
14	148	161	202	178	290	227	463	563	1,340	432	250	148
15	150	161	202	210	298	234	429	722	1,400	444	268	146
16	150	159	219	216	296	229	444	884	1,470	444	245	144
17	150	159	210	225	288	232	472	790	1,490	478	223	141
18	150	159	190	243	266	236	441	718	1,460	652	212	139
19	152	156	221	264	273	248	423	694	1,280	612	204	139
20	152	154	212	278	238	257	423	702	1,190	546	198	139
21	154	152	229	280	255	273	389	742	1,200	633	190	137
22	156	152	219	264	262	290	361	659	1,150	523	184	137
23	156	154	202	257	252	318	366	622	1,080	466	180	134
24	158	156	206	250	234	318	350	718	990	420	178	130
25	158	189	210	250	241	331	335	862	893	415	184	130
26	158	236	212	245	221	400	335	990	862	362	182	132
27	156	180	216	245	204	386	331	920	857	338	182	132
28	154	200	200	245	214	372	331	790	866	328	180	134
29	154	236	196	250	-----	377	336	682	774	318	180	134
30	154	212	202	252	-----	415	355	640	742	313	175	134
31	154	-----	198	259	-----	420	-----	602	-----	306	169	-----
TOTAL	4,722	5,131	6,620	6,872	7,092	8,408	12,208	18,865	30,605	15,425	7,308	4,330
MEAN	152	171	214	222	253	271	407	609	1,020	498	236	144
MAX	158	236	241	280	298	420	488	990	1,490	722	380	167
MIN	148	152	190	159	204	210	331	383	533	306	169	130
AC-FT	9,370	10,180	13,130	13,630	14,070	16,680	24,210	37,420	60,710	30,600	14,500	8,590

CAL YR 1970 TOTAL 161,021 MEAN 441 MAX 2,110 MIN 148 AC-FT 319,400  
WTR YR 1971 TOTAL 127,586 MEAN 350 MAX 1,490 MIN 130 AC-FT 253,100

PEAK DISCHARGE (BASE, 1,300 CFS).--June 17 (0800) 1,660 cfs (5.32 ft).

## 11186000 KERN RIVER NEAR KERNVILLE, CALIF.

LOCATION.--Lat 35°56'43", long 118°28'36", in SW $\frac{1}{4}$  sec.12, T.23 S., R.32 E. (unsurveyed), Tulare County, on left bank at Packsaddle Canyon Creek, 30 ft upstream from sand trap sluice gates, 100 ft downstream from diversion dam, and 13.4 miles north of Kernville.

DRAINAGE AREA.--846 sq mi.

PERIOD OF RECORD.--January 1912 to current year. Records for water year 1912 incomplete, yearly estimates published in WSP 1315-A. Prior to October 1953, records for river and canal published separately; combined flow only, October 1953 to September 1960.

GAGE.--Water-stage recorder on river; water-stage recorder and rectangular concrete-lined flume for canal diversion. Altitude of gage is 3,620 ft (from topographic map). Prior to Apr. 1, 1913, at site 1.4 miles 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 miles downstream at different datum.

AVERAGE DISCHARGE (River only).--9 years (1911-20), 790 cfs (571,900 acre-ft per year); 50 years (1921-71), 343 cfs (248,500 acre-ft per year); median of yearly mean discharges, 214 cfs (155,000 acre-ft per year). (Combined river and diversion).--60 years (1911-71), 723 cfs (523,800 acre-ft per year); median of yearly mean discharges, 615 cfs (446,000 acre-ft per year).

EXTREMES (River only).--Current year: Maximum discharge, 1,460 cfs June 17 (gage height, 5.95 ft); minimum daily, 29 cfs Dec. 25.

36 cfs Jan. 7, Feb. 1, 2.

Period of record: Maximum discharge, 60,000 cfs Dec. 6, 1966 (gage height, 22.77 ft, site and datum then in use, from floodmarks), from rating curve extended above 6,000 cfs on basis of computed flow over dam at gage height 17.55 ft (basic data for computation furnished by Southern California Edison Co.) and slope-area measurement of maximum flow; no flow July 31 to Nov. 7, Nov. 12 to Dec. 7, 1924, Jan. 16 to Feb. 7, 1925.

(Combined flow).--Current year: Maximum discharge, 2,120 cfs June 17; minimum daily, 165 cfs Sept. 25.

Period of record: Maximum discharge, 60,000 cfs Dec. 6, 1966; minimum daily, 78 cfs Aug. 30, 31, Sept. 17, 19, 1924.

REMARKS.--Records excellent. Since 1921 Kern River No. 3 Canal diverts up to 630 cfs 100 ft upstream from station, from left bank of Kern River in sec.12, T.23 S., R.32 E. (unsurveyed), for power development; water is returned to river 15 miles downstream from station. See schematic diagram of Kern River basin. For records of combined discharge of river and canal, see following page.

COOPERATION.--Gage-height record and 20 discharge measurements for Kern River and gage-height record and 15 discharge measurements for canal furnished by Southern California Edison Co., in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1445: 1912, 1916(M). WSP 1930: 1914(M), 1918(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	55	40	44	44	76	161	127	250	258	100	80
2	56	48	44	44	45	76	139	128	216	248	100	70
3	61	47	40	37	44	76	143	124	202	238	101	72
4	57	48	42	37	44	76	152	117	230	214	100	76
5	57	55	42	41	43	76	186	116	315	158	99	76
6	57	42	43	44	44	76	220	134	472	127	98	76
7	57	41	42	47	43	76	163	158	620	111	98	76
8	58	41	44	48	44	76	136	117	765	104	98	76
9	57	40	44	44	44	76	139	116	926	101	98	76
10	58	41	43	42	45	76	142	125	950	100	98	76
11	58	41	43	42	45	76	142	142	950	102	96	76
12	58	40	43	44	47	76	174	190	962	104	96	74
13	58	40	44	44	48	76	218	208	1,060	105	99	75
14	58	40	44	33	49	76	180	305	1,090	108	105	75
15	57	41	44	32	50	76	124	500	1,140	108	119	76
16	57	41	45	36	50	76	136	715	1,220	99	113	76
17	58	41	44	41	47	76	204	596	1,260	93	104	78
18	58	41	44	43	45	76	151	524	1,200	166	102	81
19	58	40	47	46	45	77	121	448	1,010	130	96	83
20	59	40	44	49	42	78	128	440	890	99	98	81
21	61	41	46	47	43	80	108	500	878	152	96	80
22	58	41	44	45	43	82	105	416	806	102	95	79
23	58	40	38	44	43	86	107	357	690	100	95	79
24	58	40	35	43	42	85	108	448	592	96	95	78
25	59	54	29	42	42	88	111	655	472	98	95	78
26	57	69	36	42	41	160	115	824	436	98	94	78
27	57	40	44	43	40	170	113	745	408	98	95	78
28	57	39	44	43	54	136	116	572	428	98	96	77
29	58	45	41	44	-----	128	116	456	336	96	96	76
30	59	41	44	44	-----	188	120	368	288	98	96	77
31	59	-----	44	44	-----	214	-----	310	-----	99	96	-----
TOTAL	1,799	1,313	1,311	1,319	1,256	2,940	4,278	10,981	21,062	3,908	3,067	2,309
MEAN	58.0	43.8	42.3	42.5	44.9	94.8	143	354	702	126	98.9	77.0
MAX	61	69	47	49	54	214	220	824	1,260	258	119	83
MIN	56	39	29	32	40	76	105	116	202	93	94	70
AC-FT	3,570	2,600	2,600	2,620	2,490	5,830	8,490	21,780	41,780	7,750	6,080	4,580

CAL YR 1970 TOTAL 93,052 MEAN 255 MAX 2,630 MIN 29 AC-FT 184,600  
WTR YR 1971 TOTAL 55,543 MEAN 152 MAX 1,260 MIN 29 AC-FT 110,200

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KERN RIVER AND KERN RIVER NO. 3 CANAL  
NEAR KERNVILLE, CALIF., WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179	191	289	281	398	348	735	650	868	882	391	211
2	181	188	367	290	400	321	721	681	835	872	442	208
3	185	187	303	241	391	348	727	679	817	862	484	202
4	186	186	309	234	374	351	734	661	845	838	436	204
5	192	209	313	251	373	332	767	654	928	768	398	194
6	191	224	306	245	370	321	799	698	1,090	735	374	190
7	187	225	301	251	363	327	760	741	1,240	671	356	201
8	189	219	316	276	361	336	756	691	1,380	645	336	217
9	189	210	343	280	359	344	752	677	1,540	606	318	208
10	189	213	310	268	363	354	763	704	1,570	575	323	199
11	188	209	289	265	375	360	763	727	1,570	543	309	199
12	186	202	284	278	409	375	784	764	1,580	524	302	186
13	186	200	273	267	446	441	813	792	1,680	510	308	185
14	186	195	269	245	467	400	802	891	1,710	510	330	186
15	185	197	262	286	487	402	724	1,090	1,760	522	357	186
16	185	194	309	297	490	401	756	1,310	1,840	529	331	182
17	186	193	313	323	470	402	830	1,190	1,880	558	301	177
18	188	193	260	387	433	412	746	1,110	1,800	762	281	173
19	189	190	296	446	429	428	709	1,040	1,600	747	270	174
20	188	187	291	493	387	441	727	1,040	1,470	672	262	175
21	193	187	315	490	394	478	660	1,100	1,480	727	255	174
22	194	186	298	442	397	518	603	1,010	1,420	652	246	172
23	195	186	276	411	387	582	605	953	1,300	590	243	171
24	198	188	272	387	368	596	590	1,050	1,190	528	236	167
25	200	215	284	377	368	603	556	1,250	1,080	485	239	165
26	198	451	286	372	340	751	544	1,420	1,060	457	239	168
27	194	297	309	375	316	761	543	1,340	1,030	432	237	170
28	191	257	287	378	335	721	553	1,180	1,050	419	238	171
29	191	382	268	384	-----	716	563	1,080	960	404	236	171
30	194	337	283	388	-----	774	597	991	912	399	232	174
31	193	-----	282	395	-----	786	-----	929	-----	394	222	-----
TOTAL	5,376	6,698	9,163	10,303	11,050	14,730	20,982	29,093	39,485	18,818	9,532	5,560
MEAN	190	223	296	332	395	475	699	938	1,316	607	307	185
MAX	200	451	367	493	490	786	830	1,420	1,880	882	484	217
MIN	179	186	260	234	316	321	543	650	817	394	222	165
AC-FT	11,660	13,290	18,170	20,440	21,920	29,220	41,620	57,710	78,320	37,330	18,910	11,030
CAL YR 1970	TOTAL	233,466	MEAN	640	MAX	3,160	MIN	171	AC-FT	463,100		
WTR YR 1971	TOTAL	181,290	MEAN	497	MAX	1,880	MIN	165	AC-FT	359,600		

## BUENA VISTA LAKE BASIN

11187000 KERN RIVER AT KERNVILLE, CALIF.

LOCATION.--Lat 35°45'34", long 118°25'12", in NE $\frac{1}{4}$  sec.15, T.25 S., R.33 E., Kern County, on left bank 0.5 mile upstream from highway bridge at Kernville, 1.7 miles upstream from Caldwell Creek, 9.5 miles upstream from Isabella Dam, and 42 miles northeast of Bakersfield.

DRAINAGE AREA.--1,009 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 2,634.57 ft above mean sea level. January 1905 to September 1912, nonrecording gage at two sites 3.5 miles downstream at different datums. October 1953 to Feb. 20, 1967, water-stage recorder 0.6 mile downstream at datum 2,621.57 ft above mean sea level.

AVERAGE DISCHARGE.--25 years, 878 cfs (636,100 acre-ft per year); median of yearly mean discharges, 690 cfs (500,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,040 cfs June 17 (gage height, 5.95 ft); minimum daily, 149 cfs Sept. 18, 19.

Period of record: Maximum discharge, 74,000 cfs Dec. 6, 1966 (gage height, 19.32 ft, from floodmarks, present site), from rating curve extended above 11,000 cfs on basis of slope-area measurement of maximum flow; minimum discharge, 74 cfs Oct. 27, 1954, Aug. 1, Oct. 4, 1961.

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 cfs).

REMARKS.--Records good. Slight regulation at times by operation of Kern River No. 3 canal and powerplant. A few small diversions for irrigation above station. Gilbert irrigation ditch diverts up to 7 cfs around station during irrigation season. Records of water temperatures and suspended-sediment discharge for the current year are published in Part 2 of this report.

COOPERATION.--Eleven discharge measurements furnished by the Southern California Edison Co.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	190	341	318	472	371	869	698	863	872	325	199
2	167	187	420	320	470	348	829	729	815	863	369	183
3	169	185	354	281	460	378	828	720	813	858	420	174
4	179	185	343	259	431	381	840	695	823	849	374	179
5	182	209	348	260	434	362	874	691	896	805	333	164
6	182	232	338	265	431	348	916	737	1,030	728	306	164
7	173	238	335	272	424	355	887	822	1,180	698	290	174
8	173	232	350	294	417	377	844	777	1,310	660	274	189
9	176	221	389	306	411	396	845	740	1,460	633	262	183
10	176	224	354	300	406	410	853	754	1,530	600	298	176
11	176	221	329	303	421	418	853	770	1,520	566	332	173
12	176	221	323	314	458	439	866	808	1,520	545	324	165
13	176	218	313	320	493	531	918	836	1,620	523	270	161
14	177	214	306	308	522	462	903	916	1,670	530	270	162
15	177	218	297	337	546	469	853	1,110	1,720	541	282	160
16	176	218	345	352	554	465	817	1,320	1,790	578	281	158
17	177	218	364	396	526	458	862	1,270	1,850	671	251	152
18	178	215	308	508	485	463	852	1,150	1,790	848	238	149
19	181	215	330	606	495	478	809	1,100	1,610	857	239	149
20	178	211	331	673	449	502	797	1,090	1,470	726	230	151
21	182	211	360	657	451	540	722	1,130	1,440	730	202	151
22	187	211	343	576	446	595	654	1,070	1,400	713	206	157
23	187	212	323	525	442	669	662	973	1,310	592	222	157
24	187	213	311	478	406	715	636	1,030	1,220	523	211	156
25	190	247	322	462	423	733	594	1,220	1,110	486	213	156
26	191	691	320	452	382	916	587	1,380	1,060	436	208	161
27	186	352	347	455	352	957	589	1,350	1,030	386	196	164
28	185	299	326	458	360	895	602	1,230	1,050	369	203	165
29	186	493	311	461	-----	862	617	1,090	979	347	204	166
30	187	422	315	460	-----	882	649	980	900	339	199	169
31	187	-----	318	469	-----	909	-----	914	-----	330	194	-----
TOTAL	5,579	7,623	10,414	12,445	12,567	17,084	23,427	30,100	38,779	19,202	8,226	4,967
MEAN	180	254	336	401	449	551	781	971	1,293	619	265	166
MAX	191	691	420	673	554	957	918	1,380	1,850	872	420	199
MIN	167	185	297	259	352	348	587	691	813	330	194	149
AC-FT	11,070	15,120	20,660	24,680	24,930	33,890	46,470	59,700	76,920	38,090	16,320	9,850

CAL YR 1970 TOTAL 239,147 MEAN 655 MAX 4,720 MIN 164 AC-FT 474,300  
WTR YR 1971 TOTAL 190,413 MEAN 522 MAX 1,850 MIN 149 AC-FT 377,700

PEAK DISCHARGE (BASE, 2,000 CFS).--June 17 (1315) 2,040 cfs (5.95 ft).

LOCATION.--Lat 35°38'32", long 118°28'09", in NE $\frac{1}{4}$  sec.30, T.26 S., R.33 E., Kern County, on right bank 500 ft downstream from Isabella Dam and 3 miles upstream from point where canal crosses Erskine Creek.

PERIOD OF RECORD.--January 1910 to September 1914, October 1925 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as Kern River Power Co.'s Canal at or near Kernville 1910-14. Published as "at Tillie Creek" 1925-51.

GAGE.--Water-stage recorder. Altitude of gage is 2,540 ft (from topographic map). Prior to Apr. 29, 1952, at site 4 miles upstream at different datum.

EXTREMES.--Period of record: Maximum daily discharge, 634 cfs Mar. 13, 14, 1952; no flow at times each year.

REMARKS.--Records excellent. Canal diverts from right bank of Kern River 5.5 miles upstream from Isabella Dam, and above South Fork Kern River. When capacity of Isabella Reservoir is above 110,000 acre-ft, the diversion is at the dam. Canal is used to supply Borel powerplant of Southern California Edison Co., 6 miles downstream from station, at which point water is returned to the Kern River. Water temperatures for the current year are published in Part 2 of this report.

COOPERATION.--Water-stage recorder graph and 21 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	383	0	394	293	508	565	526	414	407	548	534	524
2	369	0	323	293	537	566	507	445	407	543	535	498
3	359	0	374	293	559	566	536	491	417	537	534	456
4	357	0	340	293	559	565	557	512	454	535	537	419
5	365	0	217	293	540	564	567	525	478	536	536	401
6	392	0	0	293	533	564	566	531	535	536	537	401
7	417	0	0	293	556	564	567	499	570	538	536	401
8	425	0	0	293	567	564	568	426	571	529	536	396
9	383	0	0	293	580	564	535	407	570	529	536	377
10	321	0	0	293	567	564	488	406	570	530	549	380
11	314	0	0	294	575	564	540	406	570	530	549	388
12	290	0	54	294	584	564	564	406	570	529	550	384
13	305	0	162	294	583	565	565	406	570	529	549	392
14	330	0	205	295	589	565	563	407	570	527	549	411
15	28	0	241	296	592	565	527	422	569	529	550	449
16	0	0	241	296	602	564	432	460	570	529	550	465
17	0	0	263	296	609	565	406	454	571	530	550	455
18	0	0	294	296	595	565	406	456	557	529	550	407
19	0	0	294	296	588	565	406	465	557	529	550	400
20	0	0	294	296	549	565	406	510	558	530	549	393
21	0	0	294	292	567	564	406	544	558	536	549	376
22	0	0	294	458	589	564	406	554	558	536	549	360
23	0	0	294	580	589	559	406	568	556	535	548	334
24	0	0	294	580	591	559	407	585	553	534	548	315
25	0	0	294	578	590	560	408	588	548	534	550	317
26	0	0	294	580	590	561	408	590	548	534	550	320
27	0	179	294	580	586	561	408	502	548	534	547	293
28	0	278	294	580	581	560	408	406	548	535	519	268
29	0	280	294	571	-----	560	424	406	546	534	521	254
30	0	424	294	570	-----	559	438	406	547	534	524	247
31	0	-----	294	524	-----	561	-----	408	-----	534	503	-----
TOTAL	5,038	1,161	6,930	11,776	16,055	17,461	14,351	14,605	16,151	16,532	16,774	11,481
MEAN	163	38.7	224	380	573	563	478	471	538	533	541	383
MAX	425	424	394	580	609	566	568	590	571	548	550	524
MIN	0	0	0	292	508	559	406	406	407	527	503	247
AC-FT	9,990	2,300	13,750	23,360	31,850	34,630	28,470	28,970	32,040	32,790	33,270	22,770
WAL YR 1970	TOTAL	156,331.00	MEAN	428	MAX	578	MIN	0	AC-FT	310,100		
CTR YR 1971	TOTAL	148,315.00	MEAN	406	MAX	609	MIN	0	AC-FT	294,200		

## BUENA VISTA LAKE BASIN

11189500 SOUTH FORK KERN RIVER NEAR ONYX, CALIF.

LOCATION.--Lat 35°44'22", long 118°10'33", T.25 S., R.35 E., Kern County, on left bank 0.8 mile north of State Highway 178, 1.6 miles upstream from Canebrake Creek, and 5 miles northeast of Onyx.

DRAINAGE AREA.--530 sq mi.

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.

GAGE.--Water-stage recorder. Altitude of gage is 2,900 ft (from topographic map). Sept. 12, 1911, to Aug. 31, 1914, nonrecording gage and Jan. 23, 1919, to Apr. 17, 1936, water-stage recorder, at site 140 ft upstream at datum 4.88 ft lower. Apr. 18, 1936, to September 1942, and October 1947, to Feb. 9, 1967, at datum 4.88 ft higher.

AVERAGE DISCHARGE.--47 years (1911-13, 1919-25, 1926-27, 1929-42, 1946-71), 115 cfs (83,320 acre-ft per year); median of yearly mean discharges, 79 cfs (57,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 485 cfs Mar. 27 (gage height, 3.42 ft); minimum daily, 9.8 cfs Sept. 21.

Period of record: Maximum discharge, 28,700 cfs Dec. 6, 1966 (gage height, 16.9 ft, from floodmarks, present datum), from rating curve extended above 3,300 cfs on basis of slope-area measurement of maximum flow; no flow for several days in 1929, 1934, 1960-61.

REMARKS.--Records good. Lowell and Thomas ditches divert above station for irrigation of 160 acres below station; combined capacity, 7 cfs.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	33	52	60	77	64	260	104	100	31	15	12
2	19	33	55	67	76	58	232	104	97	31	14	11
3	20	34	47	42	74	64	220	103	94	31	18	10
4	22	33	45	42	69	70	206	102	94	30	20	10
5	23	30	45	46	73	63	206	103	91	29	21	11
6	24	31	43	50	75	63	204	107	86	26	19	10
7	24	36	42	51	73	64	190	126	83	24	18	10
8	24	37	44	60	71	64	174	142	84	22	16	11
9	25	35	60	64	70	64	170	146	77	20	15	11
10	25	34	61	58	70	67	166	176	72	19	14	11
11	25	34	55	62	73	68	159	172	68	18	12	11
12	26	33	56	67	78	73	156	174	66	16	12	11
13	26	33	53	60	83	94	154	176	65	14	13	11
14	26	33	53	47	88	89	154	165	65	14	16	11
15	26	31	53	52	94	90	154	156	63	13	41	11
16	26	33	56	60	97	87	152	149	59	13	29	11
17	26	33	60	78	100	92	152	141	57	16	25	10
18	26	33	44	101	94	94	154	130	54	26	23	10
19	27	33	48	115	90	98	156	125	52	23	20	10
20	27	33	47	114	78	103	159	122	50	24	16	11
21	29	33	65	113	71	121	150	119	48	24	14	9.8
22	30	33	54	92	79	153	129	112	46	28	13	10
23	30	33	47	84	83	192	119	109	44	35	12	11
24	30	33	46	79	78	229	121	106	43	32	10	12
25	30	38	52	80	78	248	116	106	42	28	10	12
26	31	83	55	78	68	348	112	104	40	25	10	13
27	30	56	67	78	64	410	111	103	40	22	10	14
28	30	50	53	76	65	376	111	107	38	19	11	14
29	29	86	53	76	-----	330	111	111	38	16	11	15
30	29	70	58	76	-----	327	106	112	35	15	10	15
31	31	-----	63	75	-----	311	-----	107	-----	15	10	-----
TOTAL	815	1,180	1,632	2,203	2,189	4,574	4,764	3,919	1,891	699	498	339.8
MEAN	26.3	39.3	52.6	71.1	78.2	148	159	126	63.0	22.5	16.1	11.3
MAX	31	86	67	115	100	410	260	176	100	35	41	15
MIN	19	30	42	42	64	58	106	102	35	13	10	9.8
AC-FT	1,620	2,340	3,240	4,370	4,340	9,070	9,450	7,770	3,750	1,390	988	674

CAL YR 1970 TOTAL 32,644.8 MEAN 89.4 MAX 392 MIN 9.2 AC-FT 64,750  
WTR YR 1971 TOTAL 24,703.8 MEAN 67.7 MAX 410 MIN 9.8 AC-FT 49,000

PEAK DISCHARGE (BASE, 180 CFS).--Mar. 27 (1100) 485 cfs (3.42 ft); May 10 (2300) 186 cfs (2.48 ft).



11190500 ISABELLA LAKE NEAR LAKE ISABELLA, CALIF.  
(Formerly published as Isabella Reservoir near Lake Isabella)

LOCATION.--Lat 35°38'46", long 118°28'41", in SW $\frac{1}{4}$  sec.19, T.26 S., R.33 E., Kern County, in main control tower near left abutment of main dam on Kern River, 1.5 miles north of town of Lake Isabella, and 2.8 miles upstream from Erskine Creek.

DRAINAGE AREA.--2,074 sq mi.

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1968, published as "Isabella Reservoir near Isabella." October 1968 to September 1970 published as "Isabella Reservoir."

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

EXTREMES.--Current year: Maximum contents, 240,996 acre-ft June 22 (elevation, 2,570.27 ft); minimum, 123,744 acre-ft Sept. 30 (elevation, 2,551.08 ft).

Period of record: Maximum contents, 578,100 acre-ft July 14, 1969 (elevation, 2,606.21 ft); minimum since reservoir first filled, 123,744 acre-ft Sept. 30, 1971 (elevation, 2,551.08 ft).

REMARKS.--Reservoir is formed by earthfill dam with sidehill spillway and auxiliary earthfill dam, completed in 1954; regulation began Apr. 15, 1954. Usable capacity, 569,679 acre-ft between elevations 2,470.0 ft (invert of main outlet) and 2,605.5 ft (spillway crest) above mean sea level. Dead storage, 326 acre-ft. Surcharge flood control storage, 271,800 acre-ft between ungated spillway crest and elevation 2,627.0 ft (maximum design spillway flood pool). Records, including extremes, represent total contents at 2400 hours. Water is released to Kern River through tunnel in left abutment of main dam and to Borel Canal (see sta 11187500) through concrete conduit in auxiliary dam.

COOPERATION.--Records furnished by Corps of Engineers, not rounded to Geological Survey standards.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

2,500	5,850	2,540	77,336
2,505	8,862	2,550	118,540
2,510	13,091	2,570	239,041
2,515	18,895	2,590	407,545
2,520	26,430	2,620	747,393
2,530	47,317		

CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	168,734	157,950	160,027	172,219	179,123	172,763	166,000	184,981	216,954	234,944	187,821	138,882
2	168,257	157,835	160,491	172,582	179,123	171,917	166,889	185,547	217,776	234,015	185,862	138,089
3	167,899	157,548	160,607	172,703	179,123	170,953	167,602	185,925	218,601	233,230	183,789	137,561
4	167,483	157,261	160,781	172,703	179,062	170,111	168,436	186,366	219,427	232,376	181,603	137,035
5	167,007	157,032	161,130	172,703	178,876	169,332	169,153	186,682	220,323	231,382	179,618	136,511
6	166,296	156,860	161,946	172,763	178,876	168,555	169,871	187,378	221,360	230,107	177,644	135,988
7	165,822	156,803	162,705	172,884	178,691	167,483	170,532	188,011	222,469	228,765	175,744	135,466
8	165,173	156,631	163,467	173,127	178,506	166,473	171,133	188,709	223,791	227,288	173,794	135,049
9	164,583	156,517	164,348	173,309	178,260	165,350	171,615	189,472	225,256	225,745	171,857	134,582
10	164,230	156,574	165,291	173,430	178,013	164,289	172,219	190,365	226,796	224,209	169,871	134,064
11	163,877	156,574	166,059	173,612	177,890	163,174	172,824	191,260	228,343	222,747	167,899	133,599
12	163,525	156,574	166,651	173,916	177,706	162,354	173,369	192,156	229,895	221,291	165,822	133,083
13	163,232	156,631	167,067	174,220	177,644	161,771	173,977	193,056	231,240	219,840	163,936	132,620
14	162,881	156,631	167,304	174,524	177,521	160,840	174,768	194,215	232,732	218,257	162,296	132,056
15	162,530	156,631	167,542	174,707	177,460	160,317	175,439	195,572	234,300	216,817	160,607	131,340
16	162,238	156,688	167,899	175,011	177,460	159,622	176,111	197,130	235,803	215,177	158,813	130,577
17	162,004	156,688	168,317	175,378	177,214	159,217	177,214	198,825	237,311	213,748	156,917	129,968
18	161,713	156,688	168,615	176,050	177,030	158,813	178,260	200,199	238,536	212,528	155,091	129,260
19	161,421	156,688	168,734	176,907	176,907	158,525	179,062	201,447	239,547	211,311	153,222	128,605
20	160,956	156,631	168,914	177,890	176,907	158,295	179,742	202,369	240,199	209,828	151,422	127,953
21	160,549	156,631	169,811	178,876	176,785	158,180	180,547	203,624	240,706	208,218	149,803	127,502
22	160,259	156,574	170,171	179,432	176,478	158,065	181,106	204,618	240,996	206,614	148,305	127,003
23	159,969	156,574	170,351	179,494	176,172	158,065	181,479	205,548	240,924	204,817	146,982	126,555
24	159,796	156,517	170,532	179,494	175,622	158,237	182,039	206,347	240,706	203,095	145,884	126,059
25	159,333	157,089	170,652	179,432	175,255	158,352	182,476	207,415	240,126	201,381	144,793	125,515
26	159,333	158,007	170,953	179,309	174,768	159,102	182,725	208,687	239,403	199,544	143,814	125,021
27	159,160	158,468	171,193	179,247	174,159	160,491	183,163	210,704	238,608	197,716	142,840	124,726
28	158,813	158,640	171,434	179,185	173,551	161,771	183,601	212,325	237,815	195,896	142,086	124,332
29	158,468	159,564	171,615	179,062	-----	162,939	184,039	213,748	236,880	193,957	141,334	124,038
30	158,237	159,854	171,857	179,062	-----	163,877	184,478	214,837	235,875	191,900	140,531	123,744
31	158,122	-----	172,038	179,123	-----	164,937	-----	215,928	-----	189,918	139,678	-----
MAX	168,734	159,854	172,038	179,494	179,123	172,763	184,478	215,928	240,996	234,944	187,821	138,882
MIN	158,122	156,517	160,027	172,219	173,551	158,065	166,000	184,981	216,954	189,918	139,678	123,744
(a)	2,557.53	2,557.83	2,559.89	2,561.05	2,560.14	2,558.70	2,561.91	2,566.71	2,569.56	2,562.77	2,554.20	2,551.08
(b)	-10,971	+1,732	+12,184	+7,085	-5,572	-8,614	+19,541	+31,450	+19,947	-45,957	-50,240	-15,934
(c)	3,011	1,623	619	700	990	1,836	2,277	3,182	5,337	6,226	5,251	3,678

CAL YR 1970 b -53,497

WTR YR 1971 b -45,349

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

## BUENA VISTA LAKE BASIN

## 11191000 KERN RIVER BELOW ISABELLA DAM, CALIF.

LOCATION.--Lat 35°38'21", long 118°29'02", in S<sup>1</sup>/<sub>4</sub> sec.30, T.26 S., R.33 E., Kern County, on right bank 200 ft downstream from highway bridge, 0.6 mile downstream from Isabella Dam, and 1.6 miles southwest of town of Lake Isabella.

DRAINAGE AREA.--2,074 sq mi.

PERIOD OF RECORD.--April 1945 to current year. Prior to October 1952, published as "below Isabella damsite."

GAGE.--Water-stage recorder. Datum of gage is 2,435.07 ft above mean sea level (levels by Corps of Engineers). Prior to Mar. 12, 1952, water-stage recorder at site 0.6 mile upstream at different datum. Mar. 12, 1952, to July 26, 1953, nonrecording gage at present site and datum.

AVERAGE DISCHARGE (adjusted for diversion to Borel Canal since 1945 and for change in storage and evaporation from Isabella Reservoir since 1954).--26 years, 886 cfs (641,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 940 cfs July 20-22 (gage height, 7.79 ft); no flow Dec. 2-4.

Period of record: Maximum discharge, 39,000 cfs Nov. 19, 1950 (gage height, 28.6 ft, from floodmarks, present site and datum), from rating curve extended above 1,100 cfs on basis of slope-area measurement of maximum flow; minimum, 2.1 cfs (regulated) Nov. 27, 1951. Maximum discharge since construction of Isabella Dam in 1954, 7,300 cfs May 3, 1969 (gage height, 17.67 ft); no flow Oct. 29, 1954, Mar. 22, 1960, Dec. 2-4, 1970.

REMARKS.--Records good. Flow regulated by Isabella Reservoir (see sta 11190500) beginning Apr. 15, 1954. Borel Canal (see sta 11187500) diverts above station. Diversion for irrigation of 3,500 acres between head of Isabella Reservoir and upstream stations. An additional 6,500 acres in reservoir can be irrigated when reservoir stage is low. Records of water temperatures for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1958(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	274	4.8	4.7	5.5	258	3.8	5.8	5.4	793	808	9.1
2	10	303	0	4.7	5.3	267	3.8	5.8	5.5	763	835	8.9
3	10	326	0	4.7	5.8	280	3.7	5.8	5.5	731	882	8.8
4	10	326	0	4.7	5.7	305	3.4	5.8	5.5	702	890	8.6
5	10	326	1.5	4.7	5.7	283	11	5.8	5.5	747	819	8.6
6	10	316	5.3	4.7	5.8	234	32	5.8	11	799	743	8.5
7	10	296	5.3	4.7	5.3	311	25	5.5	21	815	671	8.4
8	10	316	5.3	2.9	5.3	372	25	6.1	35	792	670	8.4
9	10	270	5.4	4.6	5.3	394	17	5.5	70	802	689	8.4
10	10	229	5.5	5.1	5.3	397	4.9	4.7	124	729	711	8.6
11	10	219	5.5	5.1	5.3	390	56	4.7	181	704	740	8.9
12	10	209	5.9	5.1	5.3	373	75	4.7	228	700	731	8.9
13	10	198	5.9	5.2	5.3	309	59	4.7	315	716	627	8.9
14	10	190	5.5	5.3	14	302	28	4.7	336	779	509	8.9
15	316	186	5.3	5.2	48	323	10	4.7	363	844	513	8.9
16	306	180	5.3	5.1	71	284	6.2	4.7	426	825	611	21
17	284	188	5.3	4.9	58	228	6.2	4.0	499	767	610	20
18	314	227	5.3	4.9	49	141	6.2	4.3	527	791	599	7.7
19	334	227	5.3	4.9	25	95	6.1	3.8	536	840	590	7.3
20	334	227	5.3	4.8	2.2	66	5.9	3.8	595	899	509	7.4
21	334	227	5.4	5.8	3.2	87	5.8	3.8	640	936	429	7.5
22	325	227	6.1	5.6	41	125	5.8	28	641	921	340	7.3
23	296	227	4.9	5.5	97	172	5.8	18	697	879	306	7.8
24	267	227	4.9	5.5	113	178	5.8	51	736	812	238	7.7
25	260	227	4.9	5.5	97	148	5.8	60	792	716	202	7.7
26	281	336	4.9	5.5	97	84	5.8	93	795	753	105	7.7
27	305	100	4.9	5.5	91	9.3	5.8	40	825	756	46	7.7
28	338	5.7	4.9	5.5	196	3.0	5.8	6.0	864	740	9.4	7.5
29	347	5.3	4.9	5.5	-----	4.0	5.8	5.8	864	801	9.4	7.6
30	300	5.1	4.9	5.5	-----	3.9	5.8	5.4	844	817	9.4	7.8
31	282	-----	4.9	5.5	-----	3.8	-----	5.3	-----	798	9.4	-----
TOTAL	5,363	6,620.1	143.3	156.9	1,073.3	6,430.0	446.2	417.0	11,992.4	24,467	15,460.6	270.5
MEAN	173	221	4.62	5.06	38.3	207	14.9	13.5	400	789	499	9.02
MAX	347	336	6.1	5.8	196	397	75	93	864	936	890	21
MIN	10	5.1	0	2.9	2.2	3.0	3.4	3.8	5.4	700	9.4	7.3
AC-FT	10,640	13,130	284	311	2,130	12,750	885	827	23,790	48,530	30,670	537
MEAN a	206	316	436	511	529	660	860	1,048	1,363	676	308	188
AC-FT a	12,670	18,780	26,830	31,450	29,400	40,610	51,170	64,430	81,120	41,590	18,950	11,060

CAL YR 1970 TOTAL 135,317.80 MEAN 371 MAX 1,350 MIN 0 AC-FT 268,400 MEAN a 782 AC-FT a 566,000  
WTR YR 1971 TOTAL 72,840.30 MEAN 200 MAX 936 MIN 0 AC-FT 144,500 MEAN a 591 AC-FT a 428,100

a Adjusted for change in contents and evaporation from Isabella Reservoir and for diversion to Borel Canal.

## 11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CALIF.

LOCATION.--Lat 35°31'15", long 118°40'34", in NE¼SE¼ sec.6, T.28 S., R.31 E., Kern County, on left bank 1.0 mile southwest of Democrat Springs and 2.1 miles upstream from Cow Creek.

DRAINAGE AREA.--2,258 sq mi.

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.

GAGE.--Water-stage recorder on river; water-stage recorder for conduit diversion. Altitude of gage is 1,850 ft (from topographic map).

AVERAGE DISCHARGE (River only, unadjusted).--21 years, 600 cfs (434,700 acre-ft per year).

(Combined river and diversion, adjusted for storage).--21 years, 922 cfs (668,000 acre-ft per year).

EXTREMES (River only).--Current year: Maximum discharge, 1,070 cfs Aug. 4 (gage height, 8.79 ft); minimum daily, 0.09 cfs Dec. 15.

Period of record (prior to regulation by Isabella Lake): Maximum discharge, 40,000 cfs Nov. 19, 1950 (gage height, 30.7 ft), from rating curve extended above 8,700 cfs on basis of computation of maximum flow over dam (basic data for computation furnished by Southern California Edison Co.); minimum daily, 0.7 cfs Nov. 17-19, 1951.

1954 to current year: Maximum discharge, 10,100 cfs Dec. 6, 1966 (gage height, 18.55 ft); minimum daily, 0.09 cfs Dec. 15, 1970.

(Combined flow).--Current year: Maximum discharge, 1,470 cfs Aug. 4; minimum daily, 17 cfs Dec. 11, 12.

Period of record (prior to regulation by Isabella Lake): Maximum discharge, 40,000 cfs Nov. 19, 1950; minimum daily, 123 cfs Sept. 22, 1951.

1954 to current year: Maximum discharge, 10,100 cfs Dec. 6, 1966; minimum daily, 10 cfs Dec. 17, 1968.

REMARKS.--Records good. Kern River No. 1 conduit diverts up to about 420 cfs from left bank of Kern River in sec.13, T.28 S., R.30 E., for power development; water is returned to river 7 miles below station. Flow regulated by Isabella Lake (formerly Isabella Reservoir) 20 miles upstream beginning in 1954 (see sta 11190500). Many diversions above station for irrigation. See schematic diagram of Kern River basin. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Gage-height record and 12 discharge measurements for river and gage-height record and 13 discharge measurements for conduit furnished by Southern California Edison Co., in connection with a Federal Power Commission project.

REVISIONS.--WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	290	255	.39	126	438	153	41	52	936	943	168
2	57	290	123	.46	150	440	99	27	52	873	964	145
3	42	338	92	.39	186	449	121	73	52	852	1,020	121
4	42	338	77	.39	184	465	143	99	73	778	1,050	78
5	40	338	32	.33	175	483	157	101	106	817	985	55
6	58	340	59	.33	149	422	170	125	120	890	915	52
7	88	316	25	.33	173	445	179	124	184	932	810	52
8	104	318	18	.33	179	538	178	51	184	890	792	52
9	93	320	18	.33	203	560	173	18	206	915	827	52
10	29	253	18	.39	186	568	97	15	257	859	841	53
11	48	240	16	.39	186	558	117	15	310	803	880	54
12	346	224	16	.39	205	548	237	17	344	796	890	54
13	330	219	3.1	.63	192	528	215	15	433	799	803	54
14	372	200	.14	.46	200	452	202	14	461	852	660	54
15	366	200	.09	.46	226	503	158	16	483	943	609	78
16	348	194	.14	.39	278	459	64	44	528	953	732	103
17	292	192	.17	.39	296	436	23	51	603	869	741	129
18	302	189	.17	.39	257	346	28	53	645	890	723	78
19	346	86	.22	.39	251	292	22	56	645	943	738	56
20	346	.54	.22	.46	182	240	22	85	681	1,010	654	56
21	346	.27	.39	.39	149	242	20	130	764	1,060	606	54
22	346	.27	.39	38	198	273	21	134	726	1,060	488	54
23	324	.22	.33	248	280	334	29	172	806	1,020	485	54
24	284	.22	.33	244	310	356	29	206	827	957	409	53
25	271	.33	.27	230	304	338	31	219	908	838	398	53
26	273	25	.33	222	290	302	30	258	911	855	314	53
27	306	64	.39	222	292	194	29	248	918	887	257	53
28	328	30	.39	219	322	170	29	38	988	841	200	53
29	366	68	.39	212	-----	166	30	22	985	915	156	52
30	346	170	.39	200	-----	165	57	22	985	957	184	52
31	292	-----	.39	186	-----	165	-----	37	-----	936	152	-----
TOTAL	7,186	5,243.85	757.24	2,029.41	6,129	11,875	2,863	2,526	15,237	27,926	20,226	2,075
MEAN	232	175	24.4	65.5	219	383	95.4	81.5	508	901	652	69.2
MAX	372	340	255	248	322	568	237	258	988	1,060	1,050	168
MIN	29	.22	.09	.33	126	165	20	14	52	778	152	52
AC-FT	14,250	10,400	1,500	4,030	12,160	23,550	5,680	5,010	30,220	55,390	40,120	4,120

CAL YR 1970 TOTAL 175,625.39 MEAN 481 MAX 1,430 MIN .09 AC-FT 348,400  
WTR YR 1971 TOTAL 104,073.50 MEAN 285 MAX 1,060 MIN .09 AC-FT 206,400

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KERN RIVER AND KERN RIVER  
NO. 1 CONDUIT NEAR DEMOCRAT SPRINGS, CALIF., WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	388	290	498	303	523	844	568	452	429	1,340	1,330	535
2	385	290	366	303	550	851	514	436	425	1,280	1,350	510
3	368	338	358	300	585	859	535	486	424	1,260	1,410	487
4	368	338	393	301	585	875	556	514	453	1,190	1,440	439
5	366	338	311	300	578	891	571	516	490	1,230	1,370	406
6	384	340	90	297	553	832	584	540	504	1,300	1,300	402
7	415	316	27	297	577	854	594	539	579	1,340	1,190	402
8	430	318	20	297	583	948	594	462	583	1,300	1,180	401
9	419	320	19	297	608	971	589	424	609	1,320	1,210	386
10	358	253	19	297	592	979	511	420	666	1,260	1,220	368
11	309	240	17	300	594	970	531	420	718	1,210	1,260	390
12	352	224	17	301	612	962	650	422	754	1,200	1,270	378
13	330	219	119	313	599	944	629	419	837	1,200	1,180	388
14	372	200	174	311	606	869	617	418	867	1,250	1,040	388
15	366	200	246	305	632	921	573	422	890	1,340	987	434
16	348	194	252	304	684	877	478	452	934	1,350	1,110	459
17	292	192	264	308	702	849	431	459	1,010	1,270	1,120	489
18	302	219	305	321	663	758	437	460	1,050	1,290	1,100	434
19	346	246	303	329	658	703	430	463	1,050	1,340	1,120	385
20	346	215	306	333	590	652	430	490	1,090	1,410	1,030	397
21	346	216	317	331	556	656	427	534	1,170	1,460	980	379
22	346	216	329	374	605	688	429	539	1,130	1,460	860	363
23	324	216	313	621	688	748	438	574	1,210	1,410	856	347
24	284	213	308	617	716	770	438	609	1,230	1,350	780	314
25	271	227	305	616	708	752	440	623	1,310	1,230	772	313
26	273	277	304	615	694	716	439	662	1,310	1,250	688	320
27	306	319	306	615	696	609	438	653	1,320	1,280	630	310
28	328	310	310	614	724	585	438	444	1,390	1,240	570	274
29	366	311	304	610	-----	581	439	426	1,390	1,310	523	228
30	346	413	304	597	-----	580	469	425	1,390	1,350	554	215
31	292	-----	303	583	-----	580	-----	430	-----	1,320	517	-----
TOTAL	10,726	8,008	7,507	12,310	17,461	24,674	15,217	15,133	27,212	40,340	31,947	11,541
MEAN	346	267	242	397	624	796	507	488	907	1,301	1,031	385
MAX	430	413	498	621	724	979	650	662	1,390	1,460	1,440	535
MIN	271	192	17	297	523	580	427	418	424	1,190	517	215
AC-FT	21,280	15,880	14,890	24,420	34,630	48,940	30,180	30,020	53,980	80,010	63,370	22,890
CAL YR 1970	TOTAL	291,257	MEAN	798	MAX	1,770	MIN	17	AC-FT	577,700		
WTR YR 1971	TOTAL	222,076	MEAN	608	MAX	1,460	MIN	17	AC-FT	440,500		

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	395	308	418	336	564	882	591	453	447	1,370	1,350	539
2	391	298	378	325	556	879	528	461	439	1,320	1,380	514
3	386	339	349	331	582	868	533	505	452	1,280	1,430	467
4	388	344	402	327	604	881	564	531	479	1,250	1,440	434
5	378	350	361	324	601	874	583	549	502	1,300	1,370	410
6	388	353	126	325	572	846	619	568	570	1,350	1,290	413
7	421	332	94	331	566	824	601	548	609	1,370	1,220	409
8	440	327	77	382	594	918	603	472	624	1,330	1,220	401
9	439	338	53	337	598	977	564	443	657	1,340	1,240	392
10	388	247	31	342	612	993	527	459	710	1,260	1,270	396
11	287	236	26	337	604	985	639	502	773	1,240	1,300	400
12	302	214	36	344	611	971	665	451	817	1,230	1,280	393
13	316	210	98	348	622	947	622	444	904	1,250	1,180	404
14	346	205	176	362	631	872	561	446	922	1,320	1,060	423
15	345	201	254	352	643	902	499	442	952	1,390	1,080	461
16	333	195	259	343	686	909	460	489	1,010	1,360	1,170	486
17	290	216	277	336	698	783	503	474	1,080	1,300	1,160	481
18	304	272	309	384	682	719	471	487	1,110	1,330	1,150	420
19	332	261	315	353	671	664	444	494	1,120	1,380	1,150	409
20	334	251	323	334	597	652	439	527	1,210	1,460	1,060	401
21	339	247	327	356	626	691	448	551	1,220	1,490	978	390
22	342	244	320	429	652	721	442	592	1,240	1,460	897	370
23	325	248	314	568	695	754	451	613	1,270	1,430	866	343
24	295	326	324	606	691	747	447	659	1,340	1,360	843	327
25	294	448	331	614	696	678	438	714	1,360	1,270	817	327
26	275	363	338	636	704	644	449	772	1,380	1,310	661	335
27	311	389	343	631	726	618	451	646	1,420	1,300	605	304
28	335	402	331	623	824	598	458	481	1,430	1,290	530	282
29	362	474	339	591	-----	579	471	455	1,420	1,350	539	265
30	346	552	333	611	-----	586	462	446	1,410	1,360	541	262
31	310	-----	326	579	-----	535	-----	434	-----	1,350	522	-----
TOTAL	10,731	9,190	7,988	13,097	17,908	24,497	15,533	16,108	28,877	41,400	32,599	11,858
MEAN	346	306	258	422	640	790	518	520	963	1,335	1,052	395
MAX	440	552	418	636	824	993	665	772	1,430	1,490	1,440	539
MIN	275	195	26	324	556	535	438	434	439	1,230	522	262
AC-FT	21,280	18,230	15,840	25,980	35,520	48,590	30,810	31,950	57,280	82,120	64,660	23,520
CAL YR 1970	TOTAL 303,134		MEAN 831	MAX 1,780		MIN 26	AC-FT 601,300					
WTR YR 1971	TOTAL 229,786		MEAN 630	MAX 1,490		MIN 26	AC-FT 455,800					

## BUENA VISTA LAKE BASIN

11194200 WAGONWHEEL CREEK NEAR REWARD, CALIF.

LOCATION.--Lat 35°19'24", long 119°44'31", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.8, T.30 S., R.21 E., Kern County, at culvert on private road 3.5 miles west of Reward.

DRAINAGE AREA.--1.38 sq mi.

PERIOD OF RECORD.--Water years 1958-65 (annual maximum), October 1965 to September 1971 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 1,500 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 43 cfs Dec. 21 (gage height, 7.98 ft); no flow most of year. Period of record: Maximum discharge, 306 cfs Aug. 14, 1965 (gage height, 13.44 ft, from floodmarks), from rating curve based on computation of flow through culvert at gage heights 6.97, 9.05, 9.55, 9.92 ft, and on computation of flow through culvert plus road-overflow at gage height 13.44 ft; no flow most of each year.

REMARKS.--Records fair. No regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0			0						
2			0			0						
3			0			0						
4			0			0						
5			0			0						
6			0			0						
7			0			0						
8			0			0						
9			0			0						
10			0			0						
11			0			0						
12			0			0						
13			.10			.02						
14			0			0						
15			0			0						
16			0			0						
17			0			0						
18			0			0						
19			0			0						
20			0			0						
21			4.3			0						
22			0			0						
23			0			0						
24			0			0						
25			0			0						
26			0			0						
27			0			0						
28			0			0						
29			0		-----	0						
30			0		-----	0						
31		-----	0		-----	0	-----		-----			-----
TOTAL	0	0	4.40	0	0	.02	0	0	0	0	0	0
MEAN	0	0	.14	0	0	.0006	0	0	0	0	0	0
MAX	0	0	4.3	0	0	.02	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	8.7	0	0	.04	0	0	0	0	0	0
(a)	0	0	1.3	.3	.6	.6	.6	.6	0	0	0	0
CAL YR 1970	TOTAL 6.10	MEAN .017	MAX 4.3	MIN 0	AC-FT 12							
WTR YR 1971	TOTAL 4.42	MEAN .012	MAX 4.3	MIN 0	AC-FT 8.8							

PEAK DISCHARGE (BASE, 5.0 CFS).--Dec. 21 (time unknown) 43 cfs (7.98 ft).

a Precipitation, in inches.

## 11195500 SAN EMIGDIO CREEK AT SAN EMIGDIO RANCHHOUSE, CALIF.

LOCATION.--Lat 34°58'54", long 119°11'03", in San Emigdio Grant, Kern County, on left bank 50 ft downstream from unnamed tributary, 0.8 mile upstream from San Emigdio ranchhouse, and 13 miles west of Wheeler Ridge.

DRAINAGE AREA.--48.8 sq mi.

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

GAGE.--Water-stage recorder and sharp-crested weir with rectangular flume for flows below 15 cfs. Datum of gage is 1,617.57 ft above mean sea level.

AVERAGE DISCHARGE.--12 years, 1.56 cfs (1,130 acre-ft per year); median of yearly mean discharges, 1.2 cfs (870 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 40 cfs Nov. 29 (gage height, 10.00 ft); minimum daily, 0.74 cfs May 13.

Period of record: Maximum discharge, 6,690 cfs Aug. 5, 1961 (gage height, 19.87 ft, from floodmarks), from rating curve extended above 20 cfs on basis of slope-area measurements at gage heights 10.94 and 19.87 ft; minimum daily, 0.30 cfs Apr. 23, 24, 1962 and many days in 1965, 1966.

Maximum stage known since at least 1938 (from information by local residents), that of Aug. 5, 1961.

REMARKS.--Records good. Small diversions for stock and domestic use above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.5	1.8	1.8	1.6	1.2	.92	1.0	1.3	1.2	1.2	1.4
2	1.6	1.5	1.7	2.3	1.7	1.2	.92	1.1	1.3	1.2	1.2	1.4
3	1.6	1.5	1.6	1.7	1.6	1.2	.92	1.4	1.2	1.2	1.3	1.5
4	1.6	1.5	1.6	1.7	1.6	1.2	.92	1.5	1.1	1.2	1.3	1.5
5	1.6	1.5	1.7	1.7	1.6	1.2	.87	1.4	1.1	1.2	1.3	1.5
6	1.6	1.5	1.6	1.6	1.6	1.2	.92	1.4	1.1	1.2	1.2	1.5
7	1.6	1.6	1.6	1.6	1.5	1.1	.97	1.5	1.0	1.2	1.2	1.6
8	1.6	1.5	1.7	1.6	1.5	1.1	.97	1.4	1.0	1.2	1.2	1.6
9	1.6	1.5	1.6	1.6	1.6	1.1	.97	1.0	1.0	1.2	1.2	1.5
10	1.6	1.6	1.7	1.6	1.5	1.1	.97	.87	1.1	1.2	1.2	1.5
11	1.6	1.6	1.7	1.6	1.5	1.1	.97	.78	1.1	1.2	1.2	1.5
12	1.5	1.5	1.7	1.7	1.5	1.1	.97	.78	1.0	1.2	1.2	1.5
13	1.6	1.5	1.7	1.7	1.5	2.4	.97	.74	1.0	1.2	1.2	1.6
14	1.6	1.5	1.7	1.6	1.5	1.2	1.2	.87	1.1	1.2	1.2	1.6
15	1.6	1.5	1.7	1.6	1.4	1.1	1.2	.92	1.0	1.2	1.2	1.6
16	1.6	1.4	1.7	1.6	1.5	1.0	1.1	.92	1.0	1.2	1.1	1.6
17	1.6	1.4	1.7	1.6	1.5	1.0	1.4	1.1	1.0	1.2	1.1	1.6
18	1.6	1.5	1.7	1.6	1.4	.97	1.6	.97	1.0	1.2	1.1	1.6
19	1.6	1.5	1.7	1.7	1.4	.92	1.4	.92	1.0	1.2	1.1	1.6
20	1.6	1.5	1.7	1.7	1.4	.92	1.9	.87	1.1	1.3	1.1	1.6
21	1.6	1.4	1.7	1.7	1.3	.87	2.1	.92	1.1	1.3	1.2	1.7
22	1.6	1.5	1.7	1.7	1.3	.87	1.3	.97	1.1	1.3	1.2	1.7
23	1.6	1.5	1.7	1.7	1.4	.87	1.2	.97	1.1	1.3	1.2	1.7
24	1.6	1.5	1.7	1.7	1.3	.92	1.1	.92	1.1	1.2	1.2	1.7
25	1.5	3.5	1.7	1.7	1.3	.92	1.2	.92	1.2	1.2	1.2	1.8
26	1.5	6.4	1.7	1.7	1.3	.92	1.2	1.1	1.1	1.3	1.2	1.8
27	1.5	3.5	1.8	1.7	1.3	.92	1.2	1.2	1.2	1.3	1.2	1.8
28	1.5	3.2	1.8	1.7	1.3	.92	1.1	1.4	1.2	1.3	1.3	1.8
29	1.5	3.4	1.9	1.7	-----	.92	1.1	1.3	1.2	1.3	1.3	1.8
30	1.5	1.9	1.9	1.6	-----	.92	1.1	1.2	1.2	1.2	1.4	2.0
31	1.4	-----	1.8	1.7	-----	.92	-----	1.3	-----	1.2	1.4	-----
TOTAL	48.7	57.9	53.0	52.2	40.9	33.28	34.66	33.64	33.0	38.0	37.6	48.6
MEAN	1.57	1.93	1.71	1.68	1.46	1.07	1.16	1.09	1.10	1.23	1.21	1.62
MAX	1.6	6.4	1.9	2.3	1.7	2.4	2.1	1.5	1.3	1.3	1.4	2.0
MIN	1.4	1.4	1.6	1.6	1.3	.87	.87	.74	1.0	1.2	1.1	1.4
AC-FT	97	115	105	104	81	66	69	67	65	75	75	96

CAL YR 1970 TOTAL 946.20 MEAN 2.59 MAX 12 MIN 1.4 AC-FT 1,880  
WTR YR 1971 TOTAL 511.48 MEAN 1.40 MAX 6.4 MIN .74 AC-FT 1,010

PEAK DISCHARGE (BASE, 25 CFS).--Nov. 29 (0100) 40 cfs (10.00 ft).

## 11195600 PASTORIA CREEK NEAR LEBEC, CALIF.

LOCATION.--Lat 34°54'33", long 118°48'55", in Los Alamos Y Agua Caliente Grant, Kern County, on right bank just upstream from unnamed tributary and 5.8 miles northeast of Lebec.

DRAINAGE AREA.--27.5 sq mi.

PERIOD OF RECORD.--October 1964 to September 1971 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,970.93 ft above mean sea level.

AVERAGE DISCHARGE.--7 years, 0.82 cfs (594 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 16 cfs Nov. 7, 25, 28, from rating curve extended above 3.0 cfs on basis of slope-area measurement at gage height, 3.01 ft; maximum gage height, 2.83 ft Nov. 25; no flow Oct. 1-10.

Period of record: Maximum discharge, 109 cfs Feb. 25, 1969 (gage height, 3.39 ft), from rating curve extended above 6.2 cfs on basis of slope-area measurements of maximum flow; no flow for many days in 1964-67, 1970, 1971.

REMARKS.--Records poor. No regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.08	.70	.97	1.2	.97	1.0	.80	.84	.63	.21	.07
2	0	.08	1.0	3.9	1.2	.92	1.1	.80	.79	.81	.18	.06
3	0	.10	.50	2.1	1.2	.92	1.0	.90	.77	.86	.18	.06
4	0	.10	.56	1.4	1.2	.92	.94	1.0	.77	.97	.16	.06
5	0	.10	.56	1.3	1.2	.90	.92	1.0	.73	.94	.16	.06
6	0	.10	.37	1.2	1.1	.88	.92	1.0	.75	.92	.16	.06
7	0	.64	.33	1.3	1.1	.86	.94	.90	.73	.90	.14	.06
8	0	.16	.33	1.7	1.1	.86	.94	.90	.73	.77	.14	1.1
9	0	.14	4.9	1.7	1.1	.86	.92	.90	.75	.77	.12	.07
10	0	.14	1.9	1.8	1.1	.84	.90	.80	.77	.75	.10	.06
11	.02	.14	.61	2.0	1.1	.84	.92	.80	.73	.69	.10	.06
12	.02	.12	.45	2.3	1.0	.84	.92	.80	.69	.61	.10	.06
13	.02	.12	.41	2.1	1.0	6.3	.90	.80	.69	.48	.10	.06
14	.04	.12	.53	1.9	1.0	2.7	1.1	.90	.71	.37	.08	.06
15	.04	.12	.53	1.2	1.0	1.7	1.0	.90	.63	.37	.08	.06
16	.03	.12	.51	1.2	1.1	1.4	.92	.90	.56	.33	.08	.06
17	.03	.12	.56	1.3	1.5	1.2	3.1	.90	.53	.33	.08	.07
18	.03	.12	1.9	1.8	1.7	1.1	3.0	.94	.53	.33	.08	.06
19	.03	.12	5.8	2.3	2.3	1.0	1.5	.94	.51	.26	.08	.06
20	.03	.12	.94	2.1	1.1	1.0	1.5	.94	.51	.23	.08	.06
21	.04	.12	2.5	2.1	1.1	1.0	1.2	.92	.48	.21	.08	.06
22	.04	.10	1.6	2.0	1.1	.99	1.0	.88	.45	.21	.08	.06
23	.05	.12	1.4	1.9	2.8	.99	.90	.84	.45	.21	.08	.05
24	.05	.12	1.2	1.7	1.1	1.0	.90	.81	.45	.21	.08	.05
25	.06	3.0	1.0	1.6	1.0	1.1	.90	.77	.43	.18	.08	.06
26	.06	.34	.99	1.5	1.0	1.0	.85	.86	.41	.18	.07	.06
27	.06	.28	1.0	1.4	.99	1.2	.85	1.1	.41	.18	.07	.05
28	.06	2.9	.99	1.3	.99	1.1	.80	1.7	.41	.18	.07	.05
29	.06	1.0	.97	1.3	-----	1.0	.80	.99	.39	.18	.07	.05
30	.06	.80	.94	1.2	-----	1.0	.80	.90	.39	.18	.07	.13
31	.07	-----	.97	1.2	-----	1.0	-----	.86	-----	.18	.07	-----
TOTAL	.90	11.64	36.95	52.77	34.38	38.39	33.44	28.45	17.99	14.42	3.23	2.89
MEAN	.029	.39	1.19	1.70	1.23	1.24	1.11	.92	.60	.47	.10	.096
MAX	.07	3.0	5.8	3.9	2.8	6.3	3.1	1.7	.84	.97	.21	1.1
MIN	0	.08	.33	.97	.99	.84	.80	.77	.39	.18	.07	.05
AC-FT	1.8	23	73	105	68	76	66	56	36	29	6.4	5.7

CAL YR 1970 TOTAL 309.08 MEAN .85 MAX 5.8 MIN 0 AC-FT 613  
WTR YR 1971 TOTAL 275.45 MEAN .75 MAX 6.3 MIN 0 AC-FT 546

## PEAK DISCHARGE (BASE, 10 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11- 7	0700	2.82	16	12- 9	0900	2.77	14
11-25	1900	2.83	16	12-19	0300	2.79	15
11-28	1900	2.82	16	1- 2	0900	2.63	11



## 11196400 CALIENTE CREEK ABOVE TEHACHAPI CREEK, NEAR CALIENTE, CALIF.

LOCATION.--Lat 35°18'41", long 118°34'10", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.17, T.30 S., R.32 E., Kern County, on right bank 0.5 mile upstream from Harper Canyon, 1.0 mile upstream from Oiler Canyon, and 3.6 miles northeast of Caliente.

DRAINAGE AREA.--165 sq mi.

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,575 ft (from topographic map).

AVERAGE DISCHARGE.--10 years, 2.71 cfs (1,960 acre-ft per year); median of yearly mean discharges, 2.0 cfs (1,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8.0 cfs Dec. 17 (gage height, 1.66 ft); no flow many days.  
Period of record: Maximum discharge, 1,410 cfs Aug. 8, 1963 (gage height, 7.48 ft, from floodmarks), from rating curve extended above 51 cfs on basis of slope-area measurement of maximum flow; no flow for several months in most years.

REMARKS.--Records good. Small diversions above station for stock and domestic use.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.78	1.1	3.7	4.1	2.7	2.4	2.2	1.8	1.7	.48	0	.08
2	.72	1.1	3.0	5.3	2.7	2.3	2.0	1.9	1.8	.38	0	.05
3	.72	1.1	2.7	4.7	2.7	2.3	2.0	2.0	1.9	.32	0	.05
4	.86	1.1	2.4	4.1	2.6	2.6	2.0	2.0	1.8	.24	0	.01
5	.94	1.2	2.3	3.5	2.6	2.6	2.0	2.0	1.7	.24	0	.01
6	.94	1.2	2.2	3.2	2.6	2.4	2.0	2.4	1.8	.20	0	.01
7	1.0	1.5	2.0	3.0	2.4	2.4	2.3	2.2	1.7	.20	0	0
8	1.0	1.4	1.9	2.9	2.3	2.4	2.3	2.2	1.3	.20	0	0
9	.94	1.4	3.6	2.9	2.3	2.4	2.3	2.2	1.3	.17	0	0
10	.94	1.4	2.7	2.9	2.3	2.4	2.3	2.0	1.4	.17	0	0
11	.86	1.4	2.4	2.7	2.2	2.4	2.0	1.8	1.5	.14	0	0
12	.86	1.4	2.2	3.2	2.0	2.3	2.0	1.6	1.4	.14	0	0
13	.94	1.4	2.0	3.5	2.0	4.3	2.0	1.7	1.4	.14	0	0
14	.94	1.2	2.0	3.5	2.0	3.7	2.6	1.6	1.3	.14	.01	0
15	1.1	1.1	2.0	3.2	2.2	3.2	2.4	1.6	1.2	.14	.01	0
16	1.0	1.2	2.0	3.2	2.3	3.0	2.2	1.6	1.1	.11	.01	0
17	.94	1.3	4.9	3.0	2.6	3.0	2.7	1.7	.94	.11	.01	0
18	.94	1.3	4.5	3.0	2.5	2.9	3.5	1.7	.86	.17	.01	0
19	1.0	1.4	3.9	3.9	2.7	2.7	2.8	1.6	.72	.14	.01	0
20	1.1	1.4	3.3	6.3	2.7	2.6	2.6	1.6	.72	.11	.03	0
21	1.2	1.4	4.1	6.3	2.6	2.4	2.6	1.6	.78	.11	.03	0
22	1.3	1.4	5.1	5.6	2.6	2.4	2.4	1.6	.66	.11	.03	0
23	1.3	1.4	4.5	4.9	2.7	2.4	2.3	1.4	.60	.11	.01	0
24	1.3	1.4	3.9	4.5	2.7	2.4	2.3	1.3	.48	.11	.08	0
25	1.4	3.0	3.3	4.1	2.6	2.3	2.3	1.3	.48	.11	.08	0
26	1.4	5.6	3.0	3.7	2.6	2.2	2.3	1.4	.54	.08	.05	0
27	1.3	3.3	2.9	3.2	2.4	2.4	2.0	2.0	.60	.08	.05	0
28	1.2	2.7	2.7	3.0	2.4	2.3	2.0	2.2	.66	.05	.05	0
29	1.1	3.7	2.7	2.9	-----	2.2	2.0	2.0	.60	.05	.05	0
30	1.1	4.9	3.2	2.9	-----	2.2	2.0	2.0	.60	.03	.05	0
31	1.1	-----	3.7	2.7	-----	2.2	-----	1.8	-----	.03	.05	-----
TOTAL	32.22	54.4	94.8	115.9	69.0	79.7	68.4	55.8	33.54	4.81	.62	.21
MEAN	1.04	1.81	3.06	3.74	2.46	2.57	2.28	1.80	1.12	.16	.020	.007
MAX	1.4	5.6	5.1	6.3	2.7	4.3	3.5	2.4	1.9	.48	.08	.08
MIN	.72	1.1	1.9	2.7	2.0	2.2	2.0	1.3	.48	.03	0	0
AC-FT	64	108	188	230	137	158	136	111	67	9.5	1.2	.4

CAL YR 1970 TOTAL 910.52 MEAN 2.49 MAX 19 MIN .17 AC-FT 1,810  
WTR YR 1971 TOTAL 609.40 MEAN 1.67 MAX 6.3 MIN 0 AC-FT 1,210

PEAK DISCHARGE (BASE, 50 CFS).--No peak above base.

## BUENA VISTA LAKE BASIN

11196420 TEHACHAPI CREEK NEAR TEHACHAPI, CALIF.

LOCATION.--Lat 35°10'26", long 118°28'43", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.6, T.32 S., R.33 E., Kern County, on right bank 1.3 miles downstream from Brite Creek and 3.2 miles northwest of Tehachapi.

DRAINAGE AREA.--53.2 sq mi.

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,534.48 ft above mean sea level. Prior to Aug. 5, 1964, at site 0.2 mile upstream at different datum.

AVERAGE DISCHARGE.--9 years, 0.30 cfs (217 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 288 cfs Nov. 29 (gage height, 1.87 ft), from rating curve extended above 63 cfs; minimum daily, 0.01 cfs many days.

Period of record: Maximum discharge, 1,700 cfs Aug. 8, 1963 (gage heights, 5.30 ft in gage well, 6.40 ft, from floodmarks, site and datum then in use), from slope-area measurement of maximum flow; no flow for parts of most years.

REMARKS.--Records fair.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1966, WRD Calif. 1969: 1967(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.03	.09	1.0	.50	.09	1.7	.15	.24	.03	.01	.02
2	.02	.03	.09	2.2	.24	2.4	1.4	.15	.24	.03	.01	.02
3	.03	.03	.06	1.4	.66	.09	.66	.15	.24	.03	.01	.02
4	.03	.03	.05	1.0	.83	.24	.83	.15	.24	.03	.01	.02
5	.03	.03	.05	.83	.66	.15	.83	.15	.24	.02	.01	.02
6	.03	.03	.04	.66	.83	.09	.83	.36	.24	.02	.02	.02
7	.03	.04	.04	.66	.66	.09	.24	.15	.24	.02	.02	.02
8	.03	.03	.04	.66	.24	.09	.24	.15	.15	.02	.02	.02
9	.02	.03	.05	.66	.24	.09	.15	.15	.15	.02	.02	.02
10	.02	.03	.04	.66	.15	.09	.15	.15	.15	.02	.02	.02
11	.02	.03	.04	.66	.09	.09	.15	.15	.15	.02	.02	.02
12	.02	.03	.04	.50	.09	.09	.15	.15	.15	.02	.02	.01
13	.02	.03	.04	.66	.09	1.4	.24	.15	.15	.01	.02	.01
14	.02	.02	.04	.66	.09	.24	2.2	.15	.15	.01	.02	.01
15	.03	.02	.04	.66	.09	.24	3.2	.15	.15	.01	.02	.01
16	.03	.03	.04	.83	.09	.36	3.9	.15	.15	.01	.02	.01
17	.03	.03	.24	.50	.15	.36	3.5	.15	.09	.02	.02	.01
18	.03	.02	.06	.24	.15	.24	2.5	.15	.06	.02	.02	.01
19	.04	.02	.06	.24	.24	.36	1.4	.15	.06	.02	.02	.01
20	.04	.02	.05	.50	.15	1.1	.50	.15	.05	.02	.02	.01
21	.04	.02	.50	.66	.09	.24	.36	.15	.05	.02	.02	.01
22	.04	.02	1.2	.66	.15	.50	.24	.24	.04	.02	.02	.01
23	.04	.03	.83	.83	.36	.36	.15	.24	.04	.02	.02	.01
24	.04	.02	.50	.66	.09	.15	.15	.15	.04	.02	.03	.01
25	.04	.06	.50	.83	.15	.66	.09	.09	.03	.02	.03	.02
26	.04	.04	.50	.83	.15	1.9	.15	.15	.02	.02	.01	.02
27	.03	.02	.50	.66	1.4	1.7	.36	.24	.03	.01	.01	.03
28	.03	.24	.50	.50	.15	1.9	.24	.36	.03	.01	.01	.03
29	.03	119	.50	.36	-----	1.9	.15	.36	.04	.01	.02	.03
30	.03	4.9	.66	.36	-----	2.8	.15	.24	.04	.01	.02	.03
31	.03	-----	.83	.36	-----	1.7	-----	.24	-----	.01	.02	-----
TOTAL	.94	124.91	8.22	21.89	8.78	21.71	26.81	5.67	3.65	.57	.56	.51
MEAN	.030	4.16	.27	.71	.31	.70	.89	.18	.12	.018	.018	.017
MAX	.04	119	1.2	2.2	1.4	2.8	3.9	.36	.24	.03	.03	.03
MIN	.02	.02	.04	.24	.09	.09	.09	.09	.02	.01	.01	.01
AC-FT	1.9	248	16	43	17	43	53	11	7.2	1.1	1.1	1.0

CAL YR 1970 TOTAL 237.69 MEAN .65 MAX 119 MIN .01 AC-FT 471  
 WTR YR 1971 TOTAL 224.22 MEAN .61 MAX 119 MIN .01 AC-FT 445

PEAK DISCHARGE (BASE, 10 CFS)  
 DATE TIME G.H. DISCHARGE DATE TIME G.H. DISCHARGE  
 11-29 1200 1.87 288 3- 2 0230 0.66 12  
 2-27 0600 .64 11

NOTE.--No gage-height record July 14 to Aug. 17.

## 11197000 TULARE LAKE IN KINGS COUNTY, CALIF.

LOCATION.--Lat 36°02'36", long 119°38'34", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.1, T.22 S., R.21 E., Kings County, at El Rico Ranch 6.0 miles southwest of Corcoran and 14.2 miles southeast of Stratford.

PERIOD OF RECORD.--March 1906 to September 1920 (incomplete), February 1937 to September 1961, January 1969 to current year.

GAGE.--Nonrecording gage. Datum of gage is at mean sea level. March 1906 to September 1920 nonrecording gages at various sites at different datums. February 1937 to September 1958 water-stage recorder or nonrecording gage at various sites.

EXTREMES.--Current year: Maximum contents, 236,000 acre-ft Oct. 1 (elevation, 185.26 ft); lake dry Sept. 3-30. Period of record: Maximum elevation 196.8 ft June 27, 28, 1941; lake dry or practically dry for parts of 1906, 1914-16, 1919, 1937, 1946, 1950-53, 1955-56, 1958, 1969, 1971; lake dry for entire years 1920-22, 1924-36, 1947-49, 1954, 1957, 1959-61. Lake elevation of June 27, 28, 1941, was highest known since about 1890. Historical accounts indicate that Tulare Lake under natural conditions reached an elevation of 216 ft above mean sea level in 1862 and 1868. This lake elevation was the highest since at least the early 1800's.

REMARKS.--Tulare Lake receives water from Kings, Kaweah, and Tule Rivers during high-water periods and occasionally from Kern River, Deer Creek, and several small intermittent streams. Its natural boundary has been greatly altered by construction of levees and other reclamation work. Elevation at lowest point of lakebed is now about 175 ft above mean sea level, lower than previously determined because of variable subsidence. Since July 1969 storage has been reduced by evaporation and pumping for irrigation.

COOPERATION.--Records of elevation and sequence of flooding and dewatering furnished by J. G. Boswell Co. Area-capacity curves furnished by J. B. Summers, civil engineer, Corcoran, based on surveys in 1966.

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	236,000	205,500	192,000	188,000	176,000	170,000	148,000	126,000	110,200	81,700	29,000	800
2	235,000	205,000	190,000	188,000	176,500	170,000	147,000	125,500	110,000	80,400	28,000	200
3	234,000	204,000	189,000	191,000	177,000	169,000	146,000	125,000	109,800	77,800	27,000	0
4	233,000	203,000	188,000	190,000	176,000	168,000	145,000	124,000	109,400	76,500	25,000	0
5	232,000	202,000	186,000	190,000	175,500	167,000	145,000	123,000	109,000	75,200	23,000	0
6	231,000	201,500	188,000	191,000	175,000	166,000	144,000	122,500	108,000	73,900	21,000	0
7	230,000	201,000	188,000	191,000	174,000	165,000	143,000	122,000	107,500	72,600	19,000	0
8	228,000	200,500	187,000	190,000	177,000	164,000	142,000	121,000	107,000	71,300	18,000	0
9	226,000	200,000	186,500	190,000	177,000	164,000	141,000	120,000	106,000	70,000	17,000	0
10	225,000	199,500	186,000	189,000	176,500	163,000	140,000	119,000	105,000	68,800	15,500	0
11	224,000	199,000	185,500	188,000	176,500	162,500	139,000	118,000	104,000	67,500	14,800	0
12	223,000	198,000	185,000	188,000	176,500	162,000	138,000	117,500	103,000	65,000	14,000	0
13	222,000	197,000	184,500	187,000	176,000	161,000	136,000	117,000	102,000	63,800	12,500	0
14	220,000	196,500	184,000	185,000	176,000	160,000	134,000	116,500	101,500	62,500	11,000	0
15	218,000	196,000	184,000	184,000	176,000	159,000	133,000	116,000	101,000	60,000	10,000	0
16	216,000	195,000	185,000	184,000	175,500	159,000	132,500	115,000	100,000	57,500	9,000	0
17	215,000	194,000	186,000	183,000	175,500	158,000	132,000	114,000	99,000	55,000	8,500	0
18	214,000	193,000	187,000	182,000	175,000	157,000	131,500	113,000	98,500	52,600	7,500	0
19	213,000	192,000	187,000	182,000	175,000	156,000	131,000	113,000	98,000	50,300	7,000	0
20	212,000	190,500	187,000	180,000	175,000	154,000	130,500	112,500	97,500	48,000	6,000	0
21	211,500	189,000	186,500	182,000	174,500	153,000	130,000	112,500	97,000	46,900	5,000	0
22	211,000	188,500	186,000	182,000	174,000	152,000	129,000	112,000	96,500	44,700	4,800	0
23	210,500	188,000	186,000	181,000	173,000	151,500	128,000	112,000	96,000	43,600	4,200	0
24	210,000	187,500	186,000	180,000	172,500	151,000	127,000	111,800	94,700	41,500	3,800	0
25	209,500	187,000	186,000	179,000	172,500	151,000	127,000	111,600	92,100	39,400	3,500	0
26	209,000	190,000	186,000	178,000	172,000	151,000	127,000	111,400	90,800	37,300	3,200	0
27	208,500	190,000	187,000	180,000	171,000	151,000	127,000	111,200	88,200	36,200	2,800	0
28	208,000	189,500	188,000	179,500	170,000	151,000	127,000	111,000	86,900	34,200	2,200	0
29	207,500	189,000	188,000	179,000	-----	150,500	127,000	110,800	85,600	33,100	1,800	0
30	207,000	193,000	188,000	178,000	-----	150,000	126,500	110,600	83,000	32,000	1,500	0
31	206,000	-----	188,000	177,000	-----	149,000	-----	110,400	-----	31,000	1,000	-----
MAX	236,000	205,500	192,000	191,000	177,000	170,000	148,000	126,000	110,200	81,700	29,000	800
MIN	206,000	187,000	184,000	177,000	170,000	149,000	126,500	110,400	83,000	31,000	1,000	0
(a)	184.2	183.7	183.5	183.1	182.8	182.0	181.2	180.6	179.5	177.3	174.8	-
(b)	-31,000	-13,000	-5,000	-11,000	-7,000	-21,000	-22,500	-16,100	-27,400	-52,000	-30,000	-1,000

CAL YR 1970 b -494,000

WTR YR 1971 b -237,000

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## TULARE LAKE BASIN

11197250 AVENAL CREEK NEAR AVENAL, CALIF.

LOCATION.--Lat 35°51'15", long 120°07'34", in NW¼ sec.10, T.24 S., R.17 E., Kings County, on right bank 550 ft downstream from road ford, 0.4 mile downstream from unnamed tributary, and 10 miles south of Avenal.

DRAINAGE AREA.--57.1 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 825 ft (from topographic map).

AVERAGE DISCHARGE.--10 years, 3.38 cfs (2,450 acre-ft per year); median of yearly mean discharges, 0.6 cfs (435 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 60 cfs May 11 (gage height, 2.40 ft); no flow for several months. Period of record: Maximum discharge, 2,600 cfs Feb. 24, 1969 (gage height, 7.89 ft), from rating curve extended above 510 cfs on basis of slope-area measurements at gage heights 5.72 and 7.54 ft; no flow for several months in each year.

REMARKS.--Records fair. Minor diversions for stock above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.15	.93	.73	.54	.34	.21	.34			
2		0	.98	.73	.73	.54	.34	.24	.34			
3		0	.50	.58	.68	.50	.30	.27	.34			
4		0	.30	.50	.68	.54	.30	.27	.30			
5		0	.27	.50	.68	.54	.24	.27	.27			
6		0	.24	.50	.68	.54	.27	.27	.24			
7		0	.18	.46	.68	.50	.30	.30	.24			
8		0	.15	.46	.68	.50	.30	.34	.21			
9		0	.09	.42	.73	.46	.24	.30	.18			
10		0	.09	.42	.73	.46	.21	.27	.21			
11		0	.18	.42	.73	.46	.21	3.9	.21			
12		0	.18	7.3	.68	.46	.21	.48	.15			
13		0	.21	2.7	.68	.46	.21	.38	.06			
14		0	.27	1.7	.63	.50	.30	.30	.06			
15		0	.21	1.2	.58	.54	.27	.30	.06			
16		0	.21	1.0	.58	.54	.21	.30	.03			
17		0	.18	.93	.68	.50	.24	.30	0			
18		0	.24	.88	.68	.50	.27	.27	0			
19		0	7.5	.83	.68	.50	.27	.27	0			
20		0	3.4	.78	.68	.46	.27	.24	0			
21		0	20	.73	.68	.46	.30	.27	0			
22		0	4.5	.83	.63	.38	.27	.30	0			
23		0	2.5	.83	.63	.42	.24	.24	0			
24		0	1.5	.78	.58	.42	.24	.21	0			
25		0	1.1	.78	.58	.42	.27	.21	0			
26		0	.90	.78	.58	.38	.27	.24	0			
27		0	3.8	.73	.63	.38	.24	.46	0			
28		0	2.0	.73	.58	.38	.24	.46	0			
29		.29	1.0	.73	-----	.38	.21	.42	0			
30		.38	.95	.73	-----	.38	.21	.38	0			
31		-----	.92	.68	-----	.34	-----	.38	-----			-----
TOTAL	0	.67	54.70	31.57	18.49	14.38	7.79	13.05	3.24	0	0	0
MEAN	0	.022	1.76	1.02	.66	.46	.26	.42	.11	0	0	0
MAX	0	.38	20	7.3	.73	.54	.34	3.9	.34	0	0	0
MIN	0	0	.09	.42	.58	.34	.21	.21	0	0	0	0
AC-FT	0	1.3	109	63	37	29	15	26	6.4	0	0	0
CAL YR 1970	TOTAL 211.48	MEAN .58	MAX 22	MIN 0	AC-FT 419							
WTR YR 1971	TOTAL 143.89	MEAN .39	MAX 20	MIN 0	AC-FT 285							

PEAK DISCHARGE (BASE, 30 CFS).--Dec. 21 (time unknown) 40 cfs (2.24 ft); May 11 (1830) 60 cfs (2.40 ft).

## 11197800 POSO CREEK NEAR OILDALE, CALIF.

LOCATION.--Lat 35°30'50", long 118°54'17", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.6, T.28 S., R.29 E., Kern County, on downstream side of highway bridge opposite mouth of Hillvale Canyon, 10 miles northeast of Oildale, and 12 miles northeast of Bakersfield.

DRAINAGE AREA.--230 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 700 ft (from topographic map).

AVERAGE DISCHARGE.--12 years, 27.1 cfs (19,630 acre-ft per year); median of yearly mean discharges, 11 cfs (8,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 125 cfs Jan. 20 (gage height, 7.02 ft); minimum daily, 0.82 cfs Aug. 25.

Period of record: Maximum discharge, 6,700 cfs Feb. 25, 1969 (gage height, 12.85 ft), from rating curve extended above 820 cfs on basis of contracted opening measurement at gage height 11.57 ft; minimum daily, 0.82 cfs Aug. 25, 1971.

Flood of Apr. 4, 1958, reached a stage of 8.6 ft, from floodmarks (discharge, 2,750 cfs, furnished by Kern County Land Co.).

REMARKS.--Records good. Oilfield waste comprises most of low flow.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.5	9.5	31	34	20	21	28	31	2.6	2.6	1.5
2	3.7	3.2	4.9	36	33	19	20	31	27	1.9	2.3	1.6
3	4.2	3.2	13	35	31	20	20	31	23	1.9	2.6	1.6
4	4.2	3.9	8.5	27	29	20	20	31	21	1.8	2.6	1.8
5	4.9	3.7	5.3	24	27	20	18	40	21	1.9	2.8	1.6
6	4.9	3.7	4.9	25	27	21	17	46	21	2.1	2.6	1.8
7	4.4	3.5	4.9	24	26	20	18	86	21	2.3	2.6	1.6
8	3.5	3.5	4.9	24	24	20	19	78	20	2.8	2.6	2.3
9	3.0	3.5	6.7	23	24	19	19	62	16	2.8	2.3	2.6
10	2.8	3.7	13	23	23	19	18	55	16	2.1	2.1	2.6
11	2.8	3.9	15	23	21	20	17	44	15	2.1	1.8	2.1
12	2.8	4.2	14	23	20	21	16	46	14	2.3	1.9	1.8
13	3.0	3.2	13	29	20	28	17	53	11	2.3	2.3	1.8
14	3.0	3.0	12	36	20	57	20	42	11	1.9	2.3	2.1
15	3.0	2.8	12	35	21	44	24	35	10	1.6	2.3	1.9
16	2.6	2.8	14	35	22	38	23	32	9.0	1.5	2.3	1.8
17	3.0	2.6	34	34	24	32	21	32	8.1	1.6	2.1	1.8
18	3.2	2.6	40	42	26	32	33	32	5.3	1.8	2.8	1.9
19	3.5	2.6	30	71	25	29	44	28	4.9	2.3	3.0	2.1
20	3.7	2.8	27	115	27	25	53	23	4.2	2.6	3.0	2.3
21	3.7	3.2	28	110	24	23	58	23	3.5	2.3	1.9	1.9
22	3.5	3.5	44	88	23	23	48	24	3.5	2.3	1.1	2.1
23	3.7	3.2	42	71	24	24	40	24	3.9	1.9	.98	3.2
24	3.5	3.0	36	57	23	24	40	21	3.2	2.3	1.5	3.2
25	3.2	5.0	31	44	23	27	37	20	3.0	1.9	.82	3.2
26	4.2	2.7	27	42	23	30	33	20	2.8	1.9	1.3	3.0
27	3.9	7.6	31	40	21	31	33	47	3.0	2.3	1.1	3.0
28	3.2	3.7	41	40	20	36	30	81	3.2	1.9	1.1	3.2
29	3.2	7.2	41	38	-----	31	27	69	3.7	2.1	1.3	3.9
30	3.2	23	34	37	-----	30	27	51	2.8	2.3	1.6	2.3
31	3.2	-----	31	36	-----	24	-----	38	-----	2.6	1.5	-----
TOTAL	107.7	128.0	672.6	1,318	685	827	831	1,273	342.1	66.0	63.10	67.6
MEAN	3.47	4.27	21.7	42.5	24.5	26.7	27.7	41.1	11.4	2.13	2.04	2.25
MAX	4.9	23	44	115	34	57	58	86	31	2.8	3.0	3.9
MIN	2.6	2.6	4.9	23	20	19	16	20	2.8	1.5	.82	1.5
AC-FT	214	254	1,330	2,610	1,360	1,640	1,650	2,530	679	131	125	134

CAL YR 1970 TOTAL 8,339.30 MEAN 22.8 MAX 936 MIN 1.6 AC-FT 16,540  
WTR YR 1971 TOTAL 6,381.10 MEAN 17.5 MAX 115 MIN .82 AC-FT 12,660

## PEAK DISCHARGE (BASE 70 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
1-20	1700	7.02	125	5-28	1200	7.18	90
5-7	1700	7.10	88				

## TULARE LAKE BASIN

11199500 WHITE RIVER NEAR DUCOR, CALIF.

LOCATION.--Lat 35°48'53", long 118°55'42", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.27, T.24 S., R.28 E., Tulare County, on right bank 0.1 mile downstream from Tyler Gulch and 8.3 miles southeast of Ducor.

DRAINAGE AREA.--92.9 sq mi.

PERIOD OF RECORD.--October 1942 to September 1953, February to September 1971. Monthly discharge only for October 1942 to September 1944, published in WSP 1315-A.

GAGE.--Water-stage recorder. Altitude of gage is 695 ft (from topographic map). October 1942 to September 1946, at site 200 ft upstream and October 1946 to September 1953, at site 300 ft downstream at different datum.

AVERAGE DISCHARGE.--11 years (1942-53), 10.9 cfs (7,890 acre-ft per year).

EXTREMES.--Maximum discharge during period February to September, 31 cfs May 27 (gage height, 4.01 ft); no flow for several months.

Period of record: Maximum discharge, 2,300 cfs (estimated by Bureau of Reclamation) Mar. 9, 1943; no flow for several months in each year.

REMARKS.--Records good. Small diversions above station for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, FEBRUARY TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					6.6	5.2	4.1	6.6	6.6	1.5		
2					6.6	4.8	3.8	6.6	6.1	1.3		
3					6.6	4.6	3.8	6.9	5.4	1.2		
4					6.6	4.8	3.8	8.5	5.2	1.1		
5					6.6	4.6	3.8	10	4.6	.92		
6					6.6	4.2	3.9	15	4.4	.70		
7					6.4	4.2	4.1	15	4.2	.60		
8					6.4	4.2	4.2	12	3.6	.50		
9					6.4	3.9	4.4	10	3.5	.50		
10					6.4	3.9	4.4	9.2	3.6	.70		
11					6.4	3.9	4.6	8.2	3.6	.70		
12					6.6	4.2	4.4	9.2	3.2	.65		
13					6.6	6.9	4.8	8.2	3.0	.40		
14					6.6	6.1	5.4	8.2	2.8	.12		
15					6.4	5.0	5.8	7.8	2.8	0		
16					6.9	4.8	5.2	7.2	2.6	0		
17					7.5	4.6	6.9	7.5	2.5	0		
18					8.2	4.4	14	7.5	2.4	0		
19					7.2	4.2	10	6.6	2.2	0		
20					7.2	4.1	8.5	6.4	2.1	0		
21					5.8	4.1	8.2	5.8	1.9	0		
22					5.8	4.1	7.5	5.6	1.8	0		
23					6.1	4.1	6.6	5.2	1.7	0		
24					5.6	4.4	6.6	4.6	1.7	0		
25					5.4	4.4	6.6	4.4	1.7	0		
26					5.2	4.1	5.8	5.0	1.6	0		
27					5.2	4.4	5.8	20	1.9	0		
28					5.2	5.2	6.1	18	1.8	0		
29					-----	4.6	6.1	12	1.7	0		
30					-----	4.4	6.1	10	1.6	0		
31		-----			-----	4.2	-----	7.8	-----	0		-----
TOTAL					179.1	140.6	175.3	275.0	91.8	10.89	0	0
MEAN					6.40	4.54	5.84	8.87	3.06	.35	0	0
MAX					8.2	6.9	14	20	6.6	1.5	0	0
MIN					5.2	3.9	3.8	4.4	1.6	0	0	0
AC-FT					355	279	348	545	182	22	0	0
CAL YR 1970	TOTAL -		MEAN -	MAX -	MIN -	AC-FT -						
WTR YR 1971	TOTAL -		MEAN -	MAX -	MIN -	AC-FT -						

## 11200800 DEER CREEK NEAR FOUNTAIN SPRINGS, CALIF.

LOCATION.--Lat 35°56'30", long 118°49'19", in SE $\frac{1}{4}$  sec.10, T.23 S., R.29 E., Tulare County, on left bank 1.0 mile upstream from Pothole Creek, 6.3 miles northeast of Fountain Springs, and 12 miles east of Terra Bella.

DRAINAGE AREA.--83.3 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 980 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 90 cfs Nov. 26 (gage height, 3.67 ft); minimum daily, 0.24 cfs Aug. 18.

Period of record: Maximum discharge, 3,340 cfs Feb. 24, 1969 (gage height, 9.85 ft), from rating curve extended above 600 cfs 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 Aug. 14-22, 1968.

Flood of Dec. 6, 1966, reached a stage of 12.54 ft, from floodmarks (discharge, 5,330 cfs).

REMARKS.--Records excellent. No storage or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	5.3	21	20	28	20	20	24	21	8.7	1.8	1.5
2	1.6	5.3	23	27	26	19	19	21	21	9.1	1.5	1.6
3	1.6	5.3	27	21	24	19	19	21	21	8.3	1.5	1.7
4	1.8	5.1	18	18	22	19	19	28	20	7.9	1.3	1.2
5	1.7	5.3	17	18	21	19	18	30	20	7.9	1.3	.98
6	1.7	6.0	16	18	21	18	18	39	19	7.2	1.3	.64
7	2.0	10	15	17	20	18	18	39	19	6.9	1.3	.98
8	2.3	10	16	17	20	18	18	36	18	6.9	1.4	1.3
9	2.4	8.3	18	17	19	18	18	32	17	6.9	1.4	.98
10	2.0	7.6	19	17	20	18	18	30	18	6.9	1.4	.58
11	2.1	7.2	16	17	20	19	17	28	18	6.3	1.3	.52
12	2.3	7.6	15	20	20	19	17	29	17	6.0	.98	.46
13	2.4	7.6	14	36	21	41	17	27	16	5.3	.80	.52
14	2.8	7.6	14	35	21	29	18	26	16	4.3	.80	.46
15	2.8	6.9	13	31	21	25	19	25	15	4.0	.88	.58
16	2.8	6.6	19	29	23	24	18	24	14	4.8	.72	.40
17	2.6	6.6	36	31	24	24	22	24	13	4.8	.40	.46
18	3.3	6.9	24	44	28	24	37	22	13	5.3	.24	.46
19	3.8	7.2	19	55	27	22	30	21	12	5.1	.40	.46
20	4.0	6.6	18	56	25	22	31	20	12	4.0	.46	.32
21	4.3	6.3	24	50	21	21	28	20	11	3.6	.58	.64
22	4.5	6.3	35	43	21	21	24	20	9.9	3.3	.64	1.2
23	5.1	6.6	25	37	22	21	24	19	9.5	2.9	.52	1.4
24	5.1	6.6	20	33	20	22	24	18	9.5	2.9	.98	1.2
25	5.1	13	19	30	20	22	22	18	9.1	3.1	1.3	1.1
26	5.3	73	19	28	19	22	21	17	8.7	2.6	1.4	1.6
27	5.6	33	24	29	18	25	20	37	8.7	2.0	1.3	2.1
28	5.6	17	27	30	19	25	23	40	9.5	1.8	1.1	2.3
29	5.3	24	21	31	-----	23	23	31	9.1	2.1	.98	2.4
30	4.8	41	19	30	-----	21	24	27	9.1	2.1	.98	2.6
31	4.8	-----	20	29	-----	21	-----	24	-----	2.0	1.4	-----
TOTAL	103.1	365.8	631	914	611	679	644	817	434.1	155.0	32.36	32.64
MEAN	3.33	12.2	20.4	29.5	21.8	21.9	21.5	26.4	14.5	5.00	1.04	1.09
MAX	5.6	73	36	56	28	41	37	40	21	9.1	1.8	2.6
MIN	1.6	5.1	13	17	18	18	17	17	8.7	1.8	.24	.32
AC-FT	205	726	1,250	1,810	1,210	1,350	1,280	1,620	861	307	64	65

CAL YR 1970 TOTAL 7,666.10 MEAN 21.0 MAX 889 MIN .24 AC-FT 15,210  
 WTR YR 1971 TOTAL 5,419.00 MEAN 14.8 MAX 73 MIN .24 AC-FT 10,750

PEAK DISCHARGE (BASE, 100 CFS).--No peak above base.

## TULARE LAKE BASIN

11201200 DEER CREEK DIVERSION NEAR TERRA BELLA, CALIF.

LOCATION.--Lat 35°50'40", long 118°59'06", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.30, T.22 S., R.28 E., Tulare County, on right bank  
1,000 ft downstream from diversion structure, 3.8 miles northeast of Terra Bella.

PERIOD OF RECORD.--October 1970 to September 1971.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 510 ft (from topographic map).

EXTREMES.--Current year: Maximum daily discharge, 9.2 cfs May 26; no flow for several months.

REMARKS.--Records good. Diversion receives water from Deer Creek 1,000 ft upstream. Water is used for ground-water recharge.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	0	2.9	1.1	.12	4.6	1.3	0			
2		0	1.4	2.7	.86	.04	4.5	.34	2.0			
3		0	5.9	1.8	.40	.01	4.0	.18	4.7			
4		0	3.2	.54	.26	.05	2.5	0	4.5			
5		0	2.0	.30	.16	.09	2.8	0	4.7			
6		0	1.6	.30	.11	.05	2.6	.16	4.5			
7		0	1.7	.28	.11	.11	2.2	1.8	5.0			
8		0	1.8	.48	.28	.05	3.3	3.3	5.1			
9		0	2.5	.83	.68	.02	3.6	4.3	4.5			
10		0	4.3	.48	1.3	0	2.6	4.0	4.7			
11		0	3.7	.30	.34	0	1.9	3.6	4.6			
12		0	3.4	.24	.36	0	3.3	4.2	4.5			
13		0	3.3	.54	.34	.14	4.7	3.5	4.0			
14		0	3.5	.50	.20	.07	4.7	3.2	3.6			
15		0	3.6	1.8	.13	.02	4.7	2.7	3.4			
16		0	4.7	2.6	.22	0	4.5	2.5	2.9			
17		0	5.6	1.8	.26	0	4.7	1.6	2.1			
18		0	1.7	1.8	.32	0	4.0	.60	1.6			
19		0	1.6	1.1	.07	1.9	2.4	.48	1.3			
20		0	2.1	.92	.13	6.0	3.5	.48	1.3			
21		0	2.9	2.2	.03	4.8	3.4	.34	1.0			
22		0	2.8	3.5	0	3.9	1.8	.48	.65			
23		0	1.8	2.8	0	3.4	2.9	.40	0			
24		0	1.2	2.2	0	3.6	4.1	.22	0			
25		0	1.8	2.1	.08	5.2	2.7	3.6	0			
26		.11	1.2	2.0	.28	5.7	2.0	9.2	0			
27		0	1.1	1.4	.58	5.4	1.9	5.8	0			
28		0	2.6	1.1	.26	5.0	1.9	.42	0			
29		0	3.1	.92	-----	4.7	1.9	.42	0			
30		1.2	2.9	.95	-----	5.2	1.7	.36	0			
31		-----	2.8	.86	-----	4.8	-----	.24	-----			
TOTAL	0	1.31	81.8	42.24	8.86	60.37	95.4	59.72	70.65	0	0	0
MEAN	0	.044	2.64	1.36	.32	1.95	3.18	1.93	2.36	0	0	0
MAX.	0	1.2	5.9	3.5	1.3	6.0	4.7	9.2	5.1	0	0	0
MIN	0	0	0	.24	0	0	1.7	0	0	0	0	0
AC-FT	0	2.6	162	84	18	120	189	118	140	0	0	0

CAL YR 1970 TOTAL - - MEAN - MAX - MIN - AC-FT -  
WTR YR 1971 TOTAL 420.35 MEAN 1.15 MAX 9.2 MIN 0 AC-FT 834



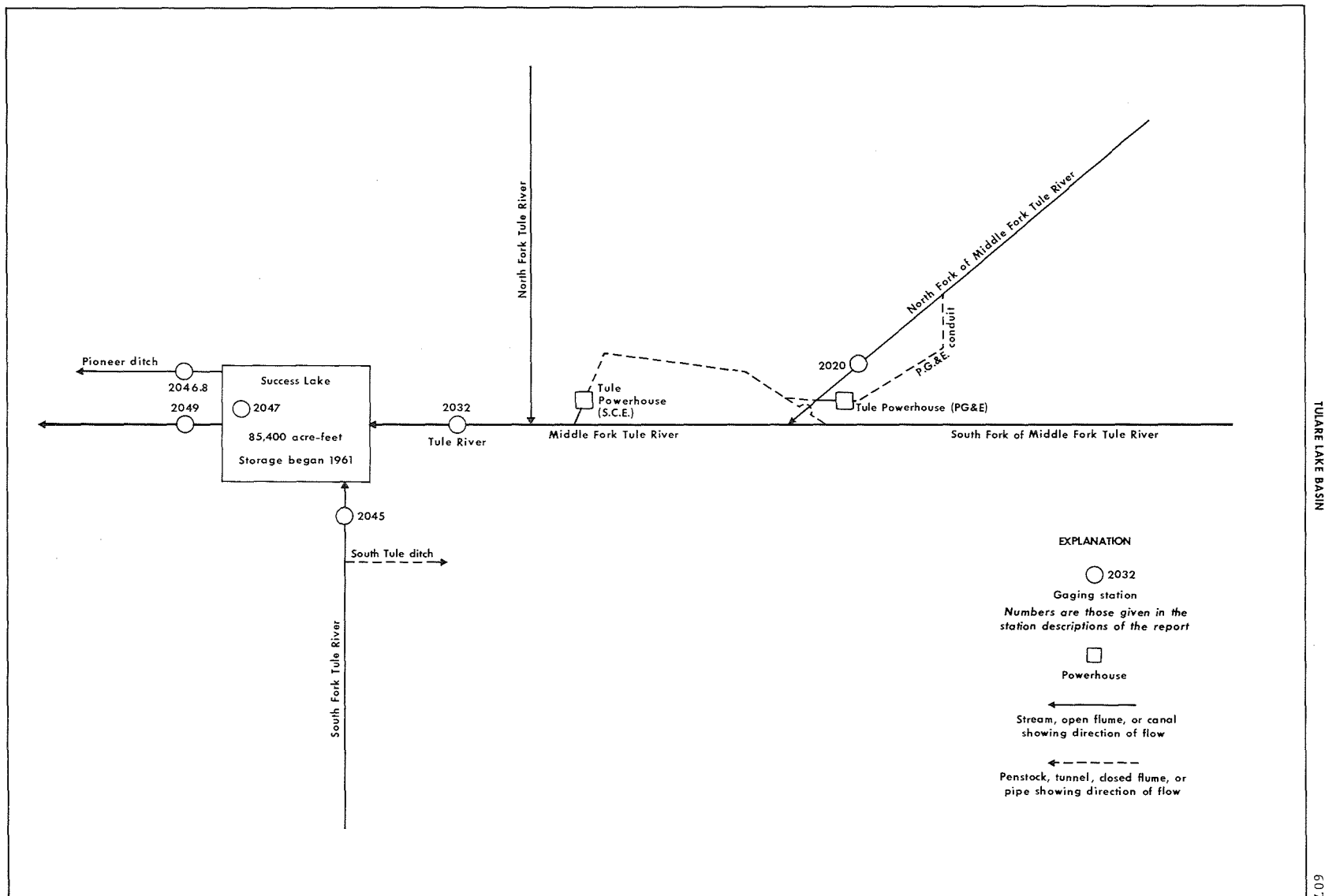


FIGURE 3.--Schematic diagram showing diversions and storage in Tule River basin.

## 11202000 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CALIF.

LOCATION.--Lat 36°10'29", long 118°41'41", in T.20 S., R.30 E. (unsurveyed); Tulare County, on right bank 1.2 miles upstream from mouth, 2.2 miles downstream from Hossack Creek, and 7.4 miles northeast of Springville.

DRAINAGE AREA.--39.3 sq mi.

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 miles upstream, records not equivalent. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

GAGE.--Water-stage recorder. Concrete control on river since Aug. 6, 1958. Water-stage recorder and rectangular concrete channel for conduit diversion. Altitude of gage is 2,920 ft (from topographic map).

AVERAGE DISCHARGE (River only).--32 years, 27.1 cfs (19,630 acre-ft per year).  
(Combined river and diversion).--32 years, 58.7 cfs (42,530 acre-ft per year).

EXTREMES (River only).--Current year: Maximum discharge, 95 cfs Nov. 25 (gage height, 3.72 ft); minimum daily, 1.0 cfs Sept. 24.

Period of record: Maximum discharge, 16,900 cfs Dec. 6, 1966 (gage height, 13.83 ft, from floodmarks), from rating curve extended above 270 cfs on basis of critical-depth determinations at gage heights 9.67 and 12.47 ft; no flow Sept. 10, 11, 1955.

(Combined flow).--Current year: Maximum discharge, 115 cfs Nov. 25; minimum daily, 16 cfs for many days. Period of record: Maximum discharge, 16,900 cfs Dec. 6, 1966; minimum daily, 7.2 cfs Aug. 18, Oct. 17, 1961.

REMARKS.--Pacific Gas and Electric Co. conduit diverts 2.5 miles upstream from station; water is returned to North Fork of Middle Fork Tule River 1.1 miles downstream from station. For record of combined discharges of river and conduit, see following page.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1445: 1951.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	6.0	4.2	5.3	4.5	4.1	12	6.7	11	3.4	2.3	1.9
2	3.1	5.9	13	6.0	4.5	4.0	11	7.0	11	3.3	2.3	1.9
3	3.3	5.9	6.0	5.3	4.4	4.1	11	8.9	9.7	3.4	2.2	1.8
4	3.3	5.9	4.6	5.0	4.2	4.0	11	9.9	10	3.7	2.1	1.8
5	3.9	4.7	4.5	4.4	4.0	3.9	13	8.5	12	3.5	2.0	1.8
6	3.8	3.7	4.2	4.2	4.0	3.9	13	9.3	13	3.3	2.0	1.8
7	3.7	4.4	4.0	4.1	3.9	4.0	9.9	11	14	3.3	1.9	1.8
8	3.1	2.8	4.2	4.0	3.9	4.1	8.7	10	21	3.1	2.0	1.8
9	2.9	2.5	5.6	4.1	3.8	4.1	8.7	8.5	26	3.1	1.9	1.7
10	2.9	2.4	4.4	4.1	3.6	4.1	8.9	12	23	2.9	2.1	1.7
11	3.0	2.8	3.7	4.1	3.7	4.1	9.1	15	21	3.0	2.0	1.7
12	2.8	3.5	3.5	5.9	3.9	5.3	11	19	20	2.9	1.9	1.7
13	2.9	3.3	3.3	6.1	4.1	12	9.7	26	21	2.9	1.7	1.7
14	2.9	2.3	3.3	5.9	4.1	7.0	11	34	19	2.8	1.8	1.6
15	3.3	2.3	3.2	6.2	4.3	6.4	9.1	48	18	2.9	2.0	1.5
16	3.1	2.3	6.2	6.2	4.4	6.1	8.7	55	16	2.8	1.8	1.6
17	4.2	2.3	6.6	8.0	4.9	6.1	12	47	13	3.0	1.9	1.9
18	4.2	2.3	5.3	11	4.6	5.9	11	40	10	2.9	1.9	1.8
19	4.0	2.3	6.0	14	5.2	5.7	9.9	36	6.6	2.7	1.8	1.3
20	3.6	2.3	4.5	14	4.6	5.9	9.7	37	4.5	2.7	1.7	1.2
21	3.1	2.3	7.2	11	4.5	6.1	7.7	36	4.3	2.9	1.7	1.1
22	3.3	2.3	6.4	7.4	4.4	6.4	5.3	24	3.9	3.1	1.7	1.1
23	3.1	2.3	5.6	6.5	4.5	6.8	5.3	22	3.8	2.7	1.7	1.1
24	3.8	2.3	4.8	6.0	4.0	6.5	5.2	27	3.6	2.8	1.7	1.0
25	3.7	23	4.7	5.5	4.0	6.7	4.8	35	3.4	2.7	1.8	1.2
26	3.2	22	5.7	5.1	3.7	11	4.8	40	3.3	2.7	1.8	1.3
27	4.8	5.6	9.2	4.9	3.6	14	4.9	40	3.3	2.6	1.9	1.3
28	6.3	3.3	7.6	4.9	3.9	11	5.2	29	3.3	3.0	1.8	1.5
29	6.1	12	6.7	4.9	-----	11	5.1	22	3.3	2.6	2.0	1.2
30	6.0	7.8	6.0	4.9	-----	15	5.4	18	3.5	2.3	1.9	1.3
31	6.0	-----	5.4	4.8	-----	14	-----	14	-----	2.3	1.8	-----
TOTAL	116.9	152.8	169.6	193.8	117.2	213.3	262.1	755.8	335.5	91.3	59.1	46.1
MEAN	3.77	5.09	5.47	6.25	4.19	6.88	8.74	24.4	11.2	2.95	1.91	1.54
MAX	6.3	23	13	14	5.2	15	13	55	26	3.7	2.3	1.9
MIN	2.8	2.3	3.2	4.0	3.6	3.9	4.8	6.7	3.3	2.3	1.7	1.0
AC-FT	232	303	336	384	232	423	520	1,500	665	181	117	91

CAL YR 1970 TOTAL 5,741.3 MEAN 15.7 MAX 899 MIN 2.3 AC-FT 11,390  
WTR YR 1971 TOTAL 2,513.5 MEAN 6.89 MAX 55 MIN 1.0 AC-FT 4,990

## 11202000 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CALIF.--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF NORTH FORK OF MIDDLE FORK TULE RIVER AND  
PACIFIC GAS AND ELECTRIC CO. CONDUIT NEAR SPRINGVILLE, CALIF., WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	16	29	29	48	34	75	66	74	40	24	19
2	16	16	47	30	47	34	74	68	74	39	24	19
3	17	16	32	27	43	35	74	71	73	38	23	19
4	16	17	29	27	41	35	75	69	73	37	23	18
5	18	22	28	26	40	34	77	70	76	36	23	18
6	17	21	28	25	39	34	77	74	77	35	23	18
7	18	24	29	25	39	35	71	76	78	34	23	18
8	17	20	32	25	39	37	69	73	85	34	22	18
9	17	20	39	26	39	39	70	73	90	33	22	18
10	17	19	30	26	40	40	70	76	87	33	22	18
11	17	18	29	27	42	40	70	79	85	32	22	18
12	17	19	28	30	46	45	74	84	84	31	22	17
13	17	19	26	28	49	58	73	91	85	30	22	17
14	17	18	25	30	50	47	74	99	83	30	21	17
15	17	18	25	29	51	47	68	113	82	29	21	17
16	17	18	34	29	49	48	69	120	80	30	21	17
17	16	18	32	39	48	49	75	112	77	31	20	17
18	17	18	27	60	45	51	70	105	73	31	20	17
19	17	17	28	76	45	53	67	101	69	30	20	16
20	18	17	27	76	42	55	64	102	65	29	20	17
21	18	17	29	66	41	58	62	101	61	28	20	17
22	18	17	29	55	39	62	58	88	59	28	20	17
23	18	17	28	50	40	65	57	86	56	27	20	17
24	18	17	27	46	38	63	55	91	53	27	20	17
25	19	58	27	44	37	66	53	99	50	26	20	17
26	17	72	30	44	35	76	51	104	48	26	20	18
27	17	34	33	46	34	77	53	104	47	26	19	18
28	17	27	30	48	34	76	53	93	46	25	19	19
29	17	50	28	48	-----	78	57	86	44	26	19	18
30	16	37	29	49	-----	81	62	82	43	24	19	19
31	16	-----	29	49	-----	78	-----	78	-----	24	19	-----
TOTAL	531	717	923	1,235	1,180	1,630	1,997	2,734	2,077	949	653	530
MEAN	17.1	23.9	29.8	39.8	42.1	52.6	66.6	88.2	69.2	30.6	21.1	17.7
MAX	19	72	47	76	51	81	77	120	90	40	24	19
MIN	16	16	25	25	34	34	51	66	43	24	19	16
AC-FT	1,050	1,420	1,830	2,450	2,340	3,230	3,960	5,420	4,120	1,880	1,300	1,050
CAL YR 1970	TOTAL	17,952	MEAN	49.2	MAX	921	MIN	16	AC-FT	35,610		
WTR YR 1971	TOTAL	15,156	MEAN	41.5	MAX	120	MIN	16	AC-FT	30,060		

## TULARE LAKE BASIN

11203200 TULE RIVER NEAR SPRINGVILLE, CALIF.

LOCATION.--Lat 36°06'02", long 118°52'07", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.17, T.21 S., R.29 E., Tulare County, on left bank 10 ft downstream from highway bridge, 3.5 miles southwest of Springville, and 4.1 miles upstream from Success Dam.

DRAINAGE AREA.--247 sq mi.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 680 ft (from topographic map). Prior to Mar. 20, 1968, at site 1.9 miles upstream at different datum.

AVERAGE DISCHARGE.--14 years, 145 cfs (105,100 acre-ft per year); median of yearly mean discharges, 98 cfs (71,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 434 cfs Nov. 26; minimum daily, 7.6 cfs Sept. 19, 20.

Period of record: Maximum discharge, 49,600 cfs Dec. 6, 1966 (gage height, 17.18 ft in gage well, 19.7 ft; from floodmarks, site and datum then in use), from rating curve extended above 7,400 cfs on basis of slope-area measurement of maximum flow; no flow for many days in 1961.

Flood in December 1955 reached a stage of 13.7 ft (previous site and datum), from floodmarks (discharge, 21,000 cfs).

REMARKS.--Records good. Many small diversions above station for irrigation. Power is developed on Middle Fork and tributaries. Diversion to Tule River diversion ditch starts 400 ft upstream most of which is returned to the river 0.5 mile downstream. Records since Mar. 20, 1968, include flow diverted to Tule River diversion ditch. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	20	117	101	136	86	178	141	169	51	16	9.3
2	12	20	167	109	132	80	167	141	159	50	16	12
3	11	20	156	117	125	83	160	172	149	49	14	12
4	14	20	102	95	118	85	160	196	147	46	14	12
5	13	22	85	90	113	85	167	192	145	44	14	12
6	13	28	81	87	109	82	168	210	142	40	14	12
7	12	33	79	87	105	82	168	233	141	36	14	11
8	12	37	86	88	104	85	146	229	147	36	14	10
9	13	29	118	88	101	87	144	209	152	33	14	9.6
10	13	26	114	88	99	92	143	205	153	32	14	9.6
11	13	26	94	88	101	94	137	209	156	32	14	9.3
12	13	25	86	109	107	98	141	210	145	32	14	9.3
13	13	26	81	157	113	223	145	226	138	30	14	9.0
14	13	25	78	146	115	167	140	228	136	28	13	9.0
15	13	25	73	131	119	145	142	241	133	28	10	9.0
16	15	25	91	120	121	143	137	253	126	26	10	8.6
17	15	25	155	124	125	145	163	239	120	28	9.3	8.2
18	17	25	125	195	118	147	203	213	114	43	9.3	7.9
19	17	25	101	299	115	151	164	196	104	38	10	7.6
20	17	25	92	315	109	153	160	185	99	30	9.7	7.6
21	18	26	144	278	101	157	155	185	97	27	9.4	8.6
22	19	26	233	216	96	164	139	174	88	26	8.6	8.6
23	19	26	133	184	94	173	134	162	82	25	9.6	8.6
24	19	26	110	162	91	173	132	159	76	24	10	9.0
25	21	46	102	147	88	173	128	167	72	23	9.3	10
26	22	345	99	136	84	188	121	179	67	22	9.0	12
27	22	147	126	138	82	210	116	245	66	20	9.0	13
28	21	86	147	141	82	196	122	240	65	20	9.0	13
29	21	187	117	144	-----	190	122	212	59	16	9.0	13
30	20	211	105	141	-----	193	135	192	52	18	9.0	12
31	20	-----	102	139	-----	187	-----	181	-----	16	9.0	-----
TOTAL	493	1,633	3,499	4,460	3,003	4,317	4,437	6,224	3,499	969	358.2	302.8
MEAN	15.9	54.4	113	144	107	139	148	201	117	31.3	11.6	10.1
MAX	22	345	233	315	136	223	203	253	169	51	16	13
MIN	11	20	73	87	82	80	116	141	52	16	8.6	7.6
AC-FT	978	3,240	6,940	8,850	5,960	8,560	8,800	12,350	6,940	1,920	710	601

CAL YR 1970 TOTAL 46,009.2 MEAN 126 MAX 4,330 MIN 7.7 AC-FT 91,260  
WTR YR 1971 TOTAL 33,195.0 MEAN 90.9 MAX 345 MIN 7.6 AC-FT 65,840

PEAK DISCHARGE (BASE, 350 CFS).--Nov. 26 (1100) 434 cfs; Nov. 29 (2000) 432 cfs.

## 11204500 SOUTH FORK TULE RIVER NEAR SUCCESS, CALIF.

LOCATION.--Lat 36°02'33", long 118°51'24", in NW¼SW¼ sec.4, T.22 S., R.29 E., Tulare County, on left bank 0.5 mile upstream from Crew Creek, 4 miles southeast of Success, and 5 miles upstream from mouth.

DRAINAGE AREA.--109 sq mi.

PERIOD OF RECORD.--June 1930 to December 1954, January 1956 to current year. Monthly and yearly discharge only for some periods, published in WSP 1735.

GAGE.--Water-stage recorder. Altitude of gage is 770 ft (from topographic map). Prior to June 26, 1951, at site 0.4 mile downstream at different datum.

AVERAGE DISCHARGE.--39 years, 41.5 cfs (30,070 acre-ft per year); median of yearly mean discharges, 27 cfs (19,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 179 cfs Nov. 25 (gage height, 3.34 ft); minimum daily, 0.16 cfs Aug. 27.

Period of record: Maximum discharge, 14,300 cfs Dec. 6, 1966 (gage height, 12.50 ft in gage well, 13.3 ft, from floodmarks), from rating curve extended above 4,300 cfs on basis of slope-area measurement of maximum flow; no flow at times in most years.

REMARKS.--Records good. Diversions for irrigation of 1,600 acres above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	3.5	30	30	41	24	47	42	39	14	1.7	.30
2	.39	2.8	48	32	38	21	45	40	38	14	1.4	.35
3	.36	2.2	42	41	36	23	44	44	37	13	1.9	.46
4	.40	2.3	29	33	34	22	44	49	35	13	.93	.57
5	.44	2.9	23	31	33	21	44	49	33	12	1.2	.36
6	.45	3.8	22	30	32	10	45	61	33	11	1.4	.35
7	.46	10	22	28	31	20	43	65	32	10	1.5	.87
8	.46	11	26	25	30	21	41	62	31	10	1.5	1.3
9	.71	8.0	38	24	29	22	41	54	31	9.3	1.5	.84
10	.63	7.2	32	24	29	23	37	52	30	8.1	1.5	.58
11	.63	6.8	24	24	30	24	35	51	30	7.8	1.2	.47
12	.67	6.8	21	31	33	26	35	51	28	7.1	.82	.48
13	.79	7.2	20	40	35	61	35	50	28	6.3	.78	.46
14	1.0	7.0	18	37	35	43	35	51	27	5.5	.77	.42
15	1.5	6.6	16	35	36	39	36	52	26	5.2	.72	.42
16	2.4	6.3	27	34	37	37	33	52	25	5.1	.70	.39
17	2.2	6.0	43	39	38	37	44	50	24	4.9	.76	.32
18	2.1	6.4	30	63	37	37	58	47	23	14	.74	.36
19	2.5	6.5	27	82	36	37	44	44	22	7.3	.45	.29
20	2.8	6.4	24	91	31	40	44	43	22	5.1	.25	.28
21	2.9	6.4	44	76	30	42	42	43	21	4.7	.22	.25
22	3.2	6.4	61	61	29	43	36	44	19	3.9	.21	.27
23	3.4	6.4	38	52	30	46	36	41	18	3.8	.18	.28
24	3.3	6.3	31	47	28	46	37	39	17	3.6	.22	.31
25	3.3	18	28	43	28	46	34	35	17	3.6	.24	.44
26	3.5	124	28	41	25	50	31	36	16	3.9	.18	.48
27	3.5	39	33	42	24	57	31	57	16	3.5	.16	.79
28	3.2	20	38	43	24	53	37	56	17	3.2	.17	.85
29	2.9	55	33	43	-----	51	37	51	16	3.0	.23	.84
30	2.7	51	27	42	-----	51	43	46	16	2.5	.26	1.3
31	3.5	-----	31	42	-----	49	-----	42	-----	1.7	.28	-----
TOTAL	56.69	452.2	954	1,306	899	1,131	1,194	1,499	767	220.1	24.07	15.68
MEAN	1.83	15.1	30.8	42.1	32.1	36.5	39.8	48.4	25.6	7.10	.78	.52
MAX	3.5	124	61	91	41	61	58	65	39	14	1.9	1.3
MIN	.36	2.2	16	24	24	19	31	35	16	1.7	.16	.25
AC-FT	112	897	1,890	2,590	1,780	2,240	2,370	2,970	1,520	437	48	31

CAL YR 1970 TOTAL 11,361.16 MEAN 31.1 MAX 1,270 MIN .36 AC-FT 22,530  
WTR YR 1971 TOTAL 8,518.74 MEAN 23.3 MAX 124 MIN .16 AC-FT 16,900

PEAK DISCHARGE (BASE, 200 CFS).--No peak above base.

## 11204680 PIONEER DITCH BELOW SUCCESS DAM, CALIF.

LOCATION.--Lat 36°03'34", long 118°55'22", in NW $\frac{1}{4}$  sec.35, T.21 S., R.28 E., Tulare County, on left bank 0.1 mile downstream from Success Dam and 5.5 miles east of Porterville.

PERIOD OF RECORD.--April 1959 to current year. Prior to October 1960, monthly diversions only, published with Tule River near Porterville.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 549.00 ft above mean sea level (levels by Corps of Engineers). Prior to Feb. 1, 1961, at site 0.5 mile downstream at different datum.

AVERAGE DISCHARGE.--12 years, 7.38 cfs (5,350 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 29 cfs Apr. 15, 1961; no flow at times in most years.

REMARKS.--Records excellent. Ditch receives water from Success Lake (see sta 11204700).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	10				0	5.6	8.7	2.1	14	14	14
2	9.4	10				.50	5.6	8.7	2.0	14	14	13
3	9.4	10				0	5.6	8.7	2.0	14	14	13
4	9.6	7.4				0	5.6	7.8	7.3	14	14	14
5	9.6	5.6				0	6.0	7.1	10	14	11	15
6	9.6	5.4				0	9.3	7.1	10	14	9.5	14
7	9.6	5.4				0	11	7.1	10	13	10	14
8	9.6	5.4				0	11	7.1	12	13	10	14
9	9.6	5.2				0	11	7.1	11	13	10	14
10	8.8	5.4				0	11	7.7	9.8	13	11	14
11	8.4	5.3				0	7.5	7.7	9.8	13	11	14
12	8.4	5.5				0	5.8	7.1	9.8	13	11	14
13	8.3	5.8				0	8.6	7.1	9.8	13	13	13
14	8.2	5.8				0	10	7.1	9.8	13	14	11
15	7.8	5.8				0	10	7.1	11	13	14	10
16	7.7	5.8				1.5	8.4	9.0	17	13	14	11
17	7.7	5.8				0	7.1	10	21	13	14	10
18	7.7	5.8				0	7.1	10	20	13	14	11
19	8.3	5.8				0	5.7	10	20	13	14	12
20	7.9	5.6				0	3.8	10	20	12	14	12
21	8.2	5.6				0	3.8	10	20	11	14	12
22	8.2	5.6				0	12	10	20	10	14	12
23	8.2	6.3				0	15	10	20	9.9	14	12
24	8.2	6.3				0	13	10	15	9.9	14	12
25	8.2	6.3				0	13	10	12	9.9	14	12
26	8.2	2.6				0	13	10	12	9.9	14	12
27	9.2	0				0	13	4.7	12	11	14	12
28	10	0				0	13	2.1	12	12	14	12
29	10	0			-----	6.5	13	2.1	13	12	14	12
30	10	0			-----	6.6	10	2.2	14	13	14	12
31	10	-----			-----	5.6	-----	2.2	-----	14	14	-----
TOTAL	273.4	159.5	0	0	0	20.70	274.5	235.5	374.4	387.6	404.5	377
MEAN	8.82	5.32	0	0	0	.67	9.15	7.60	12.5	12.5	13.0	12.6
MAX	10	10	0	0	0	6.6	15	10	21	14	14	15
MIN	7.7	0	0	0	0	0	3.8	2.1	2.0	9.9	9.5	10
AC-FT	542	316	0	0	0	41	544	467	743	769	802	748

CAL YR 1970 TOTAL 2,687.50 MEAN 7.36 MAX 16 MIN 0 AC-FT 5,330  
WTR YR 1971 TOTAL 2,507.10 MEAN 6.87 MAX 21 MIN 0 AC-FT 4,970

## 11204700 SUCCESS LAKE NEAR SUCCESS, CALIF.

LOCATION.--Lat 36°03'40", long 118°55'18", in SE¼NW¼ sec.35, T.21 S., R.28 E., Tulare County, in control tower near right abutment of Success Dam on Tule River, 5 miles east of Porterville.

DRAINAGE AREA.--391 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

EXTREMES.--Current year: Maximum contents, 50,998 acre-ft June 26 (elevation, 634.82 ft); minimum, 4,456 acre-ft Jan. 17 (elevation, 581.31 ft).

Period of record: Maximum contents, 101,300 acre-ft Dec. 7, 1966 (elevation, 658.63 ft); minimum since reservoir first filled, 4,456 acre-ft Jan. 17, 1971 (elevation, 581.31 ft).

REMARKS.--Lake is formed by earthfill dam and dike. Storage began November 1961. Usable capacity, 85,440 acre-ft between elevations 559.0 ft (invert of outlet structure) and 652.5 ft (spillway crest). Surcharge flood control storage, 117,400 acre-ft between ungated spillway crest and elevation 686.8 ft (maximum spillway design flood pool). Dead storage 720 acre-ft. Records, including extremes, represent usable contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers, not rounded to Geological Survey standards.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

580	4,010	620	32,006
585	5,903	640	59,546
590	8,378	660	105,146
600	14,935	690	217,161

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11,796	9,871	12,104	6,934	9,485	18,150	26,897	35,380	47,752	48,739	32,079	16,577
2	11,710	9,845	11,378	6,665	9,914	18,324	27,281	35,689	48,059	48,162	31,579	16,191
3	11,636	9,820	10,647	6,843	10,326	18,523	27,640	36,034	48,354	47,635	31,073	15,829
4	11,557	9,808	9,852	7,157	10,719	18,722	28,002	36,406	48,620	47,084	30,482	15,469
5	11,477	9,814	9,234	7,202	11,089	18,914	28,376	36,781	48,888	46,610	29,829	15,112
6	11,385	9,845	8,723	6,711	11,438	19,107	28,725	37,277	49,142	46,097	29,215	14,765
7	11,306	9,908	8,231	6,095	11,793	19,309	29,067	37,828	49,337	45,520	28,609	14,708
8	11,233	9,977	8,293	5,524	12,117	19,387	29,372	38,336	49,532	44,934	28,002	14,652
9	11,174	10,022	8,682	4,978	12,447	19,465	29,660	38,788	49,744	44,356	27,347	14,595
10	11,122	10,053	9,052	4,463	12,759	19,582	29,919	39,233	49,941	43,771	26,739	14,532
11	11,076	10,085	9,350	4,473	13,073	19,692	30,180	39,681	50,154	43,219	26,149	14,469
12	11,037	10,110	9,633	4,668	13,396	19,841	30,361	40,134	50,352	42,698	25,567	14,398
13	10,985	10,135	9,902	4,737	13,749	20,213	30,533	40,578	50,521	42,170	24,983	14,335
14	10,933	10,161	9,720	4,708	14,104	20,396	30,665	41,000	50,613	41,608	24,443	14,272
15	10,881	10,186	9,216	4,628	14,476	20,596	30,808	41,478	50,689	41,064	23,928	14,216
16	10,842	10,212	8,759	4,530	14,864	20,820	30,951	41,973	50,751	40,514	23,384	14,153
17	10,738	10,224	8,541	4,456	15,291	21,071	31,310	42,447	50,813	39,957	22,891	14,090
18	10,589	10,237	8,174	4,566	15,599	21,331	31,693	42,831	50,843	39,481	22,445	13,972
19	10,461	10,263	7,729	4,734	15,880	21,609	32,079	43,219	50,859	38,948	22,046	13,812
20	10,346	10,298	7,292	4,748	16,155	21,897	32,448	43,555	50,859	38,421	21,650	13,652
21	10,250	10,314	7,128	4,668	16,409	22,203	32,767	43,880	50,859	37,888	21,241	13,493
22	10,154	10,333	7,113	4,891	16,651	22,512	33,045	44,246	50,859	37,337	20,788	13,328
23	10,059	10,358	6,996	5,425	16,893	22,899	33,337	44,534	50,890	36,828	20,292	13,163
24	10,015	10,390	7,357	5,903	17,130	23,299	33,576	44,713	50,920	36,359	19,739	12,985
25	9,996	10,544	7,692	6,344	17,353	23,711	33,816	44,921	50,967	35,873	19,177	12,814
26	9,984	11,676	8,039	6,758	17,570	24,154	34,058	45,157	50,998	35,335	18,599	12,644
27	9,971	12,037	8,511	7,192	17,757	24,664	34,279	45,716	50,982	34,792	18,256	12,474
28	9,952	12,124	8,523	7,628	17,953	25,144	34,524	46,225	50,429	34,235	17,938	12,305
29	9,933	12,576	8,145	8,100	-----	25,603	34,770	46,667	49,911	33,630	17,622	12,131
30	9,914	12,712	7,718	8,558	-----	26,048	35,085	47,055	49,337	33,088	17,286	11,950
31	9,889	-----	7,312	9,022	-----	26,498	-----	47,431	-----	32,586	16,930	-----
MAX	11,796	12,712	12,104	9,022	17,953	26,498	35,085	47,431	50,998	48,739	32,079	16,577
MIN	9,889	9,808	6,996	4,456	9,485	18,150	26,897	35,380	47,752	32,586	16,930	11,950
(a)	592.50	596.80	588.04	591.09	604.13	614.40	622.83	632.44	633.73	620.55	602.76	595.67
(b)	-1,974	+2,823	-5,400	+1,710	+8,931	+8,545	+8,587	+12,346	+1,906	-16,751	-15,656	-4,980
(c)	314	158	51	32	86	214	357	583	1,036	1,111	722	470

CAL YR 1970 b -1,596  
WTR YR 1971 b +87

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

## TULARE LAKE BASIN

11204900 TULE RIVER BELOW SUCCESS DAM, CALIF.

LOCATION.--Lat 36°03'23", long 118°55'22", in SW $\frac{1}{4}$  sec.35, T.21 S., R.28 E., Tulare County, on right bank 1,000 ft downstream from Success Dam, and 5 miles east of Porterville.

DRAINAGE AREA.--393 sq mi.

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1960, published as "at Worth Bridge, near Porterville."

GAGE.--Water-stage recorder and broad-crested weir. Datum of gage is 536.00 ft above mean sea level (levels by Corps of Engineers). Prior to October 1960, at site 0.5 mile downstream at different datum.

AVERAGE DISCHARGE (adjusted for storage, diversion, and evaporation).--18 years, 178 cfs (129,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 508 cfs Dec. 2 (gage height, 6.02 ft); minimum daily, 0.50 cfs Jan. 28 to Feb. 4.

Period of record: Maximum discharge, 27,000 cfs Dec. 23, 1955 (gage height, 21.65 ft, site and datum then in use), from rating curve extended above 1,400 cfs on basis of studies of upstream peaks; no flow at times in 1954-57, 1959-61. Maximum discharge since construction of Success Dam in 1961, 9,050 cfs Dec. 6, 1966 (includes flow through spillway); no flow at times in 1962, 1965.

Flood of Nov. 19, 1950, reached a stage of 26 ft, from floodmarks, site and datum then in use (discharge, 32,000 cfs).

REMARKS.--Records good. Flow regulated by Success Lake beginning Nov. 23, 1961 (see sta 11204700). Discharge records during periods of high flow include flow over spillway that bypasses the gaging station. Pioneer ditch (see sta 11204680) diverts above station for irrigation. Records of chemical analyses and water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	21	360	295	.50	20	6.4	11	20	308	251	165
2	35	23	465	294	.50	20	10	17	22	299	244	173
3	31	24	472	100	.50	20	10	31	22	292	251	175
4	31	24	422	2.3	.50	20	10	33	22	287	291	166
5	31	20	343	99	.60	16	9.9	30	22	260	323	163
6	32	18	302	312	.60	11	9.7	20	32	267	312	163
7	32	18	295	352	.60	11	9.7	14	45	310	302	22
8	28	18	104	350	.60	64	9.7	14	51	318	303	20
9	21	18	3.0	345	.60	65	24	14	46	313	317	19
10	21	19	3.0	338	.60	53	26	14	44	302	303	19
11	21	19	2.7	111	.60	59	29	13	46	295	295	20
12	21	19	2.7	54	.60	60	68	13	46	283	281	21
13	21	18	2.6	162	.60	82	78	23	46	290	278	21
14	22	18	164	198	.60	93	88	28	90	304	266	21
15	22	18	271	198	.60	68	88	25	86	300	255	21
16	22	18	295	193	.60	48	87	25	84	295	255	21
17	42	17	293	191	.60	40	66	25	84	290	234	21
18	60	18	298	191	22	36	56	25	83	288	208	38
19	56	18	300	279	26	33	29	25	83	286	197	55
20	53	19	294	383	21	30	17	25	83	286	191	56
21	51	19	291	371	21	30	16	25	83	286	188	56
22	48	19	330	187	21	28	16	25	55	286	215	57
23	47	19	239	.90	21	14	16	29	39	260	240	62
24	30	19	2.7	.70	21	1.0	16	75	39	248	260	62
25	20	19	2.4	.70	21	.90	15	69	39	256	266	62
26	20	19	2.4	.60	20	.80	15	77	35	273	266	62
27	20	46	2.3	.60	20	.80	16	51	68	286	152	62
28	21	73	205	.50	20	.80	16	27	304	288	146	62
29	21	73	304	.50	-----	.80	14	22	296	288	146	62
30	21	209	302	.50	-----	.80	12	22	308	282	152	62
31	21	-----	299	.50	-----	.80	-----	19	-----	263	161	-----
TOTAL	949	900	6,671.8	5,010.80	243.80	927.70	883.4	866	2,323	8,889	7,549	1,989
MEAN	30.6	30.0	215	162	8.71	29.9	29.4	27.9	77.4	287	244	66.3
MAX	60	209	472	383	26	93	88	77	308	318	323	175
MIN	20	17	2.3	.50	.50	.80	6.4	11	20	248	146	19
AC-FT	1,880	1,790	13,230	9,940	484	1,840	1,750	1,720	4,610	17,630	14,970	3,950
MEAN a	12.5	85.4	128	190	171	173	189	246	139	44.9	13.6	3.16
AC-FT a	766	5,080	7,880	11,680	9,500	10,640	11,240	15,120	8,300	2,760	834	188

CAL YR 1970 TOTAL 55,608.70 MEAN 152 MAX 472 MIN 2.3 AC-FT 110,300 MEAN a 165 AC-FT a 119,300  
WTR YR 1971 TOTAL 37,202.50 MEAN 102 MAX 472 MIN .50 AC-FT 73,790 MEAN a 116 AC-FT a 83,990

a Adjusted for change in contents and evaporation from Success Lake and for diversion to Pioneer ditch.



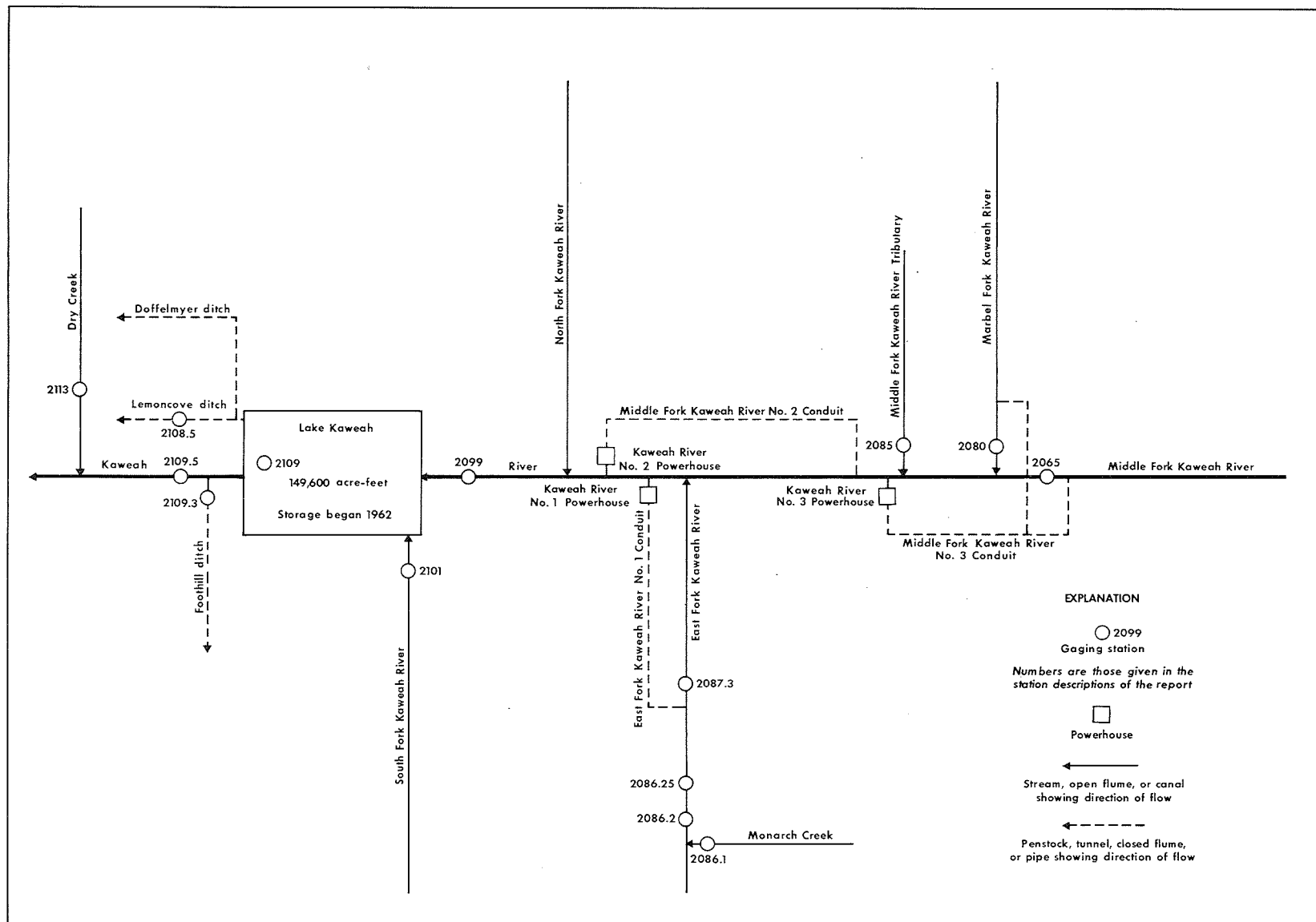


FIGURE 4.--Schematic diagram showing diversions and storage in Kaweah River basin.

## TULARE LAKE BASIN

11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CALIF.

LOCATION.--Lat 36°30'46", long 118°47'25", in NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.25, T.16 S., R.29 E., Tulare County, Sequoia National Park, on right bank 0.7 mile southeast of Potwisha Camp, and 0.9 mile upstream from confluence with Marble Fork Kaweah River.

DRAINAGE AREA.--102 sq mi.

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.

GAGE.--Water-stage recorder and concrete control on river; water-stage recorder and concrete-lined channel for conduit diversion. Altitude of gage is 2,100 ft (from topographic map). Prior to October 1955, at datum 0.70 ft higher.

AVERAGE DISCHARGE (River only).--22 years, 135 cfs (97,810 acre-ft per year).

(Combined river and diversion).--22 years, 176 cfs (127,500 acre-ft per year).

EXTREMES (River only).--Current year: Maximum discharge, 638 cfs June 15 (gage height, 6.22 ft); minimum daily, 11 cfs for many days.

Period of record: Maximum discharge, 46,800 cfs Dec. 23, 1955 (gage height, 29.0 ft, from floodmarks, datum then in use), by slope-area measurement of maximum flow; minimum daily, 0.1 cfs Nov. 12-15, 1949.

(Combined flow).--Current year: Maximum discharge, 700 cfs June 15; minimum daily, 14 cfs for many days.

Period of record: Maximum discharge, 46,800 cfs Dec. 23, 1955; minimum daily, 8.8 cfs Sept. 23-25, 1949.

REMARKS.--Records good. Middle Fork No. 3 conduit diverts from left bank of Middle Fork Kaweah River 0.5 mile upstream from station in NE $\frac{1}{4}$  sec.26, T.16 S., R.29 E. 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 powerhouse of Southern California Edison Co.; water is returned to Kaweah River 2.7 miles downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River basin. For record of combined discharges of river and conduit, see following page.

COOPERATION.--Gage-height record and 11 discharge measurements for river and gage-height record and 13 discharge measurements for conduit furnished by Southern California Edison Co.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	32	14	40	23	131	168	158	151	20	14
2	11	11	77	15	39	27	132	172	174	155	19	12
3	11	11	38	14	34	30	140	167	170	140	19	12
4	11	11	33	14	28	28	150	148	195	132	19	12
5	11	29	32	14	25	25	163	137	226	117	18	12
6	12	24	33	14	22	24	162	168	258	106	18	12
7	11	26	36	14	20	27	132	186	314	94	18	13
8	11	23	40	14	19	30	128	168	358	86	18	12
9	11	19	64	14	19	32	140	153	432	79	17	12
10	11	17	32	14	21	33	143	172	426	71	17	12
11	11	16	23	14	29	32	160	206	388	67	22	12
12	11	16	19	16	41	45	179	226	399	60	19	12
13	11	15	16	15	49	83	180	262	402	55	19	12
14	11	14	15	16	51	59	145	312	411	55	18	12
15	11	14	15	16	53	62	126	388	447	55	18	12
16	11	14	36	19	47	62	150	411	456	52	18	12
17	11	13	30	69	50	62	172	326	444	64	18	12
18	11	13	16	114	41	68	150	290	393	94	18	13
19	11	13	16	140	47	76	137	288	350	70	17	13
20	11	13	14	128	36	83	129	310	326	59	17	13
21	11	13	20	95	37	90	114	298	332	47	17	13
22	12	13	17	67	35	100	102	218	314	40	17	12
23	12	13	14	54	33	110	98	216	288	32	17	12
24	13	12	14	46	28	95	88	290	254	30	17	12
25	13	158	14	39	29	143	78	338	228	24	18	12
26	13	146	17	38	17	180	77	358	218	18	18	12
27	12	40	17	39	14	131	83	322	214	19	18	12
28	12	24	15	36	17	122	91	256	182	20	18	12
29	12	107	14	40	-----	129	107	206	151	18	18	12
30	11	56	14	40	-----	143	135	200	151	20	17	13
31	11	-----	14	43	-----	137	-----	186	-----	20	17	-----
TOTAL	353	905	787	1,225	921	2,291	3,922	7,546	9,059	2,050	559	368
MEAN	11.4	30.2	25.4	39.5	32.9	73.9	131	243	302	66.1	18.0	12.3
MAX	13	158	77	140	53	180	180	411	456	155	22	14
MIN	11	11	14	14	14	23	77	137	151	18	17	12
AC-FT	700	1,800	1,560	2,430	1,830	4,540	7,780	14,970	17,970	4,070	1,110	730

CAL YR 1970 TOTAL 41,131.0 MEAN 113 MAX 1,670 MIN 7.1 AC-FT 81,580  
WTR YR 1971 TOTAL 29,986.0 MEAN 82.2 MAX 456 MIN 11 AC-FT 59,480

## 11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CALIF.--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MIDDLE FORK KAWEAH RIVER AND MIDDLE FORK KAWEAH RIVER NO. 3 CONDUIT NEAR POTWISHA CAMP, CALIF., WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	14	82	66	109	80	192	231	222	214	69	26
2	14	14	128	69	107	79	193	235	238	214	65	24
3	14	14	89	57	101	87	201	230	234	207	63	23
4	14	14	83	56	95	86	212	211	259	199	61	23
5	14	36	82	55	91	82	225	200	291	184	58	22
6	15	32	83	54	88	78	224	231	323	173	56	22
7	14	34	87	53	86	84	194	249	379	161	54	32
8	14	31	92	54	85	89	190	231	423	153	52	24
9	14	27	117	54	85	92	202	216	453	146	49	23
10	14	24	86	54	87	94	206	235	451	138	46	23
11	14	23	78	55	96	95	223	270	453	134	59	22
12	14	24	74	71	108	109	242	290	464	126	48	21
13	14	23	68	67	114	148	243	327	467	122	46	20
14	14	21	63	69	116	124	208	377	476	122	47	20
15	14	21	59	72	118	127	189	453	512	122	44	19
16	14	21	85	79	112	127	213	476	521	120	41	19
17	14	20	86	134	116	127	235	391	509	133	39	17
18	14	19	69	181	106	133	213	354	458	164	38	18
19	14	19	71	209	112	141	200	352	415	140	35	18
20	14	19	67	199	101	148	192	375	391	129	34	17
21	15	19	75	165	102	156	176	363	397	116	33	18
22	16	18	72	137	100	166	164	282	379	109	32	17
23	16	18	65	123	98	176	160	280	353	101	32	17
24	18	17	63	115	93	161	150	354	319	99	30	16
25	18	165	63	108	94	163	140	403	293	93	30	16
26	18	177	68	107	81	202	139	423	283	85	29	18
27	17	88	72	108	77	192	145	387	280	82	29	18
28	16	75	67	105	78	183	153	320	247	79	29	18
29	16	159	63	109	-----	190	169	270	216	75	29	18
30	14	107	63	109	-----	204	198	264	216	72	27	26
31	14	-----	66	112	-----	198	-----	250	-----	71	26	-----
TOTAL	459	1,293	2,386	3,006	2,756	4,121	5,791	9,530	10,922	4,083	1,330	615
MEAN	14.8	43.1	77.0	97.0	98.4	133	193	307	364	132	42.9	20.5
MAX	18	177	128	209	118	204	243	476	521	214	69	32
MIN	14	14	59	53	77	78	139	200	216	71	26	16
AC-FT	910	2,560	4,730	5,960	5,470	8,170	11,490	18,900	21,660	8,100	2,640	1,220
CAL YR 1970	TOTAL	55,267	MEAN	151	MAX	1,700	MIN	14	AC-FT	109,600		
WTR YR 1971	TOTAL	46,292	MEAN	127	MAX	521	MIN	14	AC-FT	91,820		

## 11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CALIF.

LOCATION.--Lat 36°31'08", long 118°48'03", in SE $\frac{1}{4}$  sec.23, T.16 S., R.29 E., Tulare County, Sequoia National Park, on left bank 0.1 mile north of Potwisha Camp, 0.3 mile upstream from confluence with Middle Fork Kaweah River, and 7.9 miles northeast of Three Rivers.

DRAINAGE AREA.--51.4 sq mi.

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.

GAGE.--Water-stage recorder and concrete control on river; water-stage recorder and concrete control for conduit diversion. Altitude of gage is 2,150 ft (from topographic map).

AVERAGE DISCHARGE (River only).--21 years, 74.3 cfs (53,830 acre-ft per year); median of yearly mean discharges, 51 cfs (36,900 acre-ft per year).  
(Combined river and diversion).--21 years, 100 cfs (72,500 acre-ft per year); median of yearly mean discharges, 74 cfs (53,600 acre-ft per year).

EXTREMES (River only).--Current year: Maximum discharge, 392 cfs June 8 (gage height, 5.04 ft); minimum daily, 0.74 cfs Dec. 5-7.

Period of record: Maximum discharge, 12,500 cfs Dec. 23, 1955 (gage height, 13.4 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement of maximum flow; no flow Sept. 5-15, Oct. 24-28, 1953, Oct. 26-31, 1957.

(Combined flow).--Current year: Maximum discharge, 431 cfs June 8; minimum daily, 3.7 cfs Oct. 2, 3.

Period of record: Maximum discharge, 12,500 cfs Dec. 23, 1955; minimum daily, 1.6 cfs July 30, Sept. 14-16, 1961, Aug. 25, 1968.

REMARKS.--Records good. Marble Fork Kaweah River No. 3 conduit diverts from left bank of Marble Fork 0.3 mile above station; water is returned to Kaweah River 2.7 miles downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River basin. For record of combined discharges of river and conduit, see following page. Record of water temperatures for the current year is published in Part 2 of this report.

COOPERATION.--Gage-height record and 12 discharge measurements for river and gage-height record and 13 discharge measurements for conduit furnished by Southern California Edison Co.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	2.3	1.0	6.3	21	8.3	100	98	114	100	5.5	4.9
2	1.9	2.2	6.3	7.1	22	12	100	104	131	98	5.9	3.1
3	1.9	2.4	1.1	6.3	19	22	107	89	130	92	5.9	3.1
4	2.0	2.6	.83	7.5	15	19	115	77	165	82	5.5	3.3
5	2.1	6.3	.74	7.5	14	16	131	77	187	70	5.9	3.6
6	2.2	9.5	.74	8.7	13	13	121	91	200	56	5.5	4.2
7	2.2	9.1	.74	7.9	13	16	94	98	235	52	5.5	7.1
8	2.3	9.1	1.1	9.1	14	19	91	85	255	41	7.1	4.2
9	2.3	5.2	3.8	8.7	15	15	104	83	278	37	7.9	3.1
10	2.3	4.7	1.6	8.7	18	12	109	101	265	29	7.9	3.1
11	2.3	4.7	1.6	9.5	28	10	117	119	253	27	7.9	3.0
12	2.2	4.7	1.6	14	40	16	133	139	263	20	9.5	2.7
13	2.2	4.7	1.6	14	49	25	131	167	253	14	8.3	2.4
14	2.3	4.0	1.6	17	48	14	98	208	248	17	8.3	2.2
15	2.3	3.8	1.8	15	49	15	89	265	258	18	7.1	2.2
16	2.3	3.6	4.9	14	40	16	115	273	263	13	7.1	2.2
17	2.2	3.6	3.0	22	33	17	126	210	245	17	7.1	2.4
18	2.3	3.3	2.4	36	26	26	95	191	218	45	7.1	2.6
19	2.3	2.3	2.6	47	32	39	83	200	195	7.9	6.7	2.4
20	2.3	1.9	1.6	47	19	47	82	223	187	4.2	7.1	2.7
21	2.6	1.9	1.9	34	8.3	56	68	200	187	4.2	7.5	2.6
22	2.8	1.5	2.4	23	8.3	68	58	137	177	4.7	7.9	2.7
23	2.4	1.2	2.2	16	7.9	76	61	145	155	4.9	7.9	2.8
24	2.1	1.7	2.1	13	7.1	60	54	205	135	5.2	7.1	2.8
25	2.2	43	1.6	10	6.7	89	48	253	121	4.9	7.1	3.0
26	1.8	37	2.2	9.1	7.1	109	45	250	121	6.3	7.1	3.1
27	1.8	3.0	3.1	11	7.1	91	49	203	115	5.5	7.1	3.4
28	1.8	1.2	2.1	14	7.5	85	52	155	97	5.2	7.1	3.1
29	1.8	23	1.5	19	-----	98	56	135	86	5.9	7.1	3.1
30	1.9	3.6	5.9	22	-----	114	74	139	101	5.5	7.1	4.7
31	2.4	-----	5.9	23	-----	107	-----	124	-----	5.5	7.1	-----
TOTAL	67.6	207.1	71.55	507.4	588.0	1,330.3	2,706	4,844	5,638	897.9	218.9	95.8
MEAN	2.18	6.90	2.31	16.4	21.0	42.9	90.2	156	188	29.0	7.06	3.19
MAX	2.8	43	6.3	47	49	114	133	273	278	100	9.5	7.1
MIN	1.8	1.2	.74	6.3	6.7	8.3	45	77	86	4.2	5.5	2.2
AC-FT	134	411	142	1,010	1,170	2,640	5,370	9,610	11,180	1,780	434	190

CAL YR 1970 TOTAL 17,061.45 MEAN 46.7 MAX 614 MIN .74 AC-FT 33,840  
WTR YR 1971 TOTAL 17,172.55 MEAN 47.0 MAX 278 MIN .74 AC-FT 34,060

## 11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CALIF.--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MARBLE FORK KAWEAH RIVER AND MARBLE FORK KAWEAH RIVER NO. 3 CONDUIT AT POTWISHA CAMP, CALIF., WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	5.3	27	22	55	37	133	135	151	138	19	8.6
2	3.7	5.0	36	24	54	31	133	141	168	136	17	8.1
3	3.7	5.1	28	20	50	38	140	125	167	130	16	7.9
4	3.8	5.3	28	21	45	37	148	113	203	119	15	8.1
5	3.9	9.0	25	21	44	35	164	113	225	107	15	7.3
6	4.0	12	25	23	43	32	154	127	238	92	14	7.2
7	4.0	12	27	21	43	35	127	134	273	88	14	10
8	4.1	12	28	21	44	38	124	121	294	77	14	7.2
9	3.9	8.2	36	21	45	41	141	119	289	73	15	6.1
10	3.9	7.7	28	21	48	44	149	138	279	65	14	6.1
11	3.9	7.7	26	22	59	44	157	156	290	63	14	6.0
12	3.8	7.7	26	26	71	50	173	176	299	56	14	5.7
13	3.8	7.7	25	26	80	60	169	204	290	49	12	5.4
14	3.9	7.0	23	30	79	48	134	245	285	53	14	5.2
15	3.9	7.0	20	28	81	50	125	302	295	54	12	5.2
16	3.9	6.8	26	27	71	51	151	310	300	49	12	5.2
17	4.0	6.8	26	36	64	52	163	246	282	53	11	5.2
18	4.1	7.0	25	52	55	60	131	227	254	83	11	5.4
19	4.1	7.1	26	74	57	72	119	236	227	47	9.9	5.2
20	4.1	7.4	23	81	50	80	118	260	224	41	10	5.7
21	4.6	7.4	24	69	47	90	103	237	224	37	10	5.8
22	4.8	7.5	25	57	46	102	93	174	215	35	11	5.7
23	4.6	6.7	21	50	45	110	96	182	194	33	11	5.8
24	5.1	6.9	21	46	43	94	89	242	174	33	9.6	5.8
25	5.2	48	21	43	43	99	83	291	159	30	9.6	6.2
26	5.5	60	21	44	37	121	80	288	159	25	9.6	6.5
27	5.2	32	23	48	35	124	84	240	153	24	9.3	7.1
28	5.2	25	22	50	39	118	87	192	135	22	9.4	7.4
29	5.0	54	21	53	-----	131	91	172	123	21	9.4	7.2
30	4.9	36	22	56	-----	147	110	176	138	20	9.3	9.7
31	5.4	-----	21	57	-----	140	-----	161	-----	19	8.7	-----
TOTAL	133.9	437.3	776	1,190	1,473	2,211	3,769	5,983	6,707	1,872	379.8	198.0
MEAN	4.32	14.6	25.0	38.4	52.6	71.3	126	193	224	60.4	12.3	6.60
MAX	5.5	60	36	81	81	147	173	310	300	138	19	10
MIN	3.7	5.0	20	20	35	31	80	113	123	19	8.7	5.2
AC-FT	266	867	1,540	2,360	2,920	4,390	7,480	11,870	13,300	3,710	753	393
CAL YR 1970	TOTAL	26,320.3	MEAN	72.1	MAX	638	MIN	3.7	AC-FT	52,210		
WTR YR 1971	TOTAL	25,130.0	MEAN	68.8	MAX	310	MIN	3.7	AC-FT	49,850		

## TULARE LAKE BASIN

11208500 MIDDLE FORK KAWEAH RIVER TRIBUTARY NEAR HAMMOND, CALIF.

LOCATION.--Lat 36°29'35", long 118°49'30", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.34, T.16 S., R.29 E., Tulare County, Sequoia National Park, at culvert on State Highway 198, 2.7 miles northeast of Hammond.

DRAINAGE AREA.--1.90 sq mi.

PERIOD OF RECORD.--1960-67 (annual maximum only), May 1967 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 1,740 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 1.4 cfs Mar. 13 (gage height, 10.42 ft); no flow many days.

Period of record: Maximum discharge, 879 cfs Dec. 6, 1966 (gage height, 30.63 ft), from rating curve extended above 22 cfs on basis of computation of flow through culvert at gage heights 12.50, 14.80, 16.00, 18.41, 22.06 ft and computation of flow through culvert plus road-overflow at gage height 30.63 ft; no flow many days in each year.

REMARKS.--Records good. Minor diversion above station for domestic use. Low flow record is affected at times by small releases from Ash Mountain Water Treatment plant.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.03	.04	.43	.55	.36	.36	.20	.24	0	0	0
2	0	.02	.04	.49	.55	.36	.36	.24	.30	0	0	0
3	0	.02	.05	.43	.55	.36	.30	.30	.24	.06	0	0
4	0	.06	.06	.43	.49	.36	.24	.30	.20	.06	.02	0
5	0	.05	.13	.36	.49	.36	.16	.36	.16	.04	.07	0
6	0	.05	.16	.36	.49	.36	.24	.36	.16	.02	0	0
7	0	.04	.16	.36	.43	.30	.24	.43	.13	0	0	0
8	0	.04	.16	.36	.43	.30	.16	.36	.13	0	0	0
9	0	.04	.20	.36	.49	.30	.20	.36	.16	0	0	0
10	0	.03	.16	.36	.49	.30	.20	.36	.24	0	0	0
11	0	.03	.16	.36	.49	.24	.16	.43	.10	0	0	0
12	0	.04	.16	.43	.43	.36	.10	.36	.13	.01	0	0
13	0	.04	.13	.55	.43	.75	.10	.36	.05	.01	0	0
14	0	.03	.13	.55	.36	.36	.13	.36	.05	0	0	0
15	0	.03	.13	.55	.30	.43	.13	.30	.04	0	0	0
16	0	.04	.16	.55	.30	.43	.13	.30	.02	0	0	0
17	0	.03	.20	.55	.43	.43	.16	.24	.02	.02	0	0
18	0	.03	.16	.55	.30	.43	.13	.20	.03	.03	0	0
19	0	.04	.20	.55	.55	.43	.16	.16	.04	0	0	0
20	0	.04	.20	.55	.36	.43	.20	.13	.04	0	0	0
21	0	.04	.36	.61	.36	.36	.20	.16	.02	0	0	0
22	0	.02	.49	.61	.36	.36	.16	.16	.03	0	0	0
23	0	.03	.43	.61	.39	.43	.20	.16	.01	.01	0	0
24	0	.02	.43	.67	.43	.43	.24	.13	.02	.02	0	0
25	0	.03	.49	.67	.43	.43	.36	.13	0	.02	0	0
26	0	.04	.49	.61	.43	.30	.30	.13	.03	0	0	0
27	0	.04	.43	.61	.43	.30	.42	.36	.04	0	0	0
28	0	.04	.43	.55	.36	.30	.36	.24	.03	0	0	0
29	0	.05	.43	.55	-----	.30	.44	.24	.02	0	0	0
30	.02	.05	.43	.55	-----	.30	.24	.24	.01	0	0	.01
31	.05	-----	.43	.55	-----	.30	-----	.24	-----	0	0	-----
TOTAL	.07	1.09	7.63	15.72	12.10	11.46	6.78	8.30	2.69	.30	.09	.01
MEAN	.002	.036	.25	.51	.43	.37	.23	.27	.090	.010	.003	.0003
MAX	.05	.06	.49	.67	.55	.75	.44	.43	.30	.06	.07	.01
MIN	0	.02	.04	.36	.30	.24	.10	.13	0	0	0	0
AC-FT	.1	2.2	15	31	24	23	13	16	5.3	.6	.2	.02
(a)	0	6.1	5.3	2.3	2.0	1.4	1.3	2.3	0	0	0	.2
CAL YR 1970	TOTAL	168.60	MEAN .46	MAX 31	MIN 0	AC-FT 334						
WTR YR 1971	TOTAL	66.24	MEAN .18	MAX .7	MIN 0	AC-FT 131						

PEAK DISCHARGE (BASE, 3.0 CFS).--No peak above base.

a Precipitation, in inches.

## 11208610 MONARCH CREEK NEAR HAMMOND, CALIF.

LOCATION.--Lat 36°27'09", long 118°35'37", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.15; T.17 S., R.31 E., Tulare County, Sequoia National Forest, on right bank 0.2 mile upstream from mouth, 0.3 mile northeast of Mineral King, and 14.9 miles east of Hammond.

DRAINAGE AREA.--1.89 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 8,200 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 50 cfs June 15, 16 (gage height, 2.32 ft); minimum daily, 0.81 cfs Sept. 29.

Period of record: Maximum discharge, 81 cfs June 1, 1969 (gage height, 2.71 ft); minimum daily, 0.81 cfs Sept. 29, 1971.

REMARKS.--Records good. Minor regulation by dams on two small lakes. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.99	.94	1.9	1.5	4.1	3.0	8.7	10	11	13	3.5	1.5
2	.98	.94	1.8	1.5	4.2	3.0	9.2	10	11	13	3.5	1.5
3	1.0	.94	1.8	1.5	3.9	3.0	9.7	9.3	11	12	3.3	1.5
4	1.0	.98	2.0	1.4	3.6	2.9	11	8.7	12	11	3.0	1.4
5	1.0	1.1	1.8	1.4	3.5	2.8	11	8.4	13	11	2.9	1.4
6	1.0	1.0	1.8	1.4	3.4	2.8	11	8.4	15	10	2.8	1.4
7	1.0	1.1	1.8	1.4	3.5	3.0	9.2	8.0	20	9.5	2.7	1.4
8	.99	1.1	1.8	1.3	3.6	3.2	9.4	7.6	25	9.3	2.4	1.3
9	.98	1.1	1.8	1.3	3.8	3.5	10	7.7	26	8.5	2.4	1.3
10	.98	1.0	1.7	1.3	4.3	3.7	10	7.9	26	8.3	2.3	1.3
11	.94	.99	1.8	1.3	5.3	3.9	11	8.3	26	8.0	2.4	1.3
12	.94	.97	1.8	1.6	6.0	4.3	12	9.0	30	7.8	2.3	1.3
13	.94	.93	1.7	1.9	6.2	5.0	12	10	29	7.7	2.4	1.2
14	.94	.94	1.7	1.6	6.2	4.0	10	15	30	7.4	2.3	1.2
15	.95	.95	1.7	1.6	6.0	3.8	9.8	20	33	7.1	2.1	1.2
16	.94	.91	2.3	1.6	5.2	4.1	10	20	33	7.1	2.1	1.2
17	.94	.95	2.0	1.8	4.9	4.3	10	17	32	8.4	2.0	1.2
18	.94	.96	1.8	2.4	4.6	5.0	9.1	16	28	7.9	2.0	1.1
19	.94	.95	1.8	2.9	4.5	5.7	8.7	17	25	7.0	2.0	1.1
20	.94	.94	2.0	3.2	4.2	6.3	8.2	19	25	6.6	1.9	1.1
21	.94	.93	2.0	3.2	3.9	7.0	7.6	16	25	6.3	1.9	1.1
22	.96	.93	1.7	3.0	3.8	7.8	7.4	13	23	5.8	1.8	1.0
23	.97	.94	1.7	2.9	3.7	7.5	7.1	13	21	5.4	1.8	.98
24	1.0	.94	1.6	2.9	3.6	6.5	6.5	16	19	5.1	1.8	.94
25	.97	4.5	1.6	2.8	3.5	6.9	6.2	22	18	4.7	1.7	.93
26	.95	3.0	1.6	3.0	3.4	6.8	6.0	23	17	4.5	1.7	.88
27	.93	2.1	1.6	3.3	3.3	6.5	5.9	19	18	4.2	1.6	.89
28	.93	2.1	1.6	3.6	3.3	7.0	5.8	15	14	4.0	1.6	.85
29	.93	2.0	1.5	3.9	-----	8.3	6.6	13	14	3.7	1.7	.81
30	.93	2.0	1.5	4.2	-----	9.1	8.6	12	13	3.7	1.7	1.1
31	.94	-----	1.5	4.3	-----	8.5	-----	11	-----	3.5	1.6	-----
TOTAL	29.79	39.11	54.7	71.0	119.5	159.2	267.7	410.3	643	231.5	69.2	35.38
MEAN	.96	1.30	1.75	2.29	4.27	5.14	8.92	13.2	21.4	7.47	2.23	1.18
MAX	1.0	4.5	2.3	4.3	6.2	9.1	12	23	33	13	3.5	1.5
MIN	.93	.91	1.5	1.3	3.3	2.8	5.8	7.6	11	3.5	1.6	.81
AC-FT	59	78	109	141	237	316	531	814	1,280	459	137	70

CAL YR 1970 TOTAL 2,504.90 MEAN 6.86 MAX 49 MIN .91 AC-FT 4,970  
WTR YR 1971 TOTAL 2,130.38 MEAN 5.84 MAX 33 MIN .81 AC-FT 4,230

## PEAK DISCHARGE (BASE, 10 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-12	1800	1.80	15	5-25	1945	2.16	35
5-1	1730	1.76	13	6-15	1845	2.32	50
5-15	2015	2.04	26	6-16	1845	2.32	50

## TULARE LAKE BASIN

11208620 EAST FORK KAWEAH RIVER BELOW MOSQUITO CREEK, NEAR HAMMOND, CALIF.

LOCATION.--Lat 36°27'05", long 118°37'04", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.16, T.17 S., R.13 E., Tulare County, Sequoia National Forest, on right bank 300 ft downstream from Mosquito Creek and 13.2 miles east of Hammond.

DRAINAGE AREA.--16.0 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 7,280 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 190 cfs June 16 (gage height, 3.50 ft); minimum daily, 4.9 cfs Jan. 12.

Period of record: Maximum discharge, 589 cfs May 31, 1969 (gage height, 4.39 ft); minimum daily, 4.7 cfs Oct. 8-12, 1968.

REMARKS.--Records good. Minor regulation by small dams on four headwater lakes. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	5.4	10	7.1	13	14	38	43	59	60	22	9.6
2	5.1	5.4	10	7.0	13	14	39	45	62	58	22	9.2
3	5.1	5.3	10	7.0	13	14	41	43	61	56	23	9.2
4	5.3	5.9	10	6.8	12	14	44	41	69	53	22	8.8
5	5.4	7.0	11	6.5	12	14	46	41	74	51	20	8.8
6	5.3	6.5	11	6.2	12	14	46	41	82	48	19	8.8
7	5.2	7.0	11	6.0	12	14	42	40	97	46	18	8.8
8	5.1	6.8	11	6.0	12	15	41	39	113	44	17	8.7
9	5.1	6.8	11	5.8	13	16	42	40	118	42	16	8.5
10	5.3	6.5	10	5.5	14	17	44	41	117	39	15	8.3
11	5.2	6.2	10	5.2	16	18	45	43	119	37	15	8.1
12	5.3	6.2	10	4.9	18	20	49	46	123	36	14	7.9
13	5.2	6.0	9.7	10	20	21	50	55	125	34	15	7.8
14	5.1	5.7	9.4	9.5	21	21	46	69	133	34	16	7.6
15	5.3	5.7	8.7	9.1	21	22	44	95	143	33	14	7.4
16	5.3	5.5	9.4	7.8	21	20	45	105	145	33	14	7.2
17	5.3	5.5	11	7.7	20	20	46	91	141	36	12	7.0
18	5.2	5.2	11	8.6	19	21	44	86	124	39	12	6.9
19	5.2	5.2	10	10	17	23	41	87	112	37	11	6.8
20	5.4	5.0	10	12	17	25	39	94	108	33	11	6.8
21	5.4	5.0	9.8	12	16	27	36	90	106	31	10	6.7
22	5.5	5.0	9.6	12	16	30	35	74	100	30	10	6.6
23	5.7	5.0	9.2	11	15	31	34	74	100	30	10	6.5
24	5.8	5.0	9.1	11	15	30	32	83	94	28	10	6.3
25	5.9	14	8.7	10	15	31	31	96	88	26	10	6.3
26	5.7	12	8.7	11	15	32	31	103	85	24	10	6.2
27	5.5	10	8.3	11	15	32	30	90	87	23	10	6.2
28	5.4	9.8	8.0	12	14	32	31	75	75	22	10	6.2
29	5.3	11	7.7	13	-----	35	32	67	65	21	10	6.0
30	5.2	11	7.5	13	-----	39	37	65	63	23	9.6	6.9
31	5.5	-----	7.4	13	-----	38	-----	62	-----	24	9.6	-----
TOTAL	165.5	206.6	298.2	277.7	437	714	1,201	2,064	2,988	1,131	437.2	226.1
MEAN	5.34	6.89	9.62	8.96	15.0	23.0	40.0	66.6	99.6	36.5	14.1	7.54
MAX	5.9	14	11	13	21	39	50	105	145	60	23	9.6
MIN	5.1	5.0	7.4	4.9	12	14	30	39	59	21	9.6	6.0
AC-FT	328	410	591	551	867	1,420	2,380	4,090	5,930	2,240	867	448

CAL YR 1970 TOTAL 12,413.7 MEAN 34.0 MAX 215 MIN 5.0 AC-FT 24,620  
WTR YR 1971 TOTAL 10,146.3 MEAN 27.8 MAX 145 MIN 4.9 AC-FT 20,130

## PEAK DISCHARGE (BASE, 60 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-15	2145	3.13	128	6-16	2100	3.50	190
5-25	2145	3.11	125				



## 11208625 EAST FORK KAWEAH RIVER AT SEQUOIA NATIONAL PARK BOUNDARY, NEAR HAMMOND, CALIF.

LOCATION.--Lat 36°27'30", long 118°39'11", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.7, T.17 S., R.31 E., Tulare County, Sequoia National Park, on right bank 0.6 mile southwest of Silver City and 11.4 miles east of Hammond.

DRAINAGE AREA.--23.7 sq mi.

PERIOD OF RECORD.--August 1968 to September 1971 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 6,160 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 266 cfs June 15, 16 (gage height, 4.15 ft); minimum daily, 6.8 cfs Nov. 22, 23.

Period of record: Maximum discharge, 934 cfs May 31, 1969 (gage height, 5.74 ft); minimum daily, 5.4 cfs Oct. 9-12, 1968.

REMARKS.--Records good. Minor regulation by small dams on four headwater lakes. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	7.4	12	12	22	19	47	60	85	77	25	11
2	8.1	7.4	11	12	22	19	48	62	91	73	24	11
3	8.1	7.3	11	12	20	19	51	58	88	71	25	11
4	8.2	8.1	13	12	20	18	55	53	103	66	23	10
5	8.3	9.8	14	12	19	18	61	53	110	61	21	10
6	8.2	8.9	14	12	19	18	61	56	122	57	20	10
7	8.2	9.8	15	11	19	19	53	55	148	53	19	10
8	8.2	9.1	15	11	19	20	51	52	173	50	18	9.7
9	8.0	9.1	15	11	19	20	53	53	179	47	18	9.6
10	8.0	8.8	13	11	20	21	55	56	175	45	17	9.5
11	7.9	8.5	14	10	22	21	58	61	180	43	16	9.4
12	7.9	8.6	13	10	25	23	66	69	185	40	16	9.2
13	7.8	8.0	13	12	27	23	68	85	188	38	16	9.1
14	7.8	7.7	13	15	28	24	59	111	197	37	17	9.0
15	7.8	7.6	12	14	29	24	55	151	205	36	16	8.7
16	7.8	7.4	13	14	27	24	59	164	208	37	15	8.6
17	7.7	7.4	20	17	26	25	63	141	203	40	15	8.4
18	7.7	7.3	18	20	25	27	56	130	180	45	14	8.4
19	7.7	7.2	18	23	24	29	51	132	161	42	14	8.4
20	7.7	7.1	17	25	24	31	48	142	156	37	14	8.3
21	7.8	7.0	17	22	23	33	45	136	153	34	14	8.2
22	8.0	6.8	16	20	22	36	43	108	144	32	13	8.1
23	8.1	6.8	15	19	21	38	42	107	136	32	13	8.0
24	8.4	6.9	15	19	21	35	39	126	123	30	13	8.0
25	8.2	23	14	18	20	38	38	146	114	28	13	8.1
26	8.0	17	14	19	20	41	37	158	110	26	13	8.1
27	7.9	13	13	20	20	40	37	139	112	25	13	8.1
28	7.7	13	12	20	19	40	38	111	98	24	12	8.1
29	7.7	14	12	21	-----	44	42	97	84	23	12	8.0
30	7.5	13	12	22	-----	50	51	93	80	25	12	9.2
31	7.5	-----	12	22	-----	46	-----	89	-----	26	11	-----
TOTAL	246.0	283.0	436	498	622	885	1,530	3,054	4,291	1,300	502	271.2
MEAN	7.94	9.43	14.1	16.1	22.2	28.5	51.0	98.5	143	41.9	16.2	9.04
MAX	8.4	23	20	25	29	50	68	164	208	77	25	11
MIN	7.5	6.8	11	10	19	18	37	52	80	23	11	8.0
AC-FT	488	561	865	988	1,230	1,760	3,030	6,060	8,510	2,580	996	538
CAL YR 1970	TOTAL 17,079.6	MEAN 46.8	MAX 288	MIN 6.8	AC-FT 33,880							
WTR YR 1971	TOTAL 13,918.2	MEAN 38.1	MAX 208	MIN 6.8	AC-FT 27,610							

## PEAK DISCHARGE (BASE, 70 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1500	3.16	76	5-25	2215	3.88	202
4-12	2315	3.19	79	6-15	2015	4.15	266
5-1	1845	3.16	74	6-16	2030	4.15	266
5-15	2300	3.93	213				

## TULARE LAKE BASIN

11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CALIF.

LOCATION.--Lat 36°27'05", long 118°47'15", in NW¼ sec.14, T.17 S., R.29 E., Tulare County, on left bank just downstream from diversion dam and 6.6 miles east of Three Rivers.

DRAINAGE AREA.--85.8 sq mi.

PERIOD OF RECORD.--May 1952 to September 1955, October 1957 to current year. Prior to October 1962, combined only.

GAGE.--Water-stage recorder and Parshall flume on river; water-stage recorder and Parshall flume for conduit diversion. Altitude of gage is 2,500 ft (from topographic map). May 15, 1952, to Sept. 30, 1955, at site 200 ft downstream at different datum.

AVERAGE DISCHARGE (River only).--17 years, 93.7 cfs (67,890 acre-ft per year).  
(Combined river and conduit).--17 years, 119 cfs (86,220 acre-ft per year).

EXTREMES (River only).--Current year: Maximum discharge, 632 cfs June 15 (gage height, 5.40 ft); minimum daily, 0.84 cfs Nov. 4.

Period of record: Maximum discharge, 13,000 cfs Dec. 6, 1966 (gage height, 21 ft, from floodmarks), from rating curve extended as explained below; no flow Jan. 22, Oct. 18-20, 1962.

(Combined flow).--Current year: Maximum discharge, 657 cfs June 15; minimum daily, 14 cfs Oct. 1-4, 10-19, Nov. 3.

Period of record: Maximum discharge, 13,000 cfs Dec. 6, 1966 (gage height, 21 ft, from floodmarks), from rating curve extended above 850 cfs on basis of critical-depth measurement over diversion dam of maximum flow; minimum daily, 3.5 cfs Sept. 28, 29, 1960.

REMARKS.--Records fair. East Fork Kaweah River No. 1 conduit diverts up to 30 cfs from left bank of river near diversion dam. Flow from this conduit passes through Hammond powerhouse of Southern California Edison Co.; water is returned to Middle Fork Kaweah River in sec.8, T.17 S., R.29 E., 1.9 miles downstream from mouth of East Fork. For records of combined discharge of river and conduit, see following page. Records of chemical analyses, water temperatures, and suspended-sediment discharge for the water year 1971 are published in Part 2 of this report.

COOPERATION.--Records for East Fork Kaweah River No. 1 conduit near Three Rivers, water temperature records, and 23 discharge measurements were furnished by Southern California Edison Co.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	1.1	15	10	30	39	116	142	221	144	21	17
2	.95	.92	66	12	28	38	117	150	248	137	18	16
3	.95	.86	26	18	25	28	123	147	233	129	23	8.8
4	1.0	.84	17	28	23	21	134	134	301	123	20	1.2
5	1.0	1.9	14	30	22	19	151	130	317	121	17	1.2
6	.98	1.6	13	27	21	18	154	151	332	117	16	1.2
7	.98	2.8	14	29	20	20	132	157	379	108	13	1.2
8	.98	1.5	17	28	20	22	125	139	430	99	11	1.2
9	.98	1.4	44	27	21	24	134	135	451	91	8.8	1.2
10	.98	1.3	19	28	23	26	140	146	438	82	8.1	1.1
11	.98	1.2	15	17	26	27	147	159	439	72	6.6	1.1
12	.98	1.2	13	14	32	33	152	166	447	60	6.5	1.1
13	.98	1.1	11	11	38	57	152	196	455	53	6.5	1.4
14	.96	1.0	9.9	13	40	37	136	260	464	50	8.3	1.4
15	.95	.92	7.2	14	43	39	122	372	480	45	6.5	1.4
16	.95	1.7	35	16	41	38	136	410	478	46	5.6	1.3
17	.95	1.9	24	40	42	38	158	356	463	57	5.6	1.2
18	.95	1.7	15	61	35	41	140	337	420	67	6.0	1.2
19	.92	1.6	14	76	37	46	123	337	382	55	6.2	1.1
20	.92	1.6	12	73	47	51	113	359	369	45	6.2	1.1
21	.92	1.6	17	55	51	57	104	352	356	43	4.6	1.1
22	.92	1.4	15	43	41	63	93	287	333	38	1.2	1.1
23	.92	1.4	11	35	30	80	92	284	300	38	1.3	1.1
24	.92	1.4	10	30	25	76	85	336	260	34	1.4	1.1
25	.90	.89	9.9	27	24	85	79	382	226	29	1.5	1.1
26	.89	.81	13	26	19	107	76	411	212	25	1.5	1.1
27	.87	.17	19	28	39	103	77	377	212	22	1.4	1.1
28	.85	.10	13	28	41	100	82	314	185	20	1.3	1.1
29	1.1	112	11	27	-----	107	94	282	159	17	1.2	1.1
30	1.2	.39	9.8	30	-----	127	115	272	150	18	9.1	3.0
31	1.1	-----	11	31	-----	127	-----	245	-----	22	17	-----
TOTAL	29.88	381.94	540.8	932	884	1,699	3,602	7,925	10,140	2,007	261.4	75.3
MEAN	.96	12.7	17.4	30.1	31.6	54.8	120	256	338	64.7	8.43	2.51
MAX	1.2	112	66	76	51	127	158	411	480	144	23	17
MIN	.85	.84	7.2	10	19	18	76	130	150	17	1.2	1.1
AC-FT	59	758	1,070	1,850	1,750	3,370	7,140	15,720	20,110	3,980	518	149
CAL YR 1970	TOTAL	37,034.16	MEAN	101	MAX	1,510	MIN	.84	AC-FT	73,460		
WTR YR 1971	TOTAL	28,478.32	MEAN	78.0	MAX	480	MIN	.84	AC-FT	56,490		

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF EAST FORK KAWEAH RIVER AND EAST FORK KAWEAH RIVER NO. 1 CONDUIT NEAR THREE RIVERS, CALIF., WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	37	33	57	39	135	168	247	170	45	19
2	14	15	86	35	55	38	136	176	274	163	42	18
3	14	14	46	34	52	39	142	173	259	155	47	17
4	14	15	39	32	50	45	153	159	327	148	44	19
5	15	23	36	30	49	43	170	154	343	145	41	18
6	15	22	35	27	48	42	173	176	358	142	39	18
7	15	24	38	29	47	44	151	182	405	132	37	21
8	15	20	42	28	46	45	144	164	456	123	35	18
9	15	19	66	27	45	47	153	160	478	115	33	18
10	14	19	41	28	44	49	159	171	465	106	32	18
11	14	18	36	29	50	50	166	182	465	96	31	18
12	14	18	34	37	56	57	175	191	473	84	31	17
13	14	17	33	34	62	81	178	222	481	77	30	16
14	14	17	33	36	64	61	162	286	490	74	33	16
15	14	16	31	37	67	63	148	398	505	69	31	16
16	14	16	58	39	65	62	162	436	503	69	29	15
17	14	16	47	63	66	62	183	382	489	81	27	15
18	14	16	38	86	59	65	165	363	446	91	26	15
19	14	15	37	102	60	70	148	363	408	79	25	15
20	15	15	36	99	49	75	139	385	395	69	25	15
21	15	15	40	81	51	81	130	378	382	67	24	15
22	16	15	38	69	50	91	119	313	359	62	24	15
23	16	15	34	61	53	101	118	310	326	62	24	15
24	17	16	34	56	50	94	111	362	286	58	23	15
25	17	104	34	53	50	104	105	408	252	53	24	15
26	16	93	36	52	45	126	102	437	238	49	24	16
27	16	39	42	54	39	122	103	403	238	46	24	16
28	15	34	36	55	41	119	108	340	211	44	22	17
29	15	124	34	55	-----	126	120	308	185	41	22	16
30	15	54	33	57	-----	145	141	298	176	42	20	21
31	15	-----	34	58	-----	146	-----	271	-----	46	19	-----
TOTAL	459	859	1,244	1,516	1,470	2,332	4,299	8,719	10,920	2,758	933	503
MEAN	14.8	28.6	40.1	48.9	52.5	75.2	143	281	364	89.0	30.1	16.8
MAX	17	124	86	102	67	146	183	437	505	170	47	21
MIN	14	14	31	27	39	38	102	154	176	41	19	15
AC-FT	910	1,700	2,470	3,010	2,920	4,630	8,530	17,290	21,660	5,470	1,850	998
CAL YR 1970	TOTAL	44,200	MEAN	121	MAX	1,520	MIN	13	AC-FT	87,670		
WTR YR 1971	TOTAL	36,012	MEAN	98.7	MAX	505	MIN	14	AC-FT	71,430		

## TULARE LAKE BASIN

11209900 KAWEAH RIVER AT THREE RIVERS, CALIF.

LOCATION.--Lat 36°26'38", long 118°54'09", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.13, T.17 S., R.28 E., Tulare County, on right bank opposite schoolhouse in Three Rivers, 0.2 mile downstream from North Fork Kaweah River.

DRAINAGE AREA.--418 sq mi.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 809.62 ft above mean sea level.

AVERAGE DISCHARGE.--13 years, 512 cfs (370,900 acre-ft per year); median of yearly mean discharges, 350 cfs (254,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,830 cfs May 16 (gage height, 6.31 ft); minimum daily, 30 cfs Oct. 3.

Period of record: Maximum discharge, 73,000 cfs Dec. 5, 1966 (gage height, 16.69 ft in gage well, 19.0 ft, from floodmarks), from rating curve extended above 13,000 cfs on basis of slope-area measurements at gage heights 13.68 and 16.69 ft; minimum, 14 cfs Sept. 9, 10, 1959, Oct. 16, 1961.

Flood of Dec. 23, 1955, reached a stage of 17.9 ft, from floodmarks.

REMARKS.--Records good. Diversions of 200 acres above station. Power is developed on the Middle and East Fork Kaweah River. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	40	220	184	319	236	633	661	713	532	124	52
2	31	39	359	197	314	222	633	693	756	506	120	49
3	30	39	262	166	298	244	649	685	738	492	119	52
4	32	39	209	163	278	246	685	637	805	464	114	52
5	32	54	191	158	268	240	717	605	880	422	107	45
6	33	79	182	155	260	222	734	673	915	384	103	43
7	34	79	182	152	258	234	637	756	1,060	362	100	56
8	34	77	200	163	256	240	591	717	1,200	340	94	53
9	33	67	277	153	256	250	637	653	1,340	316	92	48
10	32	63	226	153	258	262	661	705	1,260	295	86	45
11	33	61	193	161	276	264	685	761	1,280	284	92	43
12	33	59	180	216	314	289	734	868	1,290	266	85	42
13	33	58	170	268	352	515	766	936	1,320	248	82	38
14	34	56	161	230	362	364	665	1,050	1,290	246	83	39
15	35	52	150	224	374	350	594	1,340	1,340	242	81	37
16	38	50	211	220	364	348	665	1,480	1,390	232	70	35
17	36	48	298	291	369	348	780	1,190	1,340	244	71	33
18	35	49	211	456	331	360	693	1,080	1,210	333	67	33
19	35	49	200	580	352	390	617	1,050	1,070	274	65	33
20	35	48	197	598	302	414	605	1,110	1,010	242	63	32
21	38	47	250	529	302	450	561	1,120	1,010	216	61	33
22	40	47	252	417	300	492	501	862	950	197	61	34
23	42	48	198	364	284	543	498	832	880	188	60	33
24	46	47	184	328	264	484	473	1,010	795	180	59	34
25	48	216	179	304	268	506	439	1,180	725	170	58	35
26	46	597	179	295	236	598	422	1,290	709	158	57	36
27	46	238	224	300	226	665	420	1,200	697	148	56	38
28	45	168	215	307	232	605	456	966	653	140	54	39
29	42	451	189	316	-----	617	478	850	561	133	53	38
30	41	378	180	316	-----	685	561	832	534	127	48	46
31	39	-----	182	328	-----	669	-----	790	-----	128	42	-----
TOTAL	1,143	3,343	6,511	8,692	8,273	12,352	18,190	28,582	29,721	8,509	2,427	1,226
MEAN	36.9	111	210	280	295	398	606	922	991	274	78.3	40.9
MAX	48	597	359	598	374	685	780	1,480	1,390	532	124	56
MIN	30	39	150	152	226	222	420	605	534	127	42	32
AC-FT	2,270	6,630	12,910	17,240	16,410	24,500	36,080	56,690	58,950	16,880	4,810	2,430

CAL YR 1970 TOTAL 159,149 MEAN 436 MAX 7,000 MIN 30 AC-FT 315,700  
 WTR YR 1971 TOTAL 128,969 MEAN 353 MAX 1,480 MIN 30 AC-FT 255,800

PEAK DISCHARGE (BASE, 1,800 CFS).--May 16 (0130) 1,830 cfs (6.31 ft); June 17 (0100) 1,810 cfs (6.29 ft).

## 11210100 SOUTH FORK KAWEAH RIVER AT THREE RIVERS, CALIF.

LOCATION.--Lat 36°25'00", long 118°54'48", in SE $\frac{1}{4}$  sec.26, T.17 S., R.28 E., Tulare County, on right bank 200 ft upstream from unnamed tributary, 0.5 mile upstream from mouth, and 1.8 miles southwest of Three Rivers.

DRAINAGE AREA.--86.7 sq mi.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 807.22 ft above mean sea level.

AVERAGE DISCHARGE.--13 years, 67.0 cfs (48,540 acre-ft per year); median of yearly mean discharges, 47 cfs (34,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 358 cfs May 16 (gage height, 3.22 ft); minimum daily, 0.37 cfs Sept. 23.

Period of record: Maximum discharge, 11,600 cfs Dec. 6, 1966 (gage height, 9.30 ft in gage well, 10.4 ft, from floodmarks), from rating curve extended above 2,600 cfs on basis of slope-area measurement of maximum flow; no flow at times in 1960-62.

Flood of December 23, 1955, reached a stage of 9.5 ft, from floodmarks (discharge, 10,000 cfs).

REMARKS.--Records good. Several small diversions above station for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.98	4.4	35	24	33	26	66	101	136	42	4.6	1.3
2	.93	4.6	49	29	31	24	65	115	149	39	4.1	1.4
3	.93	4.3	39	26	30	25	67	117	140	36	3.8	1.4
4	1.1	4.2	30	23	29	25	71	100	171	33	3.7	1.2
5	1.2	5.1	26	22	28	25	80	91	185	31	3.7	1.1
6	1.5	8.5	23	21	27	24	87	104	186	27	3.7	1.0
7	1.5	12	22	21	27	24	74	118	192	25	3.7	1.2
8	1.6	9.0	25	21	26	24	73	105	217	23	3.0	1.1
9	1.9	7.8	42	20	25	24	82	92	225	22	2.9	.98
10	1.7	7.5	35	20	25	25	90	105	214	21	2.6	.88
11	1.8	7.5	29	20	25	25	93	115	204	19	2.8	.83
12	1.9	6.9	25	33	28	27	106	122	196	17	2.7	.82
13	1.8	6.7	23	39	30	69	116	151	192	15	2.9	.78
14	2.0	6.4	21	33	32	45	91	188	188	14	3.1	.70
15	2.2	6.4	20	31	33	41	77	242	176	13	2.4	.64
16	2.2	6.1	26	29	34	39	89	271	166	13	2.2	.49
17	2.3	5.6	35	35	38	39	118	218	158	14	1.9	.47
18	2.6	5.8	29	63	36	39	97	198	142	23	1.9	.49
19	2.9	6.1	27	80	35	39	81	195	122	18	1.8	.48
20	3.0	6.1	24	77	31	40	78	207	111	14	1.7	.44
21	4.0	6.3	35	63	32	41	74	217	102	13	1.6	.48
22	4.3	6.3	36	52	30	44	65	144	90	11	1.4	.46
23	4.4	6.4	28	46	30	49	64	154	82	10	1.4	.37
24	4.9	6.2	24	42	28	47	61	200	74	9.8	1.5	.39
25	5.7	21	23	39	28	48	57	241	66	9.1	1.6	.46
26	5.3	74	23	37	25	61	55	257	61	7.7	1.6	.84
27	5.0	33	31	35	25	68	53	226	59	7.0	1.7	.87
28	3.7	22	31	35	26	63	54	165	58	6.0	1.7	.73
29	3.5	96	26	34	-----	63	60	142	52	5.4	1.7	.78
30	3.3	64	24	33	-----	73	77	147	46	5.0	1.5	.90
31	3.3	-----	24	33	-----	71	-----	152	-----	4.7	1.3	-----
TOTAL	83.44	466.2	890	1,116	827	1,277	2,321	5,000	4,160	547.7	76.2	23.98
MEAN	2.69	15.5	28.7	36.0	29.5	41.2	77.4	161	139	17.7	2.46	.80
MAX	5.7	96	49	80	38	73	118	271	225	42	4.6	1.4
MIN	.93	4.2	20	20	25	24	53	91	46	4.7	1.3	.37
AC-FT	166	925	1,770	2,210	1,640	2,530	4,600	9,920	8,250	1,090	151	48

CAL YR 1970 TOTAL 22,645.89 MEAN 62.0 MAX 1,360 MIN .75 AC-FT 44,920  
WTR YR 1971 TOTAL 16,788.52 MEAN 46.0 MAX 271 MIN .37 AC-FT 33,300

PEAK DISCHARGE (BASE, 500 CFS).--No peak above base.

## TULARE LAKE BASIN

## 11210850 LEMONCOVE DITCH BELOW TERMINUS DAM, CALIF.

LOCATION.--Lat 36°24'55", long 119°00'22", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.25, T.17 S., R.27 E., Tulare County, on left bank 250 ft downstream from outlet tunnel of Terminus Dam and 2.4 miles northeast of Lemoncove.

PERIOD OF RECORD.--June 1962 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 546.3 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--9 years, 5.01 cfs (3,630 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 8.8 cfs May 5, 1970; no flow many days in 1962, 1969.

REMARKS.--Records excellent. Ditch receives water from Lake Kaweah (see sta 11210900) which is used for irrigation. At times up to 3 cfs is diverted 200 ft upstream into Doffelmyer ditch for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	8.0	1.0	1.2	1.2	.70	7.0	8.1	5.0	8.1	8.1	8.1
2	8.1	8.0	1.0	1.2	1.1	1.1	7.0	8.1	5.0	8.1	8.2	8.1
3	8.2	8.1	1.0	1.2	1.0	1.0	7.0	8.1	5.0	8.0	8.2	8.1
4	8.3	7.5	1.0	1.1	1.0	1.0	7.0	8.0	5.0	8.0	8.2	8.1
5	8.3	7.0	1.0	1.1	1.0	1.0	7.0	8.0	5.0	8.0	8.2	8.1
6	8.3	7.0	1.0	1.1	1.0	1.0	7.1	6.0	5.0	8.0	8.1	8.1
7	8.2	7.0	1.0	1.0	.90	1.0	7.1	3.0	7.0	8.3	8.1	8.1
8	8.1	7.0	1.0	1.1	.90	1.0	7.1	1.0	8.0	8.3	8.1	7.8
9	8.2	7.0	1.0	1.1	1.1	1.0	7.1	1.0	8.0	8.2	8.1	8.0
10	8.2	7.0	1.0	1.1	1.3	1.0	7.1	2.4	8.0	8.1	8.1	8.2
11	8.2	7.0	1.0	1.2	1.3	2.4	7.1	5.8	8.0	8.1	8.1	8.3
12	8.2	7.0	1.0	1.2	1.3	2.2	7.1	6.9	8.0	8.0	8.1	8.3
13	8.2	7.0	1.0	1.2	1.2	1.0	7.1	6.9	8.0	8.0	8.1	8.2
14	8.2	7.0	1.1	1.2	1.1	1.0	7.1	7.0	8.0	8.1	8.1	8.2
15	8.2	7.0	1.1	1.2	1.1	1.9	7.1	7.0	8.0	8.1	8.1	8.2
16	8.2	7.0	1.1	1.2	1.1	3.0	7.1	7.0	8.0	8.1	8.1	8.2
17	8.2	7.0	1.1	1.2	1.1	3.0	5.3	8.0	8.0	8.1	8.1	8.2
18	8.2	6.8	1.1	1.2	1.1	3.0	4.0	8.0	8.1	8.0	8.0	8.2
19	8.1	7.0	1.1	1.2	1.2	3.0	4.0	8.1	8.1	8.0	8.1	8.2
20	8.1	7.0	1.1	1.2	1.2	3.0	4.0	8.0	8.1	8.0	8.1	8.2
21	8.1	6.9	1.1	1.2	1.2	4.4	4.0	8.0	8.1	8.0	8.1	8.2
22	8.1	7.0	1.1	1.2	1.2	5.1	4.1	8.1	8.1	8.0	8.1	8.2
23	8.0	7.0	1.1	1.2	1.2	5.0	4.6	8.1	8.1	8.0	8.1	8.2
24	8.0	7.0	1.1	1.2	1.2	5.0	5.1	8.1	8.1	8.0	8.1	8.2
25	8.1	5.1	1.1	1.2	1.2	5.0	5.1	8.0	8.1	8.0	8.1	8.2
26	8.1	1.3	1.1	1.2	.60	5.0	6.9	8.0	8.1	8.0	8.1	8.2
27	8.1	1.1	1.1	1.2	.10	5.0	8.1	6.0	8.1	8.0	8.1	8.2
28	8.2	1.0	1.1	1.2	.10	4.8	8.1	5.0	8.1	8.0	8.1	8.2
29	8.2	1.0	1.1	1.2	-----	5.6	8.1	5.0	8.1	8.0	8.1	8.2
30	8.1	1.0	1.2	1.2	-----	6.0	8.1	5.0	8.1	8.1	8.1	8.2
31	8.1	-----	1.2	1.2	-----	6.6	-----	5.0	-----	8.1	8.1	-----
TOTAL	252.9	181.8	33.0	36.4	29.00	90.80	192.6	200.7	222.3	249.8	251.4	244.9
MEAN	8.16	6.06	1.06	1.17	1.04	2.93	6.42	6.47	7.41	8.06	8.11	8.16
MAX	8.3	8.1	1.2	1.2	1.3	6.6	8.1	8.1	8.1	8.3	8.2	8.3
MIN	8.0	1.0	1.0	1.0	.10	.70	4.0	1.0	5.0	8.0	8.0	7.8
AC-FT	502	361	65	72	58	180	382	398	441	495	499	486

CAL YR 1970 TOTAL 2,015.30 MEAN 5.52 MAX 8.8 MIN .70 AC-FT 4,000  
WTR YR 1971 TOTAL 1,985.60 MEAN 5.44 MAX 8.3 MIN .10 AC-FT 3,940

## 11210900 LAKE KAWEAH NEAR LEMONCOVE, CALIF.

LOCATION.--Lat 36°24'53", long 119°00'07", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.25, T.17 S., R.27 E., Tulare County, in control tower near left abutment of Terminus Dam on Kaweah River, 2.1 miles northeast of Lemoncove.

DRAINAGE.--560 sq mi.

PERIOD OF RECORD.--October 1961 to current year. Fragmentary prior to March 1962. Prior to October 1962, published as Terminus Reservoir near Lemoncove.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to May 22, 1962, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 121,009 acre-ft June 19 (elevation, 678.65 ft); minimum, 7,559 acre-ft Oct. 20 (elevation, 568.38 ft).

Period of record: Maximum contents, 160,200 acre-ft July 3, 4, 1967 (elevation, 699.39 ft), storage increased by a temporary sandbag dam in the ungated spillway; minimum since reservoir first filled, 7,559 acre-ft Oct. 20, 1970 (elevation, 568.38 ft).

REMARKS.--Reservoir is formed by earthfill dam and earthfill auxiliary dam; completed and storage began in February 1962. Usable capacity, 149,433 acre-ft between elevations 520.0 ft (invert of outlet structure) and 694.0 ft (spillway crest). Dead storage, 166 acre-ft. Spillway design flood pool elevation, 745.1 ft (capacity, 266,000 acre-ft). Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

520	166	580	11,996
525	343	600	22,767
530	598	620	39,354
535	954	640	61,695
540	1,464	660	89,818
550	2,937	680	123,423
560	5,093	700	161,476
570	8,105	720	204,327

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,641	7,625	11,327	8,105	7,978	7,852	16,515	45,571	94,997	106,705	41,500	12,773
2	7,631	7,628	11,106	8,202	7,961	7,805	17,216	46,752	96,312	104,124	40,086	12,458
3	7,631	7,628	10,577	8,191	7,924	7,866	17,967	47,972	97,620	101,572	38,658	12,118
4	7,628	7,638	9,750	8,081	7,829	7,883	18,766	49,021	99,147	98,935	37,150	11,783
5	7,631	7,675	8,992	8,046	7,812	7,869	19,868	50,004	100,881	96,248	35,631	11,425
6	7,621	7,822	8,278	8,046	7,907	7,822	21,074	51,383	102,646	93,515	34,088	11,064
7	7,615	7,975	8,094	8,029	8,016	7,805	22,043	53,114	104,541	90,897	32,615	10,723
8	7,605	8,122	8,247	8,036	8,040	7,819	22,938	54,555	106,452	88,235	31,345	10,376
9	7,598	8,219	8,552	8,046	8,016	7,839	23,949	55,601	108,448	85,550	30,220	10,021
10	7,588	8,316	8,713	8,053	7,995	7,873	25,060	56,788	110,255	82,831	29,057	9,715
11	7,585	8,407	8,649	8,050	8,019	7,869	26,263	58,061	112,094	80,027	27,936	9,453
12	7,578	8,460	8,481	8,229	8,143	7,941	27,571	59,569	113,739	77,386	26,842	9,191
13	7,575	8,492	8,274	8,499	8,233	8,613	28,992	61,259	115,326	74,817	25,789	8,894
14	7,572	8,513	8,070	8,506	8,292	8,872	30,078	63,026	116,816	72,303	24,764	8,774
15	7,565	8,531	8,040	8,414	8,365	9,003	31,044	65,300	118,260	69,682	23,738	8,727
16	7,562	8,446	8,188	8,306	8,309	9,055	32,120	67,924	119,640	66,938	22,663	8,688
17	7,565	8,313	8,429	8,323	8,215	9,154	33,576	69,978	120,546	64,234	21,630	8,645
18	7,568	8,174	8,337	8,485	8,033	9,310	34,790	71,728	120,937	61,670	20,626	8,584
19	7,565	8,040	8,202	8,517	8,050	9,529	35,754	73,477	121,009	59,863	19,614	8,524
20	7,559	8,009	8,060	8,471	8,070	9,804	36,739	75,351	120,955	58,472	18,766	8,471
21	7,562	8,029	8,129	8,219	8,057	10,147	37,620	77,271	120,884	57,051	18,029	8,422
22	7,565	8,050	8,122	7,998	8,026	10,573	38,346	78,568	120,617	55,577	17,397	8,386
23	7,575	8,060	8,022	7,961	7,961	11,072	39,128	79,822	120,101	54,123	16,815	8,348
24	7,585	8,060	8,012	7,893	7,913	11,408	39,897	81,503	119,321	52,630	16,319	8,316
25	7,608	8,337	8,016	7,920	7,924	11,801	40,584	83,582	118,348	51,133	15,771	8,285
26	7,611	10,041	8,036	7,944	7,866	12,347	41,278	85,916	117,220	49,690	15,216	8,247
27	7,618	10,321	8,208	7,958	7,832	13,041	41,967	88,095	116,061	48,368	14,708	8,229
28	7,608	10,353	8,288	7,961	7,852	13,535	42,724	89,724	114,105	46,979	14,218	8,205
29	7,602	11,370	8,215	7,954	-----	14,141	43,520	91,132	111,646	45,624	13,822	8,181
30	7,605	11,775	8,105	7,954	-----	14,981	44,471	92,549	109,213	44,229	13,447	8,167
31	7,611	-----	8,081	7,975	-----	15,792	-----	93,881	-----	42,909	13,096	-----
MAX	7,641	11,775	11,327	8,517	8,365	15,792	44,471	93,881	121,009	106,705	41,500	12,773
MIN	7,559	7,625	8,012	7,893	7,812	7,805	16,515	45,571	94,997	42,909	13,096	8,167
(a)	568.54	579.49	569.93	569.62	569.26	588.01	625.03	662.58	671.89	623.53	582.46	570.18
(b)	-37	+4,164	-3,694	-106	-123	+7,940	+28,679	+49,410	+15,332	-66,304	-29,813	-4,929
(c)	183	99	39	24	42	91	281	576	1,240	1,249	651	295

CAL YR 1970 b -831  
WTR YR 1971 b +519

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

## TULARE LAKE BASIN

11210930 FOOTHILL DITCH BELOW TERMINUS DAM, CALIF.

LOCATION,--Lat 36°24'48", long 119°00'47", in NE¼ sec.35, T.17 S., R.27 E., Tulare County, on left bank 0.7 mile downstream from Terminus Dam and 2.1 miles northeast of Lemoncove.

PERIOD OF RECORD,--October 1961 to current year.

GAGE,--Water-stage recorder and Parshall flume. Datum of gage is 492.8 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE,--10 years, 17.9 cfs (12,970 acre-ft per year).

EXTREMES,--Period of record: Maximum daily discharge, 50 cfs Feb. 10, 1962; minimum daily, 1.0 cfs Feb. 1-2, 1962.

REMARKS,--Records excellent. Ditch receives water from Lake Kaweah (see sta 11210900) which is used for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	17	23	21	20	18	19	18	22	25	24	20
2	17	18	23	21	20	18	19	18	22	25	24	20
3	17	18	23	21	20	18	19	18	22	25	25	20
4	17	17	23	21	20	18	19	18	22	25	25	20
5	17	17	23	21	19	18	19	18	22	25	25	20
6	17	17	23	21	19	18	18	16	22	25	25	21
7	18	17	21	21	19	18	18	14	22	26	25	20
8	18	17	20	20	19	18	19	17	23	26	24	20
9	18	17	20	20	19	18	18	22	23	26	24	20
10	18	17	21	20	19	18	18	22	22	26	24	20
11	18	17	21	19	19	19	18	22	22	26	24	19
12	18	18	21	20	19	19	18	22	22	26	24	19
13	17	18	21	20	20	19	18	22	23	26	24	19
14	17	18	21	21	20	19	18	23	23	26	24	18
15	17	18	20	21	20	18	18	23	23	26	23	17
16	18	19	20	21	20	18	18	23	23	26	23	16
17	17	20	21	21	20	18	18	23	23	26	23	16
18	17	20	21	22	20	18	18	23	24	26	23	16
19	17	20	21	23	19	18	18	23	24	25	23	16
20	18	19	21	23	19	19	18	23	24	25	21	16
21	18	18	21	23	19	19	18	23	24	25	21	16
22	18	18	22	22	19	19	18	23	24	25	21	16
23	18	18	21	22	19	19	18	23	24	25	20	16
24	18	18	20	21	19	19	17	23	24	25	20	16
25	18	18	20	21	19	19	17	23	24	25	20	16
26	18	18	20	20	18	19	17	23	24	25	20	16
27	18	20	20	20	18	20	17	23	25	25	20	16
28	18	21	21	20	18	20	17	23	25	25	20	16
29	18	20	21	20	-----	20	17	22	25	25	20	16
30	17	21	21	20	-----	19	17	22	25	25	20	16
31	17	-----	21	20	-----	19	-----	22	-----	24	20	-----
TOTAL	544	549	656	647	539	577	539	658	697	786	699	533
MEAN	17.5	18.3	21.2	20.9	19.3	18.6	18.0	21.2	23.2	25.4	22.5	17.8
MAX	18	21	23	23	20	20	19	23	25	26	25	21
MIN	17	17	20	19	18	18	17	14	22	24	20	16
AC-FT	1,080	1,090	1,300	1,280	1,070	1,140	1,070	1,310	1,380	1,560	1,390	1,060
CAL YR 1970	TOTAL 7,248		MEAN 19.9	MAX 28	MIN 13	AC-FT 14,380						
WTR YR 1971	TOTAL 7,424		MEAN 20.3	MAX 26	MIN 14	AC-FT 14,730						



## 11210950 KAWEAH RIVER BELOW TERMINUS DAM, CALIF.

LOCATION.--Lat 36°24'51", long 119°00'42", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.26, T.17 S., R.27 E., Tulare County, on left bank 0.6 mile downstream from Terminus Dam and 2.2 miles northeast of Lemoncove.

DRAINAGE AREA.--561 sq mi.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 495.90 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE (adjusted for change in contents, evaporation and diversion).--10 years, 692 cfs (501,400 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 1,810 cfs July 1-3; minimum daily, 2.2 cfs May 7.

Period of record: Maximum discharge, 5,610 cfs June 3, 1969 (gage height, 8.77 ft); no flow at times in most years.

REMARKS.--Records excellent. Flow regulated by Lake Kaweah (see sta 11210900). Lemoncove ditch (see sta 11210850) diverts water from Lake Kaweah for irrigation. Foothill ditch (see sta 11210930) diverts water from the gage pool for irrigation. Doffelmyer ditch diverts up to 3 cfs above the station for irrigation. At times some of this water is returned to the river above the station. Records of chemical analyses and water temperatures for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WRD Calif, 1969: 1967(M). Typographical error for March 1963 adjusted acre-feet published in WRD Calif, 1963 and WSP 1931 as 47,560 acre-feet is revised to 27,560 acre-feet.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	12	449	180	326	230	316	146	244	1,810	799	180
2	7.6	13	472	178	326	233	304	170	203	1,810	808	176
3	6.2	16	528	187	325	218	302	173	174	1,810	817	179
4	5.7	13	570	202	320	235	305	174	173	1,800	836	182
5	5.6	11	521	170	280	242	235	170	177	1,790	827	184
6	10	8.0	471	151	226	234	185	68	179	1,760	818	184
7	10	6.1	282	152	210	231	186	2.2	250	1,710	806	181
8	8.6	5.1	146	144	238	231	181	61	381	1,690	684	173
9	8.1	9.1	168	140	260	235	174	174	472	1,690	601	173
10	8.2	8.7	192	142	260	244	164	178	507	1,690	620	148
11	8.4	4.2	223	152	258	259	150	188	530	1,700	619	124
12	8.4	15	242	171	264	266	155	197	596	1,540	602	118
13	8.6	24	244	207	312	279	177	208	626	1,420	579	124
14	8.4	24	232	257	346	289	187	287	680	1,430	576	69
15	9.8	24	161	277	353	318	184	336	746	1,470	576	27
16	11	55	144	276	401	343	178	342	785	1,490	576	24
17	10	71	226	276	432	321	180	356	986	1,520	566	22
18	10	78	274	394	428	308	183	352	1,130	1,520	558	27
19	11	69	262	594	361	307	186	339	1,140	1,160	537	24
20	12	45	252	676	317	308	174	339	1,130	904	484	25
21	12	19	252	674	319	309	162	350	1,130	889	413	23
22	13	19	301	556	320	316	158	338	1,160	886	361	19
23	14	23	260	411	321	337	131	317	1,230	902	317	19
24	15	25	198	377	296	359	116	312	1,240	925	295	19
25	15	29	182	312	270	349	96	329	1,270	925	309	19
26	20	33	180	291	264	360	83	346	1,310	862	313	20
27	17	134	182	301	236	390	81	334	1,320	817	289	18
28	20	159	209	316	223	403	74	295	1,610	808	267	18
29	19	101	226	326	-----	362	82	263	1,800	805	234	19
30	14	274	226	326	-----	319	102	252	1,800	797	208	19
31	12	-----	196	326	-----	316	-----	245	-----	792	189	-----
TOTAL	347.0	1,327.2	8,471	9,142	8,492	9,151	5,191	7,641.2	24,979	41,122	16,484	2,537
MEAN	11.2	44.2	273	295	303	295	173	246	833	1,327	532	84.6
MAX	20	274	570	676	432	403	316	356	1,800	1,810	836	184
MIN	5.6	4.2	144	140	210	218	74	2.2	173	792	189	18
AC-FT	688	2,630	16,800	18,130	16,840	18,150	10,300	15,160	49,550	81,570	32,700	5,030
MEAN a	39.4	140	236	316	322	447	684	1,087	1,142	302	88.3	32.6
AC-FT a	2,420	8,340	14,510	19,400	17,890	27,500	40,710	66,850	67,940	18,570	5,430	1,940
CAL YR 1970	TOTAL	167,358.0	MEAN	459	MAX	1,700	MIN	4.2	AC-FT	332,000	MEAN a	490
WTR YR 1971	TOTAL	134,884.4	MEAN	370	MAX	1,810	MIN	2.2	AC-FT	267,500	MEAN a	403
										AC-FT a	354,600	
											AC-FT a	291,500

a Adjusted for diversion to Lemoncove ditch, Foothill ditch, and change in contents and evaporation in Lake Kaweah.

## TULARE LAKE BASIN

11211300 DRY CREEK NEAR LEMONCOVE, CALIF.

LOCATION.--Lat 36°26'51", long 119°01'38", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.15, T.17 S., R.27 E., Tulare County, on right bank 0.5 mile downstream from Bequette Canyon, 2.9 miles upstream from mouth, and 4.4 miles north of Lemoncove.

DRAINAGE AREA.--75.6 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 570 ft (from topographic map). Prior to Mar. 8, 1969, 1.6 miles downstream at different datum.

AVERAGE DISCHARGE.--12 years, 21.1 cfs (15,290 acre-ft per year); median of yearly mean discharges, 9.0 cfs (6,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 102 cfs Nov. 29 (gage height, 2.86 ft); no flow for several months. Period of record: Maximum discharge, 14,500 cfs 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 in each year.

REMARKS.--Records good. Small diversions above station for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FFB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	13	14	12	11	8.8	6.1	6.1	.55		
2		0	23	16	12	11	8.4	5.6	5.6	.35		
3		0	26	16	11	10	7.9	9.2	5.6	.30		
4		0	12	13	11	10	7.9	10	5.6	.25		
5		0	7.9	12	11	9.7	7.4	9.2	5.2	.25		
6		0	6.1	12	11	9.7	7.0	11	5.2	.25		
7		0	4.8	11	11	9.2	6.6	18	4.8	.20		
8		0	4.3	11	10	9.2	7.4	24	4.3	.20		
9		0	35	11	9.7	8.8	7.4	15	4.3	.20		
10		0	20	10	9.7	7.4	7.0	13	4.3	.20		
11		0	10	9.7	9.7	7.4	6.6	12	4.8	.20		
12		0	7.5	17	9.2	8.4	6.1	10	4.3	.20		
13		0	6.0	36	8.8	40	5.6	9.7	4.3	.15		
14		0	5.0	33	8.8	18	6.1	9.2	3.8	.10		
15		0	4.7	25	8.8	14	7.0	8.8	3.8	.10		
16		0	15	21	9.7	12	5.6	8.4	3.8	.10		
17		0	40	21	17	12	13	8.4	3.8	.10		
18		0	35	22	17	11	20	7.9	3.0	.10		
19		0	25	22	15	11	14	7.0	2.5	.07		
20		0	19	23	17	10	11	6.6	1.6	.04		
21		0	56	21	14	9.7	10	6.1	1.6	.02		
22		0	55	19	12	9.7	9.7	6.1	1.4	0		
23		0	24	17	12	9.7	8.4	5.6	1.0	0		
24		0	18	16	11	9.7	7.9	5.2	1.0	0		
25		0	16	15	11	9.7	7.9	4.8	1.0	0		
26		7.7	16	14	11	10	7.4	4.3	1.0	0		
27		10	27	14	10	12	7.4	8.2	.80	0		
28		2.5	27	14	11	11	7.0	14	.80	0		
29		23	20	14	-----	10	7.0	9.7	.65	0		
30		51	17	13	-----	9.2	6.6	7.9	.65	0		
31		-----	16	12	-----	8.8	-----	6.6	-----	0		
TOTAL	0	94.2	611.3	524.7	321.4	349.3	250.1	287.6	96.60	3.93	0	0
MEAN	0	3.14	19.7	16.9	11.5	11.3	8.34	9.28	3.22	.13	0	0
MAX	0	51	56	36	17	40	20	24	6.1	.55	0	0
MIN	0	0	4.3	9.7	8.8	7.4	5.6	4.3	.65	0	0	0
AC-FT	0	187	1,210	1,040	638	693	496	570	192	7.8	0	0
CAL YR 1970	TOTAL	5,752.56	MEAN	15.8	MAX	928	MIN	0	AC-FT	11,410		
WTR YR 1971	TOTAL	2,539.13	MEAN	6.96	MAX	56	MIN	0	AC-FT	5,040		

## PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-29	2300	2.86	102	1-13	2400	2.49	51
12- 2	2200	2.55	59	3-13	1030	2.62	69
12-21	2300	2.84	100				

11211790 COTTONWOOD CREEK NEAR ELDERWOOD, CALIF.

LOCATION.--Lat 36°31'47", long 119°07'33", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.15, T.16 S., R.26 E., Tulare County, on left bank 25 ft upstream from State Highway 65 bridge, 4.0 miles north of Elderwood, and 8.0 miles north of Woodlake.

DRAINAGE AREA.--60.4 sq mi.

PERIOD OF RECORD.--February to September 1971.

GAGE.--Water-stage recorder. Altitude of gage is 575 ft (from topographic map).

EXTREMES.--Maximum discharge during period, 21 cfs Mar. 13 (gage height, 2.21 ft); no flow for several months. Flood of February 24, 1969, reached a stage of 10.4 ft, from floodmarks.

REMARKS.--Records good. No regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, FEBRUARY TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					-	6.4	5.2	3.6	2.7	0		
2					-	6.4	4.9	3.8	2.7	0		
3					-	7.2	5.2	6.4	2.0	0		
4					-	7.8	5.2	6.0	1.9	0		
5					-	5.2	5.2	5.6	2.2	0		
6					-	5.6	4.9	4.9	2.6	0		
7					-	5.2	4.6	7.2	2.6	0		
8					-	4.9	4.3	6.8	2.4	0		
9					-	5.2	4.3	5.2	2.4	0		
10					7.2	5.6	4.0	4.6	2.2	0		
11					7.8	6.0	4.0	4.3	2.6	0		
12					6.8	7.2	4.0	3.8	2.2	0		
13					6.8	15	4.6	3.4	1.9	0		
14					6.8	7.8	4.9	3.4	2.0	.30		
15					7.2	7.2	5.2	3.8	2.2	.82		
16					7.2	5.6	5.2	4.0	1.9	1.7		
17					9.6	5.6	11	3.4	1.4	1.7		
18					9.6	5.6	10	2.9	1.1	.38		
19					9.0	5.2	5.6	3.1	.82	0		
20					9.0	5.2	5.6	2.9	.70	0		
21					7.2	4.9	6.0	3.1	.50	0		
22					7.2	4.9	6.0	3.4	.08	0		
23					7.8	5.2	5.6	2.9	0	0		
24					6.4	5.6	5.2	2.7	0	0		
25					6.0	6.0	5.6	2.6	0	0		
26					6.0	5.6	5.2	2.4	0	0		
27					6.4	5.6	5.2	3.6	0	0		
28					6.8	4.9	4.0	4.0	0	0		
29					-----	4.9	3.8	3.6	0	0		
30					-----	5.6	3.8	3.4	0	0		
31		-----			-----	6.4	-----	2.7	-----	0		-----
TOTAL					-	189.5	158.3	123.5	41.10	4.90	0	0
MEAN					-	6.11	5.28	3.98	1.37	.16	0	0
MAX					-	15	11	7.2	2.7	1.7	0	0
MIN					-	4.9	3.8	2.4	0	0	0	0
AC-FT					-	376	314	245	82	9.7	0	0
CAL YR 1970	TOTAL -		MEAN -	MAX -	MIN -	AC-FT -						
WTR YR 1971	TOTAL -		MEAN -	MAX -	MIN -	AC-FT -						

## TULARE LAKE BASIN

11212000 SAND CREEK NEAR ORANGE COVE, CALIF.

LOCATION.--Lat 36°37'36", long 119°14'48", in NW¼ sec.15, T.15 S., R.25 E., Tulare County, on right bank 3.8 miles east of Orange Cove.

DRAINAGE AREA.--31.6 sq mi.

PERIOD OF RECORD.--October 1944 to September 1954; February to September 1971.

GAGE.--Water-stage recorder. Altitude of gage is 490 ft (from topographic map).

AVERAGE DISCHARGE.--10 years (1944-54), 1.77 cfs (1,280 acre-ft per year); median of yearly mean discharges, 0.7 cfs (510 acre-ft per year).

EXTREMES.--Maximum discharge during period February to September, 27 cfs Mar. 13 (gage height, 2.43 ft), from rating curve extended above 4 cfs on basis of slope-area measurements at gage heights 4.00, 4.80, 8.75 ft; no flow for several months.

Period of record: Maximum discharge, 446 cfs January 24, 1952 (gage height, 4.12 ft), from rating curve extended above 130 cfs on basis of slope-area measurement at gage height 4.00 ft; no flow for several months in each year.

Maximum discharge since 1944, 3,520 cfs Jan. 25, 1969 (gage height, 8.75 ft, from floodmarks).

Flood of Feb. 25, 1969, reached stage of 8.35 ft, from floodmarks (discharge, 2,900 cfs).

REMARKS.--Records good. No regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, FEBRUARY TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					-	3.1	1.7	1.6	.60	.01		
2					-	2.8	1.6	1.7	.60	.01		
3					-	2.8	1.6	2.3	.54	.02		
4					-	3.0	1.6	1.6	.51	.01		
5					-	2.8	1.4	1.4	.48	.01		
6					3.7	2.8	1.4	1.3	.43	.01		
7					3.7	3.0	1.5	1.7	.38	0		
8					3.7	3.0	1.5	2.3	.28	.01		
9					3.7	3.1	1.9	1.3	.24	.01		
10					3.7	3.1	1.5	1.1	.26	.01		
11					3.7	3.1	1.4	.92	.26	.01		
12					3.5	3.0	1.2	.76	.24	0		
13					3.3	14	1.5	.68	.15	0		
14					3.3	3.0	1.7	.60	.10	0		
15					3.3	2.1	2.1	.54	.06	0		
16					3.5	2.1	1.8	.48	.03	0		
17					4.4	1.9	7.5	.45	.03	.01		
18					5.0	1.8	8.9	.40	.02	0		
19					4.7	1.8	3.7	.40	.02	0		
20					4.2	1.8	2.8	.40	.02	0		
21					3.5	1.8	2.6	.40	.02	0		
22					3.3	1.8	2.2	.48	.02	0		
23					3.3	2.1	2.1	.45	.02	0		
24					3.0	2.2	2.1	.38	.02	0		
25					2.8	2.2	2.5	.26	.01	0		
26					2.6	2.5	1.8	.26	.01	0		
27					2.8	2.5	1.7	1.0	.01	0		
28					3.1	2.2	1.8	1.9	.01	0		
29					-----	2.1	1.7	1.6	0	0		
30					-----	1.9	1.7	1.1	0	0		
31		-----			-----	1.7	-----	.72	-----	0		-----
TOTAL					-	87.1	68.5	30.48	5.37	.12	0	0
MEAN					-	2.81	2.28	.98	.18	.004	0	0
MAX					-	14	8.9	2.3	.60	.02	0	0
MIN					-	1.7	1.2	.26	0	0	0	0
AC-FT					-	173	136	60	11	.2	0	0
CAL YR 1970	TOTAL -	MEAN -	MAX -	MIN -	AC-FT -							
WTR YR 1971	TOTAL -	MEAN -	MAX -	MIN -	AC-FT -							

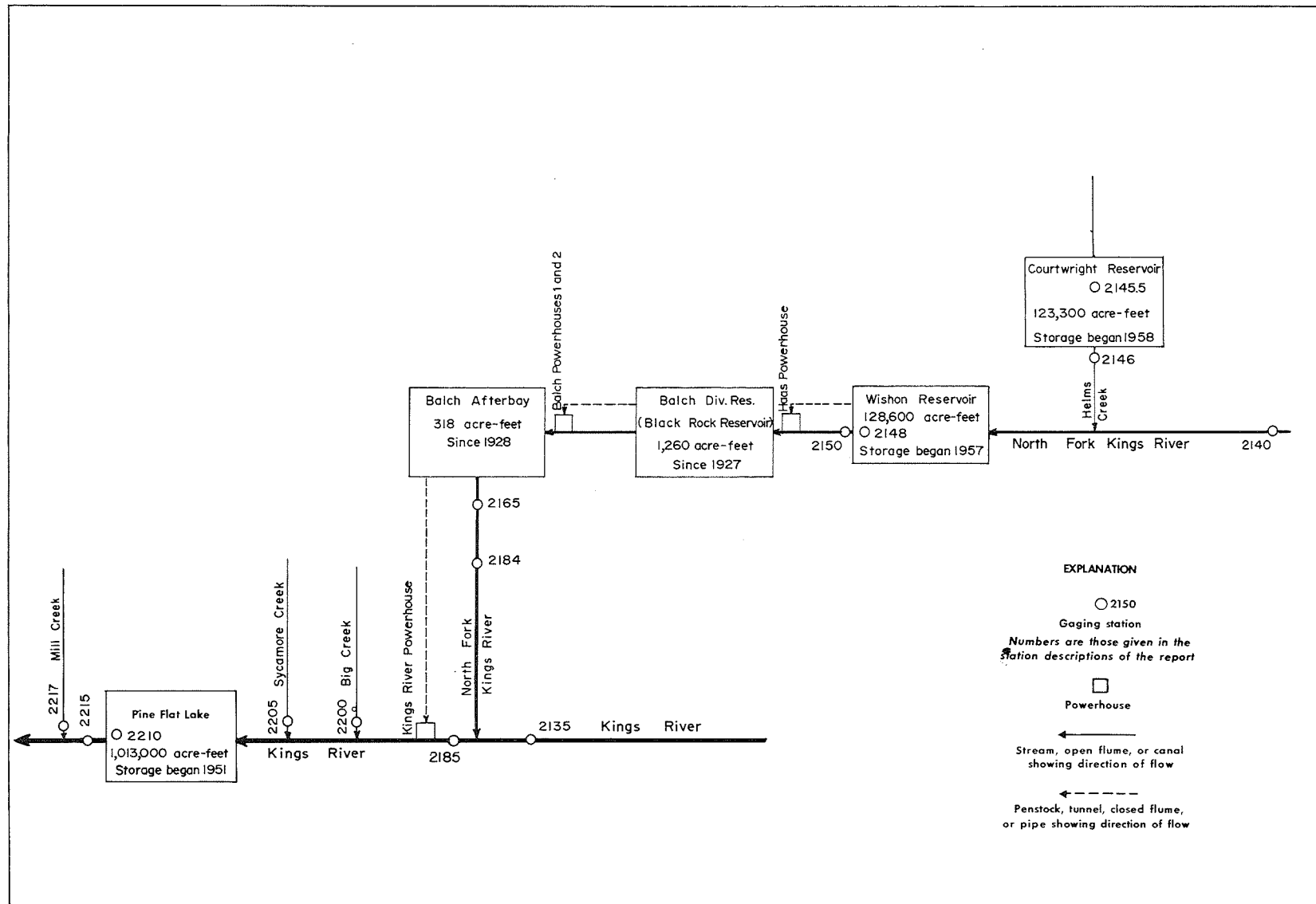


FIGURE 5.--Schematic diagram showing diversions and storage in Kings River basin.

## TULARE LAKE BASIN

11213500 KINGS RIVER ABOVE NORTH FORK, NEAR TRIMMER, CALIF.

LOCATION.--Lat 36°51'48", long 119°07'24", in NE $\frac{1}{4}$  sec.27, T.12 S., R.26 E., Fresno County, on right bank at Rogers Crossing, 0.9 mile upstream from North Fork, 2.9 miles south of Balch Camp, and 9.6 miles southeast of Trimmer.

DRAINAGE AREA.--952 sq mi.

PERIOD OF RECORD.--October 1926 to December 1928, October 1931 to current year. Prior to September 1965, published as Kings River above North Fork. Monthly figures only for some periods published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 1,001.5 ft above mean sea level (river-profile survey). March 1927 to December 1928, at site 0.5 mile downstream at different datum. October 1931 to September 1965, on left bank at datum 2.00 ft higher.

AVERAGE DISCHARGE.--41 years, 1,435 cfs (1,040,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,490 cfs June 16 (gage height, 7.15 ft); minimum daily, 144 cfs Oct. 19, 20.

Period of record: Maximum discharge, 59,100 cfs Dec. 23, 1955 (gage height, 18.26 ft, present datum), from rating curve extended above 19,000 cfs on basis of slope-area measurement of maximum flow; minimum daily, 70 cfs Jan. 14, 1963.

REMARKS.--Records good. No diversion or regulation above station. See schematic diagram of Kings River basin. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	225	160	466	375	571	414	1,150	1,500	1,730	2,100	728	269
2	175	160	816	375	566	389	1,150	1,660	1,740	2,040	800	254
3	154	160	508	333	544	410	1,200	1,610	1,810	2,070	830	245
4	152	158	517	308	512	403	1,250	1,460	2,040	2,010	740	235
5	152	192	508	308	499	382	1,390	1,420	2,420	1,840	680	228
6	156	238	466	305	482	364	1,500	1,580	2,990	1,690	635	222
7	152	240	454	302	462	368	1,320	1,600	3,520	1,610	590	347
8	152	230	504	316	454	375	1,250	1,480	3,900	1,500	558	396
9	152	220	714	326	446	378	1,320	1,390	4,290	1,410	526	344
10	150	220	540	322	450	386	1,370	1,530	4,340	1,300	517	312
11	148	218	482	308	474	389	1,410	1,790	4,290	1,220	494	293
12	148	215	446	372	530	410	1,540	1,940	4,320	1,160	486	278
13	148	212	414	386	580	590	1,740	2,200	4,460	1,130	474	263
14	148	198	392	368	595	478	1,480	2,770	4,510	1,160	499	257
15	148	198	368	403	625	490	1,330	3,680	4,660	1,190	508	245
16	146	190	434	422	625	482	1,560	4,150	4,740	1,170	474	235
17	146	185	508	590	595	474	1,820	3,360	4,660	1,240	434	228
18	146	180	446	812	553	482	1,550	2,950	4,460	1,620	400	218
19	144	175	462	920	576	522	1,370	2,860	3,880	1,700	378	212
20	144	172	442	956	508	571	1,330	3,040	3,620	1,430	361	212
21	146	172	490	878	508	635	1,200	3,210	3,730	1,300	350	210
22	152	170	478	770	512	716	1,070	2,420	3,700	1,160	336	208
23	150	170	422	692	486	824	1,060	2,290	3,580	1,060	322	200
24	158	166	400	640	454	782	1,020	2,900	3,240	980	305	198
25	166	393	389	595	454	812	944	3,380	2,860	920	302	190
26	166	823	392	576	410	1,020	926	3,860	2,740	860	296	190
27	166	400	422	566	396	1,060	926	3,500	2,850	806	330	190
28	170	358	403	566	403	994	944	2,720	2,830	770	319	190
29	162	820	386	571	-----	1,010	994	2,250	2,390	728	316	190
30	160	636	375	571	-----	1,170	1,180	2,130	2,190	692	296	198
31	160	-----	372	580	-----	1,210	-----	1,990	-----	686	284	-----
TOTAL	4,842	8,029	14,416	15,812	14,270	18,990	38,294	74,620	102,490	40,552	14,568	7,257
MEAN	156	268	465	510	510	613	1,276	2,407	3,416	1,308	470	242
MAX	225	823	816	956	625	1,210	1,820	4,150	4,740	2,100	830	396
MIN	144	158	368	302	396	364	926	1,390	1,730	686	284	190
AC-FT	9,600	15,930	28,590	31,360	28,300	37,670	75,960	148,000	203,300	80,430	28,900	14,390

CAL YR 1970 TOTAL 419,296 MEAN 1,149 MAX 6,120 MIN 144 AC-FT 831,700  
WTR YR 1971 TOTAL 354,140 MEAN 970 MAX 4,740 MIN 144 AC-FT 702,400

PEAK DISCHARGE (BASE, 6,300 CFS).--No peak above base.

## 11214000 NORTH FORK KINGS RIVER BELOW MEADOW BROOK, CALIF.

LOCATION.--Lat 37°04'53", long 118°51'43", in NE¼ sec.12, T.10 S., R.28 E., Fresno County, Sierra National Forest, on left bank 800 ft downstream from Nichols Canyon, 0.6 mile downstream from Meadow Brook, 3.9 miles west of Blackcap Mountain, 5.9 miles east of Courtright Dam, and 23 miles southeast of town of Huntington Lake.

DRAINAGE AREA.--37.7 sq mi.

PERIOD OF RECORD.--October 1921 to September 1935, October 1956 to current year. Monthly discharge only for some periods and yearly estimates for some incomplete years, published in WSP 1315-A, Records for Jan. 1-23, and Dec. 1-21, 1934, published in WSP 551 and 766, respectively, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder. Datum of gage is 8,144.66 ft above mean sea level, unadjusted (levels by Pacific Gas and Electric Co.).

AVERAGE DISCHARGE.--29 years, 71.3 cfs (51,660 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 583 cfs June 8 (gage height, 4.31 ft); maximum gage height, 4.32 ft June 12; minimum daily discharge, 0.82 cfs Oct. 1-3.

Period of record: Maximum discharge, 2,040 cfs June 2, 1969 (gage height, 5.65 ft), from rating curve extended above 800 cfs; minimum recorded, 0.3 cfs Sept. 12-14, 1924.

Flood of Dec. 23, 1955, reached a stage of 5.85 ft, from floodmarks (discharge, 2,000 cfs).

REMARKS.--No regulation or diversion above station. See schematic diagram of Kings River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1315-A: 1922(M). WSP 1515: Drainage area. See also PERIOD OF RECORD.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.82	1.9	33	21	36	18	96	167	158	119	40	4.7
2	.82	1.9	28	21	28	16	109	158	175	114	29	4.0
3	.82	1.8	28	20	27	16	119	138	192	107	24	3.5
4	.96	2.3	44	22	24	15	134	134	237	96	21	3.3
5	1.1	8.3	31	22	23	15	152	134	286	84	18	2.9
6	1.1	7.2	26	22	22	14	134	140	344	75	16	14
7	1.0	6.4	25	23	21	14	109	132	391	67	14	17
8	1.0	7.9	26	22	22	15	121	123	411	60	13	12
9	1.2	10	25	20	23	16	132	125	436	53	12	11
10	1.2	8.3	27	18	26	17	136	142	431	47	11	9.5
11	1.1	7.9	26	17	35	18	150	180	421	43	9.9	7.9
12	1.2	7.2	26	17	43	22	175	173	436	38	9.9	6.8
13	1.2	4.7	26	18	44	26	158	211	416	35	30	6.1
14	1.2	5.4	26	21	43	23	136	310	421	35	33	5.4
15	1.5	6.4	25	23	44	22	167	401	421	35	31	4.7
16	1.6	5.0	24	26	35	21	192	381	406	40	24	3.7
17	1.4	5.0	26	28	32	21	169	282	386	59	18	3.5
18	1.4	4.7	27	36	29	25	128	254	336	84	15	3.3
19	1.4	4.3	27	44	28	34	110	269	290	81	13	3.1
20	1.5	4.0	27	50	28	42	102	314	286	93	11	2.9
21	1.6	4.0	26	45	25	50	91	286	282	76	9.5	2.7
22	1.7	4.0	26	37	23	64	84	214	254	57	8.3	2.5
23	1.9	3.7	25	35	22	66	87	237	228	45	7.5	2.3
24	2.9	4.7	25	33	22	49	87	306	204	44	7.2	2.2
25	2.7	16	24	32	20	74	79	367	185	35	11	2.0
26	1.9	11	23	31	19	75	81	376	178	29	13	2.0
27	1.9	23	24	33	18	58	87	298	189	26	9.9	2.0
28	1.9	20	24	35	18	64	99	240	162	26	7.9	2.0
29	1.9	18	23	35	-----	86	117	199	136	22	7.2	2.0
30	1.9	26	22	37	-----	104	142	201	123	25	6.4	3.7
31	2.0	-----	21	38	-----	96	-----	175	-----	41	5.4	-----
TOTAL	45.82	241.0	816	882	780	1,196	3,683	7,067	8,821	1,791	486.1	152.7
MEAN	1.48	8.03	26.3	28.5	27.9	38.6	123	228	294	57.8	15.7	5.09
MAX	2.9	26	44	50	44	104	192	401	436	119	40	17
MIN	.82	1.8	21	17	18	14	79	123	123	22	5.4	2.0
AC-FT	91	478	1,620	1,750	1,550	2,370	7,310	14,020	17,500	3,550	964	303

CAL YR 1970 TOTAL 24,129.89 MEAN 66.1 MAX 564 MIN .82 AC-FT 47,860  
WTR YR 1971 TOTAL 25,961.62 MEAN 71.1 MAX 436 MIN .82 AC-FT 51,490

## PEAK DISCHARGE (BASE, 400 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-15	2000	4.27	557	5-25	2200	4.17	497
5-20	2200	3.99	400	6- 8	2000	4.31	583

## RESERVOIRS IN TULARE LAKE BASIN, CALIF.

11214550 COURTRIGHT RESERVOIR.--Lat 37°04'40", long 118°58'05", in NW¼ sec.7, T.10 S., R.28 E., Fresno County, Sierra National Forest, at left end of dam on Helms Creek 2.5 miles upstream from mouth, 4.6 miles east of Nelson Mountain, and 9.7 miles west of Blackcap Mountain. Drainage area, 39.7 sq mi. Period of record, October 1958 to current year. Water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Extremes for current year: Maximum contents, 46,700 acre-ft July 25-28 (elevation, 8,120.57 ft); no contents Oct. 1 to Nov. 6. Extremes for period of record: Maximum contents, 124,200 acre-ft July 13, 1967 (elevation, 8,184.55 ft); no contents in 1961-62, 1968, 1970.

Reservoir is formed by rockfill dam completed in 1958. Usable capacity, 123,300 acre-ft between elevations 7,902 (invert of tunnel) and 8,184 ft (elevation of spillway). Dead storage negligible. See schematic diagram of Kings River basin. Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

11214800 WISHON RESERVOIR.--Lat 37°00'20", long 118°58'00", in NW¼ sec.6, T.11 S., R.28 E., Fresno County, Sierra National Forest, on right end of dam on North Fork Kings River 1.2 miles north of Cliff Camp, 1.3 miles upstream from Cliff Camp gaging station, and 20 miles southeast of town of Big Creek. Drainage area, 177 sq mi. Period of record, December 1957 to current year. Water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Extremes for current year: Maximum contents, 125,800 acre-ft July 6 (elevation, 6,547.22 ft); minimum, 9,800 acre-ft Feb. 22 (elevation, 6,380.67 ft). Extremes for period of record: Maximum contents, 129,700 acre-ft July 29, 1958 (elevation, 6,551.1 ft); no contents in 1960.

Reservoir is formed by rockfill dam completed in 1957. Capacity, 128,600 acre-ft between elevations 6,317 (bottom of slide gates) and 6,550 ft (operating crest of spillway gates). Dead storage negligible. Water is diverted to Haas powerhouse for power. See schematic diagram of Kings River basin. Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

## MONTHEND ELEVATION AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	ELEVATION (FEET)	CONTENTS (ACRE-FEET)	CHANGE IN CONTENTS (ACRE-FEET)	ELEVATION (FEET)	CONTENTS (ACRE-FEET)	CHANGE IN CONTENTS (ACRE-FEET)
COURTRIGHT RESERVOIR				WISHON RESERVOIR		
Sept. 30.....	7,902.2	0	-	6,467.2	56,800	-
Oct. 31.....	7,902.2	0	0	6,446.4	43,300	-13,500
Nov. 30.....	7,965.1	591	+591	6,434.2	36,100	-7,200
Dec. 31.....	7,988.3	1,520	+930	6,417.6	27,100	-9,000
CAL YR 1970.....	-	-	-12,500	-	-	-1,870
Jan. 31.....	8,002.3	2,450	+930	6,407.5	22,000	-5,120
Feb. 28.....	8,018.2	3,950	+1,500	6,383.1	10,800	-11,100
Mar. 31.....	8,035.7	6,390	+2,440	6,403.8	20,200	+9,330
Apr. 30.....	8,070.9	16,100	+9,710	6,425.2	31,100	+10,900
May 31.....	8,105.8	35,300	+19,200	6,496.8	79,700	+48,500
June 30.....	8,119.9	46,100	+10,800	6,545.7	124,300	+44,600
July 31.....	8,120.5	46,600	+500	6,526.3	105,500	-18,800
Aug. 31.....	8,120.1	46,300	-300	6,492.7	76,300	-29,300
Sept. 30.....	8,119.5	45,800	-500	6,461.9	53,200	-23,100
WTR YR 1971.....	-	-	+45,800	-	-	-3,650



## 11214600 HELMS CREEK BELOW COURTRIGHT DAM, CALIF.

LOCATION.--Lat 37°04'35", long 118°58'04", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.7, T.10 S., R.28 E., Fresno County, Sierra National Forest, on left bank 500 ft downstream from Courtright Dam, 2.5 miles upstream from North Fork Kings River, and 17 miles southeast of town of Huntington Lake.

DRAINAGE AREA.--39.7 sq mi.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder and broad-crested weir with V-notch. Altitude of gage is 7,840 ft (from Pacific Gas and Electric Co. survey).

AVERAGE DISCHARGE (adjusted for storage).--13 years, 76.9 cfs (55,710 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 589 cfs Sept. 16 (gage height, 6.52 ft); no flow Nov. 21-24, Dec. 1, 3-6.  
Period of record: Maximum discharge, 1,340 cfs Aug. 29, 1969 (gage height, 5.81 ft); maximum gage height, 6.52 ft June 2, 1961, Sept. 16, 1971; no flow Nov. 21-24, Dec. 1, 3-6, 1970.

REMARKS.--Flow regulated by Courtright Reservoir 500 ft upstream since October 1958 (see sta 11214550). No diversion above station. See schematic diagram of Kings River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1715: 1959.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	2.1	0	.08	.12	.12	.88	3.0	4.7	3.8	4.1	4.0
2	2.7	2.1	.04	.08	.12	.12	1.0	3.0	5.3	3.9	4.1	4.0
3	2.7	2.0	0	.08	.12	.12	1.0	3.0	5.3	4.0	4.1	4.0
4	2.7	2.7	0	.08	.12	.17	1.1	3.0	5.3	4.0	4.1	4.0
5	2.7	2.2	0	.08	.12	.17	1.1	3.0	5.3	4.0	4.0	3.8
6	2.7	.02	0	.08	.12	.17	.97	3.0	5.3	4.0	4.0	3.8
7	2.7	.06	.01	.08	.12	.17	.88	3.0	5.3	4.0	4.0	3.9
8	2.7	.10	.01	.08	.12	.17	.97	3.0	4.1	4.0	4.0	3.9
9	2.7	.10	.01	.08	.12	.22	1.1	3.1	3.6	3.9	4.0	3.9
10	2.7	.15	.02	.08	.17	.22	1.1	3.4	3.6	3.9	4.1	3.9
11	2.7	.10	.02	.08	.17	.28	1.1	3.6	3.6	3.9	4.1	3.9
12	2.7	.10	.04	.08	.22	.28	1.3	3.6	3.6	3.9	4.0	3.9
13	2.7	.06	.04	.08	.28	.28	1.2	3.7	3.6	3.9	4.0	3.9
14	2.7	.06	.04	.08	.28	.28	1.3	3.8	3.5	3.9	4.0	3.9
15	2.7	.06	.08	.08	.28	.28	1.4	3.7	3.5	3.9	4.0	12
16	2.7	.06	.08	.08	.22	.28	1.6	3.6	3.5	3.9	4.0	71
17	2.7	.06	.08	.08	.22	.28	1.6	3.4	3.5	3.9	4.0	7.1
18	2.7	.06	.08	.08	.22	.34	1.5	3.4	3.5	3.9	4.0	5.5
19	2.7	.10	.08	.08	.17	.48	1.4	3.3	3.5	3.9	4.0	5.5
20	2.7	.02	.08	.12	.17	.55	1.4	3.2	3.5	3.9	4.0	5.5
21	2.7	0	.08	.12	.17	.63	1.4	3.4	3.5	3.9	4.0	4.0
22	2.7	0	.08	.12	.17	.63	1.4	3.4	3.6	4.1	4.0	3.1
23	3.0	0	.08	.12	.17	.55	1.7	3.4	3.6	4.4	4.0	3.7
24	3.2	0	.08	.12	.17	.55	2.1	3.4	3.8	4.4	4.0	4.3
25	2.7	.22	.08	.12	.12	.63	2.3	3.4	3.9	4.3	4.0	4.3
26	2.1	.08	.08	.12	.12	.63	2.4	3.4	3.9	4.3	4.0	4.3
27	1.8	.04	.08	.12	.12	.71	2.5	3.5	3.9	4.1	4.0	4.3
28	2.3	.02	.08	.12	.12	.80	2.5	3.5	3.8	4.1	4.0	4.4
29	2.1	.02	.08	.12	-----	.97	2.7	3.5	3.8	4.1	4.0	4.4
30	2.1	.01	.08	.12	-----	.97	2.9	3.5	3.8	4.1	4.0	4.4
31	2.1	-----	.08	.12	-----	.88	-----	3.6	-----	4.1	4.0	-----
TOTAL	80.8	12.60	1.59	2.96	4.64	12.93	45.80	103.8	120.7	124.4	124.6	202.6
MEAN	2.61	.42	.051	.096	.17	.42	1.53	3.35	4.02	4.01	4.02	6.75
MAX	3.2	2.7	.08	.12	.28	.97	2.9	3.8	5.3	4.4	4.1	71
MIN	1.8	0	0	.08	.12	.12	.88	3.0	3.5	3.8	4.0	3.1
AC-FT	160	25	3.2	5.9	9.2	26	91	206	239	247	247	402
CAL YR 1970	TOTAL	27,546.89	MEAN	75.5	MAX	740	MIN	0	AC-FT	54,640		
WTR YR 1971	TOTAL	837.42	MEAN	2.29	MAX	71	MIN	0	AC-FT	1,660		

## TULARE LAKE BASIN

11215000 NORTH FORK KINGS RIVER NEAR CLIFF CAMP, CALIF.

LOCATION.--Lat 36°59'38", long 118°58'49", in NE¼NW¼ sec.12, T.11 S., R.27 E., Fresno County, Sierra National Forest, on right bank at Cliff Camp Bridge, 1 mile northwest of Cliff Camp, 1.2 miles downstream from Wishon Dam, and 2 miles downstream from Woodchuck Creek.

DRAINAGE AREA.--181 sq mi.

PERIOD OF RECORD.--August 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 6,143.95 ft above mean sea level, adjustment of 1912 (levels by San Joaquin Light and Power Corp.). Prior to Nov. 24, 1922, at site 1 mile upstream at different datum.

AVERAGE DISCHARGE (adjusted for storage and diversion).--50 years, 362 cfs (262,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 111 cfs Mar. 26 (gage height, 3.94 ft); minimum daily, 7.1 cfs Mar. 2.

Period of record (prior to regulation by Wishon Reservoir): Maximum discharge, 14,000 cfs Dec. 11, 1937 (gage height, 18.0 ft, from floodmarks), from rating curve extended above 4,200 cfs on basis of velocity-area studies; minimum, 0.6 cfs Dec. 30, 1930.

1957 to current year: Maximum discharge, 4,880 cfs May 28, 1958 (gage height, 11.75 ft); minimum daily, 0.8 cfs Dec. 14, 1957.

REMARKS.--Flow regulated by Wishon Reservoir 1.2 miles upstream since Dec. 5, 1957 (see sta 11214800) and Courtright Reservoir since Oct. 17, 1958 (see sta 11214550). Water diverted for power from Wishon Reservoir by tunnel to Haas powerhouse since Dec. 10, 1958. See schematic diagram of Kings River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1715: 1951, drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	11	9.8	8.8	11	7.2	22	14	15	17	17	16
2	12	11	10	8.6	11	7.1	22	14	15	17	16	16
3	12	12	9.2	8.2	11	7.6	23	14	14	17	16	16
4	12	13	9.2	8.1	10	7.9	23	13	14	17	16	16
5	12	14	9.4	8.1	10	7.6	23	13	14	17	16	16
6	12	13	9.6	7.9	10	7.4	20	17	14	17	16	16
7	11	13	10	7.7	10	7.7	17	19	14	17	16	16
8	11	12	12	7.7	10	8.4	16	18	15	17	16	16
9	11	12	14	7.7	10	9.2	17	15	15	18	16	16
10	11	11	11	8.1	11	9.6	17	15	15	18	16	16
11	11	10	10	8.2	13	11	18	17	15	18	15	16
12	12	10	9.8	8.4	15	12	18	17	15	18	15	15
13	13	10	9.4	9.0	15	12	16	17	15	18	15	15
14	13	10	9.2	8.6	15	10	14	16	15	18	15	15
15	12	10	8.8	8.2	20	11	15	16	15	18	15	15
16	12	11	9.4	8.8	15	12	16	15	16	18	15	15
17	12	11	9.4	13	11	11	18	14	15	18	15	15
18	12	11	8.8	15	10	13	17	14	15	17	15	15
19	12	11	8.8	16	10	15	15	14	15	17	15	15
20	12	11	8.8	18	9.6	17	15	14	16	17	15	15
21	12	11	9.2	13	8.8	19	13	14	16	17	15	15
22	12	11	8.6	11	8.6	22	12	14	16	17	15	15
23	12	12	8.4	10	8.4	19	12	14	16	18	15	15
24	12	12	8.4	9.8	8.2	19	13	14	16	17	15	15
25	12	22	8.4	9.6	8.1	33	12	14	16	17	14	15
26	12	19	8.6	10	7.7	95	12	14	17	17	14	15
27	12	15	8.6	10	7.4	40	13	16	17	17	14	15
28	12	15	8.2	11	7.4	30	13	18	17	17	14	14
29	11	33	8.2	11	-----	31	14	17	17	17	14	14
30	11	14	8.4	11	-----	31	14	15	17	17	15	14
31	11	-----	8.8	11	-----	26	-----	15	-----	17	17	-----
TOTAL	366	392	290.4	311.5	302.2	568.7	490	470	462	537	473	458
MEAN	11.8	13.1	9.37	10.0	10.8	18.3	16.3	15.2	15.4	17.3	15.3	15.3
MAX	13	33	14	18	20	95	23	19	17	18	17	16
MIN	11	10	8.2	7.7	7.4	7.1	12	13	14	17	14	14
AC-FT	726	778	576	618	599	1,130	972	932	916	1,070	938	908
CAL YR 1970	TOTAL 5,638.5		MEAN 15.4		MAX 185		MIN 7.1		AC-FT 11,180			
WTR YR 1971	TOTAL 5,120.8		MEAN 14.0		MAX 95		MIN 7.1		AC-FT 10,160			

LOCATION.--Lat 36°54'12", long 119°07'14", in SE<sup>1</sup>NE<sup>4</sup> sec.10, T.12 S., R.26 E., Fresno County, Sierra National Forest, on left bank 100 ft downstream from bridge at Balch Camp, 200 ft upstream from Dinkey Creek, and 9.3 miles east of Trimmer.

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.

AVERAGE DISCHARGE (prior to storage and diversion).--11 years (1919-30), 387 cfs (280,200 acre-ft per year).

REMARKS.--Flow regulated by Courtright Reservoir (see sta 11214550) and Wishon Reservoir (see sta 11214800), Black Rock Reservoir (capacity, 1,000 acre-ft), Balch Afterbay (capacity, 125 acre-ft), and Haas and Balch powerplants. Diversion from Balch Afterbay to Kings River powerhouse began Mar. 1, 1962. See schematic diagram of Kings River basin.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1966(M). WSP 1930: Drainage area.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	14	16	6.6	145	6.7	7.5	7.1	9.2	15	16	26
2	20	15	20	6.6	175	6.7	7.5	7.1	10	15	17	23
3	20	16	9.6	6.6	129	6.7	7.5	8.1	12	15	20	15
4	20	15	6.7	6.6	104	6.6	7.5	7.9	12	15	20	15
5	20	15	6.4	7.7	69	6.6	7.3	7.5	12	15	20	15
6	20	16	6.2	7.7	9.2	6.6	7.1	9.2	13	15	20	15
7	20	15	6.0	7.7	8.7	6.4	7.1	9.8	14	17	20	15
8	19	15	6.6	7.7	8.5	6.4	7.1	9.4	14	17	20	16
9	20	15	8.7	7.5	7.7	6.6	7.3	8.5	15	17	18	18
10	20	15	7.1	7.5	7.1	6.6	7.3	8.1	14	16	15	16
11	20	15	6.7	7.5	7.1	6.6	7.3	8.1	14	16	15	9.4
12	20	15	6.2	10	7.1	7.7	7.1	7.9	13	16	15	16
13	19	15	5.6	13	7.1	11	6.9	7.9	13	17	15	23
14	19	15	5.6	11	7.1	7.9	7.1	7.7	13	17	15	17
15	20	15	5.8	10	7.1	7.7	7.3	7.7	14	17	15	18
16	20	15	7.5	9.6	7.1	7.7	7.3	7.7	15	17	15	15
17	19	15	8.7	9.6	7.3	7.7	9.0	7.5	15	17	15	15
18	20	15	8.1	10	7.1	7.5	8.1	7.3	15	15	15	16
19	20	15	7.5	9.2	7.7	7.5	7.7	7.3	15	16	16	16
20	20	15	7.3	9.6	7.3	7.5	7.7	7.3	15	17	16	16
21	20	15	12	9.4	6.9	6.9	7.7	7.3	15	17	16	16
22	20	15	9.4	9.2	6.9	7.1	6.9	7.3	15	17	16	16
23	20	15	7.9	9.0	6.7	7.3	6.6	7.1	15	17	16	16
24	18	15	7.1	8.7	6.7	7.3	6.4	7.1	15	16	16	16
25	12	18	6.9	8.1	6.2	7.5	6.2	7.1	16	16	16	16
26	14	18	6.9	15	6.4	7.7	6.2	7.1	16	16	24	16
27	14	15	7.3	77	6.6	7.5	6.2	7.9	15	17	30	16
28	14	15	7.3	91	6.9	7.5	6.4	7.5	15	17	27	16
29	14	23	6.9	148	-----	7.5	6.9	7.1	15	19	26	16
30	15	21	6.7	87	-----	7.5	7.1	7.1	16	18	24	17
31	15	-----	6.6	50	-----	7.5	-----	7.1	-----	16	26	-----
TOTAL	572	471	247.3	684.1	788.5	226.0	215.3	238.8	420.2	508	575	496.4
MEAN	18.5	15.7	7.98	22.1	28.2	7.29	7.18	7.70	14.0	16.4	18.5	16.5
MAX	20	23	20	148	175	11	9.0	9.8	16	19	30	26
MIN	12	14	5.6	6.6	6.2	6.4	6.2	7.1	9.2	15	15	9.4
AC-FT	1,130	934	491	1,360	1,560	448	427	474	833	1,010	1,140	985
CAL YR 1970	TOTAL	6,177.4	MEAN	16.9	MAX	234	MIN	5.6	AC-FT	12,250		
WTR YR 1971	TOTAL	5,442.6	MEAN	14.9	MAX	175	MIN	5.6	AC-FT	10,800		

## 11218400 NORTH FORK KINGS RIVER BELOW DINKEY CREEK, NEAR BALCH CAMP, CALIF.

LOCATION.--Lat 36°52'47", long 119°07'40", in NW¼ sec.22, T.12 S., R.26 E., Fresno County, Sierra National Forest, on right bank 1.1 miles upstream from mouth, 1.7 miles south of Balch Camp, 2.1 miles downstream from Dinkey Creek, and 9 miles east of Trimmer.

DRAINAGE AREA.--387 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,035 ft (from river-profile map).

EXTREMES.--Current year: Maximum discharge, 1,390 cfs May 15 (gage height, 5.86 ft); minimum daily, 24 cfs Nov. 1.

Period of record: Maximum discharge, 27,400 cfs Feb. 1, 1963 (gage height, 19.20 ft), from rating curve extended above 4,900 cfs; minimum daily, 14 cfs Aug. 26-30, 1964, Sept. 1-4, 6-23, Sept. 26 to Oct. 6, 1968.

REMARKS.--Flow regulated by Courtright Reservoir (see sta 11214550), Wishon Reservoir (see sta 11214800), Black Rock Reservoir (capacity, 1,000 acre-ft), Balch Afterbay (capacity, 125 acre-ft), and Haas and Balch powerplants. Diversion from Balch Afterbay to Kings River powerhouse began Mar. 1, 1962. See schematic diagram of Kings River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1963.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	24	128	92	305	123	480	493	390	147	46	35
2	27	25	211	93	321	111	480	486	413	139	46	34
3	27	26	120	73	264	126	517	464	427	132	46	31
4	27	26	120	82	223	130	563	393	445	126	46	33
5	27	52	117	79	194	120	588	363	513	119	45	32
6	27	89	111	77	142	114	560	421	546	113	44	33
7	27	96	111	78	142	119	430	424	605	109	43	39
8	27	66	118	79	144	127	401	390	661	104	42	39
9	28	54	228	79	145	139	473	369	635	99	41	37
10	28	52	136	83	153	150	503	445	560	94	39	33
11	27	48	114	87	182	150	553	570	523	91	42	27
12	27	45	107	113	219	187	609	700	567	87	42	33
13	27	49	100	114	241	223	598	736	543	82	40	36
14	27	42	91	111	228	172	451	843	517	79	39	33
15	28	39	85	118	251	168	458	955	500	75	38	32
16	27	39	112	115	237	176	613	931	467	72	37	31
17	27	37	125	142	204	173	627	773	430	73	36	30
18	27	37	103	193	173	190	458	708	385	92	40	28
19	28	37	110	241	181	219	390	700	341	79	42	28
20	28	35	99	262	157	245	371	732	317	72	41	28
21	29	35	124	234	150	275	338	688	301	68	41	28
22	30	34	112	185	149	317	303	513	287	65	41	29
23	31	34	98	162	141	343	296	523	277	69	41	29
24	31	34	89	149	135	279	292	668	237	65	41	29
25	25	201	89	140	138	345	268	736	218	61	38	29
26	27	303	91	145	122	649	258	724	202	58	34	30
27	26	133	100	207	123	642	252	649	201	56	38	32
28	26	108	92	237	126	493	290	570	190	54	36	31
29	25	296	88	305	-----	513	326	510	172	52	35	27
30	25	161	86	249	-----	543	410	500	158	52	35	32
31	26	-----	90	232	-----	513	-----	436	-----	48	35	-----
TOTAL	846	2,247	3,505	4,556	5,190	8,074	13,156	18,413	12,028	2,632	1,250	948
MEAN	27.3	74.9	113	147	185	260	439	594	401	84.9	40.3	31.6
MAX	31	303	228	305	321	649	627	955	661	147	46	39
MIN	25	24	85	73	122	111	252	363	158	48	34	27
AC-FT	1,680	4,460	6,950	9,040	10,290	16,010	26,090	36,520	23,860	5,220	2,480	1,880
CAL YR 1970	TOTAL	69,476	MEAN	190	MAX	2,970	MIN	24	AC-FT	137,800		
WTR YR 1971	TOTAL	72,845	MEAN	200	MAX	955	MIN	24	AC-FT	144,500		

## 11218500 KINGS RIVER BELOW NORTH FORK, NEAR TRIMMER, CALIF.

LOCATION.--Lat 36°52'29", long 119°08'27", in NE $\frac{1}{4}$  sec.21, T.12 S., R.26 E., Fresno County, on right bank 0.8 mile downstream from North Fork, 2.4 miles southwest of Balch Camp, and 8.5 miles southeast of Trimmer.

DRAINAGE AREA.--1,342 sq mi.

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.

GAGE.--Water-stage recorder. Datum of gage is 942.42 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE (adjusted for change in contents in Wishon and Courtright Reservoirs).--20 years, 2,176 cfs (1,577,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,500 cfs June 16; minimum daily, 165 cfs Oct. 3.

Period of record: Maximum discharge, 85,200 cfs Dec. 23, 1955 (gage height, 23.08 ft), from rating curve extended above 22,000 cfs on basis of slope-area measurement of maximum flow; minimum daily, 97 cfs Jan. 13, 1963.

Flood of Nov. 19, 1950, reached a stage of 21.6 ft, from floodmarks (discharge, 74,200 cfs).

REMARKS.--Records good. Flow regulated by Courtright and Wishon Reservoirs (see sta 11214550, 11214800). Records include flow diverted to Kings River powerplant since Mar. 1, 1962. This station measures inflow to Pine Flat Reservoir. See schematic diagram of Kings River basin. Records of water temperatures for the current year are published in Part 2 of this report.

COOPERATION.--Records of diversion to Kings River powerplant furnished by Pacific Gas and Electric Co. Two discharge measurements furnished by Kings River Water Association.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	581	174	971	511	948	630	2,300	2,350	2,410	2,460	832	818
2	644	413	1,510	590	960	598	2,280	2,450	2,270	2,510	1,520	885
3	165	319	1,020	454	882	660	2,280	2,660	2,330	2,330	1,530	879
4	224	404	874	700	792	726	2,500	2,310	2,740	2,290	1,460	397
5	505	378	642	972	947	631	2,460	2,230	3,240	2,080	1,360	387
6	456	581	631	777	1,020	550	2,740	2,500	3,760	2,320	1,250	394
7	477	349	812	807	1,190	560	2,440	2,440	4,400	2,480	850	957
8	432	338	934	434	1,120	586	2,180	2,170	4,790	2,290	846	1,120
9	466	424	1,360	485	1,240	610	2,520	2,010	5,150	2,410	1,170	992
10	238	339	1,040	481	1,320	640	2,510	2,280	4,990	1,570	1,160	1,140
11	183	314	965	438	1,240	618	2,550	2,710	5,190	1,530	1,130	432
12	414	414	634	544	1,360	929	2,740	3,160	5,310	1,950	1,140	580
13	312	514	604	940	1,450	1,050	2,770	3,340	5,380	1,880	1,150	868
14	435	224	843	606	1,460	762	2,300	4,230	5,420	1,960	606	953
15	301	243	625	537	1,520	809	2,060	5,120	5,540	2,000	630	918
16	365	380	911	542	1,510	855	2,700	5,860	5,580	2,000	1,120	909
17	195	401	991	789	1,470	783	2,750	4,900	5,570	1,620	1,080	831
18	178	413	988	1,460	1,380	835	2,110	4,170	5,230	2,010	1,100	383
19	378	407	637	1,770	1,500	952	2,210	4,140	4,500	2,460	1,060	346
20	346	417	704	1,900	1,620	1,050	2,150	4,280	4,210	2,250	1,040	653
21	269	192	1,170	1,850	1,620	1,050	1,940	4,460	4,620	2,200	594	463
22	410	189	1,230	1,860	1,070	1,190	1,880	3,380	4,630	2,060	525	550
23	418	392	1,190	1,150	743	1,300	1,760	3,110	4,240	1,990	985	606
24	185	422	785	1,250	714	1,160	1,540	4,080	4,020	1,240	915	467
25	193	699	599	1,020	723	1,440	1,340	4,460	3,590	1,240	969	234
26	349	1,380	558	780	600	1,900	1,520	5,060	3,340	1,520	926	232
27	370	551	644	840	618	1,950	1,540	4,590	3,320	1,440	980	428
28	360	527	637	870	630	1,790	1,750	3,760	3,380	1,710	406	530
29	360	1,230	576	936	-----	1,890	1,670	3,130	2,870	1,340	442	587
30	397	1,170	619	894	-----	2,260	2,050	2,990	2,730	1,420	888	583
31	276	-----	556	870	-----	2,490	-----	2,580	-----	888	980	-----
TOTAL	10,882	14,198	26,260	28,057	31,647	33,254	65,540	106,910	124,750	59,448	30,644	19,522
MEAN	351	473	847	905	1,130	1,073	2,185	3,449	4,158	1,918	989	651
MAX	644	1,380	1,510	1,900	1,620	2,490	2,770	5,860	5,580	2,510	1,530	1,140
MIN	165	174	556	434	600	550	1,340	2,010	2,270	888	406	232
AC-FT	21,580	28,160	52,090	55,650	62,770	65,960	130,000	212,100	247,400	117,900	60,780	38,720
MEAN a	132	362	716	837	957	1,264	2,531	4,550	4,516	1,613	512	261
AC-FT a	8,090	21,550	44,000	51,460	53,140	77,730	150,600	279,800	268,700	99,190	31,490	15,540
CAL YR 1970	TOTAL 623,860	MEAN 1,709	MAX 8,660	MIN 165	AC-FT 1,237,000	MEAN a 1,690	AC-FT a 1,223,000					
WTR YR 1971	TOTAL 551,112	MEAN 1,510	MAX 5,860	MIN 165	AC-FT 1,093,000	MEAN a 1,521	AC-FT a 1,101,000					

a Adjusted for change in contents in Wishon and Courtright Reservoirs.

## TULARE LAKE BASIN

11220000 BIG CREEK ABOVE PINE FLAT RESERVOIR, NEAR TRIMMER, CALIF.

LOCATION.--Lat 36°54'59", long 119°14'37", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.4, T.12 S., R.25 E., Fresno County, on right bank 2.4 miles upstream from mouth and 2.7 miles northeast of Trimmer.

DRAINAGE AREA.--70.0 sq mi.

PERIOD OF RECORD.--October 1953 to current year. Prior to September 1965, published as Big Creek above Pine Flat Reservoir.

GAGE.--Water-stage recorder. Datum of gage is 962.04 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--18 years, 51.7 cfs (37,460 acre-ft per year); median of yearly mean discharges, 32 cfs (23,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 990 cfs Dec. 9 (gage height, 4.80 ft); minimum daily, 0.19 cfs Sept. 20.

Period of record: Maximum discharge, 16,400 cfs Jan. 25, 1969 (gage height, 10.43 ft), from rating curve extended above 4,400 cfs on basis of slope-area measurement at gage-height 9.21 ft; no flow at times in most years.

REMARKS.--Records excellent. This station measures inflow to Pine Flat Reservoir. No regulation or diversion above station. See schematic diagram of Kings River basin.

COOPERATION.--Two discharge measurements furnished by Kings River Water Association.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	1.9	46	42	57	39	62	41	35	11	2.5	.82
2	.24	1.9	331	42	54	34	58	41	33	10	2.3	.89
3	.26	1.9	83	34	50	36	58	60	32	9.5	2.1	.99
4	.30	1.9	43	31	46	37	58	71	30	9.2	2.0	.99
5	.31	2.5	34	27	44	35	56	53	28	8.9	2.0	.87
6	.34	8.1	27	26	43	33	55	57	26	8.5	1.9	.73
7	.43	15	23	25	42	32	50	67	25	8.1	1.8	1.1
8	.57	8.0	26	25	41	33	47	85	23	7.8	1.7	2.1
9	.74	5.8	310	25	40	33	46	60	23	7.9	1.6	1.3
10	.83	4.9	68	25	40	34	47	55	23	7.6	1.6	.95
11	.82	4.5	44	26	42	34	47	52	24	7.5	1.6	.64
12	.78	4.2	33	78	45	41	48	52	22	7.3	1.4	.56
13	.86	4.1	27	102	48	137	49	50	20	7.0	1.3	.48
14	.83	4.1	23	78	47	67	44	47	19	6.4	1.2	.44
15	1.0	3.8	21	70	48	56	42	44	19	6.0	1.1	.42
16	1.1	3.5	55	64	51	53	45	43	18	5.7	1.0	.37
17	1.1	3.5	162	87	59	51	61	40	17	5.7	.95	.31
18	1.1	3.5	66	117	58	49	62	38	16	6.6	.87	.27
19	1.2	3.5	57	148	56	49	51	36	15	6.6	.77	.23
20	1.3	3.5	51	153	51	50	49	34	15	5.7	.71	.19
21	1.6	3.5	114	119	45	50	48	34	14	5.1	.64	.20
22	1.8	3.5	76	89	42	52	43	34	14	4.7	.67	.34
23	2.0	3.5	54	75	41	54	41	32	13	4.2	.76	.39
24	2.1	3.6	45	67	39	49	42	30	13	3.9	.85	.45
25	2.3	14	40	61	37	55	41	28	12	3.7	.93	.49
26	2.3	197	39	59	35	98	38	27	12	3.4	.90	.63
27	2.2	38	50	61	35	154	37	39	12	3.2	.84	.92
28	2.1	18	53	63	36	83	39	62	13	3.3	.76	1.2
29	2.1	196	42	62	-----	76	39	46	12	3.2	.79	1.3
30	2.0	100	41	60	-----	73	41	42	11	3.0	.75	1.6
31	1.9	-----	42	60	-----	68	-----	38	-----	2.9	.81	-----
TOTAL	36.67	667.2	2,126	2,001	1,272	1,745	1,444	1,438	589	193.6	39.10	22.17
MEAN	1.18	22.2	68.6	64.5	45.4	56.3	48.1	46.4	19.6	6.25	1.26	.74
MAX	2.3	197	331	153	59	154	62	85	35	11	2.5	2.1
MIN	.22	1.9	21	25	35	32	37	27	11	2.9	.64	.19
AC-FT	73	1,320	4,220	3,970	2,520	3,460	2,860	2,850	1,170	384	78	44

CAL YR 1970 TOTAL 14,521.70 MEAN 39.8 MAX 1,710 MIN .07 AC-FT 28,800  
WTR YR 1971 TOTAL 11,573.74 MEAN 31.7 MAX 331 MIN .19 AC-FT 22,960

PEAK DISCHARGE (BASE, 500 CFS)  
DATE TIME G.H. DISCHARGE DATE TIME G.H. DISCHARGE  
11-29 1500 4.34 694 12-9 0330 4.80 990  
12- 2 1130 4.51 796

## 11220500 SYCAMORE CREEK ABOVE PINE FLAT RESERVOIR, NEAR TRIMMER, CALIF.

LOCATION.--Lat 36°55'13", long 119°18'32", in NW¼ sec.1, T.12 S., R.24 E., Fresno County, on right bank 0.1 mile downstream from Little Dry Creek, 1.7 miles northwest of Trimmer, and 4.8 miles upstream from mouth.

DRAINAGE AREA.--56.1 sq mi.

PERIOD OF RECORD.--April 1953 to current year. Prior to October 1965, published as Sycamore Creek above Pine Flat Reservoir.

GAGE.--Water-stage recorder. Datum of gage is 1,141.96 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--18 years, 22.4 cfs (16,230 acre-ft per year); median of yearly mean discharges, 10 cfs (7,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 828 cfs Dec. 16 (gage height, 3.96 ft); no flow for several months. Period of record: Maximum discharge, 16,800 cfs Jan. 25, 1969 (gage height, 13.83 ft in gage well, 15.32 ft, from floodmarks), from rating curve extended above 5,200 cfs on basis of slope-area measurements at gage heights 9.78 and 13.83 ft; no flow for several months in each year.

REMARKS.--Records good. This station measures inflow to Pine Flat Reservoir. No regulation or diversion above station. See schematic diagram of Kings River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.21	18	21	14	11	8.2	6.0	6.5			
2	0	.26	119	20	14	9.6	8.1	5.7	6.2			
3	0	.32	26	17	13	9.5	7.8	23	5.9			
4	0	.45	12	15	13	9.6	7.6	28	5.3			
5	0	.72	8.0	14	12	8.9	7.2	15	5.0			
6	0	.72	6.4	13	12	8.4	7.2	14	4.0			
7	0	.84	5.5	12	12	8.4	7.2	21	3.5			
8	0	.53	14	12	11	8.2	7.2	35	3.1			
9	0	.53	113	11	11	7.8	7.1	18	3.4			
10	0	.53	18	11	9.9	7.8	6.7	15	3.5			
11	0	.53	11	11	9.6	7.2	6.5	12	3.7			
12	0	.62	8.9	37	9.6	8.9	6.2	11	3.4			
13	0	.53	7.3	123	9.4	46	6.2	9.8	3.0			
14	0	.53	6.3	53	9.1	18	6.7	8.8	2.4			
15	0	.53	5.7	42	9.2	13	6.7	7.9	1.8			
16	0	.53	102	38	9.4	12	6.5	7.1	1.4			
17	0	.53	243	51	13	11	14	6.9	1.1			
18	0	.62	56	47	15	10	16	6.5	.80			
19	0	.62	55	45	14	9.2	11	6.0	.84			
20	.26	.62	36	39	13	8.9	9.6	5.6	.82			
21	.45	.62	253	32	11	8.4	9.4	5.5	.71			
22	.24	.61	95	26	10	7.9	8.7	5.8	.66			
23	.14	.60	48	23	9.6	7.8	8.1	4.7	.53			
24	.21	.62	35	21	9.0	7.8	7.8	4.3	.45			
25	.21	2.9	29	19	8.6	8.6	8.1	4.1	.38			
26	.38	82	27	18	8.4	13	7.7	3.8	.26			
27	.38	8.6	38	17	8.6	22	7.4	7.5	.16			
28	.38	3.4	33	17	10	12	7.0	20	.14			
29	.26	138	25	16	-----	10	6.6	11	.12			
30	.21	69	24	15	-----	9.1	6.4	8.8	.07			
31	.21	-----	22	15	-----	8.4	-----	7.4	-----			
TOTAL	3.33	317.12	1,500.1	851	308.4	348.4	240.9	345.2	69.14	0	0	0
MEAN	.11	10.6	48.4	27.5	11.0	11.2	8.03	11.1	2.30	0	0	0
MAX	.45	138	253	123	15	46	16	35	6.5	0	0	0
MIN	0	.21	5.5	11	8.4	7.2	6.2	3.8	.07	0	0	0
AC-FT	6.6	629	2,980	1,690	612	691	478	685	137	0	0	0
CAL YR 1970	TOTAL 6,415.66		MEAN 17.6	MAX 1,360	MIN 0	AC-FT 12,730						
WTR YR 1971	TOTAL 3,983.59		MEAN 10.9	MAX 253	MIN 0	AC-FT 7,900						

## PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-29	1430	3.52	599	12-17	0315	3.64	655
12- 9	0045	3.02	421	12-21	0530	3.26	501
12-16	2030	3.96	828				

## TULARE LAKE BASIN

11221000 PINE FLAT LAKE NEAR PIEDRA, CALIF.  
(Formerly published as Pine Flat Reservoir near Piedra)

LOCATION.--Lat 36°49'58", long 119°19'29", in NE $\frac{1}{4}$  sec.2, T.13 S., R.24 E., Fresno County, near center of Pine Flat Dam on Kings River, 1.9 miles upstream from Mill Creek, 3.5 miles northeast of Piedra, and 16 miles northeast of Sanger.

DRAINAGE AREA.--1,545 sq mi.

PERIOD OF RECORD.--October 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to Apr. 8, 1952, nonrecording mercury gage on dam at same datum.

EXTREMES.--Current year: Maximum contents, 812,496 acre-ft May 31 (elevation, 917.80 ft); minimum, 368,797 acre-ft Sept. 30 (elevation, 815.79 ft).

Period of record: Maximum contents, 1,009,000 acre-ft July 15, 1967 (elevation, 952.76 ft); minimum since gross pool elevation first obtained, 305,900 acre-ft Sept. 29, 1968 (elevation, 796.77 ft).

REMARKS.--Reservoir is formed by gravity-type concrete dam; regulation of discharge from reservoir began Dec. 4, 1951. Total capacity, 1,001,500 acre-ft between elevations 565.5 ft (bottom of lower tier of river outlets) and 951.5 ft (gross pool elevation). No dead storage. Reservoir is used for flood control and conservation storage. Water is released down Kings River for diversion by the Kings River Water Association. Records, including extremes, represent contents at 2400 hours. See schematic diagram of Kings River basin.

COOPERATION.--Records furnished by Corps of Engineers, not rounded to Geological Survey standards.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

715	104,400	840	457,750
720	113,400	860	538,750
740	154,000	890	673,401
760	201,424	920	824,151
780	255,450	950	992,551
800	316,150	960	1,053,000
820	383,550		

CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	499,346	514,354	543,191	604,928	655,708	698,379	672,072	721,849	812,443	740,941	544,421	402,043
2	500,077	514,972	547,226	606,322	657,490	695,672	673,543	723,425	811,757	734,611	539,763	401,281
3	500,199	515,673	549,442	607,177	659,227	693,067	675,112	725,743	810,756	727,719	535,295	400,810
4	500,402	516,334	551,320	608,619	660,732	690,468	676,921	727,571	809,965	720,915	530,679	399,038
5	501,052	516,995	552,688	610,514	662,615	687,873	678,589	729,302	809,386	713,803	525,958	396,908
6	501,540	518,193	554,059	611,870	664,737	685,234	680,736	731,730	808,492	706,824	521,051	394,857
7	502,028	518,855	555,602	613,453	667,099	682,696	682,504	734,461	808,176	700,122	515,385	393,636
8	502,435	519,228	557,836	614,223	669,322	680,163	683,797	736,999	808,492	693,067	509,709	392,704
9	502,761	519,891	562,103	615,084	671,787	677,683	685,809	739,044	809,492	686,433	504,514	391,665
10	503,005	520,264	564,394	616,037	674,446	675,397	687,776	741,441	810,071	678,255	499,752	390,914
11	503,087	520,554	566,343	616,808	676,921	673,258	690,035	744,244	810,545	670,033	494,933	389,057
12	503,616	521,176	567,689	618,626	679,590	672,309	692,730	747,806	811,019	662,851	489,294	387,561
13	504,024	521,881	568,861	621,313	682,457	671,882	695,624	751,681	811,283	655,567	483,409	386,601
14	504,636	522,006	570,471	623,000	685,282	670,507	697,750	757,035	811,177	648,184	476,491	385,890
15	505,085	522,214	571,734	624,325	688,209	669,370	699,299	764,192	811,177	640,983	469,702	385,109
16	505,779	522,671	574,221	625,560	691,045	668,234	701,722	772,720	811,177	633,823	465,387	384,258
17	506,065	523,211	577,284	627,116	694,031	667,099	705,073	778,316	810,598	625,972	461,093	383,196
18	506,351	523,793	579,564	630,006	696,687	666,153	707,311	782,489	809,123	618,717	456,742	381,358
19	507,005	524,375	581,234	633,685	699,686	665,303	709,650	786,469	806,179	612,412	452,103	379,525
20	507,619	524,958	582,907	637,421	702,789	664,501	711,847	790,617	802,717	606,682	447,643	378,365
21	508,110	525,208	586,701	641,122	705,656	663,558	713,754	795,037	799,943	603,222	442,214	376,925
22	508,807	525,291	589,711	644,648	707,360	662,898	714,880	797,123	796,757	599,102	436,743	375,698
23	509,668	525,875	592,373	646,601	707,701	662,568	716,153	797,906	792,799	594,819	432,060	374,543
24	509,955	526,500	594,063	648,557	707,408	661,673	717,036	799,368	788,282	588,957	427,666	373,251
25	510,324	528,211	595,532	649,723	706,386	661,626	717,428	801,146	782,696	583,083	423,630	372,065
26	510,858	531,852	596,869	650,329	704,781	662,757	718,115	804,132	776,619	577,766	419,689	370,847
27	511,515	533,194	598,477	651,029	702,984	664,218	718,704	807,282	769,905	572,781	416,025	370,082
28	512,213	534,202	599,997	651,823	700,704	665,303	719,391	809,649	763,327	567,471	411,385	369,457
29	512,789	538,202	601,250	652,805	-----	666,579	719,784	810,966	755,922	561,844	406,700	368,971
30	513,530	541,031	602,549	653,506	-----	668,423	720,669	812,074	748,259	556,547	403,931	368,797
31	514,148	-----	603,716	653,927	-----	670,507	-----	812,496	-----	550,380	403,095	-----
MAX	514,148	541,031	603,716	653,927	707,701	698,379	720,669	812,496	812,443	740,941	544,421	402,043
MIN	499,346	514,354	543,191	604,928	655,708	661,626	672,072	721,849	748,259	550,380	403,095	368,797
(a)	854.10	860.54	874.92	885.87	895.69	889.39	899.78	917.80	905.33	862.74	825.45	815.79
(b)	+15,208	+26,883	+62,685	+50,211	+46,777	-30,197	+50,162	+91,827	-64,237	-197,879	-147,285	-34,298
(c)	1,640	669	239	294	422	887	1,318	1,696	2,902	3,227	2,848	2,151
CAL YR 1970	b -86,463											
WTR YR 1971	b -130,143											

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.



## 11221500 KINGS RIVER BELOW PINE FLAT DAM, CALIF.

LOCATION.--Lat 36°49'50", long 119°20'07", in NW¼ sec.2, T.13 S., R.24 E., Fresno County, on right bank 3,200 ft downstream from Pine Flat Dam and 2.9 miles northeast of Piedra.

DRAINAGE AREA.--1,545 sq mi.

PERIOD OF RECORD.--October 1953 to current year. Monthly and yearly discharges only and adjusted flow for some periods published in WSP 1735.

GAGE.--Water-stage recorder and concrete control since Sept. 1, 1956. Datum of gage is 556.97 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1956, at site 0.2 mile downstream at datum 3.48 ft lower.

AVERAGE DISCHARGE (adjusted for change in storage and evaporation).--18 years, 2,239 cfs (1,622,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,550 cfs June 30 (gage height, 7.36 ft); minimum daily, 32 cfs Nov. 30.

Period of record: Maximum discharge, 17,100 cfs June 3, 4, 8, 9, 1969 (gage height, 10.73 ft); minimum, 1.1 cfs Feb. 26, 27, 1962.

REMARKS.--Records excellent. Flow regulated by Pine Flat Reservoir 0.6 mile upstream (see sta 11221000) and Wishon and Courtright Reservoirs (see sta 11214550 and 11214800). See schematic diagram of Kings River basin. Records of water temperatures for the current year are published in Part 2 of this report.

COOPERATION.--Two discharge measurements furnished by Kings River Water Association.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	384	75	58	75	130	1,790	1,530	1,610	2,400	6,100	3,830	1,320
2	298	75	65	75	83	1,920	1,510	1,590	2,720	5,620	3,720	1,190
3	166	75	40	75	83	1,980	1,550	1,550	2,930	5,640	3,730	1,150
4	164	75	69	87	74	2,000	1,590	1,370	3,150	5,640	3,690	1,190
5	172	76	78	104	62	1,920	1,620	1,330	3,490	5,590	3,700	1,400
6	220	76	86	104	62	1,850	1,600	1,260	4,190	5,690	3,690	1,380
7	221	116	89	105	62	1,830	1,570	1,150	4,530	5,720	3,660	1,430
8	222	165	96	110	62	1,850	1,560	993	4,610	5,690	3,660	1,460
9	243	163	74	110	62	1,870	1,490	960	4,780	5,640	3,650	1,400
10	167	197	51	110	62	1,790	1,490	1,030	4,850	5,620	3,590	1,400
11	140	194	87	119	56	1,690	1,440	1,140	4,840	5,590	3,530	1,300
12	142	196	88	115	52	1,650	1,360	1,220	4,880	5,480	3,840	1,240
13	153	182	90	63	52	1,410	1,310	1,190	5,090	5,450	4,120	1,240
14	132	182	93	40	85	1,470	1,290	1,170	5,290	5,490	4,100	1,240
15	94	182	91	63	115	1,450	1,280	1,200	5,380	5,500	4,080	1,240
16	75	174	79	155	114	1,420	1,420	1,240	5,420	5,460	3,160	1,260
17	76	161	40	241	103	1,380	1,280	1,600	5,590	5,470	3,150	1,280
18	76	161	34	233	98	1,350	1,140	1,710	5,800	5,460	3,190	1,250
19	76	157	34	211	94	1,380	1,060	1,750	5,760	5,430	3,270	1,210
20	76	148	52	206	93	1,460	1,040	1,780	5,740	5,000	3,160	1,180
21	76	148	49	204	207	1,530	1,040	1,930	5,770	3,820	3,200	1,160
22	76	148	35	212	283	1,540	1,100	2,130	5,920	3,970	3,140	1,150
23	76	148	34	270	556	1,580	1,140	2,520	5,960	4,040	3,160	1,140
24	76	133	34	362	908	1,630	1,140	3,140	6,000	4,080	3,070	1,080
25	76	118	47	449	1,160	1,570	1,140	3,330	6,160	4,100	2,940	858
26	76	41	55	510	1,430	1,450	1,190	3,430	6,180	4,090	2,850	824
27	76	41	61	506	1,570	1,380	1,260	3,000	6,460	4,020	2,760	783
28	76	85	51	477	1,820	1,360	1,390	2,430	6,490	4,160	2,750	772
29	75	67	68	471	-----	1,330	1,430	2,390	6,460	4,150	2,720	779
30	75	32	74	574	-----	1,350	1,510	2,360	6,470	4,000	2,260	684
31	75	-----	75	665	-----	1,480	-----	2,370	-----	4,060	1,400	-----
TOTAL	4,130	3,791	1,977	7,101	9,538	49,660	40,470	55,873	153,310	155,770	102,770	34,990
MEAN	133	126	63.8	229	341	1,602	1,349	1,802	5,110	5,025	3,315	1,166
MAX	384	197	96	665	1,820	2,000	1,620	3,430	6,490	6,100	4,120	1,460
MIN	75	32	34	40	52	1,330	1,040	960	2,400	3,820	1,400	684
AC-FT	8,190	7,520	3,920	14,080	18,920	98,500	80,270	110,800	304,100	309,000	203,800	69,400
MEAN a	188	478	955	982	1,017	1,317	2,561	4,425	4,438	1,555	489	236
AC-FTa	11,550	28,460	58,750	60,390	56,490	80,960	152,400	272,100	264,100	95,620	30,060	14,070
CAL YR 1970	TOTAL 697,030	MEAN 1,910	MAX 6,280	MIN 32	AC-FT 1,383,000	MEAN a 1,798	AC-FT a 1,303,000					
WTR YR 1971	TOTAL 619,380	MEAN 1,697	MAX 6,490	MIN 32	AC-FT 1,229,000	MEAN a 1,553	AC-FT a 1,125,000					

a Adjusted for change in contents in Wishon, Courtright, and Pine Flat Reservoirs, and evaporation from Pine Flat Reservoir.

## TULARE LAKE BASIN

11221700 MILL CREEK NEAR PIEDRA, CALIF.

LOCATION.--Lat 36°49'07", long 119°20'27", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.10, T.13 S., R.24 E., Fresno County, on left bank 150 ft upstream from road bridge, 0.7 mile upstream from mouth, and 2.3 miles east of Piedra.

DRAINAGE AREA.--127 sq mi.

PERIOD OF RECORD.--October 1957 to current year in reports of Geological Survey. November 1938 to September 1957 in reports of Kings River Water Association.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 550 ft (from topographic map). Prior to July 14, 1958, at site 150 ft upstream at same datum.

AVERAGE DISCHARGE.--14 years, 42.4 cfs (30,720 acre-ft per year); median of yearly mean discharges, 18 cfs (13,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 301 cfs Dec. 21 (gage height, 3.65 ft); no flow for several months. Period of record: Maximum discharge, 11,000 cfs 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 Jan. 19, 1969 (backwater from debris); no flow for several months in most years.

REMARKS.--Records good. Some small diversions above station for irrigation. See schematic diagram of Kings River basin.

COOPERATION.--One discharge measurement furnished by Kings River Water Association.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	28	30	27	23	15	11	9.4			
2		0	54	30	26	21	14	11	8.8			
3		0	62	33	24	19	13	16	8.2			
4		0	24	26	23	19	13	17	8.2			
5		0	15	23	23	19	12	16	7.6			
6		0	12	23	23	17	11	15	7.1			
7		0	11	21	21	17	11	23	6.6			
8		0	11	19	21	16	11	33	5.6			
9		0	90	20	20	16	11	26	5.6			
10		0	43	19	19	16	10	21	5.1			
11		0	24	19	19	16	10	19	5.6			
12		0	17	50	19	19	9.4	15	5.1			
13		0	14	151	19	68	9.4	14	4.6			
14		0	12	111	19	44	10	13	4.1			
15		0	11	74	19	33	11	12	3.2			
16		0	31	60	19	30	10	11	2.8			
17		0	99	58	24	27	19	11	2.4			
18		0	79	68	38	24	30	10	1.8			
19		0	54	70	31	23	20	10	1.5			
20		0	43	66	33	23	16	10	1.5			
21		0	182	62	26	23	16	9.4	1.2			
22		0	165	54	23	21	15	9.4	1.0			
23		0	77	46	21	20	14	8.8	.80			
24		0	56	41	20	20	13	8.2	.80			
25		0	46	38	20	19	13	7.6	.80			
26		15	39	35	19	21	12	7.1	.60			
27		11	43	33	17	24	13	9.4	.60			
28		7.6	48	30	21	20	12	16	.60			
29		43	38	30	-----	17	11	14	.40			
30		93	33	28	-----	16	11	11	.02			
31		-----	30	27	-----	16	-----	10	-----			
TOTAL	0	169.6	1,491	1,395	634	707	395.8	424.9	111.62	0	0	0
MEAN	0	5.65	48.1	45.0	22.6	22.8	13.2	13.7	3.72	0	0	0
MAX	0	93	182	151	38	68	30	33	9.4	0	0	0
MIN	0	0	11	19	17	16	9.4	7.1	.02	0	0	0
AC-FT	0	336	2,960	2,770	1,260	1,400	785	843	221	0	0	0

CAL YR 1970 TOTAL 10,998.14 MEAN 30.1 MAX 1,950 MIN 0 AC-FT 21,810  
WTR YR 1971 TOTAL 5,328.92 MEAN 14.6 MAX 182 MIN 0 AC-FT 10,570

PEAK DISCHARGE (BASE, 250 CFS).--Dec. 21 (2400) 301 cfs (3.65 ft).

## 11224500 LOS GATOS CREEK ABOVE NUNEZ CANYON, NEAR COALINGA, CALIF.

LOCATION.--Lat 36°12'53", long 120°28'11", in NW¼SE¼ sec.5, T.20 S., R.14 E., Fresno County, on right bank 50 ft downstream from highway bridge, 1.1 miles upstream from Nunez Canyon, 3.0 miles downstream from White Creek, and 8.1 miles northwest of Coalinga.

DRAINAGE AREA.--95.8 sq mi.

PERIOD OF RECORD.--May 1945 to current year. Prior to October 1949 monthly discharge only, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 1,067.2 ft above mean sea level. Prior to Aug. 2, 1959, at site 100 ft downstream at same datum.

AVERAGE DISCHARGE.--26 years, 4.22 cfs (3,060 acre-ft per year); median of yearly mean discharges, 1.4 cfs (1,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 424 cfs Dec. 2 (gage height, 4.28 ft), from rating curve extended above 40 cfs; no flow for several months.

1949 to current year: Maximum discharge, 4,360 cfs Feb. 24, 1969 (gage height, 10.34 ft in gage well, 11.30 ft, from floodmarks), from rating curve extended above 800 cfs on basis of slope-area measurement at gage height 10.34 ft; no flow for several months in each year.

REMARKS.--Records good except those above 40 cfs, which are poor. Minor diversion for irrigation and stock ponds.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	5.6	8.6	2.6	1.2	.50	.05	.30	.05		
2		0	129	7.5	2.6	1.1	.40	.10	.30	.05		
3		0	20	5.2	2.4	.94	.40	.30	.20	.05		
4		0	5.2	2.8	2.4	.94	.30	.40	.10	.05		
5		0	2.8	2.6	2.2	.94	.20	.40	.10	.05		
6		0	2.2	2.4	2.2	.94	.20	.50	.10	.05		
7		0	1.8	2.4	2.0	.94	.40	.70	.05	.05		
8		0	1.6	2.4	1.8	.82	.40	.82	.05	.05		
9		0	1.6	2.6	1.6	.82	.30	.70	.10	.05		
10		0	1.4	2.6	1.4	.70	.30	.60	.10	.05		
11		0	1.4	2.6	1.3	.82	.20	.50	.10	.05		
12		0	1.3	3.6	1.2	1.2	.20	.94	.10	.05		
13		0	1.4	6.9	1.1	3.0	.20	1.1	.05	.05		
14		0	1.6	9.2	.94	2.0	2.8	.70	.05	0		
15		0	1.4	7.0	.94	1.6	2.0	.70	.10	0		
16		0	1.4	5.6	1.2	1.3	.82	.30	.10	0		
17		.05	1.4	4.8	1.6	1.2	.82	.30	.10	0		
18		.05	4.4	4.4	1.4	1.1	.94	.30	.20	0		
19		.05	72	4.0	1.2	1.1	.50	.20	.20	0		
20		.05	32	3.6	1.3	.94	.60	.20	.20	0		
21		.05	128	3.3	1.3	.82	.60	.20	.10	0		
22		.10	50	3.3	1.2	.70	.40	.30	.10	0		
23		.10	20	3.3	1.2	.70	.20	.30	.05	0		
24		.10	13	3.3	1.3	.70	.20	.20	.05	0		
25		.24	9.8	3.0	1.4	.70	.30	.10	.10	0		
26		.20	8.0	3.0	1.4	.82	.30	.20	.10	0		
27		.20	36	3.0	1.3	1.1	.10	.40	.10	0		
28		.95	24	2.8	1.3	.94	.10	.50	.05	0		
29	18		13	2.8	-----	.70	.10	.60	.05	0		
30	14		10	2.8	-----	.60	.05	.50	.05	0		
31	-----		9.2	2.6	-----	.50	-----	.40	-----	0		-----
TOTAL	0	34.14	610.5	124.0	43.78	31.88	14.83	13.51	3.35	.65	0	0
MEAN	0	1.14	19.7	4.00	1.56	1.03	.49	.44	.11	.021	0	0
MAX	0	18	129	9.2	2.6	3.0	2.8	1.1	.30	.05	0	0
MIN	0	0	1.3	2.4	.94	.50	.05	.05	.05	0	0	0
AC-FT	0	68	1,210	246	87	63	29	27	6.6	1.3	0	0

CAL YR 1970 TOTAL 1,556.54 MEAN 4.26 MAX 235 MIN 0 AC-FT 3,090  
WTR YR 1971 TOTAL 876.64 MEAN 2.40 MAX 129 MIN 0 AC-FT 1,740

## PEAK DISCHARGE (BASE, 40 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 2	1000	4.28	424	12-21	0500	4.05	233
12-19	1000	3.77	98	12-27	1100	3.57	50

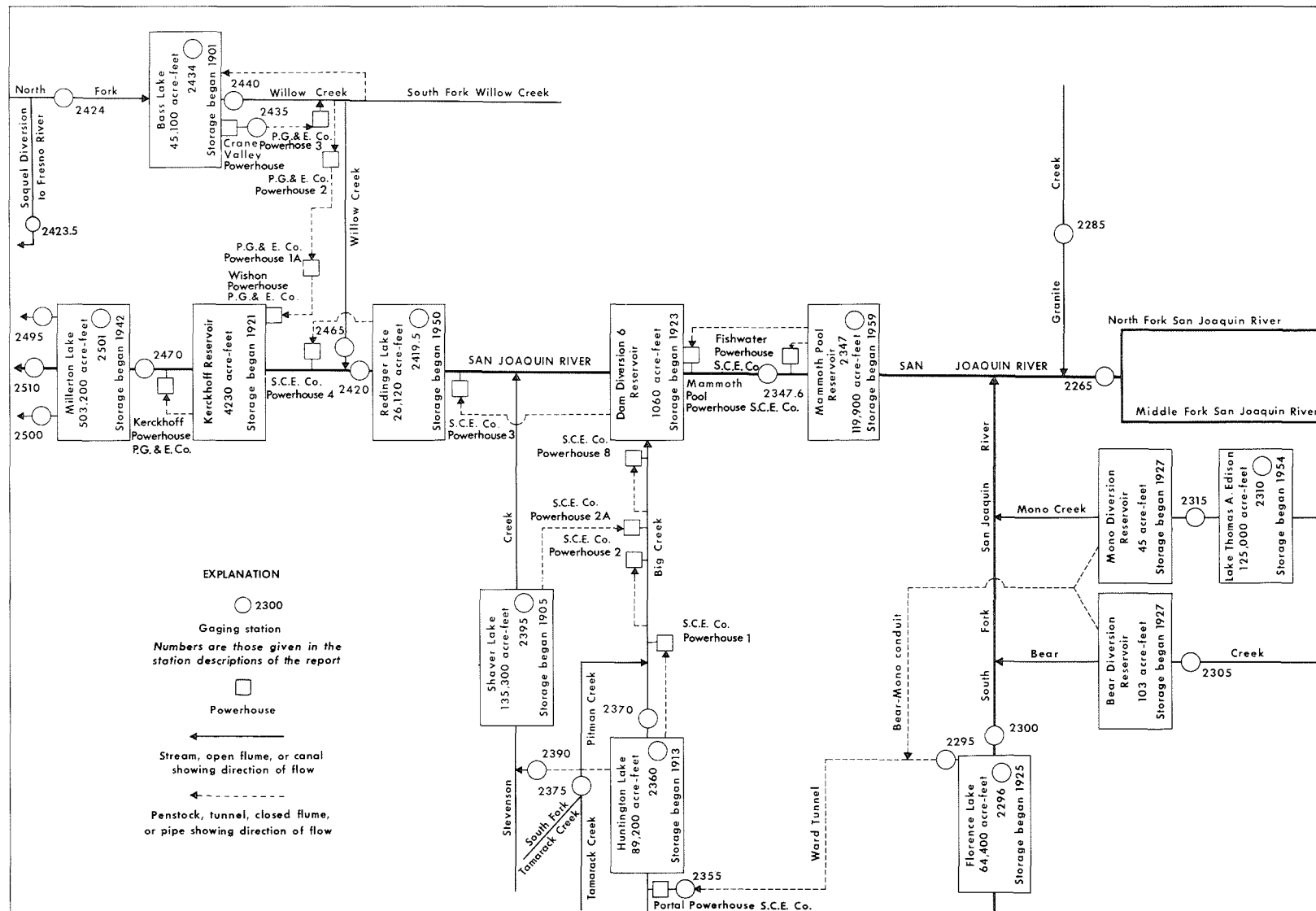


FIGURE 6.-- Schematic diagram showing diversions and storage in San Joaquin River basin.

## 11226500 SAN JOAQUIN RIVER AT MILLER CROSSING, CALIF.

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

DRAINAGE AREA.--249 sq mi.

PERIOD OF RECORD.--October 1921 to September 1928, October 1951 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as Middle Fork San Joaquin River at Miller Bridge.

GAGE.--Water-stage recorder. Altitude of gage is 4,570 ft (from topographic map). Prior to Mar. 24, 1922, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--27 years, 596 cfs (431,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,390 cfs June 8 (gage height, 15.46 ft); minimum daily, 45 cfs Oct. 15-19.

Period of record: Maximum discharge, 16,600 cfs Dec. 23, 1955 (gage height, 21.28 ft), from rating curve extended above 5,200 cfs on basis of contracted-opening measurement of maximum flow; minimum, 19 cfs Nov. 17, 1961.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and eight discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS.--WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	48	270	160	310	175	580	998	835	1,350	424	107
2	50	47	285	162	305	170	600	968	890	1,370	397	101
3	49	47	246	145	298	184	620	835	1,060	1,330	361	98
4	49	49	305	135	273	177	668	725	1,390	1,210	340	94
5	50	114	295	138	248	163	790	715	1,650	1,140	319	91
6	50	175	263	141	238	152	775	870	1,970	1,080	298	180
7	49	167	246	146	228	165	608	790	2,400	998	275	285
8	48	116	300	152	220	170	584	688	2,650	920	258	168
9	48	120	308	159	226	177	672	692	2,610	860	254	135
10	47	120	270	152	230	191	700	920	2,440	795	248	122
11	46	117	240	146	254	189	760	1,170	2,490	750	242	120
12	46	111	230	145	358	206	875	1,270	2,610	735	230	115
13	46	117	212	129	421	218	910	1,410	2,560	715	242	109
14	46	92	195	129	445	206	680	1,700	2,610	755	242	108
15	45	95	175	162	439	210	735	2,090	2,670	800	226	103
16	45	97	174	165	445	214	980	2,020	2,730	835	208	99
17	45	90	170	179	376	210	950	1,600	2,620	885	184	95
18	45	89	177	343	316	228	688	1,460	2,360	840	168	89
19	45	91	174	488	285	268	596	1,510	2,100	835	160	85
20	47	87	174	504	270	316	580	1,630	2,150	795	155	80
21	52	88	174	496	248	376	508	1,580	2,200	830	148	78
22	53	86	170	430	234	448	454	1,210	2,220	765	138	74
23	55	85	170	343	224	484	442	1,270	2,070	620	130	71
24	60	85	170	295	208	388	424	1,640	1,890	600	125	67
25	58	114	170	268	212	464	403	1,900	1,770	564	123	64
26	55	588	167	250	187	1,010	400	1,910	1,680	520	149	63
27	50	242	167	252	177	710	421	1,530	2,100	484	152	61
28	48	204	167	268	170	572	468	1,300	1,620	472	141	60
29	47	212	165	275	-----	608	600	1,110	1,390	457	130	58
30	50	268	163	288	-----	676	790	1,140	1,350	421	122	63
31	50	-----	162	298	-----	620	-----	935	-----	427	115	-----
TOTAL	1,525	3,961	6,554	7,343	7,845	10,345	19,261	39,586	61,085	25,158	6,704	3,043
MEAN	49.2	132	211	237	280	334	642	1,277	2,036	812	216	101
MAX	60	588	308	504	445	1,010	980	2,090	2,730	1,370	424	285
MIN	45	47	162	129	170	152	400	688	835	421	115	58
AC-FT	3,020	7,860	13,000	14,560	15,560	20,520	38,200	78,520	121,200	49,900	13,300	6,040
CAL YR 1970	TOTAL	186,552	MEAN	511	MAX	2,860	MIN	45	AC-FT	370,000		
WTR YR 1971	TOTAL	192,410	MEAN	527	MAX	2,730	MIN	45	AC-FT	381,600		

## PEAK DISCHARGE (BASE, 2,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-15	2200	14.94	2,780	6- 8	2130	15.46	3,390
5-25	2200	14.74	2,560	6-27	0200	14.64	2,460

## SAN JOAQUIN RIVER BASIN

11228500 GRANITE CREEK NEAR CATTLE MOUNTAIN, CALIF.

LOCATION.--Lat 37°31'36", long 119°15'28", in NE¼ sec.5, T.5 S., R.25 E., Madera County, Sierra National Forest, on right bank 0.7 mile downstream from confluence of East and West Forks of Granite Creek, 1.6 miles northwest of Cattle Mountain, and 21 miles northeast of town of Bass Lake.

DRAINAGE AREA.--47.8 sq mi.

PERIOD OF RECORD.--October 1921 to September 1928, May 1952 to current year (no winter records). Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Altitude of gage is 6,800 ft (from topographic map). Prior to May 14, 1922, nonrecording gage at same site at different datum.

AVERAGE DISCHARGE.--7 years (1921-28), 110 cfs (79,640 acre-ft per year).

EXTREMES.--Current year: Maximum discharge recorded, 1,200 cfs May 15 (gage height, 8.05 ft); minimum daily, 0.12 cfs Oct. 8-10.  
Period of record: Maximum discharge recorded, 3,140 cfs Dec. 23, 1964 (gage height, 9.49 ft), from rating curve extended above 1,100 cfs; no flow at times in 1924, 1926.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and four discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.59	64			--	37	360	187	183	9.0	5.4
2	.14	.59	39			--	37	294	238	179	8.2	5.1
3	.14	.59	--			--	48	215	321	157	7.5	4.8
4	.14	1.2	--			--	124	169	452	126	6.7	4.2
5	.14	12	--			--	249	165	515	119	6.1	3.6
6	.14	17	--			--	215	177	645	110	6.1	5.4
7	.14	9.8	--			--	153	177	620	95	6.4	6.7
8	.12	9.0	--			--	149	153	640	83	5.8	4.2
9	.12	10	--			--	187	169	605	75	5.1	3.0
10	.12	10	--			--	200	218	580	65	4.8	2.1
11	.14	10	--			--	233	384	605	59	4.8	1.9
12	.17	13	--			--	294	476	670	57	6.1	1.4
13	.17	9.4	--			--	276	472	595	48	33	1.1
14	.17	9.8	--			--	181	595	570	49	13	.79
15	.17	13	--			--	223	698	600	50	8.6	.50
16	.17	11	--			--	335	570	590	48	6.7	.42
17	.17	10	--			--	279	440	520	52	5.8	.29
18	.20	12	--			--	173	426	460	51	4.8	.24
19	.20	11	--			--	141	468	419	43	4.2	.24
20	.42	11	--			--	137	515	433	36	3.6	.20
21	.92	11	--			--	112	423	419	48	3.3	.20
22	1.1	11	--			--	96	264	405	52	3.0	.17
23	.92	9.8	--			--	99	370	356	35	2.7	.17
24	1.2	16	--			--	105	550	314	26	2.4	.14
25	1.2	161	--			--	91	610	285	23	2.4	.14
26	1.1	66	--			--	88	530	264	18	2.1	.17
27	.92	43	--			--	93	360	395	15	2.1	.17
28	.79	31	--			49	117	282	220	14	6.1	.17
29	.68	41	--		-----	59	193	252	187	12	6.7	.20
30	.68	56	--		-----	75	297	276	183	11	6.4	.59
31	.68	-----	--		-----	71	-----	197	-----	9.4	5.8	-----
TOTAL	13.51	626.77	--			--	4,962	11,255	13,293	1,948.4	199.3	53.70
MEAN	.44	20.9	--			--	165	363	443	62.9	6.43	1.79
MAX	1.2	161	--			--	335	698	670	183	33	6.7
MIN	.12	.59	--			--	37	153	183	9.4	2.1	.14
AC-FT	27	1,240	--			--	9,840	22,320	26,370	3,860	395	107

LOCATION.--Lat 37°16'27", long 118°58'23", in NW $\frac{1}{4}$  sec.1, T.8 S., R.27 E., Fresno County, Sierra National Forest, in gatehouse at entrance to tunnel.

GAGE.--Water-stage recorder, concrete control, and Venturi meter. Datum of gage is 7,213.89 ft above mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Period of record: Maximum daily discharge, 1,990 cfs Apr. 30, 1926; no flow at times.

REMARKS.--Records good. Ward tunnel diverts from Florence Lake, a reservoir on South Fork San Joaquin River, to Huntington Lake for use in Big Creek powerplants. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and rating table for Venturi meter furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS),--WSP 1515: 1931. WRD Calif. 1967: 1966.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	640	19	102	80	114	65	207	257	510	395	577	81
2	635	18	65	79	112	64	204	286	510	486	539	81
3	626	13	12	66	100	66	207	301	315	530	499	81
4	653	22	117	65	92	64	213	306	291	530	502	80
5	658	32	109	65	91	57	234	316	407	533	526	79
6	646	41	100	62	87	59	257	326	342	688	542	79
7	635	42	99	61	82	61	240	332	246	740	522	34
8	621	41	107	61	83	64	220	327	184	740	522	7.0
9	606	46	109	61	83	64	220	312	172	620	569	7.3
10	435	42	104	60	86	66	226	309	261	556	602	7.0
11	329	36	105	60	99	68	229	332	471	520	598	6.8
12	383	35	99	59	118	73	247	361	576	520	580	6.5
13	373	29	91	57	127	81	276	390	591	537	573	6.3
14	359	30	87	65	128	80	271	373	602	539	602	6.3
15	381	30	81	83	130	83	257	254	613	524	606	6.1
16	243	28	76	91	118	82	273	221	628	497	604	6.1
17	1.5	26	81	103	109	82	298	307	606	643	602	5.9
18	192	26	89	134	97	88	294	506	613	903	598	5.9
19	375	25	99	166	100	102	273	455	620	996	597	5.7
20	482	25	90	187	88	114	254	421	616	964	591	5.7
21	448	24	90	175	87	128	223	397	682	809	368	5.7
22	236	26	86	143	86	144	184	475	777	643	181	5.7
23	66	26	82	124	82	167	170	504	780	606	109	5.7
24	41	26	80	112	75	140	160	397	782	470	90	5.7
25	32	39	81	104	77	152	152	331	788	404	89	5.7
26	28	73	81	104	66	210	152	340	789	405	88	5.7
27	23	74	81	105	61	192	162	353	794	404	87	5.7
28	21	83	80	108	66	175	162	407	801	549	86	5.7
29	17	86	80	111	-----	190	183	477	806	580	84	5.7
30	21	93	79	114	-----	223	216	488	575	579	83	5.7
31	19	-----	79	116	-----	225	-----	510	-----	579	82	-----
TOTAL	10,225.5	1,156	2,721	2,981	2,644	3,429	6,664	11,371	16,748	18,489	12,698	654.6
MEAN	330	38.5	87.8	96.2	94.4	111	222	367	558	596	410	21.8
MAX	658	93	117	187	130	225	298	510	806	996	606	81
MIN	1.5	13	12	57	61	57	152	221	172	395	82	5.7
AC-FT	20,280	2,290	5,400	5,910	5,240	6,800	13,220	22,550	33,220	36,670	25,190	1,300
WAL YR 1970	TOTAL	100,329.5	MEAN	275	MAX	1,140	MIN	1.5	AC-FT	199,000		
CTR YR 1971	TOTAL	89,781.1	MEAN	246	MAX	996	MIN	1.5	AC-FT	178		

## 11229600 FLORENCE LAKE NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°16'26", long 118°58'23", in NW $\frac{1}{4}$  sec.1, T.8 S., R.27 E., Fresno County, Sierra National Forest, in gatehouse of Ward tunnel intake near dam on South Fork San Joaquin River, 16 miles northeast of town of Big Creek.

DRAINAGE AREA.--171 sq mi.

PERIOD OF RECORD.--November 1925 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Current year: Maximum contents, 63,500 acre-ft July 18 (elevation, 7,326.55 ft); minimum, 261 acre-ft Nov. 9 (elevation, 7,224.75 ft).

Period of record: Maximum contents, 66,000 acre-ft July 3, 1932 (elevation, 7,329.14 ft); no available contents Oct. 2-4, 1926, Nov. 30 to Dec. 2, 1927.

NOTE.--Prior to 1960 maximum and minimum daily contents were published.

REMARKS.--Lake is formed by multiple-arch concrete dam; storage began in April 1925. Usable capacity, 64,400 acre-ft between elevations 7,220.9 (throat of Venturi tube in Ward tunnel intake) and 7,327.5 ft (top of spillway drum gates) above mean sea level. Additional storage of 168 acre-ft is not available for diversion. Water is diverted through Ward tunnel to Huntington Lake and used for power development in Big Creek plants. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

7,220.9	0	7,235	1,770	7,260	11,600	7,290	32,000
7,222	63	7,240	2,980	7,265	14,600	7,300	39,900
7,224	201	7,245	4,670	7,270	17,800	7,310	48,300
7,227	495	7,250	6,650	7,275	21,100	7,320	57,300
7,230	887	7,255	8,950	7,280	24,600	7,330	66,800

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18,410	267	374	346	388	341	461	661	14,031	60,158	59,555	45,770
2	17,185	267	349	346	385	340	463	761	13,946	61,056	59,170	45,727
3	15,988	271	375	339	373	341	469	812	14,336	61,853	58,795	45,684
4	14,723	279	390	339	369	337	496	845	15,088	62,538	58,365	45,633
5	13,494	293	377	340	361	337	550	869	15,905	63,082	57,861	45,565
6	12,254	296	370	339	356	337	561	929	17,366	63,264	57,275	45,608
7	11,052	295	372	339	357	335	501	937	19,482	63,197	56,692	45,873
8	9,871	300	379	339	357	334	477	869	21,715	63,024	56,119	46,087
9	8,706	300	377	339	356	333	490	812	24,007	62,967	55,464	46,276
10	7,846	291	376	339	361	332	495	856	26,335	62,910	54,693	46,447
11	7,188	284	372	339	379	333	520	1,011	28,509	62,967	53,915	46,619
12	6,467	282	366	339	395	337	592	1,173	30,768	62,977	53,106	46,775
13	5,745	273	358	339	398	357	648	1,427	33,171	62,910	52,365	46,939
14	5,016	275	349	344	396	351	596	2,106	35,531	62,900	51,557	47,094
15	4,178	275	344	353	395	344	584	3,545	38,096	62,948	50,762	47,224
16	3,692	270	337	353	379	347	679	5,169	40,635	63,159	49,901	47,362
17	3,756	270	350	379	371	348	744	5,914	43,113	63,341	49,020	47,475
18	3,378	270	363	410	365	358	692	5,991	45,327	63,302	48,119	47,571
19	2,583	271	360	436	360	372	607	6,409	47,181	62,824	47,207	47,658
20	1,670	271	354	471	359	385	536	7,068	49,037	62,376	46,293	47,762
21	833	271	353	441	362	401	465	7,786	50,824	62,138	45,796	47,840
22	398	274	351	415	353	427	432	7,943	52,257	61,986	45,625	47,919
23	320	271	349	397	348	418	419	8,164	53,578	61,767	45,574	47,988
24	296	273	345	388	351	398	411	9,111	54,619	61,682	45,574	48,049
25	281	348	347	382	342	470	405	10,541	55,436	61,729	45,684	48,101
26	279	333	347	379	343	486	411	11,982	56,220	61,682	45,736	48,154
27	276	350	347	381	338	446	411	13,142	57,321	61,587	45,779	48,197
28	276	351	346	383	341	442	421	13,795	58,020	61,198	45,804	48,241
29	278	358	346	386	-----	481	455	13,988	58,374	60,715	45,822	48,275
30	269	371	345	389	-----	516	531	14,190	59,151	60,224	45,813	48,337
31	269	-----	345	392	-----	485	-----	14,171	-----	59,951	45,804	-----
MAX	18,410	371	390	471	398	516	744	14,190	59,151	63,341	59,555	48,337
MIN	269	267	337	339	338	332	405	661	13,946	59,951	45,574	45,565
(a)	7,224.85	7,225.91	7,225.65	7,226.10	7,225.61	7,226.91	7,227.29	7,264.33	7,321.97	7,322.82	7,307.13	7,310.06
(b)	-19,300	+102	-26	+47	-51	+144	+46	+13,600	+45,000	+800	-14,100	+2,500

CAL YR 1970      b      +24  
WTR YR 1971      b +28,700

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet, rounded to Geological Survey standards.



## 11230000 SOUTH FORK SAN JOAQUIN RIVER NEAR FLORENCE LAKE, CALIF.

LOCATION.--Lat 37°16'24", long 118°57'54", in SE $\frac{1}{4}$  sec.36, T.7 S., R.27 E., Fresno County, Sierra National Forest, on left bank 0.1 mile downstream from spillway of Florence Lake Dam, 6 miles upstream from Bear Creek, and 14.7 miles east of Big Creek.

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1925, published as "near Lake Florence."

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Altitude of gage is 7,200 ft (from topographic map).

AVERAGE DISCHARGE (Combined flow of South Fork San Joaquin River and Ward tunnel at intake).--50 years, 315 cfs (228,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 48 cfs Aug. 25 (gage height, 9.76 ft); minimum daily, 3.7 cfs Nov. 2, 3, Jan. 4.

Period of record: Maximum discharge, 4,320 cfs June 6, 1940 (gage height, 15.38 ft); no flow at times.

REMARKS.--Records excellent. Flow regulated by Florence Lake 0.1 mile upstream beginning in 1925 (see sta 11229600) and by diversion into Ward tunnel (see sta 11229500). See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and one discharge measurement furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	4.0	4.0	4.0	3.8	3.8	3.9	4.0	5.1	13	14	15
2	5.8	3.7	4.0	4.4	3.8	3.8	3.9	4.0	5.1	21	14	15
3	5.8	3.7	4.0	3.9	3.8	3.8	3.9	4.2	5.1	17	14	15
4	5.8	4.0	4.0	3.7	3.8	3.8	3.9	4.1	5.1	15	14	15
5	5.7	4.0	4.0	3.9	3.8	3.8	3.9	4.1	5.6	15	14	15
6	5.7	3.8	4.0	3.8	3.8	3.8	3.9	4.1	6.2	15	14	15
7	5.6	4.0	4.0	3.9	3.8	3.8	3.9	4.2	6.3	15	13	15
8	5.5	3.9	4.0	3.9	3.8	3.8	3.9	4.0	6.4	15	13	15
9	5.5	3.8	4.0	4.0	3.8	3.8	3.9	4.0	6.4	15	13	16
10	5.4	3.8	4.0	4.0	3.9	3.9	3.9	4.0	6.5	15	13	16
11	5.3	3.8	4.0	3.9	4.0	3.9	3.9	4.1	6.5	15	13	9.7
12	5.3	3.8	3.9	3.9	4.0	3.9	3.9	4.0	6.5	15	15	5.4
13	5.3	3.9	3.9	3.9	3.9	4.0	3.9	4.0	6.5	15	19	5.6
14	5.2	3.9	3.9	3.9	3.9	3.9	3.9	4.1	6.5	15	18	6.4
15	5.1	3.9	3.9	3.9	3.9	3.9	3.9	4.2	6.5	15	17	6.6
16	5.2	3.9	4.0	3.9	3.9	3.9	4.0	4.5	6.6	15	17	6.8
17	5.2	3.9	3.9	4.0	3.9	3.9	4.1	4.6	6.7	15	17	7.2
18	5.2	3.9	4.0	4.0	3.9	3.9	4.0	4.6	7.0	15	17	7.2
19	5.2	3.9	4.0	4.0	3.9	4.0	4.0	4.7	7.1	15	16	7.2
20	5.0	3.9	4.0	4.0	3.9	4.0	4.0	4.7	7.2	15	16	7.2
21	4.8	3.9	4.0	4.0	3.9	4.0	3.9	4.8	7.5	15	15	7.2
22	4.8	3.9	4.0	4.0	3.9	4.0	3.9	4.9	7.8	15	15	7.2
23	4.7	3.9	4.3	3.9	3.9	4.0	3.9	4.9	8.2	15	15	7.2
24	4.6	3.9	4.0	3.9	3.8	4.0	3.9	4.9	8.4	15	15	7.2
25	4.5	4.4	4.0	3.9	3.8	4.1	3.9	4.9	8.5	15	15	7.2
26	4.5	4.2	3.9	3.9	3.8	4.2	3.9	5.0	8.5	14	15	7.2
27	4.5	4.0	3.9	3.9	3.8	4.0	3.9	5.1	8.5	14	15	7.2
28	4.5	4.0	4.0	3.9	3.8	4.0	3.9	5.2	8.6	14	15	7.2
29	4.5	4.2	4.0	3.9	-----	4.0	3.9	5.2	8.6	14	15	7.2
30	4.5	4.0	4.0	3.8	-----	4.0	3.9	5.2	8.6	14	15	7.2
31	4.5	-----	3.9	3.8	-----	3.9	-----	5.2	-----	15	15	-----
TOTAL	159.0	117.9	123.5	121.8	108.0	121.6	117.6	139.5	208.1	466	466	293.3
MEAN	5.13	3.93	3.98	3.93	3.86	3.92	3.92	4.50	6.94	15.0	15.0	9.78
MAX	5.8	4.4	4.3	4.4	4.0	4.2	4.1	5.2	8.6	21	19	16
MIN	4.5	3.7	3.9	3.7	3.8	3.8	3.9	4.0	5.1	13	13	5.4
AC-FT	315	234	245	242	214	241	233	277	413	924	924	582

CAL YR 1970 TOTAL 1,943.4 MEAN 5.32 MAX 14 MIN 1.7 AC-FT 3,850  
WTR YR 1971 TOTAL 2,442.3 MEAN 6.69 MAX 21 MIN 3.7 AC-FT 4,840

## SAN JOAQUIN RIVER BASIN

11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CALIF.

LOCATION.--Lat 37°20'18", long 118°58'23", in SW $\frac{1}{4}$  sec.12, T.7 S., R.27 E. (unsurveyed), Fresno County, Sierra National Forest, on right bank 0.2 mile upstream from diversion dam, 1.7 miles upstream from mouth, 2.1 miles south of Lake Thomas A. Edison, and 2.4 miles northeast of Mono Hot Springs.

DRAINAGE AREA.--52.5 sq mi.

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."

GAGE.--Water-stage recorder. Datum of gage is 7,366.94 ft above mean sea level (levels by Southern California Edison Co.).

AVERAGE DISCHARGE.--50 years, 89.5 cfs (64,840 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 714 cfs June 15 (gage height, 5.48 ft); minimum daily, 3.9 cfs Oct. 13-15.

Period of record: Maximum discharge, 1,680 cfs July 26, 1956 (gage height, 7.12 ft); minimum recorded, 1.2 cfs Sept. 29 to Oct. 5, 1924.

REMARKS.--Records good except those for winter periods, which are fair. No storage or diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and seven discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 611: 1922(M). WSP 1345: 1931-35. WSP 1515: 1922-30. WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	6.2	30	18	24	15	46	71	132	314	142	22
2	5.6	6.5	25	18	24	15	47	78	137	318	184	21
3	4.9	5.9	27	17	21	17	51	77	163	330	147	21
4	4.9	6.5	27	18	21	15	56	85	211	310	119	20
5	5.2	7.7	27	17	17	15	66	89	262	289	104	18
6	4.9	11	30	17	16	13	63	92	342	271	94	32
7	4.9	11	32	17	16	13	47	89	445	250	84	68
8	4.6	15	31	18	16	12	48	74	420	238	75	51
9	4.6	15	27	18	17	12	55	71	425	223	72	43
10	4.2	13	26	18	18	12	55	87	435	205	65	38
11	4.2	12	26	18	24	12	63	96	475	199	63	34
12	4.2	12	26	15	28	13	77	110	510	199	57	31
13	3.9	11	26	16	29	14	77	130	535	190	56	28
14	3.9	11	25	18	29	15	59	214	555	202	56	25
15	3.9	11	26	21	28	16	66	280	585	214	54	25
16	4.2	9.9	25	24	24	16	85	280	585	250	48	24
17	4.2	9.5	24	36	21	16	80	226	580	256	43	21
18	4.2	9.0	23	43	20	18	66	199	550	326	38	19
19	4.6	8.6	23	50	18	22	57	211	495	322	36	18
20	4.9	8.1	22	49	17	25	54	241	505	342	35	18
21	5.2	8.6	22	43	17	31	45	238	530	262	33	16
22	5.6	9.0	22	36	17	35	39	181	515	199	31	16
23	6.2	8.6	22	33	17	37	37	187	500	169	29	15
24	6.5	9.0	22	31	16	27	36	262	465	175	28	15
25	7.2	13	22	29	16	39	34	304	420	157	28	13
26	6.2	12	22	27	15	45	37	338	420	139	32	13
27	6.5	24	21	25	15	37	40	292	450	130	36	12
28	6.2	33	22	26	15	39	38	244	390	127	32	12
29	6.2	27	21	24	-----	51	42	202	334	114	31	11
30	5.9	25	21	25	-----	59	48	190	318	108	26	12
31	7.2	-----	20	27	-----	50	-----	155	-----	125	24	-----
TOTAL	160.8	369.1	765	792	556	756	1,614	5,393	12,689	6,953	1,902	712
MEAN	5.19	12.3	24.7	25.5	19.9	24.4	53.8	174	423	224	61.4	23.7
MAX	7.2	33	32	50	29	59	85	338	585	342	184	68
MIN	3.9	5.9	20	15	15	12	34	71	132	108	24	11
AC-FT	319	732	1,520	1,570	1,100	1,500	3,200	10,700	25,170	13,790	3,770	1,410

CAL YR 1970 TOTAL 31,578.4 MEAN 86.5 MAX 500 MIN 3.9 AC-FT 62,640  
WTR YR 1971 TOTAL 32,661.9 MEAN 89.5 MAX 585 MIN 3.9 AC-FT 64,780

PEAK DISCHARGE (BASE, 440 CFS).--June 15 (2200) 714 cfs (5.48 ft); July 20 (2100) 505 cfs (5.08 ft).

## 11231000 LAKE THOMAS A. EDISON NEAR BIG CREEK, CALIF.

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

DRAINAGE AREA.--90.0 sq mi.

PERIOD OF RECORD.--October 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Current year: Maximum contents, 112,700 acre-ft Aug. 21 (elevation, 7,635.89 ft); minimum, 34,600 acre-ft Mar. 5 (elevation, 7,585.22 ft).  
Period of record: Maximum contents, 125,900 acre-ft Aug. 18, 1958 (elevation, 7,642.95 ft); minimum since appreciable storage was attained, 5,080 acre-ft Mar. 27, 1969 (elevation, 7,553.09 ft).  
NOTE.--Prior to 1960, maximum and minimum daily contents were published.

REMARKS.--Lake is formed by earthfill dam; dam completed and storage began on Oct. 12, 1954. Usable capacity, 125,000 acre-ft between elevations 7,508.9 (invert of outlet works) and 7,642.5 ft (top of gates in service spillway) above mean sea level. Water is released for diversion to Ward tunnel via Mono Creek diversion works. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

7,508.9	0	7,535	513	7,560	9,520	7,610	68,600
7,515	18	7,540	928	7,570	18,100	7,620	85,000
7,520	64	7,545	1,830	7,580	28,500	7,630	102,400
7,525	156	7,550	3,570	7,590	40,500	7,640	120,400
7,530	297	7,555	6,150	7,600	53,800	7,643	126,000

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93,610	90,929	86,027	73,543	51,160	35,851	37,629	45,082	61,861	96,171	110,127	104,679
2	93,593	90,705	85,993	72,722	50,436	35,900	37,838	45,397	62,293	96,957	110,433	103,931
3	93,593	90,480	85,839	71,966	49,713	35,778	38,011	45,752	62,774	97,693	110,739	103,167
4	93,558	90,359	85,754	71,167	48,997	34,978	38,248	46,044	63,347	98,395	110,920	102,438
5	93,541	90,235	85,550	70,386	48,241	34,556	38,497	46,308	63,996	99,063	111,118	101,677
6	93,489	90,066	85,448	69,595	47,933	34,568	38,771	46,666	64,897	99,663	111,262	101,199
7	93,420	89,946	85,176	68,869	47,211	34,629	39,008	47,051	65,987	100,209	111,388	101,252
8	93,420	89,877	85,006	68,116	46,441	34,701	39,220	47,318	67,209	100,703	111,551	101,340
9	93,402	89,723	84,854	67,350	45,673	34,761	39,485	47,599	68,460	101,163	111,714	101,429
10	93,385	89,345	84,701	66,559	44,938	34,834	39,724	47,893	69,848	101,641	111,859	101,482
11	93,368	89,139	84,498	65,771	44,231	34,906	40,001	48,268	71,120	101,942	111,985	101,553
12	93,351	88,932	84,143	65,126	43,543	35,027	40,265	48,659	72,480	102,545	112,094	101,606
13	93,333	88,743	83,754	64,470	42,818	35,087	40,658	49,118	73,964	102,936	112,184	101,641
14	93,299	88,554	83,365	63,709	42,150	35,183	40,950	49,645	75,606	103,344	112,293	101,677
15	93,281	88,349	82,977	62,955	41,472	35,244	41,243	50,449	77,245	103,824	112,383	101,712
16	93,247	88,143	82,590	62,278	40,759	35,304	41,586	51,243	78,797	104,322	112,474	101,748
17	93,229	87,955	82,355	61,607	40,064	35,364	41,983	51,960	80,277	104,858	112,510	101,748
18	93,212	87,750	82,052	60,907	39,333	35,449	42,279	52,597	81,732	105,428	112,600	101,748
19	93,177	87,562	81,749	60,215	38,659	35,534	42,536	53,239	83,095	105,964	112,655	101,748
20	93,160	87,374	81,447	59,492	37,949	35,643	42,780	53,981	84,448	106,572	112,691	101,765
21	93,143	87,169	81,129	58,763	37,234	35,765	42,985	54,728	85,925	107,056	112,747	101,748
22	93,056	86,946	80,795	58,064	36,497	35,887	43,232	55,308	87,254	107,432	111,678	101,748
23	92,918	86,775	80,243	57,342	35,778	36,034	43,465	55,979	88,554	107,736	110,956	101,748
24	92,692	86,571	79,544	56,621	35,425	36,131	43,647	56,607	89,688	108,041	110,253	101,748
25	92,485	86,639	78,830	55,908	35,497	36,375	43,829	57,299	90,722	108,311	109,550	101,712
26	92,242	86,571	78,134	55,194	35,570	36,619	44,023	58,341	91,775	108,562	108,939	101,659
27	92,034	86,384	77,426	54,700	35,656	36,766	44,205	59,128	92,918	108,903	108,257	101,641
28	91,809	86,282	76,685	53,981	35,765	36,939	44,388	59,802	93,871	109,155	107,575	101,624
29	91,585	86,350	75,900	53,253	-----	37,124	44,571	60,421	94,689	109,334	106,841	101,624
30	91,360	86,197	75,116	52,555	-----	37,284	44,820	60,952	95,489	109,550	106,107	101,606
31	91,153	-----	74,321	51,850	-----	37,456	-----	61,398	-----	109,820	105,393	-----
MAX	93,610	90,929	86,027	73,543	51,160	37,456	44,820	61,398	95,489	109,820	112,691	104,679
MIN	91,153	86,197	74,321	51,850	35,425	34,556	37,629	45,082	61,861	96,171	105,393	101,199
(a)	7,623.59	7,620.70	7,613.57	7,598.62	7,586.22	7,587.60	7,593.39	7,605.28	7,626.09	7,634.17	7,631.70	7,629.57
(b)	-2,490	-4,960	-11,900	-22,500	-16,100	+1,690	+7,360	+16,600	+34,100	+14,300	-4,440	-3,790

CAL YR 1970 b +3,970  
WTR YR 1971 b +7,960

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet, rounded to Geological Survey standards.

## SAN JOAQUIN RIVER BASIN

11231500 MONO CREEK BELOW LAKE THOMAS A. EDISON, CALIF.

LOCATION.--Lat 37°21'40", long 118°59'26", in SW $\frac{1}{4}$  sec.35, T.6 S., R.27 E. (unsurveyed), Fresno County, Sierra National Forest, on left bank 0.6 mile upstream from diversion dam, 1 mile downstream from Lake Thomas A. Edison, and 1.9 miles northeast of Mono Hot Springs.

DRAINAGE AREA.--92.5 sq mi.

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."

GAGE.--Water-stage recorder. Altitude of gage is 7,400 ft (from topographic map).

AVERAGE DISCHARGE (adjusted for storage).--50 years, 150 cfs (108,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 480 cfs Dec. 28 (gage height, 6.58 ft); minimum daily, 11 cfs on many days.

Period of record: Maximum discharge, 1,760 cfs June 2, 1938 (gage height, 8.62 ft); minimum daily, 0.3 cfs Nov. 11, 12, 1954.

REMARKS.--Records good. Flow regulated by Lake Thomas A. Edison 1 mile upstream beginning Oct. 12, 1954 (see sta 11231000). No diversion above station. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and four discharge measurements furnished by Southern California Edison Co., in connection with Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1011: 1943. WSP 1515: 1956.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	107	115	420	400	11	14	16	11	12	14	420
2	20	107	122	415	415	11	14	15	11	12	14	420
3	20	107	133	415	425	195	14	16	11	12	15	420
4	20	107	133	415	425	450	14	16	12	12	14	420
5	20	107	133	415	420	223	15	16	11	12	14	420
6	20	107	133	410	215	13	15	16	12	12	14	366
7	20	107	133	410	410	13	15	16	12	12	15	15
8	20	107	133	410	425	13	15	16	12	12	15	11
9	20	107	133	410	435	13	15	16	12	12	15	11
10	20	107	133	415	430	13	15	16	12	12	15	11
11	20	107	147	420	425	13	16	17	12	12	15	11
12	20	107	212	420	425	13	16	17	12	12	15	11
13	20	107	212	415	425	13	16	16	12	12	15	11
14	20	107	212	415	420	13	16	17	12	15	15	11
15	19	107	212	410	420	13	17	16	12	16	15	11
16	19	107	212	410	420	13	17	16	12	13	15	11
17	19	107	215	405	420	12	18	15	12	13	15	11
18	19	107	215	405	420	12	17	12	12	13	15	11
19	19	107	212	400	415	12	16	11	12	13	15	11
20	19	107	212	400	415	12	16	11	12	13	15	11
21	19	107	212	405	415	12	16	12	12	13	245	11
22	74	112	212	405	415	12	16	12	12	13	395	11
23	97	112	301	405	410	13	16	12	12	13	415	11
24	107	112	400	405	208	13	16	12	12	13	420	11
25	107	112	400	405	12	13	16	12	12	13	420	11
26	107	115	390	405	12	15	15	12	12	13	420	11
27	107	115	390	289	12	14	15	11	12	13	420	11
28	107	115	420	400	12	14	15	12	12	13	420	11
29	107	115	425	400	-----	14	15	12	12	14	420	11
30	107	115	425	400	-----	15	15	12	12	13	420	11
31	107	-----	420	400	-----	15	-----	12	-----	13	420	-----
TOTAL	1,440	3,270	7,357	12,554	9,701	1,231	466	438	356	396	4,710	2,734
MEAN	46.5	109	237	405	346	39.7	15.5	14.1	11.9	12.8	152	91.1
MAX	107	115	425	420	435	450	18	17	12	16	420	420
MIN	19	107	115	289	12	11	14	11	11	12	14	11
AC-FT	2,860	6,490	14,590	24,900	19,240	2,440	924	869	706	785	9,340	5,420
CAL YR 1970	TOTAL	49,665	MEAN	136	MAX	480	MIN	13	AC-FT	98,510		
WTR YR 1971	TOTAL	44,653	MEAN	122	MAX	450	MIN	11	AC-FT	88,570		

## 11234700 MAMMOTH POOL RESERVOIR NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°19'45", long 119°19'40", in SW $\frac{1}{4}$  sec.10, T.7 S., R.24 E., Madera County, Sierra National Forest, in gatehouse of power tunnel intake near dam on San Joaquin River, 10 miles northwest of town of Big Creek.

DRAINAGE AREA.--995 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Current year: Maximum contents, 113,700 acre-ft July 6 (elevation, 3,324.21 ft); minimum, 4,650 acre-ft May 9 (elevation, 3,140.26 ft).

Period of record: Maximum contents, 126,500 acre-ft June 2, 3, 1969; maximum elevation, 3,335.86 ft June 3, 1969; minimum contents since appreciable storage was attained, 4,600 acre-ft Mar. 30, 31, 1970; minimum elevation, 3,139.96 ft Mar. 31, 1970.

REMARKS.--Reservoir is formed by an earthfill dam; storage began Oct. 8, 1959. Usable capacity, 119,900 acre-ft between elevations 3,100.00 (invert of power tunnel) and 3,330.00 ft (crest of spillway) above mean sea level. 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 miles downstream from dam. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Records of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

3,100	0	3,130	3,110	3,180	14,100	3,260	56,400
3,105	417	3,140	4,600	3,190	17,400	3,280	72,100
3,110	861	3,150	6,400	3,200	21,400	3,300	89,800
3,115	1,360	3,160	8,620	3,220	31,100	3,320	109,300
3,120	1,900	3,170	11,200	3,240	42,800	3,335	125,500

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40,254	23,858	26,493	22,740	24,267	20,112	15,672	5,732	40,953	111,867	91,884	59,239
2	39,148	23,341	26,969	22,633	23,618	19,637	15,133	6,313	41,219	112,317	90,835	58,108
3	39,221	22,758	27,303	22,319	22,914	19,326	14,694	6,307	41,903	112,632	89,679	57,038
4	39,318	22,492	27,797	21,243	22,691	19,485	14,423	5,757	43,333	112,664	88,504	57,134
5	38,322	22,780	27,838	20,469	22,496	18,731	14,630	5,012	45,435	113,201	87,289	57,334
6	37,344	23,205	27,822	19,744	22,381	17,867	14,856	5,296	47,837	113,644	86,027	57,609
7	36,344	23,658	28,310	18,950	22,429	17,016	14,309	4,904	50,521	113,033	84,702	57,119
8	35,641	24,134	28,780	18,172	22,390	15,636	13,710	4,653	54,571	112,569	83,355	56,264
9	34,958	24,267	29,562	19,247	22,390	14,746	13,291	4,676	58,758	111,657	82,027	55,283
10	35,009	24,226	29,984	21,040	22,416	13,965	12,920	5,083	63,100	110,425	80,627	54,470
11	34,857	24,066	30,718	21,124	22,576	13,363	12,792	6,088	67,659	110,062	79,300	54,527
12	34,175	23,840	31,331	20,934	23,062	12,823	13,043	8,374	72,572	110,000	78,333	53,642
13	33,517	23,862	32,236	20,747	22,314	13,060	13,688	10,550	77,427	108,863	77,419	52,245
14	32,907	24,139	31,618	20,580	21,530	12,978	13,288	12,966	82,170	107,703	76,551	50,805
15	32,192	24,486	30,616	20,747	20,897	12,890	12,999	16,783	86,091	106,643	75,634	49,488
16	31,434	24,157	29,900	21,681	20,144	12,899	14,372	21,273	90,135	105,570	74,610	48,091
17	31,537	23,862	29,379	22,780	18,950	12,914	15,267	23,187	93,532	104,744	73,558	47,000
18	31,635	23,636	28,562	23,477	17,947	12,996	14,956	24,807	96,383	103,901	72,504	47,163
19	30,568	23,454	29,306	24,157	18,276	13,098	14,092	26,643	98,277	103,189	71,392	47,334
20	29,731	23,187	29,222	25,464	18,226	13,395	13,136	28,733	100,137	102,580	70,247	46,425
21	28,883	23,450	29,668	26,294	18,300	13,616	11,877	31,104	102,270	101,952	69,128	45,435
22	28,058	23,726	30,132	26,694	18,567	13,894	10,331	31,429	104,252	101,424	68,000	44,518
23	27,364	23,627	29,369	26,894	18,841	13,716	9,317	31,837	105,883	100,473	66,831	43,575
24	27,547	23,129	27,899	27,649	19,112	13,007	8,041	33,829	106,948	100,295	65,663	42,630
25	27,731	24,326	27,126	27,364	19,569	12,952	6,317	36,367	108,092	99,241	64,479	42,768
26	26,704	26,884	26,854	27,071	19,829	14,573	4,970	39,712	109,254	98,248	63,319	42,914
27	25,570	26,294	26,904	26,859	20,152	16,090	5,003	41,133	111,343	97,351	62,287	42,009
28	24,564	25,189	25,917	26,608	20,514	16,892	4,972	41,747	111,877	95,973	62,394	41,318
29	24,039	26,653	24,770	26,224	-----	16,560	5,134	41,984	111,919	94,860	62,612	40,585
30	23,608	25,483	23,658	25,488	-----	16,536	5,205	42,134	111,898	93,854	61,549	39,956
31	23,713	-----	22,642	24,891	-----	16,235	-----	41,722	-----	92,872	60,403	-----
MAX	40,254	26,884	32,236	27,649	24,267	20,112	15,672	42,134	111,919	113,644	91,884	59,239
MIN	23,608	22,492	22,642	18,172	17,947	12,823	4,970	4,653	40,953	92,872	60,403	39,956
(a)	3,205.22	3,209.04	3,202.84	3,207.79	3,197.89	3,186.65	3,143.55	3,238.30	3,322.46	3,303.30	3,265.38	3,235.43
(b)	-17,600	+1,770	-2,840	+2,250	-4,380	-4,280	-11,000	+36,500	+70,200	-19,000	-32,500	-20,400

CAL YR 1970      b -25,700  
WTR YR 1971      b -1,380

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet, rounded to Geological Survey standards.



LOCATION.--Lat 37°15'25", long 119°09'38", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  (revised), sec.5, T.8 S., R.26 E., Fresno County, Sierra National Forest, at tunnel outlet at east end of Huntington Lake, 0.9 mile east of Lakeshore Post Office, and 6 miles northeast of Big Creek.

GAGE.--Pressure differential recorder to record discharge through penstock. November 1927 to May 23, 1956, water-stage recorder at datum 6,999.00 ft above mean sea level (levels by Southern California Edison Co.). May 24, 1956, to Sept. 30, 1968, no recorder, see REMARKS below.

EXTREMES.--Period of record: Maximum daily discharge, 2,080 cfs June 21, 1935; no flow at times in 1961, 1964-65, 1968.

REMARKS.--For the period May 24, 1956, to Sept. 30, 1968, daily discharge 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 to Huntington Lake, receives diversions from Bear and Mono Creeks and at times from several other small tributaries of South Fork San Joaquin River. See record for sta 11229500 Ward tunnel intake at Florence Lake.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1966.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	659	148	253	558	599	94	308	278	692	717	717	509
2	648	142	289	539	600	86	329	444	682	786	714	508
3	633	156	240	513	588	234	286	461	552	867	649	503
4	657	148	319	538	572	538	337	446	560	847	627	503
5	674	152	364	530	596	426	349	479	741	831	615	499
6	682	182	311	528	314	95	395	496	742	867	632	501
7	626	189	277	512	520	90	300	612	740	979	592	236
8	628	166	311	510	555	101	347	467	741	965	602	44
9	624	184	329	506	567	102	338	444	717	922	626	0
10	571	171	292	521	572	129	332	452	726	745	670	32
11	258	170	281	514	592	127	309	458	944	730	653	68
12	408	173	376	522	619	93	358	607	1,130	725	689	66
13	397	166	356	520	638	127	411	626	1,150	724	560	59
14	385	155	348	530	627	113	400	758	1,140	724	655	0
15	401	183	321	549	615	140	382	754	1,140	728	655	82
16	386	160	322	558	628	134	442	661	1,150	728	648	0
17	0	156	324	586	629	126	470	628	1,160	942	642	58
18	111	147	347	677	586	128	437	729	1,160	1,280	635	30
19	412	157	375	661	517	153	407	746	1,150	1,320	630	52
20	510	157	327	680	578	188	348	748	1,150	1,380	623	20
21	484	144	378	689	552	206	340	748	1,210	1,100	612	50
22	414	167	354	630	568	200	291	738	1,310	848	602	0
23	196	164	400	587	569	245	271	740	1,320	760	545	48
24	144	157	456	578	381	212	253	747	1,380	688	524	0
25	206	138	506	577	134	217	344	742	1,250	553	524	0
26	187	238	514	619	97	300	236	743	1,280	583	521	0
27	219	244	518	444	62	299	275	744	1,290	534	530	0
28	139	240	528	589	77	246	252	735	1,270	653	521	45
29	144	233	545	596	-----	266	252	732	1,180	675	520	99
30	142	256	535	600	-----	353	349	732	940	682	514	0
31	122	-----	524	609	-----	327	-----	732	-----	683	506	-----
TOTAL	12,067	5,243	11,620	17,570	13,952	6,095	10,148	19,427	30,597	25,566	18,753	4,012
MEAN	389	175	375	567	498	197	338	627	1,020	825	605	134
MAX	682	256	545	689	638	538	470	758	1,380	1,380	717	509
MIN	0	138	240	444	62	86	236	278	552	534	506	0
AC-FT	23,930	10,400	23,050	34,850	27,670	12,090	20,130	38,530	60,690	50,710	37,200	7,960
CAL YR 1970	TOTAL	189,245	MEAN	518	MAX	1,650	MIN	0	AC-FT	375,400		
WTR Y												

## SAN JOAQUIN RIVER BASIN

## 11236000 HUNTINGTON LAKE NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°14'03", long 119°12'41", in SW $\frac{1}{4}$  sec.14, T.8 S., R.25 E., Fresno County, Sierra National Forest, in gate tower of dam 1 on Big Creek, 2 miles northeast of town of Big Creek.

DRAINAGE AREA.--80.5 sq mi.

PERIOD OF RECORD.--April 1913 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.). Prior to June 19, 1920, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 89,100 acre-ft Oct. 10 (elevation, 6,949.97 ft); minimum, 30,600 acre-ft Mar. 25 (elevation, 6,899.65 ft).  
Period of record: Maximum contents, 90,500 acre-ft May 31, 1926 (elevation, 6,950.92 ft); minimum, 2,100 acre-ft Nov. 6, 1937 (elevation, 6,838.53 ft).

NOTE.--Prior to 1960, maximum and minimum daily contents were published.

REMARKS.--Lake is formed by four dams; storage began Apr. 11, 1913. Dams were raised in 1914 and again in 1917. Usable capacity, 89,200 acre-ft between elevations 6,819.9 (invert of outlet tunnel No. 1) and 6,950 ft (spillway crest at dam 1) above mean sea level. Additional storage of 600 acre-ft is not available for release. Huntington-Shaver conduit has diverted water from Huntington Lake to Shaver Lake since Apr. 21, 1928 (see sta 11239000). Water is used for power development in Big Creek plants. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

6,819.9	0	6,835	1,550	6,870	11,300	6,920	50,800
6,820	8	6,840	2,350	6,880	16,400	6,930	62,600
6,822	142	6,845	3,320	6,890	22,900	6,940	75,300
6,825	382	6,850	4,480	6,900	30,900	6,950	89,200
6,830	899	6,860	7,430	6,910	40,200	6,951	90,610

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85,416	82,956	70,041	65,670	55,424	48,229	32,269	36,432	77,285	87,239	86,771	85,036
2	85,740	82,318	70,041	65,181	55,180	47,284	32,412	36,958	78,581	87,424	86,956	84,825
3	86,459	81,601	69,630	64,708	54,925	46,604	32,501	37,641	79,723	87,466	87,012	84,615
4	87,424	80,981	69,591	64,260	54,647	46,486	32,742	38,193	80,201	87,481	87,027	84,406
5	87,865	80,392	69,527	63,788	54,404	46,176	32,995	39,065	80,624	87,424	87,012	84,182
6	88,222	79,873	69,360	63,245	53,795	45,261	33,402	39,361	81,050	87,566	87,027	84,042
7	88,322	79,477	69,065	62,802	53,416	44,270	33,583	39,898	81,559	87,822	86,970	83,358
8	88,565	79,259	68,668	62,310	53,095	43,468	33,757	40,226	82,083	87,979	86,913	82,290
9	88,794	78,798	68,464	61,821	52,822	42,446	33,968	40,186	82,346	87,993	86,899	81,119
10	89,066	78,161	68,248	61,369	52,572	41,527	34,160	40,377	82,720	87,693	86,998	80,009
11	88,723	77,500	68,082	60,883	52,390	40,679	34,398	41,152	83,220	87,367	87,097	78,961
12	88,623	76,935	68,018	60,580	52,265	39,888	34,779	42,333	83,749	87,055	87,225	77,931
13	88,451	76,145	68,018	60,337	52,345	38,967	35,262	43,666	84,154	86,814	87,126	76,881
14	88,237	76,212	67,929	59,915	52,572	37,912	35,676	45,526	84,294	86,658	87,183	75,718
15	88,065	76,465	67,776	59,518	52,788	36,996	36,100	47,478	83,847	86,487	87,239	74,721
16	88,108	75,971	67,827	59,157	53,004	36,025	36,393	49,304	83,511	86,501	87,282	73,480
17	88,094	75,344	67,764	58,857	53,233	35,002	37,197	50,936	83,012	86,771	87,296	72,469
18	87,822	74,655	67,700	58,726	53,370	34,233	37,709	52,708	82,831	87,850	87,296	71,490
19	87,481	73,874	67,649	58,584	53,428	33,302	38,105	54,590	83,053	88,165	87,282	70,558
20	87,438	73,322	67,611	58,500	53,508	32,581	38,378	56,546	83,220	88,094	87,268	69,412
21	87,296	72,993	67,674	58,429	53,519	31,807	38,545	58,131	83,428	87,779	87,225	68,350
22	87,112	72,888	67,611	58,238	53,473	31,071	38,614	59,746	83,777	87,211	87,154	67,181
23	86,388	72,365	67,585	57,940	53,405	30,784	38,447	61,528	84,112	86,643	86,987	66,109
24	86,558	71,543	67,713	57,643	53,015	30,689	38,105	63,652	84,336	86,331	86,743	64,869
25	86,587	71,360	67,904	57,337	52,084	30,697	38,164	65,883	84,657	86,247	86,544	63,677
26	86,078	71,334	68,133	57,101	51,149	31,202	37,863	68,018	85,219	86,204	86,317	62,494
27	85,543	70,959	68,171	56,581	50,145	31,456	37,379	69,964	85,796	86,078	86,106	61,320
28	84,867	70,584	67,636	56,336	49,183	31,054	36,814	71,660	86,275	86,148	85,965	60,204
29	84,182	70,700	67,054	56,078	-----	31,299	36,384	73,204	86,558	86,275	85,754	59,230
30	83,665	70,312	66,587	55,856	-----	31,692	36,223	74,735	86,785	86,416	85,500	58,131
31	83,150	-----	66,096	55,646	-----	32,065	-----	76,052	-----	86,558	85,247	-----
MAX	89,066	82,956	70,041	65,670	55,424	48,229	38,614	76,052	86,785	88,165	87,296	85,036
MIN	83,150	70,312	66,096	55,646	49,183	30,689	32,269	36,432	77,285	86,078	85,247	58,131
(a)	6,945.74	6,936.16	6,932.85	6,924.23	6,918.53	6,901.37	6,905.90	6,940.53	6,948.33	6,948.17	6,947.24	6,926.34
(b)	-1,900	-12,700	-4,220	-10,500	-6,470	-17,100	+4,160	+39,800	+10,700	-227	-1,310	-27,100

CAL YR 1970 b +14,300  
WTR YR 1971 b -26,900

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet, rounded to Geological Survey standards.



## 11237500 PITMAN CREEK BELOW TAMARACK CREEK, CALIF.

LOCATION.--Lat 37°11'54", long 119°12'48"; in NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.35, T.8 S., R.25 E., Fresno County, Sierra National Forest, on right bank 0.8 mile downstream from confluence of Tamarack Creek and South Fork Tamarack Creek, 1.4 miles upstream from mouth, and 1.9 miles east of town of Big Creek.

DRAINAGE AREA.--22.9 sq mi.

PERIOD OF RECORD.--October 1927 to current year. Records for water year 1928 incomplete, yearly estimate published in WSP 1315-A.

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Altitude of gage is 7,005 ft (from Southern California Edison Co. contour map). Prior to Sept. 29, 1940, at site 10 ft downstream at same datum.

AVERAGE DISCHARGE.--44 years, 39.4 cfs (28,550 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 390 cfs May 15 (gage height, 6.10 ft); minimum daily, 0.35 cfs Oct. 1-3.

Period of record: Maximum discharge, 3,670 cfs Dec. 23, 1955 (gage height, 11.20 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement at gage height 10.77 ft; no flow Oct. 15-18, 1931.

REMARKS.--Records good except those for winter periods, which are poor. No diversion above station; practically all flow diverted below station to Huntington-Shaver conduit. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and four discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 931: 1940. WSP 1315-A: 1944. WSP 1395: 1928-29, 1938. WSP 1515: 1929.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	.52	4.0	3.0	6.0	11	73	126	114	27	3.7	.78
2	.35	.52	3.7	3.0	6.0	12	78	125	119	25	3.3	.76
3	.35	.54	4.0	2.5	6.0	13	86	109	121	23	3.1	.73
4	.37	1.0	4.0	2.0	6.0	12	98	89	132	22	3.0	.73
5	.37	2.0	4.0	2.0	6.0	11	106	85	140	20	2.8	.67
6	.37	2.0	4.0	2.0	6.0	11	98	90	144	19	2.7	1.5
7	.37	3.6	5.0	2.0	6.0	10	76	87	157	18	2.5	2.3
8	.37	2.5	5.0	2.0	6.0	11	78	80	165	16	2.3	1.4
9	.37	2.5	5.0	2.0	6.0	12	90	90	147	15	2.6	1.0
10	.37	2.2	4.0	2.0	8.0	13	100	120	140	14	3.7	.87
11	.37	2.1	4.0	2.0	13	13	114	154	130	13	2.8	.78
12	.37	2.1	4.0	2.0	16	15	127	194	135	12	2.4	.70
13	.37	2.1	4.0	2.0	17	15	121	204	130	11	2.1	.62
14	.37	2.1	4.0	3.0	18	14	97	240	123	11	1.8	.59
15	.37	1.9	4.0	4.0	19	14	112	264	119	9.4	1.7	.54
16	.37	1.7	4.0	6.2	17	14	140	244	110	9.1	1.6	.51
17	.37	1.6	4.0	6.9	16	14	129	203	98	12	1.4	.49
18	.37	1.6	4.0	8.3	15	15	94	192	85	16	1.4	.46
19	.40	1.4	4.0	10	14	18	79	191	73	12	1.3	.46
20	.54	1.4	4.0	13	13	21	73	200	69	9.4	1.3	.46
21	.62	1.3	4.0	12	12	24	67	168	64	8.6	1.2	.44
22	.60	1.4	3.5	11	12	30	62	139	61	8.1	1.2	.44
23	.62	1.4	3.0	10	11	35	60	158	54	7.8	1.1	.41
24	.88	1.4	3.0	10	11	31	58	201	48	7.3	1.1	.41
25	.76	9.1	3.0	9.0	10	38	56	210	44	6.8	1.1	.41
26	.60	7.5	3.0	8.5	10	57	52	194	40	6.4	1.1	.46
27	.57	5.0	3.0	8.0	11	61	53	158	41	6.2	.97	.54
28	.57	3.5	3.0	7.0	11	64	59	138	36	5.4	.94	.54
29	.54	3.8	3.0	7.0	-----	72	73	137	32	4.6	.90	.56
30	.54	4.0	3.0	6.0	-----	78	98	135	30	4.3	.81	1.0
31	.54	-----	3.0	6.0	-----	77	-----	119	-----	4.0	.81	-----
TOTAL	14.38	73.78	117.2	174.4	308.0	836	2,607	4,844	2,901	383.4	58.73	21.56
MEAN	.46	2.46	3.78	5.63	11.0	27.0	86.9	156	96.7	12.4	1.89	.72
MAX	.88	9.1	5.0	13	19	78	140	264	165	27	3.7	2.3
MIN	.35	.52	3.0	2.0	6.0	10	52	80	30	4.0	.81	.41
AC-FT	29	146	232	346	611	1,660	5,170	9,610	5,750	760	116	43
CAL YR 1970	TOTAL	11,363.13	MEAN	31.1	MAX	262	MIN	.35	AC-FT	22,540		
WTR YR 1971	TOTAL	12,339.45	MEAN	33.8	MAX	264	MIN	.35	AC-FT	24,480		

## PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-15	1930	6.10	390	6-7	2130	5.29	208
5-24	1900	5.65	280				

## SAN JOAQUIN RIVER BASIN

## 11239000 HUNTINGTON-SHAVER CONDUIT OUTLET NEAR SHAVER LAKE, CALIF.

LOCATION.--Lat 37°09'18", long 119°13'53", in NW $\frac{1}{4}$  sec.15, T.9 S., R.25 E., Fresno County, Sierra National Forest, on left bank at tunnel outlet, 2.3 miles northeast of Shaver Lake, and 3.5 miles south of town of Big Creek.

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for October 1928, published in WSP 1315-A. Prior to October 1960, published as Huntington-Shaver conduit at outlet.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,680 ft (from topographic map).

AVERAGE DISCHARGE.--43 years, 221 cfs (160,100 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 1,780 cfs June 3, 4, 1938; minimum daily, 0.90 cfs Sept. 8-11, 1955, Nov. 15, 19, 26, 27, 1966.

REMARKS.--Records good. Conduit diverts from Huntington Lake to Shaver Lake with additions from Pitman Creek and seepage en route. See schematic diagram of San Joaquin River basin.

COOPERATION.--Gage-height record and ten discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 931: 1940.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.0	4.3	365	334	159	171	240	301	29	34	22
2	1.3	1.0	3.3	362	334	158	176	243	309	212	34	1.4
3	1.1	1.0	3.5	361	333	149	186	228	313	365	34	1.3
4	1.1	1.0	3.5	361	332	149	198	211	680	364	34	1.1
5	1.1	4.0	4.5	358	330	149	212	208	1,120	362	34	1.1
6	1.1	4.5	5.0	358	327	147	203	214	1,130	361	34	1.1
7	1.1	3.3	4.8	358	326	145	180	213	1,150	361	34	2.4
8	1.1	2.4	4.8	357	325	143	181	207	1,160	360	33	1.4
9	1.0	2.2	5.0	354	323	142	196	214	1,140	358	33	1.3
10	1.0	2.6	5.0	350	323	140	207	243	1,130	358	34	1.3
11	1.0	2.4	5.0	350	325	137	224	288	1,290	357	34	1.3
12	1.0	3.0	5.0	348	327	136	240	333	1,440	354	33	1.4
13	1.0	2.6	5.0	348	240	134	235	351	1,430	299	32	1.4
14	1.0	2.0	5.0	347	168	130	211	390	1,430	263	32	1.4
15	1.0	2.0	4.8	347	170	127	225	422	1,420	262	32	1.4
16	1.0	1.8	4.8	344	170	124	258	403	1,410	228	32	1.4
17	1.0	1.6	5.0	344	169	121	248	364	1,390	207	32	1.4
18	1.0	1.6	5.6	343	169	120	213	353	1,130	213	32	1.4
19	1.0	1.4	5.6	343	167	119	200	360	890	635	32	1.4
20	1.0	1.4	5.3	344	168	119	194	374	883	898	32	1.4
21	1.0	1.4	5.0	344	166	119	189	347	879	712	32	1.3
22	1.0	1.4	5.3	344	165	122	181	308	876	602	32	1.3
23	1.0	1.4	5.0	343	166	124	180	336	872	494	32	1.3
24	1.0	1.4	4.8	341	165	120	178	382	866	292	32	1.3
25	1.0	8.4	5.0	340	163	126	171	398	635	37	32	1.3
26	1.0	7.1	20	339	162	147	168	388	632	36	32	1.3
27	1.0	6.8	130	339	159	154	166	354	635	36	32	1.3
28	1.0	5.0	391	336	159	156	172	326	635	35	32	1.3
29	1.0	3.5	449	336	-----	163	184	320	630	34	32	1.3
30	1.0	3.5	368	336	-----	174	212	326	377	34	32	1.3
31	1.0	-----	365	336	-----	173	-----	308	-----	34	32	-----
TOTAL	32.3	82.7	1,842.9	10,776	6,665	4,326	5,959	9,652	28,183	9,192	1,013	61.3
MEAN	1.04	2.76	59.4	348	238	140	199	311	939	297	32.7	2.04
MAX	1.4	8.4	449	365	334	174	258	422	1,440	898	34	22
MIN	1.0	1.0	3.3	336	159	119	166	207	301	29	32	1.1
AC-FT	64	164	3,660	21,370	13,220	8,580	11,820	19,140	55,900	18,230	2,010	122
CAL YR 1970	TOTAL	48,072.4	MEAN	132	MAX	1,500	MIN	1.0	AC-FT	95,350		
WTR YR 1971	TOTAL	77,785.2	MEAN	213	MAX	1,440	MIN	1.0	AC-FT	154,300		

## 11239500 SHAVER LAKE NEAR BIG CREEK, CALIF.

LOCATION.--Lat 37°08'40", long 119°18'08", in SE¼ sec.13, T.9 S., R.24 E., Fresno County, Sierra National Forest, near center of dam on Stevenson Creek, 6 miles southwest of town of Big Creek.

DRAINAGE AREA.--29.1 sq mi.

PERIOD OF RECORD.--November 1909 to current year. Prior to January 1927, monthly contents only, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.). Prior to Jan. 11, 1927, gage on rockfilled dam a short distance upstream at different datum.

EXTREMES.--Current year: Maximum contents, 133,000 acre-ft July 22 (elevation, 5,368.95 ft); minimum, 30,600 acre-ft Mar. 5 (elevation, 5,306.43 ft).  
Period of record: Maximum contents, 135,900 acre-ft July 5, 1946 (elevation, 5,370.25 ft); minimum, 26 acre-ft Jan. 29, 1927, during period of construction.  
NOTE.--Prior to 1960, maximum and minimum daily contents were published.

REMARKS.--Storage began prior to 1905. Original lake formed by rockfilled 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, 135,300 acre-ft between elevations 5,225 (trash-rack foundation) and 5,370 ft (crest of spillway) above mean sea level. 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 plants. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS.--WSP 1565: Drainage area.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-Feet)

5,225	0	5,250	700	5,280	9,190	5,330	60,900
5,230	42	5,255	1,250	5,290	15,600	5,340	76,700
5,235	97	5,260	2,070	5,300	24,000	5,350	94,600
5,240	191	5,265	3,210	5,310	34,500	5,360	114,200
5,245	379	5,270	4,750	5,320	46,800	5,371	137,500

## CONTENTS, IN ACRE-Feet, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75,357	71,101	66,347	47,969	42,024	32,077	42,175	58,698	82,082	128,431	124,009	91,022
2	75,340	70,634	66,656	47,484	41,521	31,715	42,730	59,289	82,780	128,239	122,918	89,898
3	75,340	70,040	66,687	47,026	41,074	31,320	43,278	60,018	83,461	128,516	121,852	88,743
4	75,340	69,706	66,749	46,548	40,987	30,865	43,854	60,570	84,822	129,219	120,767	87,635
5	75,323	69,500	66,795	46,088	40,887	30,789	44,485	61,137	86,984	129,925	119,688	86,500
6	75,307	69,325	66,842	45,615	40,726	31,123	45,082	61,723	89,181	130,096	118,611	85,424
7	75,173	69,341	66,780	45,121	40,552	31,463	45,576	62,383	91,469	130,246	117,539	84,344
8	74,644	69,357	66,564	44,641	40,330	31,803	46,088	62,927	93,737	130,417	116,469	83,252
9	74,150	68,832	65,946	44,187	40,109	32,143	46,613	63,488	95,997	130,588	115,385	82,152
10	74,133	68,343	65,421	43,726	39,864	32,488	47,188	64,094	98,196	131,060	114,343	81,045
11	74,001	67,967	64,903	43,265	39,644	32,822	47,821	64,826	100,661	131,577	113,286	80,131
12	73,473	67,544	64,384	42,907	39,509	33,335	48,469	65,683	103,424	131,728	112,190	79,210
13	73,016	67,152	64,018	42,566	39,239	33,709	49,120	66,533	106,159	131,750	111,141	78,106
14	72,511	67,152	63,397	42,087	38,852	34,059	49,690	67,466	108,930	131,663	110,073	77,011
15	72,054	67,152	62,670	41,595	38,381	34,398	50,275	68,453	111,766	131,599	108,970	75,874
16	71,600	66,656	62,068	41,285	37,970	34,720	50,942	69,389	113,794	131,448	107,929	74,710
17	71,584	66,146	61,077	41,746	37,565	35,054	51,752	70,247	115,364	131,599	106,955	73,589
18	71,568	65,683	59,944	41,935	37,112	35,364	52,317	71,036	116,448	131,750	105,982	72,445
19	71,568	65,208	58,787	42,629	36,626	35,700	52,863	71,858	117,066	132,138	105,015	71,278
20	71,568	64,857	57,725	43,227	36,356	36,051	53,409	72,706	117,786	132,720	103,932	70,376
21	71,552	64,857	56,742	43,355	36,098	36,415	53,904	73,473	118,445	133,022	102,838	69,500
22	71,552	64,872	55,880	43,342	35,606	36,778	54,374	74,199	119,377	133,043	101,766	68,594
23	71,568	64,384	54,388	43,419	35,065	37,171	54,830	74,941	120,081	132,936	100,700	67,716
24	71,568	64,384	53,213	43,790	34,206	37,529	55,319	75,774	121,351	132,418	99,638	66,826
25	71,552	64,857	52,041	43,752	33,381	38,006	55,739	76,641	122,771	131,319	98,560	66,826
26	71,535	65,070	50,929	43,713	32,655	38,755	56,188	77,499	123,988	130,246	97,487	66,811
27	71,519	65,116	50,057	43,688	32,544	39,399	56,610	78,375	125,210	129,177	96,416	66,347
28	71,519	65,238	49,594	43,585	32,432	39,950	57,064	79,193	126,435	128,133	95,311	66,054
29	71,503	66,085	49,336	43,457	-----	40,515	57,534	79,926	127,623	127,049	94,247	65,714
30	71,149	66,162	48,889	42,971	-----	41,086	58,077	80,683	128,452	125,991	93,171	65,330
31	71,117	-----	48,388	42,503	-----	41,633	-----	81,355	-----	124,956	92,102	-----
MAX	75,357	71,101	66,842	47,969	42,024	41,633	58,077	81,355	128,452	133,043	124,009	91,022
MIN	71,117	64,384	48,388	41,285	32,432	30,789	42,175	58,698	82,082	124,956	92,102	65,330
(a)	5,336.58	5,333.44	5,321.18	5,316.68	5,308.20	5,315.99	5,328.07	5,342.71	5,366.83	5,365.18	5,348.69	5,332.90
(b)	-4,200	-5,000	-17,800	-5,890	-10,100	+9,200	+16,400	+23,300	+47,100	-3,500	-32,900	-26,800

CAL YR 1970 b -21,900  
WTR YR 1971 b -10,000

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet, rounded to Geological Survey standards.

## SAN JOAQUIN RIVER BASIN

11241950 REDINGER LAKE NEAR AUBERRY, CALIF.

LOCATION.--Lat 37°08'42", long 119°26'58", in SW $\frac{1}{4}$  sec.15, T.9 S., R.23 E., Madera County, Sierra National Forest, on upstream face of dam No. 7 on San Joaquin River, 4.2 miles northeast of Auberry.

DRAINAGE AREA.--1,295 sq mi.

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 at mean sea level (levels by Southern California Edison Co.).

EXTREMES.--Current year: Maximum contents, 26,000 acre-ft Oct. 23 (elevation, 1,402.65 ft); minimum, 10,400 acre-ft Oct. 1 (elevation, 1,362.61 ft).

Period of record: Maximum contents, 26,100 acre-ft June 15, 1963, Oct. 29, 1964, Oct. 27, 1967; maximum elevation, 1,402.98 ft Oct. 27, 1967; minimum contents since appreciable storage was attained, 6,280 acre-ft Mar. 3, 1956 (elevation, 1,347.98 ft).

REMARKS.--Lake is formed by a concrete dam; storage began Nov. 19, 1950. Usable capacity, 26,119 acre-ft between elevations 1,320.0 (invert of tunnel) and 1,403.0 ft (top of radial gates). Additional storage of 8,914 acre-ft is not available for release. Water is used for power development in Big Creek powerhouse No. 4. See schematic diagram of San Joaquin River basin. Figures given herein represent usable contents.

COOPERATION.--Records of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

1,320	0	1,330	2,010	1,355	8,200	1,380	16,500
1,322	384	1,335	3,120	1,360	9,650	1,385	18,400
1,324	778	1,340	4,280	1,365	11,200	1,390	20,400
1,326	1,180	1,345	5,520	1,370	12,900	1,400	24,700
1,328	1,590	1,350	6,810	1,375	14,600	1,403	26,119

## CONTENTS, IN ACRE-FEET, AT 2400', WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11,840	25,566	23,596	25,301	25,173	25,451	24,730	24,974	25,246	25,177	25,123	25,264
2	13,168	25,662	24,003	25,543	25,123	25,397	24,965	25,037	25,177	25,214	25,246	25,328
3	13,626	25,786	23,759	25,602	25,351	25,570	25,055	25,046	25,132	25,214	25,186	25,269
4	13,812	25,488	23,689	25,319	25,506	25,314	24,856	25,046	25,346	25,259	25,186	25,255
5	14,653	25,515	23,786	24,965	25,520	25,387	24,906	24,789	25,351	24,947	25,186	25,282
6	15,712	25,579	23,998	24,884	25,492	25,214	24,884	25,205	25,141	25,218	25,186	25,305
7	16,836	25,310	24,078	24,979	25,424	25,328	24,870	25,337	25,110	25,205	25,209	25,374
8	17,868	24,988	24,762	25,064	25,401	25,278	24,902	25,346	24,852	25,200	25,168	25,383
9	18,904	25,146	25,805	24,735	25,447	25,451	24,938	24,947	25,383	25,209	25,164	25,378
10	19,846	25,406	25,842	24,838	25,520	25,387	25,006	24,947	25,323	25,141	25,173	25,410
11	20,444	25,634	25,625	25,164	25,460	25,488	25,055	25,137	25,278	25,055	25,223	24,331
12	21,109	25,639	25,547	25,146	25,465	25,543	25,015	25,159	25,323	25,078	25,369	23,812
13	22,215	25,602	25,010	25,255	25,369	25,492	25,051	25,146	25,296	25,191	25,378	23,945
14	23,259	25,186	24,466	25,168	25,333	25,511	25,055	25,078	25,200	25,255	25,369	24,114
15	24,461	24,649	24,600	24,667	25,346	25,401	25,123	25,024	25,237	25,227	25,369	24,233
16	25,269	25,246	24,573	24,100	25,360	25,232	24,861	25,082	25,209	25,250	25,369	24,372
17	24,960	25,616	24,730	23,834	25,401	25,241	25,132	25,060	25,355	25,200	25,392	24,282
18	24,992	25,607	24,717	24,291	25,314	25,010	25,119	25,046	25,511	25,024	25,346	22,741
19	25,319	25,602	24,775	23,504	25,355	25,019	25,132	25,173	25,657	25,177	25,314	21,405
20	25,492	25,602	24,537	23,014	25,456	24,906	25,110	25,051	25,657	25,232	25,328	20,736
21	25,634	25,456	24,636	22,970	25,415	24,997	25,137	24,988	25,842	25,241	25,282	20,237
22	25,717	25,291	24,834	23,407	25,506	24,861	25,110	25,006	25,712	25,269	25,278	19,756
23	25,607	25,269	24,762	23,693	25,159	24,847	25,087	25,024	25,685	25,282	25,310	19,230
24	25,105	25,639	24,829	22,862	25,168	25,119	25,037	24,947	25,237	24,888	25,305	18,611
25	25,033	25,195	24,744	23,276	25,223	24,929	25,205	25,137	25,173	25,218	25,369	16,011
26	25,159	23,720	24,811	23,830	25,186	24,278	25,168	25,200	25,191	25,182	25,383	13,514
27	25,392	23,180	24,623	24,340	25,337	23,790	25,051	25,182	25,191	25,214	25,378	13,278
28	25,447	24,140	24,466	24,960	25,502	23,799	24,875	25,186	25,168	25,241	25,378	12,838
29	25,643	24,109	24,546	25,173	-----	23,869	24,965	25,200	25,182	25,146	25,351	12,631
30	25,805	23,561	24,569	25,168	-----	24,158	25,096	25,177	25,150	25,110	25,355	11,952
31	25,483	-----	24,856	25,173	-----	24,367	-----	25,255	-----	25,164	25,310	-----
MAX	25,805	25,786	25,842	25,602	25,520	25,570	25,205	25,346	25,842	25,282	25,392	25,410
MIN	11,840	23,180	23,596	22,862	25,123	23,790	24,730	24,789	24,852	24,888	25,123	11,952
(a)	1,401.62	1,397.33	1,400.24	1,400.94	1,401.66	1,399.15	1,400.77	1,401.12	1,400.89	1,400.92	1,401.24	1,367.30
(b)	+15,000	-1,920	+1,300	+317	+329	-1,140	+729	+159	-105	+14	+146	-13,400

CAL YR 1970 b -426

WTR YR 1971 b +1,500

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet, rounded to Geological Survey standards.

LOCATION.--Lat 37°08'40", long 119°27'13", in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.15, T.9 S., R.23 E., Madera County, Sierra National Forest, on right bank 1,000 ft downstream from diversion dam, 0.4 mile upstream from Willow Creek, and 4.2 miles northeast of Auberry.

PERIOD OF RECORD.--March 1951 to current year.

AVERAGE DISCHARGE.--20 years, 440 cfs (318,800 acre-ft per year).

Period of record: Maximum discharge, 73,200 cfs Dec. 23, 1955 (gage height, 54.2 ft, from floodmarks), from rating curve extended above 7,000 cfs on basis of computed flow over dam; no flow Sept. 25, 1951.

COOPERATION.--Gage-height record and 11 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	21	4.5	8.9	4.9	7.3	4.4	4.9	4.8	16	21	25
2	24	21	4.8	9.7	4.9	7.0	4.4	4.9	4.8	16	22	25
3	24	21	4.4	11	4.9	7.3	4.4	5.0	4.8	16	22	25
4	24	22	4.4	11	5.0	7.5	4.3	5.0	4.8	16	22	25
5	24	21	5.9	11	5.7	7.5	4.3	5.0	4.6	17	22	25
6	23	19	8.5	15	5.7	7.5	4.3	5.0	4.5	18	22	25
7	23	17	9.1	15	5.9	7.5	4.3	5.0	4.6	18	22	25
8	24	19	10	16	6.2	7.3	4.3	5.0	4.4	18	22	25
9	24	20	4.2	15	6.3	7.3	4.4	4.9	4.6	18	22	25
10	24	20	5.2	14	6.4	7.3	4.4	4.8	4.6	18	22	24
11	24	20	9.3	14	6.6	7.3	4.4	4.8	4.6	18	22	24
12	23	20	10	10	6.7	7.7	4.4	4.6	4.6	18	22	24
13	23	20	12	7.7	6.4	6.7	4.4	4.6	4.8	18	22	24
14	23	20	13	7.2	6.4	6.4	4.4	4.6	5.6	19	22	24
15	24	20	13	7.2	6.6	6.3	4.4	4.6	5.6	19	22	24
16	23	20	7.7	6.7	6.7	6.3	4.4	4.6	6.2	22	22	24
17	22	20	4.3	6.7	7.2	6.3	5.2	4.6	9.9	20	22	24
18	22	20	5.0	6.7	7.2	6.3	5.1	4.6	9.9	19	26	24
19	22	20	5.0	6.7	7.2	5.9	5.0	4.6	11	19	24	25
20	22	20	5.1	6.7	6.9	6.2	5.0	4.6	11	20	25	25
21	22	20	5.6	6.6	6.7	6.3	5.0	4.6	12	20	24	25
22	22	20	5.5	6.4	6.7	6.3	5.0	4.6	13	20	25	25
23	22	20	5.5	6.4	6.7	6.3	5.0	4.6	14	21	25	25
24	21	20	5.5	6.4	6.7	5.6	5.0	4.6	14	21	25	25
25	21	21	6.3	6.4	6.7	4.5	5.0	4.6	14	21	25	25
26	21	7.3	7.9	6.6	7.0	4.6	5.0	4.8	14	21	25	24
27	21	7.3	7.0	5.7	8.9	4.5	5.0	4.8	14	21	25	24
28	21	15	7.3	4.8	7.9	4.5	5.0	4.9	14	21	25	24
29	21	9.7	8.4	4.8	-----	4.4	4.9	4.8	14	21	25	24
30	21	5.2	8.7	4.9	-----	4.4	4.9	4.8	15	21	25	24
31	21	-----	8.9	4.9	-----	4.4	-----	4.8	-----	21	25	-----
TOTAL	700	546.5	222.0	270.1	181.1	194.7	140.0	147.6	257.7	592	722	736
MEAN	22.6	18.2	7.16	8.71	6.47	6.28	4.67	4.76	8.59	19.1	23.3	24.5
MAX	24	22	13	16	8.9	7.7	5.2	5.0	15	22	26	25
MIN	21	5.2	4.2	4.8	4.9	4.4	4.3	4.6	4.4	16	21	24
AC-FT	1,390	1,080	440	536	359	386	278	293	511	1,170	1,430	1,460
CAL YR 1970	TOTAL	5,185.2	MEAN	14.2	MAX	282	MIN	3.2	AC-FT	10,280		
WTR YR 1971	TOTAL	4,709.7	MEAN	12.9	MAX	26	MIN	4.2	AC-FT	9,340		



## 11242400 NORTH FORK WILLOW CREEK NEAR SUGAR PINE, CALIF.

LOCATION.--Lat 37°23'52", long 119°33'55", in NE $\frac{1}{4}$  sec.21, T.6 S., R.22 E., Madera County, on right bank at road bridge 0.6 mile downstream from Soquel campground, 3.0 miles upstream from Chilkoot Creek, and 4.7 miles southeast of Sugar Pine.

DRAINAGE AREA.--16.9 sq mi.

PERIOD OF RECORD.--August 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,200 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 23.7 cfs (17,170 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 271 cfs Mar. 26 (gage height, 4.16 ft); minimum daily, 1.2 cfs Oct. 2, 3, 10-18.

Period of record: Maximum discharge, 1,600 cfs Dec. 6, 1966 (gage height, 5.90 ft), from rating curve extended above 250 cfs on basis of a step-backwater survey; minimum daily, 1.0 cfs Sept. 18, 19, 26-28, 1968.

REMARKS.--Records good. No storage above station. Madera irrigation district diverts up to 80 cfs through Soquel ditch (see sta 11242350) to the Fresno River basin 2.2 miles upstream.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1966(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.6	7.1	3.8	7.1	4.3	27	9.4	13	3.3	5.7	4.6
2	1.2	1.6	6.8	3.7	7.1	4.2	27	9.8	13	3.1	5.4	4.6
3	1.2	1.6	6.6	3.8	6.2	4.0	27	13	12	3.1	5.4	4.6
4	1.3	2.9	6.8	3.5	6.0	4.2	31	9.8	14	3.1	5.4	4.4
5	1.3	6.7	7.1	3.7	6.2	4.4	35	8.4	19	2.9	5.4	4.4
6	1.3	4.2	6.5	3.7	5.7	4.4	33	12	25	2.9	5.1	5.1
7	1.3	4.0	6.5	3.6	5.1	4.6	27	13	34	2.9	4.8	5.4
8	1.3	2.9	8.4	3.5	5.1	5.1	22	12	40	2.9	5.1	4.6
9	1.3	2.6	10	3.4	5.1	5.1	22	9.8	36	2.8	5.7	4.4
10	1.2	2.6	8.0	3.4	5.7	5.4	26	12	29	2.8	6.2	4.2
11	1.2	2.6	6.0	3.3	6.2	6.0	29	19	27	2.8	6.2	4.0
12	1.2	3.5	5.1	4.7	7.7	6.1	34	55	29	2.8	6.2	3.8
13	1.2	2.6	4.6	13	8.8	6.2	33	46	28	2.6	6.0	3.8
14	1.2	2.4	4.4	6.7	9.1	6.4	20	40	24	2.4	6.0	3.8
15	1.2	2.3	4.2	4.5	9.8	6.5	15	50	23	2.4	5.7	3.7
16	1.2	2.3	4.2	4.0	9.4	6.8	22	51	20	2.4	5.7	3.5
17	1.2	2.3	4.1	4.0	7.7	7.4	22	43	16	2.8	5.7	3.5
18	1.2	2.3	4.1	4.4	6.8	8.0	13	37	11	2.6	5.7	3.5
19	1.3	2.2	4.1	5.1	5.8	8.4	9.4	38	7.7	2.3	5.7	3.5
20	1.8	2.2	4.1	5.7	5.8	9.1	8.8	42	6.5	2.3	5.7	3.7
21	1.8	2.2	4.1	5.1	5.7	9.8	7.4	36	5.7	2.3	5.7	3.5
22	2.2	2.2	4.0	4.6	5.7	10	6.8	24	5.1	2.3	5.7	3.5
23	2.0	2.2	4.0	4.4	5.5	9.8	6.8	24	4.4	2.2	5.4	3.5
24	2.2	2.2	4.0	4.6	5.4	10	6.8	33	4.0	2.2	4.8	3.5
25	1.8	47	4.0	4.8	5.4	16	6.8	45	3.8	2.2	4.6	3.3
26	1.7	23	4.0	4.8	4.7	127	6.5	40	3.8	2.2	5.4	4.0
27	1.7	5.4	4.0	4.8	4.5	79	6.5	31	4.4	2.2	5.4	4.4
28	1.7	6.1	3.8	4.8	4.3	40	6.5	26	3.8	2.2	5.1	4.2
29	1.6	47	3.8	5.7	-----	35	6.8	20	3.5	2.0	4.8	4.2
30	1.6	12	3.8	6.2	-----	34	7.7	19	3.3	2.0	4.6	6.6
31	1.6	-----	3.8	6.5	-----	29	-----	15	-----	3.4	4.8	-----
TOTAL	45.3	204.7	162.0	147.8	177.6	516.2	551.8	843.2	469.0	80.4	169.1	123.8
MEAN	1.46	6.82	5.23	4.77	6.34	16.7	18.4	27.2	15.6	2.59	5.45	4.13
MAX	2.2	47	10	13	9.8	127	35	55	40	3.4	6.2	6.6
MIN	1.2	1.6	3.8	3.3	4.3	4.0	6.5	8.4	3.3	2.0	4.6	3.3
AC-FT	90	406	321	293	352	1,020	1,090	1,670	930	159	335	246
CAL YR 1970	TOTAL	6,486.6	MEAN	17.8	MAX	381	MIN	1.2	AC-FT	12,870		
WTR YR 1971	TOTAL	3,490.9	MEAN	9.56	MAX	127	MIN	1.2	AC-FT	6,920		

## PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	2000	3.60	122	3-26	1400	4.16	271
11-29	1100	3.79	162				

## SAN JOAQUIN RIVER BASIN

11243400 BASS LAKE NEAR BASS LAKE, CALIF.

LOCATION.--Lat 37°17'36", long 119°31'40", in NE $\frac{1}{4}$  sec.26, T.7 S., R.22 E., Madera County, Sierra National Forest, at outlet tower at dam on North Fork Willow Creek, 2.2 miles southeast of town of Bass Lake, and 5 miles north of town of North Fork.

DRAINAGE AREA.--50.4 sq mi.

PERIOD OF RECORD.--January 1911 (corrected) to current year. Bass Lake was formerly called Crane Valley<sup>2</sup> Reservoir.

GAGE.--Water-stage recorder. Datum of gage is mean sea level (levels by Pacific Gas and Electric Co.).

EXTREMES.--Current year: Maximum contents, 45,100 acre-ft June 21 (elevation, 3,376.13 ft); minimum, 18,000 acre-ft Mar. 5 (elevation, 3,347.62 ft).  
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).

REMARKS.--Reservoir formed by earth- and rockfill dam; completed in 1901 and raised in 1910. Since 1910 usable contents 45,100 acre-ft between elevations, 3,280.22 (invert of outlet conduit No. 3) and 3,376.40 ft (top of spillway gates) above mean sea level. Additional storage of 300 acre-ft not available for release. Water is released through Crane Valley powerhouse below dam for use in three small powerhouses before being discharged into Kerckhoff Reservoir at Wishon powerhouse. Water 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 cfs from North Fork Willow Creek through Soquel ditch into Nelder Creek (Fresno River basin) during October and March to July each year. Chilkoot ditch can divert up to 7 cfs from Chilkoot Creek into North Fork Willow Creek just upstream from diversion dam from Oct. 1 to Aug. 1 each water year if available. See schematic diagram of San Joaquin River basin.

COOPERATION.--Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

MONTHEND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	CONTENTS
Sept. 30.....	24,270
Oct. 31.....	19,890
Nov. 30.....	22,320
Dec. 31.....	20,450
Jan. 31.....	18,950
Feb. 28.....	18,460
Mar. 31.....	24,730
Apr. 30.....	33,070
May 31.....	42,300
June 30.....	44,350
July 31.....	38,060
Aug. 31.....	30,610
Sept. 30.....	23,590



## 11243500 PACIFIC GAS AND ELECTRIC CO. CONDUIT NO. 3 NEAR BASS LAKE, CALIF.

LOCATION.--Lat 37°17'21", long 119°31'44", in SE $\frac{1}{4}$  sec.26, T.7 S., R.22 E., Madera County, Sierra National Forest, on left bank 1,000 ft downstream from Crane Valley powerhouse and dam and 2.5 miles 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. Altitude of gage is 3,300 ft (from topographic map).

AVERAGE DISCHARGE.--31 years, 68.3 cfs (49,480 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 167 cfs June 23, 24, 1965; no flow at times.

REMARKS.--Conduit diverts from Bass Lake in sec.26, T.7 S., R.22 E. Water passed through Crane Valley powerhouse, then to powerhouse No. 3, and is stored temporarily at Manzanita Lake on North Fork Willow Creek; flow then diverted to powerhouses No. 2 and 1A before it enters San Joaquin River at Kerckhoff Reservoir through Wishon powerhouse No. 1. See schematic diagram of San Joaquin River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	10	114	120	117	107	6.7	.01	2.6	118	118	120
2	113	.01	97	120	117	118	1.3	.01	7.5	50	118	120
3	0	.01	105	120	118	119	6.5	.01	1.2	.70	118	120
4	0	.01	116	120	119	119	1.5	.01	9.0	8.6	117	120
5	117	.01	118	119	119	52	6.7	.01	1.2	3.4	117	121
6	118	.01	120	120	119	1.5	1.6	.01	6.5	79	118	121
7	120	.01	119	120	119	3.4	6.5	.01	3.9	119	118	121
8	120	.01	119	119	119	24	1.7	.01	.80	120	118	121
9	119	.01	119	120	119	1.3	7.1	.01	6.7	120	118	122
10	70	.01	118	120	119	7.1	1.5	.01	1.1	120	118	122
11	6.4	.01	119	120	119	1.3	7.3	.01	1.1	120	118	122
12	40	.01	119	102	52	1.3	.70	.20	1.1	119	118	122
13	119	.01	119	92	2.6	2.0	.10	1.7	6.9	119	118	123
14	116	.01	119	92	4.4	7.1	.10	3.0	.80	119	118	122
15	116	.01	119	33	4.7	1.5	.10	3.0	80	119	118	122
16	111	.01	103	3.7	85	8.2	.10	8.6	119	119	118	122
17	0	.01	89	2.6	120	1.3	.10	3.6	119	119	119	122
18	0	.01	90	60	120	7.1	.10	3.6	51	119	119	122
19	43	.01	91	91	119	1.5	.10	8.8	1.0	118	119	122
20	84	.01	91	105	119	7.3	.10	3.4	8.6	118	120	122
21	114	.01	111	118	119	1.3	.10	3.4	80	136	120	122
22	115	.01	105	118	119	7.1	.10	6.7	120	148	119	121
23	106	.01	91	119	118	1.3	.10	3.7	120	149	119	120
24	0	.01	91	120	118	7.3	.10	3.7	120	143	119	120
25	5.1	.10	91	120	119	1.5	.10	3.7	53	139	120	120
26	39	.10	92	119	53	7.1	.10	3.7	1.1	139	120	120
27	118	.50	92	118	3.3	1.5	.10	6.7	7.7	139	120	120
28	115	.20	106	118	52	4.5	.10	2.7	79	128	120	120
29	113	5.8	119	118	-----	1.3	.10	2.7	119	119	120	119
30	105	72	120	118	-----	7.1	.01	7.7	119	118	120	119
31	0	-----	120	118	-----	1.5	-----	2.6	-----	118	120	-----
TOTAL	2,361.5	88.93	3,342	3,203.3	2,632.0	632.4	50.81	83.31	1,247.80	3,403.70	3,680	3,630
MEAN	76.2	2.96	108	103	94.0	20.4	1.69	2.69	41.6	110	119	121
MAX	120	72	120	120	120	119	7.3	8.8	120	149	120	123
MIN	0	.01	89	2.6	2.6	1.3	.01	.01	.80	.70	117	119
AC-FT	4,680	176	6,630	6,350	5,220	1,250	101	165	2,480	6,750	7,300	7,200

CAL Yr 1970 TOTAL 27,364.62 MEAN 75.0 MAX 148 MIN 0 AC-FT 54,280  
 WTR Yr 1971 TOTAL 24,355.75 MEAN 66.7 MAX 149 MIN 0 AC-FT 48,310

## SAN JOAQUIN RIVER BASIN

11244000 NORTH FORK WILLOW CREEK NEAR BASS LAKE, CALIF.

LOCATION.--Lat 37°17'20", long 119°31'45", in SE $\frac{1}{4}$  sec.26, T.7 S., R.22 E., Madera County, Sierra National Forest, on right bank 1,500 ft downstream from Bass Lake spillway and 2.5 miles southeast of town of Bass Lake.

DRAINAGE AREA.--50.8 sq mi.

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 since Dec. 21, 1961, ineffective since 1969. Altitude of gage is 3,200 ft (from topographic map).

AVERAGE DISCHARGE.--31 years, 14.5 cfs (10,510 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4.4 cfs May 9, 10 (gage height, 2.09 ft); minimum daily, 0.19 cfs Dec. 14, 15.

Period of record: Maximum discharge, 1,300 cfs Jan. 26, 1969 (gage height, unknown); minimum daily, 0.1 cfs Nov. 13-16, 1940.

REMARKS.--Flow regulated by Bass Lake (see sta 11243400) 1,500 ft upstream and by diversion into Pacific Gas and Electric Co. conduit No. 3 near Bass Lake (see sta 11243500). At times in October and March to July, up to 50 cfs may be diverted through Sequel ditch into Nelder Creek in Fresno River basin. Brown's Creek ditch diverted 23,620 acre-ft from South Fork Willow Creek into Bass Lake in the current year. See schematic diagram of San Joaquin River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.45	1.6	.45	.84	.32	.32	.84	2.7	1.6	.71	.35
2	.29	1.0	2.9	.45	.59	.30	.30	.84	2.7	1.5	.71	.33
3	.29	1.1	1.7	.52	.45	.27	.29	1.1	2.7	1.7	.69	.32
4	.32	.62	1.3	.56	.35	.27	.29	.91	2.7	1.5	.66	.32
5	.32	.73	.75	.56	.30	.27	.28	1.1	2.7	1.5	.66	.30
6	.35	.67	.45	.56	.30	.24	.28	1.7	2.7	1.4	.66	.30
7	.35	.67	.32	.56	.30	.24	.29	2.5	2.7	1.5	.63	.29
8	.38	.90	.32	.63	.27	.24	.29	3.5	2.7	1.4	.60	.28
9	.35	1.2	.42	.71	.27	.24	.28	3.9	2.7	1.4	.60	.28
10	.35	1.2	.32	.75	.27	.24	.28	3.9	2.7	1.4	.58	.28
11	.35	1.2	.27	.75	.27	.24	.26	3.5	2.7	1.3	.58	.28
12	.38	1.3	.24	1.5	.27	.24	.26	3.1	2.7	1.3	.58	.26
13	.42	1.3	.22	1.5	.27	2.3	.26	2.7	2.7	1.2	.55	.26
14	.42	1.7	.19	1.6	.24	1.1	.26	3.1	2.7	1.2	.53	.26
15	.42	1.8	.19	1.8	.24	.66	.29	3.1	2.6	1.2	.53	.26
16	.42	1.7	.52	1.8	.24	.42	.30	2.7	2.5	1.1	.51	.26
17	.42	1.8	1.1	2.0	.32	.35	.53	2.7	2.2	1.1	.49	.26
18	.45	1.8	1.2	2.2	.32	.30	.46	2.7	1.9	1.1	.49	.26
19	.45	1.9	.93	2.2	.38	.30	.44	2.7	1.9	1.1	.46	.28
20	.51	1.8	.89	2.2	.32	.28	.46	2.7	1.9	1.1	.46	.28
21	.48	1.2	1.2	2.1	.30	.26	.46	3.1	1.9	1.0	.44	.28
22	.51	1.2	1.6	2.1	.27	.26	.46	2.7	1.8	.98	.44	.28
23	.48	1.3	1.2	2.1	.24	.26	.46	2.7	1.8	.95	.42	.28
24	.45	1.5	.84	2.2	.24	.26	.46	2.7	1.7	.91	.42	.28
25	.45	1.9	.59	2.0	.24	.46	.49	2.7	1.6	.87	.40	.29
26	.45	1.3	.48	2.0	.24	1.3	.49	2.7	1.6	.87	.40	.29
27	.45	.48	.52	1.9	.24	.66	.49	2.7	1.6	.81	.39	.29
28	.45	.35	.56	1.8	.32	.42	.51	3.1	1.7	.78	.39	.30
29	.45	1.5	.52	1.6	-----	.39	.63	3.1	1.6	.74	.37	.30
30	.45	1.5	.52	1.3	-----	.35	.84	3.1	1.6	.74	.37	.37
31	.45	-----	.48	1.1	-----	.33	-----	3.1	-----	.74	.35	-----
TOTAL	12.60	37.07	24.34	43.50	8.90	13.77	11.71	80.99	67.7	35.99	16.07	8.67
MEAN	.41	1.24	.79	1.40	.32	.44	.39	2.61	2.26	1.16	.52	.29
MAX	.51	1.9	2.9	2.2	.84	2.3	.84	3.9	2.7	1.7	.71	.37
MIN	.29	.35	.19	.45	.24	.24	.26	.84	1.6	.74	.35	.26
AC-FT	25	74	48	86	18	27	23	161	134	71	32	17

CAL YR 1970 TOTAL 408.55 MEAN 1.12 MAX 4.0 MIN .19 AC-FT 810  
WTR YR 1971 TOTAL 361.31 MEAN .99 MAX 3.9 MIN .19 AC-FT 717

## 11246500 WILLOW CREEK AT MOUTH, NEAR AUBERRY, CALIF.

LOCATION.--Lat 37°09'03", long 119°27'34", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.16, T.9 S., R.23 E., Madera County, Sierra National Forest, on left bank 40 ft upstream from bridge, 0.4 mile upstream from mouth, 1.3 miles downstream from Whiskey Creek, and 4.3 miles northeast of Auberry.

DRAINAGE AREA.--130 sq mi.

PERIOD OF RECORD.--January 1952 to current year.

GAGE.--Water-stage recorder. Concrete control since Oct. 22, 1964. Datum of gage is 1,174.69 ft above mean sea level (levels by Southern California Edison Co.).

AVERAGE DISCHARGE.--19 years, 59.3 cfs (42,960 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,150 cfs Mar. 26 (gage height, 9.87 ft); minimum daily, 0.10 cfs Oct. 6.

Period of record: Maximum discharge, 15,700 cfs Dec. 23, 1955 (gage height, 28.5 ft, from floodmarks), from rating curve extended above 4,700 cfs; no flow at times in 1955, 1959-62, 1964-66, 1968.

REMARKS.--Records good. Flow regulated by Bass Lake 10 miles upstream (see sta 11243400) and diversion into Pacific Gas and Electric Co. conduit No. 1. See schematic diagram of San Joaquin River basin. Record of water temperatures for the current year is published in Part 2 of this report.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WRD Calif. 1963: 1956-58(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	1.8	24	18	23	19	59	39	27	8.5	2.3	1.3
2	.14	1.7	100	18	22	17	56	40	26	7.9	2.1	1.3
3	.14	1.7	40	14	21	18	57	52	25	7.4	2.2	1.3
4	.14	1.7	19	15	20	18	59	51	24	7.4	2.2	1.4
5	.12	2.4	17	15	20	17	58	45	22	7.3	2.2	1.4
6	.10	7.6	15	14	19	16	58	45	21	6.7	1.7	1.4
7	.12	7.0	13	13	19	16	52	50	20	6.4	1.7	1.7
8	.16	4.2	15	13	19	17	46	54	19	6.3	1.5	2.1
9	.34	3.4	29	13	19	18	45	44	18	6.2	1.7	1.7
10	.63	2.9	18	13	19	18	49	44	18	5.9	2.0	1.4
11	.63	2.7	15	14	24	19	51	46	18	6.0	2.0	1.4
12	.82	3.9	13	32	31	24	52	58	17	5.9	1.8	1.3
13	.54	4.3	12	53	30	53	51	50	16	5.5	1.7	1.2
14	.63	3.1	12	42	28	32	45	45	15	5.1	1.7	1.1
15	.82	2.7	11	36	30	28	42	43	16	4.9	1.7	.97
16	1.0	2.5	27	32	32	28	47	40	14	4.5	1.7	.97
17	1.0	2.4	73	42	29	28	55	36	13	4.7	1.5	.82
18	.82	2.4	34	45	26	29	48	33	12	5.5	1.3	.75
19	.90	2.4	32	46	31	31	48	31	11	4.7	1.2	.68
20	.97	2.4	28	44	25	33	59	30	11	4.2	1.0	.68
21	1.3	2.4	51	37	22	36	40	29	11	4.2	1.0	.82
22	1.7	2.4	40	32	21	39	36	28	11	4.0	1.6	.82
23	1.9	2.4	26	28	20	42	35	26	10	3.8	1.7	.82
24	2.3	2.4	21	26	19	38	35	25	9.8	3.5	1.9	.82
25	2.3	8.0	19	29	19	47	33	23	9.5	3.4	1.8	.90
26	2.3	135	19	24	17	328	32	22	9.3	3.3	1.5	1.3
27	2.3	17	23	24	17	405	31	30	10	3.2	1.3	1.6
28	2.6	9.8	23	24	18	97	33	38	10	2.9	1.3	1.8
29	2.4	129	19	24	-----	84	34	35	9.2	2.8	1.2	1.9
30	2.3	65	19	24	-----	77	38	32	8.8	2.7	1.3	2.2
31	2.1	-----	18	24	-----	66	-----	29	-----	2.6	1.3	-----
TOTAL	33.70	436.6	825	828	640	1,738	1,384	1,193	461.6	157.4	51.1	37.85
MEAN	1.09	14.6	26.6	26.7	22.9	56.1	46.1	38.5	15.4	5.08	1.65	1.26
MAX	2.6	135	100	53	32	405	59	58	27	8.5	2.3	2.2
MIN	.10	1.7	11	13	17	16	31	22	8.8	2.6	1.0	.68
AC-FT	67	866	1,640	1,640	1,270	3,450	2,750	2,370	916	312	101	75
CAL YR 1970	TOTAL	11,718.30	MEAN	32.1	MAX	2,040	MIN	.06	AC-FT	23,240		
WTR YR 1971	TOTAL	7,786.25	MEAN	21.3	MAX	405	MIN	.10	AC-FT	15,440		



## 11247200 BIG SANDY CREEK TRIBUTARY, NEAR TOLLHOUSE, CALIF.

LOCATION.--Lat 37°01'53", long 119°26'50", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.27, T.10 S., R.23 E., Fresno County, at culvert on Lodge Road, 2.8 miles west of Tollhouse.

DRAINAGE AREA.--0.46 sq mi.

PERIOD OF RECORD.--Water years 1960-68 (annual maximum), October 1968 to September 1971 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 1,900 ft (from topographic map). Prior to September 23, 1968, crest-stage gage at same site and datum.

EXTREMES.--Current year: Maximum discharge, 9.6 cfs Dec. 17 (gage height, 3.94 ft); no flow for several months.

Period of record: Maximum discharge, 48 cfs Jan. 25, 1969 (gage height, 7.40 ft), by computation of peak flow through culvert and road overflow; no flow for several months in each year.

REMARKS.--Records good. No regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.02	.12	.08	.05	.04	.01	.01			
2		0	.24	.16	.08	.04	.04	.01	.01			
3		0	.02	.12	.08	.04	.04	.22	.01			
4		0	0	.10	.08	.04	.04	.09	0			
5		0	0	.09	.08	.04	.03	.04	0			
6		0	0	.08	.08	.04	.03	.05	0			
7		0	0	.08	.08	.04	.03	.20	0			
8		0	.14	.08	.08	.04	.03	.12	0			
9		0	.28	.08	.08	.03	.02	.05	0			
10		0	.08	.08	.08	.03	.02	.03	0			
11		0	.04	.08	.08	.03	.02	.02	0			
12		0	.02	1.5	.08	.31	.02	.02	0			
13		0	0	.82	.08	.47	.02	.01	0			
14		0	0	.51	.08	.17	.02	.01	0			
15		0	0	.32	.08	.12	.02	.01	0			
16		0	1.1	.28	.08	.09	.02	.01	0			
17		0	2.9	.28	.08	.09	.34	.01	0			
18		0	.58	.20	.08	.07	.06	.01	0			
19		0	.58	.20	.08	.06	.04	.01	0			
20		0	.28	.16	.08	.05	.04	.01	0			
21		0	2.6	.16	.04	.05	.04	.01	0			
22		0	1.6	.16	.04	.05	.03	.01	0			
23		0	.73	.16	.04	.05	.03	.01	0			
24		0	.44	.12	.04	.05	.03	0	0			
25		0	.28	.12	.04	.06	.03	0	0			
26		.13	.24	.12	.04	.07	.03	.01	0			
27		0	.40	.12	.04	.05	.02	.05	0			
28		0	.24	.12	.05	.05	.02	.07	0			
29		.90	.16	.08	-----	.05	.02	.02	0			
30		.20	.12	.08	-----	.05	.01	.01	0			
31		-----	.12	.08	-----	.05	-----	.01	-----			-----
TOTAL	0	1.23	13.21	6.66	1.93	2.43	1.18	1.14	.03	0	0	0
MEAN	0	.041	.43	.21	.069	.078	.039	.037	.001	0	0	0
MAX	0	.90	2.9	1.5	.08	.47	.34	.22	.01	0	0	0
MIN	0	0	0	.08	.04	.03	.01	0	0	0	0	0
AC-FT	0	2.4	26	13	3.8	4.8	2.3	2.3	.06	0	0	0
(a)	0	6.9	7.4	2.5	.6	1.7	1.0	3.1	0	0	0	.3
CAL YR 1970	TOTAL	42.22	MEAN .12	MAX 7.2	MIN 0	AC-FT 84						
WTR YR 1971	TOTAL	27.81	MEAN .076	MAX 2.9	MIN 0	AC-FT 55						

a Precipitation, in inches.

## SAN JOAQUIN RIVER BASIN

## 11249500 MADERA CANAL AT FRIANT, CALIF.

LOCATION.--Lat 37°00'10", long 119°42'21", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.5, T.11 S., R.21 E., Madera County, at Friant Dam 0.9 mile northeast of Friant.

PERIOD OF RECORD.--October 1943 to current year. October 1954 to September 1966 published as Friant-Madera Canal at Friant.

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 miles downstream.

AVERAGE DISCHARGE.--28 years, 282 cfs (204,300 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 1,322 cfs June 27, 1964; no flow many days in each year.

REMARKS.--Canal diverts from Millerton Lake (see sta 11250100) at right end of Friant Dam for irrigation between San Joaquin and Fresno Rivers.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey, rounded to Geological Survey standards.

REVISIONS (WATER YEARS).--WSP 1151: 1944-48.

## DISCHARGE, IN CUBIC FEET, PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	165			0	626	262	121	160	1,030	1,100	792
2	0	137			0	626	312	100	199	1,050	1,110	782
3	275	0			0	625	339	116	324	1,040	1,140	775
4	356	0			0	625	340	162	435	1,060	1,180	451
5	307	0			0	628	340	190	465	1,060	1,210	274
6	291	0			0	567	361	166	533	1,090	1,200	272
7	290	0			0	531	374	150	621	1,210	1,190	258
8	288	0			0	548	374	120	696	1,250	1,170	250
9	307	0			0	577	375	99	767	1,240	1,160	248
10	316	0			0	588	215	96	793	1,220	1,180	248
11	301	0			0	586	106	116	772	1,170	1,190	247
12	293	0			130	598	111	128	761	1,120	1,170	247
13	280	0			201	524	117	117	799	1,100	1,150	248
14	273	0			201	445	114	88	842	1,120	1,140	248
15	272	0			201	427	115	152	902	1,120	1,140	248
16	272	0			201	426	102	194	927	1,120	1,170	247
17	271	0			201	425	66	264	945	1,110	1,160	247
18	270	0			200	424	50	318	970	1,150	1,130	247
19	263	0			187	423	50	335	1,020	1,160	1,110	247
20	259	0			197	422	50	341	1,040	1,200	1,050	247
21	260	0			244	422	50	342	1,020	1,210	1,000	216
22	238	0			306	450	51	343	1,020	1,180	981	199
23	199	0			363	501	51	343	1,020	1,150	956	200
24	185	0			381	521	51	353	1,010	1,140	934	200
25	184	0			427	520	51	387	1,010	1,160	915	198
26	211	0			473	503	60	403	1,010	1,180	895	198
27	239	0			569	442	87	403	1,000	1,170	928	199
28	247	0			627	385	132	233	1,000	1,180	933	200
29	228	0			-----	370	159	159	1,000	1,190	912	201
30	183	0			-----	300	145	159	998	1,160	890	201
31	165	-----			-----	262	-----	160	-----	1,130	827	-----
TOTAL	7,523	302	0	0	5,109	15,317	5,010	6,658	24,059	35,470	33,221	8,835
MEAN	243	10.1	0	0	182	494	167	215	802	1,144	1,072	295
MAX	356	165	0	0	627	628	375	403	1,040	1,250	1,210	792
MIN	0	0	0	0	0	262	50	88	160	1,030	827	198
AC-FT	14,920	599	0	0	10,130	30,380	9,940	13,210	47,720	70,350	65,890	17,520
CAL YR 1970	TOTAL	143,474.00	MEAN	393	MAX	1,080	MIN	0	AC-FT	284,600		
WTR YR 1971	TOTAL	141,504.00	MEAN	388	MAX	1,250	MIN	0	AC-FT	280,700		

## 11250000 FRIANT-KERN CANAL AT FRIANT, CALIF.

LOCATION.--Lat 36°59'53", long 119°42'11", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.5, T.11 S., R.21 E., Fresno County, at Friant Dam 0.9 mile northeast of Friant.

PERIOD OF RECORD.--March 1949 to current year.

GAGE.--Discharge computed on basis of valve openings in dam 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 mile downstream.

AVERAGE DISCHARGE.--22 years, 1,309 cfs (948,400 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 4,564 cfs Apr. 17, 1962, Aug. 4, 1971; no flow for several months in most years.

REMARKS.--Canal diverts from Millerton Lake (see sta 11250100) at left end of Friant Dam for irrigation in upper San Joaquin Valley.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey, rounded to Geological Survey standards.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,050	419		0	1,700	1,320	1,850	1,250	327	3,230	4,060	2,280
2	816	439		0	1,630	1,440	1,740	1,260	423	3,440	4,210	2,080
3	668	473		0	1,740	1,450	1,690	1,110	467	3,250	4,390	1,870
4	691	510		0	1,920	1,400	1,690	817	499	3,310	4,560	1,720
5	717	395		0	2,030	1,370	1,590	754	538	3,450	4,560	1,650
6	791	260		0	2,100	1,340	1,450	639	765	3,600	4,350	1,660
7	787	229		0	2,170	1,450	1,460	481	1,460	3,760	4,060	1,820
8	716	241		0	2,150	1,570	1,400	442	1,750	3,760	4,070	1,820
9	614	262		0	2,140	1,750	1,250	601	2,140	3,530	4,140	1,840
10	540	328		0	2,230	1,820	1,130	692	2,280	3,340	4,140	1,800
11	553	375		0	2,280	1,780	1,310	734	2,270	3,440	4,160	1,630
12	593	324		0	2,190	1,820	1,600	828	2,250	3,490	3,840	1,670
13	631	285		0	2,100	1,810	1,660	820	2,470	3,540	3,420	1,710
14	629	287		0	2,220	1,840	1,680	800	2,640	3,600	3,230	1,810
15	611	287		0	2,290	1,870	1,640	803	2,710	3,550	3,400	1,960
16	517	313		0	2,360	1,820	1,350	832	2,750	3,370	3,580	2,030
17	423	355		0	2,520	1,820	1,170	826	2,440	3,230	3,620	1,790
18	499	360		0	2,680	1,830	1,020	837	2,180	3,300	3,650	1,640
19	539	273		0	2,760	1,800	856	923	2,160	3,910	3,630	1,730
20	537	184		0	2,880	1,770	628	894	2,330	4,200	3,380	1,770
21	525	162		0	2,930	1,840	605	850	2,480	4,380	3,160	1,770
22	518	173		0	3,040	1,950	574	908	2,710	4,480	3,110	1,720
23	484	231		0	2,940	1,980	493	1,040	2,890	4,390	3,160	1,630
24	424	243		0	2,720	2,010	484	1,340	2,870	4,160	3,420	1,360
25	428	125		0	2,480	1,960	642	1,480	2,690	4,210	3,580	1,240
26	449	19		0	2,290	1,820	918	1,640	2,580	4,300	3,440	1,240
27	453	0		0	1,610	1,720	1,050	1,030	2,620	4,420	2,930	1,070
28	437	0		837	1,250	1,780	1,140	481	2,700	4,480	2,150	1,060
29	426	0		1,510	-----	1,860	1,220	351	2,820	4,480	2,000	1,050
30	413	0		1,760	-----	1,910	1,250	352	2,880	4,290	2,240	946
31	383	-----		2,010	-----	1,910	-----	325	-----	3,950	2,360	-----
TOTAL	17,862	7,552	0	6,117	63,350	53,810	36,540	26,140	62,089	117,840	110,000	49,366
MEAN	576	252	0	197	2,263	1,736	1,218	843	2,070	3,801	3,548	1,646
MAX	1,050	510	0	2,010	3,040	2,010	1,850	1,640	2,890	4,480	4,560	2,280
MIN	383	0	0	0	1,250	1,320	484	325	327	3,230	2,000	946
AC-FT	35,430	14,980	0	12,130	125,700	106,700	72,480	51,850	123,200	233,700	218,200	97,920
CAL YR 1970	TOTAL	562,816	MEAN	1,542	MAX	3,960	MIN	0	AC-FT	1,116,000		
WTR YR 1971	TOTAL	550,666	MEAN	1,509	MAX	4,560	MIN	0	AC-FT	1,092,000		

## SAN JOAQUIN RIVER BASIN

## 11250100 MILLERTON LAKE AT FRIANT, CALIF.

LOCATION.--Lat 37°00'00", long 119°42'13", in SW $\frac{1}{4}$  sec.5, T.11 S., R.21 E., Fresno County, near center of Friant Dam on San Joaquin River, just upstream from Cottonwood Creek, and 0.9 mile northeast of Friant.

DRAINAGE AREA.--1,638 sq. mi.

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 at mean sea level (levels by Bureau of Reclamation). Prior to May 29, 1944, nonrecording gage on left bank at same datum.

EXTREMES.--Current year: Maximum contents, 507,300 acre-ft June 6 (elevation, 575.28 ft); minimum, 146,000 acre-ft Sept. 18 (elevation, 473.37 ft).

Period of record: Maximum contents, 528,200 acre-ft June 20, 1963 (elevation, 579.56 ft); minimum since lake first filled, 133,600 acre-ft Apr. 11, 1969 (elevation, 467.81 ft).

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) above mean sea level. Not available for release, 17,400 acre-ft. Millerton Lake is one of the storage units in Central Valley project. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records furnished by Bureau of Reclamation.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

400	36,400	500	215,600
420	57,000	520	279,400
440	83,300	540	353,000
460	117,500	560	436,500
480	161,700	580	530,400

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	169,100	158,900	201,700	310,100	406,400	375,400	351,200	412,100	498,400	466,700	303,800	154,700
2	167,700	159,000	205,300	313,600	407,900	374,800	351,900	414,200	501,200	462,600	297,500	153,000
3	165,900	160,300	208,000	316,900	409,000	374,200	352,600	416,600	503,100	458,700	291,100	151,900
4	163,900	161,500	210,600	320,900	408,800	373,500	353,900	419,600	505,000	454,300	284,400	151,300
5	163,200	162,900	212,900	325,200	408,200	372,700	355,200	422,800	506,600	449,000	277,800	150,300
6	162,600	164,400	215,100	329,300	407,500	372,100	356,600	425,600	507,300	443,200	271,400	149,100
7	161,900	164,700	217,400	333,500	406,700	371,400	358,000	429,300	506,500	438,200	265,500	148,000
8	161,200	165,300	219,900	337,300	405,700	370,400	359,400	433,300	505,600	432,900	259,700	147,100
9	160,700	166,400	222,300	340,900	404,800	369,000	361,000	436,800	503,300	428,300	253,900	146,600
10	159,400	167,700	224,700	343,000	403,700	367,000	363,200	440,000	502,000	424,000	247,900	146,200
11	157,900	168,400	227,300	346,000	402,600	365,200	365,200	442,900	500,700	418,900	241,900	146,200
12	157,400	170,500	229,600	349,900	401,800	363,900	366,700	445,800	499,300	413,600	236,200	146,300
13	157,300	171,500	231,900	354,300	402,000	362,700	368,100	449,000	497,700	409,100	231,200	146,400
14	156,900	172,000	235,100	358,300	402,200	361,400	369,400	452,200	495,600	404,500	226,500	146,500
15	156,600	171,500	238,900	362,200	402,100	359,400	370,600	455,200	493,600	400,200	221,500	146,400
16	156,300	172,800	243,500	365,900	402,000	357,900	372,500	458,000	492,300	396,100	216,200	146,000
17	156,100	173,700	248,900	367,600	401,800	356,300	375,100	460,700	492,000	392,300	210,800	146,100
18	154,900	174,400	253,200	370,900	401,200	354,500	378,000	463,400	492,000	388,000	205,400	146,300
19	154,100	176,100	257,300	374,400	398,900	352,800	381,100	465,400	491,700	382,600	200,300	146,300
20	154,500	177,600	260,700	377,700	396,500	351,800	384,800	467,900	491,100	376,700	195,700	146,400
21	155,100	177,900	265,000	381,100	393,700	350,600	388,300	470,400	490,300	370,600	191,700	146,400
22	155,800	178,200	268,900	384,500	390,400	349,000	391,900	472,700	488,900	364,400	187,800	146,500
23	157,000	178,900	272,500	387,800	387,200	347,600	395,200	474,600	487,500	358,500	183,800	146,900
24	156,600	180,200	277,300	391,200	384,700	346,700	399,000	476,000	486,000	352,500	179,600	147,500
25	155,600	181,700	281,500	394,500	382,400	345,200	402,300	476,900	483,700	346,500	175,100	148,500
26	156,300	185,100	285,400	397,800	379,900	346,000	405,100	477,500	480,900	340,400	170,700	149,500
27	156,900	188,400	289,200	401,100	377,400	348,600	406,000	479,600	478,200	333,900	167,400	150,300
28	157,600	191,700	293,600	402,700	375,900	349,100	407,400	483,100	475,600	327,700	164,800	150,700
29	158,500	194,900	298,100	403,000	-----	349,700	408,300	487,000	473,100	321,300	162,100	151,200
30	159,100	198,700	302,600	404,300	-----	350,100	409,900	490,800	470,300	315,100	159,000	151,400
31	159,200	-----	307,000	405,000	-----	350,600	-----	494,700	-----	309,600	156,600	-----
MAX	169,100	198,700	307,000	405,000	409,000	375,400	409,900	494,700	507,300	466,700	303,800	154,700
MIN	154,100	158,900	201,700	310,100	375,900	345,200	351,200	412,100	470,300	309,600	156,600	146,000
(a)	478.97	494.09	527.83	552.75	545.75	539.40	553.90	572.66	567.46	528.54	477.88	475.69
(b)	-10,500	+39,500	+108,300	+98,000	-29,100	-25,300	+59,300	+84,800	-24,400	-160,700	-153,000	-5,200
(c)	890	510	330	340	460	950	1,410	2,050	3,430	3,750	2,520	1,380

CAL YR 1970 b -20,800  
WTR YR 1971 b -18,300

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



## 11251000 SAN JOAQUIN RIVER BELOW FRIANT, CALIF.

LOCATION.--Lat 36°59'04", long 119°43'24", in SW $\frac{1}{4}$  sec.7, T.11 S., R.21 E., Fresno County, on left bank 0.5 mile west of Friant, 1.5 miles downstream from Cottonwood Creek, 2 miles downstream from Friant Dam, and at mile 268.1.

DRAINAGE AREA.--1,676 sq mi.

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.

GAGE.--Water-stage recorder. Datum of gage is 294.00 ft above mean sea level (levels by Bureau of Reclamation). Oct. 18, 1907, to Nov. 9, 1913, nonrecording gage at site 4.5 miles upstream at different datum. Nov. 10, 1913, to Sept. 30, 1938, water-stage recorder at site 2.5 miles upstream at different datum.

AVERAGE DISCHARGE (adjusted for diversions to Madera and Friant-Kern Canals, and for change in contents and evaporation from Millerton Lake).--64 years, 2,358 cfs (1,708,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 270 cfs June 22 (gage height, 3.07 ft); minimum daily, 24 cfs May 6.

Period of record: Maximum discharge, 77,200 cfs Dec. 11, 1937 (gage height, 23.8 ft, site and datum then in use); minimum, 38 cfs (regulated) July 29, 1940. Maximum discharge since construction of Friant Dam in 1941, 12,400 cfs June 6, 1969; minimum, 5.5 cfs Oct. 20, 1941.

REMARKS.--Records good. Flow regulated by Millerton Lake beginning in 1941 (see sta 11250100) and by other reservoirs described in REMARKS for San Joaquin River below Kerckhoff powerhouse. Diversion for irrigation through Madera and Friant-Kern Canals (see sta 11249500, 11250000) began in 1944 and 1949 respectively.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	32	32	33	62	42	39	54	47	102	136	85
2	57	33	30	38	66	41	41	54	49	102	129	95
3	58	32	32	38	62	41	34	62	49	102	127	88
4	60	32	30	34	60	41	38	52	50	102	125	80
5	62	32	30	33	58	41	36	44	50	102	125	80
6	62	33	30	34	57	41	38	24	52	100	123	80
7	65	33	28	34	57	39	38	27	47	100	123	80
8	65	32	32	34	57	41	39	42	46	102	121	78
9	65	32	32	34	57	41	38	49	44	104	119	80
10	65	32	30	36	55	42	46	44	44	102	117	80
11	66	33	28	34	52	42	55	41	47	102	123	80
12	66	33	28	36	47	44	55	46	46	100	123	80
13	66	41	28	42	41	60	55	42	44	100	123	87
14	66	62	27	46	41	50	55	41	54	99	123	95
15	68	62	27	36	41	47	55	39	83	97	121	99
16	68	62	30	34	39	47	55	41	104	104	121	110
17	68	65	33	34	41	46	57	41	117	117	117	121
18	66	75	30	34	41	47	58	42	165	117	113	121
19	68	76	28	34	39	47	50	44	185	119	104	121
20	68	80	28	34	39	47	28	42	200	125	102	121
21	70	87	44	34	38	46	28	42	212	134	92	121
22	63	88	49	34	38	44	28	44	212	132	82	117
23	57	88	38	34	39	47	28	42	195	136	80	113
24	57	90	36	34	39	47	30	42	192	144	78	113
25	57	85	33	34	41	49	30	42	192	147	78	113
26	55	71	33	34	39	48	34	42	190	151	78	113
27	58	58	34	36	39	46	42	47	168	151	78	108
28	52	52	42	41	42	42	47	47	147	147	80	102
29	32	36	39	47	-----	38	55	47	117	138	78	97
30	32	32	33	50	-----	35	65	47	102	138	80	92
31	32	-----	33	57	-----	36	-----	47	-----	136	80	-----
TOTAL	1,849	1,599	1,007	1,147	1,327	1,365	1,297	1,360	3,250	3,652	3,299	2,950
MEAN	59.6	53.3	32.5	37.0	47.4	44.0	43.2	43.9	108	118	106	98.3
MAX	70	90	49	57	66	60	65	62	212	151	136	121
MIN	32	32	27	33	38	35	28	24	44	97	78	78
AC-FT	3,670	3,170	2,000	2,280	2,630	2,710	2,570	2,700	6,450	7,240	6,540	5,850
MEAN a	1,065	987	1,799	1,834	1,977	1,877	2,447	2,514	2,629	2,510	2,280	1,974
AC-FT a	65,460	58,760	110,630	112,740	109,820	115,440	145,620	154,610	156,430	154,320	140,180	117,460
CAL YR 1970	TOTAL 44,061	MEAN 121	MAX 1,950	MIN 27	AC-FT 87,390	MEAN a 2,081	AC-FT a 1,508,000					
WTR YR 1971	TOTAL 24,102	MEAN 66.0	MAX 212	MIN 24	AC-FT 47,810	MEAN a 1,990	AC-FT a 1,441,000					

a Adjusted for change in contents and evaporation in Millerton Lake and for diversions to Madera and Friant-Kern Canals.

## SAN JOAQUIN RIVER BASIN

## 11253310 CANTUA CREEK NEAR CANTUA CREEK, CALIF.

LOCATION.--Lat 36°24'08", long 120°25'57", in SE $\frac{1}{4}$  sec.34, T.17 S., R.14 E., Fresno County, on left bank 9.2 miles southwest of town of Cantua Creek and 19 miles north of Coalinga.

DRAINAGE AREA.--46.4 sq mi.

PERIOD OF RECORD.--Water years 1958-66 (annual maximum), October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 680 ft (from topographic map). Prior to Sept. 16, 1966, crest-stage gage at datum 2.00 ft lower.

AVERAGE DISCHARGE.--5 years, 3.84 cfs (2,780 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 170 cfs May 11 (gage height, 3.20 ft, from floodmark); no flow for several months.

Period of record: Maximum discharge, 1,920 cfs Feb. 24, 1969 (gage height, 6.60 ft), from rating curve extended above 170 cfs on basis of slope-area measurements at gage heights 4.57, 6.04, and 6.60 ft; no flow for several months in each year.

REMARKS.--Records good. Some small dams for stock use above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	5.5	1.9	1.2	.86	.56	.50	.62			
2		0	24	1.9	1.1	.80	.50	.56	.62			
3		0	5.0	1.3	1.1	.80	.46	.56	.62			
4		0	1.7	.98	1.0	.80	.23	.74	.50			
5		0	.92	.92	1.0	.74	.13	.80	.42			
6		0	.56	.92	1.0	.74	.13	.74	.34			
7		0	.34	.92	1.0	.74	.15	.86	.30			
8		0	.20	.86	1.2	.68	.17	1.0	.26			
9		0	.15	.86	1.2	.68	.20	.98	.30			
10		0	.15	.86	1.1	.68	.23	.80	.34			
11		0	.11	.92	1.1	.68	.30	12	.26			
12		0	.11	3.3	1.0	.68	.30	21	.23			
13		0	.09	2.6	.98	1.8	.34	4.3	.17			
14		0	.13	1.9	.98	1.2	1.7	2.8	.14			
15		0	.15	1.5	.98	.98	1.4	2.3	.11			
16		0	.11	1.5	.98	.92	.92	1.7	.07			
17		0	.13	5.6	1.3	.86	.86	1.4	.05			
18		0	.68	6.6	1.2	.80	.98	1.2	.04			
19		0	8.9	3.3	1.1	.80	.86	1.1	.04			
20		0	2.1	2.3	1.0	.74	.86	1.0	.04			
21		0	6.3	1.8	1.0	.68	.98	.92	.03			
22		0	1.9	1.8	1.0	.62	.86	.92	0			
23		0	1.4	1.7	.98	.62	.80	.80	0			
24		0	1.1	1.5	.92	.68	.74	.68	0			
25		0	1.0	1.4	.86	.68	.74	.62	0			
26		0	1.0	1.5	.86	.68	.74	.56	0			
27		0	4.6	1.3	.86	.80	.68	.80	0			
28		0	3.8	1.3	.98	.74	.62	1.1	0			
29		2.7	2.3	1.3	-----	.68	.62	.98	0			
30		6.4	2.1	1.3	-----	.62	.56	.80	0			
31		-----	1.9	1.2	-----	.50	-----	.62	-----			-----
TOTAL	0	9.1	78.43	57.04	28.98	24.28	18.62	65.14	5.50	0	0	0
MEAN	0	.30	2.53	1.84	1.04	.78	.62	2.10	.18	0	0	0
MAX	0	6.4	24	6.6	1.3	1.8	1.7	21	.62	0	0	0
MIN	0	0	.09	.86	.86	.50	.13	.50	0	0	0	0
AC-FT	0	18	156	113	57	48	37	129	11	0	0	0

CAL YR 1970 TOTAL 455.63 MEAN 1.25 MAX 64 MIN 0 AC-FT 904  
WTR YR 1971 TOTAL 287.09 MEAN .79 MAX 24 MIN 0 AC-FT 569

PEAK DISCHARGE (BASE, 50 CFS).--Dec. 2 (0930) 74 cfs (2.79 ft); May 11 (2300) 170 cfs (3.20 ft).

NOTE.--Fragmentary gage-height record May 11, 12.

## 11257100 MIAMI CREEK NEAR OAKHURST, CALIF.

LOCATION.--Lat 37°23'37", long 119°39'12", in NE¼SE¼ sec.22, T.6 S., R.21 E., Madera County, Sierra National Forest, on left bank 200 ft downstream from county road bridge and 4.6 miles north of Oakhurst.

DRAINAGE AREA.--10.6 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 3,500 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 8.60 cfs (6,230 acre-ft per year); median of yearly mean discharges, 6.5 cfs (4,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 79 cfs Mar. 26 (gage height, 4.24 ft); minimum daily, 0.70 cfs Oct. 2, 3, Sept. 13-18, 21-24.

Period of record: Maximum discharge, 804 cfs Feb. 1, 1963 (gage height, 9.08 ft); no flow many days in most years.

REMARKS.--No known diversions above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1963(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	1.4	12	6.5	10	8.4	15	8.1	6.2	3.1	1.3	.90
2	.70	1.3	29	6.5	9.6	8.5	14	8.0	6.0	3.0	1.3	.90
3	.70	1.3	9.6	5.7	8.9	7.8	14	9.7	5.8	2.9	1.3	1.0
4	.80	1.6	7.9	5.7	8.4	7.9	14	10	5.6	2.8	1.1	1.0
5	.80	7.4	7.3	5.5	8.2	7.6	14	9.0	5.4	2.8	1.1	.90
6	.80	5.1	6.7	5.0	8.0	7.5	13	9.3	5.2	2.7	1.1	1.1
7	.90	5.3	7.1	5.3	7.9	7.4	13	11	5.0	2.6	1.1	1.5
8	.90	2.9	9.9	5.4	7.9	7.6	12	12	4.8	2.5	1.1	1.2
9	.90	2.3	16	5.2	8.0	7.8	12	9.5	4.7	2.5	1.1	1.0
10	.90	2.1	9.5	5.2	8.3	8.2	12	9.1	4.7	2.4	1.1	.90
11	.90	2.0	7.3	5.3	9.2	8.4	11	8.9	5.0	2.4	1.1	.90
12	.90	2.5	6.3	6.7	10	11	11	11	4.8	2.4	1.1	.80
13	.90	2.3	5.7	5.2	11	17	11	9.0	4.6	2.3	1.1	.70
14	.90	2.0	5.3	6.4	11	12	11	8.4	4.4	2.1	1.0	.70
15	.90	1.9	5.1	6.3	11	11	10	8.0	4.3	2.1	1.0	.70
16	1.0	1.8	6.8	6.3	12	11	10	7.3	4.1	2.0	1.0	.70
17	.90	1.7	6.4	8.7	11	11	12	6.9	3.8	2.2	.90	.70
18	1.0	1.7	5.7	13	10	11	11	6.7	3.6	2.4	.90	.70
19	1.0	1.8	5.9	16	11	11	10	6.5	3.5	2.1	.90	.80
20	1.2	1.8	5.5	17	11	11	10	6.3	3.4	1.9	.90	.80
21	1.5	1.7	5.9	14	11	12	9.7	6.2	3.4	1.9	.90	.70
22	1.5	1.7	5.7	11	9.7	12	9.1	6.4	3.3	1.8	.90	.70
23	1.5	1.7	5.2	10	8.5	13	8.8	6.1	3.3	1.7	1.0	.70
24	1.6	1.8	5.1	9.7	8.5	12	8.5	5.8	3.1	1.7	1.0	.70
25	1.6	11	5.2	9.0	8.5	14	8.5	5.6	3.1	1.6	1.0	.80
26	1.4	21	5.2	8.9	8.1	39	8.3	5.6	3.1	1.2	.90	1.0
27	1.4	6.4	8.0	9.5	7.8	36	8.0	7.3	3.5	1.1	.90	1.0
28	1.5	6.2	7.1	9.9	8.2	22	7.9	8.8	3.5	1.1	.90	1.0
29	1.4	21	6.5	10	-----	19	8.1	7.8	3.3	1.3	.90	1.0
30	1.4	12	6.3	10	-----	18	8.1	7.1	3.2	1.4	.90	1.5
31	1.4	-----	6.3	10	-----	16	-----	6.6	-----	1.4	.90	-----
TOTAL	34.00	134.7	241.5	258.9	262.7	406.1	325.0	248.0	127.7	65.4	31.70	27.00
MEAN	1.10	4.49	7.79	8.35	9.38	13.1	10.8	8.00	4.26	2.11	1.02	.90
MAX	1.6	21	29	17	12	39	15	12	6.2	3.1	1.3	1.5
MIN	.70	1.3	5.1	5.0	7.8	7.4	7.9	5.6	3.1	1.1	.90	.70
AC-FT	67	267	479	514	521	806	645	492	253	130	63	54
CAL YR 1970	TOTAL	3,002.80	MEAN	8.23	MAX	257	MIN	.70	AC-FT	5,960		
WTR YR 1971	TOTAL	2,162.70	MEAN	5.93	MAX	39	MIN	.70	AC-FT	4,290		

## SAN JOAQUIN RIVER BASIN

## 11257500 FRESNO RIVER NEAR KNOWLES, CALIF.

LOCATION.--Lat 37°14'14", long 119°46'26", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.15, T.8 S., R.20 E., Madera County, on left bank at Fresno Crossing, 0.1 mile downstream from Bean Gulch, and 6 miles northeast of Knowles.

DRAINAGE AREA.--133 sq mi.

PERIOD OF RECORD.--September 1911 to August 1913, November 1915 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,086.4 ft above mean sea level (river-profile survey).

Prior to June 13, 1930, nonrecording gage 10 ft upstream and June 13, 1930, to Jan. 13, 1931, water-stage recorder at site 40 ft upstream at datum 0.34 ft lower.

AVERAGE DISCHARGE.--56 years (1911-12, 1916-71), 80.0 cfs (57,960 acre-ft per year); median of yearly mean discharges, 61 cfs (44,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 509 cfs Dec. 2 (gage height, 2.72 ft); minimum daily, 0.60 cfs Aug. 24.

Period of record: Maximum discharge, 13,300 cfs Dec. 23, 1955 (gage height, 11.52 ft), from rating curve extended above 3,900 cfs on basis of slope-area measurement of maximum flow; no flow at times in some years.

REMARKS.--Records good. Diversions for irrigation of 160 acres above station. Diversions into Fresno River basin above station of up to 80 cfs at times since 1897 from the San Joaquin River basin and up to 60 cfs at times since 1888 from the Merced River basin. Diversions are for irrigation downstream from station. Records of water temperatures for the period June to September 1971 are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	8.6	85	67	83	69	133	112	110	30	9.2	1.4
2	3.4	9.8	268	75	80	66	129	116	108	29	5.9	2.3
3	3.5	9.1	130	59	76	69	127	138	107	28	3.5	2.3
4	3.5	9.1	74	50	71	69	126	130	106	26	3.1	2.4
5	3.6	13	63	49	68	63	126	122	102	25	2.9	2.3
6	3.8	41	53	46	67	58	124	126	101	23	2.7	2.2
7	4.0	26	48	45	64	58	129	145	101	22	2.7	2.2
8	4.3	22	63	48	63	58	126	145	103	21	2.7	1.7
9	4.5	17	126	47	63	60	122	126	99	19	2.7	1.8
10	5.0	14	85	46	63	60	120	118	104	21	2.6	1.6
11	5.0	14	60	47	68	62	122	118	104	21	2.1	2.0
12	4.9	15	50	103	77	70	122	122	101	20	1.7	1.3
13	4.7	18	46	134	81	168	123	116	102	19	1.5	1.5
14	4.6	15	42	104	84	104	121	117	98	18	.67	1.5
15	4.7	14	40	96	83	85	127	116	96	17	1.3	2.2
16	4.8	12	76	88	86	79	133	112	95	13	1.5	1.6
17	4.8	12	133	98	88	75	149	108	94	12	1.3	1.2
18	5.0	12	88	125	92	75	148	108	88	15	1.8	1.1
19	5.4	12	80	133	92	77	134	107	85	15	2.1	1.3
20	5.7	12	74	141	81	79	129	107	84	15	2.0	1.3
21	7.2	12	178	130	70	83	108	109	80	14	.98	1.1
22	9.1	12	149	111	66	86	95	105	76	12	.81	1.3
23	8.9	11	96	98	66	95	89	102	69	12	.72	.96
24	10	12	72	88	61	93	86	99	63	11	.60	.80
25	11	16	60	82	61	100	86	103	55	12	4.8	1.1
26	10	137	60	78	57	151	84	103	53	13	6.1	.81
27	9.6	70	95	80	55	259	81	114	48	12	1.1	1.2
28	9.3	41	121	82	59	167	81	130	40	11	1.4	1.6
29	10	137	86	84	-----	149	80	121	35	11	3.2	1.7
30	10	148	75	83	-----	142	89	114	32	10	1.9	2.1
31	8.9	-----	68	85	-----	138	-----	113	-----	9.8	.96	-----
TOTAL	191.9	901.6	2,744	2,602	2,025	2,967	3,449	3,622	2,539	536.8	76.54	47.87
MEAN	6.19	30.1	88.5	83.9	72.3	95.7	115	117	84.6	17.3	2.47	1.60
MAX	11	148	268	141	92	259	149	145	110	30	9.2	2.4
MIN	2.7	8.6	40	45	55	58	80	99	32	9.8	.60	.80
AC-FT	381	1,790	5,440	5,160	4,020	5,890	6,840	7,180	5,040	1,060	152	95

CAL YR 1970 TOTAL 28,576.10 MEAN 78.3 MAX 1,810 MIN 1.6 AC-FT 56,680  
WTR YR 1971 TOTAL 21,702.71 MEAN 59.5 MAX 268 MIN .60 AC-FT 43,050

PEAK DISCHARGE (BASE, 590 CFS).--No peak above base.

## 11258000 FRESNO RIVER NEAR DAULTON, CALIF.

LOCATION.--Lat 37°05'51", long 119°53'19", in NW¼NW¼ sec.3, T.10 S., R.19 E., Madera County, on left bank 0.4 mile downstream from Willow Creek and 5.3 miles southeast of Daulton.

DRAINAGE AREA.--258 sq mi.

PERIOD OF RECORD.--October 1941 to current year.

GAGE.--Water-stage recorder. Datum of gage is 382.37 ft above mean sea level. October 1941 to Sept. 27, 1946, at site 300 ft downstream and Sept. 28, 1946, to Sept. 28, 1949, at present site, at datum 3.37 ft higher. Sept. 29, 1949, to Mar. 19, 1963, at datum 1.00 ft higher.

AVERAGE DISCHARGE.--30 years, 107 cfs (77,520 acre-ft per year); median of yearly mean discharges, 73 cfs (52,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 461 cfs Dec. 2 (gage height, 2.79 ft); no flow many days. Period of record: Maximum discharge, 17,500 cfs Dec. 23, 1955 (gage height, 12.64 ft, present datum), from rating curve extended above 6,400 cfs on basis of slope-area measurement at gage height 12.69 ft; maximum gage height, 12.69 ft Feb. 24, 1969; no flow at times in most years. Flood of Mar. 3, 1938, reached a discharge of 15,000 cfs (furnished by Bureau of Reclamation).

REMARKS.--Records good. No diversion for irrigation between this station and station near Knowles. Some regulation at low flow by mining operations above station. See REMARKS for station near Knowles.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FFB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	11	106	107	95	76	130	87	101	30	3.4	
2	1.3	10	216	109	92	79	124	100	100	27	3.1	
3	1.5	12	230	107	84	77	121	106	99	25	2.4	
4	2.2	12	107	94	79	79	119	122	98	23	1.6	
5	2.4	12	85	90	74	78	118	116	95	21	1.3	
6	2.3	24	76	88	72	75	117	124	95	19	1.1	
7	2.6	40	66	84	72	72	115	118	96	17	.94	
8	2.7	30	66	86	70	73	113	137	96	16	.68	
9	2.9	24	101	88	70	72	111	132	94	14	.41	
10	3.0	20	103	85	71	74	110	124	94	13	.31	
11	3.6	18	76	82	72	74	109	123	94	12	.34	
12	3.6	18	64	104	77	75	109	143	93	13	.32	
13	3.7	18	55	190	80	151	110	124	91	12	.22	
14	3.6	20	51	215	93	143	109	117	89	11	.13	
15	3.8	16	46	155	84	112	110	116	87	9.7	.05	
16	3.9	14	53	138	84	103	113	114	85	8.4	0	
17	4.2	14	125	133	88	100	122	111	83	5.9	0	
18	4.3	13	110	151	51	97	131	109	81	5.4	0	
19	4.6	13	92	154	91	97	121	107	78	6.5	0	
20	5.3	13	88	162	97	99	116	106	75	6.1	0	
21	5.6	13	196	156	84	100	108	106	72	5.9	0	
22	7.1	13	233	137	80	102	93	107	68	5.7	0	
23	9.5	13	171	124	78	104	86	105	65	5.1	0	
24	9.9	13	133	114	75	105	82	103	60	4.6	0	
25	11	17	115	106	72	105	80	100	56	4.4	0	
26	12	71	108	102	71	123	79	100	52	4.7	0	
27	11	101	113	98	69	252	77	105	49	4.9	0	
28	11	59	161	98	70	196	77	120	41	4.6	0	
29	11	66	139	98	-----	160	77	115	36	4.4	0	
30	13	200	120	96	-----	146	78	108	32	4.2	0	
31	12	-----	111	95	-----	136	-----	104	-----	3.5	0	-----
TOTAL	175.8	918	3,516	3,646	2,225	3,335	3,165	3,509	2,355	347.0	16.30	0
MEAN	5.67	30.6	113	118	79.5	108	106	113	78.5	11.2	.53	0
MAX	13	200	233	215	97	252	131	143	101	30	3.4	0
MIN	1.2	10	46	82	69	72	77	87	32	3.5	0	0
AC-FT	349	1,820	6,970	7,230	4,410	6,610	6,280	6,960	4,670	688	32	0

CAL YR 1970 TOTAL 36,264.79 MEAN 99.4 MAX 2,330 MIN 0 AC-FT 71,930  
WTR YR 1971 TOTAL 23,208.10 MEAN 63.6 MAX 252 MIN 0 AC-FT 46,030

PEAK DISCHARGE (BASE, 600 CFS).--No peak above base.

## SAN JOAQUIN RIVER BASIN

11258900 WEST FORK CHOWCHILLA RIVER NEAR MARIPOSA, CALIF.

LOCATION.--Lat 37°25'14", long 119°52'25", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.10, T.6 S., R.19 E., Mariposa County, on left bank 15 ft downstream from bridge on Indian Peak Road, 0.5 mile downstream from Humbug Creek, and 6.7 miles southeast of Mariposa.

DRAINAGE AREA.--33.6 sq mi.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,680 ft (from topographic map).

AVERAGE DISCHARGE.--14 years, 18.0 cfs (13,040 acre-ft per year); median of yearly mean discharges, 12.5 cfs (8,980 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 269 cfs Dec. 2 (gage height, 4.96 ft); no flow many days.

Period of record: Maximum discharge, 4,350 cfs Jan. 25, 1969 (gage height, 8.93 ft in gage well, 11.1 ft, from floodmarks); no flow many days in each year.

REMARKS.--No known diversions above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	15	11	10	10	8.3	3.7	3.3	.20		
2		.10	105	13	9.7	8.6	7.7	4.2	3.1	.20		
3		.10	24	8.5	9.1	7.9	7.0	13	3.0	.10		
4		.10	7.0	7.3	8.8	8.2	6.4	13	2.7	.10		
5		.10	4.0	6.6	8.8	7.3	6.0	7.9	2.5	0		
6		.10	2.8	5.9	8.8	6.4	5.8	6.8	2.2	0		
7		.10	2.3	8.8	8.4	6.2	6.3	13	2.0	0		
8		.10	3.4	8.6	8.0	6.0	5.9	27	1.9	0		
9		.10	14	8.4	7.6	5.7	5.7	12	1.7	0		
10		.10	4.8	7.9	7.5	5.5	5.4	8.5	1.7	0		
11		.10	3.1	8.6	7.4	5.5	5.1	7.1	1.7	0		
12		.10	2.4	48	7.1	18	5.1	6.0	1.5	0		
13		.10	2.0	83	6.9	59	5.0	5.2	1.3	0		
14		.10	1.7	51	6.8	19	5.3	5.0	1.1	0		
15		0	1.4	37	6.7	15	5.3	4.6	1.0	0		
16		0	13	29	6.7	12	4.6	4.2	.90	0		
17		0	29	33	8.7	11	8.4	3.9	.70	0		
18		0	16	36	7.3	9.6	8.2	3.7	.60	0		
19		0	21	32	10	8.7	6.1	3.6	.60	0		
20		0	13	29	9.8	8.1	5.4	3.3	.50	0		
21		0	83	25	7.2	7.3	5.6	3.2	.50	0		
22		0	46	21	7.0	6.7	4.8	3.3	.40	0		
23		0	24	18	6.9	6.6	4.4	3.1	.30	0		
24		0	15	16	6.3	6.8	4.3	2.7	.30	0		
25		1.1	9.9	14	5.9	8.2	4.5	2.4	.30	0		
26		4.6	19	14	5.5	21	4.6	2.4	.30	0		
27		2.3	48	13	6.1	28	4.4	4.5	.30	0		
28		2.7	26	12	9.1	13	4.2	8.1	.40	0		
29		34	17	12	-----	11	3.9	5.1	.40	0		
30		25	13	11	-----	9.8	3.9	4.2	.30	0		
31		-----	11	11	-----	8.7	-----	3.6	-----	0		-----
TOTAL	0	71.00	596.8	639.6	218.1	364.8	167.6	198.3	37.50	.60	0	0
MEAN	0	2.37	19.3	20.6	7.79	11.8	5.59	6.40	1.25	.019	0	0
MAX	0	34	105	83	10	59	8.4	27	3.3	.20	0	0
MIN	0	0	1.4	5.9	5.5	5.5	3.9	2.4	.30	0	0	0
AC-FT	0	141	1,180	1,270	433	724	332	393	74	1.2	0	0
CAL YR 1970	TOTAL	5,759.60	MEAN	15.8	MAX	946	MIN	0	AC-FT	11,420		
WTR YR 1971	TOTAL	2,294.30	MEAN	6.29	MAX	105	MIN	0	AC-FT	4,550		

## 11259000 CHOWCHILLA RIVER AT BUCHANAN DAMSITE, NEAR RAYMOND, CALIF.

LOCATION.--Lat 37°13'02", long 119°59'03", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.22, T.8 S., R.18 E., Madera County, on right bank 1.9 miles upstream from Raynor Creek and 4.3 miles west of Raymond.

DRAINAGE AREA.--235 sq mi.

PERIOD OF RECORD.--October 1921 to September 1923, October 1930 to current year. Prior to Oct. 1, 1962, published as "at Buchanan damsite."

GAGE.--Water-stage recorder. Datum of gage is 407.32 ft above mean sea level. October 1921 to September 1923, at site 2.5 miles upstream at different datum.

AVERAGE DISCHARGE.--43 years (1921-23, 1930-71), 99.8 cfs (72,310 acre-ft per year); median of yearly mean discharges, 70 cfs (50,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 574 cfs Dec. 2 (gage height, 4.76 ft); no flow many days.  
Period of record: Maximum discharge, 30,000 cfs Dec. 23, 1955 (gage height, 16.50 ft), from rating curve extended above 6,000 cfs on basis of slope-area measurement at gage height 15.06 ft; no flow for part of each year except 1937-38, 1940-43.

REMARKS.--Records excellent. No storage or large diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.11	96	89	64	48	48	24	23	2.0		
2	0	.11	224	90	62	47	45	23	21	1.8		
3	0	.12	234	87	59	43	43	27	20	1.7		
4	0	.10	89	72	56	44	41	46	19	1.5		
5	0	.20	60	66	54	44	39	48	17	1.4		
6	0	.19	48	62	52	41	37	38	16	1.3		
7	0	.20	41	58	51	39	36	41	15	1.2		
8	0	2.6	41	55	50	38	37	65	14	1.1		
9	0	5.2	85	55	48	38	36	67	13	1.0		
10	0	4.1	95	53	45	36	35	49	12	.94		
11	0	3.6	59	53	45	36	33	42	12	.86		
12	0	3.6	47	135	45	38	32	50	12	.50		
13	0	3.8	40	175	44	121	31	49	11	.35		
14	0	4.1	35	142	44	104	32	37	10	.25		
15	0	4.5	32	128	44	68	32	33	9.6	.18		
16	0	4.3	40	120	44	59	32	29	8.8	.14		
17	.01	4.4	196	115	46	54	33	26	7.8	.10		
18	.03	4.4	166	140	49	50	46	25	6.9	.08		
19	.05	4.4	119	134	49	47	44	24	6.3	.07		
20	.06	4.5	134	133	55	44	38	22	6.0	.05		
21	.08	4.5	346	122	48	42	35	21	5.5	.03		
22	.08	4.8	348	108	43	40	34	20	5.0	.02		
23	.10	4.8	162	97	42	39	32	21	4.4	.01		
24	.12	5.0	117	89	41	39	30	19	3.7	0		
25	.11	6.8	96	82	39	41	29	17	3.3	0		
26	.11	37	84	75	37	51	29	16	3.0	0		
27	.11	64	124	73	36	113	29	20	2.8	0		
28	.10	33	229	72	41	85	28	35	2.6	0		
29	.10	45	140	70	-----	64	27	40	2.3	0		
30	.11	211	110	69	-----	56	25	30	2.1	0		
31	.11	-----	96	66	-----	51	-----	25	-----	0		-----
TOTAL	1.28	470.52	3,733	2,885	1,333	1,660	1,048	1,029	295.1	16.58	0	0
MEAN	.041	15.7	120	93.1	47.6	53.5	34.9	33.2	9.84	.53	0	0
MAX	.12	211	348	175	64	121	48	67	23	2.0	0	0
MIN	0	.11	32	53	36	36	25	16	2.1	0	0	0
AC-FT	2.5	933	7,400	5,720	2,640	3,290	2,080	2,040	585	33	0	0

CAL YR 1970 TOTAL 30,573.07 MEAN 83.8 MAX 4,190 MIN 0 AC-FT 60,640  
WTR YR 1971 TOTAL 12,471.48 MEAN 34.2 MAX 348 MIN 0 AC-FT 24,740

PEAK DISCHARGE (BASE, 770 CFS).--No peak above base.

## SAN JOAQUIN RIVER BASIN

11260480 MARIPOSA CREEK NEAR CATHEYS VALLEY, CALIF.

LOCATION.--Lat 37°23'56", long 120°00'10", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.21, T.6 S., R.18 E., Mariposa County, on downstream side of bridge on White Rock Road, 0.3 mile downstream from China Gulch, and 5.7 miles southeast of town of Catheys Valley.

DRAINAGE AREA.--65.7 sq mi.

PERIOD OF RECORD.--October 1958 to current year. Prior to October 1963, published as "near Cathay."

GAGE.--Water-stage recorder. Altitude of gage is 1,230 ft (from topographic map).

AVERAGE DISCHARGE.--13 years, 28.0 cfs (20,290 acre-ft per year); median of yearly mean discharges, 17 cfs (12,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 624 cfs Dec. 21 (gage height, 6.39 ft); no flow many days.

Period of record: Maximum discharge, 7,460 cfs Feb. 24, 1969 (gage height, 11.63 ft); no flow many days in each year.

Flood of Apr. 3, 1958, reached a stage of 11.62 ft (discharge, 7,180 cfs).

REMARKS.--Probably minor diversions above the station for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	41	25	12	10	8.5	4.8	3.0	.10		
2		0	181	26	12	8.5	7.9	4.9	2.7	.10		
3		0	51	22	12	7.7	7.4	6.9	2.5	0		
4		0	22	19	8.4	7.6	6.9	9.1	2.2	0		
5		0	16	18	11	7.2	6.6	7.9	1.9	0		
6		0	12	17	11	6.8	7.0	7.2	1.7	0		
7		0	11	16	10	6.6	6.5	8.6	1.5	0		
8		0	13	16	10	6.6	6.1	17	1.3	0		
9		0	41	15	10	6.4	5.8	11	1.2	0		
10		0	22	15	9.8	6.3	5.6	8.5	1.1	0		
11		0	16	14	9.6	6.2	5.4	7.2	1.0	0		
12		0	13	44	9.2	8.9	5.3	6.4	.90	0		
13		0	12	86	9.0	34	5.2	5.7	.80	0		
14		0	10	74	8.9	16	5.4	5.3	.70	0		
15		0	9.5	55	8.9	13	5.6	4.9	.60	0		
16		0	39	41	8.5	11	5.4	4.5	.50	0		
17		.10	98	34	9.4	10	6.2	4.2	.50	0		
18		3.2	53	29	8.8	9.8	7.3	4.0	.40	0		
19		3.8	75	26	10	8.1	6.3	3.7	.40	0		
20		3.9	56	24	11	8.2	5.5	3.6	.30	0		
21		4.0	345	21	9.0	7.7	5.5	3.4	.30	0		
22		4.2	169	20	8.5	7.4	5.2	3.4	.30	0		
23		4.3	81	19	8.2	7.5	5.2	3.2	.20	0		
24		4.5	54	18	7.9	7.7	5.1	3.1	.20	0		
25		10	40	17	7.5	8.2	5.2	2.9	.20	0		
26		14	34	16	6.8	13	5.3	2.8	.10	0		
27		8.2	73	15	6.9	19	5.3	3.4	.10	0		
28		11	62	15	8.8	13	5.2	5.9	.10	0		
29		80	40	14	-----	11	5.0	4.7	.10	0		
30		67	32	13	-----	10	5.0	3.9	.10	0		
31		-----	27	13	-----	7.8	-----	3.3	-----	0		-----
TOTAL	0	218.20	1,748.5	797	263.1	311.2	177.9	175.4	26.90	.20	0	0
MEAN	0	7.27	56.4	25.7	9.40	10.0	5.93	5.66	.90	.007	0	0
MAX	0	80	345	86	12	34	8.5	17	3.0	.10	0	0
MIN	0	0	9.5	13	6.8	6.2	5.0	2.8	.10	0	0	0
AC-FT	0	433	3,470	1,580	522	617	353	348	53	.4	0	0
CAL YR 1970	TOTAL	12,366.80		MEAN	33.9	MAX	2,270	MIN	0	AC-FT	24,530	
WTR YR 1971	TOTAL	3,718.40		MEAN	10.2	MAX	345	MIN	0	AC-FT	7,380	



## 11261500 SAN JOAQUIN RIVER AT FREMONT FORD BRIDGE, CALIF.

LOCATION.--Lat 37°18'36", long 120°55'48", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.24, T.7 S., R.9 E., Merced County, on left bank 30 ft downstream from Fremont Ford bridge, 2.1 miles downstream from Salt Slough, 4.5 miles west of Stevenson, and 6.7 miles upstream from Merced River.

DRAINAGE AREA.--7,615 sq mi.

PERIOD OF RECORD.--March 1937 to September 1971 (discontinued). Monthly discharge only for some periods, published in WSP 1315-A (low-flow only October 1970 to September 1971).

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. March 1937 to Oct. 1, 1959, at datum 3.77 ft below mean sea level.

AVERAGE DISCHARGE.--33 years (1937-70); 810 cfs (586,800 acre-ft per year).

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water from Delta-Mendota Canal (see sta 11313000). During periods of high flow, water bypasses this station through Mud Slough; low flows consist mainly of return water from irrigated areas. Stage affected at times by backwater from the Merced River. See REMARKS for stations upstream. No records computed above 300 cfs.

COOPERATION.--Four discharge measurements furnished by California Department of Water Resources.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	202	110		--	289	227	293	188	--	193	115	164
2	189	100		--	282	249	252	188	--	165	116	185
3	181	90		--	285	243	229	218	--	145	121	193
4	177	115		--	275	222	221	246	--	150	109	170
5	168	177		--	256	219	224	262	--	164	107	182
6	143	215		289	244	212	223	283	266	171	112	189
7	123	233		283	239	203	224	290	267	170	99	196
8	90	231		275	237	202	211	--	250	151	102	197
9	82	227		259	236	211	218	--	220	142	127	171
10	96	214		236	230	218	223	--	210	145	137	167
11	103	186		211	224	215	240	--	237	137	147	175
12	100	189		203	222	223	262	--	228	139	134	171
13	59	212		210	221	237	279	--	235	151	139	184
14	61	203		225	214	286	286	294	232	156	139	175
15	65	189		254	210	--	282	262	258	174	128	175
16	67	169		281	207	--	--	231	246	171	141	170
17	51	153		271	195	--	--	213	253	150	132	173
18	43	140		--	200	--	--	200	236	161	139	154
19	59	134		--	211	293	--	219	222	162	134	121
20	63	137		--	220	282	--	223	201	164	131	113
21	115	133		--	205	288	276	218	191	162	141	106
22	132	127		--	226	284	252	245	200	134	146	102
23	143	116		--	234	262	241	249	194	112	159	100
24	129	113		--	221	249	236	248	158	115	163	98
25	121	112		--	216	256	218	240	156	118	152	90
26	116	116		--	211	299	202	228	165	129	147	97
27	131	140		--	212	--	193	228	178	123	145	110
28	130	154		--	214	--	188	252	205	125	147	114
29	96	198		--	-----	--	189	--	205	98	159	112
30	104	297		--	-----	--	186	--	215	104	176	104
31	118	-----		--	-----	--	-----	--	-----	108	188	-----
TOTAL	3,457	4,930		--	6,436	--	--	--	--	4,489	4,232	4,458
MEAN	112	164		--	230	--	--	--	--	145	137	149
MAX	202	297		--	289	--	--	--	--	193	188	197
MIN	43	90		--	195	--	--	--	--	98	99	90
AC-FT	6,860	9,780		--	12,770	--	--	--	--	8,900	8,390	8,840

## SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CALIF.  
(Hydrologic bench-mark station)

LOCATION.--Lat 37°43'54", long 119°33'28", (unsurveyed), Mariposa County, Yosemite National Park, on right bank 10 ft downstream from footbridge at Happy Isles, 0.4 mile downstream from Illilouette Creek, and 2.0 miles southeast of Yosemite National Park headquarters.

DRAINAGE AREA.--181 sq mi.

PERIOD OF RECORD.--August 1915 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,016.58 ft above mean sea level. Prior to Nov. 2, 1916, nonrecording gage at datum 0.55 ft lower.

AVERAGE DISCHARGE.--56 years, 342 cfs (247,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,170 cfs June 13 (gage height, 6.21 ft); minimum daily, 2.6 cfs Oct. 18.

Period of record: Maximum discharge, 9,860 cfs Dec. 23, 1955 (gage height, 12.73 ft), from rating curve extended above 4,000 cfs on basis of contracted-opening measurements at gage heights 10.4 and 11.55 ft; minimum, 1.5 cfs Sept. 30, 1926.

REMARKS.--Records excellent. Up to 4 cfs can be diverted above station for Yosemite Valley water supply. Records of chemical analyses, water temperatures, and suspended-sediment discharge for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	5.2	114	84	173	94	314	577	554	800	176	29
2	3.4	6.3	114	79	169	93	320	582	564	800	172	28
3	3.4	5.9	104	63	150	100	331	554	675	785	153	26
4	3.6	5.2	120	65	143	93	370	478	840	710	143	26
5	3.6	19	117	65	135	85	444	460	1,050	645	134	24
6	3.8	24	116	66	127	84	460	500	1,280	620	124	26
7	3.6	29	128	68	120	87	400	514	1,600	578	114	29
8	3.2	28	143	72	120	87	352	464	1,680	524	107	37
9	3.1	28	139	74	120	87	370	416	1,770	478	104	40
10	3.1	32	125	76	125	91	388	523	1,590	433	101	36
11	2.7	31	122	74	152	92	420	795	1,680	397	99	32
12	2.7	32	120	73	184	100	505	1,160	1,800	389	100	30
13	3.1	28	116	69	208	106	595	1,110	1,880	364	103	29
14	2.9	24	106	76	212	101	456	1,200	1,780	368	100	28
15	3.1	24	101	81	218	106	464	1,450	1,830	393	103	26
16	3.2	23	102	87	195	108	586	1,520	1,890	421	104	26
17	2.9	22	101	135	173	108	618	1,130	1,800	528	86	24
18	2.6	21	105	248	152	116	460	1,020	1,660	591	71	24
19	2.7	20	104	301	150	137	384	1,050	1,480	560	57	23
20	3.2	20	97	295	130	156	362	1,170	1,490	425	53	22
21	4.7	19	97	259	127	179	324	1,170	1,520	433	51	20
22	5.9	18	92	222	125	202	289	815	1,540	354	48	18
23	6.8	18	85	200	120	240	274	880	1,440	294	45	16
24	10	17	79	184	117	212	262	1,260	1,260	267	41	16
25	7.1	178	83	166	114	253	250	1,360	1,180	264	40	16
26	3.1	186	88	162	95	384	245	1,480	1,110	247	39	15
27	2.9	122	87	162	97	320	248	1,140	1,400	222	37	15
28	3.1	101	85	164	98	286	262	920	1,050	217	37	15
29	3.4	112	85	166	-----	298	310	785	812	212	36	15
30	4.0	105	84	171	-----	356	424	780	795	195	33	17
31	4.3	-----	84	177	-----	345	-----	645	-----	188	30	-----
TOTAL	119.3	1,303.6	3,243	4,184	4,049	5,106	11,487	27,908	41,000	13,702	2,641	728
MEAN	3.85	43.5	105	135	145	165	383	900	1,367	442	85.2	24.3
MAX	10	186	143	301	218	384	618	1,520	1,890	800	176	40
MIN	2.6	5.2	79	63	95	84	245	416	554	188	30	15
AC-FT	237	2,590	6,430	8,300	8,030	10,130	22,780	55,360	81,320	27,180	5,240	1,440

CAL YR 1970 TOTAL 115,699.0 MEAN 317 MAX 2,040 MIN 2.6 AC-FT 229,500  
WTR YR 1971 TOTAL 115,470.9 MEAN 316 MAX 1,890 MIN 2.6 AC-FT 229,000

PEAK DISCHARGE (BASE, 1,900 CFS).--June 13 (0300) 2,170 cfs (6.21 ft).

## 11266500 MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CALIF.

LOCATION.--Lat 37°43'01", long 119°39'55", Mariposa County, Yosemite National Park, on left bank 150 ft upstream from Pohono Bridge, 0.4 mile upstream from Artist Creek, and 4.8 miles southwest of Yosemite National Park headquarters.

DRAINAGE AREA.--321 sq mi.

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 mean sea level. Prior to Sept. 5, 1918, at datum 1.8 ft higher. Sept. 5, 1918, to Sept. 30, 1955, at datum 1.0 ft higher.

AVERAGE DISCHARGE.--55 years, 602 cfs (436,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,420 cfs May 16 (gage height, 7.63 ft); minimum daily, 16 cfs Oct. 18, 19.

Period of record: Maximum discharge, 23,400 cfs Dec. 23, 1955 (gage height, 21.52 ft, from floodmarks in well), from rating curve extended above 16,300 cfs on basis of computation of flow over diversion dam for Yosemite powerhouse, 1 mile downstream at gage heights 20.1 and 20.98 ft, present datum; minimum, 3.3 cfs Sept. 29, Oct. 1, 1924.

REMARKS.--Records excellent. No diversions between stations at Happy Isles bridge and Pohono bridge. One cfs sewage effluent returns between stations (see REMARKS for sta 11264500).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	20	249	163	337	209	728	1,190	1,170	1,100	228	50
2	18	19	254	158	333	206	740	1,250	1,170	1,070	221	48
3	18	19	207	123	300	224	763	1,200	1,320	1,030	207	46
4	18	20	261	128	283	211	856	1,050	1,530	924	191	43
5	18	36	251	131	273	192	995	1,020	1,810	837	179	41
6	18	57	243	129	261	190	1,030	1,070	2,110	792	165	46
7	18	54	276	131	245	196	875	1,070	2,520	737	152	51
8	17	51	309	140	250	201	777	1,010	2,690	680	142	54
9	17	47	305	147	251	201	834	932	2,760	629	134	57
10	18	53	264	153	263	210	892	1,160	2,480	583	134	54
11	17	54	254	152	337	212	978	1,630	2,520	543	127	50
12	17	67	240	148	421	233	1,110	2,270	2,680	523	123	46
13	17	59	226	135	459	240	1,250	2,260	2,810	492	145	44
14	17	53	209	147	469	228	1,010	2,410	2,640	481	134	42
15	17	49	196	152	476	238	1,070	2,790	2,620	495	129	41
16	17	47	206	163	435	243	1,290	2,890	2,680	511	131	39
17	17	45	197	262	394	245	1,340	2,230	2,540	637	115	38
18	16	43	200	459	330	258	1,020	2,000	2,310	652	100	37
19	16	42	203	577	333	304	882	2,030	2,070	697	90	35
20	18	40	189	565	286	350	845	2,170	2,030	523	82	33
21	19	39	193	509	281	403	735	2,230	2,040	563	78	32
22	19	38	173	431	275	452	670	1,660	2,030	456	74	31
23	20	37	164	377	258	520	644	1,710	1,900	400	70	30
24	21	35	155	341	247	457	605	2,250	1,710	354	66	29
25	22	532	159	310	249	545	542	2,440	1,600	339	63	29
26	21	511	170	303	208	940	560	2,660	1,510	318	61	28
27	21	280	170	308	200	807	556	2,120	1,940	290	58	28
28	21	236	162	313	213	702	588	1,780	1,540	278	57	27
29	20	278	165	319	-----	711	714	1,570	1,190	270	55	26
30	20	238	160	327	-----	828	913	1,530	1,120	252	54	30
31	20	-----	163	340	-----	798	-----	1,310	-----	242	51	-----
TOTAL	572	3,099	6,573	8,041	8,657	11,754	25,812	54,892	61,040	17,698	3,616	1,185
MEAN	18.5	103	212	259	309	379	860	1,771	2,035	571	117	39.5
MAX	22	532	309	577	476	940	1,340	2,890	2,810	1,100	228	57
MIN	16	19	155	123	200	190	542	932	1,120	242	51	26
AC-FT	1,130	6,150	13,040	15,950	17,170	23,310	51,200	108,900	121,100	35,100	7,170	2,350

CAL YR 1970 TOTAL 208,926 MEAN 572 MAX 3,570 MIN 16 AC-FT 414,400  
WTR YR 1971 TOTAL 202,939 MEAN 556 MAX 2,890 MIN 16 AC-FT 402,500

## PEAK DISCHARGE (BASE, 2,900 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-16	0115	7.63	3,420	6-13	0230	7.37	3,160
5-26	0200	7.24	3,030				

## SAN JOAQUIN RIVER BASIN

## 11267350 BIG CREEK DIVERSION NEAR FISH CAMP, CALIF.

LOCATION.--Lat 37°28'10", long 119°36'51", in SE $\frac{1}{4}$  sec.25, T.5 S., R.21 E., Mariposa County, Sierra National Forest, on right bank 0.5 mile downstream from diversion weir, 0.5 mile upstream from Rainier Creek, and 1.2 miles southeast of Fish Camp.

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5,400 ft (from topographic map).

EXTREMES.--Maximum daily discharge, 56 cfs Jan. 16, 1970; minimum daily, 1.2 cfs Sept. 22, 23, 1971.

REMARKS.--Records fair.

COOPERATION.--One discharge measurement furnished by Merced Irrigation District.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.9	11	7.1	14	11	47	37	35	4.2	1.4	2.7
2	1.4	1.9	7.6	6.8	14	11	47	37	35	4.2	1.6	2.7
3	1.4	1.8	8.7	6.5	14	12	47	37	34	4.0	1.7	2.7
4	1.4	3.0	10	6.4	14	11	48	36	34	1.8	1.6	2.2
5	1.5	23	9.8	6.2	13	11	48	36	34	1.8	1.6	2.1
6	1.5	20	9.1	6.1	13	11	48	37	35	1.8	1.6	2.2
7	1.5	11	11	6.2	13	11	48	37	36	1.7	1.6	2.7
8	1.6	5.2	12	6.4	13	11	47	37	36	2.7	1.6	2.4
9	1.6	3.5	12	6.5	13	12	48	36	35	7.3	1.6	2.4
10	1.6	4.5	10	6.6	14	12	50	37	35	7.3	1.6	2.2
11	1.6	3.3	9.4	6.6	15	12	51	37	34	7.3	1.6	2.2
12	1.6	4.8	9.4	6.0	16	13	52	38	35	6.9	1.6	2.2
13	1.6	3.1	9.4	5.7	16	14	52	37	35	6.9	1.5	2.2
14	1.6	2.4	8.8	5.6	16	13	50	37	34	4.6	1.5	2.1
15	1.6	2.4	8.8	5.5	16	12	50	37	34	1.8	1.9	2.1
16	1.6	2.4	8.5	6.3	16	13	53	37	33	1.8	2.7	2.1
17	1.6	2.4	8.4	7.5	16	15	53	37	32	1.8	2.7	1.9
18	1.6	2.4	8.6	11	15	18	50	37	29	2.1	2.2	2.1
19	1.7	2.4	8.4	38	15	21	48	37	29	4.4	2.2	1.7
20	2.7	2.4	8.1	36	10	24	29	37	30	4.4	2.2	1.4
21	2.4	2.4	7.4	26	11	28	12	37	29	4.4	2.2	1.3
22	2.7	2.4	6.4	16	13	31	12	37	24	4.4	2.2	1.2
23	2.4	2.4	5.5	14	10	31	12	37	23	4.7	2.7	1.2
24	2.7	2.4	5.6	12	11	31	12	37	22	7.3	2.7	1.4
25	2.2	20	5.8	12	11	39	13	37	20	6.9	3.0	2.2
26	2.2	21	6.8	12	11	54	12	37	13	6.6	3.0	2.2
27	2.2	10	6.3	13	11	50	12	37	4.2	6.3	2.7	2.2
28	2.2	8.8	6.0	13	11	48	12	37	4.2	6.3	2.7	2.2
29	2.1	22	7.7	14	-----	48	12	36	4.2	6.0	3.0	2.2
30	1.9	16	7.6	14	-----	48	26	36	4.2	6.0	3.0	2.1
31	1.9	-----	7.3	14	-----	48	-----	35	-----	4.3	3.0	-----
TOTAL	57.0	211.2	261.4	353.0	375	724	1,101	1,141	821.8	142.0	66.2	62.5
MEAN	1.84	7.04	8.43	11.4	13.4	23.4	36.7	36.8	27.4	4.58	2.14	2.08
MAX	2.7	23	12	38	16	54	53	38	36	7.3	3.0	2.7
MIN	1.4	1.8	5.5	5.5	10	11	12	35	4.2	1.7	1.4	1.2
AC-FT	113	419	518	700	744	1,440	2,180	2,260	1,630	282	131	124

CAL YR 1970 TOTAL 6,381.5 MEAN 17.5 MAX 56 MIN 1.3 AC-FT 12,660  
WTR YR 1971 TOTAL 5,316.1 MEAN 14.6 MAX 54 MIN 1.2 AC-FT 10,540

## 11268000 SOUTH FORK MERCED RIVER NEAR EL PORTAL, CALIF.

LOCATION.--Lat 37°39'05", long 119°53'04", in NW¼NE¼ sec.29, T.3 S., R.19 E., Mariposa County, on right bank 1,500 ft upstream from mouth and 5.9 miles west of El Portal.

DRAINAGE AREA.--241 sq mi.

PERIOD OF RECORD.--November 1950 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,400 ft (from topographic map).

AVERAGE DISCHARGE.--20 years, 349 cfs (252,900 acre-ft per year); median of yearly mean discharges, 270 cfs (196,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,120 cfs May 16 (gage height, 8.80 ft); minimum daily, 8.8 cfs Oct. 3.

Period of record: Maximum discharge, 46,500 cfs Dec. 23, 1955 (gage height, 18.70 ft), from rating curve extended above 11,000 cfs on basis of slope-area measurement at gage height 17.63 ft; minimum, 2.2 cfs Aug. 26, 27, 1961.

REMARKS.--Records excellent. Big Creek ditch diverts up to 60 cfs at times into Fresno River basin. Diversion of 0.5 cfs at Wawona for domestic use and irrigation of golf course.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	13	291	177	250	166	536	592	508	248	27	13
2	8.9	13	978	175	245	153	522	659	546	229	27	13
3	8.8	13	353	139	231	164	532	569	596	208	26	13
4	9.0	14	260	134	211	163	581	505	621	190	25	13
5	9.1	31	251	133	199	151	674	451	887	172	25	13
6	9.5	91	217	120	193	147	692	470	938	163	25	13
7	9.6	62	230	116	188	146	552	506	1,110	155	25	16
8	10	42	278	119	187	148	461	529	1,160	145	23	19
9	10	32	403	117	186	153	491	446	1,180	130	23	16
10	11	27	267	117	189	161	510	527	1,010	117	21	14
11	11	26	216	125	215	165	581	711	929	108	22	13
12	11	27	187	192	265	205	666	1,280	1,030	102	22	12
13	11	32	165	197	297	392	790	1,260	1,060	94	21	12
14	11	25	148	191	305	260	558	1,200	950	88	20	11
15	11	22	134	189	312	242	537	1,390	947	86	19	11
16	11	21	171	189	307	235	751	1,470	932	83	20	10
17	11	20	200	317	274	229	808	1,070	858	75	18	9.6
18	11	20	183	452	250	236	573	1,000	741	97	17	9.4
19	12	19	184	494	251	255	468	1,030	632	91	16	9.5
20	12	19	171	518	216	276	436	1,110	618	74	15	9.7
21	12	19	220	430	213	301	422	1,130	594	67	15	9.9
22	15	19	213	344	203	332	383	720	558	66	15	10
23	15	19	183	293	190	373	362	694	432	55	15	11
24	16	18	161	261	185	331	352	1,050	387	49	15	11
25	16	114	154	238	178	348	337	1,230	366	44	14	11
26	15	454	159	227	159	962	326	1,270	336	40	14	12
27	14	167	213	230	158	989	310	919	466	37	14	12
28	14	183	219	238	167	651	321	725	377	34	13	13
29	14	715	195	243	-----	576	349	650	294	33	13	13
30	14	348	184	247	-----	627	437	648	275	31	13	16
31	13	-----	179	253	-----	591	-----	557	-----	29	13	-----
TOTAL	365.0	2,625	7,367	7,224	6,223	10,128	15,318	26,368	21,338	3,140	591	369.1
MEAN	11.8	87.5	238	233	222	327	511	851	711	101	19.1	12.3
MAX	16	715	978	518	312	989	808	1,470	1,180	248	27	19
MIN	8.8	13	134	116	159	146	310	446	275	29	13	9.4
AC-FT	724	5,210	14,610	14,330	12,340	20,090	30,380	52,300	42,320	6,230	1,170	732

CAL YR 1970 TOTAL 109,921.7 MEAN 301 MAX 2,840 MIN 8.8 AC-FT 218,000  
WTR YR 1971 TOTAL 171,056.1 MEAN 277 MAX 1,470 MIN 8.8 AC-FT 200,400

PEAK DISCHARGE (BASE, 2,000 CFS).--May 16 (0145) 2,120 cfs (8.80 ft).

## SAN JOAQUIN RIVER BASIN.

11268200 MERCED RIVER NEAR BRICEBURG, CALIF.

LOCATION.--Lat 37°38'09", long 119°55'56", in NW $\frac{1}{4}$  sec.36, T.3 S., R.18 E., Mariposa County, on left bank 150 ft upstream from Feliciana Creek and 2.8 miles northeast of Briceburg.

DRAINAGE AREA.--691 sq mi.

PERIOD OF RECORD.--September 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,194.98 ft above mean sea level.

AVERAGE DISCHARGE.--6 years, 1,273 cfs (992,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,880 cfs May 16 (gage height, 9.39 ft); minimum daily, 35 cfs Oct. 5, 7, 14.

Period of record: Maximum discharge, 21,500 cfs Dec. 6, 1966 (gage height, 17.79 ft); minimum daily, 27 cfs Sept. 30, 1968.

REMARKS.--Records excellent. No regulation. Small diversions above station (see REMARKS for sta 11268000).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	42	646	418	695	442	1,510	1,930	1,860	1,410	268	73
2	36	42	1,530	416	684	421	1,480	2,170	1,850	1,360	261	72
3	36	42	721	346	638	454	1,510	2,000	2,080	1,310	249	69
4	36	46	629	329	581	448	1,640	1,780	2,280	1,200	233	67
5	35	69	613	331	552	418	1,890	1,670	2,920	1,080	218	64
6	36	176	545	312	532	399	2,000	1,720	3,320	1,010	205	66
7	35	171	556	313	506	403	1,680	1,750	3,920	947	192	74
8	36	140	685	317	499	409	1,460	1,790	4,220	872	181	83
9	37	119	919	324	500	412	1,510	1,560	4,350	805	171	82
10	36	107	669	324	504	430	1,590	1,850	3,860	728	169	81
11	36	109	568	338	601	435	1,760	2,560	3,760	684	165	75
12	36	131	508	436	755	485	1,960	3,930	4,000	655	160	70
13	36	140	465	421	853	782	2,350	3,930	4,230	618	162	66
14	35	124	427	410	883	584	1,800	3,970	3,950	581	170	62
15	36	109	392	422	896	566	1,770	4,560	3,900	590	159	59
16	37	101	449	425	871	562	2,280	4,850	3,950	596	160	58
17	37	99	496	629	792	557	2,480	3,770	3,770	714	155	55
18	36	94	471	1,030	701	570	1,850	3,380	3,370	747	136	54
19	36	92	485	1,260	706	634	1,570	3,400	2,980	863	124	53
20	37	90	455	1,290	595	718	1,480	3,620	2,870	645	115	52
21	42	88	554	1,150	575	795	1,340	3,770	2,840	650	107	51
22	47	86	523	951	580	887	1,220	2,720	2,810	554	100	50
23	48	83	453	822	523	1,010	1,160	2,610	2,610	488	99	49
24	49	83	404	725	502	938	1,100	3,570	2,310	423	94	48
25	49	398	390	669	501	959	1,020	3,980	2,140	393	89	48
26	48	1,410	400	638	437	2,200	1,020	4,380	1,970	377	86	48
27	46	571	471	641	430	2,370	987	3,450	2,540	346	83	49
28	46	494	482	657	444	1,680	1,030	2,830	2,140	324	81	49
29	45	1,170	445	669	-----	1,550	1,150	2,510	1,630	315	78	49
30	44	755	432	679	-----	1,680	1,450	2,410	1,460	300	77	54
31	43	-----	421	697	-----	1,670	-----	2,090	-----	281	76	-----
TOTAL	1,229	7,181	17,204	18,389	17,336	25,868	47,047	90,510	89,890	21,866	4,623	1,830
MEAN	39.6	239	555	593	619	834	1,568	2,920	2,996	705	149	61.0
MAX	49	1,410	1,530	1,290	896	2,370	2,480	4,850	4,350	1,410	268	83
MIN	35	42	390	312	430	399	987	1,560	1,460	281	76	48
AC-FT	2,440	14,240	34,120	36,470	34,390	51,310	93,320	179,500	178,300	43,370	9,170	3,630

CAL YR 1970 TOTAL 365,766 MEAN 1,002 MAX 5,990 MIN 35 AC-FT 725,500  
WTR YR 1971 TOTAL 342,973 MEAN 940 MAX 4,850 MIN 35 AC-FT 680,300

## PEAK DISCHARGE (BASE, 5,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-16	0330	9.39	5,880	6-9	0400	8.81	5,020
5-26	0300	8.90	5,150				

## 11269300 MAXWELL CREEK AT COULTERVILLE, CALIF.

LOCATION.--Lat 37°42'58", long 120°11'20", in SE $\frac{1}{4}$  sec.34, T.2 S., R.16 E., Mariposa County, on Dogtown Road bridge, 0.4 mile downstream from Cuneo Creek and 0.5 mile northeast of Coulterville.

DRAINAGE AREA.--17.0 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,740 ft (from topographic map).

AVERAGE DISCHARGE.--12 years, 7.89 cfs (5,720 acre-ft per year); median of yearly mean discharges, 5.5 cfs (3,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 94 cfs Dec. 16 (gage height, 3.90 ft); no flow many days.

Period of record: Maximum discharge, 1,770 cfs Dec. 22, 1964 (gage height, 5.71 ft); no flow many days in each year.

REMARKS.--No diversion or storage above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (WATER YEARS).--WRD Calif, 1965: 1960(M), 1962(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.20	6.1	5.4	2.2	2.8	3.8	1.3	.70	.10		
2	.10	.30	32	6.7	2.2	2.4	3.4	1.4	.70	.10		
3	.10	.30	8.2	4.9	2.2	2.2	3.0	2.2	.60	.10		
4	.10	.60	9.3	4.1	2.2	2.2	3.0	1.9	.50	0		
5	.10	.80	6.1	3.8	2.1	2.2	2.8	1.6	.50	.10		
6	.10	.80	3.4	3.4	2.1	2.2	2.6	1.8	.50	0		
7	.10	.80	2.8	3.2	2.1	2.2	2.6	2.1	.50	0		
8	.10	.50	3.0	3.0	2.1	2.1	2.4	2.6	.40	0		
9	.10	.50	6.7	2.8	2.1	2.1	2.2	1.9	.40	0		
10	.10	.50	3.8	2.6	2.1	1.8	2.1	1.6	.40	0		
11	.10	.50	3.0	2.8	2.1	1.8	1.9	1.5	.30	0		
12	.10	.80	2.4	11	1.9	5.1	1.9	1.4	.30	0		
13	.10	.50	2.1	22	1.9	16	1.9	1.3	.30	0		
14	.10	.50	1.8	24	1.9	7.0	1.9	1.3	.30	0		
15	.10	.50	1.6	17	1.9	6.1	1.9	1.1	.30	0		
16	.10	.50	30	14	1.9	4.9	1.8	1.0	.20	0		
17	.10	.50	30	12	1.9	4.1	2.6	1.0	.20	0		
18	.10	.50	14	8.9	1.8	3.6	2.4	1.0	.20	0		
19	.10	.50	18	7.0	3.0	3.4	1.8	.80	.20	0		
20	.10	.50	13	6.1	2.4	3.2	2.1	.80	.20	0		
21	.10	.50	51	5.2	2.1	3.0	2.1	.80	.10	0		
22	.10	.50	20	4.6	2.1	2.6	1.6	.80	.10	0		
23	.20	.50	11	4.1	2.1	2.8	1.6	.70	.10	0		
24	.20	.50	8.2	3.6	1.9	2.6	1.6	.60	.10	0		
25	.20	3.0	6.1	3.2	1.8	3.4	1.8	.60	.10	0		
26	.20	9.8	5.4	3.0	1.8	15	1.6	.60	.10	0		
27	.20	2.1	28	2.8	2.2	13	1.4	.80	.10	0		
28	.20	4.1	18	2.6	2.6	7.4	1.4	1.0	.10	0		
29	.20	28	11	2.6	-----	6.1	1.4	.90	.10	0		
30	.20	7.4	8.9	2.4	-----	4.9	1.4	.80	.10	0		
31	.20	-----	6.7	2.2	-----	4.1	-----	.80	-----	0		-----
TOTAL	4.00	67.00	371.6	201.0	58.7	142.3	64.0	38.00	8.70	.40	0	0
MEAN	.13	2.23	12.0	6.48	2.10	4.59	2.13	1.23	.29	.013	0	0
MAX	.20	28	51	24	3.0	16	3.8	2.6	.70	.10	0	0
MIN	.10	.20	1.6	2.2	1.8	1.8	1.4	.60	.10	0	0	0
AC-FT	7.9	133	737	399	116	282	127	75	17	.8	0	0

CAL YR 1970 TOTAL 3,431.50 MEAN 9.40 MAX 523 MIN 0 AC-FT 6,810  
WTR YR 1971 TOTAL 955.70 MEAN 2.62 MAX 51 MIN 0 AC-FT 1,900

## SAN JOAQUIN RIVER BASIN

11269500 LAKE McCLURE AT EXCHEQUER, CALIF.

LOCATION.--Lat 37°35'02", long 120°16'09", in NW¼SE¼ sec.13, T.4 S., R.15 E., Mariposa County, on left end of New Exchequer Dam on Merced River, 0.9 mile east of Exchequer, and 5.5 miles northeast of Merced Falls.

DRAINAGE AREA.--1,037 sq mi.

PERIOD OF RECORD.--April 1926 to September 1930 (daily gage heights; also summary of yearly contents in WSP 881), October 1930 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Merced Irrigation District). Prior to Oct. 1, 1964, indicator in powerhouse at same datum. Oct. 1, 1964, to July 31, 1966, nonrecording gage at center of upstream face of dam at same datum.

EXTREMES.--Current year: Maximum contents, 838,500 acre-ft June 28 (elevation, 838.8 ft); minimum, 537,100 acre-ft Nov. 18-20, 22-25 (elevation, 780.6 ft).

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, 64-65 when reservoir was drained for inspection or construction. Minimum since construction of New Exchequer Dam under normal operations, 327,300 acre-ft Nov. 1, 1968 (elevation, 723.2 ft).

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.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

700	263,000	820	729,600
720	317,800	840	845,800
750	415,900	860	975,700
780	534,500	870	1,046,000

CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	559,200	539,700	549,800	561,800	580,000	590,200	595,800	633,600	750,100	835,400	753,500	659,500
2	556,500	539,700	554,300	561,400	580,500	590,600	596,700	636,100	752,900	833,600	750,100	657,000
3	554,300	539,700	556,500	561,800	580,900	590,600	598,600	638,000	755,200	831,800	747,300	654,000
4	551,600	540,200	557,800	559,600	581,800	590,600	599,500	639,000	755,800	831,200	744,000	651,500
5	549,800	540,200	559,200	560,000	582,800	590,600	600,500	641,500	760,300	830,600	741,200	649,500
6	546,700	540,200	560,000	558,700	582,300	590,200	601,400	642,000	764,200	828,700	737,300	647,500
7	546,300	540,200	560,900	557,800	583,700	589,700	602,800	643,500	768,800	826,300	734,000	644,500
8	545,000	540,200	562,300	557,800	582,300	588,300	602,800	646,500	775,100	823,900	731,300	641,500
9	543,200	540,200	561,800	557,400	581,400	587,400	603,300	649,000	781,400	821,500	728,000	639,000
10	541,500	539,300	561,400	556,900	580,000	585,500	603,800	651,000	786,100	819,100	724,700	637,100
11	540,600	539,300	560,000	556,900	578,600	584,200	605,700	654,000	790,700	816,700	722,000	634,600
12	540,600	538,900	560,900	557,400	579,100	582,300	607,100	660,500	796,000	814,300	718,700	632,200
13	540,200	538,900	561,400	558,300	580,500	582,300	608,500	667,700	802,500	811,400	714,900	629,700
14	540,200	538,900	560,000	559,600	582,300	581,800	610,000	672,800	807,200	808,400	712,200	627,300
15	540,200	538,900	559,200	560,900	583,200	580,900	611,900	680,000	811,900	806,000	709,000	625,300
16	540,200	538,400	560,000	561,800	584,600	580,500	614,700	687,300	816,700	802,500	705,300	622,900
17	540,200	538,000	560,500	562,300	585,100	579,500	619,100	693,600	821,500	799,500	702,100	620,000
18	540,200	537,100	560,500	564,500	586,500	579,500	622,400	697,800	824,500	797,800	698,900	617,600
19	540,200	537,100	561,800	566,800	586,900	578,600	624,400	702,100	827,500	795,400	696,200	616,200
20	539,700	537,100	561,400	568,600	587,900	578,200	626,800	706,300	830,000	793,100	693,100	613,300
21	539,700	537,600	563,200	570,400	588,300	577,700	628,300	711,100	831,800	789,600	690,400	611,400
22	539,700	537,100	563,600	571,800	588,300	577,700	629,700	715,500	833,600	786,100	688,900	608,500
23	540,200	537,100	562,300	573,100	589,200	578,200	631,200	718,700	835,400	783,800	685,200	606,600
24	540,200	537,100	563,600	574,100	589,200	578,200	631,700	722,000	835,400	780,300	682,100	603,800
25	540,200	537,100	562,700	575,000	589,200	578,200	632,600	725,800	836,000	777,400	678,500	602,400
26	539,700	540,200	562,700	575,900	589,700	581,800	632,600	732,900	836,600	774,000	675,900	600,500
27	539,700	541,500	562,700	576,300	589,200	586,000	631,700	736,800	837,900	771,100	672,800	598,600
28	539,700	542,300	562,700	577,300	589,700	588,800	631,700	740,100	838,500	767,700	670,200	596,200
29	539,700	546,300	562,700	576,800	-----	590,600	631,700	742,900	837,200	763,700	668,200	593,400
30	539,700	548,500	562,700	577,700	-----	593,000	632,200	746,200	836,000	760,800	665,100	591,600
31	539,700	-----	561,400	579,100	-----	595,300	-----	749,600	-----	756,300	662,600	-----
MAX	559,200	548,500	563,600	579,100	589,700	595,300	632,600	749,600	838,500	835,400	753,500	659,500
MIN	539,700	537,100	549,800	556,900	578,600	577,700	595,800	633,600	750,100	756,300	662,600	591,600
(a)	781.2	783.2	786.1	790.0	792.3	793.5	801.2	823.6	838.4	824.8	807.3	792.7
(b)	-21,700	+8,800	+12,900	+17,700	+10,600	+5,600	+36,900	+117,400	+86,400	-79,700	-93,700	-71,000

CAL YR 1970 b +5,400  
WTR YR 1971 b +30,200

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



## 11270900 MERCED RIVER BELOW MERCED FALLS DAM, NEAR SNELLING, CALIF.

LOCATION.--Lat 37°31'18", long 120°19'53", in SE¼SW¼ sec.4, T.5 S., R.15 E., Merced County, on right bank 0.1 mile south of Merced Falls, 0.2 mile downstream from Merced Falls Dam, and 5.8 miles east of Snelling.

DRAINAGE AREA.--1,061 sq mi.

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, and as "at Merced Falls" 1965. Records at present site are about equivalent when adjusted for diversion to North Side Canal and change in contents of Lake McClure.

GAGE.--Water-stage recorder. Datum of gage is 310.55 ft above mean sea level. Apr. 6, 1901, to Nov. 30, 1913, nonrecording gage at site 2 miles upstream at different datum. Nov. 22, 1915, to Apr. 28, 1922, nonrecording gage and Apr. 29 to Oct. 24, 1922, water-stage recorder at site 8 miles upstream at different datum. Oct. 25, 1922, to Sept. 30, 1964, at site 7 miles upstream at different datum.

AVERAGE DISCHARGE (adjusted for diversion to North Side Canal and change in contents of Lake McClure since 1965 and change in contents of McSwain Reservoir since 1969).--70 years, 1,338 cfs (969,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,200 cfs June 8 (gage height, 7.24 ft); minimum daily, 122 cfs Oct. 30.

1901-13, 1915 to current year: Maximum discharge observed, 47,700 cfs 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 cfs Dec. 4, 1950 (gage height, 22.6 ft, from floodmarks, site and datum then in use), from rating curve extended above 13,000 cfs on basis of computation of peak flow over dam; minimum daily, 3.4 cfs Mar. 5, 1966.

REMARKS.--Records excellent. Merced Falls Dam diverts water to North Side Canal to irrigate 4,100 acres below station. Flow regulated by Exchequer, McSwain, and Merced Falls powerplants, Lake McClure since 1926 (see sta 11269500), and McSwain Reservoir since 1966 (capacity, 9,200 acre-ft).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,160	125	166	762	394	391	841	1,110	956	1,790	1,820	1,340
2	1,150	148	166	776	391	392	921	1,110	958	1,790	1,760	1,350
3	1,150	194	171	776	396	392	918	1,130	932	1,790	1,710	1,350
4	1,160	184	161	807	394	395	1,060	1,080	998	1,750	1,700	1,350
5	1,150	186	168	810	397	439	1,180	1,020	1,090	1,800	1,670	1,350
6	1,140	189	168	804	402	617	1,240	1,030	1,140	1,830	1,650	1,320
7	611	178	169	804	407	725	1,240	931	1,170	1,850	1,650	1,280
8	599	172	174	691	740	861	1,240	659	1,220	1,840	1,660	1,230
9	601	180	175	429	1,010	1,040	1,230	594	1,260	1,810	1,620	1,160
10	600	186	467	412	999	1,250	1,240	637	1,300	1,780	1,570	1,140
11	276	180	761	410	966	1,390	1,250	712	1,360	1,780	1,560	1,130
12	127	172	774	408	809	1,330	1,260	731	1,370	1,780	1,610	1,130
13	126	172	767	402	404	1,110	1,280	789	1,380	1,810	1,650	1,120
14	126	172	791	394	399	1,090	1,130	836	1,390	1,840	1,650	1,130
15	127	172	799	384	393	1,020	886	886	1,400	1,860	1,610	1,150
16	134	171	791	382	397	1,020	805	964	1,300	1,910	1,590	1,180
17	123	172	786	383	396	983	705	978	1,330	1,940	1,600	1,180
18	128	179	800	387	399	977	530	1,020	1,440	1,920	1,530	1,140
19	135	179	798	378	394	922	472	1,090	1,700	1,930	1,490	1,120
20	129	170	769	383	394	908	463	1,180	1,800	1,920	1,480	1,110
21	126	168	829	391	390	915	480	1,220	1,810	1,930	1,480	1,120
22	128	167	777	394	395	908	535	1,230	1,810	1,920	1,460	1,110
23	136	166	783	397	400	990	632	1,260	1,820	1,930	1,430	1,110
24	127	166	790	392	389	1,030	766	1,300	1,840	1,920	1,420	1,100
25	130	170	795	387	398	893	768	1,350	1,870	1,920	1,410	1,080
26	124	167	796	396	394	720	771	1,370	1,870	1,930	1,410	1,050
27	129	162	803	387	399	623	889	1,230	1,830	1,900	1,400	1,030
28	124	171	785	392	398	598	1,020	1,010	1,810	1,880	1,380	1,030
29	127	170	780	396	-----	598	1,080	964	1,820	1,870	1,380	1,030
30	122	166	780	398	-----	601	1,110	961	1,780	1,870	1,350	1,020
31	126	-----	779	398	-----	664	-----	955	-----	1,850	1,320	-----
TOTAL	12,151	5,154	18,518	15,310	13,644	25,792	27,942	31,337	43,754	57,640	48,020	34,940
MEAN	392	172	597	494	487	832	931	1,011	1,458	1,859	1,549	1,165
MAX	1,160	194	829	810	1,010	1,390	1,280	1,370	1,870	1,940	1,820	1,350
MIN	122	125	161	378	389	391	463	594	932	1,750	1,320	1,020
AC-FT	24,100	10,220	36,730	30,370	27,060	51,160	55,420	62,160	86,790	114,300	95,250	69,300
(a)	1,250	69	123	97	46	1,158	2,406	2,944	3,771	4,503	4,211	2,870
MEAN b	18.8	309	868	771	678	941	1,616	2,942	2,976	654	93.7	20.1
AC-FT b	1,157	18,382	53,373	47,398	37,667	57,863	96,145	180,884	177,078	40,191	5,764	1,194

CAL YR 1970 TOTAL 423,421 MEAN 1,160 MAX 2,440 MIN 122 AC-FT 839,900 MEAN b 1,199 AC-FT b 868,600  
WTR YR 1971 TOTAL 334,202 MEAN 916 MAX 1,940 MIN 122 AC-FT 662,900 MEAN b 990 AC-FT b 717,100

a Diversion, in acre-feet, to North Side Canal; furnished by Merced Irrigation District.

b Adjusted for change in contents in Lake McClure, McSwain Lake, and diversion to North Side Canal.

## SAN JOAQUIN RIVER BASIN

11271290 MERCED RIVER AT SHAFFER BRIDGE, NEAR CRESSEY, CALIF.

LOCATION.--Lat 37°27'15", long 120°36'28", in NW¼SW¼ sec.36, T.5 S., R.12 E., Merced County, near center of span on downstream side of county road bridge, 0.6 mile upstream from Dry Creek, and 4.0 miles northeast of Cressey.

DRAINAGE AREA.--1,117 sq mi.

PERIOD OF RECORD.--October 1965 to current year (low flow only).

GAGE.--Water-stage recorder. Datum of gage is 116.79 ft above mean sea level.

REMARKS.--Records good. Most water released from Lake McClure (see sta 11269500, 11270900) 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 cfs.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	118	194			-	120	102	112	78	57	82
2	98	115	197			-	122	90	100	58	64	84
3	100	118	197			-	143	98	92	71	60	80
4	98	140	194			-	149	110	88	82	61	92
5	78	176	186			-	146	118	77	84	63	96
6	90	176	183			155	131	115	84	71	68	98
7	84	183	183			186	143	115	82	71	60	102
8	-	162	186			200	137	131	76	77	57	110
9	-	158	186			194	125	140	77	82	55	122
10	-	158	186			158	125	118	72	74	63	120
11	-	162	-			149	122	100	71	68	71	110
12	183	166	-			166	140	94	74	74	65	118
13	162	158	-			200	134	102	74	64	68	118
14	122	158	-			-	155	94	78	58	61	102
15	115	162	-			-	155	82	82	61	71	92
16	112	158	-			-	120	86	84	64	77	84
17	115	158	-			-	125	77	100	63	65	82
18	105	158	-			186	155	72	78	90	59	86
19	100	158	-			172	155	70	68	78	68	92
20	105	158	-			166	140	88	80	63	63	102
21	94	169	-			172	125	92	92	58	76	108
22	94	158	-			176	115	94	78	63	64	105
23	112	158	-			166	110	94	80	55	78	115
24	118	158	-			158	96	94	80	52	71	120
25	118	172	-			146	96	82	86	60	64	115
26	118	180	-			162	105	86	77	64	60	115
27	115	166	-			172	105	98	86	68	52	128
28	115	166	-			172	102	112	88	80	50	122
29	112	200	-		-----	149	96	120	74	84	63	125
30	118	-	-		-----	155	88	118	77	77	71	128
31	122	-----	-		-----	140	-----	122	-----	58	71	-----
TOTAL	-	-	-			-	3,780	3,114	2,467	2,150	1,996	3,153
MEAN	-	-	-			-	126	100	82.2	69.4	64.4	105
MAX	-	-	-			-	155	140	112	90	78	128
MIN	-	-	-			-	88	70	68	52	50	80
AC-FT	-	-	-			-	7,500	6,180	4,890	4,260	3,960	6,250
(a)	15,200	655	2,540	3,740	4,720	39,010	46,390	53,690	79,350	108,600	88,200	60,380

a Diversion, in acre-feet, to Main Canal near diversion dam, near Merced Falls; furnished by Merced Irrigation District.

## 11271320 DRY CREEK NEAR SNELLING, CALIF.

LOCATION.--Lat 37°33'18", long 120°27'44", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.30, T.4 S., R.14 E., Merced County, on left bank 650 ft downstream from Fields Road and 2.8 miles northwest of Snelling.

DRAINAGE AREA.--67.6 sq mi.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 230 ft (from topographic map).

AVERAGE DISCHARGE.--5 years, 22.0 cfs (15,940 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,450 cfs Dec. 21 (gage height, 9.04 ft); no flow for several months.  
Period of record: Maximum discharge, 6,710 cfs Jan. 21, 1969 (gage height, 17.01 ft); no flow for several months in most years.

REMARKS.--Records good. Small weir upstream from gage regulates storage for stock pond and irrigation pumping.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	0	11	7.2	2.0	.82						
2	.01	0	115	7.2	1.8	.73						
3	0	0	36	8.8	1.8	.73						
4	.41	0	16	6.3	1.7	.73						
5	1.8	.54	17	5.2	1.6	.73						
6	1.6	.73	9.1	4.7	1.4	.64						
7	1.1	1.0	6.3	3.9	1.4	.55						
8	.55	.73	5.2	3.7	1.4	.55						
9	.30	.64	9.1	3.5	1.3	.47						
10	.21	.47	9.4	3.3	1.2	.47						
11	.14	1.1	5.8	3.3	1.2	.40						
12	.08	1.0	4.1	62	1.2	.47						
13	.04	.55	3.3	76	1.2	16						
14	.01	.47	2.7	34	1.2	7.4						
15	0	.35	2.1	19	1.1	3.3						
16	0	.25	65	12	1.1	1.8						
17	0	.25	68	9.4	1.1	1.3						
18	0	.25	26	8.1	1.0	1.1						
19	0	.40	204	6.9	1.2	.82						
20	0	.40	52	6.1	1.2	.64						
21	0	.35	418	5.5	1.1	.35						
22	0	.30	81	4.7	1.1	.14						
23	0	.25	33	3.9	1.0	.06						
24	0	.21	21	3.5	.91	.06						
25	0	.64	15	3.1	.82	.06						
26	0	.91	13	2.7	.64	.06						
27	0	.73	18	2.5	.64	.02						
28	0	.73	21	2.3	.73	.01						
29	0	34	13	2.3	-----	.01						
30	0	35	10	2.1	-----	0						
31	0	-----	8.4	2.0	-----	0	-----		-----		-----	
TOTAL	6.26	82.25	1,318.5	325.2	34.04	40.42	0	0	0	0	0	0
MEAN	.20	2.74	42.5	10.5	1.22	1.30	0	0	0	0	0	0
MAX	1.8	35	418	76	2.0	16	0	0	0	0	0	0
MIN	0	0	2.1	2.0	.64	0	0	0	0	0	0	0
AC-FT	12	163	2,620	645	68	80	0	0	0	0	0	0

CAL YR 1970 TOTAL 6,558.45 MEAN 18.0 MAX 1,090 MIN 0 AC-FT 13,010  
WTR YR 1971 TOTAL 1,806.67 MEAN 4.95 MAX 418 MIN 0 AC-FT 3,580

PEAK DISCHARGE (BASE, 1,000 CFS).--Dec. 21 (0600) 1,450 cfs (9.04 ft).

## 11272500 MERCED RIVER NEAR STEVINSON, CALIF.

LOCATION.--Lat 37°22'15", long 120°55'46", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.36, T.6 S., R.9 E., Merced County, on right bank 5 miles upstream from mouth and 6 miles northwest of Stevinson.

DRAINAGE AREA.--1,273 sq mi.

PERIOD OF RECORD.--October 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. October 1940 to Aug. 16, 1955, at datum 55.74 ft higher, Aug. 16, 1955, to Sept. 30, 1959, at datum 54.74 ft higher.

AVERAGE DISCHARGE.--31 years, 687 cfs (497,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,280 cfs Dec. 22 (elevation, 61.04 ft); minimum daily, 85 cfs Aug. 11.

Period of record: Maximum discharge, 13,600 cfs Dec. 5, 1950 (elevation, 73.79 ft, present datum); no flow July 19 to Aug. 21, 1961, result of temporary dam below station.

REMARKS.--Records good. Practically entire flow is diverted above station for irrigation of 120,000 acres; some return flow enters above station. Flow regulated by three reservoirs (combined capacity, 1,034,000 acre-ft), the largest of which is Lake McClure (see sta 11269500).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	185	272	794	430	310	219	193	203	127	119	117
2	216	187	266	788	427	313	231	203	207	127	112	122
3	218	188	264	783	431	317	213	206	192	132	104	135
4	218	182	290	776	429	347	217	192	173	133	107	120
5	227	196	271	791	431	340	236	192	171	138	94	142
6	205	197	258	806	426	300	243	192	173	143	89	162
7	204	204	253	771	428	282	240	207	179	141	86	151
8	219	214	250	797	430	289	271	239	172	128	97	136
9	277	215	248	792	459	278	250	270	150	122	95	139
10	303	196	246	628	734	279	244	260	145	132	92	157
11	318	195	244	532	861	292	255	235	140	153	85	169
12	317	198	400	505	875	281	249	196	144	139	87	163
13	276	206	642	502	873	336	225	198	150	129	99	183
14	253	203	649	518	633	320	254	196	149	125	94	162
15	240	212	678	508	496	345	273	184	134	108	88	155
16	242	218	708	486	464	342	276	182	135	96	103	157
17	222	213	731	471	446	325	260	204	151	102	107	161
18	210	211	778	459	428	312	296	166	140	117	104	161
19	199	211	791	453	424	286	240	154	126	139	94	167
20	190	208	915	447	424	283	238	150	135	125	103	168
21	191	206	880	441	417	269	232	153	141	124	112	158
22	187	217	1,140	437	406	264	195	154	137	99	127	191
23	179	220	988	437	405	258	196	170	130	99	139	190
24	183	214	876	435	399	262	186	181	130	114	129	187
25	194	219	854	434	338	277	178	176	139	122	128	190
26	192	229	834	431	314	280	200	178	139	128	129	182
27	182	233	827	428	314	270	188	183	145	125	117	191
28	178	235	827	428	310	284	179	203	147	112	107	203
29	175	245	825	426	-----	289	173	192	132	120	106	215
30	172	284	818	426	-----	260	180	198	130	111	115	225
31	172	-----	804	430	-----	251	-----	188	-----	112	125	-----
TOTAL	6,770	6,321	18,827	17,360	13,452	9,141	6,837	5,995	4,539	3,822	3,293	4,954
MEAN	218	211	607	560	480	295	228	193	151	123	106	165
MAX	318	284	1,140	806	875	347	296	270	207	153	139	225
MIN	172	168	244	426	310	251	173	150	126	96	85	117
AC-FT	13,430	12,540	37,340	34,430	26,680	18,130	13,560	11,890	9,000	7,580	6,530	9,830
CAL YR 1970	TOTAL 168,549		MEAN 462	MAX 3,000	MIN 121	AC-FT 334,300						
WTR YR 1971	TOTAL 101,311		MEAN 278	MAX 1,140	MIN 85	AC-FT 201,000						

## 11273000 MERCED RIVER SLOUGH NEAR NEWMAN, CALIF.

LOCATION.--Lat 37°21'36", long 120°57'38", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.3, T.7 S., R.9 E., Merced County, on left bank 0.1 mile downstream from bridge, 0.2 mile downstream from head of slough between Merced and San Joaquin Rivers, and 5 miles northeast of Newman.

PERIOD OF RECORD.--October 1941 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to July 31, 1948, at datum 56.44 ft higher and Aug. 1, 1948, to Sept. 30, 1959, at datum 54.36 ft higher.

AVERAGE DISCHARGE.--30 years, 63.7 cfs (46,150 acre-ft per year).

EXTREMES.--Current year: No flow.

Period of record: Maximum discharge, 8,100 cfs Apr. 6, 1958; no flow for several months in each year.

REMARKS.--Records excellent. Sloughs flow from Merced River to San Joaquin River, bypassing the gaging station on San Joaquin River near Newman. Flow at times consists of return flow from irrigated fields. Records include flow in South Slough. Discharge for calendar year 1970 is as follows: Maximum, 0.01 cfs; minimum, zero; mean, 0.0001 cfs; total 0.04 acre-ft.

LOCATION.--Lat 37°21'02", long 120°58'34", in SW  $\frac{1}{4}$  sec.3, T.7 S., R.9 E., Stanislaus County, on left bank 300 ft downstream from bridge on Hills Ferry Road, 500 ft downstream from Merced River, and 3.5 miles northeast of Newman.

PERIOD OF RECORD.--April 1912 to current year. Prior to Oct. 1, 1937, and subsequent to Oct. 1, 1943, flow that bypassed station at discharges above 9,000 cfs not included in records.

**AVERAGE DISCHARGE,--59 years, 2,074 cfs (1,503,000 acre-ft per year).**

Period of record: Maximum discharge (River only), 28,000 cfs Feb. 26, 1969 (elevation, 65.90 ft, from high-water mark in well); river and Merced River Slough, 34,700 cfs Feb. 26, 1969 (elevation, 65.90 ft, present datum); minimum, 15 cfs Aug. 9, 10, 1924.

Flood of Jan. 2, 1868, reached a stage of 21.7 ft, from floodmarks; flood of February 1886, reached a stage of 19.8 ft, from floodmarks; and flood of 1911 reached a stage of 19 ft, from floodmarks. All stages referred to datum in use from 1931 to 1959. Discharges unknown.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas. Record for Merced River Slough (see sta 11273000) shows flow bypassing station.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	423	383	1,120	1,440	944	608	600	427	699	365	277	314
2	432	384	1,200	1,400	919	618	561	441	702	329	265	320
3	428	344	1,270	1,370	893	632	519	479	640	312	272	363
4	433	374	1,270	1,330	871	651	486	482	577	294	268	333
5	433	477	1,200	1,300	843	656	518	509	532	311	251	333
6	393	523	1,110	1,280	812	588	546	533	484	330	246	391
7	367	566	1,060	1,230	796	521	554	568	494	330	237	376
8	352	586	1,010	1,240	795	538	585	646	471	302	238	365
9	387	599	993	1,220	789	540	583	783	415	287	252	341
10	447	567	956	1,080	993	549	575	835	383	282	250	345
11	464	533	901	909	1,169	585	586	744	414	318	254	379
12	480	533	948	846	1,200	571	607	613	404	324	244	373
13	428	569	1,180	841	1,200	627	597	608	401	310	263	395
14	373	559	1,210	867	1,060	668	639	583	411	311	271	360
15	353	538	1,280	914	854	745	670	547	403	291	236	341
16	358	601	1,330	919	791	762	768	490	407	282	272	337
17	327	549	1,360	905	757	779	871	499	418	261	272	344
18	295	534	1,380	1,010	730	776	896	441	392	276	277	361
19	286	522	1,400	1,180	724	701	830	422	369	318	257	338
20	281	524	1,550	1,230	731	677	742	426	363	297	254	321
21	313	518	1,670	1,240	699	658	645	421	355	312	271	299
22	348	525	1,850	1,210	706	635	540	436	345	271	278	319
23	380	519	2,020	1,200	723	603	516	456	338	241	314	335
24	390	509	2,000	1,200	726	584	509	476	323	263	323	330
25	384	524	1,940	1,180	668	612	472	461	316	275	320	326
26	393	549	1,800	1,130	611	667	483	445	333	288	311	318
27	401	589	1,660	1,080	599	755	469	453	335	286	308	337
28	412	642	1,560	1,040	599	812	434	504	375	272	284	358
29	368	777	1,520	1,010	-----	811	423	574	358	254	277	360
30	350	1,000	1,500	977	-----	756	411	673	369	260	307	375
31	364	-----	1,480	986	-----	672	-----	663	-----	258	343	-----
TOTAL	11,843	16,417	42,728	34,764	23,193	20,357	17,635	16,598	12,826	9,110	8,492	10,387
MEAN	382	547	1,378	1,121	828	657	588	535	428	294	274	346
MAX	480	1,000	2,020	1,440	1,200	812	896	835	702	365	343	395
MIN	281	344	901	841	599	521	411	421	316	241	236	299
AC-FT	23,490	32,560	84,750	68,950	46,000	40,380	34,980	32,920	25,440	18,070	16,840	20,6

## 11274500 ORESTIMBA CREEK NEAR NEWMAN, CALIF.

LOCATION.--Lat 37°19'01", long 121°07'39", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.19, T.7 S., R.8 E., Stanislaus County, on right bank 220 ft upstream from California aqueduct siphon, 3 miles downstream from Oso Creek, and 5 miles west of Newman.

DRAINAGE AREA.--134 sq mi.

PERIOD OF RECORD.--January 1932 to current year.

GAGE.--Water-stage recorder. Datum of gage is 216.00 ft above mean sea level. Prior to Oct. 1, 1958, at site 1,320 ft downstream at datum 24.14 ft lower. Oct. 1, 1958, to Aug. 13, 1969, at site 1,200 ft downstream at datum 27.14 ft lower.

AVERAGE DISCHARGE.--39 years, 15.3 cfs (11,080 acre-ft per year); median of yearly mean discharges, 8.4 cfs (6,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 584 cfs Dec. 21 (gage height, 5.58 ft); no flow for several months. Period of record: Maximum discharge, 10,200 cfs Apr. 2, 1958 (gage height, 6.57 ft, site and datum then in use), from rating curve extended above 5,000 cfs; no flow for several months in each year.

REMARKS.--Records good. No storage or diversion except for minor stock ponds.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	0	15	6.1	1.7	.81	.11				
2		0	28	14	5.8	1.3	.66	.51				
3		0	26	10	4.7	1.5	.51	.51				
4		0	5.8	8.2	4.4	1.7	.23	.51				
5		0	1.7	7.5	4.4	1.5	.23	.51				
6		0	.15	6.8	4.4	1.3	.23	.51				
7		0	0	6.4	4.0	1.3	.23	.37				
8		0	0	5.8	4.0	1.3	.23	.37				
9		0	0	5.4	3.7	1.1	.23	.23				
10		0	0	5.0	3.4	1.1	.23	.05				
11		0	0	5.0	3.4	1.3	.11	0				
12		0	0	7.1	3.4	1.7	.11	0				
13		0	0	39	3.2	6.2	.11	0				
14		0	0	166	3.2	8.2	.37	0				
15		0	0	98	2.9	5.4	1.1	0				
16		0	0	50	3.2	4.4	1.1	0				
17		0	0	33	3.4	3.2	.66	0				
18		0	8.0	23	3.2	2.6	.37	0				
19		0	120	19	3.2	2.1	.11	0				
20		0	73	17	2.9	1.9	.11	0				
21		0	320	14	2.6	1.7	.11	0				
22		0	133	11	2.6	1.7	.23	0				
23		0	52	10	2.6	1.7	.23	0				
24		0	29	8.9	2.1	1.7	.23	0				
25		0	20	8.2	1.7	1.7	.11	0				
26		0	17	7.8	1.7	1.9	.11	0				
27		0	17	7.5	1.7	1.9	.11	0				
28		.43	31	7.1	1.7	1.7	.11	0				
29		2.0	24	6.8	-----	1.7	.11	0				
30		0	20	6.4	-----	1.3	.11	0				
31		-----	17	6.1	-----	1.1	-----	0	-----			-----
TOTAL	0	2.43	942.65	635.0	93.6	68.9	9.20	3.68	0	0	0	0
MEAN	0	.081	30.4	20.5	3.34	2.22	.31	.12	0	0	0	0
MAX	0	2.0	320	166	6.1	8.2	1.1	.51	0	0	0	0
MIN	0	0	0	5.0	1.7	1.1	.11	0	0	0	0	0
AC-FT	0	4.8	1,870	1,260	186	137	18	7.3	0	0	0	0
CAL YR 1970	TOTAL	5,612.05	MEAN	15.4	MAX	474	MIN	0	AC-FT	11,130		
WTR YR 1971	TOTAL	1,755.46	MEAN	4.81	MAX	320	MIN	0	AC-FT	3,480		

## PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 2	1930	5.08	230	12-21	0600	5.58	584
12-19	0600	5.05	215	1-14	0800	5.09	235

## SAN JOAQUIN RIVER BASIN

11274630 DEL PUERTO CREEK NEAR PATTERSON, CALIF.

LOCATION.--Lat 37°29'12", long 121°12'29", in SE¼NW¼ sec.21, T.5 S., R.7 E., Stanislaus County, on left bank 1.0 mile upstream from Delta-Mendota Canal crossing and 4.4 miles west of Patterson.

DRAINAGE AREA.--72.6 sq mi.

PERIOD OF RECORD.--October 1958 to May 1965 (maximums only), June 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 200 ft (from topographic map). Prior to June 1965, crest-stage gage at site 1.0 mile downstream at different datum.

AVERAGE DISCHARGE.--6 years, 5.17 cfs (3,750 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 125 cfs Dec. 2 (gage height, 2.89 ft); no flow for several months. Period of record: Maximum discharge, 1,800 cfs Feb. 16, 1959 (gage height, 14.68 ft, site and datum then in use), from rating curve extended above 690 cfs; no flow for several months in each year.

REMARKS.--Records good. Some stock ponds and small diversions above station.

REVISIONS (WATER YEARS).--WRD Calif. 1967 (M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	10	7.0	4.5	1.9	1.1	.98	1.1			
2			49	7.0	4.5	1.9	1.3	2.0	1.1			
3		0	26	5.9	3.9	1.9	1.3	3.1	1.1			
4		0	12	5.2	3.3	1.9	1.3	2.8	.98			
5		0	9.4	5.2	3.3	1.9	1.1	2.3	.98			
6		0	6.3	5.2	3.3	1.9	1.1	1.9	.84			
7		0	5.2	4.9	3.3	2.1	1.7	1.5	.72			
8		0	3.9	4.9	3.3	2.1	2.1	1.9	.72			
9		0	3.6	4.9	3.3	2.1	1.7	1.9	.72			
10		0	3.1	4.9	3.3	2.1	1.5	1.5	.72			
11		0	2.8	4.5	3.1	1.9	1.5	1.1	.60			
12		0	2.6	5.2	2.8	2.1	1.3	.98	.50			
13		0	2.3	11	2.8	5.7	1.3	.98	.40			
14		0	2.3	21	2.6	4.5	6.5	.84	.40			
15		0	1.9	21	2.6	3.6	5.9	.72	.20			
16		0	2.1	16	2.3	3.1	3.3	.72	.08			
17		0	2.8	12	2.8	2.6	3.1	.60	.03			
18		0	3.9	9.9	2.6	2.3	2.6	.50	0			
19		0	9.9	9.0	2.8	1.9	2.1	.50	0			
20		0	17	7.8	2.3	1.9	2.1	.40	0			
21		0	63	7.0	2.1	1.5	2.1	.50	0			
22		0	34	5.9	2.1	1.5	1.9	.40	0			
23		0	19	5.9	2.1	1.5	1.7	.40	0			
24		0	14	5.6	1.9	1.7	1.5	.50	0			
25		0	10	5.2	1.9	1.7	1.5	.50	0			
26		0	9.4	5.2	1.7	1.9	1.5	.60	0			
27		0	9.4	4.9	1.7	2.6	1.1	.60	0			
28		0	10	4.9	2.1	2.1	1.1	.72	0			
29		24	9.0	4.9	-----	1.7	1.1	.84	0			
30		26	8.2	4.9	-----	1.5	.98	.98	0			
31		-----	7.4	4.5	-----	1.3	-----	.98	-----			
TOTAL	0	50	369.5	231.4	78.3	68.4	58.38	34.24	11.19	0	0	0
MEAN	0	1.67	11.9	7.46	2.80	2.21	1.95	1.10	.37	0	0	0
MAX	0	26	63	21	4.5	5.7	6.5	3.1	1.1	0	0	0
MIN	0	0	1.9	4.5	1.7	1.3	.98	.40	0	0	0	0
AC-FT	0	99	733	459	155	136	116	68	22	0	0	0

CAL YR 1970 TOTAL 1,828.05 MEAN 5.01 MAX 63 MIN 0 AC-FT 3,630  
WTR YR 1971 TOTAL 901.41 MEAN 2.47 MAX 63 MIN 0 AC-FT 1,790

PEAK DISCHARGE (BASE, 50 CFS)  
DATE TIME G.H. DISCHARGE DATE TIME G.H. DISCHARGE  
11-30 0100 2.43 68 12-21 0800 2.64 95  
12- 2 1130 2.89 125



## 11274710 MACLURE CREEK BELOW MACLURE GLACIER, NEAR TUOLUMNE MEADOWS, CALIF.

LOCATION.--Lat 37°45'09", long 119°16'52", in T.2 S., R.24 E., Tuolumne County, Yosemite National Park, in middle of stream 650 ft upstream from large unnamed lake, 2.3 miles upstream from mouth, and 9.3 miles south of town of Tuolumne Meadows.

DRAINAGE AREA.--0.37 sq mi.

PERIOD OF RECORD.--May 1967 to current year (no winter records).

GAGE.--Water-stage recorder and artificial control. Altitude of gage is 11,520 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 11 cfs July 18 (gage height, 1.90 ft); minimum daily recorded, 0.08 cfs Oct. 21.

Period of record: Maximum discharge, 28 cfs July 28, 1967 (gage height, 2.64 ft); possibility of no flow during winter months each year.

REMARKS.--Records good. No storage or diversion above station. This station measures the outflow from Maclure Glacier in Yosemite National Park.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.61							--	.12	3.6	6.9	1.9
2	.57							--	.12	4.0	7.1	2.1
3	.55							--	.12	4.3	6.9	1.8
4	.52							--	.12	3.8	5.7	1.9
5	.52							--	.10	3.8	5.0	2.0
6	.50							--	.16	4.0	4.6	3.0
7	.46							--	.38	3.7	4.3	2.2
8	.43							--	.66	4.0	4.6	1.6
9	.40							--	.87	3.8	5.1	2.5
10	.38							--	.92	3.5	5.5	2.9
11	.35							--	1.2	3.7	4.6	2.8
12	.32							--	1.6	4.0	3.9	2.8
13	.31							--	2.0	4.4	3.9	2.6
14	.29							--	2.3	5.4	4.4	2.6
15	.24							--	2.8	6.4	3.9	2.6
16	.20							--	3.3	7.5	3.4	2.4
17	.16							--	3.4	7.1	3.4	2.0
18	.13							--	2.9	8.4	3.6	1.6
19	.12							--	2.4	8.0	3.8	1.2
20	.10							--	3.0	7.0	3.6	1.1
21	.08							--	3.6	5.2	3.2	.98
22	--							--	4.0	4.5	2.9	.90
23	--							--	4.0	5.1	2.9	.84
24	--							--	3.6	6.0	2.8	.78
25	--							--	3.5	6.2	2.6	.70
26	--							.12	3.4	6.2	2.9	.61
27	--							.12	2.6	6.6	2.9	.52
28	--							.12	2.4	6.5	3.0	.38
29	--							.12	2.2	6.0	2.8	.32
30	--							.12	3.0	5.5	2.4	.26
31	--	-----			-----		-----	.12	-----	6.4	1.8	-----
TOTAL	--							--	60.77	164.6	124.4	49.89
MEAN	--							--	2.03	5.31	4.01	1.66
MAX	--							--	4.0	8.4	7.1	3.0
MIN	--							--	.10	3.5	1.8	.26
AC-FT	--							--	121	326	247	99

PEAK DISCHARGE (BASE, 10 CFS).--July 18 (2000) 11 cfs (1.90 ft).

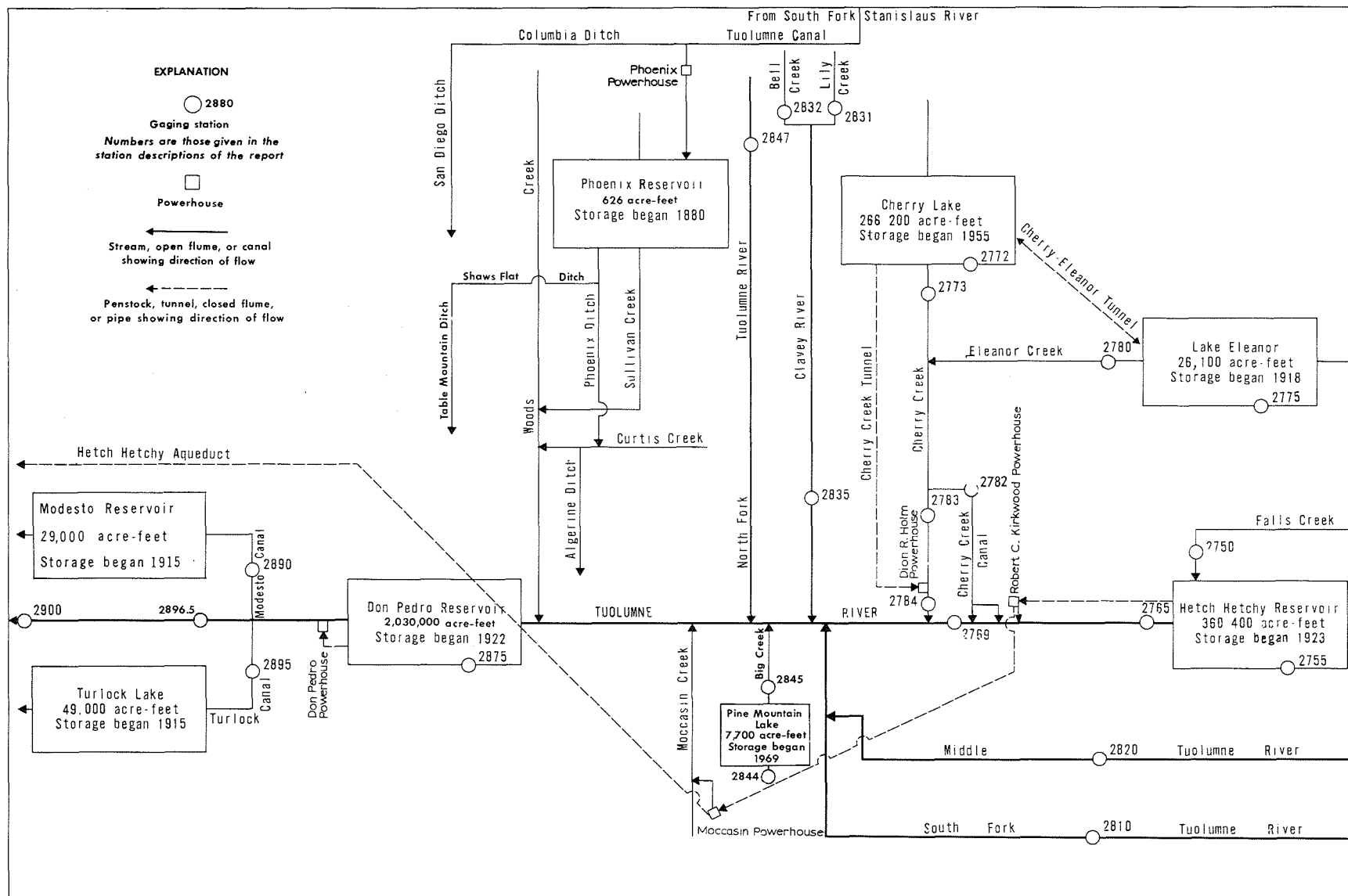


FIGURE 7.--Schematic diagram showing diversions and storage in Tuolumne River basin.

## 11275000 FALLS CREEK NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'15", long 119°45'48", in SE $\frac{1}{4}$  sec.3, T.1 N., R.20 E., Tuolumne County, Yosemite National Park, on right bank 0.2 mile upstream from Wampana Falls, 0.6 mile upstream from mouth, and 2 miles northeast of Hetch Hetchy.

DRAINAGE AREA.--46.0 sq mi.

PERIOD OF RECORD.--October 1915 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1918, published as "near Sequoia."

GAGE.--Water-stage recorder. Altitude of gage is 5,350 ft (from topographic map).

AVERAGE DISCHARGE.--56 years, 143 cfs (103,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,300 cfs June 27 (gage height, 6.15 ft); no flow Oct. 1 to Nov. 4. Period of record: Maximum discharge, 6,660 cfs Nov. 19, 1950, Dec. 23, 1955 (gage height, 9.0 ft, from floodmarks), from rating curve extended above 2,500 cfs on basis of velocity-area studies; no flow at times in many years.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and five discharge measurements furnished by city and county of San Francisco.

REVISIONS (WATER YEARS).--WSP 531: 1917(M). WSP 931: 1938. WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	91	47	82	50	132	320	163	330	34	3.4
2		0	81	47	78	49	128	346	163	332	33	3.1
3		0	86	45	70	49	132	318	240	305	30	2.7
4		0	97	44	63	47	145	250	335	270	27	2.3
5		18	89	42	57	44	175	185	451	235	25	2.0
6		51	88	41	54	42	185	203	548	218	22	3.6
7		41	122	39	53	43	158	230	695	195	18	5.2
8		26	141	38	57	45	124	235	848	178	16	9.0
9		25	117	41	57	48	128	183	806	159	14	8.2
10		28	91	46	69	49	150	265	680	143	14	6.7
11		27	82	47	112	50	175	504	660	134	14	5.5
12		49	77	49	139	57	200	500	690	124	14	4.4
13		29	70	48	135	60	245	548	842	117	11	3.8
14		19	61	49	128	54	195	588	782	115	11	3.3
15		16	55	50	145	58	198	655	700	115	10	3.1
16		14	59	59	117	63	260	680	730	113	9.0	2.8
17		12	63	114	91	68	295	490	690	120	7.5	2.5
18		12	54	161	75	70	208	385	620	120	6.7	2.2
19		12	52	195	78	81	143	388	588	110	6.1	1.9
20		11	49	188	64	94	128	451	600	93	5.5	1.7
21		11	45	143	59	104	117	490	608	87	5.0	1.5
22		10	46	112	57	112	98	330	600	87	4.7	1.3
23		10	46	95	51	119	88	323	560	78	4.4	1.1
24		10	47	82	49	101	82	493	524	65	3.9	.97
25		516	47	75	51	185	79	616	524	57	3.7	.92
26		434	48	78	46	424	82	685	490	53	3.3	.88
27		188	48	82	50	230	78	451	953	50	2.9	.75
28		117	48	82	50	152	89	320	600	46	2.8	.64
29		137	49	82	-----	145	150	248	400	44	3.5	.52
30		103	48	84	-----	170	238	248	346	42	3.9	1.3
31		-----	49	84	-----	156	-----	208	-----	37	3.8	-----
TOTAL	0	1,926	2,146	2,389	2,137	3,019	4,605	12,136	17,436	4,172	369.7	87.28
MEAN	0	64.2	69.2	77.1	76.3	97.4	154	391	581	135	11.9	2.91
MAX	0	516	141	195	145	424	295	685	953	332	34	9.0
MIN	0	0	45	38	46	42	78	183	163	37	2.8	.52
AC-FT	0	3,820	4,260	4,740	4,240	5,990	9,130	24,070	34,580	8,280	733	173

CAL YR 1970 TOTAL 52,975.92 MEAN 145 MAX 953 MIN 0 AC-FT 105,100  
WTR YR 1971 TOTAL 50,422.98 MEAN 138 MAX 953 MIN 0 AC-FT 100,000

## SAN JOAQUIN RIVER BASIN

## 11275500 HETCH HETCHY RESERVOIR AT HETCH HETCHY, CALIF.

LOCATION.--Lat 37°56'52", long 119°47'13", in NW $\frac{1}{4}$  sec.16, T.1 N., R.20 E., Tuolumne County, Yosemite National Park, near center of O'Shaughnessy Dam on Tuolumne River at Hetch Hetchy, 1.5 miles downstream from Falls Creek.

DRAINAGE AREA.--455 sq mi.

PERIOD OF RECORD.--May 1923 to current year. Prior to October 1930 monthend contents, published in WSP 1315-A. GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by city and county of San Francisco).

Prior to Oct. 1, 1927, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 360,800 acre-ft July 6 (elevation, 3,806.2 ft); minimum, 110,300 acre-ft Mar. 24 (elevation, 3,651.8 ft).

Period of record: Maximum contents, 369,100 acre-ft Dec. 3, 1950 (elevation, 3,810.4 ft); no contents at times in 1929-31.

REMARKS.--Reservoir is formed by concrete gravity-type dam, completed to crest elevation 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. Usable capacity, 360,400 acre-ft between elevations, 3,512.0 ft (somewhat above bottom outlet) and 3,806.0 ft (top of drum-type spillway gates) above mean sea level. Water is diverted from reservoir through tunnel to Robert C. Kirkwood powerplant 15 miles downstream where flow is diverted from powerplant tailrace in a closed conduit through Hetch Hetchy aqueduct to Moccasin Creek powerplant with flow in excess of aqueduct capacity being spilled to 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 at Red Mountain Bar. Flow down river is for State Department of Fish and Game and Raker Act requirements. Hetch Hetchy Reservoir is main storage unit of Hetch Hetchy water-supply system for San Francisco. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record furnished by city and county of San Francisco.

REVISIONS.--WSP 1930: Drainage area.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

3,512	0	3,540	8,700	3,640	97,000	3,740	238,900
3,513	51	3,560	22,900	3,660	119,900	3,760	273,700
3,515	154	3,580	39,500	3,680	146,200	3,780	310,400
3,520	410	3,600	57,400	3,700	175,000	3,800	348,600
3,530	3,300	3,620	76,500	3,720	206,000	3,810.4	369,100

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	249,200	205,200	179,600	162,000	148,400	132,400	114,300	121,600	231,500	357,400	343,900	292,400
2	247,600	203,800	179,600	160,800	147,900	131,400	114,100	124,600	233,000	359,000	343,000	290,600
3	246,200	202,200	179,000	159,900	147,300	130,400	113,800	125,100	235,000	360,200	342,000	288,700
4	245,000	200,900	178,800	158,900	146,600	129,100	114,300	126,300	238,400	360,400	340,800	287,100
5	243,700	199,700	178,500	157,800	145,900	128,000	114,900	127,200	243,300	360,600	339,800	285,300
6	242,300	198,600	178,200	157,000	145,300	126,700	115,500	128,200	250,200	360,800	338,500	283,800
7	240,900	197,500	177,900	156,000	144,600	125,400	115,700	129,500	259,200	360,400	337,000	282,300
8	239,400	196,400	178,300	154,900	143,800	124,100	115,700	130,300	269,100	360,000	335,400	279,800
9	237,900	195,300	178,600	154,000	143,100	123,000	115,600	130,500	278,400	359,600	333,900	279,300
10	236,500	194,000	178,600	153,100	142,400	121,900	115,900	132,400	287,300	359,400	332,400	277,600
11	235,400	192,700	178,300	152,200	142,000	120,700	116,600	136,200	296,100	359,400	331,000	276,200
12	233,700	191,800	177,700	151,400	141,900	119,700	117,300	140,500	305,300	359,200	329,500	274,600
13	232,300	190,400	177,400	150,700	141,900	118,700	118,400	145,000	315,600	358,800	328,000	273,000
14	231,000	189,100	177,000	150,000	141,900	117,800	119,000	151,500	324,900	358,800	326,400	271,400
15	229,700	188,100	176,400	148,900	142,200	116,300	119,700	159,100	332,900	358,400	324,900	269,800
16	228,200	187,000	175,600	148,000	142,200	115,600	120,900	166,000	340,400	358,400	323,400	268,200
17	226,700	185,600	175,000	148,000	141,700	114,900	122,500	170,900	346,300	358,600	321,700	266,600
18	225,500	184,000	174,100	149,300	141,100	113,900	123,200	173,800	349,600	358,800	319,800	265,200
19	224,000	182,900	173,500	150,700	140,500	113,100	123,200	178,800	351,700	358,600	317,700	263,800
20	222,500	181,500	172,800	151,500	139,900	112,400	123,400	184,300	353,900	358,200	315,800	262,200
21	221,100	179,900	172,200	151,900	139,300	111,800	123,200	187,600	356,800	357,400	313,900	260,600
22	219,700	178,500	171,300	151,900	138,500	111,400	122,700	191,900	357,800	357,000	312,200	258,900
23	218,300	177,000	170,400	151,800	137,800	110,800	122,100	196,200	357,800	356,200	309,800	257,500
24	217,000	175,900	169,500	151,500	137,200	110,300	121,600	201,900	357,800	355,000	307,900	255,700
25	215,700	177,000	168,600	151,200	136,300	110,800	120,800	208,700	357,600	353,700	306,100	254,200
26	214,000	179,300	167,700	150,700	135,100	112,800	120,200	215,800	359,000	352,500	304,000	252,600
27	212,400	179,900	166,900	150,000	134,500	113,800	119,500	220,600	360,000	351,300	302,000	250,900
28	211,000	179,400	165,800	149,600	133,500	113,900	119,300	224,200	359,400	349,800	300,000	249,300
29	209,500	179,900	164,900	149,300	-----	114,100	119,300	226,800	357,600	348,400	298,100	247,600
30	207,200	179,900	164,000	149,000	-----	113,900	120,000	229,200	356,800	347,200	296,300	246,100
31	206,500	-----	162,900	148,900	-----	114,200	-----	230,500	-----	345,700	294,200	-----
MAX	249,200	205,200	179,600	162,000	148,400	132,400	123,400	230,500	360,000	360,800	343,900	292,400
MIN	206,500	175,900	162,900	148,000	133,500	110,300	113,800	121,600	231,500	345,700	294,200	246,100
(a)	3,720.3	3,703.2	3,691.8	3,681.9	3,670.6	3,655.1	3,660.1	3,735.0	3,804.2	3,798.5	3,771.3	3,744.2
(b)	-44,000	-26,600	-17,000	-14,000	-15,400	-19,300	+5,800	+110,500	+126,300	-11,100	-51,500	-48,100

CAL YR 1970 b -50,200  
WTR YR 1971 b -4,400

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

## 11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°56'15", long 119°47'50", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.17, T.1 N., R.20 E., Tuolumne County, Yosemite National Park, on left bank 1 mile downstream from O'Shaughnessy Dam at Hetch Hetchy, and 2.5 miles downstream from Falls Creek.

DRAINAGE AREA.--457 sq mi.

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.

GAGE.--Water-stage recorder with concrete control since May 5, 1970. Altitude of gage is 3,480 ft (from topographic map). Prior to Jan. 1, 1915, water-stage recorder at site 1 mile 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 mile upstream at different datum.

AVERAGE DISCHARGE (prior to diversion to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct).--57 years (1910-67), 999 cfs (723,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge observed, 3,550 cfs June 28 (gage height, 9.95 ft); minimum daily, 24 cfs Mar. 18.

Period of record: Maximum discharge, 12,900 cfs June 1, 1943 (gage height, 13.90 ft); no flow Oct. 3, 4, 1968, Dec. 16, 1969, Feb. 20-26, 1970.

REMARKS.--Records good. Flow regulated by Hetch Hetch Reservoir 1 mile upstream beginning in April 1923 (see sta 11275500). Flow diverted above station through tunnel to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct beginning April 26, 1967. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and 7 discharge measurements furnished by city and county of San Francisco.

REVISIONS.--WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	33	37	47	33	30	34	77	78	995	226	167
2	33	32	47	47	32	29	34	77	77	840	173	165
3	33	32	37	47	32	29	33	76	77	840	159	165
4	33	32	39	47	32	29	34	76	77	840	145	164
5	34	33	37	47	32	28	33	75	77	848	148	164
6	33	33	36	44	32	28	33	75	77	848	148	164
7	33	33	36	40	32	28	34	75	77	848	148	126
8	33	33	38	33	31	28	34	75	77	840	148	74
9	33	33	41	33	31	28	34	75	77	563	148	73
10	33	33	37	33	30	28	34	75	77	452	148	73
11	33	33	36	32	30	28	34	85	77	452	124	73
12	33	33	35	31	32	29	34	79	77	365	124	73
13	33	33	35	30	32	28	34	75	77	326	124	73
14	33	33	34	28	32	28	34	83	77	326	124	72
15	33	33	34	27	32	28	34	80	686	326	124	48
16	33	33	34	27	32	27	34	76	990	326	123	31
17	33	33	34	29	32	27	35	76	990	326	123	33
18	33	33	34	31	32	24	34	75	1,790	326	180	33
19	33	33	34	30	32	33	34	75	2,590	326	235	33
20	33	33	34	29	31	33	34	75	2,790	326	237	33
21	33	33	34	29	32	33	34	76	2,790	326	237	33
22	33	33	34	28	32	33	34	76	3,350	326	235	33
23	33	33	33	28	32	33	34	77	3,420	326	233	32
24	33	32	33	28	32	33	34	78	3,320	326	207	32
25	33	38	33	29	32	34	34	78	3,210	326	167	32
26	33	41	33	32	31	41	34	79	3,150	326	169	32
27	33	33	35	33	31	37	34	80	3,410	306	170	32
28	33	34	39	33	31	35	34	80	3,550	298	170	32
29	33	45	43	33	-----	35	34	78	3,210	298	170	32
30	33	37	47	33	-----	34	61	78	1,800	293	169	32
31	33	-----	48	33	-----	34	-----	78	-----	293	167	-----
TOTAL	1,025	1,016	1,141	1,051	887	952	1,045	2,393	42,125	14,783	5,203	2,159
MEAN	33.1	33.9	36.8	33.9	31.7	30.7	34.8	77.2	1,404	477	168	72.0
MAX	34	45	48	47	33	41	61	85	3,550	995	237	167
MIN	33	32	33	27	30	24	33	75	77	293	123	31
AC-FT	2,030	2,020	2,260	2,080	1,760	1,890	2,070	4,750	83,550	29,320	10,320	4,280
CAL YR 1970	TOTAL	128,674.00	MEAN	353	MAX	3,420	MIN	0	AC-FT	255,200		
WTR YR 1971	TOTAL	73,780.00	MEAN	202	MAX	3,550	MIN	24	AC-FT	146,300		

## SAN JOAQUIN RIVER BASIN

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CALIF.

LOCATION.--Lat 37°52'46", long 119°56'46", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.1, T.1 S., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank 0.5 mile upstream from Early Intake, 5.0 miles west of Mather, and 2.4 miles upstream from Cherry Creek.

DRAINAGE AREA.--484 sq mi.

PERIOD OF RECORD.--October 1970 to September 1971. Records for the period October 1939 to September 1970 in the files of the California District Office of Geological Survey.

GAGE.--Water-stage recorder. Altitude of gage is 2,420 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 3,870 cfs June 22 (gage height, 18.20 ft); minimum daily, 37 cfs Nov. 15-24.

Flood of June 1, 1943, reached a stage of 22.1 ft (discharge, 12,900 cfs).

REMARKS.--Records good. Flow regulated by Hetch Hetchy Reservoir 12 miles upstream (see sta 11275500).

COOPERATION.--Gage-height record and two discharge measurements furnished by city and county of San Francisco.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	39	100	94	73	60	77	94	92	1,210	270	184
2	40	39	220	88	71	59	73	97	92	880	188	184
3	40	39	121	82	69	59	70	103	91	880	188	184
4	40	41	111	81	68	61	69	113	91	880	163	182
5	40	45	111	78	66	59	68	108	91	910	159	182
6	40	46	88	78	65	57	66	108	91	922	157	184
7	40	47	85	75	64	56	68	109	91	898	155	177
8	39	40	102	56	62	55	68	117	91	880	155	101
9	39	38	186	47	60	54	65	111	92	800	155	88
10	39	38	108	48	60	54	64	109	92	414	155	87
11	39	38	88	59	60	54	64	109	92	404	144	85
12	39	42	78	78	64	59	62	129	94	397	142	85
13	39	39	71	78	64	93	60	94	94	312	142	85
14	39	38	68	73	64	81	60	87	96	309	142	85
15	39	37	64	75	64	77	60	109	363	306	142	84
16	39	37	71	78	64	75	60	100	988	306	142	49
17	39	37	87	111	64	73	62	99	1,300	309	142	42
18	39	37	80	128	62	69	64	97	2,730	312	155	43
19	39	37	77	124	65	61	62	97	2,800	309	245	43
20	39	37	75	117	64	68	61	97	2,830	309	245	43
21	40	37	84	106	60	66	64	97	2,840	309	245	43
22	41	37	80	94	60	65	62	99	3,040	309	245	43
23	41	37	75	87	60	65	60	97	3,440	309	245	42
24	42	37	73	80	59	68	59	97	3,280	306	240	41
25	40	65	70	75	59	71	59	97	3,200	303	188	40
26	39	175	70	75	57	175	59	98	3,110	303	182	40
27	39	69	78	78	57	182	59	100	3,220	303	188	40
28	39	64	84	78	60	111	57	105	3,490	300	188	40
29	39	161	80	77	-----	94	60	100	3,280	300	186	40
30	39	117	69	75	-----	87	59	100	2,370	297	186	43
31	39	-----	94	74	-----	82	-----	94	-----	297	186	-----
TOTAL	1,225	1,590	2,848	2,547	1,765	2,350	1,901	3,171	43,571	15,283	5,665	2,609
MEAN	39.5	53.0	91.9	82.2	63.0	75.8	63.4	102	1,452	493	183	87.0
MAX	42	175	220	128	73	182	77	129	3,490	1,210	270	184
MIN	39	37	64	47	57	54	57	87	91	297	142	40
AC-FT	2,430	3,150	5,650	5,050	3,500	4,660	3,770	6,290	86,420	30,310	11,240	5,170

CAL YR 1970 TOTAL - MEAN - MAX - MIN - AC-FT -  
WTR YR 1971 TOTAL 84,525 MEAN 232 MAX 3,490 MIN 37 AC-FT 167,700

## 11276900 TUOLUMNE RIVER BELOW EARLY INTAKE, NEAR MATHER, CALIF.

LOCATION.--Lat 37°52'54", long 119°58'09", in NW¼SW¼ sec.2, T.1 S., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank 0.6 mile upstream from Cherry Creek, 0.7 mile downstream from Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct, and 6.3 miles west of Mather.

DRAINAGE AREA.--487 sq mi.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,200 ft (from topographic map).

AVERAGE DISCHARGE.--5 years, 594 cfs (430,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,790 cfs June 22 (gage height, 7.48 ft); minimum daily, 45 cfs Sept. 20.

Period of record: Maximum discharge, 11,300 cfs June 4, 1969 (gage height, 9.82 ft); minimum daily, 13 cfs Nov. 18, 19, 25-27, 1966, Feb. 1, 1967.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Hetch Hetchy Reservoir 13 miles upstream (see sta 11275500) 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.

COOPERATION.--Gage-height record and three discharge measurements furnished by city and county of San Francisco.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	55	127	111	98	341	294	365	325	1,360	400	354
2	64	62	278	102	95	263	282	219	297	992	355	382
3	63	71	157	92	91	282	278	405	298	1,010	310	314
4	61	70	129	93	92	294	160	400	286	1,050	302	286
5	61	83	137	95	90	306	302	395	282	1,120	294	258
6	57	79	104	93	81	310	302	365	208	1,140	294	268
7	55	68	104	93	76	306	302	355	298	1,080	286	300
8	56	57	120	77	84	302	298	365	298	1,080	278	260
9	61	55	228	70	90	302	298	405	274	936	274	208
10	64	59	125	57	91	302	286	425	263	560	270	258
11	62	59	99	71	92	306	151	410	248	505	263	210
12	66	71	91	95	91	315	298	336	252	555	274	177
13	65	70	81	98	81	355	310	155	139	500	278	212
14	66	61	79	96	77	345	310	129	245	495	286	243
15	63	56	82	107	77	345	306	157	556	455	248	225
16	61	60	96	92	92	345	306	92	1,160	450	340	190
17	54	66	120	110	96	340	310	185	1,520	460	320	175
18	52	66	110	146	99	515	330	172	2,950	485	315	167
19	55	73	96	142	100	550	348	167	2,960	485	415	132
20	58	75	91	133	90	325	345	172	2,960	465	415	45
21	58	61	115	122	82	298	335	164	2,990	465	415	180
22	67	55	110	108	91	428	330	167	3,150	460	445	202
23	68	65	104	98	95	880	325	69	3,320	455	465	190
24	61	77	102	84	99	887	320	188	3,230	465	460	179
25	57	111	87	90	100	831	345	164	3,260	400	390	167
26	60	241	95	93	96	908	355	169	3,200	485	355	148
27	61	108	108	96	104	777	345	169	3,260	485	355	200
28	61	93	120	95	264	365	340	228	3,440	470	350	169
29	64	205	113	93	-----	345	335	278	3,280	460	350	166
30	64	169	105	88	-----	306	330	302	2,400	445	270	190
31	59	-----	127	82	-----	298	-----	325	-----	435	370	-----
TOTAL	1,888	2,501	3,640	3,022	2,714	13,072	9,176	7,897	47,349	20,208	10,442	6,455
MEAN	60.9	83.4	117	97.5	96.9	422	306	255	1,578	652	337	215
MAX	68	241	278	146	264	908	355	425	3,440	1,360	465	382
MIN	52	55	79	57	76	263	151	69	139	400	248	45
AC-FT	3,740	4,960	7,220	5,990	5,380	25,930	18,200	15,660	93,920	40,080	20,710	12,800

CAL YR 1970 TOTAL 172,853 MEAN 474 MAX 3,580 MIN 46 AC-FT 342,900  
WTR YR 1971 TOTAL 128,364 MEAN 352 MAX 3,440 MIN 45 AC-FT 254,600

NOTE.--No gage-height record Aug. 29 to Sept. 30.

## SAN JOAQUIN RIVER BASIN

11277200 CHERRY LAKE NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'33", long 119°54'47", in SE¼NW¼ sec.5, T.1 N., R.19 E., Tuolumne County, Stanislaus National Forest, on upstream face of Cherry Valley Dam on Cherry Creek, 4.2 miles upstream from Eleanor Creek, 7 miles north of Early Intake, and 7.3 miles northwest of Hetch Hetchy.

DRAINAGE AREA.--117 sq mi.

PERIOD OF RECORD.--August 1956 to current year. Prior to October 1959, published as Lake Lloyd near Hetch Hetchy.

GAGE.--Nonrecording gage read once daily. Datum of gage is at mean sea level (levels by city and county of San Francisco).

EXTREMES (at 0800).--Current year: Maximum contents, 200,100 acre-ft June 29, July 6 (elevation, 4,659.4 ft); minimum, 75,200 acre-ft Mar. 21 (elevation, 4,572.0 ft).

Period of record: Maximum contents, 269,300 acre-ft July 1-3, 1957 (elevation, 4,700.6 ft); normal minimum since reservoir first filled, 7,660 acre-ft Jan. 24, 1960 (elevation, 4,502.1 ft). Reservoir drained for inspection in 1961 and 1964.

REMARKS.--Reservoir is formed by a rockfill dam completed in 1956; storage began in December 1955. Usable capacity, 268,810 acre-ft between elevations 4,430 ft (bottom of sluice gates) and 4,700 ft (top of spillway gates) above mean sea level. Additional storage of 20 acre-ft is not available for release. 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 into Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake through tunnel to Cherry powerhouse near mouth of Cherry Creek began on Aug. 1, 1960. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record furnished by city and county of San Francisco.

## CAPACITY TABLE (ELEVATION, IN FEET, AND USABLE CONTENTS, IN ACRE-Feet)

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		

## CONTENTS, IN ACRE-Feet, AT 0800, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172,000	144,500	137,500	121,300	99,500	89,000	85,700	108,800	162,300	199,800	182,600	143,100
2	171,100	143,700	137,700	120,400	98,800	88,100	86,700	110,600	162,300	199,700	181,900	141,700
3	170,200	143,000	137,900	119,300	98,200	87,200	87,500	112,500	162,600	199,700	180,500	140,200
4	169,200	142,400	137,900	118,300	97,500	86,300	88,500	113,600	163,300	199,500	179,000	138,900
5	169,100	140,800	137,800	117,100	96,900	85,700	90,600	114,000	164,600	200,000	177,600	137,800
6	168,100	142,400	137,600	115,800	96,300	84,800	91,600	114,400	166,100	200,100	176,400	137,400
7	167,000	142,300	137,900	114,000	95,800	83,900	92,500	114,900	169,100	199,500	175,000	136,800
8	166,100	141,800	137,900	113,500	95,800	83,300	93,200	115,600	171,900	199,000	173,700	135,500
9	165,200	141,800	138,100	112,100	95,000	82,400	93,400	116,100	174,300	198,400	172,900	134,200
10	164,300	141,200	138,400	111,000	94,200	81,700	94,000	117,800	175,900	197,600	171,600	132,900
11	163,500	141,000	137,800	110,300	93,800	80,500	95,000	119,400	177,300	196,800	170,200	133,100
12	163,000	140,700	137,500	109,300	93,900	79,900	96,900	121,800	178,700	196,600	168,600	133,700
13	162,400	139,900	137,100	108,500	94,000	79,400	98,000	124,600	180,700	196,000	167,400	134,700
14	161,200	139,400	137,100	107,200	94,100	78,800	98,400	127,700	182,600	195,500	166,100	134,800
15	160,300	138,500	136,500	105,900	94,800	78,200	100,300	131,000	184,100	195,200	164,700	134,800
16	159,400	138,100	135,900	105,100	95,600	77,700	101,800	134,700	185,700	194,700	164,100	134,900
17	158,500	137,200	135,200	104,300	95,400	76,900	102,200	137,600	187,300	194,300	162,600	134,900
18	157,800	135,800	134,400	104,100	95,100	76,200	105,200	139,500	188,400	193,900	161,100	134,900
19	157,600	134,700	133,700	104,400	94,900	75,800	107,200	141,400	189,500	193,900	159,600	134,900
20	156,600	133,700	132,700	104,700	94,300	75,400	107,600	143,400	190,600	193,500	158,400	135,600
21	155,300	132,500	133,400	104,700	93,800	75,200	107,700	145,600	192,000	192,700	156,900	135,400
22	154,400	131,500	131,100	104,700	93,800	75,900	107,700	147,100	193,600	191,900	155,600	134,700
23	153,700	130,800	130,000	104,300	92,900	75,800	107,600	148,300	193,800	191,400	154,900	133,700
24	152,800	129,700	129,000	103,900	92,300	75,700	107,300	150,800	194,400	190,600	153,700	132,700
25	151,800	129,200	128,000	103,700	91,500	75,400	107,200	153,100	195,100	190,000	152,100	131,500
26	151,700	132,200	127,100	103,000	90,700	76,800	107,700	156,200	195,500	189,600	150,800	130,500
27	151,000	135,100	126,100	102,200	89,300	79,700	107,300	158,200	198,100	188,900	149,300	130,000
28	150,300	135,500	125,500	101,500	89,400	81,000	107,000	159,400	200,000	187,900	148,000	128,700
29	148,100	136,200	124,600	100,900	-----	82,600	107,300	160,200	200,100	186,500	146,700	127,100
30	147,000	136,800	123,300	100,300	-----	83,800	107,700	160,600	200,000	185,200	145,600	125,800
31	145,800	-----	122,200	99,800	-----	84,800	-----	161,500	-----	184,000	144,300	-----
MAX	172,000	144,500	138,400	121,300	99,500	89,000	107,700	161,500	200,100	200,100	182,600	143,100
MIN	145,800	129,200	122,200	99,800	89,400	75,200	85,700	108,800	162,300	184,000	144,300	125,800
(a)	4,624.0	4,617.8	4,607.5	4,591.2	4,583.3	4,579.7	4,597.0	4,634.6	4,659.3	4,649.2	4,623.0	4,610.1
(b)	-27,100	-9,000	-14,600	-22,400	-10,400	-4,600	+22,900	+53,800	+38,500	-16,000	-39,700	-18,500

CAL YR 1970 b -63,500  
WTR YR 1971 b -47,100

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



## 11277300 CHERRY CREEK BELOW CHERRY VALLEY DAM, NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'04", long 119°54'59", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.5, T.1 N., R.19 E., Tuolumne County, Stanislaus National Forest, on right bank 0.7 mile downstream from Cherry Valley Dam, 3.5 miles upstream from Eleanor Creek, 6.7 miles north of Early Intake, and 7.2 miles west of Hetch Hetchy.

DRAINAGE AREA.--118 sq mi.

PERIOD OF RECORD.--November 1956 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,337.08 ft above mean sea level (levels by city and county of San Francisco).

EXTREMES.--Current year: Maximum discharge, 18 cfs Oct. 1 (gage height, 3.14 ft); minimum daily, 4.2 cfs Apr. 22-29.

Period of record: Maximum discharge, 3,830 cfs Apr. 25, 1958 (gage height, 9.95 ft); minimum daily, 1.6 cfs Apr. 10, 1957.

REMARKS.--Records good. Flow regulated by Cherry Lake 0.7 mile upstream (see sta 11277200). Diversion between Lake Eleanor and Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake to Cherry powerhouse began Aug. 1, 1960. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and three discharge measurements furnished by city and county of San Francisco.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	5.3	7.7	7.2	8.2	7.7	8.0	4.4	5.3	5.0	16	15
2	13	5.7	9.9	7.2	8.2	7.7	8.0	4.4	5.3	9.9	16	15
3	6.5	5.3	8.0	7.2	8.0	7.7	7.5	4.6	5.3	16	16	15
4	5.7	5.7	8.2	7.2	8.0	7.7	7.5	4.6	5.0	16	16	15
5	5.5	6.0	7.7	7.2	8.0	7.7	7.2	4.4	5.0	16	16	15
6	5.3	6.2	7.5	7.2	8.0	7.7	6.7	4.4	5.0	16	16	15
7	5.0	5.7	7.7	7.0	8.0	7.5	6.7	4.6	5.0	16	16	15
8	5.0	5.5	8.5	7.0	8.0	7.7	6.5	4.4	5.0	16	16	15
9	5.0	5.5	9.2	7.0	8.0	7.5	6.2	4.4	5.0	16	16	15
10	5.0	5.5	8.2	7.0	8.0	7.5	6.0	4.4	5.0	15	16	15
11	5.0	5.5	8.0	7.2	8.0	7.5	5.0	4.8	5.0	15	16	15
12	5.0	5.5	7.7	7.2	8.0	8.2	4.8	4.8	5.0	15	16	15
13	5.0	5.5	7.7	7.5	8.2	8.2	4.6	4.8	5.0	15	16	15
14	5.0	5.3	7.5	7.2	8.2	8.0	4.6	4.8	5.0	15	16	15
15	5.0	5.3	7.5	7.2	8.2	7.7	4.6	4.8	5.0	15	16	15
16	5.0	5.3	7.5	7.2	8.2	7.7	4.6	4.8	5.0	15	16	15
17	5.0	5.3	7.5	7.2	8.2	7.7	4.6	4.8	5.0	16	16	15
18	4.8	5.3	7.2	7.2	8.2	7.7	4.4	4.8	5.0	16	16	15
19	5.0	5.3	7.2	7.2	8.5	7.7	4.4	4.8	5.0	16	16	15
20	5.0	5.3	7.2	7.5	8.2	7.7	4.4	4.8	5.0	16	16	15
21	5.0	5.3	7.5	7.5	8.0	7.5	4.4	4.8	5.0	16	16	15
22	5.0	5.3	7.2	7.5	8.0	7.5	4.2	5.0	5.0	16	16	15
23	5.0	5.3	7.2	7.7	8.0	7.7	4.2	5.0	5.0	16	16	15
24	5.3	5.5	7.2	7.7	8.0	7.5	4.2	5.0	5.0	16	16	15
25	5.0	8.9	7.2	7.7	8.0	8.5	4.2	5.0	5.0	16	16	15
26	5.3	8.2	7.2	8.0	7.7	11	4.2	5.2	5.3	16	16	15
27	5.3	5.7	7.2	8.0	7.7	9.9	4.2	5.3	5.3	16	16	15
28	5.3	6.2	7.2	8.0	7.7	8.9	4.2	5.3	5.3	16	16	15
29	5.3	8.2	7.5	8.0	-----	8.5	4.2	5.3	5.0	16	15	15
30	5.3	7.5	7.2	8.0	-----	8.2	4.4	5.3	5.0	16	15	15
31	5.3	-----	7.2	8.2	-----	8.2	-----	5.3	-----	16	15	-----
TOTAL	180.9	176.1	237.4	230.1	225.4	247.9	158.7	149.1	151.8	471.9	493	450
MEAN	5.84	5.87	7.66	7.42	8.05	8.00	5.29	4.81	5.06	15.2	15.9	15.0
MAX	18	8.9	9.9	8.2	8.5	11	8.0	5.3	5.3	16	16	15
MIN	4.8	5.3	7.2	7.0	7.7	7.5	4.2	4.4	5.0	5.0	15	15
AC-FT	359	349	471	456	447	492	315	296	301	936	978	893

CAL YR 1970 TOTAL 3,366.9 MEAN 9.22 MAX 35 MIN 4.8 AC-FT 6,680  
WTR YR 1971 TOTAL 3,172.3 MEAN 8.69 MAX 18 MIN 4.2 AC-FT 6,290

## SAN JOAQUIN RIVER BASIN

11277500 LAKE ELEANOR NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'27", long 119°52'48", in NW¼ sec.3, T.1 N., R.19 E., Tuolumne County, Yosemite National Park, 720 ft from left bank on downstream side of dam on Eleanor Creek, 1.7 miles upstream from Miguel Creek, and 5.5 miles northwest of Hetch Hetchy.

DRAINAGE AREA.--78.1 sq mi.

PERIOD OF RECORD.--June 1918 to current year. Prior to October 1930, published in WSP 1315-A. Published as "near Sequoia" 1919-20.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by city and county of San Francisco). Prior to Oct. 1, 1927, nonrecording gage on upstream side of dam at same site and datum.

EXTREMES.--Current year: Maximum contents, 27,400 acre-ft June 28, 29, July 1-3 (elevation, 4,661.3 ft); minimum, 906 acre-ft Sept. 30 (elevation, 4,626.8 ft).  
Period of record: Maximum contents, 31,000 acre-ft Dec. 11, 1937, from capacity table then in use (elevation, 4,663.4 ft); no usable contents at times in 1921, 1929-30, 1956-60.

REMARKS.--Reservoir is formed by multiple-arch dam completed in 1918; storage began June 23, 1918. Usable capacity, 26,100 acre-ft between elevations 4,620.9 ft (natural outlet of old lake) and 4,660.0 ft (top of 5-foot flashboards) above mean sea level. Water is released down Eleanor Creek for power development and domestic supply as part of Hetch Hetchy system of city and county of San Francisco. Figures given herein represent usable contents. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record furnished by city and county of San Francisco.

REVISIONS.--WSP 1445: 1938(M). WSP 1930:--Drainage area.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,626.2	639	4,634	4,700	4,644	11,900	4,654	20,600
4,627	996	4,636	5,960	4,646	13,500	4,656	22,400
4,628	1,480	4,638	7,330	4,648	15,300	4,658	24,300
4,630	2,450	4,640	8,710	4,650	17,000	4,660	26,100
4,632	3,580	4,642	10,300	4,652	18,800	4,663	29,100

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11,300	1,140	3,410	1,890	2,400	1,920	4,310	3,580	8,090	27,400	21,000	19,500
2	10,900	1,040	3,240	1,870	2,350	1,870	4,030	3,750	8,020	27,400	21,000	19,400
3	10,500	950	3,010	1,840	2,300	1,820	3,800	3,860	8,090	27,400	21,000	19,300
4	9,980	950	2,900	1,810	2,260	1,820	3,800	3,860	8,230	27,300	20,900	19,300
5	9,660	1,330	2,730	1,790	2,210	1,820	3,800	3,750	8,500	27,300	20,900	19,200
6	9,180	1,870	2,620	1,770	2,160	1,770	3,800	3,630	9,100	27,300	20,900	19,100
7	8,790	2,110	2,790	1,750	2,110	1,770	3,630	3,520	9,900	27,300	20,800	19,100
8	8,500	2,160	3,070	1,730	2,060	1,770	3,410	3,410	10,900	27,300	20,800	19,000
9	8,090	2,160	3,130	1,710	2,060	1,770	3,300	3,350	12,000	27,300	20,800	18,900
10	7,680	2,160	2,900	1,680	2,110	1,770	3,300	3,580	12,900	27,300	20,700	18,000
11	7,330	2,060	2,730	1,670	2,400	1,820	3,410	4,030	13,800	27,300	20,700	16,300
12	6,920	2,110	2,620	1,720	2,730	1,970	3,580	4,480	14,800	27,100	20,600	14,900
13	6,580	2,010	2,450	1,670	2,960	2,010	3,690	4,820	15,900	26,700	20,600	13,400
14	6,160	1,920	2,350	1,630	3,070	2,010	3,690	5,160	16,900	26,400	20,500	11,900
15	5,750	1,770	2,260	1,620	3,180	2,060	3,750	5,610	17,900	26,000	20,400	10,500
16	5,270	1,670	2,260	1,770	3,180	2,060	3,970	5,890	18,800	25,600	20,400	9,180
17	4,870	1,580	2,260	2,160	3,010	2,110	4,090	5,960	19,700	25,200	20,400	7,810
18	4,540	1,430	2,260	2,620	2,850	2,160	3,800	5,890	20,400	24,800	20,300	6,580
19	4,200	1,380	2,260	3,070	2,680	2,210	3,470	5,960	21,100	24,500	20,200	5,210
20	3,800	1,290	2,240	3,200	2,510	2,350	3,180	6,030	21,900	24,100	20,200	4,030
21	3,520	1,240	2,220	3,240	2,350	2,450	3,010	6,160	22,600	23,700	20,100	3,010
22	3,130	1,190	2,200	3,070	2,260	2,620	2,790	6,090	23,400	23,400	20,100	2,400
23	2,790	1,140	2,170	2,850	2,160	2,730	2,620	6,030	24,000	22,900	20,100	2,060
24	2,450	1,090	2,140	2,680	2,110	2,730	2,620	6,370	24,600	22,500	20,000	1,770
25	2,210	3,800	2,110	2,510	2,010	3,180	2,510	6,850	25,100	22,100	20,000	1,530
26	2,010	4,710	2,080	2,450	1,970	5,340	2,350	7,470	25,700	21,700	20,000	1,330
27	1,770	4,480	2,050	2,400	1,970	5,680	2,300	7,810	26,900	21,200	19,900	1,190
28	1,630	4,090	2,020	2,400	1,920	5,410	2,300	8,020	27,400	21,000	19,800	1,090
29	1,480	3,920	1,980	2,400	-----	5,100	2,680	8,090	27,400	21,000	19,700	996
30	1,330	3,630	1,950	2,400	-----	4,930	3,130	8,160	27,300	21,000	19,600	906
31	1,240	-----	1,920	2,400	-----	4,650	-----	8,160	-----	21,000	19,600	-----
MAX	11,300	4,710	3,410	3,240	3,180	5,680	4,310	8,160	27,400	27,400	21,000	19,500
MIN	1,240	950	1,920	1,620	1,920	1,770	2,300	3,350	8,020	21,000	19,600	906
(a)	4,627.5	4,632.1	-	4,629.9	-	4,633.9	4,631.2	4,639.2	4,661.2	4,654.5	4,552.9	4,626.8
(b)	-10,360	+2,390	-1,710	+480	-480	+2,730	-1,520	+5,030	+19,140	-6,300	-1,400	-18,694

CAL YR 1970 b -18,880  
WTR YR 1971 b -10,694

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

## 11278000 ELEANOR CREEK NEAR HETCH HETCHY, CALIF.

LOCATION.--Lat 37°58'09", long 119°52'52", in SW $\frac{1}{4}$  sec.3, T.1 N., R.19 E., Tuolumne County, Yosemite National Park, on right bank 0.5 mile downstream from Lake Eleanor Dam, 1.1 miles upstream from Miguel Creek, and 5.5 miles northwest of Hetch Hetchy.

DRAINAGE AREA.--78.4 sq mi.

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.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,500 ft (from topographic map). November 1909 to November 1915, nonrecording gage and water-stage recorder at site 1 mile upstream at different datum.

AVERAGE DISCHARGE (prior to diversion to Cherry Lake).--50 years (1909-59), 223 cfs (161,400 acre-ft per year); 11 years (1960-71), 80.0 cfs (57,960 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 292 cfs June 29 (gage height, 3.83 ft); minimum daily, 0.86 cfs Oct. 27.

Period of record: Maximum discharge, 11,700 cfs Nov. 19, 1950 (gage height, 14.95 ft), from rating curve extended above 1,500 cfs on basis of velocity-area studies; no flow at times in 1910, 1930-31, 1933, 1956.

REMARKS.--Records good. Flow regulated by Lake Eleanor 0.5 mile upstream beginning in 1918 (see sta 11277500). Diversion from Lake Eleanor to Cherry Lake began in March 1960. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and 11 discharge measurements furnished by city and county of San Francisco.

REVISIONS (WATER YEARS).--WSP 1315-A: 1923(M). WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	5.9	10	4.6	5.1	5.1	5.1	5.1	4.8	210	15	15
2	8.6	5.9	8.3	4.6	5.1	5.1	5.1	5.1	4.8	207	15	15
3	4.6	5.9	5.9	4.6	4.9	5.4	5.4	5.1	4.8	188	15	16
4	6.5	6.2	6.5	4.6	4.9	5.4	5.4	5.4	4.4	169	11	16
5	6.5	6.5	5.6	4.6	4.9	5.4	5.4	5.4	4.4	150	3.1	16
6	6.5	6.8	5.4	4.6	4.9	5.4	5.4	5.4	4.4	139	9.0	16
7	6.2	6.5	5.9	4.9	4.9	5.4	5.6	5.4	4.4	134	15	16
8	6.2	6.2	6.8	4.9	4.6	5.4	5.6	5.4	4.4	125	15	16
9	6.2	6.2	6.2	4.9	4.6	5.4	5.4	5.4	4.8	112	15	16
10	5.9	6.2	5.1	5.1	4.6	5.4	5.4	5.4	4.8	96	15	16
11	6.5	6.2	4.9	4.9	4.6	5.4	5.1	5.4	4.8	88	15	15
12	6.8	6.2	4.9	5.1	4.6	5.9	5.1	5.4	5.2	69	15	15
13	6.8	6.2	4.9	5.1	4.6	5.9	5.1	5.4	5.2	13	15	15
14	6.8	6.2	4.9	5.1	4.6	5.9	5.1	5.1	5.2	7.9	15	15
15	6.5	6.2	4.9	5.1	4.9	6.2	5.1	4.9	5.2	6.6	15	14
16	6.5	5.9	4.9	5.1	4.9	6.2	5.1	4.9	5.2	7.5	15	15
17	6.5	5.9	4.9	5.6	4.9	6.2	5.1	5.1	5.2	7.9	15	15
18	6.5	5.9	4.9	5.9	4.9	5.9	5.1	5.1	4.8	8.4	15	15
19	6.2	5.9	4.9	5.9	4.9	5.6	5.1	5.1	4.4	8.4	15	14
20	6.2	5.9	4.6	6.2	4.9	5.6	5.1	5.1	4.4	7.9	15	14
21	6.2	5.9	4.6	5.6	4.9	5.6	5.1	5.1	4.8	7.9	15	14
22	6.2	5.6	4.6	5.1	4.9	5.6	5.1	5.1	4.8	9.8	15	14
23	6.5	4.1	4.6	5.1	4.9	5.6	5.1	5.1	5.6	21	15	14
24	6.8	4.1	4.6	5.1	4.9	5.6	5.4	5.1	7.9	12	15	14
25	6.5	9.0	4.9	5.1	4.9	6.5	5.4	5.1	7.5	14	15	15
26	5.1	8.3	4.9	5.1	4.9	8.0	5.4	5.1	6.1	15	15	15
27	.86	5.9	4.9	5.1	5.1	5.6	5.4	5.1	11	15	15	15
28	5.9	7.1	4.9	5.1	5.1	5.4	5.1	5.2	103	15	15	15
29	5.9	7.1	4.9	5.1	-----	5.1	5.1	5.2	262	15	15	15
30	5.9	7.4	4.9	5.1	-----	5.1	5.1	4.8	228	15	15	15
31	5.9	-----	4.6	5.1	-----	5.1	-----	4.8	-----	15	15	-----
TOTAL	199.26	187.3	166.8	158.0	135.9	175.4	157.0	160.3	736.3	1,909.3	443.1	451
MEAN	6.43	6.24	5.38	5.10	4.85	5.66	5.23	5.17	24.5	61.6	14.3	15.0
MAX	15	9.0	10	6.2	5.1	8.0	5.6	5.4	262	210	15	16
MIN	.86	4.1	4.6	4.6	4.6	5.1	5.1	4.8	4.4	6.6	3.1	14
AC-FT	395	372	331	313	270	348	311	318	1,460	3,790	879	895
CAL YR 1970	TOTAL	39,820.66	MEAN	109	MAX	2,830	MIN	.86	AC-FT	78,980		
WTR YR 1971	TOTAL	4,879.66	MEAN	13.4	MAX	262	MIN	.86	AC-FT	9,680		

## SAN JOAQUIN RIVER BASIN

## 11278200 CHERRY CREEK CANAL NEAR EARLY INTAKE, CALIF.

LOCATION.--Lat 37°53'36", long 119°57'17", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.36, T.1 N., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank 1.3 miles northeast of Early Intake and 10 miles southwest of Hetch Hetchy.

PERIOD OF RECORD.--April 1956 to May 1971 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 2,700 ft (from topographic map).

EXTREMES.--Period of record: Maximum daily discharge, 194 cfs July 30, 1959; no flow at times in 1964, 1969, and 1971.

REMARKS.--Records good. Canal diverts from left bank of Cherry Creek in SW $\frac{1}{4}$  sec.31, T.1 N., R.19 E., for domestic use at Early Intake and occasional power development at Early Intake powerhouse as part of Hetch Hetchy system of city and county of San Francisco. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and three discharge measurements furnished by city and county of San Francisco.

## DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1970 TO MAY 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	2.2	2.8	2.6	2.2	2.2	2.0	1.6				
2	11	2.2	3.0	2.5	2.2	2.2	1.9	1.6				
3	11	2.2	2.9	2.5	2.2	2.3	1.9	1.6				
4	11	2.5	3.0	2.4	2.2	2.4	1.8	1.6				
5	11	2.5	2.8	2.3	2.2	2.3	1.7	1.6				
6	11	2.6	2.8	2.3	2.2	2.3	1.7	1.7				
7	11	2.5	2.7	2.3	2.2	2.3	1.7	1.7				
8	11	2.5	2.9	2.3	2.2	2.2	1.7	1.7				
9	11	2.5	2.9	2.3	2.2	2.3	1.7	1.6				
10	11	2.5	2.8	2.3	2.2	2.3	1.7	1.6				
11	11	2.6	2.8	2.4	2.2	2.2	1.7	1.6				
12	11	2.6	2.8	2.4	2.2	2.3	1.7	1.2				
13	8.9	2.7	2.7	2.4	2.2	2.2	1.6	.70				
14	8.0	2.5	2.7	2.4	2.2	2.2	1.6	.70				
15	8.0	2.5	2.7	2.5	2.2	2.1	1.6	.70				
16	4.1	2.5	2.8	2.5	2.2	2.1	1.6	.70				
17	0	2.5	2.8	2.6	2.3	2.2	1.6	.70				
18	0	2.5	2.7	2.5	2.3	2.2	1.6	.70				
19	0	2.5	2.7	2.3	2.3	2.2	1.6	.70				
20	1.3	2.5	2.7	2.3	2.3	2.1	1.6	.32				
21	2.1	2.5	2.8	2.3	2.3	2.1	1.6	0				
22	2.2	2.5	2.6	2.3	2.2	2.1	1.6	0				
23	2.2	2.6	2.5	2.3	2.3	2.1	1.6	.19				
24	2.2	2.6	2.5	2.3	2.3	2.1	1.6	.34				
25	2.2	2.9	2.5	2.3	2.3	2.1	1.6	0				
26	2.2	2.7	2.5	2.3	2.2	2.1	1.6	0				
27	2.3	2.6	2.6	2.3	2.2	2.0	1.6	0				
28	2.2	2.7	2.6	2.3	2.3	2.0	1.6	0				
29	2.2	3.0	2.6	2.2	-----	2.0	1.6	0				
30	2.2	2.7	2.6	2.2	-----	2.0	1.6	0				
31	2.2	-----	2.6	2.2	-----	2.0	-----	0	-----			-----
TOTAL	186.5	76.4	84.4	73.1	62.5	67.2	50.0	24.85				
MEAN	6.02	2.55	2.72	2.36	2.23	2.17	1.67	.80				
MAX	11	3.0	3.0	2.6	2.3	2.4	2.0	1.7				
MIN	0	2.2	2.5	2.2	2.2	2.0	1.6	0				
AC-FT	370	152	167	145	124	133	99	49				
CAL YR 1970	TOTAL	2,232.5	MEAN	6.12	MAX	15	MIN	0	AC-FT	4,430		
WTR YR 1971	TOTAL	-	MEAN	-	MAX	-	MIN	-	AC-FT	-		

## 11278300 CHERRY CREEK NEAR EARLY INTAKE, CALIF.

LOCATION.--Lat 37°53'40", long 119°57'42", in NW¼SE¼ sec.35, T.1 N., R.18 E., Tuolumne County, Stanislaus National Forest, on right bank 1.2 miles upstream from mouth, 1.3 miles north of Early Intake, and 10.3 miles southwest of Hetch Hetchy.

DRAINAGE AREA.--226 sq mi.

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,272.00 ft above mean sea level (levels by city and county of San Francisco).

EXTREMES.--Current year: Maximum discharge, 335 cfs June 29 (gage height, 5.14 ft); minimum daily, 1.2 cfs Oct. 12.  
Period of record: Maximum discharge, 16,500 cfs Feb. 1, 1963 (gage height, 14.50 ft), from rating curve extended above 4,600 cfs; minimum daily, 0.30 cfs Apr. 5, 6, 1964.

REMARKS.--Records good. Flow regulated by Cherry Lake 10 miles upstream (see sta 11277200) and Lake Eleanor 9.8 miles upstream (see sta 11277500). Cherry Creek Canal diverts about 1.0 mile upstream from station (see sta 11278200). Diversion from Cherry Lake to Cherry powerhouse began Aug. 1, 1960. Water is returned to creek 1.2 miles below station. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and three discharge measurements furnished by city and county of San Francisco.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	9.0	39	37	59	41	61	28	24	268	28	28
2	20	9.2	80	36	56	39	57	28	23	265	28	28
3	5.2	9.2	42	33	53	42	54	31	23	255	28	28
4	1.3	11	42	31	51	43	53	36	22	230	28	28
5	2.3	18	45	31	48	42	50	34	21	200	22	29
6	1.5	20	41	31	48	39	48	32	21	184	18	30
7	1.5	20	42	34	47	39	50	33	20	180	26	30
8	1.3	12	60	29	46	40	48	37	20	164	28	28
9	1.4	11	115	29	45	41	46	35	20	150	28	28
10	1.4	11	62	30	46	42	43	33	20	130	28	28
11	1.3	11	51	32	53	43	42	32	19	119	28	28
12	1.2	15	43	40	58	53	39	40	19	108	28	28
13	2.2	12	39	38	60	77	37	38	19	43	28	28
14	4.3	11	35	36	59	64	37	34	19	25	28	28
15	4.4	11	32	36	61	59	36	30	18	23	28	27
16	6.6	11	39	37	61	60	34	28	18	22	28	26
17	11	11	39	46	56	59	37	27	17	23	28	27
18	11	11	35	60	52	56	39	26	17	23	28	28
19	11	11	34	79	57	55	36	26	16	24	28	27
20	11	11	33	88	51	53	35	25	16	23	28	27
21	9.9	11	37	83	48	53	37	25	16	23	28	28
22	11	10	33	71	46	51	35	26	16	22	28	27
23	9.7	9.7	31	64	45	52	34	25	16	30	28	27
24	11	8.8	30	60	43	56	33	23	17	28	28	26
25	9.9	43	29	56	42	67	34	23	18	26	28	28
26	9.7	91	31	56	40	188	34	23	17	29	28	28
27	8.8	29	34	58	40	162	33	25	19	29	28	28
28	5.2	28	34	60	42	102	32	28	80	29	28	28
29	8.0	73	34	60	-----	83	30	26	318	28	28	28
30	9.0	44	37	59	-----	75	29	25	288	28	28	30
31	9.0	-----	36	59	-----	67	-----	25	-----	28	28	-----
TOTAL	221.1	592.9	1,314	1,499	1,413	1,943	1,213	907	1,197	2,759	850	837
MEAN	7.13	19.8	42.4	48.4	50.5	62.7	40.4	29.3	39.9	89.0	27.4	27.9
MAX	20	91	115	88	61	188	61	40	318	268	28	30
MIN	1.2	8.8	29	29	40	39	29	23	16	22	18	26
AC-FT	439	1,180	2,610	2,970	2,800	3,850	2,410	1,800	2,370	5,470	1,690	1,660
CAL YR 1970	TOTAL	53,928.0	MEAN	148	MAX	3,040	MIN	1.2	AC-FT	107,000		
WTR YR 1971	TOTAL	14,746.0	MEAN	40.4	MAX	318	MIN	1.2	AC-FT	29,250		

LOCATION.--Lat 37°53'24", long 119°58'08", in NE1/4 sec. 2, T.1 S., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank 600 ft upstream from mouth, 0.5 mile downstream from powerhouse, 1.2 miles northwest of Early Intake, and 5.3 miles west of Mather.

PERIOD OF RECORD.--March 1963 to current year. Prior to October 1965, published as "below Cherry powerhouse, near Mather."

EXTREMES.--Current year: Maximum discharge, 1,230 cfs Mar. 26 (gage height, 8.81 ft); minimum daily, 31 cfs Apr. 18.

Period of record: Maximum discharge, 8,530 cfs Dec. 24, 1964 (gage height, 13.55 ft), from rating curve extended above 3,200 cfs; minimum daily, 3.6 cfs Oct. 26, 27, 1964.

COOPERATION.--Gage-height record and two discharge measurements furnished by city and county of San Francisco.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	666	354	684	736	829	702	643	665	675	1,120	342	681
2	655	690	738	765	814	700	634	386	669	1,090	713	675
3	665	690	683	742	736	702	532	721	666	917	705	674
4	170	695	694	824	735	706	42	727	670	516	692	614
5	660	700	688	807	732	703	631	721	630	506	685	244
6	660	705	368	802	647	700	626	724	323	873	666	245
7	660	690	682	809	355	529	626	724	660	864	689	671
8	660	354	705	812	726	702	625	679	709	855	284	671
9	660	671	764	771	717	705	623	414	884	830	689	673
10	608	666	708	612	700	702	527	723	883	810	680	675
11	165	340	694	815	735	705	35	721	881	431	688	614
12	632	676	680	822	739	722	616	725	883	794	695	235
13	628	673	384	821	664	738	616	727	884	727	696	670
14	628	631	682	816	381	583	615	722	883	702	697	672
15	628	343	676	815	389	718	611	651	881	704	293	670
16	632	678	705	755	748	720	612	408	881	700	696	669
17	616	669	805	750	742	713	507	709	880	711	695	673
18	173	672	803	855	743	718	31	700	878	340	697	616
19	640	678	777	876	742	713	612	699	873	707	699	243
20	640	675	739	881	667	709	614	696	711	707	696	666
21	648	638	799	877	378	193	658	698	874	708	696	673
22	665	336	800	857	735	705	657	647	873	705	153	675
23	665	678	790	788	729	709	653	400	870	710	690	675
24	648	674	784	652	729	715	645	699	879	716	692	670
25	186	722	735	839	728	726	190	696	880	340	689	621
26	670	435	779	838	725	852	656	695	868	715	690	246
27	666	704	609	844	656	826	651	697	728	712	691	675
28	660	660	799	847	371	260	651	703	925	710	692	673
29	665	417	795	842	-----	754	650	644	1,180	718	298	671
30	670	721	797	765	-----	743	653	394	1,150	715	692	673
31	652	-----	795	639	-----	731	-----	400	-----	711	693	-----
TOTAL	18,241	18,235	22,141	24,674	18,592	21,104	16,442	19,915	24,631	22,364	19,373	17,803
MEAN	588	608	714	756	664	681	548	642	821	721	625	593
MAX	670	722	805	881	829	852	658	727	1,180	1,120	713	681
MIN	165	336	368	612	355	193	31	386	323	340	153	235
AC-FT	36,180	36,170	43,920	48,940	36,880	41,860	32,610	39,500	48,860	44,360	38,430	35,310
CAL YR 1970	TOTAL 273,637		MEAN 750	MAX 4,330	MIN 15	AC-FT 542,800</						

## 11281000 SOUTH FORK TUOLUMNE RIVER NEAR OAKLAND RECREATION CAMP, CALIF.

LOCATION.--Lat 37°49'18", long 120°00'43", in SE $\frac{1}{4}$  sec.29, T.1.S., R.18 E., Tuolumne County, Stanislaus National Forest, on right bank 75 ft downstream from highway bridge on Big Oak Flat Road, 0.5 mile southwest of Oakland Recreation Camp, and 0.6 mile upstream from Middle Tuolumne River.

DRAINAGE AREA.--87.0 sq mi.

PERIOD OF RECORD.--March 1923 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,800 ft (from topographic map). Prior to Nov. 22, 1931, at site 50 ft upstream at same datum.

AVERAGE DISCHARGE.--48 years, 93.6 cfs (67,810 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 904 cfs Mar. 26 (gage height, 5.14 ft); minimum daily, 5.3 cfs Sept. 17.

Period of record: Maximum discharge, 11,900 cfs Dec. 23, 1955 (gage height, 10.9 ft, from floodmarks), from rating curve extended above 1,300 cfs on basis of slope-area measurements at gage heights 7.48 and 10.9 ft; minimum, 0.3 cfs Aug. 23, 1934.

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and three discharge measurements furnished by city and county of San Francisco.

REVISIONS (WATER YEARS).--WSP 1445: 1923, 1925(M), 1926-28, 1929-30(M), 1932(M), 1935-36(M), 1937-38, 1943(M), 1943(M), 1945(M). WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	9.6	62	46	82	59	179	154	134	40	13	7.0
2	6.6	9.6	278	46	79	55	174	178	138	37	12	7.0
3	6.5	9.4	85	32	74	61	172	179	136	35	12	7.0
4	6.7	13	71	37	69	61	181	169	138	34	12	6.7
5	6.6	43	68	37	66	56	192	157	154	32	12	6.3
6	6.9	35	55	36	65	54	196	154	167	30	12	7.9
7	6.9	29	58	37	63	56	174	166	179	29	11	11
8	7.2	18	82	37	62	56	155	174	190	28	11	9.1
9	7.6	16	135	37	62	57	154	154	178	26	11	7.6
10	7.6	15	78	37	69	59	159	174	155	25	9.8	6.9
11	7.6	14	62	40	76	61	178	199	143	25	9.0	6.5
12	7.6	20	58	50	91	94	185	275	154	24	9.1	6.4
13	7.3	17	49	41	98	135	201	268	152	23	8.8	6.1
14	7.4	15	45	45	102	98	172	258	138	22	8.6	5.7
15	7.7	14	41	46	107	89	167	280	130	21	8.6	5.7
16	7.7	14	55	46	106	91	199	280	125	21	8.2	5.5
17	7.6	13	51	61	97	89	206	232	115	20	7.9	5.3
18	7.7	13	47	94	88	89	171	220	99	21	7.7	5.4
19	7.9	13	46	122	91	92	151	220	91	20	7.6	5.6
20	10	13	45	134	78	97	146	222	84	20	7.4	5.7
21	11	13	50	122	74	100	138	224	78	19	7.4	5.7
22	11	13	44	100	72	106	128	176	72	18	7.6	5.8
23	11	13	40	85	68	118	120	178	65	18	7.7	6.0
24	12	13	36	76	67	115	116	212	57	18	7.7	5.8
25	11	51	36	71	65	141	113	222	53	17	7.3	6.0
26	11	174	43	69	59	481	111	232	51	17	7.0	7.2
27	10	49	51	72	58	358	106	196	65	16	6.9	7.4
28	10	74	51	75	62	234	108	171	55	16	6.9	7.7
29	10	208	47	77	-----	206	109	160	48	15	6.9	7.7
30	10	99	48	79	-----	210	122	157	43	15	6.7	10
31	9.6	-----	46	82	-----	201	-----	141	-----	13	6.9	-----
TOTAL	264.3	1,050.6	1,963	1,969	2,150	3,779	4,683	6,182	3,387	715	277.7	203.7
MEAN	8.53	35.0	63.3	63.5	76.8	122	156	199	113	23.1	8.96	6.79
MAX	12	208	278	134	107	481	206	280	190	40	13	11
MIN	6.5	9.4	36	32	58	54	106	141	43	13	6.7	5.3
AC-FT	524	2,080	3,890	3,910	4,260	7,500	9,290	12,260	6,720	1,420	551	404

CAL YR 1970 TOTAL 31,794.6 MEAN 87.1 MAX 1,220 MIN 6.5 AC-FT 63,060

WTR YR 1971 TOTAL 26,624.3 MEAN 72.9 MAX 481 MIN 5.3 AC-FT 52,810

PEAK DISCHARGE (BASE, 900 CFS).--Mar. 26 (1800) 904 cfs (5.14 ft).

## SAN JOAQUIN RIVER BASIN

## 11282000 MIDDLE TUOLUMNE RIVER AT OAKLAND RECREATION CAMP, CALIF.

LOCATION.--Lat 37°49'42", long 120°00'38", in NW $\frac{1}{4}$  sec.28, T.1 S., R.18 E., Tuolumne County, Stanislaus National Forest, on left bank 1,000 ft downstream from Oakland Recreation Camp, 0.5 mile upstream from South Fork Tuolumne River, and 4 miles east of Buck Meadows Post Office.

DRAINAGE AREA.--73.5 sq mi.

PERIOD OF RECORD.--October 1916 to current year. Monthly discharge only for October 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.

GAGE.--Water-stage recorder. Altitude of gage is 2,800 ft (from topographic map).

AVERAGE DISCHARGE.--55 years, 74.9 cfs (54,270 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 443 cfs May 16 (gage height, 4.36 ft); minimum daily, 1.2 cfs Sept. 20.

Period of record: Maximum discharge, 4,920 cfs Dec. 23, 1955 (gage height, 11.75 ft from flood profile, 11.05 ft, from floodmarks inside gage well), from rating curve extended above 1,400 cfs on basis of slope-area measurement of maximum flow; no flow Sept. 4-14, 1924, Aug. 12 to Oct. 5, 1931, Sept. 11-17, 1934, Sept. 7-14, 1961.

REMARKS.--Records good. No regulation; small diversion above station for irrigation. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record and four discharge measurements furnished by city and county of San Francisco.

REVISIONS (WATER YEARS).--WSP 1395: 1919(M), 1938(M), 1951(P). WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	4.2	62	24	37	34	103	140	201	59	12	3.2
2	2.2	4.1	138	24	37	32	99	169	210	55	11	3.4
3	2.2	4.1	36	14	35	37	100	171	223	50	10	4.7
4	2.2	9.2	34	18	33	39	106	148	230	46	9.8	2.9
5	2.4	20	34	21	33	31	119	145	262	43	9.4	2.7
6	2.4	17	29	20	33	30	127	148	279	39	9.4	2.9
7	2.5	15	29	19	32	32	119	153	300	37	8.6	3.7
8	2.5	14	40	20	31	33	107	157	331	35	8.1	5.1
9	2.5	12	66	19	31	32	106	140	313	34	7.7	4.5
10	2.5	10	38	19	32	33	115	159	279	32	7.3	3.6
11	2.6	8.1	31	22	36	33	128	210	258	30	6.8	2.8
12	2.6	12	27	30	42	46	136	283	277	29	6.4	2.5
13	2.7	9.8	24	24	47	52	156	307	273	28	5.7	2.1
14	2.7	8.1	23	27	49	45	133	318	250	26	5.9	2.0
15	2.8	6.8	22	25	53	44	133	344	238	25	5.7	1.7
16	2.8	6.1	32	28	55	42	165	356	228	24	5.2	1.6
17	2.8	5.7	30	35	50	42	184	307	206	23	5.2	1.5
18	2.9	5.4	25	42	46	41	138	296	177	23	5.0	1.4
19	3.0	5.4	25	50	47	41	124	302	154	23	4.6	1.3
20	3.3	5.3	24	55	38	44	120	316	144	21	4.6	1.2
21	3.7	5.1	34	52	38	45	114	313	134	20	5.9	1.3
22	5.0	5.1	24	47	40	49	105	236	123	18	4.4	1.4
23	5.1	5.3	20	41	36	54	101	248	110	17	4.4	1.4
24	5.4	5.3	19	39	35	55	99	313	97	17	4.2	1.4
25	5.4	22	19	35	37	63	96	329	89	16	4.1	1.5
26	5.3	103	21	34	28	189	95	360	79	15	3.9	1.7
27	5.0	34	30	35	31	180	91	313	118	15	3.8	1.9
28	4.8	48	28	35	35	124	96	246	88	14	3.7	2.1
29	4.7	121	26	36	-----	110	100	240	72	13	3.7	2.1
30	4.5	50	25	36	-----	114	115	244	65	13	3.6	3.0
31	4.4	-----	25	37	-----	112	-----	213	-----	12	3.3	-----
TOTAL	105.1	581.1	1,040	963	1,077	1,858	3,530	7,624	5,808	852	193.4	72.6
MEAN	3.39	19.4	33.5	31.1	38.5	59.9	118	246	194	27.5	6.24	2.42
MAX	5.4	121	138	55	55	189	184	360	331	59	12	5.1
MIN	2.2	4.1	19	14	28	30	91	140	65	12	3.3	1.2
AC-FT	208	1,150	2,060	1,910	2,140	3,690	7,000	15,120	11,520	1,690	384	144

CAL YR 1970 TOTAL 26,909.4 MEAN 73.7 MAX 551 MIN 1.9 AC-FT 53,370  
WTR YR 1971 TOTAL 23,704.2 MEAN 64.9 MAX 360 MIN 1.2 AC-FT 47,020



## 11283100 LILY CREEK NEAR PINECREST, CALIF.

LOCATION.--Lat 38°08'41", long 119°53'59", in T.3 N., R.19 E., Tuolumne County, Stanislaus National Forest, on left bank 1,500 ft downstream from Mud Lake and 5.7 miles southeast of Pinecrest.

DRAINAGE AREA.--11.9 sq mi.

PERIOD OF RECORD.--July 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,990 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 47.3 cfs (34,270 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 552 cfs Nov. 25 (gage height, 6.76 ft); maximum gage height, 7.17 ft Jan. 17 (backwater from ice); no flow many days in October.

Period of record: Maximum discharge, 1,700 cfs Dec. 23, 1964 (gage height, 10.77 ft), from rating curve extended above 420 cfs; no flow many days in 1970.

Flood of Feb. 1, 1963, reached a stage of 11.7 ft, from floodmarks (discharge, 2,030 cfs).

REMARKS.--Records good except those for December and January, which are fair. Small regulation by Y-Meadow Reservoir (capacity, 180 acre-ft). No diversions above station. See schematic diagram of Tuolumne River basin. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.11	25	14	32	13	58	159	54	52	.39	.04
2	0	.13	23	14	29	14	63	143	72	45	.33	.04
3	0	.14	20	13	25	14	69	102	100	37	.26	.04
4	0	.61	22	13	22	14	89	63	127	33	.24	.04
5	0	88	23	13	20	13	105	51	160	30	.20	.03
6	0	60	23	13	20	12	87	61	183	26	.16	.09
7	0	25	26	14	22	13	54	63	212	23	.15	.20
8	0	23	28	15	23	13	44	61	220	20	.15	.13
9	0	32	25	16	25	15	61	80	197	18	.13	.13
10	0	36	21	17	32	15	81	173	168	15	.13	.13
11	0	33	21	17	55	14	93	184	166	13	.13	.12
12	0	43	21	16	61	13	113	198	200	12	.12	.11
13	0	20	20	15	57	16	112	233	190	9.5	.11	.10
14	0	17	19	15	53	13	100	232	164	8.6	.10	.10
15	0	16	17	16	51	13	139	245	164	7.7	.08	.08
16	0	13	18	17	41	15	150	204	153	7.0	.08	.07
17	0	11	19	23	30	17	113	153	143	7.2	.07	.06
18	0	11	18	50	22	22	61	151	129	12	.07	.05
19	0	9.5	17	45	21	34	46	166	127	6.8	.06	.04
20	0	8.8	15	41	20	39	46	173	120	5.1	.05	.02
21	0	8.4	14	35	19	43	39	142	118	4.0	.05	.01
22	0	7.3	13	31	18	47	31	88	102	3.3	.05	.01
23	0	7.0	12	27	17	46	29	147	93	2.7	.05	.08
24	.05	9.3	12	26	17	34	32	210	89	2.2	.05	.10
25	.09	321	12	26	18	49	29	235	80	1.7	.05	.18
26	.09	111	13	28	16	130	26	190	144	1.3	.05	.30
27	.08	47	12	32	15	73	26	108	193	1.2	.04	.39
28	.08	29	11	34	14	56	36	83	73	.89	.03	.42
29	.08	34	13	33	-----	65	67	81	55	.74	.03	.42
30	.08	31	14	34	-----	85	121	80	52	.68	.03	.98
31	.09	-----	14	34	-----	69	-----	60	-----	.50	.04	-----
TOTAL	.64	1,052.29	561	737	795	1,029	2,120	4,319	4,048	407.11	3.48	4.51
MEAN	.021	35.1	18.1	23.8	28.4	33.2	70.7	139	135	13.1	.11	.15
MAX	.09	321	28	50	61	130	150	245	220	52	.39	.98
MIN	0	.11	11	13	14	12	26	51	52	.50	.03	.01
AC-FT	1.3	2,090	1,110	1,460	1,580	2,040	4,210	8,570	8,030	808	6.9	9.0

CAL YR 1970 TOTAL 14,553.46 MEAN 39.9 MAX 380 MIN 0 AC-FT 28,870  
WTR YR 1971 TOTAL 15,077.03 MEAN 41.3 MAX 321 MIN 0 AC-FT 29,910

## PEAK DISCHARGE (BASE, 160 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11- 5	1400	4.94	218	5-15	2130	5.90	382
11-25	1230	6.76	552	5-25	2130	5.88	378
4-15	2130	4.83	202	6- 7	2200	5.69	343
5- 1	2230	4.95	220	6-26	2300	6.74	548

## SAN JOAQUIN RIVER BASIN

11283200 BELL CREEK NEAR PINECREST, CALIF.

LOCATION.--Lat 38°09'46", long 119°56'32", in NE $\frac{1}{4}$  sec.36, T.4 N., R.18 E., Tuolumne County, on right bank 1,400 ft downstream from Bell Meadows and 3 miles southeast of Pinecrest.

DRAINAGE AREA.--9.11 sq mi.

PERIOD OF RECORD.--September 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,450 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 28.3 cfs (20,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 230 cfs June 26 (gage height, 4.84 ft); maximum gage height, 4.91 ft Jan. 17 (backwater from ice); minimum daily discharge, 0.05 cfs Oct. 1, 2.  
Period of record: Maximum discharge, 934 cfs Dec. 23, 1964 (gage height, 7.54 ft), from rating curve extended above 160 cfs on basis of slope-area measurement at gage height 8.79 ft; no flow at times in most years.  
Flood of Feb. 1, 1963, reached a stage of 8.79 ft, from floodmarks (discharge, 1,410 cfs), from slope-area measurement of maximum flow.

REMARKS.--Records good except those for December and January, which are fair. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.22	11	6.4	22	13	53	87	51	41	1.5	.18
2	.05	.22	10	6.1	21	13	56	82	51	36	1.3	.17
3	.07	.26	9.1	5.9	19	13	61	68	54	32	1.2	.16
4	.09	.92	9.9	5.7	17	12	71	54	62	29	1.2	.15
5	.11	12	10	5.5	16	11	80	52	77	27	1.0	.15
6	.10	6.8	11	5.4	16	11	71	55	88	24	.98	.21
7	.09	3.9	12	5.5	16	11	54	52	106	21	.89	.19
8	.11	3.5	12	5.6	17	11	50	50	114	19	.85	.15
9	.12	5.0	11	5.7	18	12	58	58	107	17	.79	.14
10	.12	5.8	11	5.8	23	12	67	92	94	15	.71	.11
11	.11	5.2	10	5.9	36	12	72	104	92	13	.64	.10
12	.12	6.3	9.9	5.5	42	11	83	113	106	12	.60	.09
13	.12	3.5	9.4	5.2	43	14	80	119	106	11	.54	.08
14	.11	3.9	8.6	5.3	41	12	76	128	98	9.7	.47	.08
15	.12	3.7	8.0	5.5	43	11	93	140	97	8.8	.35	.07
16	.12	2.9	7.7	8.0	37	13	99	124	95	7.9	.32	.06
17	.13	2.8	8.0	14	28	14	86	104	89	9.0	.29	.06
18	.15	3.2	8.1	18	24	18	61	102	83	8.5	.27	.06
19	.17	2.7	7.8	22	23	23	53	107	79	6.3	.27	.06
20	.29	2.8	7.4	24	21	26	49	112	79	5.2	.26	.07
21	.27	2.6	7.0	22	20	29	43	101	78	4.5	.25	.08
22	.27	2.1	6.7	19	18	32	38	80	72	3.9	.26	.07
23	.27	2.0	6.3	18	17	32	36	101	66	3.4	.25	.07
24	.31	3.0	6.0	17	16	29	36	119	64	3.1	.23	.07
25	.27	90	5.7	16	16	49	32	133	59	2.8	.23	.09
26	.23	28	5.6	18	15	111	30	118	81	2.5	.22	.12
27	.22	14	6.1	20	15	71	30	91	83	2.3	.21	.13
28	.23	8.7	5.8	21	14	53	35	80	53	2.1	.20	.13
29	.23	16	5.6	22	-----	58	46	74	44	2.0	.20	.14
30	.22	13	5.9	23	-----	66	67	69	42	1.8	.20	.28
31	.22	-----	6.2	23	-----	57	-----	59	-----	1.7	.19	-----
TOTAL	5.09	255.02	258.8	390.0	654	860	1,766	2,828	2,370	382.5	16.87	3.52
MEAN	.16	8.50	8.35	12.6	23.4	27.7	58.9	91.2	79.0	12.3	.54	.12
MAX	.31	90	12	24	43	111	99	140	114	41	1.5	.28
MIN	.05	.22	5.6	5.2	14	11	30	50	42	1.7	.19	.06
AC-FT	10	506	513	774	1,300	1,710	3,500	5,610	4,700	759	33	7.0

CAL YR 1970 TOTAL 9,183.33 MEAN 25.2 MAX 314 MIN .05 AC-FT 18,220  
WTR YR 1971 TOTAL 9,789.80 MEAN 26.8 MAX 140 MIN .05 AC-FT 19,420

## PEAK DISCHARGE (BASE, 125 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1145	4.39	159	5-15	1930	4.68	203
3-26	1600	4.37	156	5-25	2030	4.53	180
4-15	2015	4.19	132	6- 8	2045	4.38	157
5- 1	2045	4.17	129	6-26	2045	4.84	230

## 11283500 CLAVEY RIVER NEAR BUCK MEADOWS, CALIF.

LOCATION.--Lat 37°54'02", long 120°04'15", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.35, T.1 N., R.17 E., Tuolumne County, on right bank 300 ft upstream from Forest Service road bridge, 1.7 miles downstream from Quilty Creek, and 6 miles north of Buck Meadows Post Office.

DRAINAGE AREA.--144 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 2,374.08 ft above mean sea level.

AVERAGE DISCHARGE.--12 years, 251 cfs (181,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,950 cfs Mar. 26 (gage height, 11.82 ft); minimum daily, 12 cfs Oct. 3, Sept. 15-21, 23, 24.

Period of record: Maximum discharge, 19,200 cfs Feb. 1, 1963 (gage height, 21.40 ft), from rating curve extended above 2,000 cfs on basis of slope-area measurement of maximum flow; minimum, 3.4 cfs Sept. 7, 8, 1961.

REMARKS.--Records excellent. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	16	256	131	280	192	709	609	326	166	25	15
2	13	16	444	130	271	185	683	658	321	158	25	15
3	12	16	226	96	252	191	677	579	361	139	24	15
4	13	22	235	109	234	185	719	508	355	126	23	15
5	13	139	213	108	223	174	783	462	423	116	23	15
6	13	218	185	103	216	169	770	472	446	108	22	15
7	13	130	189	103	213	172	640	464	496	99	22	17
8	14	79	241	105	214	173	564	484	535	91	21	16
9	14	70	317	104	215	179	586	453	523	85	21	15
10	16	83	237	106	229	189	637	607	464	80	20	14
11	14	76	200	116	301	193	673	740	425	75	20	14
12	14	91	175	127	377	259	685	754	443	71	20	14
13	14	77	163	114	402	295	742	826	473	66	19	13
14	14	55	147	117	410	254	644	792	435	61	18	13
15	14	49	137	138	427	239	704	837	403	57	18	12
16	14	46	149	145	431	251	789	833	394	53	18	12
17	13	41	143	202	361	268	757	638	365	50	17	12
18	14	38	138	370	314	289	564	584	338	53	17	12
19	14	38	133	436	312	327	498	601	313	54	17	12
20	15	36	125	411	275	363	482	602	309	47	17	12
21	20	34	123	366	260	390	445	617	298	43	16	12
22	20	34	126	315	246	418	409	451	278	40	17	13
23	25	32	116	278	230	448	385	491	254	37	17	12
24	25	31	107	250	220	438	397	585	232	35	17	12
25	20	520	108	229	224	565	369	641	226	33	16	13
26	18	614	115	226	202	1,880	353	682	212	31	16	14
27	18	221	131	241	197	1,410	338	504	477	30	16	15
28	17	214	130	257	203	998	356	447	262	29	15	15
29	17	408	138	268	-----	887	401	420	196	28	16	15
30	17	277	141	276	-----	933	495	404	175	27	15	21
31	17	-----	135	284	-----	830	-----	361	-----	26	15	-----
TOTAL	488	3,721	5,467	6,261	7,739	13,744	17,254	18,106	10,758	2,114	583	420
MEAN	15.7	124	176	202	276	443	575	584	359	68.2	18.8	14.0
MAX	25	614	444	436	431	1,880	789	837	535	166	25	21
MIN	12	16	107	96	197	169	338	361	175	26	15	12
AC-FT	968	7,380	10,840	12,420	15,350	27,260	34,220	35,910	21,340	4,190	1,160	833

CAL YR 1970 TOTAL 105,609 MEAN 289 MAX 4,660 MIN 12 AC-FT 209,500

WTR YR 1971 TCTAL 86,655 MEAN 237 MAX 1,880 MIN 12 AC-FT 171,900

PEAK DISCHARGE (BASE, 1,400 CFS).--Nov. 25 (2300) 1,510 cfs (9.50 ft); Mar. 26 (1600) 2,950 cfs (11.82 ft).

## SAN JOAQUIN RIVER BASIN

11284400 BIG CREEK ABOVE WHITES GULCH, NEAR GROVELAND, CALIF.

LOCATION.--Lat 37°50'31", long 120°11'02", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.23, T.1 S., R.16 E., Tuolumne County, on right bank 500 ft upstream from Whites Gulch and 2.5 miles east of Groveland.

DRAINAGE AREA.--16.4 sq mi.

PERIOD OF RECORD.--May 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,561.79 ft above mean sea level (levels by Boise-Cascade Corp).

EXTREMES.--Current year: Maximum discharge, 139 cfs Nov. 26 (gage height, 3.52 ft); no flow many days.

Period of record: Maximum discharge, 1,230 cfs Jan. 16, 1970 (gage height, 5.80 ft); no flow many days in each year.

Flood of December 1964 reached a stage of 6.4 ft, from floodmarks (discharge not determined).

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	CCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	20	9.7	4.6	3.5	5.1	2.2	1.4	.13		
2		0	34	11	4.3	3.3	4.6	2.3	1.4	.12		
3		0	24	7.3	4.0	3.5	4.2	4.0	1.3	.12		
4		0	20	6.1	3.8	3.6	4.0	4.0	1.2	.11		
5		0	14	5.7	3.8	3.6	3.7	3.2	1.1	.11		
6		.02	9.4	5.0	3.8	3.2	3.6	3.2	1.0	.10		
7		.09	8.3	4.5	3.6	3.0	4.0	3.8	.96	.10		
8		.10	9.2	4.3	3.5	2.8	3.7	4.4	.90	.10		
9		.09	22	4.1	3.4	2.7	3.4	3.5	.88	.10		
10		.09	16	4.0	3.2	2.6	3.2	3.0	.89	.09		
11		.08	12	5.2	3.2	2.6	3.1	2.6	.86	.09		
12		.09	9.4	26	3.0	9.4	3.0	2.4	.80	.09		
13		.10	7.6	20	3.0	18	2.8	2.3	.67	.08		
14		.09	6.5	32	3.0	8.4	3.0	2.1	.60	.08		
15		.08	5.4	28	3.0	7.9	2.9	1.9	.54	.08		
16		.07	40	25	2.9	5.9	2.7	1.7	.51	.08		
17		.06	41	45	3.1	5.2	3.4	1.7	.40	.08		
18		.05	19	46	2.9	4.5	3.8	1.6	.31	.07		
19		.04	15	30	4.7	4.1	3.2	1.5	.32	.07		
20		.03	13	22	4.0	3.8	3.2	1.5	.27	.07		
21		.02	32	16	3.4	3.5	3.2	1.4	.28	.07		
22		.01	25	13	3.2	3.4	2.8	1.5	.22	.06		
23		0	15	11	3.2	3.6	2.6	1.4	.18	.05		
24		0	11	9.5	2.8	3.7	2.8	1.3	.16	.04		
25		20	8.3	8.1	2.7	5.4	3.0	1.2	.14	.02		
26		50	7.8	7.2	2.6	23	3.0	1.2	.14	0		
27		40	24	6.5	2.8	20	2.7	1.4	.19	0		
28		15	26	5.9	3.3	11	2.6	1.9	.23	0		
29		35	18	5.5	-----	8.6	2.4	1.7	.20	0		
30		28	15	5.0	-----	7.0	2.3	1.6	.15	0		
31		-----	12	4.8	-----	5.9	-----	1.5	-----	0		-----
TOTAL	0	189.11	539.9	433.4	94.8	196.7	98.0	69.0	18.20	2.11	0	0
MEAN	0	6.30	17.4	14.0	3.39	6.35	3.27	2.23	.61	.068	0	0
MAX	0	50	41	46	4.7	23	5.1	4.4	1.4	.13	0	0
MIN	0	0	5.4	4.0	2.6	2.6	2.3	1.2	.14	0	0	0
AC-FT	0	375	1,070	860	188	390	194	137	36	4.2	0	0

CAL YR 1970 TOTAL 3,658.19 MEAN 10.0 MAX 562 MIN 0 AC-FT 7,260  
 WTR YR 1971 TOTAL 1,641.22 MEAN 4.50 MAX 50 MIN 0 AC-FT 3,260

PEAK DISCHARGE (BASE, 150 CFS).--No peak above base.

## 11284500 BIG CREEK NEAR GROVELAND, CALIF.

LOCATION.--Lat 37°51'30", long 120°12'19", in NE¼NW¼ sec.15, T.1 S., R.16 E., Tuolumne County, on right bank 0.4 mile downstream from Pine Mountain Dam and 1.9 miles northeast of Groveland.

DRAINAGE AREA.--25.0 sq mi.

PERIOD OF RECORD.--October 1931 to September 1933, July 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,425 ft (from topographic map). Prior to Oct. 1, 1969, at site 1,700 ft upstream at different datum.

AVERAGE DISCHARGE (adjusted for storage in Pine Mountain Lake).--14 years, 12.1 cfs (8,770 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 332 cfs Jan. 19 (gage height, 2.89 ft); minimum daily, 0.01 cfs Oct. 18, 19, 21, 22.

Period of record: Maximum discharge, 4,530 cfs Feb. 1, 1963 (gage height, 7.71 ft, site and datum then in use), from rating curve extended above 1,500 cfs on basis of slope-area measurement of maximum flow; no flow for several months in most years. Maximum discharge since construction of Pine Mountain Dam in 1969, 550 cfs Mar. 1, 1970 (gage height, 3.38 ft); minimum daily, 0.01 cfs many days in 1970, 1971.

Flood of December 1955 reached a stage of 7.6 ft, from floodmarks, at site 1,700 ft upstream at different datum (discharge, 4,300 cfs).

REMARKS.--Records good. Flow regulated by Pine Mountain Lake beginning Oct. 15, 1969 (capacity, 7,700 acre-ft). Some diversion for irrigation of golf course. See schematic diagram of Tuolumne River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	.16	51	.40	.22	.42	10	2.2	1.0	.46	.45	.58
2	.18	.20	52	.46	.24	.39	7.1	2.6	.91	.46	.45	.58
3	.18	.25	58	.39	.22	.39	7.7	7.0	.80	.46	.46	.57
4	.15	.36	79	.39	.22	.40	8.0	6.8	.71	.46	.45	.57
5	.18	.51	90	57	.25	.39	7.0	5.1	.71	.46	.46	.57
6	.18	.54	90	67	.26	.39	6.0	4.6	.71	.45	.45	.58
7	.18	.27	42	.39	.25	.39	5.7	6.4	.58	.45	.47	.57
8	.18	.26	.37	20	.22	.39	5.1	9.2	.52	.45	.48	.57
9	.18	.26	.30	38	.22	.39	4.8	7.1	.46	.45	.48	.57
10	.18	.26	.30	38	.22	.39	3.9	5.2	.46	.45	.48	.57
11	.18	.33	.28	29	.22	.39	3.8	5.4	.46	.45	.48	.57
12	.17	.27	.26	24	.21	2.7	3.3	3.3	.46	.45	.49	.57
13	.18	.26	.26	24	.20	.55	2.4	2.8	.46	.46	.49	.57
14	3.7	.26	.26	24	.18	79	1.7	2.4	.45	.46	.49	.57
15	.07	.26	.26	24	.20	49	1.8	2.1	.45	.47	.49	.58
16	.04	.26	1.2	24	.18	.85	1.6	1.7	.45	.47	.58	.57
17	.02	.26	.48	24	.21	.62	4.1	1.3	.45	.48	.58	.64
18	.01	.26	.39	71	.18	.48	5.4	1.1	.45	.48	.58	.58
19	.01	15	.39	124	.44	.40	2.9	1.0	.45	.48	.58	.58
20	.02	28	.58	88	.28	.32	2.5	.98	.45	.48	.58	.58
21	.01	28	56	42	.26	.27	2.6	.84	.45	.48	.58	.58
22	.01	28	109	.50	.37	.24	1.7	.78	.45	.49	.58	.58
23	.07	14	44	.48	.41	.39	1.4	.83	.45	.49	.58	.58
24	.03	.28	.34	.44	.40	.28	1.7	.75	.45	.49	.58	.58
25	.02	21	.32	.40	.39	.91	2.4	.63	.45	.49	.58	.50
26	.03	51	.34	.37	.39	2.2	3.0	.55	.47	.49	.56	.50
27	.03	51	.71	.29	.42	.70	2.5	.74	.46	.49	.56	.50
28	.05	52	55	.26	.46	.66	3.6	.76	.46	.47	.58	.50
29	.06	52	68	.22	-----	.91	3.2	1.0	.46	.45	.57	.51
30	.09	51	.44	.22	-----	2.7	2.8	1.3	.46	.45	.58	.98
31	.12	-----	.41	.22	-----	5.4	-----	1.1	-----	.45	.58	-----
TOTAL	6.69	396.51	801.89	723.43	7.72	152.91	119.7	87.56	15.95	14.47	16.30	17.35
MEAN	.22	13.2	25.9	23.3	.28	4.93	3.99	2.82	.53	.47	.53	.58
MAX	3.7	52	109	124	.46	79	10	9.2	1.0	.49	.58	.98
MIN	.01	.16	.26	.22	.18	.24	1.4	.55	.45	.45	.45	.50
AC-FT	13	786	1,590	1,430	15	303	237	174	32	29	32	34
(a)	6,970	6,750	6,880	6,860	7,210	7,840	7,820	7,800	7,660	7,430	7,140	6,950

CAL YR 1970 TOTAL 2,453.90 MEAN 6.72 MAX 219 MIN .01 AC-FT 4,870 MEAN b 15.2 AC-FT b 11,020  
WTR YR 1971 TOTAL 2,360.48 MEAN 6.47 MAX 124 MIN .01 AC-FT 4,680 MEAN b 6.17 AC-FT b 4,470

a Contents, in acre-feet, of Pine Mountain Lake at end of month.

b Adjusted for change in contents of Pine Mountain Lake.

## 11284700 NORTH FORK TUOLUMNE RIVER NEAR LONG BARN, CALIF.

LOCATION.--Lat 38°05'56", long 120°05'55", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.22, T.3 N., R.17 E., Tuolumne County, Stanislaus National Forest, on right bank 0.6 mile upstream from small tributary, 1.5 miles east of Long Barn, and 3.8 miles upstream from Wrights Creek.

DRAINAGE AREA.--23.1 sq mi.

PERIOD OF RECORD.--August 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,650 ft (from topographic map).

AVERAGE DISCHARGE.--9 years, 29.7 cfs (21,520 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 402 cfs Mar. 26 (gage height, 4.95 ft); minimum daily, 0.68 cfs Oct. 1.

Period of record: Maximum discharge, 1,670 cfs Jan. 21, 1969 (gage height, 7.61 ft), from rating curve extended above 650 cfs on basis of slope-area measurement at gage height 9.8 ft; minimum daily, 0.2 cfs Sept. 18-25, 1962.

Flood of Dec. 23, 1955, reached a stage of 9.8 ft, from floodmarks (discharge, 2,560 cfs by slope-area measurement).

REMARKS.--Records good. No storage or diversions above station. See schematic diagram of Tuolumne River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.68	1.3	30	11	34	23	98	49	30	7.2	1.7	1.0
2	.70	1.3	27	11	33	22	91	53	28	6.6	1.7	1.0
3	.70	1.2	25	11	34	22	86	58	26	6.2	1.5	1.1
4	.70	7.6	25	9.6	29	21	85	57	25	5.8	1.6	1.0
5	.74	17	24	9.9	27	20	88	54	25	5.5	1.5	1.3
6	.74	12	24	10	26	20	89	53	24	5.3	1.5	1.0
7	.82	8.8	27	11	26	20	86	55	24	5.0	1.4	1.0
8	.87	4.9	44	11	25	20	78	57	23	4.8	1.4	1.0
9	.89	4.1	55	12	24	21	75	57	23	4.6	1.4	.95
10	.85	4.0	35	13	26	22	77	67	22	4.4	1.3	.85
11	.88	3.5	27	13	31	23	77	76	20	4.3	1.2	.88
12	.87	4.4	24	14	38	38	76	83	19	4.1	1.2	.90
13	.86	3.5	21	16	43	40	78	80	17	3.9	1.1	.88
14	.86	3.0	18	18	46	34	75	78	16	3.6	1.1	.82
15	.89	2.7	16	20	53	33	73	78	15	3.3	1.1	.79
16	.91	2.6	16	23	51	36	76	73	14	3.2	1.1	.77
17	.88	2.5	17	30	46	38	78	64	13	3.0	1.1	.73
18	.91	2.4	15	42	41	40	69	57	12	3.2	1.0	.74
19	.98	2.4	14	48	40	42	62	54	11	3.0	1.1	.82
20	1.6	2.3	12	49	41	45	59	52	10	2.8	1.0	.86
21	1.6	2.3	15	43	36	47	55	52	9.8	2.7	.99	.85
22	1.8	2.3	17	37	31	50	50	46	9.1	2.5	1.0	.83
23	1.9	2.2	13	32	30	56	47	42	8.5	2.4	1.0	.90
24	2.2	2.2	11	29	28	59	46	42	8.1	2.4	1.1	.89
25	1.7	35	10	28	26	97	44	42	7.9	2.2	1.0	.94
26	1.5	33	11	27	24	277	42	45	9.9	2.2	.99	1.0
27	1.4	14	10	29	23	208	41	45	13	2.1	.90	1.1
28	1.4	32	9.6	31	24	153	40	43	9.3	2.0	.96	1.2
29	1.4	76	10	32	-----	134	41	38	8.1	2.0	1.0	1.2
30	1.4	32	11	34	-----	126	43	36	7.7	1.9	.93	2.5
31	1.3	-----	11	34	-----	112	-----	32	-----	1.7	1.0	-----
TOTAL	34.93	322.5	624.6	738.5	936	1,899	2,025	1,718	488.4	113.9	36.87	29.80
MEAN	1.13	10.8	20.1	23.8	33.4	61.3	67.5	55.4	16.3	3.67	1.19	.99
MAX	2.2	76	55	49	53	277	98	83	30	7.2	1.7	2.5
MIN	.68	1.2	9.6	9.6	23	20	40	32	7.7	1.7	.90	.73
AC-FT	69	640	1,240	1,460	1,860	3,770	4,020	3,410	969	226	73	59

CAL YR 1970 TOTAL 10,479.88 MEAN 28.7 MAX 525 MIN .66 AC-FT 20,790

WTR YR 1971 TOTAL 8,967.50 MEAN 24.6 MAX 277 MIN .68 AC-FT 17,790

PEAK DISCHARGE (BASE, 150 CFS).--Mar. 26 (1615) 402 cfs (4.95 ft).

## 11287500 DON PEDRO RESERVOIR NEAR LA GRANGE, CALIF.

LOCATION.--Lat 37°42'06", long 120°25'16", in NE $\frac{1}{4}$  sec.3, T.3 S., R.14 E., Tuolumne County, at new Don Pedro Dam on Tuolumne River, 500 ft downstream from Mexican Gulch, and 3.4 miles northeast of La Grange. Prior to Nov. 3, 1970, at site 1.5 miles upstream.

DRAINAGE AREA.--1,533 sq mi.

PERIOD OF RECORD.--September 1923 to current year. 1923-24 (year-end contents only) and October 1924 to September 1930 monthend contents, published in WSP 1315-A.

GAGE.--Nonrecording gage. Datum of gage is at mean sea level (levels by Turlock Irrigation District). Prior to Feb. 1, 1941, nonrecording gage at site 1.5 miles upstream at same datum. Feb. 2, 1941, to Feb. 28, 1971, water-stage recorder at site 1.5 miles upstream at same datum.

EXTREMES.--Current year: Maximum contents, 491,400 acre-ft July 1, 2 (elevation, 644.6 ft); minimum, 109,300 acre-ft Oct. 5, 14 (elevation, 538.0 ft).

1923-70: Maximum contents, 292,400 acre-ft Jan. 26, 1969 (elevation, 606.2 ft); minimum, 29,200 acre-ft Sept. 1-3, 5, 1934; minimum elevation, 475.0 ft Sept. 1, 2, 1934. Maximum contents since construction of New Don Pedro Dam in 1970, 491,400 acre-ft July 1, 2, 1971 (elevation, 644.6 ft); minimum, 158,200 acre-ft Nov. 3, 1970 (elevation, 549.8 ft).

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 miles downstream, where it is diverted into Turlock and Modesto Canals 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. Figures given herein represent total contents. See schematic diagram of Tuolumne River basin.

COOPERATION.--Gage-height record furnished by Turlock and Modesto Irrigation Districts.

## CAPACITY TABLES (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FeET)

Oct. 1 to Nov. 2

476	30,000	510	64,200	550	135,800	590	242,400
480	33,000	520	78,100	560	159,900	600	272,900
490	41,900	530	94,100	570	185,600	607	295,000
500	52,200	540	113,500	580	213,400		

Nov. 3 to Sept. 30

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		

## CONTENTS, IN ACRE-FeET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110,600	148,400	246,900	281,700	297,000	313,900	343,400	371,800	404,800	491,400	438,100	368,200
2	110,300	152,500	256,000	280,700	297,000	314,600	344,600	372,200	405,200	491,400	435,000	366,700
3	110,600	158,200	260,500	279,100	297,700	315,000	350,600	374,500	405,200	489,900	432,800	365,900
4	110,100	161,300	263,700	277,700	298,400	315,300	352,900	376,100	405,200	488,100	431,100	364,800
5	109,300	164,300	263,700	277,400	298,700	314,600	354,000	379,700	405,700	486,600	428,500	365,500
6	109,500	168,400	262,400	279,400	299,100	313,200	354,400	381,300	405,700	485,200	425,500	363,600
7	109,700	172,100	262,100	281,700	298,400	311,400	354,000	382,800	405,200	484,300	422,500	362,400
8	109,700	174,200	263,700	283,800	298,400	311,400	354,400	384,900	405,700	482,900	419,100	360,900
9	109,900	176,000	268,200	285,400	299,100	312,500	355,500	387,300	406,500	482,400	415,300	359,300
10	109,900	178,700	271,500	286,800	299,800	312,800	357,000	388,900	407,300	481,000	411,500	358,200
11	111,000	181,100	273,800	288,800	300,100	313,600	359,700	390,900	407,300	479,200	407,700	357,400
12	110,100	182,700	276,100	291,500	301,500	314,300	359,700	392,900	407,700	476,400	404,000	358,200
13	109,700	185,400	277,400	292,900	304,600	315,300	360,500	395,000	409,800	474,100	400,700	356,300
14	109,300	187,800	278,100	295,000	306,400	316,400	361,700	396,200	409,800	471,700	397,400	354,800
15	109,900	189,400	278,700	295,600	306,800	316,400	362,400	397,400	409,000	469,400	393,700	354,000
16	112,400	191,600	281,400	295,300	307,500	317,100	363,600	399,100	410,200	466,700	390,100	353,200
17	114,700	193,800	282,400	295,300	308,600	318,500	365,900	399,900	411,500	464,400	387,700	353,600
18	116,900	196,300	282,700	296,300	309,700	319,600	367,900	400,300	415,700	461,700	385,300	353,600
19	118,200	198,600	283,100	297,700	310,400	320,300	368,200	401,100	421,700	458,500	382,400	354,400
20	120,600	200,800	282,700	298,700	311,100	320,700	368,200	401,100	428,100	455,800	380,900	354,000
21	123,000	203,400	285,100	298,700	311,100	321,000	368,200	401,900	432,800	453,600	380,500	354,800
22	125,700	205,400	286,100	298,400	311,400	320,700	368,200	401,900	437,600	451,800	379,700	355,900
23	128,400	207,100	286,100	294,400	312,500	320,300	368,200	401,500	444,200	450,000	378,900	356,700
24	130,700	209,100	285,800	295,300	313,600	320,300	369,000	400,700	450,000	448,700	378,500	357,800
25	133,600	212,900	284,800	294,300	314,300	320,700	370,200	401,500	456,700	446,900	377,300	359,000
26	134,400	220,500	283,800	293,600	314,600	324,700	370,600	402,800	463,000	445,100	376,100	359,700
27	136,700	223,800	282,700	293,600	314,600	330,100	370,600	403,200	469,400	443,800	375,300	360,500
28	139,100	228,000	282,700	293,600	314,300	335,600	369,800	403,600	475,400	442,900	373,700	362,000
29	141,700	235,200	282,400	294,300	-----	339,000	370,200	404,400	483,800	442,000	372,200	363,200
30	144,300	241,000	282,400	295,600	-----	339,700	370,200	404,800	489,500	440,700	370,200	364,800
31	146,500	-----	282,400	296,300	-----	341,600	-----	404,800	-----	439,400	369,400	-----
MAX	146,500	241,000	286,100	298,700	314,600	341,600	370,600	404,800	489,500	491,400	438,100	368,200
MIN	109,300	148,400	246,900	277,400	297,000	311,400	343,400	371,800	404,800	439,400	369,400	353,200
(a)	554.5	579.4	592.3	596.4	601.5	609.0	616.5	625.1	644.2	633.2	616.3	615.1
(b)	+35,500	+94,500	+41,400	+13,900	+18,000	+27,300	+28,600	+34,600	+84,700	-50,100	-70,000	-4,600

CAL YR 1970 b +69,300

WTR YR 1971 b +253,800

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

## SAN JOAQUIN RIVER BASIN

11289000 MODESTO CANAL NEAR LA GRANGE, CALIF.

LOCATION.--Lat 37°40'04", long 120°27'26", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.17, T.3 S., R.14 E., Stanislaus County, on right bank 0.5 mile northeast of La Grange and 1 mile 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.

GAGE.--Water-stage recorder. V-notch sharp-crested weir since Mar. 19, 1963. Datum of gage is 272.4 ft above mean sea level (levels by Modesto Irrigation District). Prior to July 1904, nonrecording gage at approximately present site at different datum. July 1904 to March 1920, nonrecording gage in concrete well 0.9 mile upstream and 460 ft below intake, set by water surface elevation to read same as previous gage. March 1920 to February 1924, nonrecording gage and February 1924 to March 1932, water-stage recorder, 0.9 mile upstream and 500 ft below intake at different datum.

AVERAGE DISCHARGE.--68 years, 401 cfs (290,500 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 1,820 cfs July 1, 1935; no flow at times.

REMARKS.--Records excellent. 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.

COOPERATION.--Two discharge measurements furnished by city and county of San Francisco.

REVISIONS (WATER YEARS).--WSP 1315-A: 1904-9 (monthly figures only).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	CCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	576	.02	0		0	130	816	385	832	1,350	938	587
2	587	.02	0		0	465	600	231	791	1,360	1,110	446
3	579	.02	0		0	459	650	159	747	1,260	968	409
4	585	.02	0		0	610	395	438	740	1,160	919	464
5	501	.01	0		0	770	405	598	746	1,010	926	397
6	356	.01	0		0	1,280	609	403	707	1,060	912	335
7	334	0	0		0	1,230	874	305	812	1,010	764	441
8	319	0	0		0	904	968	266	778	1,000	774	689
9	310	0	0		0	431	769	246	683	838	1,020	614
10	310	0	0		0	7.0	789	335	584	601	1,080	558
11	247	0	0		0	4.1	727	483	662	595	1,100	282
12	322	0	0		0	4.3	857	521	475	929	1,020	334
13	326	0	0		0	4.2	1,070	709	298	1,120	852	814
14	331	0	.01		0	4.1	965	797	730	1,150	884	696
15	214	0	.25		0	4.1	955	762	1,130	996	896	599
16	17	0	.01		0	4.1	964	781	1,070	975	895	589
17	300	0	.01		0	112	924	795	1,040	751	897	310
18	37	0	0		0	373	909	837	846	811	891	286
19	.06	0	0		0	549	946	778	530	1,060	856	281
20	.05	0	0		0	733	1,080	786	523	1,040	895	282
21	.05	0	.01		0	887	915	782	941	903	903	275
22	.05	0	0		0	922	744	795	801	985	902	273
23	.05	0	0		0	951	629	830	943	992	900	233
24	.05	0	0		0	986	348	912	929	850	813	234
25	.04	0	0		2.0	980	323	858	984	893	669	236
26	.04	0	0		4.7	977	668	799	952	898	641	235
27	.04	0	0		4.7	704	582	837	939	919	627	237
28	.04	0	0		4.9	743	612	828	982	937	631	238
29	.04	0	0		-----	989	590	867	992	942	619	239
30	.03	0	0		-----	951	595	840	1,100	942	479	241
31	.03	-----	0		-----	697	-----	876	-----	940	409	-----
TOTAL	6,251.57	.10	.29	0	16.3	17,864.9	22,278	19,839	24,287	30,277	26,190	11,854
MEAN	202	.003	.009	0	.58	576	743	640	810	977	845	395
MAX	587	.02	.25	0	4.9	1,280	1,080	912	1,130	1,360	1,110	814
MIN	.03	0	0	0	0	4.1	323	159	298	595	409	233
AC-FT	12,400	.2	.6	0	32	35,440	44,190	39,350	48,170	60,050	51,950	23,510
CAL YR 1970	TOTAL	187,444.12	MEAN	514	MAX	1,440	MIN	0	AC-FT	371,800		
WTR YR 1971	TOTAL	158,858.16	MEAN	435	MAX	1,360	MIN	0	AC-FT	315,100		



## 11289500 TURLOCK CANAL NEAR LA GRANGE, CALIF.

LOCATION.--Lat 37°39'57", long 120°26'24", in NE¼NW¼ sec.21, T.3 S., R.14 E., Stanislaus County, on right bank 2,400 ft downstream from intake at La Grange Dam and 1.2 miles east of La Grange.

PERIOD OF RECORD.--October 1898 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 265 ft (from topographic map). July 1, 1899 to Sept. 14, 1915, nonrecording gage at different sites and datums near canal intake. Sept. 15, 1915, to Apr. 15, 1924, nonrecording gage and Apr. 16, 1924, to winter of 1936-37, water-stage recorder, both at present site at datum 0.25 ft higher.

AVERAGE DISCHARGE.--73 years, 602 cfs (436,100 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 2,280 cfs June 12, 1949; no diversion for irrigation during some periods in some years. Prior to 1939, unmeasured small discharge during winter called zero.

REMARKS.--Records excellent. 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. During fall and winter some unmeasured flow is diverted from canal at tunnel 0.3 mile above gage, passed through La Grange powerplant and returned to river. See schematic diagram of Tuolumne River basin.

COOPERATION.--Five discharge measurements furnished by city and county of San Francisco.

REVISIONS (WATER YEARS).--WSP 1315-A: 1899-1908 (monthly figures only). WSP 1445: 1917-20, 1922.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	CCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	661	.40	5.0	2.3	20	938	1,610	1,130	1,280	1,150	1,060	1,670
2	649	.33	4.8	2.7	19	640	1,290	1,210	1,320	1,410	1,640	1,650
3	505	.40	4.3	2.6	19	646	683	1,590	1,460	1,970	1,510	1,550
4	488	.50	3.3	2.6	19	517	583	1,310	1,470	1,900	1,610	1,250
5	563	.48	3.4	2.4	19	421	1,210	1,160	1,280	1,800	1,760	44
6	704	.58	3.4	2.3	19	771	1,210	1,340	1,100	1,910	1,950	1,110
7	759	.40	3.1	2.3	19	752	969	1,470	1,480	1,980	2,140	1,480
8	803	1.9	2.9	2.3	19	432	819	1,040	1,580	1,970	2,080	1,560
9	766	8.1	2.8	2.3	18	601	807	462	1,640	1,930	2,110	1,410
10	767	7.1	2.5	2.4	18	1,060	491	1,390	1,750	2,020	2,170	1,430
11	245	6.8	2.5	2.6	19	934	52	1,490	1,720	1,980	2,160	1,100
12	803	6.2	2.6	2.6	19	1,050	1,030	1,390	1,580	1,950	2,120	58
13	984	5.7	2.6	2.8	14	1,430	1,010	1,420	961	1,910	2,150	1,340
14	949	5.4	2.6	2.8	9.6	1,580	1,050	1,500	1,760	1,870	2,130	1,230
15	558	5.1	2.6	334	6.9	1,360	1,020	1,240	1,590	1,910	2,030	1,160
16	13	5.1	2.7	814	6.9	1,090	1,190	1,060	1,500	2,000	1,870	1,160
17	11	5.2	2.7	1,040	6.9	738	545	1,410	1,440	1,860	1,800	715
18	1.3	5.2	2.7	1,040	71	544	127	1,460	1,390	1,790	1,880	524
19	1.1	5.2	2.8	1,050	108	1,160	1,130	1,560	1,120	1,980	1,940	62
20	.96	5.6	2.8	1,050	108	642	1,160	1,530	704	2,040	1,510	831
21	.90	5.3	3.0	1,050	108	1,270	1,470	1,550	1,440	1,780	595	582
22	.95	5.2	2.6	1,050	49	1,270	1,450	1,410	1,320	1,660	660	527
23	.93	5.2	2.4	1,060	15	1,410	1,370	1,170	1,170	1,590	807	631
24	.81	5.2	2.3	1,060	14	1,410	1,240	1,590	994	1,260	1,000	408
25	.80	5.6	2.3	1,050	246	1,270	679	1,520	991	1,080	1,260	129
26	.76	5.5	2.3	1,040	574	1,240	1,380	1,420	490	1,420	1,400	125
27	.73	5.2	2.6	1,030	984	1,120	1,330	1,440	320	1,380	1,330	372
28	.65	5.3	2.4	1,030	968	1,230	1,370	1,330	698	1,300	1,470	367
29	.65	5.2	2.2	692	-----	1,620	1,410	1,040	863	1,200	1,280	364
30	.59	5.2	2.2	20	-----	1,370	1,360	767	1,130	1,220	1,520	285
31	.42	-----	2.2	19	-----	993	-----	929	-----	1,130	1,600	-----
TOTAL	10,239.55	128.59	88.6	14,464.0	3,516.3	31,509	31,045	40,328	37,541	52,350	50,542	25,124
MEAN	330	4.29	2.86	467	126	1,016	1,035	1,301	1,251	1,689	1,630	837
MAX	984	8.1	5.0	1,060	984	1,620	1,610	1,590	1,760	2,040	2,170	1,670
MIN	.42	.33	2.2	2.3	6.9	421	52	462	320	1,080	595	44
AC-FT	20,310	255	176	28,690	6,970	62,500	61,580	79,990	74,460	103,800	100,300	49,830
CAL YR 1970	TOTAL	295,126.08	MEAN	809	MAX	1,940	MIN	0	AC-FT	585,400		
WTR YR 1971	TOTAL	296,876.04	MEAN	813	MAX	2,170	MIN	.33	AC-FT	588,900		

## SAN JOAQUIN RIVER BASIN

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CALIF.

LOCATION.--Lat 37°39'59", long 120°26'28", in NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.21, T.3 S., R.14 E., Stanislaus County, on left bank 0.5 mile downstream from La Grange Dam and 1.1 miles east of La Grange.

DRAINAGE AREA.--1,538 sq mi.

PERIOD OF RECORD.--October 1970 to September 1971.

GAGE.--Water-stage recorder. Datum of gage is 170.19 ft above mean sea level (levels by Turlock Irrigation District).

EXTREMES (River only).--Current year: Maximum discharge, 2,720 cfs Feb. 1 (gage height, 8.73 ft); minimum daily, 0.10 cfs Oct. 29 to Nov. 3.  
(Combined flow).--Current year: Maximum discharge, 3,260 cfs Jan. 22; minimum daily, 0.45 cfs Nov. 2.

REMARKS.--Records good except those for low-flow periods in October and November, which are poor. Flow diverted into Modesto Canal (see sta 11289000) and Turlock Canal (see sta 11289500) at La Grange Dam. Flow regulated by Don Pedro powerplant, Don Pedro Reservoir, 4.5 miles upstream (see sta 11287500), Hetch Hetchy Reservoir (see sta 11275500), Cherry Lake (see sta 11277200), and Lake Eleanor (see sta 11277500). Tuolumne Canal (see sta 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 297 cfs was diverted during 1971 water year. Records of water temperatures for the current year are published in Part 2 of this report. See schematic diagram of Tuolumne River basin. For records of combined discharge of river and Modesto and Turlock canals, see following page.

COOPERATION.--Fourteen discharge measurements furnished by city and county of San Francisco.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	.10	203	2,320	2,000	829	342	19	9.0	6.7	9.0	9.5
2	61	.10	203	2,490	2,060	617	482	26	9.6	7.2	9.4	9.2
3	17	.10	421	2,450	1,710	620	266	17	9.8	16	11	9.0
4	5.6	.20	1,470	2,300	1,610	618	240	16	10	33	13	8.8
5	5.6	.30	2,460	1,510	1,770	659	266	16	10	35	88	2.6
6	10	.30	2,460	959	1,830	960	684	16	9.9	19	13	10
7	11	.40	1,810	961	1,720	1,020	538	16	10	8.4	13	11
8	13	11	970	963	1,800	705	446	21	11	8.8	17	11
9	12	97	697	965	1,640	620	418	5.7	11	15	33	11
10	12	220	643	923	1,650	641	237	15	10	18	36	11
11	3.5	218	685	957	1,830	633	228	11	9.1	17	21	8.1
12	7.5	220	866	1,430	1,610	626	489	9.5	9.2	16	12	2.1
13	7.2	214	997	2,340	624	770	320	9.1	8.7	23	12	7.9
14	4.1	213	1,160	2,290	783	913	147	9.1	9.1	15	12	8.8
15	6.1	211	1,270	2,180	1,740	818	121	9.1	10	12	12	8.4
16	2.2	156	1,500	1,780	1,790	680	99	8.7	10	13	12	8.4
17	4.8	198	2,060	1,610	1,720	630	97	9.1	10	12	14	7.2
18	5.1	196	2,180	1,610	1,700	620	96	9.6	10	11	14	6.9
19	17	158	2,250	1,630	1,680	406	110	9.6	8.7	11	13	5.3
20	4.7	199	2,240	1,630	1,710	246	102	9.7	8.2	12	13	9.0
21	2.5	199	2,180	1,670	1,660	279	105	17	8.6	11	8.2	6.9
22	1.5	199	2,180	1,820	1,440	275	103	9.6	9.4	10	11	6.8
23	1.2	159	2,190	2,120	1,530	248	97	9.2	8.8	9.8	14	7.6
24	1.0	201	2,280	1,960	1,470	271	97	97	8.6	9.2	15	9.2
25	.60	201	2,330	1,680	1,300	264	96	11	8.5	9.0	11	9.2
26	.40	201	2,370	1,420	1,160	266	95	9.4	7.7	9.8	82	9.3
27	.30	199	2,400	1,170	757	164	97	8.9	6.5	10	10	9.6
28	.20	201	2,420	1,040	886	217	99	8.9	7.4	10	9.8	9.5
29	.10	203	2,090	1,080	-----	250	97	8.7	7.1	10	9.5	9.4
30	.10	201	2,020	1,600	-----	240	96	8.4	5.5	10	9.8	18
31	.10	-----	2,080	1,560	-----	231	-----	8.5	-----	9.6	9.5	-----
TOTAL	240.40	4,396.50	51,089	50,458	43,180	16,336	6,710	458.8	271.4	417.5	567.2	260.7
MEAN	7.75	147	1,648	1,628	1,542	527	224	14.8	9.05	13.5	18.3	8.69
MAX	61	220	2,460	2,490	2,060	1,020	684	97	11	35	88	18
MIN	.10	.10	203	923	624	164	95	5.7	5.5	6.7	8.2	2.1
AC-FT	477	8,720	101,300	100,100	85,650	32,400	13,310	910	538	828	1,130	517
CAL YR 1970	TOTAL -		MEAN -		MAX -	MIN -	AC-FT -					
WTR YR 1971	TOTAL 174,385.50		MEAN 478		MAX 2,490	MIN .10	AC-FT 345,900					

## 11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CALIF.--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF TUOLUMNE RIVER, MODESTO CANAL  
NEAR LA GRANGE AND TURLOCK CANAL NEAR LA GRANGE, CALIF., WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,250	.52	208	2,320	2,020	1,900	2,770	1,540	2,120	2,510	2,010	2,270
2	1,300	.45	208	2,490	2,080	1,730	2,370	1,470	2,120	2,780	2,760	2,110
3	1,100	.52	425	2,490	1,730	1,730	1,600	1,770	2,220	3,250	2,490	1,970
4	1,080	.72	1,470	2,300	1,630	1,750	1,220	1,770	2,220	3,090	2,540	1,720
5	1,070	.79	2,460	1,510	1,790	1,850	1,890	1,780	2,040	2,850	2,780	444
6	1,070	.89	2,460	961	1,850	3,010	2,500	1,760	1,820	2,990	2,870	1,460
7	1,100	.80	1,810	963	1,740	3,000	2,380	1,800	2,300	3,000	2,910	1,930
8	1,140	13	973	965	1,820	2,040	2,240	1,330	2,370	2,980	2,870	2,260
9	1,090	105	700	967	1,660	1,650	2,000	714	2,330	2,790	3,160	2,030
10	1,090	227	646	925	1,670	1,710	1,520	1,750	2,340	2,640	3,290	2,000
11	496	225	692	960	1,850	1,570	1,010	1,980	2,390	2,600	3,280	1,390
12	1,130	226	869	1,430	1,630	1,680	2,380	1,920	2,070	2,900	3,150	394
13	1,320	220	1,000	2,340	638	2,200	2,400	2,140	1,270	3,050	3,010	2,160
14	1,280	218	1,160	2,290	793	2,490	2,170	2,310	2,500	3,040	3,020	1,940
15	778	216	1,270	2,510	1,750	2,180	2,100	2,010	2,730	2,920	2,940	1,770
16	32	201	1,500	2,590	1,800	1,770	2,250	1,850	2,580	2,990	2,780	1,760
17	316	203	2,060	2,650	1,730	1,480	1,570	2,220	2,490	2,620	2,710	1,030
18	47	201	2,180	2,650	1,770	1,530	1,130	2,310	2,250	2,610	2,780	817
19	18	203	2,250	2,680	1,790	2,120	2,190	2,350	1,660	3,050	2,810	348
20	5.8	205	2,240	2,680	1,820	1,620	2,340	2,330	1,240	3,090	2,420	1,120
21	3.5	204	2,180	2,720	1,770	2,440	2,500	2,350	2,390	2,690	1,510	864
22	2.6	204	2,180	2,870	1,490	2,470	2,290	2,220	2,130	2,660	1,570	807
23	2.2	204	2,190	3,180	1,550	2,610	2,100	2,010	2,120	2,590	1,720	872
24	1.9	206	2,280	3,020	1,480	2,670	1,690	2,600	1,930	2,120	1,830	651
25	1.4	207	2,330	2,730	1,550	2,510	1,100	2,390	1,980	1,980	1,940	374
26	1.2	207	2,370	2,460	1,730	2,490	2,150	2,230	1,450	2,330	2,120	369
27	1.0	204	2,400	2,200	1,740	1,980	2,010	2,290	1,270	2,310	1,970	619
28	.9	206	2,420	2,070	1,850	2,190	2,080	2,170	1,690	2,250	2,110	615
29	.8	208	2,090	1,770	-----	2,860	2,100	1,920	1,860	2,150	1,910	612
30	.7	206	2,020	1,620	-----	2,560	2,060	1,620	2,240	2,170	2,010	544
31	.6	-----	2,080	1,580	-----	1,920	-----	1,810	-----	2,080	2,020	-----
TOTAL	16,729.6	4,523.69	51,121	64,891	46,721	65,710	60,110	60,714	62,120	83,080	77,290	37,250
MEAN	540	151	1,649	2,093	1,669	2,120	2,004	1,959	2,071	2,680	2,493	1,242
MAX	1,320	277	2,460	3,180	2,080	3,010	2,770	2,600	2,730	3,250	3,290	2,270
MIN	.60	.45	208	925	638	1,480	1,010	714	1,240	1,980	1,510	348
AC-FT	33,180	8,970	101,400	128,700	92,670	130,300	119,200	120,400	123,200	164,800	153,300	73,890
CAL YR 1970	TOTAL -		MEAN -		MAX -		MIN -		AC-FT -			
WTR YR 1971	TOTAL 630,260.29		MEAN 1,727		MAX 3,290		MIN .45		AC-FT 1,250,000			

## SAN JOAQUIN RIVER BASIN

## 11290000 TUOLUMNE RIVER AT MODESTO, CALIF.

LOCATION.--Lat 37°37'38", long 120°59'11", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.33, T.3 S., R.9 E., Stanislaus County, on left bank at bridge on Ninth Street in Modesto and 0.2 mile downstream from Dry Creek.

DRAINAGE AREA, --1,884 sq mi.

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. Datum of gage is at mean sea level, unadjusted (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.

AVERAGE DISCHARGE.--32 years (1895-96, 1940-71), 1,453 cfs (1,053,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,070 cfs Jan. 15 (elevation, 44.24 ft); minimum daily, 164 cfs Oct. 30.

1895-96, 1940 to current year: Maximum discharge observed, 57,000 cfs Dec. 9, 1950 (elevation, 69.19 ft); minimum, 85 cfs Oct. 25, 1961.

REMARKS.--Records excellent. Flow regulated by reservoirs and powerplants above station. In addition to diversions into Modesto and Turlock Canals (see sta 11289000, 11289500), there are diversions for irrigation of about 1,300 acres between station above La Grange Dam and at Modesto. See REMARKS for sta 11289650 for Tuolumne River below La Grange Dam. Records of water temperatures for the current year are published in Part 2 of this report. See schematic diagram of Tuolumne River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	268	169	673	2,310	1,680	1,150	507	347	265	198	206	231
2	260	170	606	2,560	2,230	960	544	344	260	203	221	232
3	256	169	837	2,700	2,210	762	667	334	266	221	195	218
4	301	216	815	2,700	1,830	737	525	325	270	232	195	224
5	281	203	1,750	2,510	1,740	726	492	321	263	250	208	238
6	266	219	2,640	1,650	1,870	762	881	308	290	222	219	235
7	267	233	2,680	1,190	1,930	1,010	915	282	264	214	238	224
8	266	225	1,930	1,140	1,840	1,140	814	332	270	201	220	227
9	286	201	1,170	1,120	1,940	869	728	399	255	192	215	227
10	297	193	885	1,110	1,770	744	691	354	252	206	204	228
11	295	333	822	1,070	1,780	769	554	349	249	206	211	232
12	267	371	845	1,070	1,940	844	506	269	259	216	199	229
13	274	381	988	1,820	1,600	1,200	642	275	269	213	211	233
14	277	382	1,140	2,570	846	1,470	630	265	256	210	220	246
15	407	385	1,310	3,000	1,010	1,550	477	251	238	219	221	228
16	373	381	1,370	2,540	1,810	1,430	424	252	235	221	239	228
17	296	368	1,790	2,020	1,900	1,220	424	271	225	211	237	246
18	261	364	2,210	1,830	1,850	1,020	627	266	219	254	228	238
19	243	365	2,470	1,800	1,810	835	678	248	235	252	250	230
20	228	367	2,740	1,790	1,820	635	684	250	244	208	232	250
21	212	374	2,710	1,800	1,810	499	666	245	219	199	235	232
22	198	376	2,830	1,820	1,760	480	436	255	225	199	258	228
23	189	368	2,740	2,060	1,620	499	381	258	232	193	272	245
24	183	367	2,530	2,290	1,650	490	354	273	225	202	216	240
25	176	410	2,560	2,110	1,600	596	345	249	227	219	213	266
26	172	414	2,610	1,800	1,430	947	366	268	246	223	216	266
27	171	402	2,630	1,550	1,250	966	369	253	243	199	245	280
28	172	479	2,640	1,310	1,000	806	351	300	237	194	266	266
29	167	677	2,690	1,190	-----	749	360	288	221	188	257	270
30	164	835	2,370	1,280	-----	664	358	279	215	224	267	277
31	166	-----	2,230	1,680	-----	562	-----	278	-----	203	224	-----
TOTAL	7,639	10,400	58,211	57,390	47,526	27,091	16,396	8,988	7,374	6,592	7,038	7,214
MEAN	246	347	1,878	1,851	1,697	874	547	290	246	213	227	240
MAX	407	835	2,830	3,000	2,230	1,550	915	399	290	254	272	280
MIN	164	169	606	1,070	846	480	345	245	215	188	195	218
AC-FT	15,150	20,630	115,500	113,800	94,270	53,740	32,520	17,830	14,630	13,080	13,960	14,310
CAL YR 1970	TOTAL 431,774		MEAN 1,183	MAX 8,350	MIN 164	AC-FT 856,400						
WTR YR 1971	TOTAL 261,859		MEAN 717	MAX 3,000	MIN 164	AC-FT 519,400						

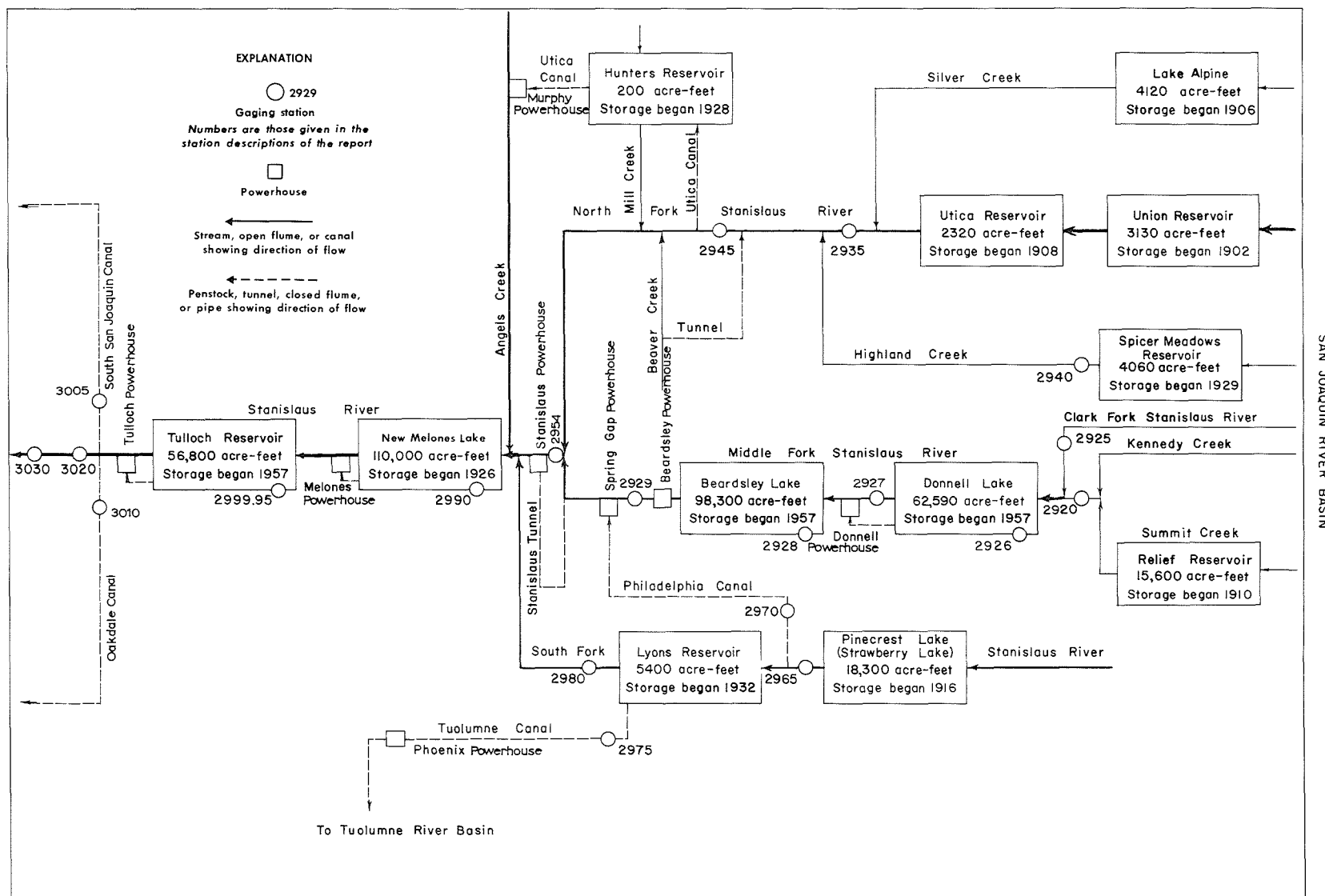


FIGURE 8.—Schematic diagram showing diversions and storage in Stanislaus River basin.

## SAN JOAQUIN RIVER BASIN

11292000 MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CALIF.

LOCATION.--Lat 38°17'51", long 119°44'25", in SW 1/4 sec.11, T.5 N., R.20 E., Tuolumne County, Stanislaus National Forest, on right bank at upper end of Kennedy Meadows, 1.3 miles upstream from Deadman Creek, 1.6 miles downstream from Relief Reservoir, and 5.8 miles southwest of Dardanelle.

DRAINAGE AREA.--47.5 sq mi.

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."

GAGE.--Water-stage recorder. Datum of gage is 6,320.1 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE (unadjusted), --33 years, 134 cfs (97,080 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,280 cfs June 26 (gage height, 6.16 ft); minimum daily, 15 cfs Oct. 27 to Nov. 3, Dec. 26.

Period of record: Maximum discharge recorded, 1,700 cfs Nov. 20, 1950 (gage height, 6.66 ft); minimum daily recorded, 7.2 cfs Feb. 11, 1948.

REMARKS.--Flow regulated by Relief Reservoir 1.6 miles upstream (usable capacity, 15,600 acre-ft). Contents of Relief Reservoir were 753 acre-ft on Sept. 30, 1970, and 11,300 acre-ft on Sept. 30, 1971. No diversion above station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1315-A: 1939(M). WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	15	26	21	35	23	53	154	159	433	134	57
2	20	15	19	19	34	22	55	164	153	418	129	49
3	21	15	19	18	33	24	57	161	204	352	124	49
4	21	18	19	17	31	23	62	150	279	344	122	48
5	21	35	25	17	30	23	68	144	388	341	119	48
6	21	26	28	18	30	23	71	147	437	320	115	59
7	21	22	29	18	28	23	67	148	556	295	112	53
8	20	21	30	19	28	23	64	147	700	303	110	49
9	20	23	28	19	28	23	65	150	667	286	110	48
10	21	23	27	20	31	22	67	175	610	265	109	48
11	20	22	25	20	36	22	68	207	622	256	107	41
12	21	23	25	17	39	21	75	219	675	235	105	33
13	23	20	25	18	42	23	81	239	739	229	104	32
14	23	20	24	20	42	22	80	243	692	256	102	32
15	29	20	24	20	43	23	85	259	675	279	99	30
16	40	19	22	27	40	22	91	256	679	291	98	29
17	43	19	21	46	37	23	87	217	650	300	96	29
18	47	19	20	43	35	24	74	196	622	305	95	28
19	120	19	19	48	34	26	67	196	610	284	94	28
20	39	18	19	48	32	29	62	206	642	252	93	28
21	17	18	19	43	33	32	56	206	634	227	91	28
22	17	18	18	40	30	34	51	184	622	213	90	25
23	17	18	18	37	29	35	49	186	590	193	80	23
24	17	18	17	35	28	33	48	200	567	177	69	23
25	17	69	16	33	27	42	46	229	583	161	69	22
26	16	45	15	33	25	62	47	363	696	147	70	22
27	15	32	17	34	24	49	87	385	891	141	70	23
28	15	28	19	34	24	46	119	305	553	142	68	48
29	15	31	21	34	-----	51	126	252	427	141	66	89
30	15	29	21	35	-----	57	138	246	421	136	65	90
31	15	-----	21	35	-----	54	-----	213	-----	135	63	-----
TOTAL	788	718	676	886	908	959	2,166	6,547	16,743	7,857	2,978	1,211
MEAN	25.4	23.9	21.8	28.6	32.4	30.9	72.2	211	558	253	96.1	40.4
MAX	120	69	30	48	43	62	138	385	891	433	134	90
MIN	15	15	15	17	24	21	46	144	153	135	63	22
AC-FT	1,560	1,420	1,340	1,760	1,800	1,900	4,300	12,990	33,210	15,580	5,910	2,400
CAL YR 1970	TOTAL	46,198	MEAN	127	MAX	679	MIN	15	AC-FT	91,630		
WTR YR 1971	TOTAL	42,437	MEAN	116	MAX	891	MIN	15	AC-FT	84,170		

## 11292500 CLARK FORK STANISLAUS RIVER NEAR DARDANELLE, CALIF.

LOCATION.--Lat 38°21'50", long 119°52'13", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.22, T.6 N., R.19 E., Tuolumne County, Stanislaus National Forest, on right bank 0.5 mile upstream from mouth and 2.6 miles northwest of Dardanelle.

DRAINAGE AREA.--67.5 sq mi.

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,507.3 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--21 years, 152 cfs (110,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,710 cfs June 26 (gage height, 8.08 ft); minimum daily, 25 cfs Oct. 16-19.

Period of record: Maximum discharge, 4,350 cfs Nov. 20, 1950 (gage height, 11.88 ft), from rating curve extended above 1,300 cfs on basis of slope-area measurement of maximum flow; minimum, 11 cfs Apr. 3, 1958.

REMARKS.--Records excellent except those for the winter period, which are fair. No storage or diversion above station. See schematic diagram of Stanislaus River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

CAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	27	52	46	80	62	141	244	269	448	83	39
2	27	27	40	43	79	62	145	255	265	436	79	38
3	27	27	41	35	77	64	148	251	280	404	76	37
4	28	31	38	35	74	65	162	220	312	378	74	36
5	28	58	40	36	73	63	185	207	376	358	72	35
6	28	48	45	39	72	62	191	210	463	337	69	37
7	29	38	49	45	71	62	167	216	563	316	66	38
8	29	35	53	47	71	62	155	217	637	296	63	35
9	29	43	53	47	72	63	165	214	618	276	62	34
10	29	53	52	43	77	63	181	271	590	260	60	33
11	29	45	49	42	89	63	192	318	605	244	58	33
12	29	49	49	38	97	64	214	330	678	232	57	32
13	29	39	50	35	103	64	231	389	707	224	57	31
14	27	40	54	36	105	61	220	429	680	220	53	31
15	26	39	49	47	110	61	239	498	705	214	51	30
16	25	37	45	70	102	62	263	493	717	206	50	29
17	25	37	44	90	94	63	252	416	696	220	49	29
18	25	37	42	106	89	65	214	387	655	232	48	29
19	25	36	40	108	88	70	197	401	660	191	47	29
20	28	36	38	94	83	77	193	427	677	173	46	29
21	28	36	38	83	81	83	172	404	683	160	45	29
22	29	36	38	77	79	88	157	340	659	146	44	29
23	29	35	37	73	77	92	150	364	622	136	43	28
24	30	37	37	71	75	86	147	440	600	125	42	28
25	29	151	38	69	75	102	138	502	579	116	43	29
26	28	95	43	71	70	152	136	508	682	109	43	30
27	26	65	47	73	68	133	136	437	711	103	44	30
28	28	58	43	75	66	126	146	367	534	99	41	30
29	27	56	45	76	-----	137	174	335	473	94	40	30
30	28	54	48	78	-----	161	207	323	450	89	39	36
31	27	-----	47	80	-----	151	-----	291	-----	85	39	-----
TOTAL	858	1,405	1,388	1,908	2,297	2,589	5,418	10,704	17,146	6,927	1,683	963
MEAN	27.7	46.8	44.8	61.5	82.0	83.5	181	345	572	223	54.3	32.1
MAX	30	151	54	108	110	161	263	508	717	448	83	39
MIN	25	27	37	35	66	61	136	207	265	85	39	28
AC-FT	1,700	2,790	2,750	3,780	4,560	5,140	10,750	21,230	34,010	13,740	3,340	1,910
CAL YR 1970	TOTAL	54,263	MEAN	149	MAX	634	MIN	25	AC-FT	107,600		
WTR YR 1971	TOTAL	53,286	MEAN	146	MAX	717	MIN	25	AC-FT	105,700		

## PEAK DISCHARGE (BASE, 600 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
5-15	2145	5.60	620	6-15	2145	6.47	918
5-25	2200	5.60	620	6-26	2200	8.08	1,710

## SAN JOAQUIN RIVER BASIN

## 11292600 DONNELL LAKE NEAR DARDANELLE, CALIF.

LOCATION.--Lat 38°19'46", long 119°57'37", in SE $\frac{1}{4}$  sec.35, T.6 N., R.18 E., Tuolumne County, on left bank in hoist house of Donnell Dam on Middle Fork Stanislaus River, 1.2 miles downstream from Niagara Creek, and 6.9 miles west of Dardanelle.

DRAINAGE AREA.--230 sq mi.

PERIOD OF RECORD.--October 1957 to current year. Prior to October 1962, published as Donnell's Reservoir near Dardanelle.

GAGE.--Water-stage recorder. Datum of gage is 4.84 ft above mean sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

EXTREMES.--Current year: Maximum contents, 64,600 acre-ft June 26 (gage height, 4,916.6 ft); minimum, 5,900 acre-ft Feb. 26 (gage height, 4,740.3 ft).

Period of record: Maximum contents, 64,900 acre-ft May 8, 1963 (gage height, 4,917.3 ft); minimum since reservoir first filled, 4,800 acre-ft Apr. 19, 1965 (gage height, 4,735.3 ft).

REMARKS.--Lake is formed by concrete arch-type dam completed in 1957. Usable capacity, 62,590 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-mile tunnel to a powerplant and down the Middle Fork Stanislaus River to Beardsley Lake (see sta 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.

CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,735	4,730	4,790	19,100
4,740	5,830	4,800	22,100
4,750	8,220	4,820	28,400
4,760	10,800	4,850	38,700
4,770	13,400	4,880	49,800
4,780	16,200	4,917.3	64,900

CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28,100	30,200	29,400	20,900	12,500	6,900	8,370	7,290	39,600	64,400	60,200	34,700
2	28,200	29,500	28,900	21,200	11,500	7,070	8,120	7,970	39,800	64,400	59,400	33,900
3	28,300	29,000	28,400	21,300	10,600	6,710	7,900	8,570	40,100	64,300	58,600	32,700
4	28,300	28,600	27,900	20,700	9,640	6,430	7,800	8,800	40,600	64,300	57,700	31,600
5	28,400	28,800	28,300	20,200	8,640	6,130	8,040	8,920	41,700	64,300	56,900	30,700
6	28,400	29,100	28,600	19,600	8,320	6,500	8,120	9,100	43,400	64,300	56,100	29,600
7	28,500	29,300	28,100	19,300	8,140	6,880	7,970	9,330	45,900	64,300	55,200	28,900
8	28,600	29,400	27,700	18,700	7,460	7,040	7,680	9,560	48,800	64,300	55,400	27,800
9	28,700	29,600	27,300	18,900	6,480	7,070	7,480	9,820	51,800	64,300	54,800	27,000
10	28,700	29,800	27,100	19,100	6,240	7,040	7,430	10,600	54,300	64,300	54,000	25,800
11	28,800	30,000	26,600	18,700	6,170	6,920	7,460	11,800	56,900	64,300	53,100	24,900
12	28,800	30,200	26,900	18,100	6,830	6,550	7,680	13,000	60,000	64,200	52,100	24,000
13	28,900	30,300	27,100	17,500	7,630	6,590	7,970	14,600	61,000	64,100	51,200	22,800
14	29,000	30,500	26,600	16,900	8,420	7,000	8,220	16,500	61,700	64,000	50,200	22,100
15	29,000	30,600	26,000	16,300	9,300	7,140	8,670	18,700	62,600	64,000	49,200	21,300
16	29,000	30,700	25,500	16,500	9,180	7,290	9,250	20,800	63,800	64,200	48,500	20,400
17	29,000	30,900	25,100	17,300	8,520	7,190	9,690	22,300	63,800	64,300	47,500	19,500
18	29,000	30,200	24,500	17,400	7,970	7,120	9,720	23,500	63,900	64,000	46,900	18,600
19	29,200	29,600	24,800	17,100	7,430	6,850	9,660	24,700	63,900	64,000	46,200	17,900
20	29,400	29,000	25,000	16,400	7,410	7,410	9,540	26,100	64,000	63,900	45,300	16,800
21	29,500	29,100	25,000	15,600	7,500	8,020	9,250	27,400	64,000	63,700	44,700	15,900
22	29,600	29,300	24,400	14,800	7,070	7,870	8,870	28,200	64,200	63,400	44,000	14,900
23	29,700	28,800	23,300	15,300	6,850	7,630	8,420	29,200	64,200	63,300	43,300	13,800
24	29,700	28,200	22,500	15,800	6,590	7,310	8,000	30,500	64,300	63,500	42,500	12,500
25	29,800	29,000	22,600	15,200	6,310	7,310	7,500	32,400	64,300	63,700	41,400	11,100
26	29,900	29,800	22,900	14,300	5,900	8,370	6,970	34,500	64,600	63,400	40,300	9,770
27	29,900	29,400	23,100	13,400	6,290	8,640	6,520	36,300	64,200	63,200	39,200	9,330
28	30,000	29,800	22,400	12,500	6,730	8,640	6,310	37,500	64,200	63,000	38,200	9,430
29	30,000	30,200	21,900	11,900	-----	8,470	6,360	38,300	64,300	62,300	38,100	9,640
30	30,100	29,800	21,400	12,400	-----	8,440	6,660	39,000	64,300	61,600	37,000	9,900
31	30,100	-----	20,800	13,000	-----	8,270	-----	39,400	-----	60,900	35,800	-----
MAX	30,100	30,900	29,400	21,300	12,500	8,640	9,720	39,400	64,600	64,400	60,200	34,700
MIN	28,100	28,200	20,800	11,900	5,900	6,130	6,310	7,290	39,600	60,900	35,800	9,330
(a)	4,825.2	4,824.1	4,795.8	4,768.2	4,743.9	4,750.2	4,743.6	4,852.0	4,916.0	4,907.9	4,841.9	4,756.6
(b)	+2,000	-300	-9,000	-7,800	-6,270	+1,540	-1,610	+32,740	+24,900	-3,400	-25,100	-25,900

CAL YR 1970 b +11,240  
WTR YR 1971 b -18,200

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, CALIF.

LOCATION.--Lat 38°14'49", long 120°01'51", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.31, T.5 N., R.18 E., Tuolumne County, on left bank 200 ft upstream from Donnell powerhouse, 800 ft downstream from Hells Half Acre bridge, 1.1 miles upstream from Cow Creek, and 4.7 miles northwest of Pinecrest.

DRAINAGE AREA.--287 sq mi.

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 mean sea level (river-profile survey). Prior to Aug. 9, 1961, at site 1,600 ft upstream at different datum.

AVERAGE DISCHARGE.--15 years, 255 cfs (184,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,970 cfs June 27 (gage height, 8.93 ft); minimum daily, 14 cfs Nov. 3.

Period of record: Maximum discharge, 10,200 cfs Dec. 24, 1964 (gage height, 13.64 ft in gage well, 14.2 ft outside, from floodmarks), from rating curve extended above 5,200 cfs on basis of slope-area measurement at gage height 12.20 ft; minimum daily, 3.3 cfs Nov. 9, 10, 1957.

Maximum stage known since at least 1905, 23 ft Dec. 23, 1955, from floodmarks at present site (discharge, 26,600 cfs by slope-area measurement).

REMARKS.--Records good. Flow regulated by Relief Reservoir since 1909 (capacity, 15,600 acre-ft), by Donnell Lake (see sta 11292600), and by diversion around station through Donnell powerhouse. See schematic diagram of Stanislaus River basin. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	36	68	53	129	100	374	314	189	637	35	32
2	35	36	85	52	127	99	368	320	182	667	35	36
3	35	14	64	52	121	101	366	303	186	519	35	36
4	35	18	72	51	114	99	383	270	187	440	33	35
5	35	35	68	50	109	93	411	255	194	393	38	35
6	35	43	68	48	107	90	396	263	199	370	38	35
7	35	38	68	47	104	90	348	274	206	274	37	34
8	35	30	82	48	105	90	312	280	206	227	38	34
9	35	29	105	49	105	91	321	272	197	202	38	33
10	35	37	79	51	112	93	344	332	184	90	36	33
11	35	31	71	54	145	94	354	422	174	76	36	32
12	35	36	65	55	174	115	376	437	171	50	35	32
13	35	32	62	51	186	118	384	421	1,130	48	35	32
14	35	29	58	56	190	107	376	424	1,250	46	35	35
15	35	27	56	54	210	107	406	436	1,100	46	35	35
16	35	26	62	55	206	115	422	409	1,050	46	33	34
17	35	26	58	121	176	120	392	348	1,440	45	33	34
18	35	25	54	158	156	122	313	311	1,300	227	32	33
19	35	25	53	168	154	135	287	308	1,270	52	32	33
20	37	25	52	167	139	149	282	311	1,340	44	34	33
21	37	24	55	153	132	162	253	295	1,340	41	34	32
22	37	24	51	136	128	175	233	248	1,210	40	34	32
23	37	24	50	124	121	195	224	262	1,150	40	34	31
24	38	24	49	116	115	196	225	283	1,010	39	34	31
25	37	192	49	110	115	304	208	295	1,050	39	34	33
26	36	158	50	110	107	897	198	306	1,080	38	33	33
27	36	69	52	116	103	626	192	289	2,050	38	33	32
28	36	63	51	120	106	460	201	266	1,130	38	33	32
29	36	90	54	122	-----	439	232	241	689	37	32	32
30	36	71	53	125	-----	463	274	224	678	36	32	35
31	36	-----	54	129	-----	420	-----	206	-----	35	32	-----
TOTAL	1,105	1,337	1,918	2,801	3,796	6,465	9,455	9,625	23,542	4,920	1,068	999
MEAN	35.6	44.6	61.9	90.4	136	209	315	310	785	159	34.5	33.3
MAX	38	192	105	168	210	897	422	437	2,050	667	38	36
MIN	35	14	49	47	103	90	192	206	171	35	32	31
AC-FT	2,190	2,650	3,800	5,560	7,530	12,820	18,750	19,090	46,700	9,760	2,120	1,980

CAL YR 1970 TOTAL 85,051 MEAN 233 MAX 3,470 MIN 14 AC-FT 168,800  
WTR YR 1971 TOTAL 67,031 MEAN 184 MAX 2,050 MIN 14 AC-FT 133,000

## SAN JOAQUIN RIVER BASIN

## 11292800 BEARDSLEY LAKE NEAR STRAWBERRY, CALIF.

LOCATION.--Lat 38°12'17", long 120°04'31", in NW $\frac{1}{4}$  sec.14, T.4 N., R.17 E., Tuolumne County, Stanislaus National Forest, in hoist house of Beardsley Dam on Middle Fork Stanislaus River, 2.4 miles upstream from Spring Gap powerhouse, 3.9 miles west of Strawberry, and 4.7 miles west of Pinecrest.

DRAINAGE AREA.--309 sq mi.

PERIOD OF RECORD.--June 1957 to current year. Prior to October 1960, published as Lake Hartley near Strawberry.

GAGE.--Water-stage recorder. Datum of gage is 7.84 ft above mean sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

EXTREMES.--Current year: Maximum contents, 97,800 acre-ft June 28, July 12-20 (gage height, 3,397.0 ft); minimum, 27,900 acre-ft Mar. 21 (gage height, 3,279.0 ft).

Period of record: Maximum contents, 98,700 acre-ft June 27, 1957 (gage height, 3,398.2 ft); minimum since reservoir first filled, 20,000 acre-ft Jan. 27, 28, 1962 (gage height, 3,261.3 ft).

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 powerplant and down Middle Fork Stanislaus River to Melones Reservoir (see sta 11299000). Records, including extremes, represent contents at 2400 hours. See schematic diagram of Stanislaus River basin.

## CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FEET)

3,261	19,900	3,350	66,400
3,290	33,100	3,370	79,200
3,320	48,800	3,398	98,500

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91,100	74,300	52,500	39,700	35,500	35,800	40,700	69,700	95,000	97,700	96,600	97,300
2	90,200	73,300	52,400	38,800	36,200	35,200	41,900	70,600	95,700	97,700	96,700	97,100
3	89,300	73,100	52,200	37,700	36,900	35,100	43,000	71,400	96,300	97,700	96,900	97,400
4	88,500	72,600	52,000	37,500	37,500	35,000	44,300	72,200	96,900	97,700	97,100	97,600
5	87,700	71,800	51,100	37,400	38,300	34,800	45,300	73,000	97,200	97,700	97,300	97,400
6	86,600	71,000	50,100	37,200	38,200	34,000	46,600	73,700	97,600	97,700	97,400	97,700
7	85,600	70,100	49,900	36,800	38,000	33,200	47,700	74,500	97,700	97,700	97,600	97,400
8	84,700	69,000	49,800	36,600	38,200	32,600	48,800	75,300	97,700	97,700	96,700	97,500
9	83,900	68,000	49,700	35,700	38,900	32,100	49,800	76,100	97,700	97,700	96,500	97,400
10	83,000	67,100	49,200	34,900	38,800	31,700	51,000	77,000	97,700	97,700	96,700	97,700
11	82,100	66,200	49,100	34,700	38,900	31,500	52,100	78,100	97,700	97,700	96,900	97,600
12	81,300	65,200	48,100	34,700	38,300	31,600	53,200	79,200	97,700	97,800	97,000	97,400
13	80,500	64,200	47,200	34,700	37,600	31,300	54,400	80,300	97,700	97,800	97,200	97,700
14	79,100	63,200	47,000	34,600	37,000	30,700	55,500	81,300	97,700	97,800	97,400	97,400
15	78,600	62,100	46,900	34,600	36,400	30,100	56,800	82,300	97,700	97,800	97,600	97,200
16	77,900	61,200	46,700	33,700	36,700	29,500	58,000	83,300	97,700	97,800	97,500	97,000
17	77,100	60,000	46,500	33,000	37,400	29,400	59,100	84,100	97,700	97,800	97,700	96,800
18	76,300	59,600	46,100	33,000	37,900	29,200	60,100	84,900	97,600	97,800	97,500	96,700
19	76,000	59,200	45,300	33,500	38,300	29,200	60,800	85,500	97,700	97,800	97,400	96,400
20	75,900	58,800	44,300	34,300	38,200	28,600	61,800	86,200	97,700	97,800	97,400	96,500
21	75,900	57,700	43,800	35,100	37,800	27,900	62,600	87,000	97,600	97,700	97,200	96,400
22	75,900	56,600	43,500	35,800	38,000	28,100	63,300	87,700	97,600	97,700	97,000	96,300
23	75,900	56,000	43,900	35,100	37,900	28,800	64,200	88,400	97,700	97,700	96,900	96,400
24	75,900	55,600	43,800	34,300	37,900	29,200	64,900	89,100	97,600	97,200	96,800	96,700
25	75,900	55,700	42,900	34,500	37,800	30,000	65,600	89,900	97,600	96,700	97,000	97,000
26	75,900	54,900	42,000	35,100	37,800	32,500	66,200	90,600	97,700	96,500	97,200	97,400
27	75,800	54,700	41,100	35,800	37,100	34,200	66,800	91,400	97,700	96,300	97,400	96,700
28	75,800	53,700	41,000	36,400	36,300	35,500	67,400	92,100	97,800	96,100	97,500	95,700
29	75,800	52,900	40,800	36,800	-----	36,900	68,100	93,000	97,700	96,200	96,700	94,500
30	75,600	52,600	40,600	36,100	-----	38,300	68,900	93,700	97,700	96,300	96,800	93,400
31	74,700	-----	40,400	35,300	-----	39,700	-----	94,400	-----	96,400	97,000	-----
MAX	91,100	74,300	52,500	39,700	38,900	39,700	68,900	94,400	97,800	97,800	97,700	97,700
MIN	74,700	52,600	40,400	33,000	35,500	27,900	40,700	69,700	95,000	96,100	96,500	93,400
(a)	3,363.2	3,326.8	3,304.4	3,294.4	3,296.4	3,303.1	3,354.0	3,392.2	3,396.9	3,395.1	3,395.9	3,390.8
(b)	-17,300	-22,100	-12,200	-5,100	+1,000	+3,400	+29,200	+25,500	+3,300	-1,300	+600	-3,600

CAL YR 1970 b -14,100

WTR YR 1971 b +1,400

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	467	478	556	552	533	533	547	634	609	1,270	576	575
2	467	515	609	543	534	532	555	637	604	1,360	576	572
3	467	526	600	542	540	527	562	629	597	1,200	577	568
4	467	527	595	543	540	531	565	628	605	1,090	576	571
5	466	530	597	540	541	528	571	629	745	1,060	575	572
6	469	529	589	537	541	525	573	633	746	1,040	573	573
7	469	529	585	533	542	527	576	636	851	957	570	572
8	469	529	591	532	543	519	581	638	946	870	571	572
9	469	530	596	532	543	516	582	639	945	876	576	572
10	469	530	589	527	544	517	588	642	905	776	575	572
11	468	532	586	525	549	516	591	644	894	719	572	572
12	468	534	584	523	544	518	592	647	893	712	574	572
13	472	541	581	524	545	520	596	648	1,770	714	575	572
14	479	544	578	525	543	518	596	655	2,010	717	575	572
15	479	550	576	524	538	512	601	659	1,840	684	575	572
16	477	545	575	524	540	512	605	665	1,740	650	575	572
17	478	583	576	529	540	511	607	668	2,240	651	571	575
18	479	597	573	530	540	506	618	670	2,080	817	572	580
19	264	603	572	532	544	503	615	670	1,940	706	572	578
20	85	605	565	534	543	498	614	670	2,140	658	572	576
21	66	607	543	538	544	495	617	665	2,090	662	573	575
22	55	598	543	540	538	493	620	657	1,930	619	574	576
23	40	600	556	537	540	497	620	648	1,820	576	574	576
24	53	600	556	532	540	496	624	638	1,760	572	574	576
25	51	601	556	531	540	504	626	637	1,760	571	573	569
26	52	604	557	530	540	541	627	630	1,760	567	574	570
27	54	597	555	536	539	541	628	620	2,870	572	574	571
28	54	594	554	539	537	536	631	624	1,760	576	575	571
29	54	596	551	540	-----	539	633	616	1,360	573	576	576
30	211	596	552	540	-----	544	633	616	1,340	576	576	582
31	461	-----	552	538	-----	555	-----	607	-----	576	576	-----
TOTAL	9,579	16,850	17,792	16,552	15,145	16,110	17,994	19,899	43,550	23,967	17,797	17,202
MEAN	322	562	574	534	541	520	600	642	1,452	773	574	573
MAX	479	607	609	552	549	555	633	670	2,870	1,360	577	582
MIN	40	478	543	523	533	493	547	607	597	567	570	568
AC-FT	19,790	33,420	35,290	32,830	30,040	31,950	35,690	39,470	86,380	47,540	35,300	34,120
WAL YR 1970	TOTAL	250,137	MEAN	685	MAX	2,780	MIN	40	AC-FT	496,100		
CAL YR 1971	TOTAL	232,837	MEAN	638	MAX	2,870	MIN	40	AC-FT	461,800		

## 11293500 NORTH FORK STANISLAUS RIVER BELOW SILVER CREEK, CALIF.

LOCATION.--Lat 38°26'22", long 120°00'53", in SE $\frac{1}{4}$  sec.20, T.7 N., R.18 E., Alpine County, Stanislaus National Forest, on right bank 100 ft downstream from Silver Creek and 5.6 miles northeast of Big Meadow.

DRAINAGE AREA.--27.8 sq mi.

PERIOD OF RECORD.--October 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,677.3 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--19 years, 76.8 cfs (55,640 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 823 cfs May 15 (gage height, 6.98 ft); minimum daily, 2.5 cfs Oct. 26.

Period of record: Maximum discharge, 2,780 cfs Dec. 24, 1964 (gage height, 11.16 ft, from floodmarks), from rating curve extended above 500 cfs; minimum daily, 0.3 cfs Oct. 10, 1958.

Flood of Nov. 20 1950, reached a stage of 11.17 ft, from Pacific Gas and Electric Co. recorder chart (discharge, 2,790 cfs).

REMARKS.--Flow regulated by Lake Alpine, Union, and Utica Reservoirs (combined capacity, 9,600 acre-ft). No diversion above station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS.--WSP 1930: 1954(M), drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	4.5	11	7.0	31	16	125	389	121	68	4.4	33
2	36	4.2	10	6.2	30	14	137	333	107	65	4.2	33
3	33	3.7	9.0	5.2	28	13	146	230	146	55	4.1	33
4	33	3.7	10	4.5	26	13	169	176	180	48	4.0	33
5	32	39	9.4	4.0	24	12	199	160	222	44	3.9	33
6	27	23	10	3.8	23	11	188	188	297	39	7.6	33
7	23	15	11	3.7	21	11	137	223	359	36	7.8	33
8	23	10	12	3.7	21	12	106	211	377	33	8.0	31
9	23	24	11	3.6	21	13	136	219	339	30	8.3	29
10	23	30	11	3.6	27	13	169	391	286	26	8.5	29
11	23	26	10	3.5	32	13	180	449	282	24	15	29
12	23	23	9.0	3.4	36	15	210	423	312	22	19	29
13	15	21	8.3	3.8	40	15	225	475	299	21	19	29
14	3.7	17	7.6	4.5	38	15	242	526	259	19	19	29
15	3.9	14	7.0	5.0	37	15	318	530	241	17	19	29
16	3.8	11	7.6	5.4	34	15	334	462	231	16	18	28
17	3.7	9.5	7.3	20	29	17	272	307	220	15	24	29
18	3.7	8.0	6.8	64	26	17	166	265	197	16	36	28
19	3.7	7.5	6.4	58	24	24	141	310	192	17	35	29
20	4.0	7.0	6.0	52	23	32	154	356	185	15	35	28
21	3.1	6.7	5.8	46	22	40	127	314	179	9.0	37	26
22	2.7	6.4	5.5	42	21	58	100	195	163	4.9	39	26
23	2.9	6.0	5.3	37	20	77	99	262	142	4.9	38	24
24	3.1	16	5.1	33	19	72	115	372	129	4.9	36	21
25	2.6	36	5.0	30	20	99	97	411	120	4.9	34	20
26	2.5	80	5.0	31	18	250	93	387	239	4.9	33	20
27	2.9	35	5.0	31	17	152	109	268	280	4.9	33	20
28	4.7	15	5.0	32	19	123	166	222	134	4.9	33	20
29	4.4	13	5.7	32	-----	140	246	190	94	4.9	33	21
30	4.5	12	6.6	32	-----	179	315	179	78	4.8	33	21
31	4.5	-----	7.3	32	-----	152	-----	149	-----	4.6	33	-----
TOTAL	415.4	527.2	241.7	642.9	727	1,648	5,221	9,572	6,410	683.6	681.8	826
MEAN	13.4	17.6	7.80	20.7	26.0	53.2	174	309	214	22.1	22.0	27.5
MAX	37	80	12	64	40	250	334	530	377	68	39	33
MIN	2.5	3.7	5.0	3.4	17	11	93	149	78	4.6	3.9	20
AC-FT	824	1,050	479	1,280	1,440	3,270	10,360	18,990	12,710	1,360	1,350	1,640

CAL YR 1970 TOTAL 33,595.8 MEAN 92.0 MAX 1,250 MIN 2.5 AC-FT 66,640  
WTR YR 1971 TOTAL 27,596.6 MEAN 75.6 MAX 530 MIN 2.5 AC-FT 54,740

## PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-26	1200	6.13	349	5-25	2300	6.66	579
4-15	2130	6.26	399	6-7	2330	6.52	511
5-1	2300	6.46	484	6-26	2230	6.79	675
5-15	2230	6.98	823				

NOTE.--No gage-height record Nov. 4 to Feb. 23.

## 11294000 HIGHLAND CREEK BELOW SPICER MEADOWS RESERVOIR, CALIF.

LOCATION.--Lat 38°23'34", long 119°59'50", in SW $\frac{1}{4}$  sec.3, T.6 N., R.18 E., Tuolumne County, Stanislaus National Forest, on right bank 500 ft downstream from Spicer Meadows Reservoir dam, 5.5 miles upstream from mouth, and 7 miles east of Big Meadow.

DRAINAGE AREA.--42.4 sq mi.

PERIOD OF RECORD.--October 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,374.8 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--19 years, 123 cfs (89,110 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,280 cfs June 26 (gage height, 6.60 ft); minimum daily, 2.0 cfs Oct. 1-29.

Period of record: Maximum discharge, 9,860 cfs Jan. 31, 1963 (gage height, 11.88 ft), from rating curve extended above 1,200 cfs; no flow Sept. 28 to Dec. 1, Dec. 4-6, 1964.

Flood of Nov. 20, 1950, reached a stage of 11.50 ft, from Pacific Gas and Electric Co. recorder chart (discharge, 8,800 cfs).

REMARKS.--Flow regulated by Spicer Meadows Reservoir 500 ft upstream (capacity, 4,060 acre-ft). See schematic diagram of Stanislaus River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1930: 1953.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	20	50	34	93	54	211	434	222	220	45	9.6
2	2.0	15	45	33	90	54	226	416	205	203	45	9.6
3	2.0	11	42	30	78	52	236	348	238	179	45	9.6
4	2.0	11	40	28	67	49	270	274	270	160	44	9.4
5	2.0	12	44	26	63	47	317	246	335	145	35	9.4
6	2.0	12	48	25	61	47	302	259	422	133	37	9.4
7	2.0	12	50	24	61	47	228	286	518	121	37	9.4
8	2.0	12	55	23	63	48	194	290	561	109	37	9.4
9	2.0	12	54	22	67	49	230	290	532	96	37	9.3
10	2.0	12	45	21	82	49	277	447	473	85	34	9.1
11	2.0	12	43	21	126	51	290	507	473	77	31	9.1
12	2.0	12	42	21	153	51	343	500	561	68	31	9.1
13	2.0	7.6	40	27	163	51	361	596	558	63	30	9.1
14	2.0	3.9	37	32	158	52	343	623	500	59	30	9.1
15	2.0	3.9	35	34	163	50	404	682	450	56	30	9.0
16	2.0	3.9	34	38	142	54	431	628	483	53	30	9.0
17	2.0	3.9	33	151	109	59	384	480	460	53	21	9.0
18	2.0	8.2	32	238	92	61	255	428	428	72	10	9.0
19	2.0	13	31	205	92	77	216	457	431	50	9.7	8.8
20	2.0	13	30	172	77	97	224	483	422	43	9.6	8.8
21	2.0	13	29	142	70	115	186	447	410	39	9.6	8.8
22	2.0	13	29	122	68	129	163	330	381	33	9.4	8.8
23	2.0	13	28	106	63	138	156	401	350	30	9.4	8.7
24	2.0	20	28	96	61	118	161	504	330	29	9.4	8.7
25	2.0	26	27	92	65	199	142	565	309	36	9.4	8.7
26	2.0	86	27	87	58	500	136	565	493	41	9.6	8.5
27	2.0	73	26	88	55	272	147	447	493	41	9.6	8.5
28	2.0	62	26	92	54	211	196	378	309	44	9.6	8.5
29	2.0	58	33	95	-----	236	277	324	255	46	9.6	8.5
30	9.8	54	32	93	-----	288	359	307	230	45	9.6	8.5
31	21	-----	33	97	-----	246.	-----	259	-----	45	9.6	-----
TOTAL	88.8	628.4	1,148	2,315	2,494	3,551	7,665	13,201	12,142	2,474	733.1	270.4
MEAN	2.86	20.9	37.0	74.7	89.1	115	256	426	405	79.8	23.6	9.01
MAX	21	86	55	238	163	500	431	682	561	220	45	9.6
MIN	2.0	3.9	26	21	54	47	136	246	205	29	9.4	8.5
AC-FT	176	1,250	2,280	4,590	4,950	7,040	15,200	26,180	24,080	4,910	1,450	536

CAL YR 1970 TOTAL 48,773.5 MEAN 134 MAX 1,570 MIN 2.0 AC-FT 96,740  
WTR YR 1971 TOTAL 46,710.7 MEAN 128 MAX 682 MIN 2.0 AC-FT 92,650

## SAN JOAQUIN RIVER BASIN

11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CALIF.

LOCATION.--Lat 38°14'45", long 120°17'20", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.35, T.5 N., R.15 E., Calaveras County, Stanislaus National Forest, on right bank 700 ft upstream from intake of Utica Canal, 3.3 miles upstream from Beaver Creek, and 5.1 miles northeast of Avery.

DRAINAGE AREA.--163 sq mi.

PERIOD OF RECORD.--July 1914 to September 1925, November 192 to current year. Yearly discharge only for some years, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 3,388.3 ft above mean sea level (river-profile survey). Prior to September 1922, nonrecording gage at same site at datum 0.05 ft lower.

AVERAGE DISCHARGE.--54 years, 419 cfs (303,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,620 cfs Mar. 26 (gage height, 7.38 ft); minimum daily, 24 cfs Oct. 17, 18.

Period of record: Maximum discharge, 36,000 cfs Jan. 31, 1963 (gage height, 15.00 ft, from floodmarks), from rating curve extended above 14,000 cfs on basis of slope-area measurement at gage height 13.8 ft; minimum daily, 5.5 cfs Dec. 6, 7, 1929.

REMARKS.--Flow regulated at low and medium stages by Lake Alpine, Spicer Meadows, Union and Utica Reservoirs (combined capacity, 13,600 acre-ft). Diversion of a maximum of 10 cfs during summer from Beaver Creek into river above station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1215: 1938(M). WSP 1515: 1915(M), 1932(M), 1936(M), 1938, 1940(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	35	240	156	361	234	903	1,530	704	375	70	47
2	41	37	283	150	349	226	933	1,540	631	355	68	47
3	41	35	187	125	328	228	950	1,270	714	310	66	47
4	37	38	228	130	297	225	1,040	1,010	778	272	65	47
5	37	189	211	135	279	211	1,210	903	927	244	65	46
6	36	197	213	140	272	199	1,240	993	1,100	225	55	46
7	35	136	223	142	270	206	963	1,080	1,330	204	59	47
8	29	120	257	142	274	206	794	1,160	1,450	187	58	46
9	28	104	333	147	283	213	869	1,080	1,380	172	58	44
10	28	146	238	157	312	217	1,020	1,570	1,230	160	58	41
11	28	92	217	172	467	221	1,060	1,990	1,130	146	58	41
12	28	121	201	182	593	225	1,200	1,820	1,210	134	58	41
13	28	102	194	169	627	230	1,360	1,970	1,300	126	58	40
14	27	73	176	177	614	235	1,240	1,990	1,160	120	57	40
15	26	58	163	163	618	242	1,520	2,140	1,060	113	56	39
16	26	52	160	160	597	257	1,620	2,050	1,040	104	55	39
17	24	45	155	408	464	274	1,500	1,590	981	99	55	39
18	24	30	152	676	384	274	999	1,380	898	114	54	39
19	28	27	150	662	381	307	836	1,460	836	115	52	39
20	33	38	148	622	328	369	881	1,570	836	98	51	39
21	38	53	145	525	305	430	758	1,500	783	88	51	39
22	35	51	140	447	295	488	649	1,050	733	79	55	38
23	33	47	135	421	274	576	597	1,190	658	71	55	37
24	34	43	132	366	255	556	676	1,570	580	65	55	37
25	37	892	135	344	272	763	580	1,660	552	62	53	34
26	35	593	139	347	244	2,460	537	1,760	676	68	49	33
27	33	293	146	366	232	1,430	544	1,400	1,300	71	48	34
28	33	244	142	358	250	1,040	709	1,200	671	69	48	34
29	35	333	139	352	-----	1,010	869	1,030	496	72	48	35
30	36	244	146	358	-----	1,210	1,290	963	418	73	47	50
31	36	-----	151	363	-----	1,080	-----	831	-----	71	47	-----
TOTAL	1,010	4,468	5,679	9,062	10,225	15,842	29,347	44,250	27,562	4,462	1,732	1,225
MEAN	32.6	149	183	292	365	511	978	1,427	919	144	55.9	40.8
MAX	41	892	333	676	627	2,460	1,620	2,140	1,450	375	70	50
MIN	24	27	132	125	232	199	537	831	418	62	47	33
AC-FT	2,000	8,860	11,260	17,970	20,280	31,420	58,210	87,770	54,670	8,850	3,440	2,430

CAL YR 1970 TOTAL 180,009 MEAN 493 MAX 8,590 MIN 24 AC-FT 357,000  
WTR YR 1971 TOTAL 154,864 MEAN 424 MAX 2,460 MIN 24 AC-FT 307,200

## PEAK DISCHARGE (BASE, 2,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-26	1415	7.38	3,620	5-26	0130	6.10	2,070
5-16	0130	6.62	2,630	6-27	0200	6.13	2,100

LOCATION.--Lat 38°08'29", long 120°22'19", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.6, T.3 N., R.15 E., Calaveras County, on right bank 1,000 ft upstream from Stanislaus powerhouse and 3.6 miles south of Hathaway Pines.

PERIOD OF RECORD.--July 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,030.00 ft above mean sea level (levels by Pacific Gas and Electric Co.).

Period of record: Maximum discharge, 17,300 cfs Jan. 21, 1970 (gage height, 17.98 ft, recorded, 18.6 ft, from floodmarks); minimum daily, 19 cfs Aug. 17, 1968.

(Combined flow).--Current year: Maximum discharge, 6,940 cfs Mar. 26; minimum daily, 252 cfs Oct. 22, 23. Period of record: Maximum discharge, 17,900 cfs Jan. 21, 1970; minimum daily, 134 cfs Oct. 22, 1968.

REMARKS.--Records excellent. Many diversions above station for hydro-electric powerplants. Small diversions for domestic water supply. Stanislaus tunnel diverts from left bank of Middle Fork Stanislaus River 13.7 miles upstream from station in SE $\frac{1}{4}$  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. Records of water temperatures for the current year are published in Part 2 of this report.

COOPERATION.--Records of diversion to Stanislaus powerplant furnished by Pacific Gas and Electric Co.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	36	600	311	665	456	1,460	1,900	935	1,250	161	97
2	34	36	910	308	675	435	1,440	2,020	885	1,290	162	96
3	33	43	534	218	655	404	1,450	1,710	925	1,120	162	102
4	33	52	725	225	615	404	1,540	1,460	952	973	161	103
5	33	146	590	245	558	404	1,760	1,270	1,180	884	160	105
6	32	329	490	235	486	350	1,880	1,420	1,410	869	158	105
7	33	220	466	230	486	356	1,540	1,420	1,720	800	152	106
8	33	138	518	232	530	393	1,300	1,600	2,000	724	152	150
9	33	104	830	245	566	428	1,340	1,370	1,960	635	155	152
10	34	154	574	250	590	446	1,520	1,880	1,750	519	160	152
11	34	138	482	275	795	449	1,560	2,480	1,620	441	155	152
12	34	136	435	365	940	542	1,670	2,310	1,640	400	155	152
13	34	158	400	344	935	615	1,900	2,490	2,490	389	155	152
14	33	111	365	365	940	510	1,720	2,470	2,850	379	154	152
15	31	96	335	382	946	502	2,040	2,700	2,540	353	155	152
16	31	85	432	362	988	538	2,180	2,670	2,380	299	155	152
17	29	95	446	635	870	566	2,090	2,040	2,760	293	151	152
18	29	104	386	1,010	760	574	1,490	1,760	2,650	362	135	158
19	47	106	350	1,020	760	605	1,280	1,810	2,330	449	136	158
20	144	108	329	1,000	675	685	1,310	1,900	2,600	290	136	160
21	117	111	372	935	630	760	1,180	1,910	2,470	271	136	160
22	96	109	299	825	595	820	1,080	1,380	2,290	246	138	155
23	95	104	296	690	554	920	1,010	1,480	2,030	175	133	157
24	100	106	268	630	502	940	1,060	1,830	1,920	165	96	158
25	104	992	262	615	550	1,200	952	1,980	1,860	161	97	153
26	100	1,190	284	605	498	4,120	910	2,120	1,810	154	96	152
27	100	550	320	645	414	2,770	900	1,700	3,920	160	95	152
28	100	474	314	680	438	1,890	1,010	1,530	2,130	155	95	152
29	100	740	320	655	-----	1,710	1,320	1,320	1,500	162	97	157
30	87	574	326	605	-----	1,940	1,640	1,200	1,360	162	98	185
31	56	-----	317	625	-----	1,750	-----	1,070	-----	161	98	-----
TOTAL	1,833	7,345	13,575	15,767	18,616	28,482	43,532	56,200	58,867	14,691	4,249	4,289
MEAN	59.1	245	438	509	665	919	1,451	1,813	1,962	474	137	143
MAX	144	1,190	910	1,020	988	4,120	2,180	2,700	3,920	1,290	162	185
MIN	29	36	262	218	414	350	900	1,070	885	154	95	96
AC-FT	3,640	14,570	26,930	31,270	36,920	56,490	86,350</					

## 11295400 STANISLAUS RIVER NEAR HATHAWAY PINES, CALIF.--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF STANISLAUS RIVER AND STANISLAUS  
POWERPLANT AT STANISLAUS, NEAR HATHAWAY PINES, CALIF., WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	573	567	1,140	849	1,200	997	2,000	2,440	1,480	1,800	708	642
2	573	587	1,450	846	1,210	974	1,980	2,560	1,430	1,840	708	641
3	572	592	1,070	756	1,190	943	1,990	2,260	1,470	1,660	708	647
4	572	598	1,270	763	1,150	943	2,080	2,000	1,490	1,520	707	648
5	572	691	1,130	783	1,100	943	2,300	1,820	1,720	1,430	707	650
6	571	872	1,030	773	1,020	889	2,420	1,930	1,950	1,410	705	650
7	572	762	1,000	768	1,020	897	2,080	1,960	2,260	1,340	699	651
8	572	679	1,060	770	1,070	934	1,840	2,140	2,520	1,270	699	695
9	572	645	1,370	783	1,100	967	1,880	1,910	2,500	1,180	702	697
10	573	693	1,110	788	1,130	985	2,060	2,420	2,290	1,060	706	697
11	573	677	1,020	813	1,330	990	2,100	3,020	2,160	984	702	697
12	573	675	973	903	1,480	1,080	2,210	2,850	2,180	943	702	697
13	573	696	938	882	1,470	1,160	2,440	3,030	3,030	932	702	697
14	572	649	903	903	1,480	1,050	2,260	3,010	3,390	924	701	697
15	569	634	873	920	1,480	1,040	2,580	3,240	3,080	898	702	697
16	570	623	970	900	1,530	1,080	2,720	3,210	2,920	844	701	697
17	568	633	985	1,170	1,410	1,110	2,630	2,580	3,300	838	698	697
18	567	642	924	1,550	1,300	1,120	2,030	2,300	3,200	907	681	703
19	440	644	888	1,560	1,300	1,150	1,820	2,350	2,870	994	682	703
20	320	646	867	1,540	1,210	1,230	1,850	2,440	3,140	835	682	705
21	278	649	910	1,470	1,170	1,300	1,720	2,450	3,020	816	682	705
22	252	647	837	1,360	1,130	1,360	1,620	1,920	2,840	791	684	698
23	252	642	834	1,230	1,090	1,460	1,550	2,020	2,580	720	679	700
24	257	644	806	1,170	1,040	1,480	1,600	2,370	2,460	710	642	701
25	261	1,530	800	1,150	1,090	1,740	1,500	2,520	2,400	706	642	696
26	257	1,730	822	1,140	1,040	4,660	1,450	2,660	2,360	699	642	697
27	257	1,090	858	1,180	953	3,310	1,440	2,240	4,460	705	641	695
28	257	1,010	852	1,220	980	2,430	1,550	2,070	2,680	701	640	695
29	257	1,280	858	1,190	-----	2,250	1,860	1,860	2,040	709	642	700
30	308	1,110	864	1,140	-----	2,480	2,180	1,740	1,900	709	643	728
31	568	-----	855	1,160	-----	2,290	-----	1,610	-----	708	643	-----
TOTAL	14,251	23,537	30,267	32,430	33,673	45,242	59,740	72,930	75,120	31,583	21,182	20,623
MEAN	460	785	976	1,046	1,203	1,459	1,991	2,353	2,504	1,019	683	687
MAX	573	1,730	1,450	1,560	1,530	4,660	2,720	3,240	4,460	1,840	708	728
MIN	252	567	800	756	953	889	1,440	1,610	1,430	699	640	641
AC-FT	28,270	46,690	60,030	64,320	66,790	89,740	118,500	144,700	149,000	62,640	42,010	40,910
CAL YR 1970	TOTAL	536,168	MEAN	1,469	MAX	13,000	MIN	252	AC-FT	1,063,000		
WTR YR 1971	TOTAL	460,578	MEAN	1,262	MAX	4,660	MIN	252	AC-FT	913,600		



LOCATION.--Lat 38°11'51", long 120°00'27", in SW $\frac{1}{4}$  sec.16, T.4 N., R.18 E., Tuolumne County, Stanislaus National Forest, on right bank 0.3 mile downstream from bridge on State Highway 108 at Strawberry, 0.6 mile downstream from Herring Creek, and 1.2 miles downstream from Pinecrest Lake.

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.

AVERAGE DISCHARGE.--38 years (1911-16, 1938-71), 128 cfs (92,740 acre-ft per year).

Period of record: Maximum discharge, 3,900 cfs Nov. 21, 1950 (gage height, 9.25 ft), from rating curve extended above 1,100 cfs on basis of contracted-opening measurement of maximum flow at bridge 0.3 mile below station; minimum, 1.3 cfs Nov. 22, 23, 1946.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	53	43	47	60	59	92	143	181	304	63	63
2	98	39	42	47	59	59	96	144	187	298	63	63
3	100	32	42	46	59	59	100	118	261	254	63	62
4	101	33	46	46	58	58	108	85	328	212	64	62
5	100	37	49	46	58	57	120	77	447	195	64	63
6	95	36	49	46	58	56	112	77	573	191	64	63
7	92	34	50	46	57	56	87	74	691	163	63	90
8	92	33	51	45	57	56	77	71	759	150	63	103
9	90	33	51	46	57	56	81	79	729	135	63	101
10	90	35	49	46	59	56	95	130	655	100	63	101
11	90	34	49	46	66	56	105	157	655	95	63	101
12	89	35	49	46	74	57	125	165	729	90	63	101
13	68	34	49	46	78	57	122	191	759	81	62	101
14	59	33	50	46	79	56	100	223	712	74	63	100
15	59	33	50	45	81	56	125	339	700	70	63	100
16	58	33	50	45	79	57	135	600	671	66	63	100
17	58	33	48	58	74	57	120	470	655	64	63	98
18	58	33	48	67	68	58	84	433	619	72	63	98
19	58	33	49	68	68	62	72	477	562	60	62	98
20	58	33	49	67	66	63	70	515	600	58	62	98
21	58	32	49	66	64	63	62	470	585	62	63	96
22	57	32	49	66	64	67	56	251	551	63	63	96
23	57	32	49	64	63	68	51	266	504	64	63	96
24	57	32	49	62	62	67	50	456	473	63	63	95
25	57	144	49	59	62	107	53	588	443	64	63	95
26	56	70	49	58	60	129	56	562	577	64	63	95
27	56	50	47	59	59	89	54	402	835	64	63	93
28	54	46	47	59	60	84	59	322	427	64	63	93
29	54	47	47	59	-----	100	75	278	322	64	62	82
30	53	44	47	59	-----	103	110	230	296	63	62	75
31	53	-----	47	60	-----	92	-----	201	-----	63	63	-----
TOTAL	2,223	1,228	1,492	1,666	1,809	2,120	2,652	8,594	16,486	3,430	1,951	2,682
MEAN	71.7	40.9	48.1	53.7	64.6	68.4	88.4	277	550	111	62.9	89.4
MAX	101	144	51	68	81	129	135	600	835	304	64	103
MIN	53	32	42	45	57	56	50	71	181	58	62	62
AC-FT	4,410	2,440	2,960	3,300	3,590	4,210	5,260	17,050	32,700	6,800	3,870	5,320
WAL YR 1970	TOTAL 47,317		MEAN 130	MAX 848	MIN 27	AC-FT 93,850						
CAL YR 1971	TOTAL 46,333		MEAN 127	MAX 835	MIN 32	AC-FT 91,900						

## SAN JOAQUIN RIVER BASIN

11297000 PHILADELPHIA CANAL NEAR STRAWBERRY, CALIF.

LOCATION.--Lat 38°10'39", long 120°02'46", in NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.30, T.4 N., R.18 E., Tuolumne County, Stanislaus National Forest, on right bank 250 ft downstream from diversion dam on South Fork Stanislaus River, and 2.8 miles 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 mean sea level (river-profile survey).

AVERAGE DISCHARGE.--32 years, 43.3 cfs (31,370 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 64 cfs in 1941, 1961-63, 1965, 1971; no flow at times in some years.

REMARKS.--Canal diverts from right bank of South Fork Stanislaus River for power development in Spring Gap powerplant of Pacific Gas and Electric Co.; tailrace empties into Middle Fork Stanislaus River above station at Sand Bar Flat. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	53	43	50	45	55	51	61	56	60	60	3.0
2	58	41	43	49	45	54	59	59	59	60	60	12
3	58	30	43	35	45	54	59	58	60	59	60	15
4	58	30	44	35	45	54	59	55	59	59	60	16
5	58	34	48	43	45	54	59	54	59	62	60	16
6	58	36	51	43	45	54	59	58	59	62	60	16
7	58	35	52	42	45	55	57	59	61	62	60	42
8	58	34	52	42	45	55	58	59	63	62	60	60
9	58	33	52	42	45	55	59	59	62	58	60	60
10	58	34	52	42	45	55	60	60	59	60	60	60
11	58	33	51	42	46	55	60	62	59	60	60	60
12	58	34	51	41	47	56	60	62	60	60	60	60
13	49	33	51	43	52	56	60	60	60	60	60	60
14	42	33	51	42	55	55	59	60	59	60	60	60
15	42	33	52	42	55	56	60	60	59	60	60	60
16	42	10	52	42	55	56	61	55	59	60	60	59
17	42	.01	52	44	54	56	60	58	60	60	51	60
18	42	.01	52	45	53	56	58	59	60	61	45	59
19	42	.01	51	45	56	56	56	59	62	59	45	61
20	42	.01	51	45	56	56	56	59	64	58	45	60
21	42	.01	51	45	56	56	56	58	63	59	45	60
22	49	.01	50	45	56	57	58	56	63	60	45	60
23	54	.01	50	45	55	57	57	59	62	60	11	60
24	54	.01	50	44	55	57	56	60	62	60	1.7	60
25	54	32	50	44	55	59	56	61	61	60	3.1	60
26	54	47	50	44	55	60	58	56	60	60	3.1	60
27	54	45	50	44	55	55	58	58	59	60	3.1	59
28	54	45	50	44	55	56	58	60	58	60	3.1	60
29	53	45	50	44	-----	58	60	59	59	60	3.1	59
30	53	44	50	45	-----	59	62	58	60	60	3.0	59
31	53	-----	50	45	-----	51	-----	57	-----	60	3.0	-----
TOTAL	1,613	794.08	1,545	1,343	1,421	1,728	1,749	1,818	1,806	1,861	1,270.2	1,496.0
MEAN	52.0	26.5	49.8	43.3	50.8	55.7	58.3	58.6	60.2	60.0	41.0	49.9
MAX	58	53	52	50	56	60	62	62	64	62	60	61
MIN	42	.01	43	35	45	51	51	54	56	58	1.7	3.0
AC-FT	3,200	1,580	3,060	2,660	2,820	3,430	3,470	3,610	3,580	3,690	2,520	2,970

CAL YR 1970 TOTAL 18,326.08 MEAN 50.2 MAX 63 MIN .01 AC-FT 36,350  
WTR YR 1971 TOTAL 18,444.28 MEAN 50.5 MAX 64 MIN .01 AC-FT 36,580

## 11297500 TUOLUMNE CANAL NEAR LONG BARN, CALIF.

LOCATION.--Lat 38°05'35" long 120°10'03", in SW $\frac{1}{4}$  sec.24, T.3 N., R.16 E., Tuolumne County, Stanislaus National Forest, on left bank 300 ft downstream from intake, 350 ft downstream from Lyons Reservoir on South Fork Stanislaus River, 2 miles west of Long Barn, and 15 miles 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 mean sea level (river-profile survey). Prior to June 1938, at site 200 ft downstream at different datum.

AVERAGE DISCHARGE.--34 years, 25.9 cfs (18,760 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 56 cfs May 30, 1963; no flow at times in some years.

REMARKS.--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 collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	20	25	36	36	34	39	37	39	43	45	46
2	30	16	26	36	35	38	39	38	42	50	45	46
3	30	17	26	36	38	38	39	46	44	42	45	46
4	30	27	25	35	40	37	39	47	44	42	45	46
5	31	23	25	36	39	38	39	40	44	42	44	46
6	29	21	25	33	39	38	39	39	45	43	45	46
7	28	21	31	30	39	38	39	40	44	44	46	44
8	29	21	36	30	39	39	39	40	44	45	46	41
9	29	14	36	30	39	39	39	40	44	46	46	41
10	29	11	36	30	29	39	39	41	42	46	46	41
11	29	20	35	31	23	39	39	42	43	44	46	41
12	29	13	35	31	24	39	39	41	43	42	46	41
13	29	15	35	31	25	39	39	40	44	40	46	41
14	29	21	36	31	25	39	39	40	43	40	46	41
15	28	21	36	31	25	40	39	41	42	40	46	41
16	28	14	36	31	25	40	39	44	41	40	46	41
17	28	14	36	31	25	43	39	41	41	40	46	41
18	28	14	36	29	25	43	39	40	42	40	46	41
19	28	15	36	25	25	39	39	40	43	40	46	41
20	23	20	36	26	31	39	39	41	43	40	46	41
21	20	19	36	29	36	40	39	41	44	40	46	41
22	20	19	35	33	29	39	38	39	44	40	46	41
23	20	19	35	32	25	39	39	38	43	41	46	41
24	20	20	35	32	25	39	39	39	43	41	46	41
25	20	20	35	33	25	36	39	41	43	41	46	41
26	20	21	35	33	29	31	39	40	43	40	46	41
27	20	22	35	36	33	31	39	39	42	40	46	41
28	20	26	36	38	35	30	48	39	43	40	46	41
29	20	26	36	36	-----	36	44	39	42	40	46	41
30	20	25	36	36	-----	39	37	39	43	43	47	38
31	20	-----	36	36	-----	39	-----	39	-----	45	47	-----
TOTAL	796	575	1,038	1,003	863	1,177	1,181	1,251	1,287	1,300	1,421	1,260
MEAN	25.7	19.2	33.5	32.4	30.8	38.0	39.4	40.4	42.9	41.9	45.8	42.0
MAX	32	27	36	38	40	43	48	47	45	50	47	46
MIN	20	11	25	25	23	30	37	37	39	40	44	38
AC-FT	1,580	1,140	2,060	1,990	1,710	2,330	2,340	2,480	2,550	2,580	2,820	2,500
CAL YR 1970	TOTAL	12,945	MEAN	35.5	MAX	54	MIN	11	AC-FT	25,680		
WTR YR 1971	TOTAL	13,152	MEAN	36.0	MAX	50	MIN	11	AC-FT	26,090		

## 11298000 SOUTH FORK STANISLAUS RIVER NEAR LONG BARN, CALIF.

LOCATION.--Lat 38°05'33", long 120°10'02", in SW $\frac{1}{4}$  sec.24, T.3 N., R.16 E., Tuolumne County, Stanislaus National Forest, on left bank 600 ft downstream from Lyons Dam, 2 miles west of Long Barn, and 15 miles northeast of Sonora.

DRAINAGE AREA.--66.9 sq mi.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 4,073.4 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--34 years, 87.1 cfs (63,100 acre-ft per year).

ETREMES.--Current year: Maximum discharge, 1,460 cfs June 27 (gage height, 6.00 ft); minimum daily, 1.4 cfs Nov. 10, 13, 16, Mar. 2, 3, July 20.

Period of record: Maximum discharge, 4,900 cfs Nov. 21, 1950 (gage height, 9.3 ft), from rating curve extended above 1,100 cfs on basis of computation of maximum flow over Lyons Dam; no flow at times in 1937-39, 1952.

REMARKS.--Flow regulated by Lyons Reservoir 600 ft upstream (capacity, 5,400 acre-ft) and Pinecrest Lake (capacity, 18,300 acre-ft). Tuolumne Canal (see sta 11297500) diverts at Lyons Dam; other diversions, see schematic diagram of Stanislaus River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1215: 1938(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.0	2.4	2.2	2.2	2.0	78	2.0	100	82	1.8	2.0
2	2.2	2.0	2.2	2.2	2.2	1.4	64	2.0	74	167	1.8	2.0
3	2.2	1.8	1.8	2.2	2.2	1.4	57	2.2	116	164	1.8	2.0
4	2.2	2.0	2.2	2.3	2.2	2.0	57	14	193	124	2.0	2.0
5	2.2	2.0	2.0	2.4	2.2	2.4	60	10	287	88	2.0	2.0
6	2.2	2.0	2.0	2.4	2.2	2.4	65	5.5	414	86	2.0	2.0
7	2.0	1.8	2.0	2.4	2.0	2.2	49	3.5	552	64	2.0	2.0
8	2.0	1.8	2.0	2.4	2.0	2.2	31	3.5	668	43	2.0	1.8
9	2.0	2.0	2.0	2.4	1.8	2.2	22	2.7	676	32	2.0	1.8
10	2.0	1.4	1.8	2.6	2.0	2.2	24	6.8	585	14	2.0	2.0
11	2.0	2.2	2.0	2.4	2.0	2.2	31	50	552	1.8	2.2	2.2
12	2.2	1.8	2.0	2.2	2.0	2.2	39	63	601	2.0	2.2	2.2
13	2.2	1.4	2.0	2.2	2.0	2.2	55	86	684	2.0	2.2	2.2
14	2.4	2.4	2.2	2.2	2.0	2.2	35	100	660	2.0	2.2	2.2
15	2.2	2.2	2.4	2.2	2.0	2.2	35	156	608	2.0	2.2	2.4
16	2.2	1.4	2.6	2.2	2.0	2.2	52	486	517	2.0	2.2	2.2
17	2.2	1.6	2.6	2.4	2.0	2.2	59	411	535	2.0	1.8	2.2
18	2.2	1.8	2.6	2.4	2.0	7.4	35	341	542	2.0	1.8	2.4
19	2.2	1.8	2.6	2.4	2.0	14	15	369	480	1.6	1.8	2.4
20	2.2	2.0	2.6	2.4	6.8	16	7.1	414	477	1.4	2.0	2.4
21	2.2	2.2	2.6	2.4	13	17	4.8	414	366	1.6	2.0	2.4
22	2.2	2.2	2.4	2.4	19	19	3.2	244	420	2.0	2.0	2.0
23	2.0	2.2	2.4	2.2	20	26	3.3	134	425	1.8	2.0	1.8
24	2.0	2.2	2.2	2.2	16	30	3.5	291	348	2.0	2.0	2.0
25	2.0	2.6	2.4	2.2	15	57	3.5	451	336	1.8	2.0	2.0
26	2.0	2.2	2.4	2.2	7.4	240	3.3	542	338	2.0	2.0	2.0
27	2.0	2.2	2.6	2.2	2.7	218	3.2	346	907	2.4	2.0	2.0
28	2.0	2.2	2.4	2.2	2.7	140	2.2	252	356	2.4	2.2	2.0
29	2.0	2.4	2.2	2.2	-----	104	1.8	203	267	2.4	2.2	2.0
30	2.0	2.2	2.2	2.2	-----	94	2.0	166	220	2.0	2.2	2.0
31	2.0	-----	2.2	2.2	-----	78	-----	121	-----	1.8	2.2	-----
TOTAL	65.6	60.0	70.0	71.1	141.6	1,096.2	900.9	5,692.2	13,304	905.0	62.8	62.6
MEAN	2.12	2.00	2.26	2.29	5.06	35.4	30.0	184	443	29.2	2.03	2.09
MAX	2.4	2.6	2.6	2.6	20	240	78	542	907	167	2.2	2.4
MIN	2.0	1.4	1.8	2.2	1.8	1.4	1.8	2.0	74	1.4	1.8	1.8
AC-FT	130	119	139	141	281	2,170	1,790	11,290	26,390	1,800	125	124
CAL YR 1970	TOTAL 28,155.4		MEAN 77.1		MAX 826		MIN 1.4		AC-FT 55,850			
WTR YR 1971	TOTAL 22,432.0		MEAN 61.5		MAX 907		MIN 1.4		AC-FT 44,490			

11299000 NEW MELONES LAKE AT MELONES DAM, CALIF.  
(Formerly published as Melones Reservoir at Melones Dam)

LOCATION.--Lat 37°57'12", long 120°30'49", in NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec.11, T.1 N., R.13 E., Tuolumne County, at gate tower near left bank at Melones Dam on Stanislaus River, 0.1 mile downstream from Bear Creek, and 7.5 miles southwest of Sonora.

DRAINAGE AREA.--904 sq mi.

PERIOD OF RECORD.--1926 (year-end content only, published in WSP 1315-A), June 1927 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Prior to Feb. 28, 1961, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 114,122 acre-ft June 9, 27 (elevation, 735.8 ft); minimum, 3,430 acre-ft Oct. 21 (elevation, 614.8 ft).

Period of record: Maximum contents observed, 115,800 acre-ft May 27, 1951 (elevation, 736.7 ft); minimum observed, 3,220 acre-ft Dec. 7, 1957 (elevation, 613.5 ft).

REMARKS.--Reservoir is formed by concrete overflow dam; storage began Aug. 21, 1926; dam completed in December 1926. Capacity for power development 1 mile below dam is 106,100 acre-ft between elevations 628.0 ft (minimum operating level) and 735.0 ft (top of drum-type spillway gates) above mean sea level; usable capacity for irrigation, 110,000 acre-ft between elevation 610.0 ft (floor of outlet tunnel) and 735.0 ft above mean sea level. Figures given herein represent total contents, of which 2,630 acre-ft are not available for release. Released water flows down Stanislaus River to Tulloch Reservoir (see sta 11299995). See schematic diagram of Stanislaus River basin.

COOPERATION.--Record of elevation furnished by Oakdale Irrigation District. Capacity table furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

REVISIONS.--WSP 1930: Drainage area.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

610	2,630	635	8,750	660	21,500	700	59,100
615	3,500	640	10,700	665	25,000	710	72,200
620	4,480	645	12,900	670	28,900	720	86,900
625	5,650	650	15,400	680	37,600	730	103,500
630	7,070	655	18,300	690	47,600	736.7	115,800

CONTENTS, IN ACRE-FEET, AT 1630, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12,679	8,706	40,615	34,831	31,941	24,662	42,596	77,324	112,989	113,366	77,759	26,149
2	12,820	11,761	43,816	34,028	31,686	24,010	44,021	79,366	112,801	112,989	76,028	24,517
3	12,679	13,155	46,645	34,028	31,517	23,298	45,478	81,143	112,613	112,989	74,321	22,947
4	12,399	14,502	48,160	34,028	31,095	22,529	46,967	82,491	112,613	112,801	72,637	21,365
5	12,077	15,995	49,030	31,011	30,594	21,912	48,811	83,095	113,744	112,425	71,115	19,859
6	11,761	17,945	49,030	30,015	30,015	21,164	51,025	83,853	113,744	112,050	69,476	18,305
7	11,451	19,859	48,376	29,039	29,443	20,374	52,725	84,615	113,744	111,675	67,860	16,780
8	11,104	21,499	47,836	28,798	28,958	19,668	53,762	85,844	113,933	110,929	66,399	15,290
9	10,806	23,017	48,160	28,082	28,478	19,102	54,813	86,927	114,122	110,001	64,309	13,843
10	10,890	24,517	48,485	27,144	28,003	18,305	55,875	88,186	113,177	109,078	62,641	12,773
11	10,678	25,998	48,160	26,074	27,845	17,590	57,192	90,894	113,177	108,159	60,999	12,820
12	10,595	27,610	47,506	25,474	28,082	17,066	58,651	93,163	113,177	106,882	59,142	12,820
13	10,554	29,039	46,752	26,682	28,319	17,298	60,624	93,982	113,555	105,795	57,434	12,773
14	10,554	29,200	45,900	27,924	28,718	17,182	62,387	94,146	113,933	104,535	55,757	12,679
15	10,472	29,120	44,954	28,399	28,958	17,009	64,439	94,971	113,744	103,290	54,111	12,679
16	9,070	28,958	44,331	28,319	29,443	16,780	67,061	95,633	113,555	101,902	52,382	12,585
17	8,145	28,798	44,331	23,017	29,769	16,441	69,611	95,633	113,366	100,696	50,689	12,585
18	7,353	28,558	43,816	29,525	29,851	16,217	71,252	96,466	113,555	99,330	49,030	12,538
19	5,877	28,319	43,407	30,677	29,769	15,940	72,220	97,303	113,366	98,482	47,506	12,492
20	5,265	28,240	43,407	31,941	29,606	15,776	72,498	99,671	113,177	97,135	45,794	12,445
21	3,431	28,082	42,496	32,801	29,200	15,776	73,476	102,247	113,366	95,633	44,124	12,399
22	4,349	27,924	42,496	33,324	28,718	15,995	73,757	103,998	113,366	94,311	42,496	12,399
23	4,655	27,845	41,896	33,499	28,240	16,273	73,757	105,434	113,555	92,674	40,909	12,352
24	5,001	27,689	41,105	33,940	27,610	16,894	74,039	106,882	113,555	90,734	39,171	12,352
25	5,315	27,767	40,227	33,763	27,067	17,414	74,180	109,078	113,366	88,977	37,590	12,352
26	5,617	31,263	39,266	33,587	26,605	20,701	74,180	112,425	113,555	87,243	35,920	12,352
27	5,931	32,456	38,603	33,236	25,923	29,688	74,321	112,989	114,122	85,690	34,384	12,260
28	6,257	33,324	37,855	32,975	25,251	33,324	74,180	113,177	113,366	84,310	32,542	12,214
29	7,975	35,828	37,122	32,801	-----	35,737	74,462	112,801	113,744	82,793	30,928	12,168
30	8,145	38,698	36,379	32,456	-----	38,228	75,742	112,613	113,366	81,292	29,281	12,214
31	8,528	-----	35,555	32,198	-----	40,713	-----	112,989	-----	79,366	27,689	-----
MAX	12,820	38,698	49,030	34,831	31,941	40,713	75,742	113,177	114,122	113,366	77,759	26,149
MIN	3,431	8,706	35,555	23,017	25,251	15,776	42,596	77,324	112,613	79,366	27,689	12,168
(a)	634.4	681.2	677.8	674.0	665.3	683.3	712.5	735.2	735.4	715.0	668.5	643.5
(b)	-4,370	+30,170	-3,140	-3,360	-6,950	+15,460	+35,030	+37,260	+400	-34,030	-51,680	-15,480

CAL YR 1970 b -19,040

WTR YR 1971 b -690

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11299995 TULLOCH RESERVOIR NEAR KNIGHTS FERRY, CALIF.

LOCATION.--Lat 37°52'34", long 120°36'12", in SW¼ sec.1, T.1 S., R.12 E., Tuolumne County, in center of dam on Stanislaus River, 1.9 miles upstream from Goodwin Dam, and 5.3 miles northeast of Knights Ferry.

DRAINAGE AREA.--980 sq mi.

PERIOD OF RECORD.--November 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

EXTREMES.--Current year: Maximum contents, 67,000 acre-ft June 9, 26, 29, 30, July 1-3 (elevation, 510.0 ft); minimum, 26,800 acre-ft Nov. 12 (elevation, 465.6 ft).

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).

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) above mean sea level. Dead storage, 11,560 acre-ft. Reservoir is used for conservation and power. Water passes down Stanislaus River, some first passing through powerplant at dam. Part of flow is diverted at Goodwin Dam to Oakdale Canal (see sta 11301000) and South San Joaquin Canal (see sta 11300500). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-Feet)

404	4,580	460	23,600
411	6,020	475	33,100
420	8,200	490	45,300
430	11,100	512	69,500
445	16,400		

CONTENTS, IN ACRE-Feet, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31,700	29,400	40,800	43,400	34,100	37,500	53,200	54,800	65,200	67,000	66,600	63,300
2	30,700	29,200	42,400	43,100	33,900	38,500	53,400	54,700	65,200	67,000	66,700	63,300
3	30,300	28,900	43,500	42,700	33,700	39,500	53,500	54,700	65,000	67,000	66,700	63,300
4	29,800	28,600	44,300	42,400	33,500	40,100	53,500	54,800	64,100	66,800	66,600	63,300
5	29,400	28,400	44,300	42,000	33,300	40,500	53,500	54,700	63,900	66,700	66,600	63,400
6	29,000	28,200	44,200	41,600	33,100	40,800	54,000	54,300	65,200	66,600	66,500	63,400
7	28,500	27,900	44,200	41,200	32,900	41,200	55,400	54,000	66,600	66,500	66,500	63,500
8	28,100	27,700	44,200	39,700	32,600	41,300	56,400	53,800	66,700	66,700	66,500	63,600
9	27,900	27,400	46,900	39,300	32,400	41,100	56,200	53,500	67,000	66,800	66,500	63,800
10	27,700	27,300	48,200	38,900	32,100	40,700	56,100	53,200	66,600	66,800	66,600	63,200
11	27,600	26,900	47,900	38,600	31,600	40,100	56,000	53,000	66,600	66,800	66,600	62,100
12	27,500	26,800	47,600	37,900	31,400	40,400	55,800	53,700	66,600	66,700	66,600	61,000
13	27,300	26,900	47,300	37,800	31,200	41,900	55,800	56,000	66,800	66,700	66,600	60,000
14	27,100	28,200	46,900	38,300	31,000	43,300	55,800	58,400	66,800	66,700	66,600	59,000
15	26,900	29,400	46,500	38,200	30,800	44,300	55,700	60,800	66,700	66,700	66,600	57,900
16	27,500	30,800	46,500	38,000	30,600	45,300	55,700	62,000	66,700	66,600	66,600	56,800
17	28,200	32,000	46,400	37,800	30,400	46,400	55,800	62,000	66,700	66,500	66,500	56,000
18	29,900	33,300	46,100	37,300	30,300	47,400	56,200	61,300	66,600	66,300	66,500	55,100
19	31,300	34,500	46,100	37,400	30,100	48,200	56,500	61,000	66,300	66,200	66,300	54,200
20	32,100	35,200	45,900	37,100	29,900	48,100	56,800	60,700	66,200	66,300	66,200	53,400
21	32,200	35,700	46,400	37,000	29,800	47,400	57,200	60,900	66,600	66,300	66,100	52,400
22	31,900	36,200	46,400	36,600	29,800	46,500	56,900	61,000	66,300	66,500	65,800	51,000
23	31,600	36,700	46,200	36,400	31,000	45,800	56,500	61,000	66,700	66,500	65,600	49,800
24	31,200	37,200	45,900	35,800	32,100	45,100	56,100	60,900	66,700	66,700	65,400	48,600
25	30,900	37,900	45,600	35,500	33,100	45,200	55,600	60,600	66,700	66,800	65,100	47,200
26	30,600	38,600	45,400	35,400	34,200	46,500	55,400	60,900	67,000	66,800	64,900	46,000
27	30,500	38,800	45,200	35,100	35,400	47,900	55,100	63,000	66,500	66,700	64,600	44,700
28	30,300	39,500	44,800	35,000	36,400	49,200	55,000	64,200	66,800	66,600	64,200	43,400
29	30,200	40,700	44,500	34,800	-----	50,400	54,900	64,600	67,000	66,300	64,000	42,100
30	30,000	40,200	44,200	34,500	-----	51,500	54,900	64,900	67,000	66,300	63,600	40,800
31	29,800	-----	43,900	34,300	-----	52,500	-----	65,100	-----	66,500	63,300	-----
MAX	32,200	40,700	48,200	43,400	36,400	52,500	57,200	65,100	67,000	67,000	66,700	63,800
MIN	26,900	26,800	40,800	34,300	29,800	37,500	53,200	53,000	63,900	66,200	63,300	40,800
(a)	470.2	484.1	488.4	476.7	479.5	497.3	499.6	508.5	510.0	509.6	507.0	484.9
(b)	-2,300	+10,400	+3,700	-9,600	+2,100	+16,100	+2,400	+10,200	+1,900	-500	-3,200	-22,500
CAL YR 1970	b	-15,400										
WTR YR 1971	b	+8,700										

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11300500 SOUTH SAN JOAQUIN CANAL NEAR KNIGHTS FERRY, CALIF.

LOCATION.--Lat 37°51'16", long 120°38'14", in Rancheria del Rio Estanislao Grant, Tuolumne County, on left bank 0.8 mile downstream from headgate at Goodwin Dam and 3.0 miles 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 mean sea level (levels by Oakdale Irrigation District). Prior to Mar. 12, 1915, nonrecording gage 100 ft downstream. Mar. 12, 1915, to July 1, 1921, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--57 years, 420 cfs (304,300 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 1,310 cfs July 16, 1967; no flow at times in each year except 1951, 1969.

REMARKS.--Records excellent. Canal diverts from right bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale and South San Joaquin Irrigation Districts. See schematic diagram of Stanislaus River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	515	6.5	1.0	0	0	400	728	1,180	1,160	1,270	1,070	1,000
2	515	6.8	1.0	0	0	400	928	1,160	1,170	1,270	1,070	977
3	515	6.2	.90	0	0	399	1,010	1,130	1,170	1,280	1,070	934
4	517	6.5	1.0	0	0	510	1,010	1,100	1,180	1,270	1,070	906
5	517	5.6	.90	0	0	564	1,010	1,100	1,190	1,260	1,070	910
6	517	5.6	.90	0	0	563	764	1,110	1,190	1,260	1,070	907
7	518	6.2	.80	0	0	498	363	1,100	1,190	1,220	1,070	850
8	518	6.2	.60	0	0	469	624	1,100	1,180	1,120	1,070	818
9	342	5.9	.10	0	0	577	1,070	1,040	1,190	1,090	1,080	815
10	296	5.6	.10	0	0	666	1,080	1,000	1,070	1,100	1,070	792
11	298	5.3	.10	0	0	710	1,100	1,010	987	1,100	1,070	777
12	301	5.6	0	0	0	609	1,110	1,020	986	1,090	1,070	780
13	301	5.9	0	.05	0	321	1,120	1,050	988	1,090	1,070	759
14	302	5.9	0	.08	0	283	1,120	997	1,050	1,090	1,070	749
15	319	5.9	0	0	0	284	1,120	960	1,200	1,090	1,070	749
16	316	6.2	.05	0	0	289	1,130	983	1,220	1,090	1,070	749
17	245	6.8	0	0	0	307	1,140	988	1,200	1,090	1,070	708
18	5.9	6.8	.05	0	1.4	318	1,140	1,000	896	1,090	1,070	680
19	7.7	7.1	0	0	2.8	406	1,140	1,030	1,270	1,090	1,070	680
20	11	8.0	0	0	3.4	603	1,140	1,020	1,270	1,090	1,110	679
21	9.2	8.0	.39	0	3.4	675	1,140	932	1,270	1,090	1,120	791
22	8.8	8.0	0	0	3.4	720	1,150	1,060	1,260	1,090	1,120	872
23	7.7	8.0	0	0	222	741	1,110	1,150	1,260	1,090	1,120	871
24	8.0	8.0	0	0	372	745	1,090	1,150	1,260	1,080	1,130	871
25	7.4	8.0	0	0	389	686	1,090	1,150	1,260	1,080	1,130	871
26	7.1	8.0	0	0	400	461	1,160	1,150	1,260	1,070	1,130	872
27	7.1	8.0	0	0	402	343	1,190	1,150	1,250	1,070	1,130	869
28	6.2	8.0	0	0	402	350	1,190	1,160	1,260	1,070	1,130	853
29	6.2	8.0	0	0	-----	354	1,180	1,150	1,260	1,070	1,120	815
30	6.8	4.5	0	0	-----	371	1,180	1,160	1,260	1,070	1,120	815
31	6.8	-----	0	0	-----	521	-----	1,150	-----	1,070	1,130	-----
TOTAL	6,957.9	201.1	7.89	.13	2,201.4	15,143	31,327	33,440	35,357	34,900	33,830	24,719
MEAN	224	6.70	.25	.004	78.6	488	1,044	1,079	1,179	1,126	1,091	824
MAX	518	8.0	1.0	.08	402	745	1,190	1,180	1,270	1,280	1,130	1,000
MIN	5.9	4.5	0	0	0	283	363	932	896	1,070	1,070	679
AC-FT	13,800	399	16	.3	4,370	30,040	62,140	66,330	70,130	69,220	67,100	49,030
CAL YR 1970	TOTAL	204,638.06	MEAN	561	MAX	1,240	MIN	0	AC-FT	405,900		
WTR YR 1971	TOTAL	218,084.42	MEAN	597	MAX	1,280	MIN	0	AC-FT	432,600		

## SAN JOAQUIN RIVER BASIN

## 11301000 OAKDALE CANAL NEAR KNIGHTS FERRY, CALIF.

LOCATION.--Lat 37°51'32", long 120°37'56", in SE $\frac{1}{4}$  sec.10, T.1 S., R.12 E., Tuolumne County, on left bank 0.3 mile downstream from headgate at Goodwin Dam and 3.4 miles 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. Altitude of gage is 350 ft (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.

AVERAGE DISCHARGE.--57 years, 158 cfs (114,500 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 556 cfs July 8-11, 1967; no flow at times in each year.

REMARKS.--Records excellent. Canal diverts water from left bank of Stanislaus River at Goodwin Dam 0.3 mile upstream for irrigation in Oakdale Irrigation District. See schematic diagram of Stanislaus River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	390	1.3	.03	0		0	360	496	474	522	466	429
2	390	1.3	.08	0		0	416	496	474	522	466	415
3	389	14	0	0		0	416	496	499	522	466	415
4	392	23	.03	0		0	430	448	515	522	466	414
5	391	22	0	0		0	460	417	517	521	465	416
6	391	11	0	0		41	473	419	516	522	467	415
7	391	.15	0	0		173	472	397	516	524	467	363
8	391	.12	0	0		249	472	212	517	467	468	416
9	391	.12	0	0		302	471	172	516	456	468	417
10	392	.10	0	0		358	466	171	516	457	466	420
11	392	.06	0	0		412	467	301	515	455	467	421
12	392	.08	0	0		263	455	387	521	459	471	422
13	392	.10	0	.02		53	453	441	522	462	472	421
14	392	.08	0	.02		36	445	467	522	462	472	420
15	394	.06	0	0		40	439	474	523	462	472	421
16	402	.03	0	0		48	440	472	521	461	472	420
17	304	.06	0	0		67	366	480	522	462	473	421
18	8.8	.06	0	0		79	275	486	522	464	473	420
19	1.9	.06	0	0		79	275	487	522	465	473	421
20	1.5	.06	0	0		218	284	499	522	465	473	421
21	1.3	.06	.06	0		357	310	506	523	464	477	421
22	1.3	.06	0	0		414	423	507	523	465	479	421
23	1.2	4.7	0	0		440	459	508	522	466	477	420
24	1.2	14	0	0		440	458	508	522	465	476	421
25	1.2	5.4	0	0		337	457	508	522	466	476	421
26	1.2	.15	0	0		153	461	509	522	465	476	421
27	1.3	.10	0	0		128	463	507	522	468	475	422
28	1.3	.28	0	0		129	463	507	521	465	475	402
29	1.2	.27	0	0	-----	203	468	506	522	465	475	400
30	1.3	.66	0	0	-----	253	496	506	523	465	474	401
31	1.3	-----	0	0	-----	345	-----	480	-----	465	477	-----
TOTAL	6,602.0	98.82	.20	.04	0	5,617	12,793	13,770	15,494	14,771	14,620	12,478
MEAN	213	3.29	.007	.001	0	181	426	444	516	476	472	416
MAX	402	23	.08	.02	0	440	496	509	523	524	479	429
MIN	1.2	.03	0	0	0	0	275	171	474	455	465	363
AC-FT	13,100	196	.4	.08	0	11,140	25,370	27,310	30,730	29,300	29,000	24,750

CAL YR 1970 TOTAL 96,186.31 MEAN 264 MAX 532 MIN 0 AC-FT 190,800  
WTR YR 1971 TOTAL 96,244.06 MEAN 264 MAX 524 MIN 0 AC-FT 190,900



## 11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CALIF.

LOCATION.--Lat 37°51'06", long 120°38'13", Rancheria Del Rio Estanislao Grant, Calaveras County, on right bank 250 ft upstream from Owl Creek, 0.9 mile downstream from Goodwin Dam, and 2.9 miles northeast of Knights Ferry.

DRAINAGE AREA.--986 sq mi.

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 Company's canal and Oakdale and South San Joaquin canals.

GAGE.--Water-stage recorder. Datum of gage is 252.83 ft above mean sea level.

AVERAGE DISCHARGE.--14 years, 762 cfs (552,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,550 cfs June 27 (gage height, 13.27 ft); minimum daily, 1.1 cfs Oct. 11, 12.

Period of record: Maximum discharge, 40,200 cfs Dec. 24, 1964 (gage height, 28.85 ft, in gage well, 31.2 ft outside, from floodmarks), from rating curve extended above 27,000 cfs; minimum daily, 0.3 cfs Sept. 13, 14, Oct. 1, 1960.

Flood of Dec. 23, 1955, reached a stage of 37.7 ft, from floodmarks (discharge, 62,900 cfs, by computation of flow over Goodwin Dam).

REMARKS.--Records good. Flow regulated by reservoirs and powerplants at Donnell, Beardsley Lake, Melones, Tulloch, and several smaller reservoirs above station. South San Joaquin Canal (see sta 11300500) and Oakdale Canal (see sta 11301000) divert at Goodwin Dam 1.0 mile upstream. See schematic diagram of Stanislaus River basin. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	126	886	1,610	1,530	486	63	22	5.0	312	3.6	3.2
2	1.4	131	866	1,610	1,530	470	30	21	5.0	188	3.6	2.9
3	1.4	126	787	1,610	1,530	465	19	25	5.3	131	3.6	2.8
4	1.4	131	1,350	1,610	1,530	546	29	32	5.8	132	3.8	2.8
5	1.4	128	1,640	1,610	1,530	590	21	174	5.8	4.8	3.8	2.9
6	1.4	128	1,630	1,610	1,520	557	9.8	276	5.6	4.4	3.8	2.9
7	1.4	131	1,630	1,600	1,520	491	9.3	284	305	4.4	3.8	34
8	1.4	131	1,460	1,590	1,520	530	9.4	440	1,240	3.6	3.8	3.2
9	1.2	131	312	1,580	1,510	530	44	530	1,620	3.4	3.8	3.0
10	1.2	128	899	1,580	1,510	480	48	562	1,660	3.4	3.8	3.0
11	1.1	126	1,650	1,580	1,510	475	34	430	1,230	3.2	3.8	3.0
12	1.1	128	1,650	1,580	1,500	322	19	340	1,220	3.2	3.8	3.0
13	1.2	128	1,650	1,570	1,500	288	17	284	1,540	3.2	4.0	3.0
14	1.4	128	1,650	1,570	1,490	362	26	316	2,440	3.2	3.8	2.9
15	96	126	1,650	1,570	1,490	440	33	418	2,110	3.2	3.8	2.9
16	142	126	1,650	1,570	1,490	486	33	1,340	1,800	3.4	4.0	2.9
17	131	131	1,640	1,570	1,490	445	20	1,350	1,750	3.4	4.0	2.9
18	236	131	1,640	1,570	1,490	430	37	1,290	2,370	3.5	3.8	2.8
19	224	133	1,640	1,420	1,490	445	34	632	1,860	3.5	3.8	2.8
20	168	380	1,640	1,570	1,490	530	18	280	1,620	3.5	3.8	2.8
21	160	540	1,640	1,570	1,480	590	6.0	127	1,530	3.5	4.0	2.9
22	160	540	1,640	1,560	1,330	546	143	13	1,400	3.5	4.2	3.2
23	165	535	1,640	1,560	680	496	264	12	1,040	3.5	4.2	3.2
24	160	524	1,630	1,550	502	491	284	9.1	1,150	3.5	4.2	3.2
25	160	535	1,630	1,550	480	321	284	6.8	912	3.5	4.2	3.2
26	110	540	1,630	1,540	470	183	151	6.6	768	3.5	4.0	3.0
27	63	696	1,630	1,540	475	328	17	6.6	3,390	3.5	4.0	15
28	60	886	1,620	1,530	480	336	20	179	1,360	3.6	3.8	47
29	60	886	1,620	1,530	-----	332	28	524	595	3.6	3.8	94
30	76	879	1,610	1,530	-----	324	24	186	487	3.6	3.8	94
31	128	-----	1,610	1,530	-----	150	-----	5.8	-----	3.6	3.8	-----
TOTAL	2,317.6	9,389	45,820	48,570	36,067	13,465	1,769.5	10,121.9	35,429.5	859.2	120.0	358.4
MEAN	74.8	313	1,478	1,567	1,288	434	59.0	327	1,181	27.7	3.87	11.9
MAX	236	886	1,650	1,610	1,530	590	284	1,350	3,390	312	4.2	94
MIN	1.1	126	312	1,420	470	150	6.0	5.8	5.0	3.2	3.6	2.8
AC-FT	4,600	18,620	90,880	96,340	71,540	26,710	3,510	20,080	70,270	1,700	238	711
CAL YR 1970	TOTAL 364,857.8		MEAN 1,000		MAX 16,200		MIN 1.1		AC-FT 723,700			
WTR YR 1971	TOTAL 204,287.1		MEAN 560		MAX 3,390		MIN 1.1		AC-FT 405,200			

## 11303000 STANISLAUS RIVER AT RIPON, CALIF.

LOCATION.--Lat 37°43'47", long 121°06'34", in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.29, T.2 S., R.8 E., Stanislaus County, on left bank 15 ft downstream from railroad bridge, 1.1 miles southeast of Ripon, and 15 miles upstream from mouth.

DRAINAGE AREA.--1,075 sq mi.

PERIOD OF RECORD.--October 1940 to current year. April to September 1940 in reports of California Department of Water Resources.

GAGE.--Water-stage recorder. Datum of gage is 0.72 ft above mean sea level. October 1940 to Nov. 17, 1953, at site 100 ft upstream at same datum.

**AVERAGE DISCHARGE.**--31 years, 1,053 cfs (762,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,480 cfs June 28 (gage height, 48.97 ft); minimum daily, 172 cfs Aug. 19.

Period of record: Maximum discharge, 62,500 cfs Dec. 24, 1955 (gage height, 63.25 ft); minimum, 40 cfs July 21, 1961.

Flood of Feb. 12, 1938, reached a stage of 64.4 ft, from floodmarks.

REMARKS.--Records good. Flow regulated by reservoirs and powerplants above station (see REMARKS for sta 11302000). South San Joaquin and Oakdale Canals (see sta 11300500, 11301000) divert at Goodwin Dam 34 miles upstream. Diversions for irrigation of 57,250 acres in vicinity of Oakdale area. See schematic diagram of Stanislaus River basin.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	285	208	1,220	1,710	1,620	636	527	311	491	936	193	220
2	293	224	1,190	1,720	1,610	630	448	333	415	728	211	210
3	273	227	1,260	1,720	1,610	617	407	353	375	663	228	207
4	267	244	985	1,710	1,610	651	359	368	344	530	177	227
5	275	264	1,360	1,700	1,610	714	356	365	378	559	179	237
6	263	270	1,600	1,690	1,610	781	288	405	419	412	195	254
7	228	289	1,630	1,690	1,600	754	291	484	400	344	188	244
8	256	312	1,640	1,690	1,600	722	274	602	418	347	205	201
9	251	266	1,530	1,680	1,590	778	290	763	1,080	317	209	196
10	212	246	726	1,670	1,590	697	299	762	1,480	276	203	193
11	228	241	890	1,670	1,590	657	328	781	1,720	269	196	220
12	247	235	1,550	1,670	1,590	633	331	717	1,410	285	187	226
13	310	234	1,630	1,670	1,580	681	342	614	1,380	270	193	222
14	312	231	1,650	1,730	1,580	518	354	560	1,600	266	218	200
15	372	229	1,670	1,770	1,580	544	299	496	2,340	245	228	190
16	459	228	1,680	1,690	1,570	588	350	603	2,330	219	199	201
17	471	228	1,700	1,680	1,570	683	383	1,250	2,030	239	215	185
18	368	227	1,700	1,670	1,570	715	414	1,420	1,960	297	196	173
19	348	229	1,730	1,670	1,570	725	433	1,420	2,330	252	172	176
20	362	228	1,800	1,570	1,560	705	411	1,040	2,080	233	191	174
21	310	275	1,760	1,640	1,550	710	372	639	1,900	202	177	195
22	274	432	1,860	1,650	1,560	822	300	545	1,710	197	223	265
23	283	480	1,780	1,650	1,480	793	316	401	1,600	191	276	295
24	280	495	1,740	1,640	1,010	764	445	346	1,330	220	263	268
25	276	509	1,720	1,640	770	744	520	324	1,370	241	212	265
26	271	545	1,720	1,640	697	864	503	278	1,240	275	205	335
27	266	582	1,720	1,640	665	782	455	287	1,200	247	178	437
28	229	640	1,720	1,630	651	821	362	400	2,830	244	201	446
29	208	1,230	1,720	1,630	-----	813	331	392	2,140	238	210	395
30	197	1,420	1,720	1,630	-----	692	335	682	1,010	195	238	417
31	192	-----	1,710	1,620	-----	677	-----	681	-----	173	229	-----
TOTAL	8,866	11,476	48,311	51,780	40,193	21,911	11,123	18,622	41,310	10,110	6,395	7,474
MEAN	286	383	1,558	1,670	1,435	707	371	601	1,377	326	206	249
MAX	471	1,420	1,860	1,770	1,620	864	527	1,420	2,830	936	276	446
MIN	192	208	726	1,570	651	518	274	278	344	173	172	173
AC-FT	17,590	22,760	95,820	102,700	79,720	43,460	22,060	36,940	81,940	20,050	12,680	14,820
CAL YR 1970	TOTAL 448,156		MEAN 1,228	MAX 13,800		MIN 145	AC-FT 888,900					
WTR YR 1971	TOTAL 277,571		MEAN 760	MAX 2,830		MIN 172	AC-FT 550,600					

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CALIF.  
(International Hydrological Decade Station)

LOCATION.--Lat 37°40'34", long 121°15'55", in El Pescadero Grant, San Joaquin County, on left bank 12 ft downstream from Durham Ferry highway bridge, 2.6 miles downstream from Stanislaus River, and 3.2 miles northeast of Vernalis.

DRAINAGE AREA.--13,540 sq mi.

PERIOD OF RECORD.--July 1922 to current year (1922-23 and 1925-29, low-water records only).

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. July 1922 to September 1946, at various sites on or within 100 ft of Durham Ferry bridge. Prior to Apr. 1, 1931, at different datum. Apr. 1, 1931, to Sept. 30, 1959, at datum 5.06 ft above mean sea level. Oct. 1, 1959, to Nov. 30, 1967, at site 120 ft upstream at present datum.

AVERAGE DISCHARGE.--43 years (1924, 1929-71), 4,532 cfs (3,283,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,700 cfs Dec. 23 (elevation, 16.68 ft); minimum daily, 734 cfs Aug. 13.

Period of record: Maximum discharge recorded, 79,000 cfs Dec. 9, 1950 (elevation, 32.81 ft, present datum), including flow through breaks in levee; minimum, 19 cfs Aug. 10, 1961.

REMARKS.--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. Records of chemical analyses, water temperatures, and suspended-sediment discharge for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,420	1,120	3,580	5,880	4,730	2,620	2,270	1,390	1,910	2,040	780	1,000
2	1,530	1,140	3,430	5,920	4,740	2,570	2,130	1,560	1,760	1,700	870	1,010
3	1,550	1,150	3,590	6,080	5,100	2,420	2,050	1,760	1,650	1,530	870	980
4	1,590	1,190	3,590	6,110	4,980	2,380	2,000	1,830	1,600	1,490	790	986
5	1,600	1,270	3,640	6,040	4,710	2,400	1,820	1,860	1,500	1,530	775	1,020
6	1,640	1,360	4,620	5,780	4,670	2,380	1,820	1,900	1,440	1,370	770	1,010
7	1,570	1,470	5,230	5,100	4,700	2,390	1,930	1,860	1,480	1,180	830	1,030
8	1,530	1,530	5,270	4,780	4,700	2,470	1,980	1,960	1,380	1,140	845	986
9	1,500	1,520	4,730	4,710	4,580	2,440	1,940	2,360	1,550	1,090	850	997
10	1,540	1,480	3,830	4,660	4,600	2,280	1,950	2,620	2,030	1,050	795	930
11	1,570	1,470	3,260	4,560	4,620	2,280	2,050	2,430	2,470	1,080	757	940
12	1,560	1,550	3,590	4,410	4,740	2,300	2,000	2,240	2,450	1,110	762	1,110
13	1,550	1,560	3,900	4,380	4,690	2,470	1,740	1,980	2,350	1,050	734	1,150
14	1,590	1,590	4,150	5,070	4,290	2,690	1,980	1,860	2,330	940	795	1,040
15	1,650	1,600	4,350	5,660	4,010	3,020	2,150	1,650	2,760	900	950	935
16	1,820	1,570	4,550	5,900	4,140	3,140	2,060	1,590	3,060	865	1,010	890
17	1,860	1,600	4,660	5,530	4,630	3,060	2,240	1,840	2,890	860	945	890
18	1,670	1,570	5,060	5,150	4,670	2,860	2,440	2,260	2,700	945	875	945
19	1,530	1,540	5,470	5,080	4,670	2,630	2,570	2,330	2,860	1,040	870	986
20	1,440	1,520	5,760	5,140	4,580	2,500	2,500	2,270	3,030	930	890	1,050
21	1,370	1,520	6,100	5,160	4,560	2,330	2,440	1,840	2,960	830	830	1,020
22	1,300	1,620	6,330	5,220	4,510	2,320	2,110	1,700	2,590	762	930	1,050
23	1,280	1,750	6,630	5,230	4,410	2,290	1,700	1,530	2,510	757	1,070	1,120
24	1,280	1,800	6,610	5,460	3,980	2,290	1,660	1,520	2,360	748	1,080	1,260
25	1,290	1,860	6,500	5,560	3,830	2,310	1,720	1,390	2,210	805	970	1,300
26	1,250	1,950	6,510	5,370	3,470	2,880	1,680	1,300	2,400	935	870	1,350
27	1,240	1,990	6,500	5,030	2,990	3,220	1,580	1,230	2,280	905	945	1,440
28	1,200	2,040	6,400	4,780	2,660	3,100	1,550	1,310	2,860	905	925	1,510
29	1,200	2,750	6,310	4,560	-----	2,970	1,410	1,590	3,900	875	1,060	1,480
30	1,190	3,570	6,240	4,440	-----	2,760	1,370	1,790	2,390	855	1,120	1,500
31	1,140	-----	5,970	4,560	-----	2,500	-----	2,060	-----	825	1,080	-----
TOTAL	45,450	49,650	156,360	161,310	122,960	80,270	58,840	56,810	69,660	33,042	27,643	32,915
MEAN	1,466	1,655	5,044	5,204	4,391	2,589	1,961	1,833	2,322	1,066	892	1,097
MAX	1,860	3,570	6,630	6,110	5,100	3,220	2,570	2,620	3,900	2,040	1,120	1,510
MIN	1,140	1,120	3,260	4,380	2,660	2,280	1,370	1,230	1,380	748	734	890
AC-FT	90,150	98,480	310,100	320,000	243,900	159,200	116,700	112,700	138,200	65,540	54,830	65,290

CAL YR 1970 TOTAL 1,394,642 MEAN 3,821 MAX 24,000 MIN 902 AC-FT 2,766,000  
WTR YR 1971 TOTAL 894,910 MEAN 2,452 MAX 6,630 MIN 734 AC-FT 1,775,000

## 11306000 SOUTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CALIF.

LOCATION.--Lat 38°08'40", long 120°39'46", in NW¼ sec.4, T.3 N., R.12 E., Calaveras County, on right bank 0.1 mile downstream from San Antonio Creek and 3.7 miles south of San Andreas.

DRAINAGE AREA.--118 sq mi.

PERIOD OF RECORD.--April 1950 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 860 ft (from topographic map). Prior to Feb. 13, 1952, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--21 years, 81.7 cfs (59,190 acre-ft per year); median of yearly mean discharges, 56 cfs (40,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,210 cfs Dec. 2 (gage height, 5.91 ft); no flow for several days. Period of record: Maximum discharge, 17,600 cfs Dec. 23, 1955 (gage height, 10.29 ft), from rating curve extended above 5,700 cfs on basis of slope-area measurement of maximum flow; no flow at times in most years.

REMARKS.--Records good. Some small diversions for irrigation above station.

REVISIONS (WATER YEARS).--WSP 1395: 1951(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.76	2.9	876	95	83	50	109	30	21	7.6	1.0	.94
2	.79	2.8	1,350	104	82	43	98	31	20	7.0	1.0	.49
3	.84	2.8	395	88	78	43	91	36	20	6.5	.85	.32
4	.86	4.2	1,050	75	72	44	83	41	18	5.7	.85	.20
5	.87	14	415	69	67	44	78	39	18	5.3	.76	.20
6	.98	24	210	65	66	41	73	36	17	5.6	.67	.12
7	1.1	24	150	60	65	41	75	35	15	4.9	.49	.04
8	1.2	14	134	57	62	39	71	43	15	4.6	.49	0
9	1.3	8.3	225	54	59	39	66	42	14	4.6	.49	0
10	1.3	7.3	148	51	58	38	62	36	14	4.4	.40	0
11	1.4	5.8	117	54	63	38	60	33	14	4.4	.40	0
12	1.5	5.3	99	164	68	66	56	31	13	3.9	.49	.32
13	1.7	5.4	85	587	71	167	55	29	13	3.9	.28	.85
14	1.8	5.0	73	594	73	97	53	28	12	2.8	.12	.36
15	1.8	4.8	64	273	75	90	52	26	12	2.8	.16	.12
16	1.8	4.7	254	195	76	78	49	25	11	2.8	.08	0
17	1.8	4.4	551	191	76	71	54	23	10	2.7	0	0
18	1.9	4.2	237	187	69	67	55	22	6.9	2.7	0	0
19	2.1	4.3	229	170	77	64	49	22	8.7	2.7	1.3	0
20	2.7	4.2	173	156	68	53	47	22	8.6	2.5	4.8	0
21	3.3	4.4	550	143	62	62	48	21	8.1	2.5	5.6	0
22	4.0	4.4	297	134	58	61	44	21	7.7	2.2	4.8	0
23	4.2	5.1	186	119	56	64	42	20	7.3	1.6	2.8	0
24	4.8	5.9	145	107	52	71	41	20	7.1	1.6	2.7	0
25	4.2	44	120	98	53	88	41	19	6.9	1.8	2.3	0
26	6.2	112	111	92	47	661	39	18	7.6	1.8	1.5	0
27	4.0	52	139	88	45	346	37	19	13	1.5	.67	0
28	3.3	465	129	87	49	210	35	22	12	1.3	.40	0
29	3.2	953	122	86	-----	165	33	22	9.4	1.2	.28	0
30	3.0	375	122	84	-----	143	31	21	8.4	1.2	.24	0
31	3.0	-----	104	84	-----	124	-----	21	-----	1.2	.94	-----
TOTAL	71.70	2,173.2	8,860	4,411	1,830	3,208	1,727	854	368.7	105.3	36.86	3.96
MEAN	2.31	72.4	286	142	65.4	103	57.6	27.5	12.3	3.40	1.19	.13
MAX	6.2	953	1,350	594	83	661	109	43	21	7.6	5.6	.94
MIN	.76	2.8	64	51	45	38	31	18	6.9	1.2	0	0
AC-FT	142	4,310	17,570	8,750	3,630	6,360	3,430	1,690	731	209	73	7.9
CAL YR 1970	TOTAL	44,250.11	MEAN	121	MAX	2,600	MIN	.21	AC-FT	87,770		
WTR YR 1971	TOTAL	23,649.72	MEAN	64.8	MAX	1,350	MIN	0	AC-FT	46,910		

## PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-29	1200	5.69	1,990	1-14	0100	4.56	1,020
12- 2	0630	5.91	2,210	3-26	1030	5.06	1,400

## 11308000 NORTH FORK CALAVERAS RIVER NEAR SAN ANDREAS, CALIF.

LOCATION.--Lat 38°13'17", long 120°41'54", in NW $\frac{1}{4}$  sec.7, T.4 N., R.12 E., Calaveras County, on right bank 0.5 mile upstream from Chile Gulch and 1.8 miles northwest of San Andreas.

DRAINAGE AREA.--85.2 sq mi.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 750 ft (from topographic map). Prior to Feb. 14, 1952, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--21 years, 49.2 cfs (35,650 acre-ft per year); median of yearly mean discharges, 33 cfs (23,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,550 cfs Mar. 26 (gage height, 7.04 ft); no flow for many days. Period of record: Maximum discharge, 6,200 cfs Dec. 23, 1955 (gage height, 12.52 ft), from rating curve extended above 3,900 cfs; no flow at times in most years.

REMARKS.--Records good. Small diversions above station for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.8	410	70	36	26	60	19	16	7.3	.06	
2	1.2	1.8	553	73	35	25	52	20	16	6.9	0	
3	.71	1.8	178	62	33	24	47	22	16	6.5	0	
4	.92	7.3	624	53	31	24	42	23	15	6.1	0	
5	1.2	32	210	48	30	26	35	23	14	5.5	.31	
6	1.3	36	91	45	29	24	36	22	13	4.5	.21	
7	1.6	40	64	42	28	23	41	22	13	4.0	0	
8	2.0	21	57	40	28	22	35	30	12	3.8	0	
9	2.1	12	212	38	27	23	32	28	12	3.2	0	
10	2.7	11	91	37	26	22	30	24	13	3.0	0	
11	3.4	12	63	37	26	22	29	22	13	3.2	0	
12	3.4	16	53	114	25	30	27	20	12	3.2	0	
13	3.2	19	46	140	24	119	26	19	11	2.6	0	
14	3.8	17	40	188	24	59	26	18	11	2.2	0	
15	4.3	16	36	168	24	54	25	17	10	2.2	0	
16	5.3	16	126	133	24	45	24	16	9.6	2.1	0	
17	5.8	16	292	194	28	38	27	16	8.1	2.4	0	
18	5.6	17	172	146	26	35	27	16	7.8	2.1	0	
19	5.6	17	124	110	29	33	25	16	7.1	2.1	0	
20	6.7	17	105	83	29	31	24	15	7.1	1.6	0	
21	7.9	17	210	69	26	28	25	15	7.0	1.3	0	
22	9.1	18	168	62	25	26	24	15	6.9	1.1	0	
23	11	17	107	58	24	28	23	15	6.0	.71	0	
24	7.0	20	83	53	24	34	23	15	5.8	.57	0	
25	3.8	55	70	48	23	39	24	14	5.8	.64	0	
26	2.6	144	63	45	22	621	23	14	7.7	.45	0	
27	2.6	49	113	43	22	319	23	15	15	.45	0	
28	1.7	105	124	41	23	156	22	17	13	.64	0	
29	1.6	347	124	40	-----	107	21	17	9.9	.27	0	
30	1.7	154	121	38	-----	85	20	17	9.1	.40	0	
31	1.7	-----	84	36	-----	71	-----	17	-----	.18	0	-----
TOTAL	111.93	1,255.7	4,814	2,354	751	2,219	902	579	322.9	81.21	.58	0
MEAN	3.61	41.9	155	75.9	26.8	71.6	30.1	18.7	10.8	2.62	.019	0
MAX	11	347	624	194	36	621	60	30	16	7.3	.31	0
MIN	.71	1.8	36	36	22	22	20	14	5.8	.18	0	0
AC-FT	222	2,490	9,550	4,670	1,450	4,400	1,790	1,150	640	161	1.2	0

CAL YR 1970 TOTAL 24,512.17 MEAN 67.2 MAX 1,460 MIN .18 AC-FT 48,620  
WTR YR 1971 TOTAL 13,391.32 MEAN 36.7 MAX 624 MIN 0 AC-FT 26,560

PEAK DISCHARGE (BASE, 1,300 CFS).--Mar. 26 (1300) 1,550 cfs (7.04 ft).

11308700 NEW HOGAN LAKE NEAR VALLEY SPRINGS, CALIF.  
(Formerly published as New Hogan Reservoir near Valley Springs)

LOCATION.--Lat 38°09'01", long 120°48'45", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.31, T.4 N., R.11 E., Calaveras County, in control house at New Hogan Dam on the Calaveras River, 3.0 miles south of alley Springs.

DRAINAGE AREA.--362 sq mi.

PERIOD OF RECORD.--December 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

EXTREMES.--Current year: Maximum contents, 186,928 acre-ft Apr. 20 (elevation, 676.54 ft); minimum, 122,602 acre-ft Oct. 22 (elevation, 653.81 ft).  
Period of record: Maximum contents, 241,200 acre-ft Apr. 18, 1967 (elevation, 692.53 ft); minimum since initial season of normal operation, 9,360 acre-ft Oct. 27, 1964 (elevation, 516.81 ft).

REMARKS.--Reservoir is formed by an earthfill dam and four earthfill dikes. Storage began Dec. 20, 1963. Total capacity, 323,859 acre-ft between elevations 534.5 ft (invert of outlet valve) and 713.0 ft (top of spillway gates). Elevation of spillway crest is 679.5 ft. No dead storage. The reservoir is operated for flood control according to existing downstream channel conditions. Reservoir releases limited, insofar as possible, to amounts that will not cause flows greater than 6,000 cfs at Bellota. Records, including extremes, show contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers, not rounded to Geological Survey standards.

CAPACITY TABLE (ELEVATION, IN FEET AND CONTENTS, IN ACRE-FEET)

545	723	600	27,320
550	1,240	610	39,169
555	1,956	630	70,540
560	2,951	650	113,200
570	6,134	670	166,978
580	11,147	700	269,652
590	18,020		

CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125,113	122,703	138,757	158,383	161,251	166,682	183,309	186,176	181,235	171,515	158,441	145,089
2	124,858	122,728	144,649	158,441	161,513	166,860	183,651	186,082	181,019	171,125	157,980	144,704
3	124,603	122,728	146,688	158,326	161,775	167,008	183,993	186,082	180,803	170,765	157,635	144,347
4	124,400	122,880	152,135	158,268	161,979	167,097	184,304	186,051	180,618	170,345	157,261	143,964
5	124,171	123,006	154,515	158,038	162,212	167,245	184,553	186,051	180,464	169,956	156,773	143,608
6	124,070	123,259	155,685	158,009	162,446	167,453	184,833	186,082	180,279	169,597	156,429	143,307
7	123,917	123,360	156,429	158,095	162,621	167,601	185,083	186,145	180,063	169,239	156,000	142,871
8	123,841	123,486	157,117	158,355	162,855	167,601	185,239	186,207	179,848	168,881	155,628	142,516
9	123,791	123,562	158,355	158,614	163,031	167,750	185,457	186,301	179,633	168,494	155,285	142,217
10	123,664	123,588	159,105	158,816	163,206	167,869	185,613	186,270	179,387	168,107	154,914	141,918
11	123,588	123,689	159,683	159,076	163,411	167,958	185,770	186,207	179,110	167,661	154,515	141,646
12	123,486	123,689	160,176	160,031	163,558	168,583	185,895	186,176	178,773	167,215	154,032	141,348
13	123,410	123,714	160,524	162,241	163,763	169,358	186,020	186,082	178,405	166,830	153,493	140,969
14	123,335	123,740	160,844	164,027	163,998	169,866	186,176	185,926	178,068	166,297	153,068	140,644
15	123,157	123,740	161,280	163,705	164,174	170,255	186,364	185,832	177,731	165,883	152,587	140,346
16	123,056	123,765	162,329	162,329	164,380	170,555	186,489	185,582	177,334	165,352	152,135	139,969
17	122,905	123,765	164,910	161,047	164,615	170,825	186,677	185,520	176,967	164,880	151,684	139,564
18	122,804	123,791	165,234	159,510	164,910	171,035	186,834	185,270	176,601	164,439	151,149	139,268
19	122,678	123,816	164,851	158,758	165,145	171,245	186,896	185,052	176,205	164,027	150,672	138,919
20	122,678	123,841	164,145	158,556	165,352	171,455	186,928	184,709	175,809	163,617	150,139	138,516
21	122,627	123,841	165,086	158,585	165,499	171,606	186,834	184,428	175,414	163,206	149,663	138,194
22	122,602	123,867	165,116	158,730	165,647	171,786	186,771	184,304	175,019	162,826	149,272	137,899
23	122,703	123,917	164,498	158,816	165,824	172,027	186,677	183,993	174,564	162,358	148,882	137,632
24	122,703	124,044	163,529	158,903	165,972	172,177	186,677	183,558	174,079	161,979	148,492	137,364
25	122,703	124,476	162,475	159,047	166,090	172,659	186,708	183,092	173,625	161,542	148,047	137,097
26	122,728	125,062	161,396	159,365	166,208	177,212	186,677	182,751	173,353	161,076	147,602	136,830
27	122,703	125,393	160,582	159,712	166,356	179,663	186,646	182,441	172,991	160,553	147,242	136,590
28	122,703	127,315	159,712	160,002	166,474	180,865	186,489	182,131	172,599	160,060	146,799	136,324
29	122,703	132,121	159,163	160,408	-----	181,698	186,395	181,915	172,267	159,626	146,439	136,138
30	122,678	134,334	158,903	160,698	-----	182,379	186,207	181,667	171,936	159,163	146,053	135,951
31	122,703	-----	158,528	160,960	-----	182,813	-----	181,451	-----	158,787	145,556	-----
MAX	125,113	134,334	165,234	164,027	166,474	182,813	186,928	186,301	181,235	171,515	158,441	145,089
MIN	122,602	122,703	138,757	158,009	161,251	166,682	183,309	181,451	171,936	158,787	145,556	135,951
(a)	653.85	658.35	667.11	667.95	669.83	675.22	676.31	674.78	671.66	667.20	662.51	658.96
(b)	-2,697	+11,631	+24,194	+2,432	+5,514	+16,339	+3,394	-4,756	-9,515	-13,149	-13,231	-9,605
(c)	1,022	400	191	231	332	644	964	1,167	1,872	2,428	2,205	1,834

CAL YR 1970 b -13,272  
WTR YR 1971 b +10,551

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

## 11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CALIF.

LOCATION.--Lat 38°08'53", long 120°49'26", in NE $\frac{1}{4}$  sec.1, T.3 N., R.10 E., Calaveras County, on right bank at county road bridge, 0.5 mile upstream from Cosgrove Creek, 0.8 mile downstream from New Hogan Dam, and 3.0 miles south of Valley Springs.

DRAINAGE AREA.--363 sq mi.

PERIOD OF RECORD.--January 1961 to current year. Published as "below Hogan Dam" 1961-63 and as "below New Hogan Dam" 1964.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 519.8 ft above mean sea level (levels by Corps of Engineers). Auxiliary nonrecording gage 300 ft downstream at different datum used May 1, 1962, to Jan. 26, 1963.

AVERAGE DISCHARGE (adjusted for change in contents and evaporation from New Hogan Reservoir).--10 years, 241 cfs (174,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,440 cfs Jan. 18 (gage height, 3.23 ft); no flow Oct. 25.  
Period of record: Maximum discharge, 7,830 cfs Jan. 25, 26, 1969 (gage height, 7.46 ft); no flow for many days in 1961-65, 1971.

REMARKS.--Records good. Flow regulated by New Hogan Reservoir (see sta 11308700). Some seepage of North Fork Stanislaus River water enters basin from diversion canals and reservoirs, normally not over 1.5 cfs. Small diversions above station for irrigation. Record of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112	1.6	8.5	408	31	33	22	113	140	199	193	200
2	112	1.6	8.2	285	31	32	21	108	136	208	193	187
3	112	1.8	3.5	300	31	31	21	112	119	193	189	165
4	112	2.0	4.2	249	31	31	21	111	108	193	189	158
5	90	1.8	2.9	210	30	31	33	91	108	193	189	158
6	57	1.9	2.6	208	30	31	56	80	108	178	181	158
7	35	1.8	2.2	133	31	33	61	72	107	164	176	164
8	30	1.8	2.2	27	31	25	61	72	125	171	176	157
9	31	1.8	2.2	29	31	25	51	74	140	181	176	145
10	31	1.8	2.0	29	31	27	39	88	140	195	161	148
11	30	1.8	1.7	28	30	29	39	101	147	210	185	144
12	30	1.8	1.7	26	30	32	47	101	184	210	209	144
13	30	1.8	1.6	107	30	30	61	101	202	225	225	144
14	37	1.8	2.1	369	30	30	41	101	202	240	213	144
15	50	1.8	2.5	955	30	30	29	101	202	240	197	145
16	51	1.8	3.5	1,410	29	30	31	101	194	240	194	176
17	51	1.8	304	1,400	29	30	31	111	185	240	209	184
18	51	1.8	754	1,410	29	30	31	137	193	217	225	150
19	42	1.8	990	877	29	30	55	154	206	196	225	147
20	27	1.8	990	488	29	30	94	174	206	197	204	153
21	16	1.8	990	362	28	29	132	191	207	197	197	153
22	16	1.8	990	253	28	38	145	181	220	197	189	143
23	10	1.8	990	250	28	50	140	185	235	197	185	135
24	.30	1.8	990	250	28	49	97	186	235	197	186	129
25	0	2.5	990	120	28	50	76	185	222	197	189	111
26	.80	2.1	1,000	27	28	60	86	185	210	220	189	111
27	2.6	2.1	1,000	28	28	53	125	177	210	245	181	111
28	1.9	3.8	1,000	28	28	51	147	154	198	245	176	111
29	1.1	9.0	767	28	-----	35	148	140	189	235	176	111
30	1.4	4.6	600	28	-----	23	122	140	189	199	191	91
31	1.6	-----	538	28	-----	22	-----	140	-----	185	202	-----
TOTAL	1,172.70	67.2	12,944.6	10,350	827	1,060	2,063	3,967	5,267	6,404	5,970	4,377
MEAN	37.8	2.24	418	334	29.5	34.2	68.8	128	176	207	193	146
MAX	112	9.0	1,000	1,410	31	60	148	191	235	245	225	200
MIN	0	1.6	1.6	26	28	22	21	72	107	164	161	91
AC-FT	2,330	133	25,680	20,530	1,640	2,100	4,090	7,870	10,450	12,700	11,840	8,680
MEAN a	11.2	204	814	377	135	310	142	69.6	47.2	32.2	13.2	15.3
AC-FT a	687	12,160	50,060	23,190	7,490	19,080	8,450	4,280	2,810	1,980	814	909

CAL YR 1970 TOTAL 122,717.50 MEAN 336 MAX 4,970 MIN 0 AC-FT 243,400 MEAN a 338 AC-FT a 244,700  
WTR YR 1971 TOTAL 54,469.50 MEAN 149 MAX 1,410 MIN 0 AC-FT 108,000 MEAN a 182 AC-FT a 131,900

a Adjusted for change in contents and evaporation from New Hogan Reservoir.

## 11312000 BEAR CREEK NEAR LOCKEFORD, CALIF.

LOCATION.--Lat 38°09'10", long 121°08'17", in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.31, T.4 N., R.8 E., San Joaquin County, on right bank 15 ft downstream from county road bridge and 0.8 mile southeast of Lockeford.

DRAINAGE AREA.--47.6 sq mi.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1315-A. October 1926 to November 1930 at site 3 miles downstream; records not equivalent.

GAGE.--Water-stage recorder and low-water concrete control. Datum of gage is 80.68 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--41 years, 11.8 cfs (8,550 acre-ft per year); median of yearly mean discharges, 8.9 cfs (6,450 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 615 cfs Nov. 29 (gage height, 12.27 ft); no flow for several days. Period of record: Maximum discharge, 2,930 cfs Apr. 3, 1958 (gage height, 15.13 ft); no flow for several months in most years.

REMARKS.--Records fair. No storage or diversion above station. Occasionally water is released from East Bay Municipal Utility District aqueduct into Bear Creek above station. Summer discharge influenced by return flows from irrigated areas.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	0	171	19	3.0	.73	5.6	.43	0	.82	.39	1.5
2	.41	0	246	37	3.1	.77	4.3	1.3	0	.58	.72	1.4
3	.51	0	95	35	3.0	.61	3.4	.18	0	.94	.39	.47
4	.43	.29	137	16	2.7	.49	2.7	.16	0	.40	.44	.57
5	.36	1.4	73	8.7	2.4	.37	1.9	.52	0	.67	2.3	.64
6	.26	5.3	37	7.1	2.3	.37	1.9	1.1	0	.84	2.1	.07
7	.30	13	22	6.0	2.2	.20	2.3	.97	0	.83	2.1	.51
8	1.0	2.2	29	5.2	2.0	.16	2.7	2.3	0	.52	2.1	.95
9	1.8	1.3	56	4.6	2.0	.16	2.9	1.2	0	.38	1.1	1.1
10	1.6	.60	24	4.2	1.8	.18	1.8	.65	0	.18	1.2	.40
11	1.2	.43	13	4.1	1.7	.14	1.2	.19	0	1.4	.78	.30
12	1.4	.51	8.8	10	1.8	1.1	.81	.15	0	1.6	.41	.57
13	1.1	.51	8.4	83	1.8	34	.05	.98	0	1.8	.80	2.2
14	.38	.70	7.6	62	1.7	12	.03	1.6	0	1.4	1.2	2.2
15	.39	.60	5.3	35	1.6	6.6	.02	1.2	.06	1.3	1.0	1.4
16	.56	.43	30	22	1.4	5.3	.02	.70	.06	.35	.85	1.7
17	.77	.36	134	16	1.4	4.1	.02	.57	.02	.90	.68	.73
18	.48	.23	66	13	1.5	3.0	.04	.15	0	.29	2.4	.68
19	.53	.18	62	11	1.9	2.1	.12	.09	.07	.39	2.2	.11
20	1.2	.18	43	8.8	5.0	1.7	.45	.05	.32	.48	1.8	.50
21	.31	.18	211	7.8	3.6	1.3	.55	.04	.23	.55	1.8	.29
22	.13	.18	97	6.6	2.6	1.0	.10	.03	.29	.31	.59	.61
23	.08	.18	45	5.6	2.1	.80	.05	.03	.38	.26	.76	.66
24	.06	.23	30	5.1	2.2	.90	.03	.03	.18	1.4	.06	1.1
25	.04	1.3	19	4.4	1.7	1.7	.03	.03	.09	2.2	.11	1.2
26	.03	6.0	19	3.9	1.3	101	.03	.01	.06	1.5	.15	2.7
27	.03	2.7	54	3.6	1.1	96	.11	0	.26	.96	.40	2.8
28	.02	20	55	3.4	.87	40	.99	0	1.1	.44	.19	2.5
29	.01	358	46	3.4	-----	23	1.4	0	1.1	.95	.20	2.0
30	.01	123	43	3.3	-----	13	.92	0	.87	.28	.18	1.0
31	.01	-----	27	3.1	-----	7.9	-----	0	-----	.57	1.6	-----
TOTAL	16.36	539.99	1,914.1	457.9	59.77	360.68	36.47	14.66	5.09	25.49	31.00	32.86
MEAN	.53	18.0	61.7	14.8	2.13	11.6	1.22	.47	.17	.82	1.00	1.10
MAX	1.8	358	246	83	5.0	101	5.6	2.3	1.1	2.2	2.4	2.8
MIN	.01	0	5.3	3.1	.87	.14	.02	0	0	.18	.06	.07
AC-FT	32	1,070	3,800	908	119	715	72	29	10	51	61	65

CAL YR 1970 TOTAL 7,764.78 MEAN 21.3 MAX 605 MIN 0 AC-FT 15,400

WTR YR 1971 TOTAL 3,494.37 MEAN 9.57 MAX 358 MIN 0 AC-FT 6,930

PEAK DISCHARGE (BASE, 500 CFS).--Nov. 29 (1500) 615 cfs (12.27 ft).



## 11313000 DELTA-MENDOTA CANAL AT TRACY PUMPING PLANT, NEAR TRACY, CALIF.

LOCATION.--Lat 37°47'49", long 121°35'03", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.31, T.1 S., R.4 E., Alameda County, at Tracy pumping plant at intake to canal, 6 miles southeast of Byron, and 10 miles 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 at mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--20 years, 1,792 cfs (1,298,000 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 4,935 cfs Aug. 11, 1969; no flow many days in most years.

REMARKS.--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 furnished by Bureau of Reclamation, rounded to Geological Survey standards.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,590	1,150	0	0	0	3,960	4,460	3,400	3,720	4,610	4,490	4,030
2	2,560	1,160	0	0	64	3,930	4,730	3,250	3,850	4,590	4,530	3,420
3	2,580	1,070	0	0	0	3,940	4,740	2,940	3,860	4,650	4,520	2,980
4	2,670	930	0	0	0	3,940	4,720	3,040	3,770	4,630	4,530	2,970
5	2,670	941	0	0	0	3,940	4,730	3,010	3,840	4,700	4,540	2,990
6	2,940	945	0	0	0	3,950	4,560	3,920	3,890	4,640	4,530	2,990
7	2,800	941	0	0	0	3,930	4,000	3,880	4,000	4,590	4,530	2,840
8	2,750	941	0	0	589	3,940	3,820	3,800	4,550	4,560	4,510	2,600
9	2,590	941	0	0	1,980	3,500	3,660	3,260	4,620	4,460	4,480	2,630
10	2,430	1,040	0	0	2,110	3,490	3,260	3,030	4,660	4,480	4,470	2,600
11	2,450	1,040	0	0	2,270	3,480	3,260	3,120	4,650	4,500	4,480	2,620
12	2,440	1,140	0	0	2,200	3,550	3,100	3,160	4,640	4,540	4,490	2,520
13	2,150	713	0	0	2,520	3,770	2,920	3,180	4,590	4,580	4,490	2,560
14	2,220	668	69	0	2,550	4,610	2,880	3,150	4,520	4,520	4,500	2,600
15	2,130	317	35	0	2,540	3,670	2,630	3,210	4,560	4,550	4,490	2,580
16	2,150	0	0	0	2,680	3,480	2,640	3,260	4,620	4,570	4,490	2,760
17	2,060	69	0	0	3,050	3,580	2,380	3,320	4,620	4,580	4,500	2,760
18	2,050	105	0	0	3,090	3,510	2,300	3,350	4,630	4,570	4,500	2,760
19	1,640	0	0	0	3,520	3,530	2,320	3,940	4,650	4,550	4,490	2,760
20	1,450	0	0	0	3,970	3,510	2,330	4,170	4,630	4,520	4,370	2,750
21	1,420	0	0	0	3,970	3,960	2,320	4,190	4,660	4,590	4,360	2,760
22	1,610	0	0	0	3,960	3,510	2,490	4,190	4,650	4,600	4,280	2,740
23	1,600	0	67	0	3,990	3,460	2,570	4,180	4,650	4,590	4,160	2,740
24	1,600	0	0	0	3,930	3,520	2,780	4,340	4,600	4,580	4,090	2,740
25	1,600	0	0	0	3,900	3,620	2,860	4,450	4,640	4,560	4,100	2,670
26	1,500	0	0	0	3,970	3,850	3,340	4,190	4,630	4,570	4,100	2,670
27	1,400	0	0	0	3,940	3,870	3,560	4,060	4,600	4,560	4,110	2,660
28	1,340	0	0	0	3,950	4,460	3,740	3,830	4,620	4,500	4,070	2,670
29	1,330	0	0	0	-----	3,800	3,780	3,670	4,530	4,520	4,110	2,570
30	1,350	0	68	660	-----	4,340	3,290	3,670	4,750	4,480	4,120	2,440
31	1,350	-----	0	72	-----	4,340	-----	3,730	-----	4,510	4,100	-----
TOTAL	63,420	14,111	239	732	64,743	117,940	100,170	111,890	133,200	141,450	135,530	83,380
MEAN	2,046	470	7.71	23.6	2,312	3,805	3,339	3,609	4,440	4,563	4,372	2,779
MAX	2,940	1,160	69	660	3,990	4,610	4,740	4,450	4,750	4,700	4,540	4,030
MIN	1,330	0	0	0	0	3,460	2,300	2,940	3,720	4,460	4,070	2,440
AC-FT	125,800	27,990	474	1,450	128,400	233,900	198,700	221,900	264,200	280,600	268,800	165,400
CAL YR 1970	TOTAL 849,749.00		MEAN 2,328		MAX 4,600		MIN 0		AC-FT 1,685,000			
WTR YR 1971	TOTAL 966,805.00		MEAN 2,649		MAX 4,750		MIN 0		AC-FT 1,918,000			

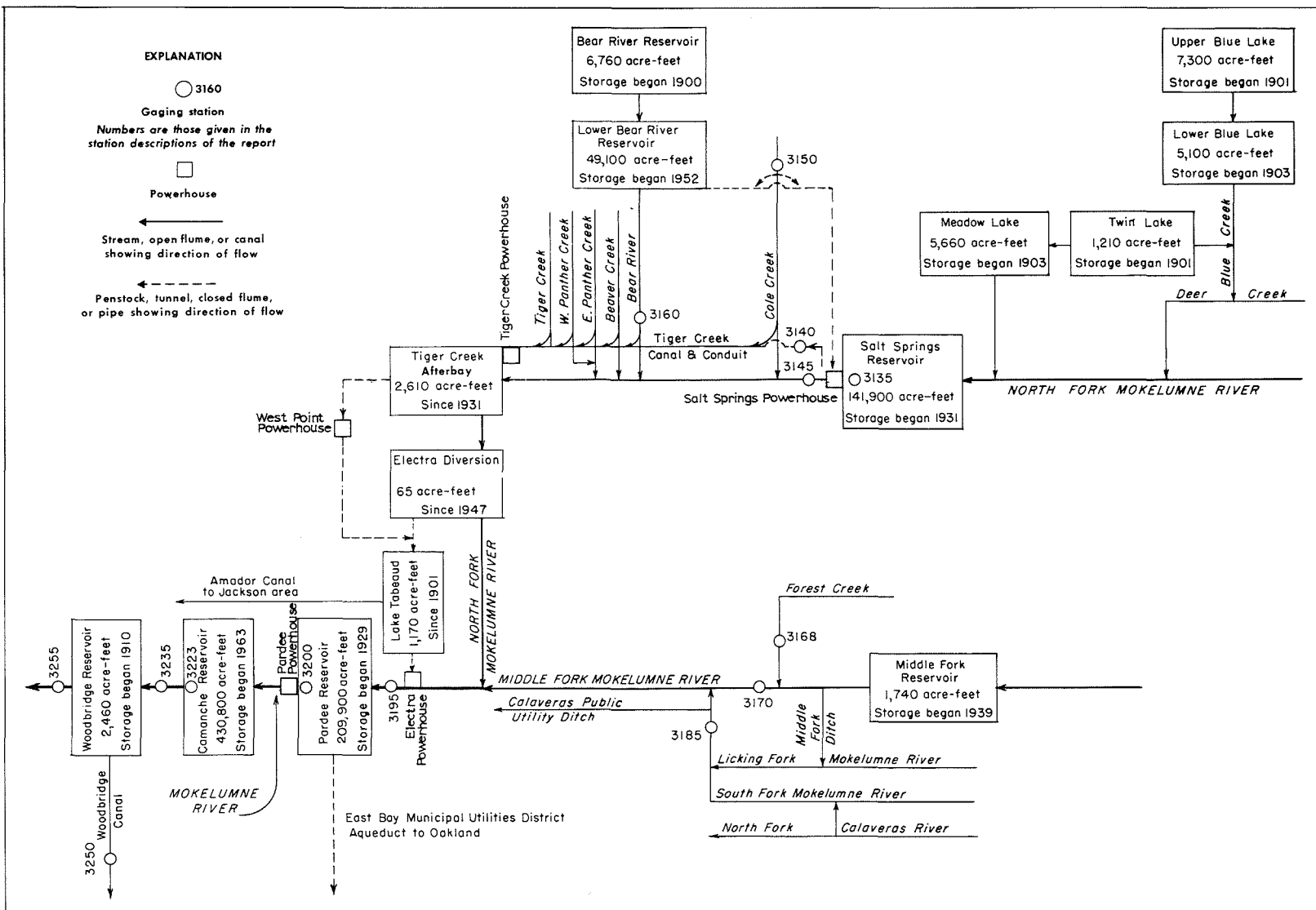


FIGURE 9.--Schematic diagram showing diversions and storage in Mokelumne River basin.

## 11313500 SALT SPRINGS RESERVOIR NEAR WEST POINT, CALIF.

LOCATION.--Lat 38°30'00", long 120°12'55", in SE $\frac{1}{4}$  sec.33, T.8 N., R.16 E., Calaveras County, Eldorado National Forest, at right end of Salt Springs Dam on North Fork Mokelumne River, 2 miles upstream from Cole Creek, and 18 miles northeast of West Point.

DRAINAGE AREA.--169 sq mi.

PERIOD OF RECORD.--March 1931 to current year. Prior to October 1964, records published as usable contents. GAGE.--Nonrecording gage read once daily. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.).

EXTREMES (at 1700).--Current year: Maximum contents observed, 141,900 acre-ft June 27 to July 4 (elevation, 3,958.0 ft); minimum, 7,740 acre-ft Mar. 22 (elevation, 3,741.8 ft).

Period of record: Maximum contents observed 141,900 acre-ft for several days in June or July each year 1948-54, 1956-58, 1960, 1962-63, 1965, 1967, 1969-71 (elevation, 3,958.0 ft); no contents at times in 1932-33, 1945, 1962.

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam, completed in 1931; storage began in March 1931. Capacity, 141,900 acre-ft between elevations 3,667.75 (outlet drain) and 3,958.0 ft (top of radial gates) above mean sea level. Storage of 1,860 acre-ft is available for release to river only. Water is released through powerhouse just below dam and discharged into Tiger Creek powerhouse conduit (see sta 11314000).

Figures given herein represent total contents. See schematic diagram of Mokelumne River basin.

COOPERATION.--Record of contents furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

REVISIONS.--WSP 1930: Drainage area.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

3,667.75	45	3,740.0	7,320
3,700.0	1,250	3,750.0	9,800
3,705.0	1,680	3,760.0	12,700
3,710.0	2,200	3,780.0	19,600
3,715.0	2,810	3,800.0	28,000
3,720.0	3,520	3,850.0	54,900
3,725.0	4,320	3,900.0	90,800
3,730.0	5,230	3,958.0	141,900
3,735.0	6,230		

## CONTENTS, IN ACRE-FEET, AT 1700, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89,281	64,952	49,479	28,247	22,973	14,452	14,886	37,471	108,770	141,858	124,359	94,155
2	88,729	64,057	49,598	27,115	22,808	13,961	15,462	39,405	108,856	141,858	123,360	93,429
3	87,707	63,373	48,888	25,786	22,643	13,382	16,085	40,843	109,114	141,858	122,365	92,786
4	86,846	62,694	49,006	24,744	22,520	12,816	16,828	41,870	109,892	141,858	121,373	91,665
5	86,067	62,558	48,534	23,850	22,275	12,384	17,621	42,579	111,019	141,569	120,564	90,629
6	85,290	62,490	47,949	23,222	22,072	12,080	18,686	43,459	113,200	141,377	119,399	89,597
7	84,517	62,694	47,483	22,973	21,789	11,485	19,554	44,459	116,462	141,473	118,417	88,650
8	84,131	61,346	47,019	22,397	21,468	11,397	20,169	45,871	120,294	141,473	117,438	88,021
9	83,592	60,280	47,135	21,428	21,110	10,990	20,794	46,846	124,268	141,377	116,374	87,315
10	82,367	59,949	47,193	20,480	20,597	10,256	21,468	48,417	126,917	140,993	115,312	86,300
11	81,452	58,961	46,846	19,668	20,014	9,532	22,397	51,520	130,236	140,513	114,430	85,445
12	80,467	58,178	46,043	19,136	19,822	8,939	23,347	54,727	134,060	139,938	113,376	84,671
13	79,938	57,529	45,020	18,537	19,174	8,888	24,658	58,048	138,221	139,269	112,413	83,823
14	79,335	56,756	44,069	17,948	19,174	8,762	25,917	61,614	139,651	138,697	111,628	83,285
15	78,809	55,735	43,404	17,332	19,061	8,513	27,250	65,784	139,651	138,030	110,758	82,902
16	78,135	54,601	42,853	18,612	19,023	8,268	28,797	70,163	139,651	137,365	109,719	82,672
17	77,091	53,543	42,142	18,948	18,836	8,390	30,567	73,048	139,269	136,607	108,683	82,443
18	76,054	52,373	41,220	19,630	18,500	8,244	31,659	75,611	138,983	136,134	107,824	81,680
19	75,242	51,157	40,201	21,348	18,463	8,123	32,428	78,360	139,938	135,473	106,797	81,073
20	74,508	50,735	39,193	22,725	18,315	8,003	33,204	81,452	140,130	134,625	105,859	80,618
21	73,849	49,717	38,354	23,640	18,131	7,860	33,792	84,903	139,938	133,872	104,754	80,240
22	73,266	48,593	37,316	24,189	17,875	7,742	33,988	87,237	139,174	133,123	103,823	79,938
23	72,539	47,579	36,292	24,146	17,476	7,813	33,988	89,202	139,651	132,376	102,812	79,561
24	71,599	46,616	35,936	23,892	17,643	7,931	33,988	92,465	139,556	131,444	101,805	79,185
25	70,521	47,890	35,381	23,640	16,614	8,027	33,988	96,594	139,651	130,607	100,803	78,285
26	69,449	50,015	34,334	23,598	16,120	9,532	34,185	101,555	140,321	129,773	99,723	77,464
27	68,952	50,195	33,302	23,514	15,634	11,485	34,284	103,907	141,858	128,849	98,730	76,498
28	68,243	49,836	31,995	23,389	15,122	12,080	34,432	105,859	141,858	127,927	97,659	75,832
29	67,608	49,836	30,992	23,305	-----	12,537	34,929	106,882	141,858	127,376	96,512	75,095
30	66,833	49,836	30,003	23,139	-----	13,318	35,886	107,738	141,858	126,367	95,534	74,581
31	65,993	-----	29,491	23,097	-----	14,288	-----	108,425	-----	125,361	94,802	-----
MAX	89,281	64,952	49,598	28,247	22,973	14,452	35,886	108,425	141,858	141,858	124,359	94,155
MI4	65,993	46,616	29,491	17,332	15,122	7,742	14,886	37,471	108,770	125,361	94,802	74,581
(a)	3,866.8	3,841.8	3,803.2	3,788.7	3,767.5	3,765.0	3,816.4	3,921.3	3,958.0	3,940.4	3,905.0	3,878.8
(b)	-24,000	-16,200	-20,300	-6,390	-7,980	-934	+21,600	+72,500	+33,400	-16,500	-30,600	-20,200

CAL YR 1970 b -17,900

WTR YR 1971 b -15,400

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet, rounded to Geological Survey standards.

## SAN JOAQUIN RIVER BASIN

## 11314000 TIGER CREEK POWERHOUSE CONDUIT BELOW SALT SPRINGS DAM, CALIF.

LOCATION.--Lat 38°29'47", long 120°13'04", in SW $\frac{1}{4}$  sec.33, T.8 N., R.16 E., Amador County, Eldorado National Forest, on left bank 1,000 ft downstream from Salt Springs Dam and powerhouse.

PERIOD OF RECORD.--June 1931 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,620 ft (from topographic map).  
Auxiliary nonrecording gages in stilling wells upstream and downstream from control.

AVERAGE DISCHARGE.--40 years, 342 cfs (247,800 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 577 cfs June 22, 1945; no flow at times in some years.

REMARKS.--Conduit conveys water of North Fork Mokelumne River from tailrace of Salt Springs powerhouse to forebay of Tiger Creek powerhouse. Since December 1952, records include Bear River diversion to Salt Springs powerhouse. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	536	541	550	549	505	514	486	496	550	553	533	549
2	536	545	487	549	503	514	486	496	550	555	539	549
3	536	550	526	550	503	515	487	496	550	552	538	539
4	533	550	530	552	505	515	477	495	550	549	535	527
5	533	550	514	547	505	490	474	495	550	552	529	517
6	532	550	541	549	505	514	472	496	542	552	523	514
7	532	550	549	549	505	515	466	493	535	552	515	514
8	533	550	550	549	492	514	472	480	532	553	509	508
9	535	549	550	547	503	514	476	482	533	545	506	498
10	533	550	547	549	502	514	476	493	538	536	505	489
11	536	550	550	549	508	514	476	496	544	533	505	363
12	538	550	549	550	511	517	480	496	549	535	499	371
13	538	550	549	547	515	515	482	498	550	538	483	511
14	538	550	549	549	509	514	486	498	553	538	183	511
15	541	550	550	469	505	517	487	496	553	538	541	503
16	539	550	552	351	505	512	489	11	555	538	552	499
17	544	552	538	352	503	514	490	0	553	536	552	492
18	545	552	549	487	466	515	487	0	555	538	552	483
19	545	550	550	424	505	514	485	0	553	538	552	474
20	538	549	549	315	502	514	486	0	553	538	550	471
21	542	549	549	368	505	512	487	0	553	538	550	471
22	545	550	549	456	505	523	495	0	553	538	550	465
23	545	552	550	508	505	521	498	0	555	536	550	462
24	545	550	550	505	505	520	498	0	555	536	550	462
25	545	549	550	503	505	490	496	0	553	538	550	460
26	542	553	547	503	514	364	496	0	553	536	550	460
27	538	550	549	503	514	432	495	0	553	535	550	465
28	542	552	550	503	514	479	495	199	553	532	552	477
29	544	552	550	503	-----	487	495	532	553	521	550	487
30	544	552	550	503	-----	487	495	550	553	518	550	218
31	544	-----	549	505	-----	486	-----	550	-----	348	550	-----
TOTAL	16,717	16,497	16,872	15,443	14,124	15,566	14,570	9,248	16,482	16,545	16,253	14,309
MEAN	539	550	544	498	504	502	486	298	549	534	524	477
MAX	545	553	552	552	515	523	498	550	555	555	552	549
MIN	532	541	487	315	466	364	466	0	532	348	183	218
AC-FT	33,160	32,720	33,470	30,630	28,010	30,880	28,900	18,340	32,690	32,820	32,240	28,380
CAL YR 1970	TOTAL	186,742.70	MEAN	512	MAX	553	MIN	0	AC-FT	370,400		
WTR YR 1971	TOTAL	182,626.00	MEAN	500	MAX	555	MIN	0	AC-FT	362,200		

## 11314500 NORTH FORK MOKELUMNE RIVER BELOW SALT SPRINGS DAM CALIF.

LOCATION.--Lat 38°29'37", long 120°13'12", in NE¼NW¼ sec.4, T.7 N., R.16 E., Calaveras County, Stanislaus National Forest, on left bank 0.3 mile downstream from Salt Springs Dam and 1.3 miles upstream from Cole Creek.

DRAINAGE AREA.--170 sq mi.

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.

GAGE.--Water-stage recorder. Altitude of gage is 3,590 ft (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.

AVERAGE DISCHARGE (combined flow of North Fork Mokelumne River and Tiger Creek powerhouse conduit minus Bear River-Cole Creek diversion).--45 years, 471 cfs (341,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,780 cfs June 26 (gage height, 12.16 ft); minimum daily, 5.3 cfs Mar. 18.

Period of record: Maximum discharge, 16,000 cfs Nov. 21, 1950 (gage height, 17.20 ft), from rating curve extended above 3,900 cfs on basis of computations of flow over dam and discharge through powerhouse; minimum daily, 0.3 cfs Mar. 31, Apr. 1, 1931.

REMARKS.--Flow regulated by Salt Springs Reservoir 0.3 mile upstream since 1931 (see sta 11313500). Diversion from Bear River and Cole Creek to Salt Springs powerhouse averaged 184 cfs during current year. Diversion above station through Tiger Creek powerhouse conduit (see sta 11314000). See schematic diagram of Mokelumne River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS.--WSP 1930: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	8.4	114	208	124	195	6.6	113	329	688	321	100
2	10	6.3	12	203	122	193	6.6	97	331	643	311	100
3	10	6.3	94	199	102	191	6.3	91	326	493	303	96
4	9.8	7.1	79	208	93	193	6.0	92	334	398	303	91
5	9.8	8.1	9.1	193	94	85	6.0	91	336	396	308	100
6	9.8	41	72	70	93	48	6.3	80	344	296	321	103
7	9.8	121	151	5.5	113	191	6.6	71	360	193	326	134
8	10	260	151	5.5	155	216	6.3	70	352	199	331	168
9	10	175	30	5.8	177	227	6.3	63	374	265	334	258
10	10	189	7.8	6.0	148	224	6.3	69	376	313	331	270
11	10	284	49	6.0	135	229	6.3	28	376	316	334	116
12	10	229	135	6.0	124	127	6.3	11	376	313	342	100
13	10	203	174	5.8	132	6.3	6.6	11	567	306	344	122
14	10	272	183	5.5	102	5.5	6.6	11	1,980	298	331	134
15	10	284	181	5.5	33	5.5	6.6	12	2,060	298	293	141
16	10	279	177	6.0	5.8	5.8	6.6	393	2,100	303	284	142
17	9.8	277	205	8.8	5.5	5.5	6.8	454	2,040	303	286	134
18	9.8	284	298	9.5	32	5.3	6.8	410	1,610	306	298	114
19	9.8	177	286	9.8	46	5.8	6.8	413	1,360	308	296	122
20	9.8	6.6	231	9.1	78	6.3	6.8	416	1,900	308	298	185
21	9.8	6.3	199	8.4	108	5.5	47	393	1,890	308	298	208
22	10	6.0	205	7.8	155	5.5	191	363	1,670	306	298	214
23	10	57	201	7.1	172	6.0	185	365	1,380	301	298	201
24	10	99	203	6.8	170	6.6	187	371	1,310	298	301	210
25	9.8	122	205	43	172	7.1	125	368	1,060	298	301	174
26	9.8	7.4	201	100	172	12	92	451	2,050	303	301	132
27	9.8	106	201	117	193	9.5	122	655	2,370	306	233	179
28	10	193	191	119	193	8.1	170	430	878	313	205	191
29	9.8	146	191	122	-----	7.4	166	347	734	326	205	179
30	9.8	75	197	124	-----	7.1	135	329	688	313	205	301
31	9.8	-----	203	124	-----	6.8	-----	329	-----	326	132	-----
TOTAL	307.0	3,935.5	4,835.9	1,954.9	3,249.3	2,246.6	1,549.5	7,397	31,861	10,341	9,072	4,719
MEAN	9.90	131	156	63.1	116	72.5	51.7	239	1,062	334	293	157
MAX	10	284	298	208	193	229	191	655	2,370	688	344	301
MIN	9.8	6.0	7.8	5.5	5.5	5.3	6.0	11	326	193	132	91
AC-FT	609	7,810	9,590	3,880	6,440	4,460	3,070	14,670	63,200	20,510	17,990	9,360
CAL YR 1970	TOTAL	85,092.8	MEAN	233	MAX	2,400	MIN	6.0	AC-FT	168,800		
WTR YR 1971	TOTAL	81,468.7	MEAN	223	MAX	2,370	MIN	5.3	AC-FT	161,600		

LOCATION.--Lat 38°31'26", long 120°12'28", in SE¼ sec.21, T.8 N., R.16 E., Amador County, Eldorado National Forest, on right bank 1.8 miles north of Salt Springs Dam, 3.4 miles upstream from mouth, and 6.3 miles southwest of Mokelumne Peak.

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."

AVERAGE DISCHARGE.--43 years, 64.1 cfs (46,440 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,080 cfs June 26 (gage height, 6.57 ft), from rating curve extended as explained below; minimum daily, 0.04 cfs Oct. 5.  
Period of record: Maximum discharge, 6,140 cfs Dec. 23, 1964 (gage height, 10.21 ft), from rating curve extended above 900 cfs on basis of slope-area measurement at gage height 9.69 ft; no flow for many days in some years.

REMARKS.--Occasional pumping for domestic use in summer home tract began in September 1961. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

CAL YR 1970	TOTAL	28,070.45	MEAN	76.9	MAX	1,680	MIN	.04	AC-FT	55,680
WTR YR 1971	TOTAL	26,288.81	MEAN	72.0	MAX	684	MIN	.04	AC-FT	52,140

PEAK DISCHARGE (BASE, 500 CFS)							
DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1700	5.13	1,050	5-25	1900	4.30	640
1-17	1200	5.35	1,170	6- 7	2000	4.28	632
5-14	1830	4.29	636	6-26	1730	6.57	2,080

## 11316000 BEAR RIVER NEAR SALT SPRINGS DAM, CALIF.

LOCATION.--Lat 38°29'37", long 120°17'18", in NE¼NW¼ sec.2, T.7 N., R.15 E., Amador County, Eldorado National Forest, on right bank 200 ft upstream from diversion to Tiger Creek powerhouse conduit and highway bridge, 1.5 miles upstream from mouth, and 4 miles west of Salt Springs Dam.

DRAINAGE AREA.--48.0 sq mi.

PERIOD OF RECORD.--October 1951 to current year.

GAGE.--Water-stage recorder and broad-crested weir. Altitude of gage is 3,710 ft (from topographic map).

AVERAGE DISCHARGE.--20 years, 56.6 cfs (41,010 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,100 cfs June 26 (gage height, 3.80 ft); minimum daily, 1.9 cfs Nov. 1-3.

Period of record: Maximum discharge, 11,000 cfs Dec. 24, 1964 (gage height, 10.11 ft in gage well, 11.8 ft, from flood profile), from rating curve extended above 560 cfs on basis of slope-area measurements of maximum flow; minimum daily, 1.0 cfs Aug. 23-28, 1961.

Flood in November 1950 reached a stage of 11.2 ft, from floodmarks (discharge, 10,000 cfs).

REMARKS.--Flow regulated by Bear River Reservoir since 1900 (capacity, 6,760 acre-ft) and Lower Bear River Reservoir 4 miles upstream since December 1952 (capacity, 49,100 acre-ft). Water diverted for power from Lower Bear River Reservoir through tunnel to Salt Springs powerhouse on North Fork Mokelumne River since December 1952. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	1.9	14	10	29	20	86	48	20	14	5.8	4.5
2	4.3	1.9	16	9.8	29	27	82	48	19	11	5.6	4.5
3	4.3	1.9	15	13	27	18	79	54	18	11	5.6	4.5
4	4.5	3.3	16	13	25	16	82	54	16	10	5.6	4.3
5	4.5	16	17	13	24	16	86	48	16	10	5.8	4.3
6	4.3	7.9	16	12	22	15	84	46	16	9.8	5.6	4.3
7	4.3	7.9	16	12	22	15	75	60	15	9.8	5.6	4.5
8	4.3	4.6	24	10	22	15	66	58	15	9.4	5.6	4.5
9	4.5	4.9	22	11	22	15	66	56	15	9.4	5.4	4.5
10	4.5	4.9	16	12	27	15	71	58	34	9.4	5.4	4.5
11	4.3	7.0	15	12	36	16	66	62	430	9.0	5.9	4.5
12	4.3	13	14	12	44	24	71	60	540	9.0	5.6	4.5
13	4.3	5.6	13	13	48	21	68	56	535	9.0	5.6	4.3
14	4.3	4.2	12	12	48	19	71	54	483	7.9	5.6	4.3
15	4.3	3.6	12	11	50	20	73	50	470	7.9	5.4	4.3
16	4.2	3.1	13	15	46	21	73	46	470	7.9	7.9	4.3
17	4.3	3.0	14	41	38	22	71	41	425	9.4	9.4	4.3
18	4.3	2.8	12	41	34	22	58	36	359	9.0	9.0	4.3
19	4.3	2.7	11	41	34	24	54	34	343	7.0	7.9	4.5
20	6.3	2.7	11	41	29	27	52	32	317	7.0	7.9	4.5
21	4.9	2.6	11	32	25	30	46	30	287	7.0	6.3	4.3
22	5.4	2.6	10	29	24	34	42	27	234	6.6	7.0	4.2
23	7.0	2.5	10	25	22	48	41	23	196	6.6	6.6	4.2
24	7.0	2.9	10	22	21	50	38	24	171	6.6	4.8	4.2
25	4.9	66	9.8	21	21	91	34	22	145	6.6	4.8	4.3
26	4.6	32	9.8	22	20	145	34	24	431	6.3	4.6	4.3
27	4.2	12	10	24	20	150	32	27	368	6.3	4.6	4.5
28	2.1	15	9.8	24	22	117	32	25	127	6.3	4.6	4.3
29	2.0	25	11	25	-----	107	36	22	32	6.3	4.6	4.6
30	2.0	15	11	27	-----	107	42	22	18	5.9	4.6	7.0
31	2.0	-----	11	29	-----	95	-----	22	-----	5.8	4.6	-----
TOTAL	134.8	278.5	412.4	634.8	831	1,362	1,811	1,269	6,565	257.2	183.3	134.1
MEAN	4.35	9.28	13.3	20.5	29.7	43.9	60.4	40.9	219	8.30	5.91	4.47
MAX	7.0	66	24	41	50	150	86	62	540	14	9.4	7.0
MIN	2.0	1.9	9.8	9.8	20	15	32	22	15	5.8	4.6	4.2
AC-FT	267	552	818	1,260	1,650	2,700	3,590	2,520	13,020	510	364	266
CAL YR 1970	TOTAL 14,721.8		MEAN 40.3	MAX 643	MIN 1.9	AC-FT 29,200						
WTR YR 1971	TOTAL 13,873.1		MEAN 38.0	MAX 540	MIN 1.9	AC-FT 27,520						

## 11316800 FOREST CREEK NEAR WILSEYVILLE, CALIF.

LOCATION.--Lat 38°24'12", long 120°26'45", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.4, T.6 N., R.14 E., Calaveras County, on left bank 1.0 mile downstream from Lion Creek, 1.8 miles upstream from mouth, and 4 miles northeast of Wilseyville.

DRAINAGE AREA.--20.8 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 2,950 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 24.7 cfs (17,900 acre-ft per year); median of yearly mean discharges, 19 cfs (13,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 497 cfs Mar. 26 (gage height, 5.43 ft); minimum daily, 2.0 cfs Sept. 12.

Period of record: Maximum discharge, 1,770 cfs Dec. 24, 1964 (gage height, 7.68 ft), from rating curve extended above 500 cfs on basis of slope-area measurement at gage height 7.41 ft; minimum, 0.6 cfs Aug. 24, 25, 1961.

REMARKS.--Records good. No regulation. Minor diversions above station for irrigation and domestic use. See schematic diagram of Mokelumne River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	3.6	48	24	28	22	75	33	23	11	5.1	3.6
2	2.9	3.5	66	23	28	22	71	35	22	11	4.6	3.3
3	3.1	3.5	34	20	28	21	67	39	21	10	4.4	3.2
4	3.1	6.3	60	18	27	20	66	41	21	9.2	4.5	3.4
5	3.2	17	44	18	25	20	64	38	20	8.2	4.9	3.4
6	3.1	10	31	17	25	20	63	37	19	7.9	4.7	3.4
7	3.2	9.2	26	16	24	19	61	41	19	7.9	4.6	3.4
8	3.0	5.0	27	16	23	19	56	42	18	8.0	4.5	3.0
9	3.1	4.7	55	16	22	19	54	41	17	7.5	4.7	2.6
10	3.1	5.1	35	16	23	20	54	42	16	7.2	4.6	2.5
11	3.1	6.3	28	20	27	20	53	42	15	7.0	4.1	2.6
12	2.7	11	23	21	29	31	52	42	15	7.6	4.0	2.0
13	2.7	5.4	21	20	32	36	52	40	14	7.7	4.1	2.3
14	2.9	4.4	19	22	34	31	51	39	14	7.3	4.2	2.4
15	2.9	4.0	18	23	38	30	50	37	14	7.1	4.2	2.3
16	2.7	3.7	22	27	36	30	50	35	13	6.4	3.8	2.3
17	2.7	3.6	21	52	34	30	52	33	13	6.5	3.8	2.4
18	2.8	3.5	22	49	32	30	47	31	13	6.8	3.9	2.3
19	3.1	3.4	21	46	34	30	44	30	13	6.7	4.6	2.3
20	4.3	3.3	19	44	29	31	43	29	12	6.1	4.4	2.4
21	4.7	3.3	19	40	28	32	41	29	12	5.9	4.4	2.3
22	4.2	3.3	18	36	27	33	39	28	11	6.3	4.1	2.6
23	4.9	3.3	17	33	25	40	37	26	11	5.8	4.5	2.5
24	5.6	3.3	16	30	24	42	36	25	11	5.5	4.4	2.5
25	4.1	30	15	28	23	64	35	24	11	5.2	4.4	2.6
26	3.8	33	18	27	22	271	34	24	17	5.5	3.9	2.8
27	3.9	16	20	27	22	166	33	26	18	5.1	3.7	2.9
28	3.6	20	21	27	22	117	33	26	14	5.1	3.1	2.9
29	3.6	44	28	28	-----	101	32	24	13	5.0	3.1	3.1
30	3.8	27	33	28	-----	94	32	25	12	5.2	3.2	5.0
31	3.9	-----	26	28	-----	83	-----	24	-----	5.1	3.5	-----
TOTAL	106.3	299.7	871	840	771	1,544	1,477	1,028	462	216.8	130.0	84.3
MEAN	3.43	9.99	28.1	27.1	27.5	49.8	49.2	33.2	15.4	6.99	4.19	2.81
MAX	5.6	44	66	52	38	271	75	42	23	11	5.1	5.0
MIN	2.5	3.3	15	16	22	19	32	24	11	5.0	3.1	2.0
AC-FT	211	594	1,730	1,670	1,530	3,060	2,930	2,040	916	430	258	167

CAL YR 1970 TOTAL 10,969.6 MEAN 30.1 MAX 642 MIN 2.1 AC-FT 21,760  
WTR YR 1971 TOTAL 7,830.1 MEAN 21.5 MAX 271 MIN 2.0 AC-FT 15,530

PEAK DISCHARGE (BASE, 120 CFS).--Mar. 26 (1130) 497 cfs (5.43 ft).



## 11317000 MIDDLE FORK MOKELUMNE RIVER AT WEST POINT, CALIF.

LOCATION.--Lat 38°23'23", long 120°31'32", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.10, T.6 N., R.13 E., Calaveras County, on right bank 200 ft downstream from highway bridge, 0.6 mile south of West Point, and 4.5 miles upstream from South Fork Mokelumne River.

DRAINAGE AREA.--68.4 sq mi.

PERIOD OF RECORD.--October 1911 to current year. Monthly discharge only for October 1911, published in WSP 1315-A.

GAGE.--Water-stage recorder. Altitude of gage is 2,450 ft (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.

AVERAGE DISCHARGE.--60 years, 61.0 cfs (44,190 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,090 cfs Mar. 26 (gage height, 5.10 ft); minimum daily, 5.6 cfs Aug. 14.

Period of record: Maximum discharge, 4,320 cfs Dec. 23, 1955 (gage height, 8.98 ft); no flow Aug. 23 to Sept. 14, 1931, Sept. 9, 1934.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Flow slightly regulated by Middle Fork Reservoir (capacity, 1,740 acre-ft), 6 miles above station, since January 1940. Several small diversions above station. At times water diverted 4 miles above station to South Fork Mokelumne River via Middle Fork ditch (capacity, 15 cfs) and Licking Fork Mokelumne River. See schematic diagram of Mokelumne River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	9.7	150	65	90	64	219	101	64	31	14	11
2	8.4	9.9	164	66	89	61	199	115	64	31	8.4	11
3	9.0	9.6	72	53	86	63	191	120	64	29	14	11
4	8.9	15	186	51	82	63	184	114	62	26	12	11
5	9.1	31	94	50	78	61	182	108	58	24	12	12
6	9.1	24	73	48	77	59	178	105	55	22	11	12
7	9.6	23	64	46	75	59	171	114	52	20	11	12
8	9.5	17	90	46	73	59	157	123	49	17	11	12
9	9.9	17	140	45	71	58	152	114	47	14	12	12
10	9.7	17	84	45	72	59	153	119	47	14	10	12
11	9.5	19	65	50	81	61	147	120	46	15	8.8	13
12	8.7	27	58	63	93	94	145	119	45	16	8.4	11
13	8.8	19	52	59	103	141	155	117	44	17	7.1	11
14	9.1	18	47	61	109	101	151	113	43	19	5.6	11
15	9.0	17	45	62	116	98	142	108	42	19	8.8	11
16	9.0	17	76	70	116	94	143	105	41	17	14	12
17	8.7	16	69	144	107	94	148	97	40	21	13	12
18	9.2	16	62	164	98	91	133	92	39	22	12	12
19	9.8	16	57	157	106	91	124	86	38	23	12	12
20	12	16	56	147	92	94	124	83	35	23	12	12
21	12	16	62	132	84	96	117	80	33	24	11	12
22	11	16	57	116	81	99	110	77	33	25	9.2	12
23	12	15	52	103	77	111	107	74	32	25	9.6	12
24	14	15	49	94	73	121	107	68	32	22	8.8	12
25	12	53	48	86	71	159	102	65	35	21	9.2	12
26	12	53	50	83	67	722	99	67	42	24	11	14
27	11	31	66	83	66	554	93	69	60	23	12	16
28	10	50	66	85	68	375	89	71	42	24	11	20
29	10	91	94	85	-----	299	89	73	35	22	11	21
30	10	66	86	86	-----	276	92	68	32	22	10	25
31	10	-----	71	89	-----	249	-----	66	-----	22	10	-----
TOTAL	308.9	760.2	2,405	2,534	2,401	4,626	4,203	2,951	1,351	674	329.9	389
MEAN	9.96	25.3	77.6	81.7	85.8	149	140	95.2	45.0	21.7	10.6	13.0
MAX	14	91	186	164	116	722	219	123	64	31	14	25
MIN	7.9	9.6	45	45	66	58	89	65	32	14	5.6	11
AC-FT	613	1,510	4,770	5,030	4,760	9,180	8,340	5,850	2,680	1,340	654	772

CAL YR 1970 TOTAL 32,611.6 MEAN 89.3 MAX 1,360 MIN 6.8 AC-FT 64,690  
WTR YR 1971 TOTAL 22,933.0 MEAN 62.8 MAX 722 MIN 5.6 AC-FT 45,490

PEAK DISCHARGE (BASE, 400 CFS).--Mar. 26 (1530) 1,090 cfs (5.10 ft).

NOTE.--No gage-height record May 10 to July 13.

## SAN JOAQUIN RIVER BASIN

11318500 SOUTH FORK MOKELUMNE RIVER NEAR WEST POINT, CALIF.

LOCATION.--Lat 38°22'06", long 120°32'40", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.16, T.6 N., R.13 E., Calaveras County, on right bank 500 ft upstream from highway bridge, 2.4 miles southwest of West Point, and 2.5 miles upstream from mouth.

DRAINAGE AREA.--75.1 sq mi.

PERIOD OF RECORD.--October 1933 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,950 ft (from topographic map). October 1933 to Sept. 19, 1957, at site 1,100 ft downstream at different datum.

AVERAGE DISCHARGE.--38 years, 84.6 cfs (61,290 acre-ft per year); median of yearly mean discharges, 72 cfs (52,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,250 cfs Mar. 26 (gage height, 6.38 ft); minimum daily, 8.0 cfs Oct. 1.

Period of record: Maximum discharge, 6,920 cfs Dec. 23, 1955 (gage height, 14.8 ft, from floodmarks, site and datum then in use), from rating curve extended above 2,700 cfs on basis of slope-area measurement of maximum flow; no flow Aug. 6, 7, Aug. 12 to Sept. 26, 1934.

REMARKS.--Records good. Several small diversions above station for domestic use and for irrigation of about 100 acres. Diversions into South Fork Mokelumne River basin above station at times from North Fork Calaveras River and from Middle Fork Mokelumne River for use below station. See schematic diagram of Mokelumne River basin.

REVISIONS (WATER YEARS).--WSP 1315-A: 1934(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	14	261	79	102	70	226	100	57	32	15	14
2	8.8	14	352	80	101	66	210	108	55	31	16	13
3	9.2	14	140	64	97	67	198	118	54	30	16	13
4	9.3	18	313	61	92	67	194	122	53	29	16	12
5	9.6	54	170	59	88	66	192	112	53	29	14	10
6	9.9	50	108	56	86	63	190	111	51	26	14	9.5
7	10	49	87	54	83	63	182	116	49	24	14	11
8	9.9	29	116	53	80	62	164	123	46	25	14	11
9	10	25	196	52	78	62	160	114	45	24	13	11
10	10	27	114	52	78	63	160	116	45	23	14	11
11	10	25	89	61	88	63	154	114	44	23	14	11
12	10	32	76	98	102	117	152	114	43	22	13	10
13	10	26	67	89	112	135	152	108	41	21	13	10
14	9.8	22	61	105	118	102	148	105	40	21	12	8.7
15	11	21	57	100	124	97	148	101	39	20	13	8.3
16	11	20	124	104	126	96	150	96	38	19	13	8.3
17	10	19	123	200	117	95	156	89	37	20	13	8.3
18	11	18	95	220	105	95	140	84	37	21	12	9.1
19	11	18	83	216	110	96	137	80	36	20	12	9.5
20	14	18	80	198	96	98	131	78	32	20	12	9.1
21	20	18	114	174	89	101	125	76	32	19	12	9.1
22	17	17	92	147	86	104	118	74	32	18	14	10
23	18	17	75	130	82	120	112	69	31	18	13	10
24	21	17	65	117	78	130	108	66	34	18	14	9.1
25	17	88	61	106	76	200	104	62	34	18	13	10
26	16	131	61	100	72	845	103	63	41	17	13	11
27	15	55	92	98	71	570	101	63	51	17	12	11
28	15	120	88	100	74	380	99	66	38	16	12	12
29	15	212	112	100	-----	316	98	62	36	16	13	14
30	15	127	105	100	-----	292	98	60	34	15	13	23
31	15	-----	88	102	-----	258	-----	58	-----	15	14	-----
TOTAL	386.5	1,315	3,665	3,275	2,611	4,959	4,410	2,828	1,258	667	416	327.0
MEAN	12.5	43.8	118	106	93.3	160	147	91.2	41.9	21.5	13.4	10.9
MAX	21	212	352	220	126	845	226	123	57	32	16	23
MIN	8.0	14	57	52	71	62	98	58	31	15	12	8.3
AC-FT	767	2,610	7,270	6,500	5,180	9,840	8,750	5,610	2,500	1,320	825	649

CAL YR 1970 TOTAL 37,744.5 MEAN 103 MAX 1,840 MIN 8.0 AC-FT 74,870  
WTR YR 1971 TOTAL 26,117.5 MEAN 71.6 MAX 845 MIN 8.0 AC-FT 51,800

PEAK DISCHARGE (BASE, 500 CFS).--Dec. 2 (0600) 557 cfs (5.08 ft); Mar. 26 (1400) 1,250 cfs (6.38 ft).

## 11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CALIF.

LOCATION.--Lat 38°18'46", long 120°43'09", in SW<sup>1</sup>SW<sup>4</sup> sec.1, T.5 N., R.11 E., Calaveras County, on downstream side of bridge 1.2 miles northwest of Mokelumne Hill and 8 miles downstream from confluence of North and South Forks of Mokelumne River.

DRAINAGE AREA.--544 sq mi.

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.

GAGE.--Water-stage recorder. Datum of gage is 589.88 ft above mean sea level (levels by California Division of Highways). Jan. 1 to June 30, 1901, and May 11, 1903, to Dec. 31, 1904, nonrecording gage at site 3 miles upstream at different datum. Nov. 10, 1927, to Aug. 26, 1952, water-stage recorder at site 40 ft upstream at present datum.

AVERAGE DISCHARGE.--45 years (1903-4, 1927-71), 978 cfs (708,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,600 cfs June 27 (gage height, 11.49 ft); minimum daily, 495 cfs Oct. 16.  
Period of record: Maximum discharge, 33,700 cfs Dec. 3, 1950 (gage height, 18.5 ft); minimum observed, 5 cfs Aug. 13-15, 17, 18, 1904.

REMARKS.--Records excellent. Flow regulated by Salt Springs Reservoir beginning in 1931 (see sta 11313500), several smaller reservoirs, and four powerplants. Diversion above station for irrigation and domestic use. See schematic diagram of Mokelumne River basin. Records of water temperatures for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1445: 1903-4, 1928 (M), 1936 (M), 1938 (M), 1940 (M), 1943 (M), 1945 (M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	516	603	1,410	1,140	1,150	998	1,550	1,050	1,240	1,400	796	680
2	592	600	1,830	1,180	1,150	998	1,450	1,080	1,230	1,320	873	688
3	572	500	1,270	1,030	1,150	1,010	1,430	1,060	1,270	1,290	913	653
4	548	637	1,720	1,090	1,140	885	1,360	1,130	1,210	962	921	638
5	578	578	1,380	1,040	1,090	822	1,420	1,090	1,220	1,030	888	712
6	516	968	1,190	885	1,080	906	1,290	1,060	1,220	983	755	652
7	572	942	1,030	808	1,050	1,070	1,280	1,170	1,210	864	985	643
8	623	740	1,090	872	1,090	976	1,230	1,090	1,190	808	869	713
9	501	848	1,410	768	1,050	1,030	1,280	1,040	1,180	804	895	667
10	591	844	1,160	815	998	1,010	1,200	1,150	1,290	918	872	773
11	581	923	1,070	854	1,180	1,010	1,210	1,270	1,480	911	895	711
12	513	932	1,040	895	1,170	1,130	1,210	1,250	1,820	905	904	549
13	566	1,000	1,030	979	1,100	1,170	1,170	1,050	2,000	907	864	546
14	555	955	995	990	1,210	983	1,250	1,420	2,920	913	601	689
15	616	861	1,020	914	1,220	920	1,130	1,210	3,420	887	805	678
16	495	960	1,150	972	1,210	913	1,240	1,040	3,530	985	848	693
17	602	911	1,290	980	1,130	906	1,190	955	3,340	879	872	664
18	528	884	1,200	1,200	1,080	899	1,200	927	3,140	938	922	704
19	546	764	1,140	1,260	1,090	878	1,170	913	2,410	925	860	519
20	579	723	1,120	1,250	1,010	920	1,150	899	2,870	914	910	671
21	607	721	1,230	1,140	1,010	913	1,130	906	2,920	848	878	712
22	680	676	1,160	1,160	1,020	1,010	1,070	913	2,910	949	862	704
23	596	513	1,120	1,080	969	1,080	1,120	808	2,230	871	939	672
24	551	689	1,020	1,130	990	1,010	1,150	815	2,250	892	825	699
25	605	1,100	1,080	1,140	1,010	1,170	1,080	822	2,020	925	909	658
26	570	1,380	938	1,070	1,010	3,410	1,090	913	1,830	885	880	644
27	556	1,020	1,160	1,030	998	2,840	1,080	1,190	6,380	832	906	695
28	633	1,030	1,110	1,130	1,060	2,150	1,050	1,040	1,690	898	838	702
29	590	1,410	1,180	1,140	-----	1,880	1,030	1,110	1,600	906	735	731
30	573	1,140	1,230	1,130	-----	1,810	1,100	1,320	1,330	919	845	683
31	593	-----	1,160	1,130	-----	1,720	-----	1,290	-----	872	736	-----
TOTAL	17,744	25,852	36,933	32,202	30,415	38,477	36,310	32,981	64,350	29,340	26,601	20,143
MEAN	572	862	1,191	1,039	1,086	1,240	1,210	1,064	2,145	946	858	671
MAX	680	1,410	1,830	1,260	1,220	3,410	1,550	1,420	6,380	1,400	985	773
MIN	495	500	938	768	969	822	1,030	808	1,180	804	601	519
AC-FT	35,200	51,280	73,260	63,870	60,330	76,220	72,020	65,420	127,600	58,200	52,760	39,950
CAL YR 1970	TOTAL 460,857		MEAN 1,263	MAX 9,050	MIN 262	AC-FT 914,100						
WTR YR 1971	TOTAL 391,298		MEAN 1,072	MAX 6,380	MIN 495	AC-FT 776,100						

## SAN JOAQUIN RIVER BASIN

## 11320000 PARDEE RESERVOIR NEAR VALLEY SPRINGS, CALIF.

LOCATION.--Lat 38°15'25", long 120°50'59", in N $\frac{1}{4}$ SW $\frac{1}{4}$  sec.26, T.5 N., R.10 E., Amador County, at Pardee Dam on the Mokelumne River, 4.5 miles north of Valley Springs.

DRAINAGE AREA.--578 sq mi.

PERIOD OF RECORD.--March 1929 to September 1930 (lake elevation only), October 1930 to September 1933, published in reports of the Geological Survey. October 1933 to September 1961 in files of East Bay Municipal Utility District. October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by East Bay Municipal Utility District). EXTREMES.--Current year: Maximum contents, 212,200 acre-ft June 21 (elevation, 568.64 ft); minimum, 170,800 acre-ft Mar. 24 (elevation, 549.03 ft).

Period of record: Maximum contents, 219,300 acre-ft Dec. 23, 1955 (elevation, 571.72 ft); minimum, 49,000 acre-ft Aug. 31, 1931 (elevation, 457.6 ft).

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) above mean sea level. 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. Records represent total contents at 2400 hours. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records furnished by East Bay Municipal Utility District.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

523	125,100
530	136,500
540	153,800
550	172,700
560	193,200
570	215,300
580	239,100

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	201,900	194,100	194,400	183,900	177,500	176,400	186,600	190,700	188,100	211,000	207,900	209,800
2	201,400	193,600	195,900	183,900	177,600	176,200	187,200	190,700	188,200	210,800	207,900	209,700
3	201,300	192,800	196,200	183,600	177,600	176,100	187,800	190,700	188,300	210,700	207,900	209,500
4	201,800	192,700	195,100	183,500	177,600	175,800	188,200	190,700	188,400	210,400	208,000	209,300
5	201,300	192,300	186,900	183,200	177,500	175,300	188,700	190,700	188,600	210,300	207,900	209,300
6	200,600	192,600	184,500	182,700	177,400	174,900	189,100	190,700	188,700	210,100	207,700	209,100
7	200,200	193,200	183,800	182,000	177,300	174,900	189,400	190,900	188,700	209,800	207,900	208,400
8	199,700	194,100	183,800	181,400	177,200	174,600	189,600	191,000	188,800	209,300	207,800	207,800
9	199,100	194,000	184,300	180,700	177,100	174,400	189,900	190,900	188,800	208,800	207,900	207,700
10	199,000	193,500	184,400	180,000	176,900	174,100	190,000	191,000	189,000	208,300	207,900	207,700
11	199,500	193,100	184,300	179,400	177,000	173,900	190,100	191,300	189,600	208,000	207,800	207,400
12	198,900	192,700	184,000	179,000	177,100	174,200	190,300	191,600	190,900	207,700	207,900	207,700
13	198,300	192,400	183,800	178,800	177,100	174,300	190,400	191,600	192,500	207,700	207,800	207,100
14	197,800	192,100	183,500	178,500	177,300	174,100	190,600	192,100	195,900	207,800	207,300	206,700
15	197,400	193,100	183,300	178,000	177,500	173,700	190,600	192,300	200,300	207,800	207,200	206,300
16	196,800	193,300	183,500	177,600	177,700	173,300	190,900	192,200	205,000	208,000	207,000	205,900
17	196,800	193,600	184,000	177,200	177,700	172,900	191,000	191,800	209,400	208,000	206,900	205,700
18	197,300	193,900	184,200	177,300	177,800	172,500	191,100	191,500	210,900	208,100	207,000	205,100
19	196,600	194,000	184,200	177,500	177,800	172,000	191,200	191,100	211,300	208,100	207,200	205,400
20	196,200	193,800	184,200	177,800	177,600	171,600	191,300	190,700	212,100	208,100	207,500	204,900
21	195,900	192,900	184,400	177,800	177,500	171,300	191,300	190,300	212,200	208,100	207,800	204,600
22	195,600	193,700	184,400	177,800	177,400	171,000	191,200	189,900	212,100	208,200	208,000	204,300
23	195,200	192,400	184,300	177,700	177,200	171,000	191,200	189,200	211,700	208,100	208,400	203,700
24	195,100	192,000	184,100	177,700	177,000	170,800	191,100	188,600	211,600	208,100	208,600	203,400
25	195,600	192,000	183,900	177,800	176,800	171,100	191,100	188,000	211,400	208,200	208,900	203,000
26	195,100	192,500	183,500	177,700	176,700	176,400	191,100	187,500	211,300	208,100	209,100	203,500
27	194,700	192,200	183,700	177,500	176,500	179,900	191,200	187,600	211,100	208,100	209,400	203,100
28	194,400	192,400	183,600	177,500	176,500	181,900	190,900	187,400	211,200	208,100	209,700	202,700
29	194,000	193,300	183,700	177,500	-----	183,400	190,800	187,400	211,100	208,000	209,700	202,500
30	193,600	193,500	183,700	177,500	-----	184,700	190,800	187,700	210,900	208,100	209,900	202,100
31	193,500	-----	183,900	177,500	-----	185,800	-----	187,900	-----	208,000	209,900	-----
MAX	201,900	194,100	196,200	183,900	177,800	185,800	191,300	192,300	212,200	211,000	209,900	209,800
MIN	193,500	192,000	183,300	177,200	176,500	170,800	186,600	187,400	188,100	207,700	206,900	202,100
(a)	560.17	560.15	555.56	552.44	551.94	556.50	558.88	557.52	568.06	566.80	567.62	564.13
(b)	-9,000	0	-9,600	-6,400	-1,000	+9,300	+5,000	-2,900	+23,000	-2,900	+1,900	-7,800
(c)	611	227	214	165	158	312	639	812	1,024	1,305	1,331	1,064
(d)	18,651	17,875	18,489	16,719	13,318	17,456	17,934	18,750	18,576	19,456	19,410	18,708

CAL YR 1970 b -15,600  
WTR YR 1971 b -400

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

d Diversion, in acre-feet, from Pardee Reservoir to East Bay Municipal Utility District and to Jackson Valley Irrigation District.

## 11322300 CAMANCHE RESERVOIR NEAR CLEMENTS, CALIF.

LOCATION.--Lat 38°13'31", long 121°01'17", in SE $\frac{1}{4}$  sec.6, T.4 N., R.9 E., San Joaquin County, at Camanche Dam on the Mokelumne River, 4.3 miles northeast of Clements.

DRAINAGE AREA.--621 sq mi.

PERIOD OF RECORD.--December 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by East Bay Municipal Utility District).

EXTREMES.--Current year: Maximum contents, 366,200 acre-ft June 27 (elevation, 226.66 ft); minimum, 276,500 acre-ft Oct. 27 (elevation, 212.97 ft).

Period of record: Maximum contents, 425,700 acre-ft July 14, 1967 (elevation, 234.82 ft); minimum after initial season of operation, 68,700 acre-ft Sept. 5, 11, 18, 1966 (elevation, 164.97 ft).

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) above mean sea level. Dead storage, 534 acre-ft. Camanche Reservoir provides holdover storage to meet downstream water requirements and flood control on the Mokelumne River. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records furnished by East Bay Municipal Utility District.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

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		

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	288,600	276,800	289,400	296,800	300,800	299,000	312,200	323,700	335,500	365,100	347,500	339,900
2	288,300	277,100	289,900	296,600	300,500	298,700	312,600	324,000	335,700	364,800	347,300	339,400
3	287,500	278,000	290,400	296,300	300,900	299,400	313,100	324,400	335,900	364,200	347,200	338,500
4	286,400	278,400	293,000	296,400	300,800	299,100	313,500	324,800	336,100	363,200	347,100	337,700
5	286,000	278,700	300,500	296,300	300,900	299,500	313,900	325,400	336,300	362,100	347,100	336,800
6	285,700	279,400	301,700	296,200	300,900	299,900	314,400	325,900	336,600	361,300	346,900	336,000
7	285,400	279,500	301,200	296,100	300,800	300,200	314,800	326,300	336,800	360,900	346,800	335,700
8	285,000	278,900	300,100	296,000	300,600	300,200	315,300	327,200	337,000	360,700	346,700	335,300
9	284,800	279,600	298,900	296,000	300,600	300,400	315,700	327,900	337,200	360,400	346,600	334,600
10	284,100	280,200	297,600	295,800	300,400	300,900	315,900	328,500	337,400	359,800	346,600	333,600
11	282,900	281,100	296,100	295,800	300,500	301,200	316,400	328,900	337,500	359,300	346,400	333,000
12	282,500	281,600	294,600	296,300	300,500	302,200	316,700	329,500	337,500	358,600	346,300	331,300
13	282,300	282,500	293,100	297,000	300,500	302,600	317,200	330,000	337,600	357,500	346,200	330,700
14	282,000	283,200	292,100	297,400	300,500	303,000	317,600	330,600	337,700	356,400	346,000	329,900
15	281,800	282,700	291,700	297,800	300,300	303,500	317,900	331,100	337,600	355,600	345,800	328,900
16	281,600	282,500	292,200	298,200	300,200	303,800	318,300	331,400	337,400	354,800	345,600	328,000
17	280,900	282,300	292,600	298,500	300,100	303,900	318,600	331,900	337,200	354,100	345,400	327,300
18	279,800	282,300	293,000	298,700	300,400	304,300	319,000	332,300	339,200	353,600	345,400	326,500
19	279,500	282,100	293,100	298,900	300,100	304,700	319,300	332,600	341,000	353,000	345,000	324,800
20	279,200	281,900	293,800	299,400	300,200	305,200	319,600	332,800	343,300	352,300	344,500	323,700
21	279,000	282,600	294,200	299,600	300,000	305,600	320,100	332,900	346,400	351,700	344,100	322,800
22	278,700	281,600	294,400	300,100	299,900	306,200	320,500	333,200	349,600	351,000	343,700	321,900
23	278,700	281,900	294,600	300,600	299,900	306,600	320,800	333,400	351,700	350,300	343,300	321,000
24	278,100	282,800	294,800	300,800	299,800	307,100	321,000	333,700	353,500	350,000	342,800	319,900
25	277,000	283,700	294,800	301,100	299,500	308,200	321,400	333,800	355,400	348,800	342,600	318,900
26	276,600	284,000	295,100	301,200	299,500	309,600	321,800	334,000	357,200	348,600	342,200	317,100
27	276,500	284,900	295,400	301,100	299,200	310,200	322,200	334,100	366,200	348,200	341,800	316,200
28	276,700	286,000	295,800	301,000	299,200	310,700	322,400	334,400	365,800	348,000	341,300	315,200
29	277,100	287,500	296,400	300,900	-----	311,100	322,800	334,800	365,800	347,800	341,100	314,200
30	277,200	288,400	296,900	300,800	-----	311,400	323,200	335,100	365,700	347,700	340,800	313,300
31	277,300	-----	296,800	300,800	-----	311,800	-----	335,400	-----	347,600	340,500	-----
MAX	288,600	288,400	301,700	301,200	300,900	311,800	323,200	335,400	366,200	365,100	347,500	339,900
MIN	276,500	276,800	289,400	295,800	299,200	298,700	312,200	323,700	335,500	347,600	340,500	313,300
(a)	213.11	214.91	216.26	216.88	216.64	218.61	220.35	222.18	226.59	223.98	222.93	218.84
(b)	-11,600	+11,100	+8,400	+4,000	-1,600	+12,600	+11,400	+12,200	+30,300	-18,000	-7,100	-27,200
(c)	2,354	1,111	649	582	885	1,868	2,440	3,079	4,831	6,036	5,617	4,283

CAL YR 1970 b +14,300

WTR YR 1971 b +24,400

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

## 11323500 MOKELUMNE RIVER BELOW CAMANCHE DAM, CALIF.

LOCATION.--Lat 38°13'14", long 121°02'19", in NW¼ sec. 7, T. 4 N., R. 9 E., San Joaquin County, on left bank 0.7 mile downstream from Murphy Creek, 1.0 mile downstream from Camanche Dam, and 3.4 miles northeast of Clements.

DRAINAGE AREA.--627 sq mi.

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."

GAGE.--Water-stage recorder. Datum of gage is 82.71 ft above mean sea level. Oct. 28, 1904, to Apr. 18, 1926, nonrecording gage at bridge 3.3 miles downstream at datum 13.62 ft (revised) lower. Apr. 19, 1926, to Apr. 8, 1931, water-stage recorder, 75 ft downstream from bridge at datum 15.62 ft (revised) lower. Apr. 9, 1931, to Sept. 30, 1961, 700 ft upstream from bridge at datum 15.55 ft (revised) lower.

AVERAGE DISCHARGE.--24 years (1904-28), 1,111 cfs (804,300 acre-ft per year); 42 years (1929-71), 836 cfs (605,700 acre-ft per year), adjusted for change in contents and evaporation from Camanche Reservoir since 1963. Storage and diversion by East Bay Municipal Utility District began in March 1929.

EXTREMES.--Current year: Maximum discharge, 1,720 cfs June 27, 28 (gage height, 6.40 ft); minimum daily, 296 cfs Oct. 29, 30.  
Period of record: Maximum discharge, 28,800 cfs Nov. 21, 1950 (gage height, 24.40 ft, site and datum then in use); no flow July 9, Aug. 15, 20-23, 1924.

REMARKS.--Records good. Flow regulated by Camanche Reservoir 1 mile upstream beginning December 1963 (see sta 11322300), Salt Springs Reservoir beginning March 1931 (see sta 11313500), Pardee Reservoir beginning March 1929 (see sta 11320000), several smaller reservoirs, and four powerplants. East Bay Municipal Utility District aqueducts are the largest of several diversions above the station. Maximum capacity is 511 cfs with Pardee Reservoir full. Records of water temperatures for the current year are published in Part 2 of this report. See schematic diagram of Mokelumne River basin.

COOPERATION.--Eight discharge measurements and temperature record furnished by the East Bay Municipal Utility District.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	603	297	713	899	871	386	631	594	698	1,370	553	546
2	603	298	762	905	871	845	631	602	698	1,370	549	597
3	603	299	720	901	871	829	631	603	699	1,370	538	693
4	603	303	1,190	900	871	826	631	603	699	1,370	530	760
5	603	300	1,630	899	871	779	631	565	700	1,370	531	759
6	603	300	1,630	903	871	711	631	510	702	1,240	529	758
7	604	300	1,630	909	871	711	631	509	703	941	527	757
8	603	300	1,630	910	879	709	630	510	703	808	521	807
9	603	298	1,620	909	883	707	624	510	704	963	521	836
10	602	383	1,620	910	884	709	624	509	716	1,060	521	846
11	605	443	1,620	810	886	709	625	510	752	1,060	521	855
12	604	443	1,620	704	885	712	620	509	788	1,060	521	856
13	611	443	1,620	695	886	711	627	510	788	1,060	536	854
14	600	443	1,610	684	885	711	637	509	789	1,060	560	889
15	606	443	1,140	680	886	706	619	509	864	942	554	915
16	606	443	758	680	886	718	614	510	915	857	554	913
17	608	440	760	683	885	735	612	510	911	856	542	913
18	609	443	750	682	887	735	612	509	910	856	533	909
19	608	444	750	683	886	672	608	617	913	854	537	909
20	608	499	751	685	887	620	609	695	913	853	537	944
21	609	543	777	684	887	620	608	697	947	851	531	969
22	609	543	757	684	889	620	603	697	968	851	531	968
23	609	543	785	685	888	620	603	698	965	851	518	976
24	609	543	794	685	887	620	603	697	964	850	505	974
25	609	547	790	685	886	624	603	698	788	850	498	972
26	609	543	795	785	888	635	597	698	639	726	490	973
27	538	562	800	873	887	624	598	698	1,420	637	490	973
28	358	607	798	872	887	622	597	697	1,520	622	485	972
29	296	644	543	871	-----	632	592	698	1,380	603	484	978
30	296	611	565	871	-----	633	592	698	1,370	581	480	967
31	297	-----	900	871	-----	631	-----	698	-----	554	482	-----
TOTAL	17,534	13,246	32,828	24,597	24,700	21,632	18,474	18,577	26,526	29,296	16,209	26,038
MEAN	566	442	1,059	793	882	698	616	599	884	945	523	868
MAX	611	644	1,630	910	889	886	637	698	1,520	1,370	560	978
MIN	296	297	543	680	871	620	592	509	639	554	480	546
AC-FT	34,780	26,270	65,110	48,790	48,990	42,910	36,640	36,850	52,610	58,110	32,150	51,650
MEAN a	415	647	1,206	868	869	933	848	848	1,475	749	499	483
AC-FT a	25,530	38,480	74,160	53,370	48,280	57,380	50,480	52,130	87,740	46,050	30,870	28,730

CAL YR 1970	TOTAL 351,783	MEAN 964	MAX 5,050	MIN 296	AC-FT 697,800	MEAN a 1,033	AC-FT a 748,300
WTR YR 1971	TOTAL 269,657	MEAN 739	MAX 1,630	MIN 296	AC-FT 534,900	MEAN a 818	AC-FT a 593,000

a Adjusted for change in contents and evaporation from Camanche Reservoir.

LOCATION.--Lat 38°09'07", long 121°18'00", in SE $\frac{1}{4}$  sec.34, T.4 N., R.6 E., San Joaquin County, on right bank at Woodbridge at point of diversion from Woodbridge Reservoir.

GAGE.--Water-stage recorder and gate-opening recorder. Datum of gage is 32.18 ft above mean sea level (levels by East Bay Municipal Utility District). Prior to Mar. 15, 1931, water-stage recorder at site 0.2 mile downstream at different datum.

EXTREMES.--Period of record: Maximum daily discharge, 482 cfs July 8, 1953; no flow at times in each year.

REMARKS.--Records good. Discharge computed from records of gate openings and effective head as shown by recorder. Canal diverts from Woodbridge Reservoir on Mokelumne River for irrigation south and west of Woodbridge. See schematic diagram of Mokelumne River basin.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162					0	109	316	278	371	370	286
2	157					16	127	282	284	365	369	292
3	157					32	130	271	280	366	371	277
4	157					37	130	267	291	371	373	263
5	158					45	160	264	294	364	375	259
6	159					54	156	268	292	373	363	261
7	162					69	160	257	294	392	354	262
8	160					87	158	257	315	402	348	259
9	159					76	158	253	324	394	352	251
10	151					133	152	247	325	388	357	233
11	146					140	147	225	334	383	349	221
12	145					134	177	224	335	378	347	221
13	142					115	218	235	336	378	343	218
14	140					104	238	246	338	385	347	208
15	130					92	241	278	339	385	361	216
16	126					88	261	289	355	375	372	237
17	129					90	267	301	373	364	371	233
18	124					88	262	323	378	355	362	226
19	122					94	256	330	372	352	361	215
20	118					97	257	334	366	365	362	204
21	115					96	280	322	365	383	354	204
22	87					133	306	303	378	394	340	204
23	54					147	302	301	381	395	336	195
24	44					147	313	307	372	397	337	178
25	46					128	316	300	381	397	332	177
26	45					102	311	302	391	401	329	177
27	44					85	317	302	386	399	325	150
28	52					85	321	298	388	397	309	145
29	54				-----	85	320	295	397	394	290	150
30	18				-----	85	325	289	394	392	282	152
31	0	-----			-----	90	-----	279	-----	381	281	-----
TOTAL	3,463	0	0	0	0	2,774	6,875	8,764	10,336	11,836	10,722	6,574
MEAN	112	0	0	0	0	89.5	229	283	345	382	346	219
MAX	162	0	0	0	0	147	325	334	397	402	375	292
MIN	0	0	0	0	0	0	109	224	278	352	281	145
AC-FT	6,870	0	0	0	0	5,500	13,640	17,380	20,500	23,480	21,270	13,040
CAL YR 1970	TOTAL 60,124.00		MEAN 165	MAX 388	MIN 0	AC-FT 119,500						
WTR YR 1971	TOTAL 61,344.00		MEAN 168	MAX 402	MIN 0	AC-FT 121,700						

## 11325500 MOKELUMNE RIVER AT WOODBRIDGE, CALIF.

LOCATION.--Lat 38°09'31", long 121°18'09", in NW¼NE¼ sec.34, T.4 N., R.6 E., San Joaquin County, on right bank at Woodbridge, 0.4 mile downstream from county highway bridge, and 0.5 mile downstream from dam and canal intake of Woodbridge Irrigation District.

DRAINAGE AREA.--661 sq mi.

PERIOD OF RECORD.--May 1924 to current year (low-water records only 1924-25).

GAGE.--Water-stage recorder. Datum of gage is 14.9 ft above mean sea level (levels by East Bay Municipal Utility District). May 1924 to July 1928, 0.4 mile upstream and 100 ft downstream from bridge at datum 4 ft higher; July 1928 to March 1931, 0.4 mile upstream and 400 ft downstream from bridge at same datum; March 1931 to July 25, 1968, 125 ft downstream at same datum.

AVERAGE DISCHARGE.--42 years (1929-71), since start of diversion through East Bay Municipal Utility District aqueduct, 620 cfs (449,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,440 cfs Dec. 13 (gage height, 12.14 ft); minimum daily, 27 cfs Aug. 15.

Period of record: Maximum discharge, 27,000 cfs Nov. 22, 1950 (gage height, 29.58 ft), from rating curve extended above 6,200 cfs on basis of contracted-opening measurement of maximum flow; minimum daily, 1.4 cfs Sept. 19, 20, 22, 1927.

REMARKS.--Records good. Concerning regulation and diversions see REMARKS for Mokelumne River below Camanche Dam; between Woodbridge and Camanche Dam there are many additional diversions for irrigation, including Woodbridge Canal (see sta 11325000). Nearest diversion is 0.5 mile upstream. See schematic diagram of Mokelumne River basin. Records of chemical analyses and water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	367	300	593	831	820	830	421	163	277	769	40	82
2	380	280	688	844	818	438	403	253	272	750	44	126
3	371	268	679	848	828	632	396	247	265	753	40	201
4	378	302	673	848	819	674	392	240	257	758	35	332
5	379	285	1,230	848	824	657	345	237	211	768	33	353
6	382	275	1,400	846	822	562	349	150	230	754	35	358
7	371	273	1,420	851	822	544	360	165	236	463	35	353
8	369	266	1,430	855	822	455	357	163	224	245	36	374
9	369	263	1,440	856	829	492	359	186	199	264	36	437
10	401	263	1,440	856	832	459	359	231	206	420	37	463
11	396	363	1,440	855	835	444	368	212	213	447	36	523
12	394	392	1,440	731	836	471	314	189	254	467	34	527
13	410	393	1,440	687	837	486	285	172	264	456	32	536
14	399	393	1,440	669	838	490	297	150	263	443	30	546
15	405	394	1,420	657	838	500	276	111	254	393	27	592
16	400	394	919	653	838	501	252	114	318	311	54	565
17	401	394	792	653	816	516	241	112	312	282	59	570
18	409	394	764	653	815	522	235	75	309	305	36	580
19	415	394	751	649	835	518	237	80	313	310	33	585
20	430	397	741	649	832	452	243	190	321	280	41	610
21	425	455	760	646	834	439	206	208	332	243	65	620
22	509	474	752	646	843	381	165	244	348	243	75	630
23	501	476	736	646	840	391	185	242	349	244	74	640
24	498	477	763	646	843	386	159	239	367	248	67	650
25	494	495	761	646	832	420	148	244	330	264	40	655
26	491	493	759	648	832	456	167	248	115	250	38	670
27	490	488	761	781	831	456	157	243	297	111	47	700
28	397	544	763	814	831	449	157	250	875	85	76	720
29	262	619	754	816	-----	449	153	262	739	71	93	740
30	693	588	464	818	-----	451	157	265	719	57	82	750
31	358	-----	693	820	-----	440	-----	276	-----	45	80	-----
TOTAL	12,944	11,792	30,106	23,266	23,242	15,361	8,143	6,161	9,669	11,499	1,490	15,488
MEAN	418	393	971	751	830	496	271	199	322	371	48.1	516
MAX	693	619	1,440	856	843	830	421	276	875	769	93	750
MIN	262	263	464	646	815	381	148	75	115	45	27	82
AC-FT	25,670	23,390	59,720	46,150	46,100	30,470	16,150	12,220	19,180	22,810	2,960	30,720

CAL YR 1970 TOTAL 254,232 MEAN 697 MAX 4,690 MIN 31 AC-FT 504,300  
WTR YR 1971 TOTAL 169,161 MEAN 463 MAX 1,440 MIN 27 AC-FT 335,500



## 11327000 SUTTER CREEK NEAR SUTTER CREEK, CALIF.

LOCATION.--Lat 38°23'45", long 120°46'49", in SE¼ sec.5, T.6 N., R.11 E., Amador County, on left bank 1.3 miles east of town of Sutter Creek.

DRAINAGE AREA.--48.1 sq mi.

PERIOD OF RECORD.--October 1935 to December 1941, March 1960 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Altitude of gage is 1,220 ft (from topographic map). Prior to Oct. 29, 1937, nonrecording gage 15 ft downstream at datum 4.00 ft lower. Oct. 29, 1937, to Dec. 7, 1938, nonrecording gage at present site at datum 4.00 ft lower.

AVERAGE DISCHARGE.--17 years (1935-41, 1960-71), 32.5 cfs (23,550 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 689 cfs Mar. 26 (gage height, 3.15 ft); no flow many days.  
Period of record: Maximum discharge, 5,770 cfs Jan. 31, 1963 (gage height, 6.27 ft), from rating curve extended above 1,200 cfs on basis of slope-area measurement at gage height 4.77 ft; no flow at times in each year except 1938 and 1941.

REMARKS.--Small diversion above station for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	2.9	174	63	29	18	49	16	12	5.4	.40	
2	.20	2.9	226	62	28	17	45	17	11	5.3	.50	
3	.20	2.9	96	49	27	17	33	18	11	4.9	.30	
4	.30	4.6	355	41	25	18	32	21	10	4.5	.10	
5	.40	8.9	139	37	25	18	30	20	9.8	4.3	.10	
6	.50	10	75	33	24	17	34	19	9.3	4.2	0	
7	.70	17	53	31	24	16	39	19	9.0	4.0	0	
8	.70	7.6	63	29	23	15	29	26	8.6	3.8	0	
9	.80	5.6	97	28	22	15	27	22	8.4	3.5	0	
10	.90	5.1	59	26	22	14	28	19	8.6	3.6	0	
11	.90	5.3	44	33	21	13	26	17	8.5	3.4	0	
12	.90	7.3	35	85	21	41	24	16	7.9	3.4	0	
13	.90	7.1	30	89	20	74	23	15	7.5	3.2	0	
14	1.0	5.9	26	99	20	36	24	15	7.4	3.0	0	
15	1.2	5.6	23	89	20	35	23	14	6.9	2.8	0	
16	1.2	5.4	82	82	19	27	22	13	6.5	2.5	0	
17	1.2	5.2	110	118	21	24	26	13	6.2	2.3	0	
18	1.3	5.2	80	101	19	22	24	13	5.9	2.2	0	
19	1.3	5.3	66	86	28	19	22	12	6.0	2.3	0	
20	1.8	5.2	57	77	22	18	22	12	6.0	2.0	0	
21	2.3	5.2	86	68	20	17	24	12	5.9	1.9	0	
22	2.3	5.2	75	61	19	16	22	12	5.5	1.7	0	
23	3.0	5.2	59	55	19	19	21	12	5.4	1.6	0	
24	3.8	5.8	49	49	18	20	20	11	5.1	1.5	0	
25	3.1	26	41	44	17	43	21	11	5.0	1.5	0	
26	2.7	64	37	40	17	331	20	10	5.0	1.5	0	
27	2.6	21	77	38	16	154	20	12	8.9	1.3	0	
28	2.6	34	110	36	17	92	19	13	8.0	1.0	0	
29	2.7	122	115	33	-----	71	18	13	6.4	1.0	0	
30	2.8	75	91	32	-----	59	17	13	5.7	.80	0	
31	2.9	-----	73	30	-----	52	-----	12	-----	.60	0	-----
TOTAL	47.50	488.4	2,703	1,744	603	1,348	784	468	227.4	85.00	1.40	0
MEAN	1.53	16.3	87.2	56.3	21.5	43.5	26.1	15.1	7.58	2.74	.045	0
MAX	3.8	122	355	118	29	331	49	26	12	5.4	.50	0
MIN	.20	2.9	23	26	16	13	17	10	5.0	.60	0	0
AC-FT	94	969	5,360	3,460	1,200	2,670	1,560	928	451	169	2.8	0
CAL YR 1970	TOTAL	16,179.00	MEAN	44.3	MAX	934	MIN	0	AC-FT	32,090		
WTR YR 1971	TOTAL	8,499.70	MEAN	23.3	MAX	355	MIN	0	AC-FT	16,860		

## SAN JOAQUIN RIVER BASIN

## 11329500 DRY CREEK NEAR GALT, CALIF.

LOCATION.--Lat 38°14'44", long 121°13'03", in NE¼ sec.32, T.5 N., R.7 E., San Joaquin County, on left bank of main channel 35 ft downstream from county road bridge, 2 miles downstream from Coyote Creek, and 4 miles east of Galt.

DRAINAGE AREA.--329 sq mi.

PERIOD OF RECORD.--October 1926 to September 1933, October 1944 to current year. Monthly figures only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 52.83 ft above mean sea level (levels by East Bay Municipal Utility District). Dec. 4, 1926, to Sept. 30, 1933, at site 4 miles downstream at different datum. Oct. 1, 1944, to Sept. 30, 1945, at site across channel at datum 3.00 ft higher. Oct. 1, 1945, to June 15, 1966, across channel at same datum.

AVERAGE DISCHARGE.--34 years, 113 cfs (81,870 acre-ft per year); median of yearly mean discharges, 68 cfs (49,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,960 cfs Mar. 26 (gage height, 13.26 ft); no flow for many days. Period of record: Maximum discharge, 24,000 cfs Apr. 3, 1958 (gage height, 15.28 ft); no flow for several days in each year.

REMARKS.--Records fair. Many small diversions above station for irrigation. Total storage of many small reservoirs, 1,000 acre-ft and total number of acres irrigated, approximately 500.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	0	1,300	257	73	36	105	28	17			
2	.33	0	1,680	266	71	34	91	28	4.4			
3	2.0	0	834	237	67	32	72	31	7.0			
4	2.6	0	1,490	195	63	32	52	35	6.6			
5	3.3	0	1,370	170	61	33	62	28	1.3			
6	1.2	0	404	155	60	31	116	20	.02			
7	.34	0	241	145	58	28	126	19	.24			
8	.16	0	202	135	56	26	126	27	.02			
9	2.0	0	249	127	53	25	103	40	0			
10	1.8	0	194	120	51	23	95	35	0			
11	1.2	0	159	115	50	22	95	29	0			
12	1.7	0	144	192	49	26	84	28	0			
13	1.6	0	133	426	47	249	78	25	0			
14	.29	0	120	489	46	124	78	19	0			
15	0	0	113	380	45	94	73	22	0			
16	0	0	158	295	45	76	68	22	0			
17	0	0	441	279	49	63	67	18	0			
18	0	0	351	273	48	52	73	20	0			
19	0	0	256	230	67	47	64	19	0			
20	0	0	197	196	68	44	54	24	0			
21	0	0	313	168	53	39	56	24	0			
22	0	0	474	148	48	41	55	18	0			
23	0	0	341	133	45	48	48	20	0			
24	0	0	265	121	43	71	42	17	0			
25	0	0	226	111	40	78	45	18	0			
26	0	0	213	102	36	1,280	40	14	0			
27	0	14	257	96	34	1,600	32	18	0			
28	0	20	370	90	34	462	32	17	0			
29	0	814	373	85	-----	315	30	17	0			
30	0	698	375	80	-----	247	29	20	0			
31	0	-----	298	76	-----	133	-----	18	-----			-----
TOTAL	20.12	1,546	13,541	5,892	1,460	5,411	2,091	718	36.58	0	0	0
MEAN	.65	51.5	437	190	52.1	175	69.7	23.2	1.22	0	0	0
MAX	3.3	814	1,680	489	73	1,600	126	40	17	0	0	0
MIN	0	0	113	76	34	22	29	14	0	0	0	0
AC-FT	40	3,070	26,860	11,690	2,900	10,730	4,150	1,420	73	0	0	0
CAL YR 1970	TOTAL	66,997.56	MEAN	184	MAX	3,110	MIN	0	AC-FT	132,900		
WTR YR 1971	TOTAL	30,715.70	MEAN	84.2	MAX	1,680	MIN	0	AC-FT	60,920		

## PEAK DISCHARGE (BASE, 2,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 2	1630	11.54	2,150	3-26	2230	13.26	2,960
12- 4	2030	12.72	2,610				

## 11333000 CAMP CREEK NEAR SOMERSET, CALIF.

LOCATION.--Lat 38°39'26", long 120°39'46", in SW $\frac{1}{4}$  sec.4, T.9 N., R.12 E., El Dorado County, on right bank 0.2 mile upstream from mouth, 1.3 miles northeast of Somerset, and 5.6 miles south of Camino.

DRAINAGE AREA.--62.6 sq mi.

PERIOD OF RECORD.--February to May 1924 (published as "near Pleasant Valley"), October 1954 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,820 ft (from topographic map). Feb. 1 to May 31, 1924, nonrecording gage at site 0.2 mile upstream at different datum.

AVERAGE DISCHARGE (adjusted for storage, diversion, and evaporation from Jenkinson Lake).--17 years (1954-71), 79.6 cfs (57,670 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,320 cfs Mar. 26 (gage height, 7.45 ft); minimum daily, 2.7 cfs Nov. 3.

Period of record: Maximum discharge, 6,040 cfs Dec. 23, 1964 (gage height, 12.50 ft); minimum, 0.5 cfs Aug. 1-3, 1961.

REMARKS.--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. Some water is released from Jenkinson Lake down Camp Creek for irrigation downstream from station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	5.0	52	20	14	8.1	284	100	75	27	7.5	4.8
2	3.6	3.0	66	25	14	7.6	271	114	64	27	7.3	4.8
3	3.6	2.7	30	20	13	8.0	254	140	55	25	7.0	4.7
4	3.6	3.6	88	16	12	8.5	240	150	51	24	6.8	4.6
5	3.7	6.8	42	14	12	8.3	233	129	47	23	6.7	4.4
6	3.8	6.6	23	13	11	7.6	233	122	43	21	6.7	4.4
7	3.8	9.3	16	12	11	7.4	237	121	44	20	6.6	4.4
8	3.9	4.7	21	11	10	7.3	208	135	42	19	6.5	4.2
9	3.9	3.8	25	11	10	7.2	184	132	38	18	6.4	4.0
10	4.1	3.5	18	11	9.8	7.1	211	132	33	17	6.3	4.0
11	4.1	3.5	15	12	9.8	7.5	195	147	29	17	6.3	3.8
12	4.0	6.7	13	26	9.7	17	179	166	23	16	6.2	3.9
13	4.0	4.7	11	23	9.4	29	175	166	19	15	6.0	3.9
14	4.1	3.5	12	25	9.2	16	172	161	15	15	5.9	3.6
15	4.1	3.2	16	25	9.4	14	174	153	12	14	5.8	3.5
16	4.1	3.0	33	25	9.0	12	174	147	7.3	14	5.8	3.6
17	4.1	2.9	36	46	9.2	12	199	132	5.6	13	5.6	3.6
18	4.1	2.9	23	58	9.7	11	168	115	4.9	13	5.5	3.6
19	4.2	2.9	18	54	13	10	145	105	4.7	12	5.5	3.7
20	6.2	2.9	17	46	10	9.4	139	100	4.7	12	5.4	3.8
21	7.9	2.9	23	36	8.9	8.9	139	100	4.6	11	5.5	3.8
22	8.4	2.9	19	31	8.6	8.5	122	89	4.4	11	5.5	3.7
23	9.4	2.9	16	27	8.6	12	111	83	4.3	10	5.5	3.8
24	12	3.3	14	23	8.0	12	107	81	4.3	9.8	5.5	3.8
25	9.1	35	13	20	7.8	22	101	72	4.2	9.5	5.4	3.7
26	7.5	27	12	19	7.5	770	97	74	6.5	9.2	5.3	4.2
27	6.7	10	21	18	7.6	900	90	75	9.4	8.9	5.1	4.9
28	6.3	15	28	17	8.6	629	87	80	5.4	8.7	5.1	4.9
29	6.2	39	40	16	-----	470	87	75	4.8	8.3	4.9	5.2
30	6.0	27	35	15	-----	410	91	73	4.6	8.0	4.8	10
31	6.1	-----	26	15	-----	333	-----	90	-----	7.7	4.8	-----
TOTAL	166.4	250.2	822	730	280.8	3,790.4	5,107	3,559	669.7	464.1	183.2	129.3
MEAN	5.37	8.34	26.5	23.5	10.0	122	170	115	22.3	15.0	5.91	4.31
MAX	12	39	88	58	14	900	284	166	75	27	7.5	10
MIN	3.6	2.7	11	11	7.5	7.1	87	72	4.2	7.7	4.8	3.5
AC-FT	330	496	1,630	1,450	557	7,520	10,130	7,060	1,330	921	363	256
(a)	-2,170	+1,074	+4,277	+4,198	+5,083	+4,417	-20	0	-696	-3,938	-4,525	-3,653
(b)	2,014	570	501	461	512	626	564	1,238	2,874	3,932	4,320	3,469
(c)	109	29	22	8	42	75	113	153	258	345	321	216
MEAN d	4.60	36.5	105	99.5	111	206	181	137	63.4	20.5	7.79	4.84
AC-FT d	283	2,170	6,430	6,120	6,190	12,640	10,790	8,450	3,770	1,260	479	288

CAL YR 1970 TOTAL 29,783.4 MEAN 81.6 MAX 2,260 MIN 2.7 AC-FT 59,080 MEAN d 108 AC-FT d 78,150  
WTR YR 1971 TOTAL 16,152.1 MEAN 44.3 MAX 900 MIN 2.7 AC-FT 32,040 MEAN d 81.3 AC-FT d 58,870

a Change in contents, in acre-feet, in Jenkinson Lake; furnished by Bureau of Reclamation.

b Diversion, in acre-feet, from Jenkinson Lake; furnished by Bureau of Reclamation.

c Evaporation, in acre-feet, from Jenkinson Lake; furnished by Bureau of Reclamation.

d Adjusted for change in contents, evaporation, and diversion from Jenkinson Lake.

## 11333500 NORTH FORK COSUMNES RIVER NEAR EL DORADO, CALIF.

LOCATION.--Lat 38°35'20", long 120°50'38", in SW $\frac{1}{4}$  sec.35, T.9 N., R.10 E., El Dorado County, on downstream side of left abutment of county road bridge, 0.8 mile north of Nashville, 2.6 miles upstream from mouth, and 6 miles south of El Dorado.

DRAINAGE AREA.--205 sq mi.

PERIOD OF RECORD.--August 1911 to December 1941, October 1948 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 840 ft (from topographic map). Prior to October 1933, nonrecording gage at site 1.5 miles upstream at different datum. October 1933 to December 1941, water-stage recorder at site 1,000 ft upstream at different datum.

AVERAGE DISCHARGE.--53 years, 202 cfs (146,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,210 cfs Mar. 26 (gage height, 8.71 ft); minimum daily, 4.3 cfs Sept. 20.

Period of record: Maximum discharge, 15,800 cfs Dec. 23, 1955 (gage height, 14.8 ft), from rating curve extended above 7,500 cfs on basis of slope-area measurement of maximum flow; no flow for part of 1924, 1926, 1931, 1933-34.

REMARKS.--Records good. Flow partly regulated since January 1955 by Jenkinson Lake (usable capacity, 40,570 acre-ft). Camino conduit above the station diverts water out of the basin (see REMARKS for sta 11333000 Camp Creek near Somerset). Numerous small diversions above station for irrigation and domestic use.

REVISIONS (WATER YEARS).--WSP 1315-A: 1914(M), 1925(M), 1928(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	29	540	175	186	119	668	290	225	74	22	14
2	14	26	880	195	187	112	605	308	198	81	21	15
3	12	22	372	146	182	113	543	345	184	75	19	14
4	12	27	1,580	122	174	108	515	393	174	71	19	13
5	14	49	520	118	165	105	504	355	167	67	18	11
6	15	71	260	115	159	98	511	330	163	63	17	9.2
7	18	73	208	120	155	96	529	324	166	59	18	8.9
8	21	51	208	104	151	97	468	371	170	56	17	8.4
9	23	39	299	101	149	96	429	352	169	53	16	7.7
10	25	34	225	99	144	93	478	352	161	49	16	6.6
11	26	36	175	109	152	98	452	378	156	48	17	6.6
12	27	40	156	237	171	148	428	440	149	46	15	8.9
13	25	51	140	346	191	306	430	427	143	43	15	7.7
14	25	38	124	291	205	191	421	418	136	40	14	9.3
15	24	34	122	249	214	161	419	404	127	39	14	12
16	24	29	420	220	220	154	426	387	119	36	13	11
17	25	28	500	294	217	155	456	354	112	35	12	11
18	25	27	284	324	202	155	412	319	106	36	12	11
19	26	25	202	311	207	154	374	301	101	36	12	8.3
20	31	24	172	303	183	153	352	287	95	35	11	4.3
21	39	24	235	286	165	159	350	280	90	36	10	5.1
22	40	23	210	262	158	167	315	259	85	33	12	6.0
23	47	23	165	241	154	201	298	248	80	31	14	8.0
24	56	28	142	222	144	278	289	245	76	30	14	9.3
25	49	126	128	205	133	387	286	241	71	23	13	10
26	39	269	124	192	121	2,700	275	246	71	23	15	11
27	35	110	182	184	119	2,340	262	244	143	23	14	13
28	33	170	240	180	123	1,580	259	247	95	22	13	15
29	32	488	284	180	-----	1,200	260	231	80	22	13	15
30	30	296	252	179	-----	1,010	271	225	71	23	14	21
31	29	-----	200	181	-----	834	-----	242	-----	23	14	-----
TOTAL	855	2,310	9,549	6,291	4,731	13,568	12,285	9,843	3,883	1,331	464	311.3
MEAN	27.6	77.0	308	203	169	438	410	318	129	42.9	15.0	10.4
MAX	56	488	1,580	346	220	2,700	668	440	225	81	22	21
MIN	12	22	122	99	119	93	259	225	71	22	10	4.3
AC-FT	1,700	4,580	18,940	12,480	9,380	26,910	24,370	19,520	7,700	2,640	920	617

CAL YR 1970 TOTAL 103,387.0 MEAN 283 MAX 5,220 MIN 12 AC-FT 205,100  
WTR YR 1971 TOTAL 65,421.3 MEAN 179 MAX 2,700 MIN 4.3 AC-FT 129,800

PEAK DISCHARGE (BASE, 1,800 CFS).--Dec. 4 (1000) 2,630 cfs (7.31 ft); Mar. 26 (1600) 4,210 cfs (8.71 ft).

## 11334200 MIDDLE FORK COSUMNES RIVER NEAR SOMERSET, CALIF.

LOCATION.--Lat 38°37'29", long 120°42'02", in NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.19, T.9 N., R.12 E., El Dorado County, on left bank 1,000 ft downstream from county road bridge, 0.2 mile downstream from Perry Creek, and 1.8 miles southwest of Somerset.

DRAINAGE AREA.--107 sq mi.

PERIOD OF RECORD.--October 1957 to September 1971 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Datum of gage is 1,647.95 ft above mean sea level.

AVERAGE DISCHARGE.--14 years, 153 cfs (110,800 acre-ft per year); median of yearly mean discharges, 121 cfs (87,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,290 cfs Mar. 26 (gage height, 9.79 ft); minimum daily, 6.3 cfs Sept. 14.

Period of record: Maximum discharge, 11,800 cfs Feb. 1, 1963 (gage heights, 16.20 ft in gage well, 18.4 ft from floodmarks), from rating curve extended above 2,500 cfs on basis of computation of maximum flow over dam; minimum, 1.7 cfs probably occurred Sept. 11, 1961.

Flood of Dec. 23, 1955, reached a stage of 18.1 ft, from floodmarks (discharge, 11,600 cfs).

REMARKS.--Records good. No storage above station. Some regulation at low flows for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	12	276	104	233	136	505	281	197	73	17	12
2	8.8	12	377	111	235	129	468	300	181	67	23	12
3	8.8	12	191	80	224	129	445	311	177	63	22	12
4	8.6	16	392	80	210	125	438	314	170	59	22	12
5	8.5	60	245	84	196	120	436	297	170	55	27	10
6	8.5	80	173	82	185	115	452	290	179	52	24	9.7
7	8.5	70	144	81	176	114	437	295	193	49	18	9.4
8	8.5	42	182	80	170	112	396	332	208	46	12	9.5
9	8.6	34	300	78	166	112	379	307	207	43	11	9.5
10	8.8	34	211	77	167	111	400	320	197	41	14	9.4
11	8.8	34	171	101	195	113	377	362	183	38	18	10
12	8.8	34	148	139	243	195	378	374	181	35	12	9.6
13	8.8	48	131	124	287	219	389	374	179	33	9.7	6.4
14	8.8	47	118	134	309	179	384	375	168	31	8.1	6.3
15	8.8	36	108	118	319	170	380	373	160	36	7.6	6.9
16	8.8	32	193	111	313	173	396	373	153	44	8.1	9.5
17	8.6	28	182	166	293	176	406	340	142	46	8.2	9.8
18	8.8	28	139	160	258	179	355	314	131	41	9.1	9.9
19	9.0	26	120	191	257	187	327	304	120	54	12	10
20	11	25	114	198	221	199	320	295	113	45	13	10
21	16	23	158	208	202	213	302	297	105	33	12	11
22	16	23	119	238	189	227	281	258	97	22	10	11
23	17	23	102	240	177	280	265	257	90	21	9.0	11
24	22	24	93	217	166	337	263	262	84	19	7.8	12
25	19	122	85	196	160	431	248	276	79	18	7.7	12
26	15	225	91	183	147	1,490	240	297	92	17	9.1	12
27	14	97	124	182	145	1,260	225	285	171	19	10	13
28	14	130	128	188	146	883	228	272	100	26	9.2	14
29	13	245	145	197	-----	708	233	246	86	27	12	14
30	13	180	128	208	-----	651	252	237	79	24	11	19
31	12	-----	111	223	-----	575	-----	221	-----	15	12	-----
TOTAL	347.8	1,802	5,199	4,579	5,989	10,048	10,605	9,439	4,392	1,192	405.6	322.9
MEAN	11.2	60.1	168	148	214	324	354	304	146	38.5	13.1	10.8
MAX	22	245	392	240	319	1,490	505	375	208	73	27	19
MIN	8.5	12	85	77	145	111	225	221	79	15	7.6	6.3
AC-FT	690	3,570	10,310	9,080	11,880	19,930	21,040	18,720	8,710	2,360	805	640

CAL YR 1970 TOTAL 70,251.3 MEAN 192 MAX 2,880 MIN 8.5 AC-FT 139,300  
WTR YR 1971 TOTAL 54,321.3 MEAN 149 MAX 1,490 MIN 6.3 AC-FT 107,700

PEAK DISCHARGE (BASE, 700 CFS).--Mar. 26 (1300) 2,290 cfs (9.79 ft).

## 11334300 SOUTH FORK COSUMNES RIVER NEAR RIVER PINES, CALIF.

LOCATION.--Lat 38°33'25", long 120°47'32", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.8, T.8 N., R.11 E., Amador County, on left bank 2.4 miles upstream from mouth and 2.7 miles west of River Pines.

DRAINAGE AREA.--64.3 sq mi.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,220 ft (from topographic map).

AVERAGE DISCHARGE.--14 years, 45.5 cfs (32,960 acre-ft per year); median of yearly mean discharges, 32 cfs (23,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,400 cfs Mar. 26 (gage height, 4.70 ft); no flow many days in August and September.  
Period of record: Maximum discharge, 5,540 cfs Feb. 1, 1963 (gage height, 10.90 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement at gage height 9.90 ft; no flow at times in most years.

REMARKS.--Amount of water imported from Middle Fork Cosumnes River through Garabaldi ditch has been negligible because of leakage in the ditch.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	1.5	315	95	61	27	83	23	20	6.8	.70	0
2	.30	1.6	393	99	58	25	74	23	19	6.5	.70	0
3	.20	1.5	156	79	54	25	67	26	18	6.0	.60	.10
4	.20	2.9	571	69	51	26	60	30	17	5.6	.70	.20
5	.20	9.7	211	61	48	26	55	27	16	5.3	.70	.20
6	.20	12	112	56	46	25	51	26	15	5.1	.40	.10
7	.40	20	79	50	44	25	60	27	14	4.9	.30	.10
8	.40	11	85	46	41	25	50	32	13	4.5	.30	.10
9	.40	7.1	135	44	39	25	46	28	13	4.2	.30	0
10	.50	6.1	95	41	37	24	49	25	13	4.0	.30	0
11	.50	5.2	73	51	36	25	43	25	12	3.8	.20	0
12	.50	7.9	59	132	36	61	44	24	12	3.6	.10	0
13	.50	8.1	49	151	35	116	40	23	11	3.2	.10	0
14	.50	6.4	41	146	35	69	38	22	11	2.9	.10	0
15	.60	5.4	36	119	35	60	36	20	11	2.5	0	0
16	.60	5.0	125	105	35	53	30	20	10	2.1	0	0
17	.60	4.4	196	151	36	48	37	20	9.5	1.8	0	0
18	.60	4.3	111	181	35	46	36	19	9.2	1.9	0	0
19	.60	4.2	82	170	42	42	32	19	8.8	1.8	0	0
20	.90	4.0	75	157	38	39	32	19	8.5	1.7	0	0
21	1.4	3.9	147	139	34	37	33	18	7.8	1.4	0	0
22	1.5	3.9	109	122	33	35	31	17	7.6	1.2	0	0
23	2.0	3.9	80	109	32	41	29	17	7.3	1.3	0	0
24	4.0	4.6	68	97	30	43	29	16	7.0	1.1	0	0
25	2.7	31	57	86	29	86	29	16	6.7	1.0	0	0
26	1.6	56	51	78	27	712	27	19	9.6	1.0	0	0
27	1.5	26	102	73	27	293	26	20	13	1.1	0	0
28	1.4	63	155	70	28	180	26	19	9.6	.90	0	0
29	1.4	196	172	67	-----	141	25	18	8.3	1.0	0	0
30	1.4	111	148	65	-----	115	23	19	7.5	.90	0	.40
31	1.5	-----	112	63	-----	97	-----	20	-----	.80	0	-----
TOTAL	29.30	627.6	4,200	2,972	1,082	2,592	1,241	677	345.4	89.70	5.50	1.20
MEAN	.95	20.9	135	95.9	38.6	83.6	41.4	21.8	11.5	2.90	.18	.040
MAX	4.0	196	571	181	61	712	83	32	20	6.8	.70	.40
MIN	.20	1.5	36	41	27	24	23	16	6.7	.80	0	0
AC-FT	58	1,240	8,330	5,890	2,150	5,140	2,460	1,340	685	178	11	2.4

CAL YR 1970 TOTAL 24,671.10 MEAN 67.6 MAX 1,140 MIN .10 AC-FT 48,940  
WTR YR 1971 TOTAL 13,862.90 MEAN 38.0 MAX 712 MIN 0 AC-FT 27,500

PEAK DISCHARGE (BASE, 600 CFS).--Dec. 4 (1000) 1,040 cfs (4.24 ft); Mar. 26 (1100) 1,400 cfs (4.70 ft).

## 11335000 COSUMNES RIVER AT MICHIGAN BAR, CALIF.

LOCATION.--Lat 38°30'01", long 121°02'39", in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.36, T.8 N., R.8 E., Sacramento County, on downstream side of midstream pier of highway bridge at Michigan Bar, 5.5 miles southwest of Latrobe, and 12 miles downstream from confluence of North and Middle Fork Cosumnes River.

DRAINAGE AREA.--536 sq mi.

PERIOD OF RECORD.--October 1907 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 168.09 ft above mean sea level. Prior to July 10, 1930, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--64 years, 484 cfs (350,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,590 cfs Mar. 26 (gage height, 7.97 ft); minimum daily, 14 cfs Oct. 6-9, Sept. 17-20, 22.

Period of record: Maximum discharge, 42,000 cfs Dec. 23, 1955 (gage height, 14.59 ft); no flow at times in many years.

Flood in March 1907 reached a stage of 16.3 ft (discharge unknown).

REMARKS.--Records good. Flow partly regulated since January 1955 by Jenkinson Lake (usable capacity, 40,570 acre-ft). Camino conduit above the station diverts water out of the basin (see REMARKS for sta 11333000). Numerous small diversions above station for irrigation and domestic use. Records of chemical analyses, water temperatures, and suspended-sediment discharge for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	35	2,350	597	566	324	1,450	625	488	148	36	18
2	18	35	3,370	708	572	299	1,330	668	426	152	35	19
3	18	34	1,470	548	560	295	1,210	716	390	143	34	18
4	17	39	4,960	452	524	291	1,150	794	370	137	32	18
5	16	60	2,140	428	500	287	1,130	758	356	128	31	18
6	14	148	1,040	400	476	275	1,140	708	351	124	30	18
7	14	155	716	375	458	263	1,190	684	370	118	29	18
8	14	135	646	351	434	259	1,070	785	390	109	28	16
9	14	88	980	338	416	255	980	776	395	105	28	17
10	15	75	740	324	405	247	1,030	758	380	99	32	16
11	15	74	584	345	422	259	1,030	812	365	90	24	16
12	16	75	512	778	476	643	950	893	346	88	27	16
13	17	102	446	1,380	542	704	970	893	333	86	25	16
14	16	91	395	1,110	584	536	950	893	328	77	24	16
15	16	74	360	866	611	482	950	884	308	77	23	15
16	17	68	1,080	708	618	458	960	857	287	68	24	15
17	18	60	1,720	812	604	452	1,010	785	267	66	21	14
18	18	57	1,010	970	560	452	940	716	247	61	21	14
19	18	56	716	950	584	446	830	653	232	61	21	14
20	20	53	590	960	530	446	776	625	214	62	20	14
21	23	52	944	911	464	458	767	611	197	60	20	15
22	35	52	848	830	434	482	700	572	185	56	20	14
23	43	51	604	749	416	590	653	542	173	50	20	15
24	62	52	524	676	385	724	632	536	162	49	20	15
25	62	184	452	618	360	812	632	542	152	48	20	16
26	57	1,080	428	572	338	5,480	611	560	150	48	20	17
27	45	420	611	560	324	4,490	584	560	295	45	19	17
28	40	923	902	554	328	2,860	566	566	251	43	19	18
29	35	2,920	970	554	-----	2,040	566	524	182	43	18	20
30	34	1,360	884	554	-----	1,870	578	500	160	41	18	22
31	33	-----	692	560	-----	1,650	-----	500	-----	38	18	-----
TOTAL	803	8,608	33,684	20,538	13,491	29,129	27,335	21,296	8,750	2,520	757	495
MEAN	25.9	287	1,087	663	482	940	911	687	292	81.3	24.4	16.5
MAX	62	2,920	4,960	1,380	618	5,480	1,450	893	488	152	36	22
MIN	14	34	360	324	324	247	566	500	150	38	18	14
AC-FT	1,590	17,070	66,810	40,740	26,760	57,780	54,220	42,240	17,360	5,000	1,500	982

CAL YR 1970 TOTAL 251,707 MEAN 690 MAX 11,300 MIN 14 AC-FT 499,300  
WTR YR 1971 TOTAL 167,406 MEAN 459 MAX 5,480 MIN 14 AC-FT 332,000

## PEAK DISCHARGE (BASE, 4,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12-2	1100	6.74	4,680	3-26	1600	7.97	8,590
12-4	1300	7.85	8,140				

## SAN JOAQUIN RIVER BASIN

## 11335700 DEER CREEK NEAR SLOUGHHOUSE, CALIF.

LOCATION.--Lat 38°33'06", long 121°06'30", in NW¼NW¼ sec.16, T.8 N., R.8 E., Sacramento County, on right bank 0.2 mile upstream from Scott Road, 0.4 mile upstream from Little Deer Creek, and 5.9 miles northeast of Sloughhouse.

DRAINAGE AREA.--46.0 sq mi.

PERIOD OF RECORD.--November 1959 to September 1966, October 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 160 ft (from topographic map).

AVERAGE DISCHARGE.--10 years, 26.7 cfs (19,340 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,000 cfs Dec. 4 (gage height, 10.69 ft); no flow for several months.

Period of record: Maximum discharge, 6,560 cfs Oct. 13, 1962 (gage height, 12.86 ft, from floodmarks), from rating curve extended above 2,200 cfs; no flow for several months in each year.

REMARKS.--No known regulation or diversion above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	462	54	19	8.0	26	6.4	1.8			
2		0	773	134	18	7.0	20	6.0	1.7			
3		0	205	54	17	6.4	17	6.5	1.4			
4		.90	1,200	46	16	6.8	15	7.1	1.2			
5		1.3	275	42	15	6.9	13	7.8	1.1			
6		2.0	107	39	14	6.4	13	6.9	.90			
7		2.3	58	36	14	6.4	17	5.9	.60			
8		2.6	57	34	13	6.4	16	7.2	.30			
9		2.6	56	32	12	6.3	12	9.9	.20			
10		2.6	39	30	12	5.9	12	7.3	.20			
11		2.6	34	40	11	6.7	13	5.7	.10			
12		2.6	31	101	11	11	11	4.8	.10			
13		2.6	29	368	11	40	9.6	4.3	.10			
14		2.6	25	140	10	18	9.7	3.9	0			
15		2.6	22	70	10	13	9.1	3.3	0			
16		2.6	171	54	12	11	8.3	2.7	0			
17		2.6	163	51	13	9.7	9.8	2.3	0			
18		2.6	85	46	11	9.0	12	1.9	0			
19		2.6	53	43	19	8.3	8.4	1.9	0			
20		2.6	44	40	16	7.1	7.7	1.9	0			
21		2.6	216	37	11	6.9	8.0	1.7	0			
22		2.6	149	35	9.6	6.4	7.5	1.4	0			
23		2.6	63	33	9.3	9.0	7.1	1.3	0			
24		3.8	49	32	8.8	26	6.8	1.1	0			
25		101	43	30	8.1	89	6.4	1.0	0			
26		252	44	29	7.2	532	7.3	.90	0			
27		98	113	28	7.4	174	7.4	.90	0			
28		272	149	26	8.0	68	7.3	1.0	0			
29		659	242	24	-----	46	7.1	1.7	0			
30		331	119	22	-----	37	6.4	2.2	0			
31		-----	66	20	-----	31	-----	2.1	-----			
TOTAL	0	1,764.90	5,142	1,770	343.4	1,225.6	330.9	119.00	9.70	0	0	0
MEAN	0	58.8	166	57.1	12.3	39.5	11.0	3.84	.32	0	0	0
MAX	0	659	1,200	368	19	532	26	9.9	1.8	0	0	0
MIN	0	0	22	20	7.2	5.9	6.4	.90	0	0	0	0
AC-FT	0	3,500	10,200	3,510	681	2,430	656	236	19	0	0	0

CAL YR 1970 TOTAL 17,548.40 MEAN 48.1 MAX 1,560 MIN 0 AC-FT 34,810  
WTR YR 1971 TOTAL 10,705.50 MEAN 29.3 MAX 1,200 MIN 0 AC-FT 21,230

NOTE.--No gage-height record Oct. 24 to Dec. 2.



## 11336000 COSUMNES RIVER AT McCONNELL,, CALIF.

LOCATION.--Lat 38°21'29", long 121°20'34", in sec.20', T.6 N., R.6 E., Sacramento County, on downstream side of bridge on U.S. Highway 99, 0.2 mile south of McConnell, 1 mile downstream from Deer Creek, and 7 miles north of Galt.

DRAINAGE AREA.--724 sq mi.

PERIOD OF RECORD.--October 1941 to current year. Monthly figures only for some periods, published in WSP 1315-A. Gage heights only during high-water periods 1931-40, in reports of California Department of Water Resources.

GAGE.--Water-stage recorder. Datum of gage is 3.34 ft below mean sea level.

AVERAGE DISCHARGE.--30 years, 553 cfs (400,600 acre-ft per year); median of yearly mean discharges, 450 cfs (326,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,080 cfs Mar. 27 (gage height, 41.85 ft); no flow for many days. 1943 to current year: Maximum discharge, 54,000 cfs Dec. 23, 1955 (gage height, 46.26 ft), from rating curve extended above 36,000 cfs; no flow for parts of each year. Flood of Feb. 23, 24, 1936, reached a stage of 45.94 ft (discharge unknown).

REMARKS.--Records good except those for the summer months, which are poor. Diversions for irrigation of 2,100 acres between stations at Michigan Bar and at McConnell.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	4.3	2,710	716	544	298	1,520	539	491	101		
2	0	6.3	3,880	808	556	278	1,370	604	427	93		
3	0	6.7	3,290	826	545	261	1,260	655	377	88		
4	0	16	4,100	524	519	262	1,180	726	345	81		
5	0	22	5,880	458	486	254	1,120	737	322	79		
6	0	70	2,020	421	455	243	1,120	677	311	72		
7	0	184	1,190	384	433	230	1,170	651	316	64		
8	0	156	900	351	412	226	1,100	702	331	58		
9	0	101	1,100	334	396	223	991	745	356	52		
10	0	68	1,050	313	380	219	965	697	355	45		
11	0	56	749	308	376	218	1,050	724	332	38		
12	0	54	612	568	419	236	946	810	313	23		
13	0	56	516	1,570	497	744	934	851	296	29		
14	0	85	444	1,840	569	613	934	847	286	52		
15	0	67	394	1,160	608	478	911	845	265	35		
16	0	54	496	880	634	419	915	817	239	23		
17	0	47	2,140	826	635	395	939	779	218	22		
18	0	41	1,450	1,020	588	390	949	713	198	19		
19	0	38	924	1,010	569	381	817	652	176	19		
20	0	36	676	1,010	559	379	746	616	162	49		
21	0	33	862	974	468	387	740	589	152	8.3		
22	0	34	1,420	893	423	400	688	582	141	.75		
23	0	34	888	794	400	432	635	506	120	0		
24	2.6	33	608	712	372	621	593	499	109	0		
25	39	62	486	648	340	704	587	500	105	0		
26	43	870	424	588	319	3,150	557	509	97	0		
27	42	724	508	548	296	7,040	531	541	112	0		
28	24	516	1,140	534	291	3,620	501	542	262	0		
29	14	3,090	1,180	527	-----	2,450	490	519	151	0		
30	7.1	3,310	1,440	524	-----	2,010	500	476	119	0		
31	4.5	-----	924	530	-----	1,750	-----	467	-----	0		-----
TOTAL	176.2	9,874.3	44,401	22,599	13,089	29,311	26,759	20,117	7,484	1,051.05	0	0
MEAN	5.68	329	1,432	729	467	946	892	649	249	33.9	0	0
MAX	43	3,310	5,880	1,840	635	7,040	1,520	851	491	101	0	0
MIN	0	4.3	394	308	291	218	490	467	97	0	0	0
AC-FT	349	19,590	88,070	44,830	25,960	58,140	53,080	39,900	14,840	2,080	0	0
CAL YR 1970	TOTAL 263,718.72 MEAN 723 MAX 14,100 MIN 0 AC-FT 523,100											
WTR YR 1971	TOTAL 174,861.55 MEAN 479 MAX 7,040 MIN 0 AC-FT 346,800											

## PEAK DISCHARGE (BASE, 3,600 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-29	2400	39.34	4,530	12- 5	0530	41.84	8,060
12- 2	2000	40.22	5,540	3-27	0930	41.85	8,080

## 11336580 MORRISON CREEK NEAR SACRAMENTO, CALIF.

LOCATION.--Lat 38°29'55", long 121°27'06", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.32, T.8 N., R.5 E., Sacramento County, on right bank 750 ft upstream from Florin Road, 1.6 miles upstream from Elder Creek, and 2 miles south of Sacramento city limits.

DRAINAGE AREA.--48.6 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 7.60 ft above mean sea level. Prior to June 29, 1960, at site 650 ft downstream at datum 1.55 ft higher. June 29, 1960, to Sept. 12, 1965, at site 475 ft upstream at datum 2.71 ft higher.

AVERAGE DISCHARGE.--12 years, 18.1 cfs (13,110 acre-ft per year); median of yearly mean discharges, 16 cfs (11,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,200 cfs Nov. 29 (gage height, 7.13 ft); minimum daily, 3.0 cfs Sept. 26.

Period of record: Maximum discharge, 1,610 cfs Jan. 26, 1969 (gage height, 8.53 ft); no flow at times in 1960, 1962, 1965.

REMARKS.--Records fair. No regulation or diversion above station. Summer flow is sustained by waste water from domestic and industrial use.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	4.3	93	24	8.3	7.2	8.7	5.4	7.0	6.4	7.2	5.6
2	7.2	5.5	309	37	8.3	8.3	8.6	26	6.8	6.0	8.6	5.1
3	4.9	5.2	122	24	8.4	8.2	6.1	8.8	7.3	5.5	6.4	5.5
4	4.3	101	222	18	8.2	7.7	5.2	10	6.8	5.0	6.1	4.9
5	7.0	70	170	15	7.8	7.8	6.7	8.1	5.0	5.2	5.8	4.7
6	6.3	69	65	14	5.9	5.6	8.1	6.5	5.4	7.2	5.4	4.4
7	6.0	41	43	14	5.6	5.1	13	5.9	6.3	7.2	4.3	7.6
8	6.0	11	33	13	7.4	6.6	7.9	18	6.5	7.3	4.2	8.9
9	6.6	7.6	27	11	8.0	6.8	5.5	8.0	6.1	7.3	6.5	8.3
10	4.5	6.4	21	9.6	7.6	6.8	5.4	6.8	6.5	5.1	7.2	6.9
11	4.2	6.0	17	25	7.8	7.2	5.2	6.7	6.4	5.0	6.9	4.7
12	4.8	5.7	14	39	7.9	90	6.4	6.4	4.6	5.5	7.0	4.6
13	5.7	5.5	14	57	7.3	27	6.4	6.5	4.3	6.6	7.5	6.2
14	7.0	4.2	13	39	5.8	8.7	9.0	7.4	6.0	6.6	5.1	7.5
15	6.0	4.3	14	24	4.9	7.4	6.9	5.9	6.2	6.1	4.5	7.7
16	6.3	5.6	59	17	15	7.2	8.3	4.7	5.8	8.1	6.9	7.2
17	4.3	5.5	61	13	24	6.4	7.4	5.7	5.2	5.2	7.6	7.1
18	4.2	5.3	48	13	11	6.6	6.1	6.1	5.1	4.1	7.3	4.5
19	5.1	5.1	32	13	16	6.9	7.2	6.2	4.3	4.9	7.2	5.5
20	20	4.9	36	13	8.3	5.6	8.3	6.5	4.1	5.7	6.8	7.9
21	19	3.9	87	13	6.7	4.9	7.0	5.1	5.8	6.2	5.3	7.3
22	14	3.6	58	12	7.3	5.4	7.4	4.4	5.7	4.9	5.2	8.4
23	27	4.2	32	10	7.2	31	6.7	4.5	5.8	4.1	7.2	7.5
24	8.2	10	22	8.8	6.9	12	5.0	5.4	5.5	3.8	6.7	6.0
25	7.2	36	17	9.1	6.7	37	5.4	5.5	4.5	3.8	6.6	3.5
26	7.0	43	29	8.4	6.9	89	6.8	5.6	4.2	7.0	6.3	3.0
27	6.4	11	36	10	5.1	20	7.8	5.2	5.7	10	6.1	4.6
28	5.7	294	43	12	5.8	10	7.7	5.6	6.5	9.6	5.9	6.0
29	6.0	664	54	11	-----	8.6	7.2	3.6	6.5	8.6	5.5	5.8
30	6.3	166	50	8.7	-----	8.2	7.6	4.5	6.4	9.1	5.1	5.4
31	4.7	-----	30	7.5	-----	7.2	-----	5.5	-----	7.0	5.4	-----
TOTAL	239.0	1,608.8	1,871	543.1	236.1	476.4	215.0	220.5	172.3	194.1	193.8	182.3
MEAN	7.71	53.6	60.4	17.5	8.43	15.4	7.17	7.11	5.74	6.26	6.25	6.08
MAX	27	664	309	57	24	90	13	26	7.3	10	8.6	8.9
MIN	4.2	3.6	13	7.5	4.9	4.9	5.0	3.6	4.1	3.8	4.2	3.0
AC-FT	474	3,190	3,710	1,080	468	945	426	437	342	385	384	362
CAL YR 1970	TOTAL	10,078.4	MEAN	27.6	MAX	664	MIN	3.4	AC-FT	19,990		
WTR YR 1971	TOTAL	6,152.4	MEAN	16.9	MAX	664	MIN	3.0	AC-FT	12,200		

## PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-29	0900	7.13	1,200	3-12	1430	4.63	488
12- 2	1530	4.36	420				

## 11337000 CONTRA COSTA CANAL NEAR OAKLEY, CALIF.

LOCATION.--Lat 37°59'44", long 121°42'03", in NE¼ sec.25, T.2 N., R.2 E., Contra Costa County, at pumping plant No. 1, 0.7 mile east of Oakley and 2.6 miles northwest of Knightsen.

PERIOD OF RECORD.--February 1950 to current year.

GAGE.--Recording flow meters on pumps. Prior to Jan. 1, 1953, water-stage recorder at site 3.2 miles downstream at datum 121.72 ft above mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--21 years, 88.2 cfs (63,900 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 245 cfs June 26, 1968; minimum daily, 4.0 cfs Jan. 20, 1970.

REMARKS.--Water is diverted from Sacramento-San Joaquin Delta by way of Old River, Rock Slough, and a dredged channel. A series of four pumping plants lifts the water 115 ft into the canal. Water is used for municipal, agricultural, and industrial purposes. The canal is a part of the Central Valley project.

COOPERATION.--Records of daily discharge furnished by Bureau of Reclamation and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	84	58	64	61	68	75	84	118	157	154	163
2	148	89	60	64	66	68	75	82	114	165	157	154
3	142	97	60	59	62	73	75	72	119	164	162	146
4	135	87	62	68	63	73	76	83	124	159	159	149
5	141	106	62	70	63	67	79	79	123	160	174	152
6	137	79	65	76	63	68	77	86	127	164	180	148
7	132	65	68	74	68	70	85	86	125	161	170	150
8	132	72	69	68	64	72	80	79	132	153	180	153
9	128	80	68	68	66	58	70	74	132	149	180	152
10	127	90	70	69	69	61	72	76	133	151	186	149
11	128	90	69	62	70	65	61	75	132	157	196	152
12	121	105	69	66	60	64	76	84	132	153	197	144
13	123	100	55	63	65	90	80	84	135	161	197	145
14	121	87	64	61	64	78	66	84	142	172	189	145
15	124	89	65	59	74	85	74	86	143	176	186	136
16	125	87	62	59	64	88	74	87	149	173	182	129
17	118	83	62	65	67	84	74	86	150	168	178	125
18	119	78	61	61	67	75	69	112	149	168	181	123
19	119	63	64	61	68	70	65	107	147	169	190	115
20	118	70	57	61	66	68	80	104	147	173	192	108
21	104	68	63	63	63	69	92	115	141	179	189	118
22	103	68	71	63	60	68	92	98	159	183	182	124
23	96	74	59	62	65	74	100	104	165	181	179	112
24	93	73	60	63	65	75	82	113	163	171	170	121
25	85	68	62	60	65	68	83	132	162	167	148	101
26	86	64	58	64	65	61	95	143	156	166	198	84
27	88	65	57	63	65	64	90	138	156	166	196	83
28	88	56	61	58	65	67	85	131	154	167	185	84
29	88	54	62	59	-----	68	90	113	154	168	184	80
30	88	60	61	55	-----	74	93	108	162	162	182	80
31	84	-----	66	59	-----	74	-----	107	-----	154	182	-----
TOTAL	3,588	2,351	1,950	1,967	1,823	2,207	2,385	3,012	4,245	5,117	5,585	3,825
MEAN	116	78.4	62.9	63.5	65.1	71.2	79.5	97.2	142	165	180	128
MAX	148	106	71	76	74	90	100	143	165	183	198	163
MIN	84	54	55	55	60	58	61	72	114	149	148	80
AC-FT	7,120	4,660	3,870	3,900	3,620	4,380	4,730	5,970	8,420	10,150	11,080	7,590
CAL YR 1970	TOTAL 46,936.0		MEAN 129	MAX 236	MIN 4.0	AC-FT 93,100						
WTR YR 1971	TOTAL 38,055.0		MEAN 104	MAX 198	MIN 54	AC-FT 75,480						

## 11337500 MARSH CREEK NEAR BYRON, CALIF.

LOCATION.--Lat 37°52'24", long 121°43'34", in Los Meganos Grant, Contra Costa County, on right bank 40 ft downstream from highway bridge on Marsh Creek Road, 1.2 miles upstream from Marsh Creek Dam, and 5.0 miles west of Byron.

DRAINAGE AREA.--42.6 sq mi.

PERIOD OF RECORD.--February 1953 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 177.87 ft above mean sea level.

AVERAGE DISCHARGE.--18 years, 8.53 cfs (6,180 acre-ft per year); median of yearly mean discharges, 2.9 cfs (2,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 313 cfs Dec. 4 (gage height, 5.01 ft); no flow for long periods. Period of record: Maximum discharge, 3,880 cfs Jan. 31, 1963 (gage height, 11.62 ft), from rating curve extended above 880 cfs on basis of slope-area measurement at gage height 10.90 ft; maximum gage height, 12.98 ft Dec. 23, 1955; no flow for long periods in each year.

REMARKS.--Records good. No regulation or diversion above station. Records of suspended-sediment discharge for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1635: 1955.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	15	24	9.3	3.8	5.7	2.5	.71			
2		0	57	25	9.0	3.5	5.8	4.0	.52			
3		0	25	19	8.1	3.7	5.0	4.0	.47			
4		0	176	16	7.8	3.8	4.7	3.1	.52			
5		0	67	15	7.8	3.7	4.4	2.7	.33			
6		0	30	14	7.8	3.7	4.1	2.3	.18			
7		0	19	13	7.5	3.7	4.7	2.0	.09			
8		0	14	12	7.0	3.8	4.5	2.4	.08			
9		0	12	12	7.0	3.7	3.9	2.3	.04			
10		0	8.8	11	6.8	3.6	5.1	2.0	.08			
11		0	7.4	12	6.6	3.2	4.7	1.4	.06			
12		0	6.6	22	6.4	11	4.0	1.0	.01			
13		0	7.5	63	6.4	16	3.5	1.2	0			
14		0	8.2	43	5.9	7.2	5.9	.73	0			
15		0	6.2	33	5.7	6.7	4.5	.44	0			
16		0	43	29	5.9	5.7	3.8	.24	0			
17		0	104	26	6.4	5.1	4.9	.19	0			
18		0	101	24	5.4	4.4	4.3	.24	0			
19		0	88	21	5.9	3.8	3.0	.32	0			
20		0	54	19	5.2	4.2	2.8	.28	0			
21		0	69	17	4.9	4.1	3.1	.30	0			
22		0	40	16	5.0	3.8	2.8	.31	0			
23		0	31	14	4.9	3.8	2.7	.24	0			
24		0	26	14	4.5	4.0	2.4	.26	0			
25		0	22	12	4.4	4.1	2.5	.18	0			
26		0	24	12	4.0	27	2.1	.05	0			
27		0	31	11	4.5	18	2.2	.27	0			
28		0	24	11	4.4	11	1.9	.58	0			
29		53	35	10	-----	8.9	2.0	.63	0			
30		15	31	9.9	-----	7.2	1.9	.68	0			
31		-----	26	9.6	-----	6.4	-----	.61	-----			-----
TOTAL	0	68	1,208.7	589.5	174.5	202.6	112.9	37.45	3.09	0	0	0
MEAN	0	2.27	39.0	19.0	6.23	6.54	3.76	1.21	.10	0	0	0
MAX	0	53	176	63	9.3	27	5.9	4.0	.71	0	0	0
MIN	0	0	6.2	9.6	4.0	3.2	1.9	.05	0	0	0	0
AC-FT	0	135	2,400	1,170	346	402	224	74	6.1	0	0	0
CAL YR 1970	TOTAL	5,521.01	MEAN	15.1	MAX	814	MIN	0	AC-FT	10,950		
WTR YR 1971	TOTAL	2,396.74	MEAN	6.57	MAX	176	MIN	0	AC-FT	4,750		

## PEAK DISCHARGE (BASE, 140 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 4	0900	5.01	313	12-20	2245	4.37	156
12-18	0530	4.48	180				

## 11341400 SACRAMENTO RIVER NEAR MT SHASTA, CALIF.

LOCATION.--Lat 41°15'56", long 122°18'32", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.33, T.40 N., R.4 W., Siskiyou County, on left bank 200 ft upstream from Stink Creek, 0.3 mile upstream from Southern Pacific Railroad bridge, and 3.3 miles south of town of Mt Shasta.

DRAINAGE AREA.--135 sq mi (revised).

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

GAGE.--Water-stage recorder. Altitude of gage is 2,800 ft (from topographic map). Prior to July 1, 1966, water-stage recorder at site 500 ft upstream at datum 4.26 ft higher.

AVERAGE DISCHARGE (adjusted for storage in Lake Siskiyou).--12 years, 247 cfs (179,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,330 cfs Mar. 26 (gage height, 4.31 ft); minimum daily, 37 cfs Aug. 20, 21, 24-26.

Period of record: Maximum discharge, 12,200 cfs Dec. 22, 1964 (gage height, 12.6 ft, from floodmarks, present site and datum), from slope-area measurement of maximum flow; minimum, 37 cfs Sept. 6, 1962. Maximum discharge since construction of Box Canyon Dam in 1968, 4,070 cfs Jan. 23, 1970 (gage height, 7.14 ft); minimum daily, 26 cfs Dec. 19, 1968.

REMARKS.--Records good. Flow regulated by Box Canyon Dam 2 miles upstream beginning December 1968 (capacity, 26,100 acre-ft). See schematic diagram of Pit and McCloud River basins. Records of chemical analyses, water temperatures, and suspended-sediment discharge for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	172	421	121	408	193	400	647	459	157	60	52
2	40	102	403	121	439	193	340	632	408	147	60	58
3	40	40	385	119	434	193	325	773	372	136	61	48
4	40	89	381	164	369	193	335	964	376	135	60	48
5	40	190	390	241	333	193	355	952	383	129	60	50
6	40	175	416	235	333	193	335	763	405	127	60	57
7	40	168	502	230	333	193	360	670	438	123	60	51
8	40	171	502	225	291	193	450	1,070	445	119	60	53
9	40	188	502	195	270	193	580	990	433	117	60	53
10	40	196	480	166	270	196	764	850	426	114	60	52
11	40	220	470	166	277	215	665	890	388	110	59	50
12	40	216	462	166	398	264	635	940	363	108	59	49
13	40	208	457	164	462	349	526	970	341	104	60	50
14	40	204	390	169	502	403	481	860	317	99	60	48
15	41	202	221	302	525	325	485	803	296	92	59	47
16	45	200	193	377	520	201	486	748	286	88	59	47
17	51	198	191	421	452	196	484	617	281	87	59	47
18	56	198	193	742	369	193	480	550	273	87	51	47
19	62	198	193	1,080	345	191	479	543	262	86	38	50
20	142	196	196	1,080	294	191	481	547	246	86	37	50
21	169	196	193	1,060	270	193	443	502	235	86	37	46
22	168	199	191	1,010	270	201	359	488	225	86	38	50
23	172	201	191	665	221	241	333	535	215	86	38	52
24	174	280	191	294	193	229	333	607	202	86	37	52
25	172	394	191	121	193	452	333	710	197	86	37	52
26	160	421	191	119	193	1,110	334	752	220	73	37	54
27	172	426	191	119	193	810	339	635	218	60	38	54
28	172	421	193	188	193	730	421	803	195	60	40	57
29	172	434	159	317	-----	725	446	750	177	59	42	65
30	172	434	121	369	-----	650	560	634	166	60	44	73
31	172	-----	123	373	-----	600	-----	516	-----	60	49	-----
TOTAL	2,832	6,937	9,283	11,119	9,350	10,402	13,347	22,711	9,248	3,053	1,579	1,562
MEAN	91.4	231	299	359	334	336	445	733	308	98.5	50.9	52.1
MAX	174	434	502	1,080	525	1,110	764	1,070	459	157	61	73
MIN	40	40	121	119	193	191	325	488	166	59	37	46
AC-FT	5,620	13,760	18,410	22,050	18,550	20,630	26,470	45,050	18,340	6,060	3,130	3,100
(a)	24,500	25,200	24,000	24,600	24,200	25,700	26,300	26,500	26,200	26,100	26,200	26,200
MEAN b	70.3	243	280	368	327	360	455	736	303	96.9	52.5	52.1
AC-FT b	4,320	14,460	17,210	22,650	18,150	22,130	27,070	45,250	18,040	5,960	3,230	3,100

CAL YR 1970	TOTAL	97,438	MEAN	267	MAX	3,530	MIN	39	AC-FT	193,300	MEAN b	263	AC-FT b	190,800
WTR YR 1971	TOTAL	101,423	MEAN	278	MAX	1,110	MIN	37	AC-FT	201,200	MEAN b	278	AC-FT b	201,600

a Contents, in acre-feet, at end of month in Lake Siskiyou.

b Adjusted for change in contents in Lake Siskiyou.

## SACRAMENTO RIVER BASIN

## 11342000 SACRAMENTO RIVER AT DELTA, CALIF.

LOCATION.--Lat 40°56'23", long 122°24'58", in NW $\frac{1}{4}$  sec.35, T.36 N., R.5 W., Shasta County, Bureau of Reclamation property, on left bank 0.2 mile downstream from Dog Creek, 0.6 mile southeast of Delta, and 2.8 miles south of Lamoine.

DRAINAGE AREA.--425 sq mi.

PERIOD OF RECORD.--October 1944 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 1,075.00 ft above mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--27 years, 1,164 cfs (843,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 11,000 cfs Mar. 26 (gage height, 11.26 ft); minimum daily, 185 cfs Oct. 3.

Period of record: Maximum discharge, 38,800 cfs Dec. 22, 1964 (gage height, 20.10 ft), from rating curve extended above 19,000 cfs on basis of slope-area measurement at gage heights, 19.50 ft in gage well, 20.0 ft, from floodmarks; minimum, 141 cfs Sept. 3-5, 1950.

REMARKS.--Records good. Some regulation from Box Canyon Dam near the town of Mt Shasta. Some minor diversions for irrigation above station. See schematic diagram of Pit and McCloud River basins. Records of chemical analyses and water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	188	338	3,280	1,320	2,150	870	2,040	1,860	1,140	476	254	230
2	188	335	2,900	1,170	2,180	846	1,840	1,800	1,040	462	257	236
3	185	330	2,780	1,040	2,030	840	1,780	2,100	984	436	251	227
4	188	350	2,420	970	1,840	822	1,750	2,430	997	420	251	218
5	188	400	2,930	1,010	1,640	798	1,840	2,470	984	408	251	215
6	188	700	3,720	970	1,570	786	2,020	2,110	990	400	248	215
7	190	1,200	6,520	935	1,510	774	1,950	2,000	1,020	392	248	224
8	192	1,000	5,650	963	1,440	762	1,860	2,870	1,020	384	245	215
9	192	3,500	4,110	977	1,360	756	2,880	2,610	1,000	380	242	212
10	192	2,500	2,920	970	1,390	762	3,110	2,440	977	384	239	212
11	190	2,000	2,330	1,030	1,590	1,270	2,490	2,440	925	373	236	210
12	188	1,500	2,030	1,030	1,850	4,360	2,220	2,630	865	362	236	205
13	188	970	1,820	1,000	2,060	3,000	2,050	2,530	835	352	236	202
14	188	810	1,620	1,170	2,030	2,310	1,910	2,190	794	342	236	202
15	188	708	1,590	5,690	2,000	1,970	1,950	2,040	761	334	236	200
16	190	640	1,830	6,860	1,890	1,650	1,930	1,910	744	324	233	200
17	195	595	1,570	6,760	1,740	1,520	1,830	1,640	722	317	230	200
18	205	570	1,410	6,300	1,540	1,390	1,690	1,480	706	320	230	200
19	210	540	1,250	5,960	1,400	1,320	1,640	1,460	700	324	218	202
20	306	520	1,210	5,090	1,300	1,290	1,700	1,450	668	338	212	205
21	482	505	1,140	4,160	1,200	1,290	1,560	1,350	634	317	212	202
22	566	595	1,040	3,450	1,150	1,400	1,400	1,310	607	306	212	202
23	691	780	984	2,820	1,090	2,250	1,310	1,430	590	300	210	202
24	539	3,190	928	2,160	1,010	2,200	1,260	1,540	575	296	210	205
25	396	3,000	894	1,710	977	3,560	1,230	1,690	570	292	208	210
26	352	1,940	870	1,570	935	8,360	1,270	1,800	607	289	208	221
27	345	3,130	852	1,570	921	4,840	1,330	1,500	612	266	208	221
28	352	4,030	1,250	1,660	894	3,550	1,440	1,840	570	263	205	224
29	348	3,550	1,740	1,800	-----	3,060	1,610	1,660	525	260	208	245
30	342	4,370	1,340	1,990	-----	2,780	1,680	1,470	500	254	210	275
31	338	-----	1,360	2,100	-----	2,340	-----	1,250	-----	254	233	-----
TOTAL	8,690	44,596	66,288	76,205	42,687	63,726	54,570	59,300	23,662	10,625	7,113	6,437
MEAN	280	1,487	2,138	2,458	1,525	2,056	1,819	1,913	789	343	229	215
MAX	691	4,370	6,520	6,860	2,180	8,360	3,110	2,870	1,140	476	257	275
MIN	185	330	852	935	894	756	1,230	1,250	500	254	205	200
AC-FT	17,240	88,460	131,500	151,200	84,670	126,400	108,200	117,600	46,930	21,070	14,110	12,770

CAL YR 1970 TOTAL 522,268 MEAN 1,431 MAX 22,800 MIN 182 AC-FT 1,036,000  
WTR YR 1971 TOTAL 463,899 MEAN 1,271 MAX 8,360 MIN 185 AC-FT 920,100

## PEAK DISCHARGE (BASE, 8,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12-7	1530	10.43	8,910	3-26	0200	11.26	11,000
1-16	2200	10.10	8,120				

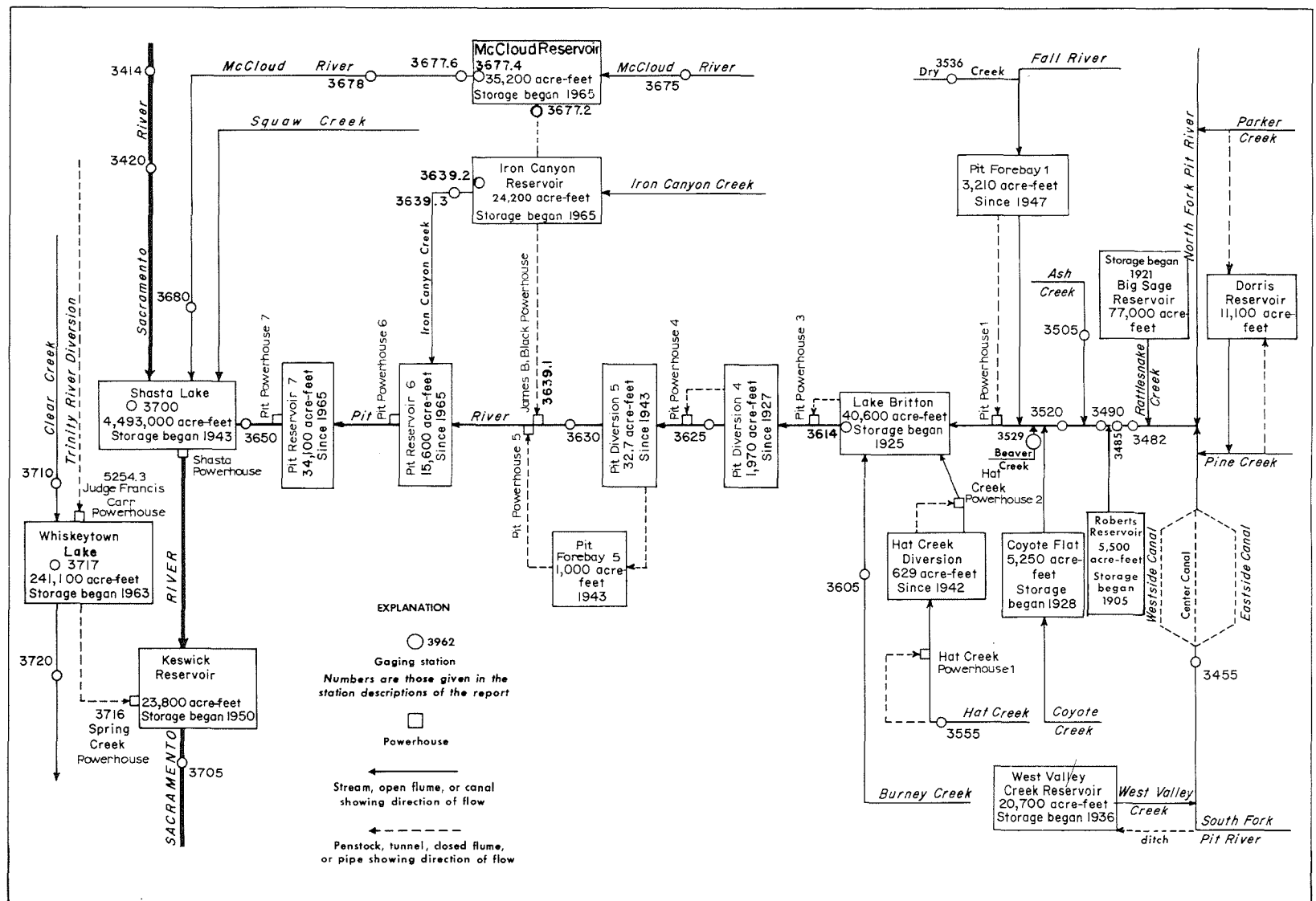


FIGURE 10.--Schematic diagram showing diversions and storage in Pit and McCloud river basins.





## 11348200 PIT RIVER NEAR ALTURAS, CALIF.

LOCATION.--Lat 41°29'00", long 120°37'46", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.18, T.42 N., R.12 E., Modoc County, on left bank 500 ft downstream from Noble Creek and 4.7 miles west of Alturas.

DRAINAGE AREA.--1,080 sq mi, excluding Goose Lake basin.

PERIOD OF RECORD.--September 1965 to September 1971 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 4,330 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 244 cfs (176,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,600 cfs June 3 (gage height, 14.03 ft); minimum daily, 36 cfs Oct. 11.

Period of record: Maximum discharge, 7,040 cfs Jan. 24, 1970 (gage height, 14.19 ft); minimum daily, 4.1 cfs Oct. 20, 21, 1966.

REMARKS.--Records excellent. Flow regulated by many small reservoirs (total capacity, 144,000 acre-ft). Diversions for irrigation of 23,000 acres above station. See schematic diagram of Pit and McCloud River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	81	225	103	295	116	1,480	849	2,940	946	155	120
2	54	75	190	96	287	127	1,210	792	4,290	822	184	155
3	54	72	166	90	254	158	1,040	776	4,940	718	200	164
4	52	68	171	78	251	171	923	1,020	4,630	646	193	160
5	50	75	241	62	256	146	854	1,240	3,670	569	193	148
6	46	103	936	54	261	140	822	1,430	3,150	477	191	138
7	42	148	1,540	58	244	150	799	1,440	2,700	411	184	143
8	40	146	1,420	63	236	146	762	1,360	2,340	402	169	145
9	38	190	1,150	74	217	156	723	1,550	2,070	391	138	152
10	37	373	640	96	203	158	716	1,470	1,840	382	143	155
11	36	319	346	160	206	143	707	1,380	1,640	329	79	145
12	37	249	233	171	203	173	666	1,330	1,460	308	77	140
13	37	238	163	133	203	388	615	1,290	1,340	255	84	134
14	37	195	158	103	203	534	611	1,260	1,230	191	83	127
15	37	150	146	98	206	584	633	1,210	1,130	193	98	134
16	37	126	126	116	203	598	622	1,150	1,010	167	129	129
17	37	107	130	732	203	600	648	1,080	893	164	145	120
18	40	107	118	2,540	208	572	699	1,010	753	225	125	112
19	37	103	110	2,640	190	608	741	930	666	248	101	112
20	37	103	105	2,240	171	614	755	828	611	230	92	109
21	40	94	98	1,540	200	887	750	730	586	215	88	105
22	54	103	107	1,100	200	1,230	794	681	527	186	86	105
23	74	171	107	718	198	1,950	810	633	527	155	86	101
24	123	249	100	500	190	2,420	782	573	529	138	83	98
25	128	360	92	436	158	2,330	812	560	486	160	79	94
26	103	586	87	398	126	3,280	870	518	560	140	75	98
27	92	334	75	378	124	3,320	972	529	803	125	72	145
28	126	236	85	352	119	2,950	1,030	644	803	96	73	191
29	96	302	88	326	-----	2,480	992	847	937	69	79	169
30	90	410	88	315	-----	2,090	918	1,160	980	70	86	255
31	85	-----	94	299	-----	1,800	-----	1,990	-----	134	105	-----
TOTAL	1,850	5,873	9,335	16,069	5,815	31,019	24,756	32,260	50,041	9,562	3,675	4,103
MEAN	59.7	196	301	518	208	1,001	825	1,041	1,668	308	119	137
MAX	128	586	1,540	2,640	295	3,320	1,480	1,990	4,940	946	200	255
MIN	36	68	75	54	119	116	611	518	486	69	72	94
AC-FT	3,670	11,650	18,520	31,870	11,530	61,530	49,100	63,990	99,260	18,970	7,290	8,140
CAL YR 1970	TOTAL	103,370	MEAN	283	MAX	4,410	MIN	36	AC-FT	205,900		
WTR YR 1971	TOTAL	194,358	MEAN	532	MAX	4,940	MIN	36	AC-FT	385,500		

## SACRAMENTO RIVER BASIN

11348500 PIT RIVER NEAR CANBY, CALIF.

LOCATION.--Lat 41°24'22", long 120°55'36", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.10, T.41 N., R.9 E., Modoc County, on right bank at lower end of Warm Spring Valley, 4 miles southwest of Canby.

DRAINAGE AREA.--1,431 sq mi, excluding Goose Lake basin.

PERIOD OF RECORD.--January 1904 to December 1905, May 1929 to current year (1929-31 incomplete).

GAGE.--Water-stage recorder. Datum of gage is 4,266 ft above mean sea level. January 1904, to December 1905, nonrecording gage and May 6, 1929, to Sept. 30, 1931, water-stage recorder, at site 100 ft upstream at different datum.

AVERAGE DISCHARGE.--41 years (1905, 1931-71), 247 cfs (179,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,710 cfs Mar. 27 (gage height, 10.04 ft); minimum daily, 28 cfs Aug. 12.

Period of record: Maximum discharge observed, 13,000 cfs Mar. 8, 1904 (gage height, 15.0 ft, site and datum then in use); minimum, 0.1 cfs Apr. 29, Aug. 5, Sept. 18, 1934, Aug. 18-21, 1935.

REMARKS.--Records excellent. Flow regulated by many small reservoirs (total capacity now, about 144,000 acre-ft). Diversions for irrigation of about 39,000 acres above station. See schematic diagram of Pit and McCloud River basins. Records of chemical analyses and water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

CAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	104	532	170	453	162	2,310	1,150	1,950	1,020	36	39
2	85	96	360	140	450	217	1,930	1,080	2,810	992	43	34
3	60	93	292	126	413	272	1,630	1,030	3,550	884	135	71
4	61	86	304	110	377	254	1,420	1,090	4,140	754	162	111
5	59	98	334	97	378	237	1,270	1,370	4,430	610	146	110
6	94	109	613	103	384	218	1,180	1,530	4,090	500	155	113
7	76	138	1,110	109	379	227	1,140	1,640	3,530	430	143	159
8	61	170	1,970	113	354	227	1,110	1,660	3,080	420	142	238
9	62	198	2,160	124	341	215	1,050	1,640	2,640	410	194	219
10	57	281	1,640	134	326	229	1,060	1,700	2,300	375	165	208
11	45	377	1,070	163	336	228	1,040	1,680	2,040	322	123	172
12	40	394	517	216	339	297	997	1,610	1,820	324	28	159
13	46	342	328	212	342	479	936	1,590	1,610	298	50	147
14	44	301	251	173	340	802	889	1,530	1,470	199	63	130
15	41	251	239	169	353	899	872	1,470	1,330	142	69	129
16	41	213	216	210	340	980	881	1,410	1,200	180	90	127
17	41	176	215	642	330	1,030	932	1,340	1,060	139	104	113
18	43	157	194	2,160	329	996	974	1,250	938	139	83	136
19	44	137	120	4,740	326	918	985	1,160	800	203	110	113
20	46	124	112	4,010	286	990	1,000	1,070	720	158	88	111
21	52	130	110	2,950	284	1,250	1,020	960	654	178	78	108
22	87	117	108	2,050	303	1,860	1,010	851	594	192	77	106
23	93	146	112	1,510	302	2,600	1,020	775	556	148	109	110
24	102	211	114	1,050	291	3,330	1,000	716	556	111	90	106
25	140	398	118	733	262	3,470	988	656	539	76	61	107
26	142	631	124	607	197	4,980	1,030	641	561	65	42	104
27	119	688	129	557	185	5,540	1,110	621	715	117	44	117
28	111	510	131	522	173	4,890	1,180	662	836	115	51	139
29	140	440	130	485	-----	4,240	1,230	776	884	75	51	198
30	116	526	148	467	-----	3,380	1,210	954	986	57	44	262
31	108	-----	156	460	-----	2,770	-----	1,260	-----	44	45	-----
TOTAL	2,318	7,642	13,957	25,312	9,173	48,187	34,404	36,872	52,389	9,677	2,821	3,996
MEAN	74.8	255	450	817	328	1,554	1,147	1,189	1,746	312	91.0	133
MAX	142	688	2,160	4,740	453	5,540	2,310	1,700	4,430	1,020	194	262
MIN	40	86	108	97	173	162	872	621	539	44	28	34
AC-FT	4,600	15,160	27,680	50,210	18,190	95,580	68,240	73,140	103,900	19,190	5,600	7,930
CAL YR 1970	TOTAL	147,085.2	MEAN	403	MAX	6,080	MIN	1.8	AC-FT	291,700		
WTR YR 1971	TOTAL	246,748.0	MEAN	676	MAX	5,540	MIN	28	AC-FT	489,400		

## 11349000 PIT RIVER NEAR LOOKOUT, CALIF.

LOCATION.--Lat 41°19'27", long 121°07'36", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.11, T.40 N., R.7 E., Modoc County, on right bank 0.2 mile downstream from unnamed tributary and 8.2 miles north of Lookout.

DRAINAGE AREA.--1,585 sq mi, excluding Goose Lake basin.

PERIOD OF RECORD.--January 1929 to September 1931, August 1958 to September 1971 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Altitude of gage is 4,160 ft (from topographic map). January 1929 to September 1931, at site approximately 2.5 miles downstream at different datum.

AVERAGE DISCHARGE.--15 years, 299 cfs (216,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,540 cfs Mar. 26 (gage height, 18.94 ft); minimum daily, 28 cfs Oct. 1.

Period of record: Maximum discharge, 10,900 cfs Jan. 24, 1970 (gage height, 20.96 ft); no flow Aug. 29, 1931.

REMARKS.--Records good. Flow regulated by many small reservoirs. Diversions for irrigation of 41,000 acres above station. See schematic diagram of Pit and McCloud River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	112	662	228	626	184	2,920	1,240	1,720	1,020	44	48
2	80	108	507	196	629	233	2,530	1,200	2,520	1,020	65	42
3	76	102	384	149	563	261	2,180	1,240	3,350	959	77	41
4	61	98	513	156	504	300	1,930	1,360	3,970	854	154	94
5	66	111	423	143	490	284	1,750	1,440	4,550	731	143	113
6	59	126	797	128	501	265	1,630	1,620	4,400	644	152	127
7	108	132	1,340	131	523	263	1,570	1,710	3,810	545	145	108
8	70	168	2,040	132	480	274	1,500	1,790	3,250	466	142	224
9	64	254	2,650	146	462	265	1,420	1,860	2,790	447	164	249
10	69	312	2,160	180	521	272	1,440	1,790	2,410	437	186	209
11	57	380	1,540	217	656	329	1,390	1,780	2,110	425	145	211
12	50	462	827	243	692	548	1,290	1,720	1,880	349	83	176
13	46	382	472	292	716	668	1,210	1,680	1,700	347	34	164
14	52	327	354	260	671	947	1,130	1,620	1,550	265	55	146
15	48	282	314	251	767	1,080	1,060	1,550	1,440	175	63	139
16	45	240	294	310	626	1,210	1,050	1,470	1,310	180	70	136
17	45	206	288	741	554	1,300	1,130	1,410	1,190	176	98	129
18	48	178	265	2,890	496	1,240	1,160	1,320	1,060	136	78	127
19	49	147	195	6,620	466	1,200	1,140	1,230	914	186	100	142
20	53	143	189	5,290	411	1,290	1,140	1,140	800	211	95	122
21	55	142	180	3,940	380	1,590	1,160	1,040	728	135	82	118
22	69	135	174	2,790	407	2,250	1,140	938	671	230	76	115
23	100	138	168	2,070	400	3,510	1,140	842	602	176	74	115
24	100	209	163	1,530	384	4,050	1,120	782	587	133	108	119
25	112	533	158	1,070	345	4,410	1,110	719	596	106	82	117
26	162	662	156	842	265	7,000	1,110	686	584	73	55	119
27	133	794	181	749	263	6,680	1,180	674	668	133	46	118
28	117	698	184	704	238	5,920	1,240	686	836	132	47	143
29	129	689	193	656	-----	5,200	1,290	770	869	82	52	178
30	135	677	201	632	-----	4,350	1,300	908	950	62	51	272
31	117	-----	217	632	-----	3,500	-----	1,170	-----	50	46	-----
TOTAL	2,403	8,947	18,189	34,318	14,036	60,873	42,360	39,385	53,815	10,885	2,812	4,161
MEAN	77.5	298	587	1,107	501	1,964	1,412	1,270	1,794	351	90.7	139
MAX	162	794	2,650	6,620	767	7,000	2,920	1,860	4,550	1,020	186	272
MIN	28	98	156	128	238	184	1,050	674	584	50	34	41
AC-FT	4,770	17,750	36,080	68,070	27,840	120,700	84,020	78,120	106,700	21,590	5,580	8,250

CAL YR 1970 TOTAL 186,773.6 MEAN 512 MAX 8,910 MIN 8.6 AC-FT 370,500  
 WTR YR 1971 TOTAL 292,184.0 MEAN 801 MAX 7,000 MIN 28 AC-FT 579,500

## SACRAMENTO RIVER BASIN

## 11350500 ASH CREEK AT ADIN, CALIF.

LOCATION.--Lat 41°11'54", long 120°56'32", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.21, T.39 N., R.9 E., Modoc County, on left bank 300 ft upstream from highway bridge at Adin and 0.4 mile upstream from Butte Creek.

DRAINAGE AREA.--258 sq mi.

PERIOD OF RECORD.--March 1904 to December 1905, October 1928 to November 1932, October 1957 to current year. Records of daily discharge for Oct. 19-31, 1928, are in error and should not be used.

GAGE.--Water-stage recorder. Altitude of gage is 4,190 ft (estimated on basis of bench mark 300 ft downstream). Prior to Sept. 12, 1957, water-stage recorder or nonrecording gage at sites within 1 mile of present site, at different datums.

AVERAGE DISCHARGE.--19 years (1904-5, 1928-32, 1957-71), 75.6 cfs (54,770 acre-ft per year); median of yearly mean discharges, 55 cfs (39,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,280 cfs Mar. 26 (gage height, 13.30 ft); minimum daily, 16 cfs Sept. 10, 11.

Period of record: Maximum discharge, 2,950 cfs Jan. 24, 1970 (gage height, 14.69 ft in gage well, 15.24 ft, from floodmarks); no flow for part of Aug. 26, 1962.

REMARKS.--Small diversions above station for irrigation. Flow regulated by many small reservoirs (total capacity, 4,732 acre-ft). See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (WATER YEARS).--WRD Calif. 1966: 1958(M), 1960(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	31	71	69	179	65	417	239	356	59	23	28
2	21	34	77	56	169	61	375	247	369	46	23	28
3	22	28	83	40	134	71	346	353	355	34	22	23
4	21	28	94	37	131	84	329	599	249	34	24	20
5	21	41	178	38	134	82	323	375	181	35	33	20
6	21	52	502	42	143	79	327	334	148	36	24	25
7	21	50	551	49	121	85	331	316	131	34	24	24
8	22	40	462	51	115	86	306	363	119	33	24	19
9	23	154	336	56	112	92	297	370	112	32	25	18
10	23	102	150	64	131	93	334	302	118	30	24	16
11	22	103	131	68	139	107	295	273	96	29	24	16
12	22	230	99	69	143	345	261	257	89	28	24	17
13	22	63	85	66	145	537	245	227	81	28	23	18
14	22	45	80	64	137	349	235	198	77	27	21	18
15	22	39	76	62	153	295	216	181	71	27	17	21
16	22	36	77	102	128	339	200	167	64	26	21	23
17	27	34	78	503	128	304	285	153	60	26	21	23
18	31	34	70	1,810	116	228	300	147	53	31	21	24
19	30	33	56	1,320	113	265	265	130	51	31	21	25
20	34	33	64	978	104	317	257	113	49	29	18	26
21	35	33	71	526	102	383	305	113	45	28	19	26
22	39	44	65	355	107	370	281	107	44	26	21	27
23	37	64	62	293	105	876	238	97	39	26	22	27
24	36	108	53	217	101	939	208	90	39	25	22	27
25	30	449	44	189	85	962	241	90	42	24	21	33
26	32	168	40	186	74	1,620	338	89	87	23	21	37
27	32	86	61	185	77	1,220	315	97	91	23	23	34
28	34	71	60	173	72	824	281	109	131	23	24	32
29	36	83	57	166	-----	645	262	113	87	27	24	39
30	31	84	58	173	-----	576	256	122	66	24	25	49
31	35	-----	64	173	-----	483	-----	163	-----	23	27	-----
TOTAL	847	2,400	3,955	8,180	3,398	12,782	8,669	6,534	3,500	927	706	763
MEAN	27.3	80.0	128	264	121	412	289	211	117	29.9	22.8	25.4
MAX	39	449	551	1,810	179	1,620	417	599	369	59	33	49
MIN	21	28	40	37	72	61	200	89	39	23	17	16
AC-FT	1,680	4,760	7,840	16,230	6,740	25,350	17,190	12,960	6,940	1,840	1,400	1,510

CAL YR 1970 TOTAL 44,138.1 MEAN 121 MAX 2,160 MIN 9.5 AC-FT 87,550  
WTR YR 1971 TOTAL 52,661.0 MEAN 144 MAX 1,810 MIN 16 AC-FT 104,500

## 11352000 PIT RIVER NEAR BIEBER, CALIF.

LOCATION.--Lat 41°00'55", long 121°09'13", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.27, T.37 N., R.7 E., Modoc County, on right bank 2.2 miles upstream from Spring Gulch and 7.4 miles south of Bieber.

DRAINAGE AREA.--2,475 sq mi, excluding Goose Lake basin.

PERIOD OF RECORD.--January 1904 to September 1908, December 1913 to August 1914, September 1921 to September 1926, November 1928 to September 1931, October 1951 to current year. Yearly figures only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 4,080.4 ft above mean sea level. Prior to November 1928, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--33 years (1903-8, 1921-26, 1928-31, 1951-71), 528 cfs (382,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 11,000 cfs Mar. 28 (gage height, 10.59 ft); minimum daily, 2.7 cfs Aug. 28.

Period of record: Maximum discharge, 33,800 cfs Mar. 19, 1907 (gage height, 16.7 ft), from rating curve extended above 11,000 cfs; no flow at times in some years.

REMARKS.--Records good except those for Dec. 18 to Jan. 17, which are fair. Flow regulated by many small reservoirs (total capacity now, 204,000 acre-ft). Diversions for irrigation of 33,000 acres between stations near Canby and near Bieber. See schematic diagram of Pit and McCloud River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	128	767	390	1,110	394	5,290	1,720	1,350	986	71	7.6
2	41	160	795	335	1,110	330	4,370	1,690	1,760	1,050	66	6.0
3	34	142	676	320	1,030	386	3,720	1,680	2,160	1,050	52	9.6
4	35	124	575	300	949	450	3,250	1,910	2,810	1,040	45	12
5	49	134	615	280	844	474	2,900	2,200	3,360	816	40	8.4
6	93	176	823	260	844	470	2,640	2,260	3,790	615	16	9.2
7	79	196	1,440	255	865	462	2,420	2,220	4,120	410	16	24
8	69	193	2,300	250	844	450	2,330	2,240	4,100	688	20	12
9	71	270	3,020	250	788	454	2,220	2,380	3,760	712	19	8.8
10	71	495	3,360	255	760	454	2,170	2,440	3,360	525	15	9.2
11	66	478	3,120	270	900	470	2,210	2,360	2,960	474	13	12
12	63	605	2,290	330	1,060	682	2,140	2,270	2,620	458	12	15
13	61	646	1,360	330	1,150	1,490	2,000	2,140	2,290	366	14	16
14	62	600	978	370	1,170	2,600	1,890	2,030	1,950	274	17	32
15	130	495	630	340	1,200	2,700	1,750	1,930	1,730	257	24	71
16	87	426	530	410	1,310	2,390	1,640	1,820	1,560	124	38	119
17	87	338	478	590	1,130	2,460	1,700	1,710	1,420	104	48	106
18	63	281	380	1,550	986	2,450	1,810	1,590	1,270	119	28	36
19	54	234	300	3,850	886	2,230	1,840	1,510	1,130	110	34	54
20	57	206	260	7,070	748	2,060	1,790	1,410	1,000	142	27	308
21	61	188	270	7,230	742	2,080	1,840	1,310	879	202	19	293
22	71	188	270	7,410	712	2,220	1,920	1,190	742	176	11	126
23	72	199	300	5,360	706	2,860	1,890	1,070	658	209	7.2	100
24	92	225	300	3,560	652	4,320	1,810	963	630	182	5.8	93
25	101	461	295	2,620	595	5,460	1,720	872	605	156	5.2	104
26	108	914	290	1,930	530	6,850	1,690	788	575	132	4.5	126
27	149	1,060	280	1,520	454	9,850	1,700	682	620	103	3.1	122
28	163	1,090	245	1,360	410	10,500	1,720	630	774	84	2.7	115
29	128	986	230	1,260	-----	9,150	1,720	664	907	98	6.8	122
30	122	886	265	1,170	-----	7,540	1,720	730	928	95	14	193
31	146	-----	360	1,110	-----	6,350	-----	921	-----	83	7.6	-----
TOTAL	2,522	12,524	27,802	52,535	24,485	91,036	67,810	49,330	55,818	11,840	701.9	2,269.8
MEAN	81.4	417	897	1,695	874	2,937	2,260	1,591	1,861	382	22.6	75.7
MAX	163	1,090	3,360	7,410	1,310	10,500	5,290	2,440	4,120	1,050	71	308
MIN	34	124	230	250	410	330	1,640	630	575	83	2.7	6.0
AC-FT	5,000	24,840	55,150	104,200	48,570	180,600	134,500	97,850	110,700	23,480	1,390	4,500

CAL YR 1970 TOTAL 299,398.05 MEAN 820 MAX 17,700 MIN .63 AC-FT 593,900  
WTR YR 1971 TOTAL 398,673.70 MEAN 1,092 MAX 10,500 MIN 2.7 AC-FT 790,800

## 11352900 BEAVER CREEK NEAR HAT CREEK, CALIF.

LOCATION.--Lat 40°49'47", long 121°14'54", in NE<sup>1</sup>NE<sup>1</sup> sec.12, T.34 N., R.6 E., Lassen County, Lassen National Forest, on right bank at culvert on Forest Service road 35N10, 13.6 miles east of town of Hat Creek, and 15 miles south of Pittville.

DRAINAGE AREA.--23.2 sq mi.

PERIOD OF RECORD.--November 1969 to current year.

GAGE.--Water-stage recorder and precipitation gage. Datum of gage is 4,980 ft above mean sea level (from topographic map).

EXTREMES.--Current year: Maximum discharge, 195 cfs Mar. 26 (gage height, 4.19 ft), from rating curve extended above 15 cfs as explained below; minimum daily, 0.21 cfs Jan. 5.

Period of record: Maximum discharge, 349 cfs Jan. 23, 1970 (gage height, 5.89 ft), from rating curve extended above 15 cfs on basis of theoretical computation of culvert flow; minimum daily, 0.21 cfs Jan. 5, 1971.

REMARKS.--Records good below 20 cfs, fair above. No known diversions above station. Flow of stream is sustained by springs.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.37	.41	1.4	.25	6.5	1.4	22	5.4	29	.76	.38	.43
2	.37	.42	1.3	.24	4.1	1.5	22	6.9	16	.59	.38	.44
3	.37	.45	.98	.23	2.1	2.3	22	18	6.3	.49	.38	.44
4	.37	.58	.85	.22	2.2	2.0	22	22	8.3	.45	.38	.44
5	.37	.55	1.5	.21	4.1	1.6	22	9.8	8.5	.42	.39	.43
6	.37	.42	3.2	.23	4.7	1.7	21	7.2	3.5	.41	.38	.46
7	.42	.42	9.3	.25	3.4	1.6	20	6.7	2.5	.41	.38	.44
8	.42	.37	14	.75	3.0	1.5	18	12	2.1	.40	.38	.44
9	.42	3.8	13	1.8	3.1	1.6	18	9.0	2.0	.40	.39	.43
10	.42	.85	6.4	4.1	8.2	1.7	24	5.0	2.3	.41	.39	.42
11	.42	2.4	3.0	7.0	11	2.3	15	4.0	1.6	.40	.40	.40
12	.42	5.4	1.9	10	12	8.2	13	3.9	1.2	.41	.38	.41
13	.37	.55	1.1	9.2	11	23	12	3.2	1.2	.40	.38	.42
14	.37	.37	.65	8.2	8.7	14	11	2.8	.82	.40	.38	.42
15	.37	.33	.39	7.0	8.1	7.0	9.5	2.4	.73	.39	.39	.42
16	.37	.33	.29	9.0	5.1	10	9.7	2.1	1.0	.40	.39	.42
17	.37	.33	.28	12	4.1	10	19	1.9	.91	.44	.39	.43
18	.37	.33	.27	13	3.2	8.1	15	1.9	.83	.42	.39	.44
19	.37	.33	.26	13	2.8	14	11	1.6	.82	.48	.38	.43
20	.42	.33	.26	15	2.6	16	13	1.5	.74	.37	.38	.43
21	.37	.33	.25	15	2.4	16	15	1.8	.60	.37	.39	.43
22	.42	.37	.25	14	2.4	18	10	1.5	.47	.37	.39	.43
23	.49	.37	.24	12	2.6	54	10	1.1	.45	.36	.39	.43
24	.37	.37	.24	11	2.8	32	12	.93	.44	.36	.39	.43
25	.37	10	.23	10	1.6	31	14	.82	.46	.37	.40	.48
26	.37	4.7	.24	8.6	1.2	78	23	1.2	3.2	.37	.40	.47
27	.37	1.2	.24	7.7	1.1	37	11	1.3	11	.38	.43	.47
28	.37	1.1	.26	6.8	1.4	30	8.5	2.9	4.7	.38	.40	.47
29	.30	4.2	.28	4.9	-----	30	7.1	2.3	2.0	.38	.39	.49
30	.35	3.6	.27	5.3	-----	28	6.1	7.4	1.1	.38	.42	.46
31	.43	-----	.26	5.1	-----	23	-----	11	-----	.38	.43	-----
TOTAL	11.96	45.21	63.09	212.08	125.5	506.5	455.9	159.55	114.77	12.95	12.12	13.15
MEAN	.39	1.51	2.04	6.84	4.48	16.3	15.2	5.15	3.83	.42	.39	.44
MAX	.49	10	14	15	12	78	24	22	29	.76	.43	.49
MIN	.30	.33	.23	.21	1.1	1.4	6.1	.82	.44	.36	.38	.40
(a)	1.50	4.57	-	-	.32	-	-	2.64	2.35	.29	0	0

CAL YR 1970 TOTAL 1,498.61 MEAN 4.11 MAX 100 MIN .23  
WTR YR 1971 TOTAL 1,732.78 MEAN 4.75 MAX 78 MIN .21

a Precipitation, in inches (some precipitation falling as snow may not be included).

## 11355500 HAT CREEK NEAR HAT CREEK, CALIF.

LOCATION.--Lat 40°41'12", long 121°25'25", in SE $\frac{1}{4}$  sec.28, T.33 N., R.5 E., Shasta County, on right bank 0.8 mile northeast of Old Station Post Office and 8 miles southeast of Hat Creek Post Office.

DRAINAGE AREA.--162 sq mi; hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--July 1926 to September 1929, April 1930 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,300 ft (from topographic map). July 1926 to April 1928 at site 0.5 mile upstream at different datum. May 1928 to July 1965 at site 80 ft upstream at datum 2.76 ft higher.

AVERAGE DISCHARGE.--44 years, 136 cfs (98,530 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 404 cfs June 26 (gage height, 4.30 ft); minimum daily, 150 cfs Oct. 2.

Period of record: Maximum discharge, 3,320 cfs Dec. 11, 1937 (gage height, 7.75 ft in gage well, affected by drawdown, site and datum then in use), from rating curve extended above 610 cfs on basis of slope-area measurement of maximum flow; minimum, 67 cfs Sept. 7, 1934.

REMARKS.--Records excellent. Diversions for irrigations of 260 acres above station. See schematic diagram of Pit and McCloud River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154	166	167	159	163	155	171	181	228	237	177	155
2	150	166	163	157	162	157	171	180	219	235	177	154
3	152	166	160	153	158	162	171	181	212	230	177	155
4	153	168	155	153	160	159	170	184	220	225	176	155
5	154	183	159	153	160	155	172	194	227	222	176	155
6	154	179	167	154	160	158	175	190	237	219	175	155
7	155	172	170	154	159	158	175	191	249	214	175	160
8	157	170	166	157	158	157	172	203	262	211	174	166
9	157	191	163	157	159	155	174	200	268	209	163	166
10	157	188	160	159	160	155	175	212	264	208	158	164
11	157	181	164	158	160	155	171	223	270	200	158	164
12	158	183	162	157	162	167	170	235	268	194	158	164
13	162	171	159	155	160	159	171	249	264	193	159	163
14	166	171	159	154	160	158	172	247	268	190	159	164
15	164	170	160	154	160	157	175	244	271	188	159	163
16	164	168	159	155	159	157	177	237	279	188	160	163
17	164	168	160	177	160	155	180	222	281	190	162	163
18	167	167	159	220	159	155	177	217	270	194	159	163
19	166	167	155	200	159	155	175	223	275	193	166	159
20	170	166	155	191	158	157	176	230	281	191	170	152
21	167	166	155	177	158	157	174	228	273	186	168	152
22	168	168	154	171	159	159	172	214	277	183	168	152
23	172	168	154	171	159	188	171	230	277	181	168	152
24	171	186	154	170	158	183	171	251	258	179	168	153
25	170	214	153	167	157	179	171	271	258	177	170	153
26	167	184	154	167	154	196	171	290	356	176	170	166
27	164	177	155	166	155	177	171	271	312	175	170	168
28	166	160	158	164	157	175	174	288	266	174	167	167
29	167	166	158	164	-----	174	176	258	246	172	154	170
30	166	168	158	164	-----	175	181	255	240	176	154	170
31	166	-----	158	163	-----	172	-----	232	-----	177	154	-----
TOTAL	5,025	5,218	4,933	5,121	4,453	5,081	5,202	7,031	7,876	6,087	5,149	4,806
MEAN	162	174	159	165	159	164	173	227	263	196	166	160
MAX	172	214	170	220	163	196	181	290	356	237	177	170
MIN	150	160	153	153	154	155	170	180	212	172	154	152
AC-FT	9,970	10,350	9,780	10,160	8,830	10,080	10,320	13,950	15,620	12,070	10,210	9,530
CAL YR 1970	TOTAL	66,133	MEAN	181	MAX	705	MIN	136	AC-FT	131,200		
WTR YR 1971	TOTAL	65,982	MEAN	181	MAX	356	MIN	150	AC-FT	130,900		

## PEAK DISCHARGE (BASE, 180 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11- 5	1500	3.18	198	5-14	0100	3.63	266
11- 9	2200	3.37	228	5-28	0030	3.90	318
11-24	2300	3.56	260	6-26	1730	4.30	404
1-18	1200	3.54	251	7-20	1500	3.52	246
3-26	0400	3.36	219				

## SACRAMENTO RIVER BASIN

11360500 BURNEY CREEK NEAR BURNEY, CALIF.

LOCATION.--Lat 40°52'16", long 121°40'57", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.19, T.35 N., R.3 E., Shasta County, on right bank 300 ft upstream from road bridge, 0.8 mile southwest of Burney and 4.5 miles upstream from Goose Creek.

DRAINAGE AREA.--88.8 sq mi.

PERIOD OF RECORD.--August 1911 to August 1913 (published as "at Burney"), March 1921 to September 1922, April 1958 to September 1964, October 1965 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Altitude of gage is 3,180 ft (from topographic map). August 1911 to August 1913 and March 1921 to September 1922, nonrecording gage or water-stage recorder at different site and datum.

AVERAGE DISCHARGE.--15 years (1911-13, 1921-22, 1958-64, 1965-71), 66.5 cfs (48,180 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,190 cfs Mar. 26 (gage height, 11.09 ft); minimum daily, 12 cfs Oct. 1.

Period of record: Maximum discharge, 4,910 cfs Jan. 23, 1970 (gage height, 15.89 ft), from rating curve extended above 2,500 cfs on basis of contracted-opening measurement of maximum flow; minimum, 3.4 cfs Aug. 4, 1961.

REMARKS.--Small diversions upstream for irrigation. Slight regulation probably caused by logging operations.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS.--Revised figures of discharge, in cubic feet per second, for the water year 1970, superseding those published in WRD Calif. 1970, are given herewith:

DATE	DISCHARGE	DATE	DISCHARGE	DATE	DISCHARGE	DATE	DISCHARGE
June 18	24	June 27	20	July 6	12	July 15	12
19	21	28	36	7	12	16	15
20	17	29	37	8	17	17	19
21	23	30	23	9	18	18	19
22	21	July 1	21	10	17	19	20
23	17	2	18	11	14	20	22
24	11	3	17	12	13	21	17
25	17	4	15	13	13	22	14
26	19	5	12	14	12		

MONTH	CFS-DAYS	MAX	MIN	MEAN	RUNOFF IN AC-FT
June	664.2	77	7.5	22.1	1,320
July	466	22	10	15.0	924
WTR YR 1970	47,108.4	3,370	7.5	129	93,440

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	15	106	61	92	58	253	211	198	73	23	18
2	13	15	144	51	91	53	249	214	160	64	23	16
3	14	15	136	44	88	55	247	318	138	59	21	17
4	15	22	128	42	84	55	248	366	133	55	20	18
5	17	124	113	37	81	49	257	306	132	52	21	18
6	16	70	126	37	80	46	283	265	123	50	20	19
7	18	55	215	38	78	45	281	260	119	48	18	20
8	19	39	327	37	75	45	269	274	117	47	18	21
9	18	175	301	37	72	46	283	252	110	45	18	18
10	19	96	179	80	70	46	374	240	103	44	19	18
11	21	73	129	88	76	61	288	240	98	44	19	20
12	22	103	102	59	86	307	255	253	93	43	17	21
13	20	56	87	56	97	288	262	260	91	42	17	19
14	15	38	75	50	99	207	258	232	85	39	16	17
15	19	29	86	102	117	154	269	207	78	36	16	17
16	17	23	118	217	117	133	276	189	75	33	17	18
17	16	18	91	282	104	128	294	165	72	32	18	18
18	23	17	78	361	94	110	234	147	75	33	17	18
19	27	18	65	351	95	106	216	137	71	33	17	18
20	51	17	62	335	81	105	234	137	68	32	18	17
21	60	17	62	276	76	109	205	134	67	31	18	17
22	86	25	60	207	74	123	182	131	61	29	19	17
23	72	25	57	176	70	362	171	134	58	27	20	16
24	52	48	51	155	67	466	162	137	51	27	20	16
25	26	204	42	140	63	443	157	142	53	27	20	18
26	19	144	46	130	59	911	164	213	106	26	19	25
27	16	137	45	121	61	586	172	189	201	25	20	27
28	15	170	52	113	60	412	179	219	147	25	19	27
29	15	133	84	106	-----	337	196	167	97	23	19	47
30	14	128	68	101	-----	328	211	196	80	21	19	57
31	14	-----	62	97	-----	273	-----	192	-----	22	20	-----
TOTAL	781	2,049	3,297	3,987	2,307	6,447	7,129	6,527	3,060	1,187	586	633
MEAN	25.2	68.3	106	129	82.4	208	238	211	102	38.3	18.9	21.1
MAX	86	204	327	361	117	911	374	366	201	73	23	57
MIN	12	15	42	37	59	45	157	131	51	21	16	16
AC-FT	1,550	4,060	6,540	7,910	4,580	12,790	14,140	12,950	6,070	2,350	1,160	1,260

CAL YR 1970 TOTAL 45,746.4 MEAN 125 MAX 3,370 MIN 7.5 AC-FT 90,740  
WTR YR 1971 TOTAL 37,990.0 MEAN 104 MAX 911 MIN 12 AC-FT 75,350



## RESERVOIRS IN PIT AND McCLOUD RIVER BASINS, CALIF.

11361400 LAKE BRITTON NEAR BURNEY.--Lat 41°01'20", long 121°40'32", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.30, T.37 N., R.3 E., Shasta County, Shasta National Forest, at control house on right bank 200 ft upstream from dam on Pit River, 1.1 miles downstream from Clark Creek, 1.3 miles northwest of Burney Falls, and 9 miles north of Burney.. Drainage area, 4,606 sq mi. Period of record, October 1965 to current year. Gage is a remote telemark read once daily. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Extremes for current year: Maximum contents, 15,598 acre-ft Mar. 27, 28 (elevation, 2,757.90 ft); minimum, 2,036 acre-ft Mar. 11 (elevation, 2,746.09 ft). Extremes for period of record: Maximum contents, 20,445 acre-ft Jan. 25, 1970 (elevation, 2,761.55 ft); minimum, 719 acre-ft Feb. 1, 1968 (elevation, 2,744.75 ft).

Reservoir is formed by gravity-type concrete dam. Storage began July 15, 1925. Maximum storage, 40,600 acre-ft. Record of contents collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project. See schematic diagram of Pit and McCloud River basins.

11363920 IRON CANYON RESERVOIR NEAR BIG BEND.--Lat 41°02'41", long 121°58'52", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.21, T.37 N., R.1 W., Shasta County, Shasta National Forest, in control house on left bank 500 ft upstream from Iron Canyon Dam on Iron Canyon Creek, 3.7 miles northwest of Big Bend. Drainage area, 11.1 sq mi. Period of record, December 1965 to current year. Gage is a water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Extremes for current year: Maximum contents, 17,058 acre-ft Aug. 29 (elevation, 2,649.10 ft); minimum, 195 acre-ft Feb. 10 (elevation, 2,540.00 ft). Extremes for period of record: Maximum contents, 22,800 acre-ft July 24, 1968 (elevation, 2,662.07 ft); minimum since initial operation of reservoir, 195 acre-ft Feb. 10, 1971 (elevation, 2,540.00 ft); reservoir drained for inspection.

Reservoir is formed by a rockfill dam completed in 1965. Capacity is 24,200 acre-ft between elevations 2,525.00 ft (invert of sluice pipe) and 2,665.00 ft (crest of spillway). No dead storage. Water is diverted from McCloud Reservoir through a tunnel to Iron Canyon Reservoir and thence into the Pit River via a powerplant. Record of contents collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project. See schematic diagram of Pit and McCloud River basins.

11367740 McCLOUD RESERVOIR NEAR McCLOUD.--Lat 41°08'06", long 122°04'26", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.22, T.38 N., R.2 W., Shasta County, Shasta National Forest, on McCloud Dam near spillway on McCloud River, 200 ft downstream from Panther Creek, and 8.8 miles southeast of McCloud. Drainage area, 403 sq mi. Period of record, October 1965 to current year. Gage is a water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Gas and Electric Co.). Extremes for current year: Maximum contents, 35,391 acre-ft Feb. 13, 14, April 10, 11 (elevation, 2,680.30 ft); minimum, 18,397 acre-ft Jan. 9, 10 (elevation, 2,640.90 ft). Extremes for period of record: Maximum contents, 35,652 acre-ft Jan. 21, 1970 (elevation, 2,680.80 ft); minimum since storage pool first filled, 15,700 acre-ft Jan. 22, 1967 (elevation, 2,632.60 ft).

Reservoir is formed by a rockfill dam completed in 1965. Capacity, 36,548 acre-ft between elevations 2,571.30 ft (invert of sluice pipe) and 2,682.50 ft (top of radial gates). No dead storage. Water is diverted from McCloud Reservoir through a diversion tunnel to Iron Canyon Reservoir and thence into the Pit River. Record of contents collected by Pacific Gas and Electric Co., under the general supervision of the Geological Survey, in connection with a Federal Power Commission project. See schematic diagram of Pit and McCloud River basins.

## MONTHEND ELEVATIONS AND CONTENTS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (acre- feet)	Elevation (feet)	Contents (acre- feet)	Change in contents (acre- feet)	Elevation (feet)	Contents (acre- feet)	Change in contents (acre- feet)
LAKE BRITTON				McCLOUD RESERVOIR			IRON CANYON RESERVOIR		
Sept. 30.....	2,751.70	8,054	-	2,664.30	27,670	-	2,636.50	12,557	-
Oct. 31.....	2,748.05	4,044	-4,010	2,656.10	24,152	-3,518	2,638.00	13,042	+485
Nov. 30.....	2,753.00	9,561	+5,517	2,657.00	24,524	+372	2,624.80	9,158	-3,884
Dec. 31.....	2,747.97	3,960	-5,601	2,643.00	19,134	-5,390	2,602.80	4,535	-4,623
CAL YR 1970....	-	-	+3,751	-	-	-12,971	-	-	+108
Jan. 31.....	2,753.00	9,561	+5,601	2,668.10	29,397	+10,263	2,618.10	7,494	+2,959
Feb. 28.....	2,751.45	7,768	-1,793	2,660.90	26,177	-3,220	2,600.90	4,246	-3,248
Mar. 31.....	2,756.50	13,814	+6,046	2,680.00	35,234	+9,057	2,595.00	3,441	-805
Apr. 30.....	2,753.92	10,649	-3,165	2,679.50	34,975	-259	2,604.40	4,792	+1,351
May 31.....	2,753.35	9,973	-676	2,679.60	35,027	+52	2,599.70	4,072	-720
June 30.....	2,755.15	12,141	+2,168	2,667.00	28,891	-6,136	2,619.70	7,872	+3,800
July 31.....	2,752.80	9,327	-2,814	2,670.00	31,281	+2,390	2,642.20	14,468	+6,596
Aug. 31.....	2,755.45	12,509	+3,182	2,671.90	31,185	-96	2,645.00	15,481	+1,013
Sept. 30.....	2,756.10	13,315	+806	2,668.00	29,350	-1,835	2,640.10	13,742	-1,739
WTR YR 1971....	-	-	+5,261	-	-	+1,680	-	-	+1,185

## SACRAMENTO RIVER BASIN

11362500 PIT RIVER BELOW PIT NO. 4 DAM, CALIF.

LOCATION.--Lat 40°58'25", long 121°46'42", in SW $\frac{1}{4}$  sec.17, T.36 N., R.2 E., Shasta County, Shasta National Forest, on right bank 0.6 mile downstream from Ruling Creek, 1.3 miles downstream from Pit No. 4 Dam, and 2.7 miles downstream from Pit No. 3 powerhouse.

DRAINAGE AREA.--4,647 sq mi, excluding Goose Lake basin.

PERIOD OF RECORD.--May 1922 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Pecks Bridge" April to October 1922, and as "at Lindsay Flat" November 1922 to June 1927.

GAGE.--Water-stage recorder. Altitude of gage is 2,358 ft (from river-profile map). Prior to November 1922, water-stage recorder at site at Pecks Bridge 7.4 miles upstream at different datum. November 1922 to June 20, 1927, at site at Lindsay Flat 1.8 miles upstream at different datum.

AVERAGE DISCHARGE.--61 years (1910-71), 2,775 cfs (2,010,000 acre-ft per year), including diversion to Pit No. 4 powerplant. Period 1910-22 extrapolated on basis of records for Pit River at Big Bend.

EXTREMES.--Current year: Maximum discharge, 13,000 cfs Mar. 27 (gage height, 12.85 ft); minimum daily, 53 cfs Dec. 26, 27.

Period of record: Maximum discharge, 31,000 cfs Jan. 25, 1970 (gage height, 18.04 ft), from rating curve extended above 12,000 cfs; minimum daily, 234 cfs Sept. 13, 1953. Minimum daily discharge since diversion to Pit No. 4 powerplant in 1955, 22 cfs Dec. 2-4, 1969.

REMARKS.--Flow regulated by many small reservoirs and powerplants (total usable reservoir capacity, 253,000 acre-ft). Many diversions above station; diversion to Pit No. 4 powerplant began June 9, 1955. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	67	128	60	94	61	6,430	1,400	762	153	153	141
2	104	63	245	60	78	57	5,280	1,380	1,100	155	151	153
3	105	138	380	57	79	56	3,970	1,420	1,460	151	153	153
4	110	178	288	56	78	56	3,620	1,670	1,730	149	145	147
5	107	79	125	57	72	56	3,120	2,030	2,310	155	151	151
6	105	73	175	55	67	56	2,790	2,240	2,820	153	147	151
7	107	75	563	662	75	57	2,540	2,220	3,260	147	153	153
8	104	79	1,810	395	67	59	2,390	2,240	3,500	153	155	155
9	100	95	2,970	76	66	57	2,170	2,450	3,250	153	155	153
10	109	76	3,060	61	66	57	2,210	2,530	2,790	151	155	149
11	109	78	2,870	63	63	60	2,330	2,590	2,370	151	151	145
12	104	79	2,210	59	63	75	2,150	2,500	1,900	153	157	145
13	107	79	1,130	64	82	63	2,100	2,320	1,340	155	157	155
14	107	78	416	69	105	370	1,940	2,210	969	143	155	163
15	107	76	99	79	105	2,210	1,810	1,980	673	145	112	167
16	102	78	87	119	110	2,040	1,700	1,780	526	162	63	159
17	105	78	78	94	200	2,010	1,680	1,660	288	145	119	163
18	104	78	60	509	182	1,800	1,710	1,350	200	151	159	145
19	100	79	57	3,100	123	1,450	1,750	887	151	153	189	147
20	107	76	57	5,730	104	1,260	1,700	874	145	147	153	155
21	110	78	57	6,410	89	976	1,690	651	151	153	157	149
22	110	78	53	6,880	78	1,220	1,910	563	157	151	149	153
23	104	78	55	6,390	60	2,040	1,690	439	285	147	161	149
24	104	82	56	4,130	56	3,520	1,630	353	312	151	157	149
25	110	89	55	2,350	72	5,420	1,550	300	147	151	149	155
26	107	78	53	1,680	64	7,980	1,360	282	155	147	155	155
27	109	92	53	934	64	9,960	1,300	189	157	151	155	155
28	105	264	59	626	60	11,200	1,340	198	151	151	159	149
29	104	522	72	463	-----	10,700	1,360	222	153	153	155	145
30	104	341	67	309	-----	9,230	1,380	178	157	149	155	149
31	109	-----	61	242	-----	7,740	-----	500	-----	153	138	-----
TOTAL	3,239	3,404	17,449	41,839	2,422	81,896	68,600	41,606	33,369	4,682	4,623	4,558
MEAN	104	113	563	1,350	86.5	2,642	2,287	1,342	1,112	151	149	152
MAX	110	522	3,060	6,880	200	11,200	6,430	2,590	3,500	162	189	167
MIN	60	63	53	55	56	56	1,300	178	145	143	63	141
AC-FT	6,420	6,750	34,610	82,990	4,800	162,400	136,100	82,530	66,190	9,290	9,170	9,040
MEAN a	2,292	2,592	3,892	4,531	3,450	5,982	5,779	4,853	4,426	2,638	2,021	2,404
AC-FT a	140,900	154,200	239,300	278,600	191,600	367,800	343,900	298,400	263,400	162,200	124,300	143,000
CAL YR 1970	TOTAL 358,121	MEAN 981	MAX 26,800	MIN 41	AC-FT 710,300	MEAN a 3,701	AC-FT a 2,679,000					
WTR YR 1971	TOTAL 307,687	MEAN 843	MAX 11,200	MIN 53	AC-FT 610,300	MEAN a 3,740	AC-FT a 2,708,000					

a Adjusted for diversion to Pit No. 4 powerplant.

LOCATION.--Lat 41°01'10", long 121°54'36", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.31, T.37 N., R.1 E., Shasta County, on left bank at Big Bend 0.4 mile downstream from Nelson Creek and 1.5 miles upstream from Kosk Creek.

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Henderson" 1910-23.

GAGE.--Water-stage recorder. Datum of gage is 1,674.47 ft above mean sea level. Prior to Dec. 28, 1912, nonrecording gage and Dec. 28, 1912, to June 21, 1924, water-stage recorder at same site at datum 7.69 ft higher.

AVERAGE DISCHARGE (prior to diversion to Pit No. 5 powerplant).--33 years (1910-43), 2,931 cfs (2,122,000 acre-ft per year); 28 years (1943-71), 592 cfs (428,900 acre-ft per year), unadjusted.

EXTREMES.--Current year: Maximum discharge, 14,800 cfs Mar. 27 (gage height, 12.61 ft); minimum daily, 96 cfs Nov. 20.

Period of record: Maximum discharge, 49,000 cfs Jan. 25, 1970 (gage height, 18.17 ft in gage well, 0 ft, from floodmarks), from rating curve extended above 17,000 cfs, partly affected by gate operation  
Pit No. 4 Dam; minimum daily, 34 cfs Mar. 29, 1955.

REMARKS.--Flow regulated by many reservoirs and powerplants (total usable reservoir capacity, about 253,000 acre-ft). Many diversions above station; diversion to Pit No. 5 powerhouse began May, 1, 1944. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	121	112	858	141	832	162	7,820	2,340	1,340	285	136	128
2	123	101	960	130	502	155	6,570	2,340	1,800	235	138	128
3	109	190	1,140	121	544	155	5,120	2,380	2,220	181	143	130
4	112	224	989	114	734	151	4,770	2,660	2,470	172	140	132
5	116	227	813	111	729	149	4,250	2,990	3,060	172	140	130
6	116	197	851	109	426	147	3,890	3,210	3,580	168	143	132
7	123	141	1,430	106	527	145	3,640	3,220	4,070	168	140	132
8	125	162	2,840	104	498	143	3,440	3,310	4,320	164	134	130
9	121	291	4,130	106	328	143	3,290	3,470	4,090	170	136	130
10	126	168	4,110	116	445	145	3,310	3,550	3,580	170	143	130
11	123	175	3,870	157	355	256	3,420	3,620	3,120	166	141	130
12	121	155	3,040	145	536	423	3,210	3,510	2,640	162	140	130
13	119	130	1,970	126	580	319	3,140	3,330	2,050	164	140	125
14	123	123	1,140	160	729	553	2,990	3,190	1,670	160	132	121
15	114	116	770	319	832	3,010	2,860	2,920	1,340	155	119	126
16	121	109	764	695	838	2,970	2,770	2,700	1,140	155	109	125
17	125	106	695	558	891	2,750	2,750	2,570	918	147	145	126
18	128	104	457	864	975	2,730	2,720	2,230	770	149	190	128
19	126	106	181	3,930	845	2,350	2,750	1,710	689	151	222	126
20	140	96	143	6,790	794	2,120	2,690	1,700	641	151	279	123
21	145	101	138	7,690	502	1,810	2,660	1,450	397	149	160	128
22	141	99	126	8,240	240	2,010	2,520	1,320	485	149	134	132
23	170	98	119	8,040	514	3,020	2,510	1,170	752	153	130	132
24	134	181	114	5,410	294	4,490	2,550	1,080	925	140	130	130
25	126	232	111	3,560	209	6,740	2,440	982	419	151	128	132
26	119	205	108	2,630	193	10,100	2,230	946	190	143	134	132
27	123	657	106	1,850	177	11,700	2,200	911	183	149	134	128
28	123	819	149	1,450	170	12,800	2,260	884	254	151	125	128
29	128	1,210	170	1,260	-----	12,200	2,300	877	285	149	121	157
30	126	1,150	162	1,060	-----	10,800	2,320	884	271	149	132	136
31	126	-----	151	1,060	-----	9,050	-----	1,010	-----	136	126	-----
TOTAL	3,893	7,785	32,605	57,152	15,239	103,696	99,390	68,464	49,669	5,064	4,464	3,897
MEAN	126	260	1,052	1,844	544	3,345	3,313	2,209	1,656	163	144	130
MAX	170	1,210	4,130	8,240	975	12,800	7,820	3,620	4,320	285	279	157
MIN	109	96	106	104	170	143	2,200	877	183	136	109	121
AC												

CAL YR 1970	TOTAL 465,207	MEAN 1,275	MAX 29,100	MIN 87	AC-FT 922,700
WTR YR 1971	TOTAL 451,318	MEAN 1,236	MAX 12,800	MIN 96	AC-FT 895,200



## 11363930 IRON CANYON CREEK BELOW IRON CANYON DAM, NEAR BIG BEND, CALIF.

LOCATION.--Lat 41°02'27", long 121°59'02", in NW $\frac{1}{4}$  sec.28, T.37 N., R.1 W., Shasta County, on left bank 0.2 mile downstream from Iron Canyon Dam and 4.2 miles west of Big Bend.

DRAINAGE AREA.--11.6 sq mi.

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder, 60° sharp-crested V-notch weir, and concrete control. Datum of gage is 2,461.52 ft above mean sea level (levels by Pacific Gas and Electric Co.).

EXTREMES.--Current year: Maximum discharge recorded, 391 cfs Feb. 1 (gage height, 3.10 ft); minimum daily, 2.4 cfs Aug. 19.

Period of record: Maximum discharge recorded, 391 cfs Feb. 1, 1971 (gage height, 3.10 ft), from rating curve extended above 65 cfs on basis of computation of flow over weir (flow was a result of sluicing at dam); no flow July 15-18, 1967.

REMARKS.--Flow is regulated by Iron Canyon Dam (see sta 11363920). There is inter-basin diversion from McCloud Reservoir (see sta 11367790) to Iron Canyon Reservoir (see sta 11363920), and then into a tunnel to James B. Black powerplant on the Pit River (see sta 11363910). See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	3.2	3.2	3.7	368	3.1	3.1	3.2	3.2	3.2	3.2	3.1
2	3.2	3.2	3.1	3.9	360	3.1	3.1	3.1	3.1	3.2	3.2	3.1
3	3.2	3.2	3.2	3.9	375	3.2	3.1	3.1	3.1	3.2	3.2	3.1
4	3.2	3.2	3.2	3.9	360	3.1	3.1	3.1	3.1	3.2	3.2	3.1
5	3.2	3.4	3.2	3.9	334	3.1	3.1	3.1	3.1	3.2	3.2	3.1
6	3.2	3.2	3.2	3.9	317	3.1	3.1	3.1	3.1	3.2	3.2	3.1
7	3.2	3.2	3.2	3.7	114	3.1	3.1	3.1	3.1	3.2	3.2	3.1
8	3.2	3.2	3.2	3.5	77	3.1	3.1	3.1	3.1	3.2	3.2	3.1
9	3.2	3.2	3.2	3.1	75	3.1	3.2	3.1	3.2	3.2	3.2	3.1
10	3.2	3.2	3.2	3.1	89	3.1	3.1	3.2	3.1	3.2	3.1	3.1
11	3.2	3.2	3.2	3.1	59	3.2	3.1	3.1	3.1	3.2	3.2	3.1
12	3.2	3.2	3.2	3.1	83	3.1	3.1	3.1	3.1	3.2	3.1	3.1
13	3.2	3.2	3.2	3.1	98	3.1	3.1	3.1	3.1	3.2	3.1	3.1
14	3.2	3.2	2.6	3.1	52	3.1	3.1	3.1	3.1	3.2	3.1	3.1
15	3.2	3.2	3.2	3.2	36	3.1	3.1	3.1	3.1	3.1	3.1	3.1
16	3.2	3.2	3.2	3.4	15	3.1	3.2	3.1	3.1	3.2	3.1	3.1
17	3.2	3.2	3.2	3.2	3.8	3.1	3.2	3.1	2.7	3.2	3.1	3.1
18	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
19	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.2	2.4	3.1
20	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.1
21	3.2	3.2	3.2	3.1	3.1	3.1	3.0	3.1	3.1	2.9	3.1	3.1
22	2.7	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.1	3.1
23	3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.1	3.1	3.2	2.9	3.1
24	3.2	3.2	3.4	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.1
25	3.2	3.2	3.4	3.1	2.9	3.5	3.1	3.1	3.2	3.2	3.1	3.1
26	3.2	3.2	3.3	3.1	2.9	3.2	3.1	3.2	3.2	3.2	3.1	3.1
27	3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	3.1	3.2	3.1	3.1
28	3.2	3.2	3.6	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.1
29	3.2	3.2	3.7	3.1	-----	3.1	3.1	3.1	3.2	3.2	3.1	3.1
30	3.2	4.0	3.9	205	-----	3.1	3.1	3.1	3.2	3.2	3.1	3.1
31	3.2	-----	3.7	368	-----	2.9	-----	3.2	-----	3.2	3.1	-----
TOTAL	98.7	97.0	101.0	669.0	2,849.5	96.6	93.4	96.6	93.3	98.7	96.2	93.0
MEAN	3.18	3.23	3.26	21.6	102	3.12	3.11	3.12	3.11	3.18	3.10	3.10
MAX	3.2	4.0	3.9	368	375	3.5	3.2	3.2	3.2	3.2	3.2	3.1
MIN	2.7	3.2	2.6	3.1	2.9	2.9	3.0	3.1	2.7	2.9	2.4	3.1
AC-FT	196	192	200	1,330	5,650	192	185	192	185	196	191	184

CAL YR 1970 TOTAL 1,227.5 MEAN 3.36 MAX 16 MIN 2.6 AC-FT 2,430  
WTR YR 1971 TOTAL 4,483.0 MEAN 12.3 MAX 375 MIN 2.4 AC-FT 8,890

## SACRAMENTO RIVER BASIN

## 11365000 PIT RIVER NEAR MONTGOMERY CREEK, CALIF.

LOCATION.--Lat 40°50'36", long 122°00'58", in SE $\frac{1}{4}$  sec.31, T.35 N., R.1 W., Shasta County, Shasta National Forest, on right bank 0.5 mile upstream from Potem Creek, 1.9 miles downstream from Pit No. 7 dam and powerhouse, and 5.0 miles west of town of Montgomery Creek.

DRAINAGE AREA.--4,951 sq mi, excluding Goose Lake basin.

PERIOD OF RECORD.--October 1944 to current year (monthly discharge only December 1964 to May 1965). Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 1,036 ft above mean sea level (levels by Pacific Gas and Electric Co.). October 1944 to Feb. 17, 1963, at site 1.9 miles upstream at different datum. Feb. 17, 1963, to May 21, 1965, at site 2.7 miles upstream at different datum.

AVERAGE DISCHARGE (prior to diversion from McCloud River).--21 years (1944-65), 3,759 cfs (2,721,000 acre-ft per year); 6 years (1965-71), 5,486 cfs (3,975,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 40,500 cfs Mar. 26 (gage height, 29.52 ft); maximum gage height, 31.76 ft May 11, backwater from Shasta Lake; minimum daily discharge, 123 cfs June 26.  
Period of record: Maximum discharge, 73,000 cfs Jan. 24, 1970 (gage height, 32.36 ft); minimum daily, 42 cfs July 22, 1967.

REMARKS.--Flow regulated by many reservoirs and powerplants (total usable reservoir capacity, 337,000 acre-ft). Many diversions above station for irrigation. Diversion from McCloud River to Pit River began December 1965 (see sta 11367720). See schematic diagram of Pit and McCloud River basins. Records of chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Records collected by Pacific Gas and Electric Co. under general supervision of Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1966.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,710	2,480	8,000	5,690	6,040	4,480	15,200	9,290	7,000	5,290	1,380	6,630
2	2,880	4,250	8,190	5,800	6,810	4,060	13,300	8,780	6,600	4,870	4,190	5,810
3	1,590	3,670	7,980	5,210	6,040	4,110	11,500	8,490	6,500	4,470	7,490	4,450
4	1,180	4,730	8,030	5,110	5,910	4,140	10,900	9,120	6,940	4,750	6,290	298
5	4,550	5,520	7,950	4,040	5,740	4,700	10,900	9,060	7,110	4,430	4,950	226
6	4,210	6,230	7,950	3,910	5,450	4,740	11,200	9,720	7,850	4,880	2,630	2,080
7	4,410	3,180	7,950	3,870	5,470	5,030	10,100	9,400	8,430	5,120	270	4,310
8	4,560	3,800	9,930	6,210	5,990	5,940	10,200	9,620	8,490	4,590	175	4,920
9	5,580	5,720	11,700	5,390	4,510	7,790	9,890	9,510	8,430	5,060	2,550	4,140
10	5,050	5,460	10,900	6,290	5,320	7,790	10,800	8,950	8,550	4,370	3,340	4,790
11	4,440	5,920	9,630	5,420	4,820	7,680	9,720	10,200	7,770	4,560	2,740	3,980
12	3,940	4,650	9,010	5,190	5,520	5,570	9,620	8,950	7,460	5,250	3,490	4,610
13	3,730	5,400	7,980	4,560	5,270	4,120	8,720	9,340	7,160	4,600	3,520	4,330
14	4,280	5,190	7,850	4,760	5,810	6,520	8,950	9,620	6,600	5,500	2,370	3,320
15	3,690	5,560	7,830	6,910	5,670	8,490	8,610	9,170	6,270	3,590	1,110	1,660
16	3,040	5,630	7,780	11,300	5,910	7,990	8,550	8,890	5,140	4,100	4,430	2,800
17	2,980	6,720	7,050	11,300	6,010	7,910	8,550	8,890	5,910	1,500	5,470	3,930
18	2,470	4,350	6,110	11,200	6,580	7,680	8,320	8,660	5,420	1,050	7,540	3,510
19	4,510	5,970	5,940	12,700	8,020	7,380	8,780	8,430	5,740	5,140	5,210	4,830
20	4,970	3,470	5,920	14,500	7,320	7,300	8,720	8,140	4,990	4,700	3,700	3,430
21	3,740	692	6,210	15,700	6,270	7,240	8,890	8,140	5,080	4,390	208	2,950
22	4,570	3,780	4,970	15,600	6,810	7,160	7,960	8,080	6,730	3,930	209	3,600
23	3,860	4,030	5,130	15,200	6,320	9,290	9,450	7,880	6,890	4,750	2,910	3,480
24	3,740	5,610	5,050	12,700	7,990	11,100	8,260	6,340	6,550	2,050	3,380	3,790
25	3,580	7,370	7,140	10,600	7,910	12,300	7,270	6,970	4,680	2,120	4,750	2,490
26	3,480	5,140	4,900	8,780	7,710	26,600	7,410	7,880	123	4,370	4,500	3,450
27	4,400	7,280	5,290	8,370	6,190	21,200	7,240	5,220	339	3,280	2,330	2,770
28	3,800	8,100	4,370	8,320	6,340	22,100	7,240	7,320	5,890	5,100	2,020	3,930
29	3,790	8,030	6,940	8,260	-----	21,300	7,460	7,130	6,420	6,040	2,380	3,320
30	4,280	8,030	7,250	6,060	-----	13,900	7,600	6,730	6,040	3,750	4,640	3,120
31	3,960	-----	5,780	6,760	-----	17,000	-----	7,080	-----	1,610	4,740	-----
TOTAL	119,970	155,962	226,710	255,710	173,750	292,610	281,310	261,000	187,102	129,210	104,912	106,954
MEAN	3,870	5,199	7,313	8,249	6,205	9,439	9,377	8,419	6,237	4,168	3,384	3,565
MAX	5,580	8,100	11,700	15,700	8,020	26,600	15,200	10,200	8,550	6,040	7,540	6,630
MIN	1,180	692	4,370	3,870	4,510	4,060	7,240	5,220	123	1,050	175	226
AC-FT	238,000	309,400	449,700	507,200	344,600	580,400	558,000	517,700	371,100	256,300	208,100	212,100
CAL YR 1970	TOTAL	2,466,407	MEAN	6,757	MAX	53,900	MIN	209	AC-FT	4,892,000		
WTR YR 1971	TOTAL	2,295,200	MEAN	6,288	MAX	26,600	MIN	123	AC-FT	4,553,000		

## 11367500 McCLOUD RIVER NEAR McCLOUD, CALIF.

LOCATION.--Lat 41°11'18", long 122°03'52", in NE $\frac{1}{4}$  sec.34, T.39 N., R.2 W., Siskiyou County, on right bank 0.4 mile downstream from Angel Creek and 6 miles southeast of McCloud.

DRAINAGE AREA.--358 sq mi.

PERIOD OF RECORD.--April 1931 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,711.2 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--40 years, 921 cfs (667,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,260 cfs Mar. 26 (gage height, 3.05 ft); minimum daily, 823 cfs Oct. 14-19.

Period of record: Maximum discharge, 11,800 cfs Dec. 21, 1955 (gage heights, 9.42 ft in gage well, 10.7 ft, from floodmarks), from rating curve extended above 8,800 cfs on basis of slope-area measurement of maximum flow; minimum, 524 cfs Nov. 23, 24, 1932.

REMARKS.--Two small diversions above station for irrigation, and one 22-inch pipe line for town of McCloud and millpond. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	836	842	951	858	907	872	1,290	1,410	1,320	1,050	958	915
2	836	847	929	850	907	858	1,260	1,420	1,290	1,040	958	915
3	836	842	922	836	900	858	1,250	1,540	1,260	1,040	958	915
4	836	1,020	900	830	900	858	1,260	1,560	1,260	1,030	951	915
5	830	1,100	900	830	893	858	1,280	1,520	1,240	1,030	951	915
6	830	1,040	958	830	893	850	1,320	1,450	1,240	1,030	951	907
7	830	992	1,090	830	893	850	1,320	1,470	1,250	1,020	951	907
8	830	920	1,160	830	886	850	1,300	1,810	1,260	1,020	951	907
9	830	960	1,130	830	886	850	1,470	1,640	1,260	1,020	951	907
10	830	920	1,050	836	879	850	1,890	1,590	1,250	1,020	936	907
11	830	905	1,000	836	886	872	1,590	1,590	1,240	1,010	936	907
12	830	896	973	830	907	1,160	1,470	1,680	1,230	1,010	936	900
13	830	887	951	830	915	1,100	1,440	1,810	1,210	1,000	936	900
14	823	875	929	836	929	1,030	1,410	1,680	1,200	1,000	936	900
15	823	865	929	900	936	995	1,440	1,590	1,180	995	936	893
16	823	858	922	922	958	980	1,430	1,540	1,170	995	936	893
17	823	850	915	966	951	973	1,460	1,450	1,160	988	929	893
18	823	843	900	1,040	936	958	1,420	1,410	1,150	988	929	886
19	823	836	886	1,090	929	951	1,350	1,390	1,140	988	929	886
20	836	836	893	1,060	915	951	1,380	1,390	1,130	988	929	886
21	843	836	886	1,020	907	966	1,320	1,340	1,120	980	929	886
22	843	836	879	988	900	995	1,290	1,320	1,110	980	929	886
23	850	850	872	966	893	1,140	1,280	1,340	1,100	980	922	886
24	836	900	865	951	893	1,240	1,260	1,360	1,090	973	922	886
25	830	995	865	929	886	1,310	1,240	1,410	1,090	973	922	886
26	845	973	858	915	879	2,130	1,240	1,450	1,100	973	922	886
27	830	958	858	915	879	1,790	1,300	1,450	1,100	973	922	886
28	838	936	865	907	879	1,510	1,320	1,540	1,080	966	915	886
29	848	944	858	900	-----	1,440	1,350	1,440	1,060	966	915	893
30	850	958	858	900	-----	1,390	1,400	1,390	1,060	966	915	893
31	830	-----	858	900	-----	1,330	-----	1,340	-----	958	922	-----
TOTAL	25,831	27,320	28,810	27,961	25,322	33,765	41,030	46,320	35,350	30,950	28,983	26,928
MEAN	833	911	929	902	904	1,089	1,368	1,494	1,178	998	935	898
MAX	850	1,100	1,160	1,090	958	2,130	1,890	1,810	1,320	1,050	958	915
MIN	823	836	858	830	879	850	1,240	1,320	1,060	958	915	886
AC-FT	51,240	54,190	57,140	55,460	50,230	66,970	81,380	91,880	70,120	61,390	57,490	53,410
CAL YR 1970	TOTAL	414,342	MEAN	1,135	MAX	10,000	MIN	823	AC-FT	821,800		
WTR YR 1971	TOTAL	378,570	MEAN	1,037	MAX	2,130	MIN	823	AC-FT	750,900		

## PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-26	1230	3.05	2,260	5-8	0800	2.80	1,940
4-10	0315	2.95	2,090	5-28	0700	2.39	1,590

## SACRAMENTO RIVER BASIN

## 11367720 McCLOUD-IRON CANYON DIVERSION TUNNEL NEAR McCLOUD, CALIF.

LOCATION.--Lat 41°08'06", long 122°04'26", in SE1SW1/4 sec.22, T.38 N., R.2 W., Shasta County, Shasta National Forest, on left bank of McCloud Reservoir, 8.8 miles southeast of McCloud.

RECORDS AVAILABLE.--December 1965 to current year.

GAGE.--None. Water-stage recorders on McCloud Reservoir and Iron Canyon Reservoir used to compute record.

EXTREMES.--Period of record: Maximum daily discharge, 1,890 cfs May 20-22, June 1-3, 10, 1967; no flow for several days in 1965-68, 1971.

REMARKS.--Water is diverted from McCloud Reservoir (see sta 11367740) to Iron Canyon Reservoir (see sta 11363920) and thence into James B. Black powerplant (see sta 11363910) on the Pit River. Diversion began Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	924	680	1,010	979	0	1,320	1,600	1,560	1,570	1,190	1,560	965
2	926	742	1,070	934	0	1,200	1,620	1,540	1,590	1,190	1,540	947
3	914	777	1,060	894	0	1,130	1,580	1,540	1,590	1,080	1,540	947
4	813	781	1,050	947	0	1,030	1,620	1,620	1,580	1,060	1,620	875
5	830	796	1,040	988	0	1,060	1,590	1,570	1,570	995	1,570	987
6	891	889	1,070	990	0	1,020	1,610	1,600	1,550	960	1,600	825
7	894	899	1,040	985	0	1,010	1,600	1,610	1,510	911	1,610	870
8	899	942	1,160	988	0	1,000	1,600	1,610	1,470	896	1,610	891
9	959	976	1,280	941	0	1,080	1,600	1,580	1,420	911	1,580	921
10	959	1,040	1,380	918	0	1,140	1,640	1,580	1,430	911	1,580	942
11	843	1,070	1,360	810	0	1,060	1,630	1,580	1,450	870	1,580	919
12	828	1,040	1,360	700	0	1,090	1,630	1,570	1,440	916	981	873
13	841	1,070	1,370	611	0	1,020	1,630	1,580	1,420	941	955	913
14	873	1,070	1,370	548	0	1,050	1,630	1,600	1,420	904	924	916
15	950	1,060	1,360	551	0	988	1,630	1,600	1,340	936	864	897
16	845	1,060	1,350	691	1,200	959	1,630	1,610	1,320	955	887	878
17	740	1,050	1,350	887	1,380	955	1,630	1,600	1,280	899	913	904
18	671	1,020	1,340	1,040	1,340	971	1,630	1,600	1,280	914	929	837
19	719	1,000	1,330	1,110	1,520	982	1,630	1,600	1,280	954	933	796
20	765	1,000	1,320	1,120	1,450	1,000	1,630	1,610	1,260	959	974	815
21	800	950	1,300	1,170	1,480	1,000	1,630	1,600	1,280	974	924	834
22	810	976	1,290	1,210	1,470	1,020	1,620	1,600	1,290	970	875	864
23	839	981	1,270	1,230	1,460	1,120	1,610	1,600	1,280	957	899	896
24	779	979	1,180	1,240	1,440	1,160	1,620	1,600	1,240	926	934	897
25	220	1,010	1,250	1,230	1,420	1,260	1,620	1,570	1,220	896	944	832
26	702	966	1,170	1,210	1,400	1,390	1,540	1,560	1,090	939	968	785
27	775	1,000	1,190	1,210	1,390	1,490	1,520	1,610	988	929	906	792
28	798	952	1,160	1,120	1,360	1,560	1,480	1,610	1,030	928	861	839
29	792	1,010	1,150	1,090	-----	1,610	1,510	1,580	1,130	963	832	877
30	800	993	1,150	516	-----	1,570	1,520	1,570	1,200	937	864	924
31	745	-----	1,110	0	-----	1,610	-----	1,560	-----	957	908	-----
TOTAL	25,144	28,779	37,890	28,858	18,310	35,855	48,030	49,220	40,518	29,778	35,665	26,458
MEAN	811	959	1,222	931	654	1,157	1,601	1,588	1,351	961	1,150	882
MAX	959	1,070	1,380	1,240	1,520	1,610	1,640	1,620	1,590	1,190	1,620	987
MIN	220	680	1,010	0	0	955	1,480	1,540	988	870	832	785
AC-FT	49,870	57,080	75,150	57,240	36,320	71,120	95,270	97,630	80,370	59,060	70,740	52,480
CAL YR 1970	TOTAL 408,393		MEAN 1,119		MAX 1,620		MIN 220		AC-FT 810,000			
WTR YR 1971	TOTAL 404,505		MEAN 1,108		MAX 1,640		MIN 0		AC-FT 802,300			



## 11367760 McCLOUD RIVER BELOW McCLOUD DAM, NEAR McCLOUD, CALIF.

LOCATION.--Lat 41°07'44", long 122°04'08", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.27, T.38 N., R.2 W., Shasta County, Shasta National Forest, on left bank 0.1 mile downstream from Lizard Creek, 0.6 mile downstream from McCLOUD Dam, and 9 miles southeast of McCLOUD.

DRAINAGE AREA.--404 sq mi.

PERIOD OF RECORD.--April 1966 to current year (low flow only).

GAGE.--Water-stage recorder. Datum of gage is 2,401.76 ft above mean sea level (levels by Pacific Gas and Electric Co.).

REMARKS.--Flow regulated by McCLOUD Reservoir (see sta 11367740) since November 1965. Most of McCLOUD River runoff is diverted from reservoir through tunnel to Iron Canyon Reservoir (see sta 11363920) in Pit River basin. This station records fishwater release. Flow is computed up to 400 cfs. See schematic diagram of Pit and McCLOUD River basins.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179	195	54	116	75	94	95	74	120	172	186	177
2	179	195	54	116	91	103	88	215	129	173	184	179
3	179	195	53	116	388	102	82	373	144	172	179	181
4	179	197	51	116	--	102	79	325	146	173	175	182
5	177	162	51	115	--	109	77	296	149	172	175	182
6	179	132	53	116	--	115	76	138	150	172	175	181
7	177	170	54	116	--	115	77	361	150	172	177	182
8	179	172	48	115	--	120	77	--	152	172	177	179
9	179	137	45	116	--	125	147	370	153	172	177	181
10	179	98	61	116	--	125	--	--	153	173	177	181
11	179	111	81	116	--	125	394	367	155	188	177	181
12	179	123	74	115	--	94	338	--	162	188	181	181
13	179	146	68	116	--	53	249	--	162	181	190	181
14	179	146	109	118	--	50	160	--	160	167	191	180
15	193	144	79	125	--	48	190	358	160	179	191	180
16	195	165	79	129	249	44	223	276	168	181	190	182
17	190	186	73	131	64	53	205	188	165	186	177	182
18	190	186	67	102	56	57	240	179	167	188	190	182
19	190	182	56	50	46	57	78	117	168	184	190	182
20	190	182	54	54	44	57	79	98	170	191	190	188
21	190	182	77	55	42	57	79	102	177	191	190	193
22	191	182	120	53	48	53	68	109	172	191	190	193
23	191	181	118	53	53	49	52	113	173	182	191	193
24	191	181	118	51	60	51	46	117	172	172	193	193
25	190	182	118	50	61	56	43	122	170	168	188	193
26	191	181	117	48	73	79	55	120	168	173	182	188
27	193	182	116	46	83	75	60	160	167	175	182	191
28	193	184	116	50	81	--	61	--	173	182	181	190
29	193	182	117	53	-----	304	62	107	172	173	179	184
30	193	152	116	54	-----	312	66	113	172	168	179	184
31	193	-----	117	64	-----	147	-----	116	-----	186	179	-----
TOTAL	5,759	5,013	2,514	2,791	--	--	--	--	4,799	5,517	5,683	5,526
MEAN	186	167	81.1	90.0	--	--	--	--	160	178	183	184
MAX	195	197	120	131	--	--	--	--	177	191	193	193
MIN	177	98	45	46	--	--	--	--	120	167	175	177
AC-FT	11,420	9,940	4,990	5,540	--	--	--	--	9,520	10,940	11,270	10,960

## 11367800 McCLOUD RIVER AT AH-DI-NA, NEAR McCLOUD, CALIF.

LOCATION.--Lat 41°06'39", long 122°05'42", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.33, T.38 N., R.2 W., Shasta County, Shasta National Forest, on right bank at Ah-Di-Na, 1.8 miles downstream from Squirrel Creek, 3.9 miles downstream from McCloud Dam, and 9.6 miles south of McCloud.

DRAINAGE AREA.--427 sq mi.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,160 ft (from topographic map).

AVERAGE DISCHARGE (adjusted for diversion to Iron Canyon Reservoir and change in contents in McCloud Reservoir).--7 years, 1,359 cfs (984,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,800 cfs Feb. 14 (gage height, 5.91 ft); minimum daily, 124 cfs Dec. 20.

Period of record: Maximum discharge prior to construction of McCloud Reservoir, 9,660 cfs Dec. 22, 1964 (gage height, 9.43 ft in gage well, from floodmarks), from rating curve extended above 2,500 cfs; minimum daily, 86 cfs Oct. 1-26, 1964. Maximum discharge since construction of McCloud Dam in 1965, 17,500 cfs Jan. 23, 1970 (gage height, 12.94 ft), from rating curve extended above 2,500 cfs; minimum daily, 107 cfs Mar. 11, 1969.

Flood of Dec. 21, 1955, reached a stage of 12.5 ft (discharge, 16,800 cfs, from rating curve extended above 3,000 cfs).

REMARKS.--Flow regulated by McCloud Reservoir 3.9 miles upstream (see sta 11367740) since November 1965. Diversion to Iron Canyon Reservoir (see sta 11363920) through McCloud River diversion tunnel (see sta 11367720) started Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	210	213	222	184	235	163	336	219	187	204	190	207
2	207	213	204	179	261	173	310	368	193	198	187	207
3	207	213	173	173	521	171	295	531	207	201	182	210
4	207	241	138	168	1,370	168	288	473	204	198	179	210
5	210	303	143	163	1,390	168	295	450	204	198	179	210
6	207	288	196	160	1,440	171	310	333	204	198	179	210
7	207	271	356	158	1,410	171	310	492	204	198	179	210
8	207	244	459	158	1,280	173	299	750	204	198	179	207
9	210	303	376	158	1,180	182	372	686	201	196	179	207
10	210	204	281	163	1,190	182	1,270	506	201	207	179	207
11	207	207	241	168	1,290	281	738	587	204	213	179	207
12	207	210	198	168	1,320	619	624	709	207	207	182	207
13	207	210	173	168	1,460	427	459	930	204	190	196	207
14	207	193	198	176	1,520	314	384	608	201	187	196	207
15	219	182	171	360	1,420	251	410	531	207	196	196	207
16	219	198	176	401	511	219	450	459	204	196	193	210
17	210	222	160	450	241	213	406	321	201	201	179	210
18	213	216	143	501	216	201	441	292	204	204	196	210
19	213	213	127	441	187	193	247	213	207	201	196	210
20	219	210	124	397	171	187	244	193	210	204	193	213
21	231	210	138	340	158	190	231	187	207	204	193	210
22	225	210	184	281	153	198	207	190	207	207	193	210
23	238	213	179	241	153	299	182	193	204	196	196	210
24	225	257	173	210	153	340	165	196	204	182	198	210
25	216	288	171	187	148	436	158	204	204	179	201	213
26	216	264	168	171	153	1,170	168	196	207	182	201	210
27	216	274	165	160	163	669	184	247	204	184	204	210
28	216	278	173	168	158	890	187	603	204	190	204	210
29	213	303	176	173	-----	641	198	179	201	179	204	222
30	213	352	182	184	-----	613	210	184	198	173	204	216
31	213	-----	184	213	-----	410	-----	182	-----	190	207	-----
TOTAL	6,625	7,203	6,152	7,222	19,852	10,483	10,378	12,212	6,098	6,061	5,923	6,294
MEAN	214	240	198	233	709	338	346	394	203	196	191	210
MAX	238	352	459	501	1,520	1,170	1,270	930	210	213	207	222
MIN	207	182	124	158	148	163	158	179	187	173	179	207
AC-FT	13,140	14,290	12,200	14,320	39,380	20,790	20,580	24,220	12,100	12,020	11,750	12,480
MEAN a	968	1,208	1,333	1,331	1,305	1,642	1,943	1,983	1,451	1,195	1,340	1,061
AC-FT a	59,490	71,740	81,960	81,820	72,480	101,000	115,600	121,900	86,330	73,470	82,390	63,120

CAL YR 1970 TOTAL 143,377 MEAN 393 MAX 11,600 MIN 124 AC-FT 284,400 MEAN a 1,493 AC-FT a 1,081,000  
WTR YR 1971 TOTAL 104,503 MEAN 286 MAX 1,520 MIN 124 AC-FT 207,300 MEAN a 1,396 AC-FT a 1,011,000

a Adjusted for diversion to Iron Canyon Reservoir and change in contents in McCloud Reservoir.

## 11368000 McCLOUD RIVER ABOVE SHASTA LAKE, CALIF.

LOCATION.--Lat 40°57'30", long 122°13'07", in NW¼ sec.28, T.36 N., R.3 W., Shasta County, on right bank just upstream from Shasta Lake, 0.2 mile downstream from Big Bollibokka Creek, and 11.3 miles east of Lamoine.

DRAINAGE AREA.--604 sq mi.

PERIOD OF RECORD.--October 1945 to current year. Published as "above Shasta Reservoir" prior to 1950.

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft above mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE (prior to regulation by McCloud Reservoir and diversion to Pit River basin).--20 years (1945-65), 1,699 cfs (1,230,000 acre-ft per year); 6 years (1966-71), 852 cfs (617,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,300 cfs Mar. 26 (gage height, 16.56 ft); minimum daily, 276 cfs Aug. 17.

Period of record: Maximum discharge 45,200 cfs Dec. 22, 1955 (gage height, 28.20 ft), from rating curve extended above 15,000 cfs on basis of slope-area measurement of maximum flow; minimum daily, 255 cfs Oct. 7, 8, 1968.

REMARKS.--Flow partially regulated by McCloud Reservoir (see sta 11367740) since Nov. 3, 1965. Diversions to Iron Canyon Reservoir (see sta 11363920) began Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins. Records of chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	288	304	2,530	1,040	1,220	564	1,400	653	465	382	312	312
2	284	304	2,300	940	1,250	558	1,280	732	460	382	308	316
3	288	304	1,950	827	1,280	553	1,190	940	465	377	300	312
4	288	519	1,700	751	2,110	547	1,140	934	465	372	296	312
5	288	1,220	1,620	695	2,070	530	1,110	867	455	368	296	312
6	288	1,270	1,900	653	2,090	524	1,110	763	450	368	296	308
7	288	913	2,930	623	2,030	524	1,080	821	444	363	292	308
8	292	744	3,640	600	1,900	513	1,040	1,190	444	363	292	308
9	296	1,620	2,800	606	1,760	519	1,230	1,010	439	359	292	304
10	296	975	1,960	653	1,760	524	2,240	989	439	377	288	304
11	292	907	1,500	751	1,830	940	1,670	934	434	377	284	304
12	292	860	1,220	776	2,060	3,630	1,420	1,070	434	368	280	304
13	292	677	1,040	763	2,170	2,690	1,230	1,230	429	354	292	300
14	292	553	947	900	2,210	1,800	1,150	1,130	424	333	296	300
15	296	481	989	3,270	2,210	1,440	1,110	867	424	350	292	300
16	308	439	1,260	4,260	1,400	1,300	1,070	821	415	350	292	304
17	296	450	1,130	4,200	968	1,200	1,100	671	415	350	276	304
18	304	424	1,000	3,930	913	1,110	1,070	612	420	359	292	304
19	304	410	867	3,410	840	1,030	840	524	420	350	292	304
20	350	400	827	2,830	770	975	834	513	405	354	292	308
21	391	391	776	2,310	726	947	789	475	405	350	292	304
22	415	410	770	1,850	695	968	744	486	400	341	292	304
23	486	429	713	1,540	677	1,400	695	481	396	337	296	304
24	386	1,070	671	1,330	647	1,530	653	475	396	324	296	308
25	333	1,450	635	1,170	629	2,090	629	481	405	316	296	316
26	320	996	612	1,060	594	5,930	623	530	424	316	296	316
27	316	1,530	600	1,010	606	3,470	629	547	415	308	296	316
28	312	2,020	808	1,020	582	2,840	629	947	400	320	300	320
29	312	1,850	1,200	1,050	-----	2,200	635	491	391	312	300	354
30	308	3,290	1,070	1,080	-----	1,930	647	470	386	300	304	350
31	308	-----	1,070	1,160	-----	1,670	-----	465	-----	312	316	-----
TOTAL	9,809	27,210	43,035	47,058	37,997	46,446	30,987	23,119	12,764	10,792	9,144	9,320
MEAN	316	907	1,388	1,518	1,357	1,498	1,033	746	425	348	295	311
MAX	486	3,290	3,640	4,260	2,210	5,930	2,240	1,230	465	382	316	354
MIN	284	304	600	600	582	513	623	465	386	300	276	300
AC-FT	19,460	53,970	85,360	93,340	75,370	92,130	61,460	45,860	25,320	21,410	18,140	18,490
CAL YR 1970	TOTAL	402,177	MEAN	1,102	MAX	28,900	MIN	278	AC-FT	797,700		
WTR YR 1971	TOTAL	307,681	MEAN	843	MAX	5,930	MIN	276	AC-FT	610,300		

## SACRAMENTO RIVER BASIN

## 11370000 SHASTA LAKE NEAR REDDING, CALIF.

LOCATION.--Lat 40°43'08", long 122°25'12", in NW $\frac{1}{4}$  sec.15, T.33 N., R.5 W., Shasta County, in Shasta Dam on Sacramento River near right bank, 2 miles downstream from Squaw Creek, and 9.5 miles north of Redding.

DRAINAGE AREA.--6,421 sq mi, excluding Goose Lake basin.

PERIOD OF RECORD.--November 1942 to current year. Prior to 1950, published as Shasta Reservoir near Redding.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to July 10, 1944, nonrecording gage at various sites near dam at same datum.

EXTREMES.--Current year: Maximum contents, 4,545,000 acre-ft May 13 (elevation, 1,066.76 ft); minimum, 3,135,000 acre-ft Jan. 9 (elevation, 1,013.60 ft).

Period of record: Maximum contents, 4,550,300 acre-ft May 19, 1967 (elevation, 1,066.94 ft); minimum since reservoir first filled, 2,144,900 acre-ft Nov. 22, 1961 (elevation, 965.54 ft).

REMARKS.--Reservoir is formed by concrete gravity-type dam completed in 1949; regulation began Dec. 30, 1943. Usable capacity, 4,436,400 acre-ft between elevations 737.75 ft (bottom of lowest set of river outlets) and 1,067.0 ft (top of flashboard gates on drum-type spillway gates) above mean sea level. Dead storage, 115,700 acre-ft. Installation of flashboard gates on top of drum gates completed Nov. 12, 1964. Gates increased elevation to 1,067.0 ft, total capacity, 4,552,000 acre-ft. All water passes down the Sacramento River, most of which is through powerplant at dam. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation, rounded to Geological Survey standards.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

960	2,047,000	1,010	3,052,000
970	2,226,000	1,020	3,287,000
980	2,416,000	1,030	3,533,000
990	2,617,000	1,050	4,063,000
1,000	2,829,000	1,067	4,552,000

## CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,439	3,386	3,502	3,201	3,336	3,444	4,293	4,501	4,506	4,390	4,049	3,569
2	3,435	3,383	3,496	3,198	3,332	3,449	4,306	4,508	4,503	4,382	4,034	3,562
3	3,429	3,378	3,493	3,191	3,326	3,454	4,314	4,518	4,500	4,374	4,025	3,554
4	3,422	3,384	3,481	3,182	3,321	3,458	4,324	4,527	4,500	4,368	4,015	3,535
5	3,422	3,400	3,453	3,172	3,317	3,464	4,331	4,532	4,498	4,359	4,004	3,515
6	3,420	3,412	3,424	3,161	3,315	3,470	4,341	4,534	4,499	4,352	3,992	3,498
7	3,419	3,416	3,410	3,149	3,308	3,474	4,350	4,534	4,499	4,346	3,970	3,493
8	3,418	3,421	3,402	3,141	3,306	3,481	4,357	4,537	4,501	4,337	3,948	3,488
9	3,419	3,450	3,386	3,135	3,301	3,494	4,373	4,539	4,500	4,331	3,932	3,481
10	3,420	3,460	3,364	3,137	3,295	3,506	4,388	4,540	4,500	4,323	3,918	3,477
11	3,420	3,473	3,342	3,140	3,293	3,529	4,396	4,542	4,500	4,316	3,900	3,468
12	3,418	3,480	3,324	3,144	3,293	3,569	4,402	4,544	4,501	4,308	3,885	3,461
13	3,416	3,483	3,311	3,144	3,299	3,594	4,405	4,545	4,501	4,300	3,869	3,452
14	3,414	3,484	3,299	3,150	3,306	3,617	4,406	4,544	4,499	4,294	3,853	3,440
15	3,413	3,483	3,290	3,198	3,314	3,641	4,408	4,543	4,496	4,282	3,832	3,426
16	3,410	3,476	3,286	3,268	3,321	3,662	4,414	4,540	4,488	4,271	3,817	3,413
17	3,407	3,468	3,276	3,325	3,327	3,682	4,420	4,538	4,482	4,254	3,805	3,402
18	3,404	3,453	3,263	3,354	3,338	3,700	4,426	4,533	4,476	4,237	3,797	3,391
19	3,404	3,439	3,248	3,372	3,352	3,719	4,430	4,528	4,471	4,227	3,782	3,382
20	3,407	3,420	3,243	3,388	3,364	3,737	4,437	4,522	4,466	4,218	3,767	3,372
21	3,410	3,397	3,240	3,399	3,371	3,754	4,442	4,518	4,459	4,206	3,744	3,359
22	3,411	3,381	3,229	3,406	3,381	3,774	4,447	4,518	4,456	4,194	3,721	3,351
23	3,415	3,366	3,219	3,409	3,389	3,802	4,452	4,517	4,453	4,184	3,704	3,341
24	3,416	3,367	3,207	3,401	3,400	3,831	4,457	4,513	4,450	4,168	3,687	3,332
25	3,415	3,372	3,202	3,386	3,413	3,894	4,463	4,512	4,442	4,151	3,674	3,320
26	3,411	3,367	3,191	3,369	3,424	4,014	4,468	4,513	4,426	4,140	3,660	3,309
27	3,409	3,397	3,182	3,361	3,432	4,083	4,474	4,509	4,409	4,125	3,643	3,297
28	3,405	3,439	3,182	3,358	3,440	4,145	4,481	4,510	4,404	4,114	3,624	3,288
29	3,400	3,460	3,195	3,355	-----	4,199	4,487	4,509	4,400	4,103	3,606	3,284
30	3,397	3,495	3,201	3,348	-----	4,238	4,493	4,508	4,395	4,089	3,592	3,275
31	3,393	-----	3,202	3,343	-----	4,269	-----	4,506	-----	4,070	3,580	-----
MAX	3,439	3,495	3,502	3,409	3,440	4,269	4,493	4,545	4,506	4,390	4,049	3,569
MIN	3,393	3,366	3,182	3,135	3,293	3,444	4,293	4,501	4,395	4,070	3,580	3,275
(a)	1,024.36	1,028.47	1,016.45	1,022.32	1,026.27	1,057.31	1,065.01	1,065.45	1,061.67	1,050.25	1,031.83	1,019.51
(b)	-48	+102	-293	+141	+97	+829	+224	+13	-111	-325	-490	-305
(c)	7,220	2,790	1,270	2,120	3,460	4,260	7,140	8,930	11,490	16,240	14,630	11,560
CAL YR 1970	b -61											
WTR YR 1971	b -166											

a Elevation, in feet, at end of month.

b Change in contents, in thousands of acre-feet.

c Evaporation, in acre-feet.

## 11370500 SACRAMENTO RIVER AT KESWICK, CALIF.

LOCATION.--Lat 40°36'04", long 122°26'36", in SW¼NW¼ sec.28, T.32 N., R.5 W., Shasta County, on right bank 0.4 mile upstream from Middle Creek, 0.8 mile downstream from Keswick Dam, 1.6 miles downstream from Keswick, and 10 miles downstream from Shasta Dam.

DRAINAGE AREA.--6,468 sq mi, excluding Goose Lake basin.

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 479.81 ft above mean sea level. Prior to Oct. 1, 1939, at site 1.5 miles upstream at datum 20.2 ft higher and Oct. 1, 1939, to Apr. 30, 1942, at site 1.5 miles upstream at datum 15.2 ft higher. Since Aug. 20, 1960, auxiliary water-stage recorder at city of Redding pumping plant 2.1 miles downstream.

AVERAGE DISCHARGE (adjusted for change in contents and evaporation from Shasta Lake and transbasin diversion into Keswick Reservoir).--33 years, 8,576 cfs (6,213,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 37,600 cfs Dec. 9 (gage height, 24.52 ft); minimum daily, 5,010 cfs Mar. 10.

Period of record: Maximum discharge, 186,000 cfs Feb. 23, 1940 (gage height, 47.2 ft, site and datum then in use), from rating curve extended above 75,000 cfs on basis of peak discharge at Kennet plus 4,000 cfs estimated inflow; minimum observed, 2,730 cfs Aug. 22, 1939. Maximum discharge since construction of Shasta Dam in 1944, 78,900 cfs Jan. 24, 1970 (gage height, 32.22 ft); minimum, 154 cfs May 15, 1948.

REMARKS.--Records good. Flow regulated by Shasta Dam beginning Dec. 30, 1943 (see sta 11370000). Diurnal fluctuations from Shasta powerplant re-regulated by Keswick Reservoir (capacity, 4,170 acre-ft between normal operation elevations 579.0 and 586.0 ft) and powerplant. No diversion for irrigation between Shasta Dam and station at Keswick. Since December 1963, water is released from Whiskeytown Lake (see sta 11371700) at lat 40°37'03", long 122°31'31", through a tunnel to Spring Creek powerplant (see sta 11371600) and then into Keswick Reservoir. See schematic diagram of Pit and McCloud River basins. Records of chemical analyses for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,480	6,610	21,300	15,200	18,800	6,100	11,800	12,400	15,100	13,600	15,400	14,300
2	7,130	6,600	25,200	15,200	18,800	6,040	15,300	12,400	14,300	13,700	15,100	13,300
3	7,100	6,600	31,300	15,100	18,730	6,040	15,100	12,500	14,400	13,700	14,700	11,800
4	7,050	6,610	33,400	14,800	18,600	6,010	15,200	13,200	14,400	13,600	15,100	11,700
5	7,100	6,570	35,400	14,900	17,200	6,040	16,000	14,800	14,300	13,600	14,700	11,700
6	7,080	6,540	35,200	15,000	15,400	6,060	16,000	15,400	14,100	13,600	14,200	11,700
7	7,060	6,530	35,400	15,000	15,200	6,050	14,700	16,200	14,100	13,600	14,200	11,700
8	7,080	6,600	36,200	14,900	15,100	6,040	13,500	16,900	14,400	13,600	14,100	11,700
9	7,080	6,330	37,200	12,700	15,100	5,470	13,700	17,300	14,600	13,600	14,200	11,700
10	7,080	5,390	34,400	10,700	15,100	5,010	14,200	17,100	14,400	13,600	14,200	11,700
11	7,110	5,170	29,100	10,700	12,800	5,050	16,300	17,100	14,400	13,600	14,200	11,600
12	7,110	5,190	24,500	10,800	12,600	5,220	16,700	17,200	14,400	13,600	14,200	11,600
13	7,050	6,710	20,700	10,800	10,600	5,080	17,300	17,600	14,400	13,600	14,200	11,800
14	7,000	6,940	20,500	10,800	10,400	5,070	17,000	18,000	14,400	13,600	14,200	11,700
15	6,580	8,460	20,500	14,100	10,400	5,050	17,000	17,900	14,600	13,600	14,100	11,700
16	6,620	12,300	20,400	14,600	10,400	5,040	14,700	17,900	14,600	13,600	14,100	11,700
17	6,620	13,700	20,300	15,600	10,300	5,070	14,600	17,900	14,700	13,600	14,300	11,600
18	6,620	14,800	20,300	23,300	8,500	5,060	14,700	17,700	14,500	13,500	14,300	11,700
19	6,610	14,900	20,100	25,200	7,390	5,170	14,700	17,500	14,400	13,500	14,100	11,700
20	6,620	14,900	16,400	25,300	7,330	5,450	14,600	17,300	14,300	13,500	14,200	11,800
21	6,620	14,800	16,300	25,200	7,340	5,520	13,700	16,500	14,500	13,500	14,200	11,700
22	6,620	14,800	15,900	25,200	7,290	5,540	13,700	15,000	14,700	13,500	14,200	11,800
23	6,610	14,800	16,200	25,200	7,280	5,560	13,600	14,900	14,700	13,700	14,200	11,700
24	6,610	14,900	15,700	25,100	7,280	5,570	12,500	15,100	14,700	13,700	14,200	11,700
25	6,580	14,800	15,000	25,200	6,770	6,110	12,500	14,800	14,300	13,700	14,200	11,700
26	6,620	14,800	15,000	24,900	6,740	6,020	12,600	14,900	14,000	13,600	14,200	11,700
27	6,630	15,500	14,900	21,000	6,710	5,720	12,500	15,000	14,000	13,700	14,200	11,700
28	6,620	16,300	15,200	18,800	6,670	5,630	11,800	15,100	14,000	14,200	14,200	11,700
29	6,600	16,100	15,200	18,800	-----	6,040	12,500	14,800	14,100	14,300	14,200	11,200
30	6,620	16,300	15,200	18,800	-----	10,500	12,500	14,800	14,100	14,900	14,300	10,800
31	6,620	-----	15,200	18,800	-----	10,900	-----	15,000	-----	14,700	14,300	-----
TOTAL	211,930	320,550	707,600	551,700	324,800	183,230	431,000	490,200	431,900	425,400	444,200	353,900
MEAN	6,836	10,690	22,830	17,800	11,600	5,911	14,370	15,810	14,400	13,720	14,330	11,800
MAX	7,480	16,300	37,200	25,300	18,800	10,900	17,300	18,000	15,100	14,900	15,400	14,300
MIN	6,580	5,170	14,900	10,700	6,670	5,010	11,800	12,400	14,000	13,500	14,100	10,800
AC-FT	420,400	635,800	1,404M	1,094M	644,200	363,400	854,900	972,300	856,700	843,800	881,100	702,000
MEAN a	4,494	12,020	17,130	17,410	10,600	17,440	15,230	12,800	9,508	6,058	5,102	5,219
AC-FTa	276,300	715,400	1,053M	1,071M	588,800	1,073M	906,200	787,100	565,700	372,500	313,700	310,600

CAL YR 1970 TOTAL 5,178,070 MEAN 14,190 MAX 77,200 MIN 5,170 AC-FT 10,270,000 MEANa 12,000 AC-FT a 8,672,000  
WTR YR 1971 TOTAL 4,876,410 MEAN 13,360 MAX 37,200 MIN 5,010 AC-FT 9,672,000 MEANa 11,100 AC-FT a 8,033,000

a Adjusted for change in contents and evaporation in Shasta Lake and transbasin diversion into Keswick Reservoir.

## 11371000 CLEAR CREEK AT FRENCH GULCH, CALIF.

LOCATION.--Lat 40°41'42", long 122°38'08", (unsurveyed), Shasta County, on right bank 1,200 ft downstream from French Gulch, 0.3 mile south of town of French Gulch, and 15 miles northwest of Redding.

DRAINAGE AREA.--115 sq mi.

PERIOD OF RECORD.--July 1950 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,320.60 ft above mean sea level. Prior to Dec. 28, 1959, water-stage recorder at datum 3.00 ft higher.

AVERAGE DISCHARGE.--21 years, 216 cfs (156,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,800 cfs Jan. 16 (gage height, 10.07 ft); minimum daily, 8.4 cfs Oct. 2.

Period of record: Maximum discharge, 7,600 cfs Dec. 22, 1964 (gage height, 13.70 ft), from rating curve extended above 3,200 cfs; minimum, 3.9 cfs Sept. 6-8, 1955.

REMARKS.--Records excellent. No large diversion above station. See schematic diagram of Pit and McCloud River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	23	685	325	520	190	517	192	107	47	19	18
2	8.4	24	595	305	508	182	474	192	102	46	19	18
3	8.6	23	651	277	472	179	443	197	99	44	18	17
4	8.8	98	688	251	435	175	418	193	106	41	18	15
5	9.4	293	641	233	403	170	403	187	94	41	18	15
6	10	136	718	218	379	164	396	180	89	40	17	15
7	11	101	1,330	206	358	162	377	174	87	39	17	15
8	11	126	1,480	201	343	158	358	200	85	39	17	14
9	13	559	1,030	210	328	155	403	181	83	39	16	14
10	13	285	744	242	321	155	452	171	83	40	15	13
11	12	216	576	252	348	193	390	165	79	38	14	13
12	11	207	479	253	384	709	358	162	76	37	14	12
13	11	156	415	246	412	604	342	158	75	36	14	12
14	11	123	362	260	403	458	328	151	72	33	14	11
15	11	101	361	1,120	387	384	318	145	69	31	14	11
16	11	86	421	2,650	367	353	309	140	67	30	14	11
17	11	76	390	2,950	342	336	298	135	64	29	13	11
18	13	68	366	2,140	319	315	279	132	64	29	13	10
19	15	63	330	1,780	298	300	263	128	67	30	12	10
20	25	59	320	1,380	276	293	265	125	64	29	13	11
21	33	57	310	1,070	261	291	249	124	60	28	13	11
22	50	78	281	856	249	313	239	120	57	27	14	11
23	69	134	262	715	237	654	230	115	55	25	14	11
24	63	581	245	617	228	612	220	112	55	24	13	11
25	36	679	233	545	219	851	214	115	59	24	12	11
26	29	384	225	456	209	2,190	208	120	66	22	12	13
27	26	545	219	476	206	1,370	202	115	62	21	12	15
28	25	1,110	249	475	200	968	199	128	57	21	12	16
29	24	918	376	475	-----	774	196	115	53	21	12	20
30	23	991	347	492	-----	670	193	109	50	20	13	29
31	23	-----	334	515	-----	580	-----	106	-----	19	17	-----
TOTAL	634.0	8,300	15,667	22,287	9,412	14,508	9,541	4,587	2,206	990	453	414
MEAN	20.5	277	505	719	336	481	318	148	73.5	31.9	14.6	13.8
MAX	69	1,110	1,480	2,950	520	2,190	517	200	107	47	19	29
MIN	8.4	23	219	201	200	155	193	106	50	19	12	10
AC-FT	1,260	16,460	31,080	44,210	18,670	29,570	18,920	9,100	4,380	1,960	899	821
CAL YR 1970	TOTAL	104,189.0	MEAN	285	MAX	4,070	MIN	8.0	AC-FT	206,700		
WTR YR 1971	TOTAL	89,399.0	MEAN	245	MAX	2,950	MIN	8.4	AC-FT	177,300		

## PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12-7	1900	7.99	1,980	3-26	0530	8.80	2,600
1-16	2130	10.07	3,800				

## 11525430 JUDGE FRANCIS CARR POWERPLANT NEAR FRENCH GULCH, CALIF.

LOCATION.--Lat 40°38'49", long 122°37'34", (unsurveyed), Shasta County, at powerplant 1.6 miles downstream from Mill Creek and 3.8 miles south of French Gulch.

PERIOD OF RECORD.--April 1963 to current year.

GAGE.--Recorded powerplant output.

EXTREMES.--Period of record: Maximum daily discharge, 3,910 cfs Feb. 11, 1970; no flow for several days in 1963, 1966, 1969.

REMARKS.--Water is diverted from Trinity River at NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec.8, T.33 N., R.8 W., through a tunnel to powerplant and then into Whiskeytown Lake (see sta 11371700). See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation, rounded to Geological Survey standards.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	909	26	289	24	3,560	2,080	859	2,740	3,000	3,020	1,790	1,410
2	887	322	338	24	3,560	2,090	792	2,740	3,000	3,020	1,860	1,340
3	882	315	373	197	3,560	2,080	821	2,890	3,000	3,120	1,910	1,360
4	24	318	509	1,010	3,560	1,960	780	2,740	2,880	3,180	1,830	499
5	990	320	273	1,050	1,780	1,820	2,120	2,740	2,920	3,180	1,830	252
6	1,050	330	74	1,080	1,780	2,110	3,240	2,740	3,010	3,300	1,840	253
7	1,160	313	385	955	26	1,390	1,510	2,740	2,910	3,180	1,440	1,920
8	1,040	24	895	1,180	2,300	1,970	1,560	2,740	3,100	3,180	1,240	1,910
9	947	315	478	729	2,330	1,700	1,310	2,610	3,200	3,180	1,440	1,740
10	920	267	379	1,020	1,280	1,210	2,570	2,740	3,110	3,180	1,410	1,770
11	24	261	356	1,700	2,720	1,660	2,560	2,710	3,170	3,290	1,190	1,340
12	886	278	24	1,590	2,300	1,780	2,600	2,680	3,040	3,040	1,320	1,360
13	886	259	24	1,650	2,260	1,660	2,660	2,880	3,050	3,040	1,300	1,360
14	915	279	816	1,660	1,390	1,620	2,620	2,970	3,200	3,040	1,320	1,330
15	1,050	26	871	1,680	1,560	1,570	2,620	2,350	3,380	1,830	1,420	978
16	1,280	269	718	1,010	2,260	1,570	2,650	2,070	3,170	1,780	1,320	1,440
17	1,270	269	1,130	276	2,120	1,920	2,620	2,920	3,110	1,870	1,320	1,580
18	24	280	952	399	1,930	1,940	2,620	3,020	3,300	1,800	1,350	1,300
19	1,100	352	24	914	1,930	1,930	2,880	2,880	3,180	1,970	1,290	1,460
20	1,190	319	24	1,120	1,930	1,960	2,700	2,530	3,180	1,970	1,320	1,380
21	1,260	257	935	1,230	1,500	1,890	3,190	2,660	3,040	1,720	1,430	858
22	1,250	24	863	1,720	1,920	1,950	2,620	2,810	3,180	1,800	1,280	296
23	1,160	257	875	1,640	1,920	2,050	2,620	2,890	2,700	1,800	1,350	24
24	1,090	261	863	24	1,930	2,120	2,620	3,060	2,860	1,820	1,410	541
25	26	314	24	1,980	1,980	1,910	2,620	3,150	2,860	1,800	1,390	1,340
26	205	365	24	2,490	1,970	2,130	2,630	2,860	2,750	1,790	1,400	1,300
27	269	416	24	3,540	2,080	2,130	2,860	2,660	2,670	1,780	1,370	1,550
28	295	315	1,220	3,540	1,390	451	2,860	2,860	2,740	1,940	1,340	1,420
29	360	24	1,070	3,540	-----	1,440	2,740	3,000	3,020	1,790	1,380	1,550
30	269	340	1,210	3,560	-----	773	2,740	3,150	3,020	1,890	1,370	1,410
31	150	-----	1,060	3,560	-----	1,030	-----	3,090	-----	1,870	1,330	-----
TOTAL	23,768	7,715	17,100	46,092	58,826	53,894	69,592	86,620	90,750	75,170	44,790	36,271
MEAN	767	257	552	1,487	2,101	1,739	2,320	2,794	3,025	2,425	1,445	1,209
MAX	1,280	416	1,220	3,560	3,560	2,130	3,240	3,150	3,380	3,300	1,910	1,920
MIN	24	24	24	24	26	451	780	2,070	2,670	1,720	1,190	24
AC-FT	47,140	15,300	33,920	91,420	116,700	106,900	138,000	171,800	180,000	149,100	88,840	71,940
CAL YR 1970	TOTAL	697,730	MEAN	1,912	MAX	3,910	MIN	24	AC-FT	1,384,000		
WTR YR 1971	TOTAL	610,588	MEAN	1,673	MAX	3,560	MIN	24	AC-FT	1,211,000		





## 11371700 WHISKEYTOWN LAKE NEAR IGO, CALIF.

LOCATION.--Lat 40°37'03", long 122°31'31", (unsurveyed), Shasta County, at outlet works to Spring Creek powerplant on Clear Creek, 1.8 miles downstream from Whiskey Creek, and 7.8 miles northeast of Igo.

DRAINAGE AREA.--200 sq mi.

PERIOD OF RECORD.--May 1963 to current year. Prior to October 1964 published as Whiskeytown Reservoir near Igo.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Current year: Maximum contents, 239,700 acre-ft June 22 (elevation, 1,209.56 ft); minimum, 159,000 acre-ft Oct. 25 (elevation, 1,181.48 ft).

Period of record: Maximum contents, 251,200 acre-ft Jan. 27, 1970 (elevation, 1,213.11 ft); minimum since reservoir was first filled, 159,000 acre-ft Oct. 25, 1970 (elevation, 1,181.48 ft).

REMARKS.--Reservoir is formed by earthfill and rockfill dam. Storage began in May 1963. Capacity, 241,100 acre-ft between elevations 1,100.00 ft (minimum operating level) and 1,210.00 ft (crest of spillway). No dead storage. Transbasin water enters the reservoir through Judge Francis Carr powerplant (see sta 11525430) and is released through Spring Creek Tunnel to Spring Creek powerplant (see sta 11371600) and Keswick Reservoir. Records, including extremes, represent contents at 2400 hours. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records furnished by Bureau of Reclamation.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

1,015	714	1,080	15,100
1,020	994	1,100	27,500
1,030	1,800	1,120	46,700
1,040	3,060	1,140	74,000
1,050	4,900	1,180	155,300
1,060	7,420	1,220	274,400

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211,500	160,300	180,800	203,600	209,700	202,600	236,600	232,700	227,300	238,400	238,400	239,000
2	209,300	160,500	182,200	201,200	210,300	202,600	235,800	232,200	227,700	238,100	238,600	238,800
3	207,100	160,600	186,700	199,800	210,000	202,700	234,900	232,100	228,100	238,000	239,000	238,800
4	203,100	161,700	189,600	200,300	209,800	202,400	233,700	231,700	228,700	238,000	239,200	238,800
5	201,100	161,200	191,100	200,300	208,900	201,800	232,900	232,200	229,200	238,100	239,200	238,600
6	199,000	161,300	192,900	200,400	207,900	201,800	232,700	233,100	230,000	238,600	239,200	238,400
7	197,300	160,300	197,100	199,900	207,200	201,800	233,100	235,200	230,700	238,700	239,100	236,800
8	195,300	160,700	201,200	199,900	207,700	202,300	233,300	237,200	231,200	238,800	238,700	235,200
9	193,200	160,600	201,300	199,800	207,900	202,700	233,800	237,800	233,600	238,900	238,600	233,100
10	190,900	159,300	201,000	200,200	206,000	202,900	234,100	238,800	234,700	238,900	238,500	231,200
11	186,800	159,200	201,000	201,000	207,900	204,200	234,100	238,700	234,800	239,400	238,000	230,000
12	184,500	159,700	202,200	201,800	209,000	207,500	234,100	238,200	234,700	239,100	237,700	229,500
13	182,300	160,000	203,200	202,600	209,900	208,100	234,300	238,500	234,600	238,900	237,700	229,300
14	180,000	160,400	203,100	203,700	208,600	208,900	235,500	238,500	235,100	238,700	237,700	229,100
15	178,100	160,500	203,900	209,400	206,900	209,200	235,500	237,200	236,100	238,400	238,100	228,100
16	176,600	160,800	203,700	219,200	206,300	209,500	235,500	234,700	236,200	238,400	238,200	228,500
17	175,200	161,100	204,200	221,600	205,400	210,300	235,400	234,400	236,500	238,400	238,300	229,400
18	171,300	161,300	204,300	219,900	204,100	212,500	235,300	234,300	237,900	238,300	238,400	229,400
19	169,400	161,300	203,400	218,000	202,700	213,200	235,500	234,100	238,400	238,500	238,400	229,600
20	168,000	161,100	203,300	215,400	202,300	214,000	235,700	232,700	239,000	238,700	238,500	229,700
21	167,200	161,100	204,300	212,000	202,800	214,400	237,200	231,700	239,100	238,400	238,900	228,600
22	165,800	161,300	205,700	209,700	202,800	215,300	236,900	231,000	239,700	238,200	238,900	225,000
23	164,400	161,400	207,100	206,800	202,700	217,300	236,700	230,400	239,400	238,000	239,100	221,100
24	162,700	162,800	206,700	204,300	202,600	219,600	236,000	230,200	239,000	237,900	239,400	217,400
25	159,000	164,400	205,400	204,700	202,700	224,000	235,300	230,200	238,800	238,000	239,400	217,700
26	159,100	165,200	204,100	203,500	202,600	231,700	234,600	229,500	239,200	238,000	239,500	217,800
27	159,700	169,700	202,700	204,700	202,600	236,100	234,300	228,700	239,100	238,100	239,300	217,500
28	159,900	173,400	204,300	205,900	202,300	236,200	234,100	228,000	239,300	238,400	239,100	216,800
29	160,200	175,100	204,800	206,900	-----	237,500	233,700	227,700	239,100	238,500	239,100	216,600
30	160,400	178,500	205,500	208,000	-----	237,300	233,100	227,700	238,700	238,800	239,100	216,000
31	160,300	-----	205,600	208,900	-----	237,300	-----	227,600	-----	238,300	239,000	-----
MAX	211,500	178,500	207,100	221,600	210,300	237,500	237,200	238,800	239,700	239,400	239,500	239,000
MIN	159,000	159,200	180,800	199,800	202,300	201,800	232,700	227,600	227,300	237,900	237,700	216,000
(a)	1,181.99	1,188.90	1,198.47	1,199.59	1,197.35	1,208.81	1,207.49	1,205.73	1,209.25	1,209.13	1,209.35	1,201.96
(b)	-53,500	+18,200	+27,100	+3,300	-6,600	+35,000	-4,200	-5,500	+11,100	-400	+700	-23,000
(c)	670	160	80	150	330	440	840	1,060	1,420	2,080	1,990	1,440

CAL YR 1970 b +3,200

WTR YR 1971 b +2,200

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

## SACRAMENTO RIVER BASIN

11372000 CLEAR CREEK NEAR IGO, CALIF.

LOCATION.--Lat 40°30'48", long 122°31'23", (unsurveyed), Shasta County, on left bank at highway bridge on Redding-Igo Road 1.0 mile northeast of Igo, 8.3 miles southwest of Redding, and 10.4 miles upstream from mouth.

DRAINAGE AREA.--228 sq mi.

PERIOD OF RECORD.--October 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 672 ft above mean sea level.

AVERAGE DISCHARGE (adjusted for storage and diversions).--31 years, 439 cfs (318,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,470 cfs Dec. 28 (gage height, 6.23 ft); minimum daily, 43 cfs Oct. 31.

Period of record: Maximum discharge, 24,500 cfs Dec. 21, 1955 (gage height, 13.75 ft); minimum, 8.6 cfs Sept. 4, 6, 7, 1950. Maximum discharge since construction of Whiskeytown Dam in 1963, 9,940 cfs Dec. 22, 1964 (gage height, 9.23 ft); minimum daily, 37 cfs for many days in August and September 1966.

REMARKS.--Records good. Flow regulated by Whiskeytown Lake since May 1963 (see sta 11371700). Transbasin diversion from Trinity River through Judge Francis Carr powerplant to Whiskeytown Lake began in April 1963 (see sta 11525430). Diversions from Whiskeytown Lake to Spring Creek powerplant (see sta 11371600) began in December 1963. See schematic diagram of Pit and McCloud River basins. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	63	354	248	114	70	136	74	64	53	49	48
2	48	100	293	216	110	69	127	75	62	54	49	54
3	48	100	998	197	103	69	118	80	61	52	49	49
4	48	112	702	186	101	68	112	78	60	52	47	49
5	48	169	355	177	99	67	108	77	60	52	47	49
6	48	151	268	126	98	67	105	74	59	52	48	50
7	48	131	494	110	94	66	104	74	58	51	48	49
8	47	166	454	106	92	66	100	80	58	51	48	49
9	47	281	329	103	91	64	110	76	58	52	48	48
10	47	146	264	106	84	65	103	76	59	55	47	51
11	47	160	222	101	89	106	96	74	58	53	46	58
12	47	138	200	99	89	343	93	71	57	55	46	57
13	47	124	186	99	89	174	91	67	58	51	47	57
14	47	119	174	103	88	164	90	66	57	50	46	57
15	47	115	264	332	86	156	86	64	56	50	46	57
16	47	112	285	1,150	84	137	85	63	55	50	47	57
17	47	110	232	635	82	120	83	64	55	50	46	57
18	48	109	228	374	81	108	82	63	55	50	47	57
19	47	107	211	285	81	102	80	62	56	50	46	58
20	48	106	238	235	78	97	83	61	55	50	47	58
21	57	106	303	200	77	93	80	61	55	49	47	58
22	58	112	251	177	76	94	78	61	54	48	47	58
23	62	112	219	161	75	128	77	60	56	48	47	57
24	51	194	200	148	74	116	77	60	54	48	46	58
25	47	176	186	140	72	781	76	61	55	48	48	58
26	45	136	174	130	72	918	75	62	57	48	48	58
27	45	786	169	128	72	351	75	62	56	48	48	58
28	47	1,020	856	123	71	243	75	71	58	48	48	58
29	45	555	720	121	-----	198	77	64	55	49	48	61
30	45	836	358	118	-----	171	75	62	53	48	49	59
31	43	-----	278	116	-----	150	-----	61	-----	49	51	-----
TOTAL	1,494	6,652	10,505	6,550	2,422	5,421	2,757	2,104	1,714	1,564	1,471	1,652
MEAN	48.2	222	339	211	86.5	175	91.9	67.9	57.1	50.5	47.5	55.1
MAX	62	1,020	998	1,150	114	518	136	80	64	55	51	61
MIN	43	63	169	99	71	64	75	60	53	48	46	48
AC-FT	2,960	13,190	20,840	12,990	4,800	10,750	5,470	4,170	3,400	3,100	2,920	3,280
MEAN a	112	685	1,196	1,485	671	1,044	740	563	457	308	142	125
AC-FT a	6,870	40,780	73,530	91,290	37,250	64,220	44,020	34,600	27,220	18,950	8,730	7,410
CAL YR 1970	TOTAL 117,206	MEAN 321	MAX 6,410	MIN 43	AC-FT 232,500	MEAN a 696	AC-FT a 504,000					
WTR YR 1971	TOTAL 44,306	MEAN 121	MAX 1,150	MIN 43	AC-FT 87,880	MEAN a 628	AC-FT a 454,900					

a Adjusted for change in contents and evaporation in Whiskeytown Lake, diversion from Trinity River through Judge Francis Carr powerplant, and diversion to Spring Creek powerplant.

## 11372060 CHURN CREEK BELOW NEWTOWN CREEK, NEAR REDDING, CALIF.

LOCATION.--Lat 40°38'17", long 122°22'02", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.7, T.32 N., R.4 W., Shasta County, on left bank 100 ft downstream from Newtown Creek, 0.1 mile upstream from Oasis Road bridge, and 4.2 miles north of Redding.

DRAINAGE AREA.--11.9 sq mi.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 640 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 26.2 cfs (18,980 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,020 cfs Mar. 25 (gage height, 5.66 ft); no flow for several months.

Period of record: Maximum discharge, 2,960 cfs Jan. 23, 1970 (gage height, 8.21 ft); no flow for several months in each year.

Flood of Dec. 22, 1964, reached a stage of 8.68 ft from floodmarks (discharge, 4,000 cfs, from station above Newtown Creek adjusted for intervening drainage area).

REMARKS.--Records good. Small diversion above station for domestic supply.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.16	151	55	12	4.8	27	4.6	2.8	.13		
2	0	.16	109	42	11	4.6	23	4.7	2.4	.09		
3	0	.17	444	33	10	4.7	19	6.9	2.5	.07		
4	0	4.9	347	28	9.9	4.8	17	6.2	4.1	.04		
5	0	16	133	24	5.6	4.5	15	5.5	2.0	.03		
6	0	17	78	21	9.0	4.2	14	4.8	1.6	.01		
7	0	9.9	192	19	8.6	4.2	13	4.5	1.4	.01		
8	0	24	156	17	8.3	4.3	12	6.4	1.2	.01		
9	0	138	117	16	7.9	4.0	17	5.5	1.0	0		
10	0	25	70	22	7.8	4.1	17	4.4	1.2	0		
11	0	25	45	24	7.4	14	12	3.8	.96	0		
12	0	17	36	23	7.2	167	10	3.6	.84	0		
13	0	10	31	23	7.0	65	9.6	3.4	.82	0		
14	0	8.2	25	24	7.0	52	9.1	3.2	.72	0		
15	0	6.7	79	164	6.7	39	8.4	2.9	.60	0		
16	0	5.8	92	572	6.5	33	8.2	2.6	.45	0		
17	0	5.0	59	311	6.4	27	7.8	2.5	.41	0		
18	0	4.3	59	147	6.6	21	7.2	2.4	.38	0		
19	0	3.6	45	51	6.9	19	6.8	2.2	.43	0		
20	0	3.3	93	62	6.2	17	8.4	2.0	.38	0		
21	0	2.9	208	47	6.0	14	8.0	1.8	.33	0		
22	0	4.9	116	38	5.9	14	6.8	1.8	.28	0		
23	0	7.1	73	33	5.7	41	6.4	1.6	.22	0		
24	.44	71	54	28	5.5	35	6.0	1.4	.18	0		
25	.31	56	44	24	5.3	342	5.7	1.6	.24	0		
26	.20	24	37	21	5.1	418	5.7	2.4	.68	0		
27	.17	414	32	19	5.2	139	5.4	3.1	.61	0		
28	.17	586	295	17	5.1	78	5.4	7.2	.41	0		
29	.15	283	316	16	-----	54	5.0	3.7	.30	0		
30	.15	416	123	14	-----	41	4.7	3.1	.20	0		
31	.15	-----	75	13	-----	33	-----	2.6	-----	0		-----
TOTAL	1.74	2,189.09	3,814	1,588	205.8	1,707.2	320.6	112.4	29.64	.39	0	0
MEAN	.056	73.0	123	64.1	7.35	55.1	10.7	3.63	.99	.013	0	0
MAX	.44	586	444	572	12	418	27	7.2	4.1	.13	0	0
MIN	0	.16	25	13	5.1	4.0	4.7	1.4	.18	0	0	0
AC-FT	3.5	4,340	7,570	3,940	408	3,390	636	223	59	.8	0	0
CAL YR 1970	TOTAL	15,863.10	MEAN	43.5	MAX	1,150	MIN	0	AC-FT	31,460		
WTR YR 1971	TOTAL	10,368.86	MEAN	28.4	MAX	586	MIN	0	AC-FT	20,570		

## PEAK DISCHARGE (BASE, 360 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-27	1915	5.62	1,000	1-16	1545	5.20	800
12-3	1900	5.50	940	3-25	2215	5.66	1,020
12-28	2145	5.58	980				

## SACRAMENTO RIVER BASIN

## 11372200 SOUTH COW CREEK NEAR MILLVILLE, CALIF.

LOCATION.--Lat 40°32'56", long 122°05'29", in NW¼NE¼ sec.16, T.31 N., R.2 W., Shasta County, on left bank 2.5 miles upstream from Old Cow Creek and 4.4 miles east of Millville.

DRAINAGE AREA.--77.3 sq mi.

PERIOD OF RECORD.--October 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 610 ft (from topographic map). Prior to Aug. 9, 1957, at site 1.0 mile downstream at different datum. Aug. 9, 1957, to Aug. 26, 1971, at datum 4.46 ft higher.

AVERAGE DISCHARGE.--15 years, 115 cfs (83,320 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,720 cfs Dec. 3 (gage height, 7.72 ft); minimum daily, 19 cfs Oct. 1, Sept. 19, 20.

Period of record: Maximum discharge, 6,970 cfs Jan. 23, 1970 (gage height, 9.46 ft); minimum, 0.3 cfs Aug. 30, 1960.

Flood of December 1955 reached a stage of 12.5 ft, from floodmarks, previous site and datum (discharge, unknown).

REMARKS.--Records good. Diversions above station of up to 35 cfs for irrigation of about 1,050 acres. Records of water temperatures for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1964(M), 1965(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	33	360	172	161	79	245	142	194	66	35	31
2	20	33	417	150	161	75	219	138	170	65	33	29
3	20	34	788	119	152	75	209	165	156	61	33	28
4	21	41	1,270	107	143	75	199	207	152	57	35	27
5	22	117	439	99	136	72	196	189	143	57	33	26
6	21	92	320	93	128	70	199	178	134	52	31	26
7	24	135	754	89	122	69	215	178	132	48	32	24
8	23	77	1,080	87	115	68	194	207	128	41	37	22
9	25	398	552	86	109	66	185	196	126	37	33	27
10	25	171	324	455	107	68	245	191	128	43	34	25
11	25	111	242	285	109	69	188	203	119	43	30	24
12	25	147	197	209	124	1,320	177	213	115	46	31	26
13	24	81	172	179	132	414	175	227	109	43	33	24
14	24	62	152	184	134	297	169	219	100	40	30	21
15	25	52	219	715	141	267	170	202	87	36	28	21
16	25	46	330	2,240	136	242	170	187	87	38	32	20
17	25	42	394	1,010	130	231	179	168	87	39	30	21
18	27	39	242	665	122	186	156	154	81	41	30	22
19	29	37	184	544	122	170	147	163	78	41	30	19
20	38	36	190	456	109	160	159	156	76	36	30	19
21	38	35	344	376	103	152	154	139	69	35	30	23
22	52	40	190	311	102	149	144	134	62	40	30	22
23	53	44	159	266	98	473	136	136	60	35	30	22
24	57	162	139	236	94	538	132	139	60	35	30	24
25	37	567	122	205	89	912	127	152	60	37	30	26
26	34	195	126	184	84	1,360	126	230	96	36	30	29
27	33	389	161	172	84	648	125	187	94	37	29	31
28	32	1,550	205	166	82	459	128	208	82	35	28	30
29	32	841	725	161	-----	379	131	172	68	33	28	39
30	32	529	233	159	-----	334	137	175	69	30	29	58
31	33	-----	190	161	-----	276	-----	161	-----	34	31	-----
TOTAL	920	6,136	11,220	10,341	3,329	9,753	5,136	5,516	3,122	1,317	965	786
MEAN	29.7	205	362	334	119	315	171	178	104	42.5	31.1	26.2
MAX	57	1,550	1,270	2,240	161	1,360	245	230	194	66	37	58
MIN	19	33	122	86	82	66	125	134	60	30	28	19
AC-FT	1,820	12,170	22,250	20,510	6,600	19,350	10,190	10,940	6,190	2,610	1,910	1,560
CAL YR 1970	TOTAL	66,035	MEAN	181	MAX	4,120	MIN	16	AC-FT	131,000		
WTR YR 1971	TOTAL	58,541	MEAN	160	MAX	2,240	MIN	19	AC-FT	116,100		

## PEAK DISCHARGE (BASE, 1,800 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-28	0215	6.58	3,310	12-29	0400	5.11	1,840
11-30	1915	5.06	1,800	1-16	1600	6.38	3,090
12- 3	2315	7.72	4,720	3-12	1430	7.60	4,560
12- 8	1600	6.32	3,020	3-26	1615	5.51	2,200

## 11374000 COW CREEK NEAR MILLVILLE, CALIF.

LOCATION.--Lat 40°30'19", long 122°13'56", in NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.32, T.31 N., R.3 W., Shasta County, on right bank 2.9 miles upstream from mouth, 4.2 miles southwest of Millville, and 4.3 miles downstream from Little Cow Creek.

DRAINAGE AREA.--425 sq mi.

PERIOD OF RECORD.--October 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 408.3 ft above mean sea level.

AVERAGE DISCHARGE.--22 years, 686 cfs (497,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 30,000 cfs Dec. 4 (gage height, 16.64 ft); minimum daily, 31 cfs Oct. 1.

Period of record: Maximum discharge, 45,200 cfs Dec. 27, 1951 (gage height, 21.55 ft); minimum daily, 0.80 cfs Aug. 13, 1966.

Flood of 1937 or 1940 reached a stage of 23.8 ft, from floodmarks. Probable backwater effect from high flows on the Sacramento River.

REMARKS.--Records good. Numerous small diversions above station for irrigation. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	124	2,400	1,040	652	366	1,210	619	633	233	70	60
2	36	121	3,550	924	639	356	1,100	612	594	216	70	66
3	40	121	3,030	717	609	356	1,020	756	516	207	69	57
4	45	142	11,200	633	585	356	966	937	519	195	69	55
5	46	1,100	3,410	585	567	343	932	828	480	186	64	52
6	44	1,580	2,360	549	549	334	929	750	457	174	63	52
7	49	1,130	4,810	525	520	330	1,020	715	443	163	57	50
8	55	712	5,560	503	503	325	966	815	429	147	67	44
9	53	5,350	3,590	498	492	316	895	825	420	136	66	59
10	53	1,550	1,950	1,710	476	321	1,590	751	446	131	59	62
11	53	1,080	1,360	3,090	476	356	1,030	728	413	129	57	59
12	51	1,170	1,070	2,250	498	8,240	901	794	389	126	52	57
13	50	617	932	1,350	508	2,750	864	797	377	120	53	55
14	50	436	828	1,210	514	1,850	828	765	350	111	52	44
15	54	342	932	2,860	525	1,800	818	707	313	104	49	39
16	58	288	2,180	15,700	525	1,280	808	660	289	99	61	41
17	54	252	3,340	7,080	508	1,240	837	603	278	96	53	42
18	65	227	2,030	3,890	492	932	740	549	277	95	52	42
19	88	208	1,270	2,840	597	828	688	533	276	97	50	42
20	132	196	1,580	2,180	492	766	726	516	264	93	49	38
21	191	190	3,710	1,670	455	717	759	492	239	83	49	41
22	238	211	1,590	1,370	445	690	674	466	221	79	52	44
23	241	282	1,120	1,190	430	2,620	630	457	213	77	47	42
24	367	1,620	916	1,070	420	3,540	600	460	204	75	49	52
25	186	3,360	773	940	405	6,390	574	478	200	74	47	62
26	150	1,290	710	852	385	10,000	569	699	294	76	41	70
27	135	1,320	788	788	385	3,860	564	602	631	74	53	88
28	130	10,400	1,220	745	385	2,450	571	767	419	74	55	86
29	126	5,510	3,380	704	-----	1,930	588	617	297	73	58	112
30	128	2,960	1,670	678	-----	1,640	615	580	254	72	61	301
31	125	-----	1,230	664	-----	1,370	-----	557	-----	70	70	-----
TOTAL	3,124	43,889	74,489	60,805	14,037	58,652	25,012	20,435	11,135	3,685	1,764	1,922
MEAN	101	1,463	2,403	1,961	501	1,892	834	659	371	119	56.9	64.1
MAX	367	10,400	11,200	15,700	652	10,000	1,590	937	633	233	70	301
MIN	31	121	710	498	385	316	564	457	200	70	41	38
AC-FT	6,200	87,050	147,700	120,600	27,840	116,300	49,610	40,530	22,090	7,310	3,500	3,810
CAL YR 1970	TOTAL	384,935	MEAN	1,055	MAX	17,700	MIN	16	AC-FT	763,500		
WTR YR 1971	TOTAL	318,949	MEAN	874	MAX	15,700	MIN	31	AC-FT	632,600		

## PEAK DISCHARGE (BASE, 10,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11- 9	1615	10.68	10,900	1-16	1715	14.22	21,300
11-28	0515	11.31	12,500	3-12	1445	13.84	19,900
12- 4	0215	16.64	30,000	3-26	0200	11.50	13,000

## 11374400 MIDDLE FORK COTTONWOOD CREEK NEAR ONO, CALIF.

LOCATION.--Lat 40°22'03", long 122°34'19", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.17, T.29 N., R.6 W., Shasta County, on right bank 700 ft downstream from Poverty Gulch, 4.6 miles upstream from North Fork Cottonwood Creek, and 7.8 miles southeast of Ono.

DRAINAGE AREA.--244 sq mi.

PERIOD OF RECORD.--October 1956 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 610 ft (from topographic map). Prior to Nov. 1, 1969, at site 4.2 miles downstream at different datum.

AVERAGE DISCHARGE.--15 years, 257 cfs (186,200 acre-ft per year); median of yearly mean discharges, 205 cfs (148,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,380 cfs Mar. 26 (gage height, 7.36 ft); minimum daily, 7.0 cfs Oct. 6, 7.

Period of record: Maximum discharge, 13,500 cfs Dec. 22, 1964 (gage height, 19.08 ft, from floodmarks in gage well, site and datum then in use), from rating curve extended above 7,800 cfs on basis of slope-area measurement of maximum flow; minimum daily, 1.2 cfs Aug. 28, 1964.

REMARKS.--Records good. No regulation or diversion above station. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	18	900	455	620	206	663	237	127	60	23	15
2	7.2	18	805	444	609	201	587	237	127	56	21	17
3	7.2	19	2,010	376	565	197	542	242	124	54	21	16
4	7.2	24	2,090	336	488	197	511	237	120	52	20	15
5	7.2	61	1,040	314	411	188	487	232	106	51	21	14
6	7.0	68	975	296	392	180	481	224	96	49	20	13
7	7.0	61	1,880	272	368	180	463	214	106	49	19	13
8	7.5	61	2,030	260	344	171	433	237	110	44	19	13
9	8.2	220	1,290	278	320	167	421	232	110	44	18	12
10	8.5	220	915	376	320	163	457	224	110	42	16	12
11	8.5	127	692	543	368	176	404	214	106	42	15	11
12	8.5	206	587	477	400	1,030	382	219	99	41	15	11
13	8.8	135	510	433	422	779	371	214	102	38	15	11
14	8.8	89	444	384	392	532	376	201	96	37	14	10
15	8.8	73	597	1,680	376	444	354	193	89	35	14	9.8
16	9.0	60	1,020	5,360	344	392	344	188	89	35	13	9.5
17	9.0	52	716	4,900	314	422	338	184	89	32	13	9.2
18	10	47	740	4,060	290	384	316	171	87	32	13	9.2
19	11	43	598	3,120	278	360	300	155	87	32	13	9.2
20	18	41	543	2,360	255	344	290	147	87	32	12	9.2
21	25	40	565	1,650	245	336	280	147	81	56	12	9.2
22	34	46	455	1,230	250	344	280	143	76	42	13	9.0
23	37	92	400	945	250	975	290	139	76	34	13	9.0
24	43	223	360	818	240	900	275	139	73	32	13	9.2
25	32	499	320	704	235	2,030	265	147	73	30	12	9.5
26	23	392	296	620	230	5,660	255	147	87	28	12	9.8
27	21	892	278	587	220	2,160	250	147	89	27	12	11
28	20	1,200	398	598	215	1,500	242	163	73	26	12	12
29	19	1,340	668	609	-----	1,190	237	159	65	24	12	14
30	19	1,360	499	620	-----	973	237	151	61	23	12	26
31	19	-----	444	632	-----	790	-----	135	-----	23	14	-----
TOTAL	461.6	7,727	25,065	35,737	9,761	23,571	11,131	5,819	2,821	1,202	472	357.8
MEAN	14.9	258	809	1,153	349	760	371	188	94.0	38.8	15.2	11.9
MAX	43	1,360	2,090	5,360	620	5,660	663	242	127	60	23	26
MIN	7.0	18	278	260	215	163	237	135	61	23	12	9.0
AC-FT	916	15,330	49,720	70,880	19,360	46,750	22,080	11,540	5,600	2,380	936	710

CAL YR 1970 TOTAL 154,402.1 MEAN 423 MAX 8,270 MIN 6.1 AC-FT 306,300  
WTR YR 1971 TOTAL 124,125.4 MEAN 340 MAX 5,660 MIN 7.0 AC-FT 246,200

## PEAK DISCHARGE (BASE, 1,800 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-27	2000	3.91	2,780	1-16	1600	7.10	8,020
12- 3	2330	5.20	5,240	3-12	1300	3.52	2,100
12- 7	2200	4.08	3,220	3-26	0400	7.36	8,380

## 11375700 NORTH FORK COTTONWOOD CREEK NEAR IGO, CALIF.

LOCATION.--Lat 40°26'32", long 122°32'57", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.21, T.30 N., R.6 W., Shasta County, near right bank on downstream side of bridge on Gas Point Road, 1.2 miles downstream from Huling Creek, 4.4 miles south of Igo, and 4.5 miles upstream from Middle Fork.

DRAINAGE AREA.--88.7 sq mi.

PERIOD OF RECORD.--October 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 630 ft (from topographic map).

AVERAGE DISCHARGE.--15 years, 172 cfs (124,600 acre-ft per year); median of yearly mean discharges, 140 cfs (101,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,960 cfs Jan. 16 (gage height, 35.11 ft); minimum daily, 2.2 cfs Oct. 10-12.

Period of record: Maximum discharge, 11,000 cfs Dec. 22, 1964 (gage height, 39.45 ft in gage well, 41.7 ft, from floodmarks), from rating curve extended above 4,400 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.80 cfs July 23-25, 1968.

Flood of Dec. 21, 1955, reached a peak discharge of 14,300 cfs by slope-area measurement at site 1.2 miles upstream (above Huling Creek) adjusted for intervening drainage area.

REMARKS.--Some storage for irrigation above station in Rainbow Lake (capacity, 4,800 acre-ft). Some flow diverted upstream to Clear Creek basin by Happy Valley Irrigation Canal.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (WATER YEARS).--WRD Calif. 1966: 1960(M), 1961(M), 1963(M), 1964(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	15	473	330	452	122	359	137	81	19	8.0	7.3
2	3.3	15	371	281	442	105	369	137	73	18	7.9	8.2
3	3.0	36	1,580	228	432	105	359	148	67	17	7.9	10
4	2.8	100	987	194	401	101	349	142	67	16	7.3	9.7
5	2.5	48	565	180	381	97	350	141	64	15	7.8	10
6	2.5	56	514	169	371	92	350	131	62	14	8.0	10
7	2.5	248	1,060	158	340	92	340	118	62	14	8.0	11
8	2.5	84	401	158	314	88	322	126	59	14	7.6	14
9	2.5	126	330	158	297	88	350	113	59	14	7.4	14
10	2.2	122	297	175	289	92	371	105	56	14	7.5	13
11	2.2	122	241	187	305	118	314	101	54	13	6.8	13
12	2.2	126	200	175	330	636	299	101	52	12	6.1	13
13	2.5	113	169	175	330	330	281	97	45	12	7.2	12
14	2.8	105	148	175	322	350	241	92	43	16	6.9	13
15	2.6	97	524	877	314	297	234	88	36	14	6.4	12
16	2.5	88	483	2,270	289	281	228	86	35	13	6.0	13
17	2.8	81	350	1,430	264	256	221	81	33	13	5.8	12
18	5.5	64	473	1,160	248	221	218	78	30	16	5.4	12
19	14	56	314	1,080	234	200	214	78	29	18	4.9	12
20	14	50	412	978	214	187	214	76	26	17	4.9	12
21	39	39	493	840	200	180	200	73	25	15	5.3	6.8
22	52	45	297	779	194	180	194	70	23	15	5.6	5.9
23	34	52	248	718	169	187	187	70	22	13	5.4	5.4
24	30	73	228	626	164	234	180	67	21	12	5.2	4.1
25	25	148	200	554	153	1,370	175	67	20	12	5.3	4.1
26	22	92	180	493	148	1,630	164	73	33	11	5.2	4.6
27	19	371	169	483	142	773	153	78	29	10	5.2	4.2
28	16	1,460	809	452	137	630	148	109	24	9.0	5.1	4.3
29	16	779	677	452	-----	557	139	88	22	8.9	5.2	6.9
30	17	858	452	452	-----	455	137	81	20	8.5	5.6	12
31	16	-----	371	463	-----	384	-----	76	-----	8.1	7.7	-----
TOTAL	364.2	5,669	14,016	16,850	7,876	10,438	7,660	3,028	1,272	421.5	198.6	289.5
MEAN	11.7	189	452	544	281	337	255	97.7	42.4	13.6	6.41	9.65
MAX	52	1,460	1,580	2,270	452	1,630	371	148	81	19	8.0	14
MIN	2.2	15	148	158	137	88	137	67	20	8.1	4.9	4.1
AC-FT	722	11,240	27,800	33,420	15,620	20,700	15,190	6,010	2,520	836	394	574
CAL YR 1970	TOTAL	81,598.6	MEAN	224	MAX	4,170	MIN	1.3	AC-FT	161,900		
WTR YR 1971	TOTAL	68,082.8	MEAN	187	MAX	2,270	MIN	2.2	AC-FT	135,000		

## SACRAMENTO RIVER BASIN

11375810 COTTONWOOD CREEK NEAR OLINDA, CALIF.

LOCATION.--Lat 40°23'06", long 122°28'31", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.7, T.29 N., R.5 W., Shasta County, on left bank 1.0 mile downstream from Dutch Gulch and 5.5 miles southwest of Olinda.

DRAINAGE AREA.--395 sq mi.

PERIOD OF RECORD.--August to September 1971.

GAGE.--Water-stage recorder. Altitude of gage is 515 ft (from topographic map).

EXTREMES.--Maximum discharge during period, 106 cfs Sept. 30 (gage height, 5.58 ft); minimum daily, 12 cfs Aug. 30, Sept. 27, 28.

REMARKS.--Records good. Numerous pumping diversions above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, AUGUST TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											--	17
2											--	18
3											--	20
4											--	22
5											--	20
6											--	16
7											--	16
8											--	18
9											--	22
10											16	23
11											17	22
12											16	21
13											15	17
14											15	16
15											15	16
16											14	16
17											14	16
18											14	16
19											13	16
20											13	15
21											14	14
22											14	14
23											13	14
24											13	14
25											14	13
26											13	13
27											13	12
28											14	12
29					-----						14	17
30					-----						12	37
31		-----			-----		-----		-----		13	-----
TOTAL											--	523
MEAN											--	17.4
MAX											--	37
MIN											--	12
AC-FT											--	1,040



## 11375820 SOUTH FORK COTTONWOOD CREEK NEAR COTTONWOOD, CALIF.

LOCATION.--Lat 40°18'59", long 122°26'52", in SE $\frac{1}{4}$  sec.32, T.29 N., R.5 W., Tehama County, on right bank 15 ft downstream from highway bridge, 0.7 mile upstream from Dry Fork, and 10.3 miles southwest of Cottonwood.

DRAINAGE AREA.--217 sq mi.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 525 ft (from topographic map). October 1962 to Dec. 22, 1964, at site 85 ft upstream at different datum.

AVERAGE DISCHARGE.--9 years, 233 cfs (168,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,070 cfs Mar. 26 (gage height, 8.42 ft); no flow many days.  
Period of record: Maximum discharge, 14,000 cfs Jan. 23, 1970 (gage height, 12.15 ft); no flow many days in each year.

REMARKS.--Small diversion above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.70	234	223	693	142	449	186	156	56	7.7	0
2	0	.70	380	265	657	136	379	195	142	51	7.1	.90
3	0	.80	1,880	198	554	134	336	199	129	49	6.2	2.1
4	0	3.7	3,680	174	464	134	311	199	124	46	5.6	2.1
5	0	55	912	167	401	129	306	207	120	42	5.3	1.9
6	0	97	652	150	368	124	324	207	121	40	5.1	1.7
7	0	44	1,400	140	332	122	348	209	128	40	4.8	1.3
8	0	31	2,950	138	301	121	326	256	139	38	4.6	1.1
9	0	25	1,560	175	275	118	315	269	138	36	4.3	1.1
10	0	225	728	351	263	117	428	261	133	34	4.0	.90
11	0	85	437	666	332	121	355	274	126	33	3.4	.60
12	0	108	325	526	404	1,210	317	314	121	32	3.1	.50
13	0	96	267	398	487	1,230	302	326	118	29	2.9	.30
14	0	47	204	308	454	504	337	292	111	27	2.6	.30
15	0	31	258	819	415	370	319	266	107	25	2.4	.10
16	0	21	1,510	5,460	369	307	300	253	104	24	2.3	.10
17	0	16	776	6,510	317	325	295	218	104	21	1.9	.10
18	0	12	810	6,100	272	299	268	199	102	21	1.7	0
19	0	12	512	4,620	247	279	243	187	99	20	1.2	0
20	0	9.0	665	3,400	221	275	230	179	96	19	1.0	0
21	0	8.2	617	2,580	201	278	213	172	90	23	.90	0
22	0	8.2	342	1,910	188	275	193	165	81	26	.80	0
23	0	11	260	1,400	176	1,020	190	160	79	20	.60	0
24	.20	17	222	1,040	166	1,430	178	163	75	17	.60	0
25	3.3	251	187	813	162	1,330	169	183	74	14	.80	0
26	2.2	434	167	668	154	5,990	164	188	88	13	1.0	0
27	1.4	407	156	610	150	3,200	160	177	77	12	.70	0
28	1.1	2,090	156	601	148	2,040	162	210	74	11	.50	0
29	.90	2,590	377	583	-----	1,290	168	190	67	9.5	.30	0
30	.80	695	285	598	-----	835	174	186	62	9.3	.20	0
31	.70	-----	234	664	-----	582	-----	170	-----	8.3	0	-----
TOTAL	10.60	7,431.30	23,143	42,255	9,171	24,467	8,259	6,660	3,185	846.1	83.60	15.10
MEAN	.34	248	747	1,363	328	789	275	215	106	27.3	2.70	.50
MAX	3.3	2,590	3,680	6,510	693	5,990	449	326	156	56	7.7	2.1
MIN	0	.70	156	138	148	117	160	160	62	8.3	0	0
AC-FT	21	14,740	45,900	83,810	18,190	48,530	16,380	13,210	6,320	1,680	166	30
CAL YR 1970	TOTAL	128,185.70	MEAN	351	MAX	9,030	MIN	0	AC-FT	254,300		
WTR YR 1971	TOTAL	125,526.70	MEAN	344	MAX	6,510	MIN	0	AC-FT	249,000		

## 11376000 COTTONWOOD CREEK NEAR COTTONWOOD, CALIF.

LOCATION.--Lat 40°23'10", long 122°14'12", in NE $\frac{1}{4}$  sec.7; T.29 N., R.3 W., Tehama County, on right bank 2 miles east of Cottonwood and 2.4 miles upstream from mouth.

DRAINAGE AREA.--927 sq mi.

PERIOD OF RECORD.--October 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 364.0 ft above mean sea level (levels by Corps of Engineers). Prior to July 26, 1963, at site 250 ft upstream at datum 3.59 ft higher. Sept. 21, 1967, to Jan. 14, 1968, auxiliary gage at a site 1,200 ft downstream at datum 2.35 ft higher.

AVERAGE DISCHARGE.--31 years, 847 cfs (613,700 acre-ft per year); median of yearly mean discharges, 700 cfs (507,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 31,300 cfs Jan. 16 (gage height, 15.57 ft); minimum daily, 52 cfs Aug. 25-29.

Period of record: Maximum discharge, 60,000 cfs Dec. 22, 1964 (gage height, 19.64 ft); minimum, 15 cfs for several days in September 1945.

REMARKS.--Records good. Small diversions for irrigation above station. At times during irrigation season, Cottonwood Creek receives water above station from Sacramento River by way of Anderson-Cottonwood Canal. Records of chemical analyses for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	69	3,120	1,380	1,720	600	2,160	672	582	232	88	60
2	81	69	2,740	1,440	1,700	568	1,920	681	555	224	84	64
3	69	72	4,630	1,250	1,590	552	1,740	720	502	208	84	68
4	69	133	10,100	1,130	1,460	552	1,620	740	442	196	80	72
5	81	163	3,550	1,050	1,350	536	1,520	760	435	188	72	80
6	97	324	2,810	971	1,280	512	1,460	760	428	180	72	92
7	117	333	3,710	906	1,230	505	1,490	730	428	176	72	96
8	117	237	5,560	868	1,160	490	1,380	750	435	172	72	100
9	87	478	3,800	855	1,100	482	1,300	812	416	168	72	96
10	129	830	2,710	958	1,060	482	1,410	770	390	168	68	92
11	125	489	2,120	1,320	1,120	498	1,290	690	383	172	60	80
12	129	546	1,800	1,250	1,220	2,270	1,190	690	360	164	60	84
13	87	558	1,640	1,130	1,290	2,270	1,120	681	355	156	60	88
14	84	386	1,500	1,050	1,280	1,450	1,140	663	340	144	56	88
15	78	308	1,480	1,710	1,230	1,320	1,110	618	320	136	56	80
16	81	272	3,280	16,800	1,160	1,160	1,050	582	312	132	56	76
17	75	237	2,480	15,600	1,080	1,120	1,030	564	308	124	56	76
18	87	207	2,720	10,600	1,000	1,070	984	537	296	120	60	72
19	93	189	2,260	7,880	948	1,000	936	502	292	124	60	76
20	133	178	2,160	5,540	878	960	900	510	288	120	64	104
21	158	163	3,010	4,200	834	948	834	495	280	120	64	104
22	168	153	1,980	3,410	801	936	790	510	268	128	60	88
23	168	189	1,640	2,880	760	1,390	790	488	260	132	56	80
24	148	265	1,480	2,460	720	1,830	780	472	252	128	56	72
25	125	971	1,320	2,150	690	2,800	750	458	252	116	52	76
26	101	1,140	1,240	1,950	663	14,100	710	480	256	112	52	88
27	81	1,440	1,150	1,850	645	6,750	681	488	292	108	52	104
28	78	6,740	1,150	1,780	636	4,220	672	600	308	96	52	96
29	75	6,880	2,320	1,720	-----	3,340	681	636	288	92	52	104
30	72	4,610	1,710	1,690	-----	2,760	681	600	256	92	56	184
31	69	-----	1,490	1,700	-----	2,400	-----	591	-----	92	60	-----
TOTAL	3,143	28,629	82,660	99,478	30,605	59,871	34,119	19,250	10,579	4,520	1,964	2,640
MEAN	101	954	2,666	3,209	1,093	1,931	1,137	621	353	146	63.4	88.0
MAX	168	6,880	10,100	16,800	1,720	14,100	2,160	812	582	232	88	184
MIN	69	69	1,150	855	636	482	672	458	252	92	52	60
AC-FT	6,230	56,790	164,000	197,300	60,710	118,800	67,680	38,180	20,980	8,970	3,900	5,240

CAL YR 1970 TOTAL 507,197 MEAN 1,390 MAX 31,900 MIN 44 AC-FT 1,006,000  
WTR YR 1971 TOTAL 377,458 MEAN 1,034 MAX 16,800 MIN 52 AC-FT 748,700

## PEAK DISCHARGE (BASE, 7,100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
11-29	1000	11.45	8,200	1-16	2100	15.57	31,300
12- 4	0300	13.77	18,000	3-26	0900	13.38	19,000

## 11376550 BATTLE CREEK BELOW COLEMAN FISH HATCHERY NEAR COTTONWOOD, CALIF.

LOCATION.--Lat 40°23'54", long 122°08'43", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.1, T.29 N., R.3 W., Shasta County, U.S. Fish and Wildlife Service land, on right bank 3.7 miles downstream from Spring Branch, 5.7 miles upstream from mouth, and 7.0 miles east of Cottonwood.

DRAINAGE AREA.--357 sq mi.

PERIOD OF RECORD.--October 1961 to current year. October 1940 to September 1961 at site 0.6 mile upstream published as "near Cottonwood"; low flow records not equivalent owing to Coleman Fish Hatchery diversion.

GAGE.--Water-stage recorder. Altitude of gage is 415 ft (from topographic map).

AVERAGE DISCHARGE.--10 years, 519 cfs (376,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,490 cfs Nov. 28 (gage height, 8.06 ft); minimum daily, 274 cfs Aug. 18, 19.  
 Period of record: Maximum discharge, 24,300 cfs Jan. 24, 1970 (gage height, 14.75 ft), from rating curve extended above 4,200 cfs on basis of slope-area measurement of peak flow; minimum since 1961, 52 cfs Aug. 8, 1962.  
 Maximum stage known, 15.8 ft Dec. 11, 1937, from floodmarks at former site and datum (discharge, 35,000 cfs, by slope-area measurement).

REMARKS.--Records good. Flow regulated by four small powerplants, several small reservoirs, and Coleman Fish Hatchery. Coleman Fish Hatchery diverts 50 to 90 cfs which is returned above the station. Ten cfs diverted at times above station for irrigation. Maximum flows considered equivalent to former station Battle Creek near Cottonwood. Records of water temperatures for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WRD Calif. 1965: 1963.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	289	303	946	660	616	474	794	630	763	533	307	293
2	289	307	1,270	685	619	467	775	637	688	528	311	296
3	287	295	874	590	598	478	770	708	648	510	315	293
4	294	319	3,170	565	593	477	757	761	629	502	310	286
5	297	434	1,270	565	579	462	759	761	614	474	307	283
6	301	542	969	546	575	457	786	709	624	456	300	283
7	304	983	1,240	533	559	454	780	712	647	443	300	288
8	302	412	2,320	520	554	450	751	771	663	430	293	288
9	317	1,410	1,630	510	545	450	718	749	661	425	287	293
10	311	922	1,020	551	542	439	866	761	658	412	282	292
11	308	635	826	635	545	439	742	787	675	402	282	290
12	302	952	732	585	573	752	703	803	661	412	287	289
13	298	560	690	565	586	942	707	844	643	402	285	288
14	296	474	650	551	587	695	681	836	636	394	291	285
15	293	448	765	695	592	634	717	813	622	395	288	286
16	291	430	1,000	4,080	582	595	715	772	622	406	277	286
17	291	416	1,610	1,970	574	593	792	720	613	405	280	278
18	299	420	916	1,510	557	557	693	689	592	408	274	284
19	303	407	754	1,320	593	545	641	686	569	407	274	283
20	315	407	726	1,120	542	544	653	686	590	397	282	282
21	327	398	1,010	972	533	547	650	682	585	405	284	282
22	327	402	787	875	527	552	639	647	580	386	286	285
23	340	434	700	809	520	850	607	672	575	363	286	280
24	358	416	655	762	511	1,050	581	697	556	356	283	276
25	323	645	620	720	503	1,230	571	732	542	348	292	275
26	315	721	630	688	487	2,500	576	860	826	339	292	279
27	307	798	675	660	491	1,460	566	787	934	333	291	291
28	315	4,180	665	654	485	1,120	584	921	675	330	294	287
29	311	2,770	1,050	632	-----	986	600	776	590	328	293	288
30	303	1,110	710	621	-----	938	622	742	556	322	293	319
31	307	-----	660	620	-----	843	-----	700	-----	311	295	-----
TOTAL	9,520	22,950	31,540	26,769	15,568	22,980	20,796	23,051	19,237	12,562	9,021	8,608
MEAN	307	765	1,017	864	556	741	693	744	641	405	291	287
MAX	358	4,180	3,170	4,080	619	2,500	866	921	934	533	315	319
MIN	287	295	620	510	485	439	566	630	542	311	274	275
AC-FT	18,880	45,520	62,560	53,100	30,880	45,580	41,250	45,720	38,160	24,920	17,890	17,070
CAL YR 1970	TOTAL 273,597		MEAN 750	MAX 9,800	MIN 271	AC-FT 542,700						
WTR YR 1971	TOTAL 222,602		MEAN 610	MAX 4,180	MIN 274	AC-FT 441,500						

## PEAK DISCHARGE (BASE, 2,500 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11- 9	1700	7.14	4,980	12-17	0230	5.37	2,760
11-28	0330	8.06	6,490	1-16	1745	7.55	5,620
12- 4	0415	7.90	6,200	3-26	0515	5.84	3,290
12- 8	1815	7.06	4,860				

## 11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, CALIF.

LOCATION (revised).--Lat 40°17'19", long 122°11'08", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.15, T.28 N., R.3 W., Tehama County, on left bank 2.7 miles upstream from Bend Bridge and 8.1 miles northeast of Red Bluff.

DRAINAGE AREA.--8,900 sq mi, excluding Goose Lake basin.

PERIOD OF RECORD.--1879-88 annual observed maximums only, published in WSP 1315-A. January 1892 to current year. Monthly discharges only for some periods and yearly estimates for some incomplete years, published in WSP 1315-A. Published as "at Red Bluff" 1894-96, as "at Jellys Ferry" 1895-1902, and as "near Red Bluff" 1903-68.

GAGE.--Water-stage recorder. Datum of gage is 285.77 ft above mean sea level. Prior to January 1902, nonrecording gage at site 6.1 miles upstream at different datum. January 1902 to December 1919, nonrecording gage at several sites about 10 miles downstream at different datum. December 1919 to September 1968, water-stage recorder at site 10.1 miles downstream at different datum.

AVERAGE DISCHARGE.--80 years, 11,670 cfs (8,455,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 104,000 cfs Dec. 4 (gage height, 27.58 ft); minimum daily, 7,010 cfs Oct. 16, 17.

Period of record: Maximum discharge, 291,000 cfs Feb. 28, 1940 (gage height, 38.9 ft, site and datum then in use), from rating curve extended above 170,000 cfs on basis of velocity-area studies; minimum (1892 to current year), 2,000 cfs Mar. 29, 1944.

REMARKS.--Records excellent. Flow regulated by Shasta Lake since Dec. 30, 1943 (see sta 11370000). Diversions, in addition to those on tributaries, for irrigation of 22,000 acres between stations at Keswick and above Bend Bridge. Transbasin diversions from Trinity River to Whiskeytown Lake via Judge Francis Carr powerplant (see sta 11525430) started in April 1963. Records of chemical analyses, water temperatures, and suspended-sediment discharge at or near this gaging station for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WRD Calif. 1969: 1965.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,720	7,320	31,600	18,600	22,200	8,200	14,900	13,600	16,500	13,700	14,200	13,600
2	7,520	7,360	36,000	18,500	22,100	7,980	18,400	13,700	15,700	13,800	14,400	13,000
3	7,380	7,240	39,600	17,500	21,800	7,950	18,500	13,900	15,300	13,700	14,100	11,800
4	7,380	7,540	77,500	17,000	21,600	7,950	18,200	14,800	15,200	13,700	14,300	11,200
5	7,400	8,220	50,300	16,800	20,200	7,900	18,400	16,000	15,000	13,600	14,100	11,200
6	7,410	9,700	45,300	16,800	18,200	7,860	19,000	16,800	14,800	13,600	13,700	11,200
7	7,430	11,800	49,000	16,500	17,300	7,840	18,200	17,300	14,700	13,600	13,600	11,100
8	7,460	8,580	58,200	16,400	17,100	7,830	16,300	18,600	14,900	13,600	13,500	11,100
9	7,440	17,300	54,600	15,000	16,900	7,590	16,000	19,300	15,200	13,600	13,500	11,200
10	7,460	12,100	46,500	14,100	16,900	7,200	17,200	19,100	15,300	13,600	13,500	11,200
11	7,460	8,190	37,700	16,900	15,500	7,100	18,500	18,800	14,900	13,600	13,500	11,100
12	7,460	9,120	32,300	15,500	14,900	18,600	18,800	19,000	14,900	13,600	13,500	11,100
13	7,400	8,310	27,400	14,200	13,600	15,400	19,500	19,200	14,900	13,500	13,500	11,200
14	7,360	8,390	25,200	13,800	12,900	10,100	19,200	19,700	14,900	13,500	13,500	11,200
15	7,120	8,960	25,000	16,900	12,800	10,400	19,200	19,800	14,800	13,500	13,500	11,100
16	7,010	11,300	30,400	67,200	12,800	9,160	17,300	19,300	14,900	13,500	13,400	11,100
17	7,010	13,700	31,400	53,700	12,600	8,990	16,700	19,200	14,900	13,400	13,600	11,100
18	7,110	14,700	28,400	43,600	11,500	8,450	16,500	19,100	14,700	13,400	13,600	11,100
19	7,170	15,100	26,400	42,000	10,400	8,170	16,300	18,800	14,600	13,400	13,500	11,100
20	7,360	15,100	22,800	38,000	9,790	8,030	16,700	18,300	14,400	13,400	13,500	11,200
21	7,560	15,100	29,800	35,300	9,610	8,000	15,900	18,000	14,600	13,300	13,600	11,200
22	7,590	15,100	22,600	33,400	9,500	7,880	15,300	16,200	14,600	13,300	13,600	11,200
23	7,720	15,200	20,800	32,300	9,410	9,830	15,000	15,700	14,700	13,400	13,600	11,100
24	7,900	15,800	20,000	31,300	9,340	13,700	14,100	15,800	14,800	13,400	13,600	11,200
25	7,580	21,900	18,000	30,900	8,980	19,100	13,800	15,700	14,300	13,400	13,600	11,200
26	7,440	18,600	17,700	30,200	8,800	44,800	13,800	16,000	14,500	13,400	13,600	11,300
27	7,440	18,300	17,600	27,700	8,710	22,400	13,700	16,100	15,200	13,400	13,500	11,300
28	7,430	56,500	18,000	22,900	8,690	15,500	13,100	16,800	14,500	13,500	13,500	11,300
29	7,400	47,400	27,300	22,600	-----	13,100	13,500	16,300	14,300	13,800	13,500	11,200
30	7,320	30,900	21,100	22,400	-----	12,600	13,700	16,000	14,200	13,900	13,500	11,100
31	7,300	-----	19,500	22,300	-----	15,600	-----	16,100	-----	14,200	13,600	-----
TOTAL	229,740	464,830	1,008,000	800,300	394,130	365,210	495,700	533,000	446,200	420,300	423,200	340,000
MEAN	7,411	15,490	32,520	25,820	14,080	11,780	16,520	17,190	14,870	13,560	13,650	11,330
MAX	7,900	56,500	77,500	67,200	22,200	44,800	19,500	19,800	16,500	14,200	14,400	13,600
MIN	7,010	7,240	17,600	13,800	8,690	7,100	13,100	13,600	14,200	13,300	13,400	11,100
AC-FT	455,700	922,000	1,999M	1,587M	781,800	724,400	983,200	1,057M	885,000	833,700	839,400	674,400
CAL YR 1970	TOTAL 6,842,900		MEAN 18,750		MAX 127,000		MIN 7,010		AC-FT 13,570,000			
WTR YR 1971	TOTAL 5,920,610		MEAN 16,220		MAX 77,500		MIN 7,010		AC-FT 11,740,000			

## 11378800 RED BANK CREEK NEAR RED BLUFF, CALIF.

LOCATION.--Lat 40°05'25", long 122°24'45", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.22, T.26 N., R.5 W., Tehama County, on road bridge near bank 0.1 mile downstream from unnamed tributary, 1.8 miles southeast of town of Red Bank, and 11 miles southwest of Red Bluff.

DRAINAGE AREA.--93.5 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 470 ft (from topographic map).

AVERAGE DISCHARGE.--12 years, 45.6 cfs (33,040 acre-ft per year); median of yearly mean discharges, 38 cfs (27,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,610 cfs Dec. 4 (gage height, 7.66 ft); no flow for several months.

Period of record: Maximum discharge, 9,730 cfs Jan. 5, 1965 (gage height, 10.06 ft); no flow for several months in each year.

REMARKS.--Some small storage ponds and possibly some diversions for irrigation upstream.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	108	55	32	11	46	7.5	2.4			
2		0	107	60	29	10	42	8.0	2.3			
3		0	1,000	46	26	11	38	8.3	2.1			
4		0	829	41	26	11	35	8.3	1.9			
5		0	247	38	25	10	32	7.7	1.8			
6		0	164	35	24	8.9	31	7.1	1.6			
7		0	170	32	23	8.3	31	6.7	1.4			
8		0	266	31	22	8.3	35	9.2	1.4			
9		0	170	30	21	8.3	28	8.1	1.3			
10		0	125	30	21	8.3	26	6.7	1.3			
11		0	100	29	20	8.7	23	6.1	1.3			
12		0	83	28	20	110	21	5.7	1.2			
13		0	78	27	20	48	19	5.2	1.2			
14		0	71	26	20	32	18	4.8	1.2			
15		0	120	254	19	29	16	4.7	1.1			
16		0	153	959	19	22	14	4.1	.90			
17		0	105	393	18	18	13	3.9	.80			
18		0	216	207	17	14	12	3.8	.60			
19		0	125	146	16	13	11	3.8	.40			
20		0	171	104	15	12	12	3.4	.10			
21		0	160	79	15	10	11	3.3	0			
22		0	106	68	15	9.8	10	3.2	0			
23		0	86	61	14	13	9.9	3.1	0			
24		0	74	55	14	14	9.1	2.9	0			
25		0	65	49	12	224	8.5	2.9	0			
26		0	59	45	12	467	8.3	2.8	0			
27		58	53	42	12	137	8.3	2.9	0			
28		472	60	38	12	87	8.0	3.2	0			
29		738	105	36	-----	69	7.8	3.1	0			
30		219	67	34	-----	59	7.6	2.7	0			
31		-----	57	33	-----	51	-----	2.5	-----			-----
TOTAL	0	1,487	5,300	3,111	539	1,542.6	591.5	155.7	26.30	0	0	0
MEAN	0	49.6	171	100	19.3	49.8	19.7	5.02	.88	0	0	0
MAX	0	738	1,000	959	32	467	46	9.2	2.4	0	0	0
MIN	0	0	53	26	12	8.3	7.6	2.5	0	0	0	0
AC-FT	0	2,950	10,510	6,170	1,070	3,060	1,170	309	52	0	0	0
CAL YR 1970	TOTAL	30,360.90	MEAN	83.2	MAX	3,250	MIN	0	AC-FT	60,220		
WTR YR 1971	TOTAL	12,753.10	MEAN	34.9	MAX	1,000	MIN	0	AC-FT	25,300		

## SACRAMENTO RIVER BASIN

11379000 ANTELOPE CREEK NEAR RED BLUFF, CALIF.

LOCATION.--Lat 40°12'14", long 122°07'02", in Rio De Los Berrendos Grant, Tehama County, on right bank 1.8 miles upstream from diversion dam of Los Molinos Mutual Water Co., 6.5 miles east of Red Bluff, and 9.7 miles upstream from mouth.

DRAINAGE AREA.--123 sq mi.

PERIOD OF RECORD.--October 1940 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 360 ft (from topographic map). Prior to Sept. 18, 1954, at site 0.6 mile downstream at different datum. Sept. 18, 1954, to July 9, 1969, at datum 2.00 ft higher.

AVERAGE DISCHARGE.--31 years, 150 cfs (108,700 acre-ft per year); median of yearly mean discharges, 135 cfs (97,810 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,090 cfs Nov. 28 (gage height, 12.82 ft), from rating curve extended as explained below; minimum daily, 41 cfs Oct. 1-3, Sept. 9-11, 15-19.  
Period of record: Maximum discharge, 17,200 cfs Jan. 23, 1970 (gage height, 17.95 ft), from rating curve extended above 6,000 cfs on basis of slope-area measurement at gage height, 15.96 ft (present datum; minimum discharge, 8.2 cfs Oct. 27, 1961.  
Flood of December 1937 reached a stage of about 22 ft, from floodmarks, at former site and datum.

REMARKS.--Records good. No diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	48	528	177	177	83	215	139	157	75	49	43
2	41	48	864	209	179	81	193	145	142	72	49	42
3	41	48	573	158	176	81	185	158	132	69	49	42
4	42	57	1,960	138	169	83	180	173	126	67	48	42
5	42	136	688	127	159	81	182	176	125	65	48	42
6	43	142	456	118	144	78	195	173	123	64	47	42
7	43	210	539	112	133	76	197	175	125	62	47	43
8	43	93	1,020	109	121	76	189	185	126	61	46	42
9	42	309	816	106	107	75	177	187	125	60	46	41
10	43	253	453	189	103	75	202	191	129	59	45	41
11	43	138	312	257	103	77	183	206	124	59	45	41
12	43	224	239	204	105	235	171	213	119	58	45	42
13	43	119	199	189	113	334	168	228	114	56	45	42
14	42	92	174	192	116	217	164	230	109	55	44	42
15	42	78	159	823	117	186	165	223	106	55	44	41
16	42	69	259	2,000	115	168	167	214	103	54	44	41
17	43	65	391	822	113	161	187	157	101	53	44	41
18	46	62	312	568	108	144	169	184	96	53	44	41
19	50	60	233	460	112	130	158	179	93	53	45	41
20	63	59	205	400	103	122	162	178	90	52	45	42
21	62	58	441	345	99	119	163	176	87	54	44	42
22	69	59	290	295	97	120	152	164	83	52	44	42
23	62	63	219	255	96	240	143	164	80	51	44	42
24	72	59	182	226	93	375	137	168	78	51	45	42
25	56	105	156	198	90	520	134	174	76	51	45	43
26	51	242	153	183	86	2,400	131	201	99	51	44	45
27	50	316	158	172	86	1,750	128	165	136	50	44	48
28	49	3,360	159	165	85	720	126	194	97	50	44	47
29	49	1,870	266	162	-----	350	128	167	85	50	43	48
30	49	854	223	161	-----	285	133	158	79	49	43	60
31	48	-----	191	163	-----	245	-----	149	-----	49	43	-----
TOTAL	1,496	9,296	12,818	9,693	3,305	9,687	4,984	5,654	3,265	1,760	1,402	1,293
MEAN	48.3	310	413	313	118	312	166	182	109	56.8	45.2	43.1
MAX	72	3,360	1,960	2,000	179	2,400	215	230	157	75	49	60
MIN	41	48	153	106	85	75	126	136	76	49	43	41
AC-FT	2,970	18,440	25,420	19,230	6,560	19,210	9,890	11,210	6,480	3,490	2,780	2,560

CAL YR 1970 TOTAL 91,762 MEAN 251 MAX 5,670 MIN 41 AC-FT 182,000  
WTR YR 1971 TOTAL 64,653 MEAN 177 MAX 3,360 MIN 41 AC-FT 128,200

## PEAK DISCHARGE (BASE, 2,200 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-28	0300	12.82	5,090	1-16	0200	10.61	2,790
12-4	0330	12.03	4,140	3-26	unknown	10.44	2,650

## 11379500 ELDER CREEK NEAR PASKENTA, CALIF.

LOCATION.--Lat 40°01'29", long 122°30'31", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.14, T.25 N., R.6 W., Tehama County, on left bank 2.5 miles downstream from South Fork Elder Creek, 8.2 miles northwest of Flounoy, and 10 miles north of Paskenta.

DRAINAGE AREA.--92.9 sq.mi.

PERIOD OF RECORD.--October 1948 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 718.1 ft above mean sea level. Prior to Aug. 13, 1965, water-stage recorder at site 300 ft downstream at datum 5.13 ft lower.

AVERAGE DISCHARGE.--23 years, 100 cfs (72,450 acre-ft per year); median of yearly mean discharges, 90 cfs (65,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,700 cfs Mar. 26 (gage height, 8.23 ft), from rating curve extended above 1,700 cfs on basis of a step-backwater computation; minimum daily, 1.4 cfs Sept. 17, 18. Period of record: Maximum discharge, 11,700 cfs Feb. 24, 1958 (gage height, 13.90 ft, site and datum then in use), from rating curve extended above 3,500 cfs on basis of slope-area measurements at gage heights 10.97 and 13.90 ft; no flow at times in some years.

REMARKS.--Records excellent. No regulation or large diversion above station.

REVISIONS (WATER YEARS).--WRD Calif. 1970: 1967(P).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	6.3	178	126	190	63	205	101	49	14	4.6	4.1
2	1.6	6.2	141	120	181	62	186	103	46	14	4.3	3.8
3	1.6	6.3	898	100	160	60	171	100	42	13	4.2	3.4
4	1.9	47	882	93	143	60	163	99	40	12	4.3	3.0
5	2.2	142	337	86	132	56	162	106	38	12	4.3	2.8
6	2.5	49	282	81	126	55	165	102	35	11	4.1	2.7
7	2.7	36	460	78	118	55	166	104	34	11	4.0	2.9
8	2.0	25	481	83	110	52	151	124	32	11	3.9	2.6
9	1.7	67	328	102	104	51	148	112	32	11	3.6	2.5
10	1.9	59	222	130	110	51	149	107	32	10	3.1	2.4
11	1.9	44	172	135	135	56	134	108	29	9.8	2.9	2.3
12	1.9	46	143	118	158	532	125	111	28	9.5	3.0	2.1
13	1.9	32	128	110	175	236	128	107	27	9.0	3.2	1.9
14	1.8	25	110	98	162	184	134	96	25	8.4	3.2	1.6
15	1.7	21	181	606	148	150	131	90	24	8.1	3.1	1.5
16	1.9	19	250	1,680	135	128	128	85	22	7.7	3.1	1.5
17	2.1	17	178	1,380	122	116	123	77	21	7.5	2.9	1.4
18	2.4	15	254	1,100	110	104	112	70	20	7.6	2.8	1.4
19	2.7	14	184	770	102	100	105	66	21	7.6	2.6	1.5
20	3.7	13	236	537	93	97	106	64	21	17	2.8	1.7
21	4.6	13	212	393	87	97	99	61	19	9.7	3.0	1.7
22	5.8	14	150	311	84	97	95	58	18	8.0	3.3	1.8
23	11	17	126	264	79	205	94	56	17	6.8	3.2	1.9
24	14	21	108	230	76	216	87	56	17	6.2	2.9	2.0
25	10	44	97	199	73	860	84	57	18	5.9	2.6	2.4
26	7.6	48	89	178	69	1,740	84	56	21	5.7	2.6	3.1
27	6.5	342	84	178	69	605	84	55	20	5.4	2.6	3.4
28	6.3	675	152	178	67	404	87	71	17	5.1	2.5	3.5
29	6.3	973	244	175	-----	322	93	58	16	5.0	2.6	4.2
30	6.3	338	148	178	-----	279	97	53	15	4.9	3.0	7.0
31	6.3	-----	126	190	-----	236	-----	49	-----	4.7	4.1	-----
TOTAL	126.7	3,174.8	7,581	10,007	3,318	7,329	3,796	2,562	796	278.6	102.4	78.1
MEAN	4.09	106	245	323	119	236	127	82.6	26.5	8.99	3.30	2.60
MAX	14	973	898	1,680	190	1,740	205	124	49	17	4.6	7.0
MIN	1.6	6.2	84	78	67	51	84	49	15	4.7	2.5	1.4
AC-FT	251	6,300	15,040	19,850	6,580	14,540	7,530	5,080	1,580	553	203	155
CAL YR 1970	TOTAL	53,627.2	MEAN	147	MAX	3,810	MIN	1.6	AC-FT	106,400		
WTR YR 1971	TOTAL	39,149.6	MEAN	107	MAX	1,740	MIN	1.4	AC-FT	77,650		

## PEAK DISCHARGE (BASE, 1,200 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-29	1130	5.55	1,540	3-12	1300	5.24	1,350
12- 3	2330	6.24	2,000	3-26	0045	8.23	3,700
1-16	1630	6.84	2,450				

## SACRAMENTO RIVER BASIN

11381500 MILL CREEK NEAR LOS MOLINOS, CALIF.

LOCATION.--Lat 40°03'17", long 122°01'23", in NE $\frac{1}{4}$  NW $\frac{1}{4}$  sec.6, T.25 N., R.1 W., Tehama County, on right bank 4.5 miles northeast of Los Molinos and 5.5 miles upstream from mouth.

DRAINAGE AREA.--131 sq mi.

PERIOD OF RECORD.--September 1909 to August 1913 (fragmentary), October 1928 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 385 ft (from topographic map). Prior to September 1913, nonrecording gage at site 0.3 mile downstream at different datum.

AVERAGE DISCHARGE.--43 years (1928-71), 301 cfs (218,100 acre-ft per year); median of yearly mean discharges, 265 cfs (192,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,870 cfs Dec. 4 (gage height, 9.41 ft); minimum daily, 105 cfs on several days in October.

1928 to current year: Maximum discharge, 36,400 cfs Dec. 11, 1937 (gage height, 23.4 ft, from floodmarks), from rating curve extended above 14,000 cfs on basis of step-backwater computation and slope-area measurement of maximum flow; minimum, 49 cfs Dec. 13, 1932.

REMARKS.--Records good. No storage or large diversion above station.

REVISIONS (WATER YEARS)..--WRD Calif. 1969: 1938(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	110	706	303	306	196	482	422	423	393	172	137
2	105	111	1,310	320	312	189	455	427	381	386	169	135
3	105	111	750	261	300	188	442	473	354	366	164	135
4	107	126	2,400	236	283	194	435	466	344	351	160	134
5	107	404	800	228	270	188	442	523	365	339	159	131
6	105	389	632	218	261	182	469	468	402	332	159	131
7	106	285	717	210	250	180	457	484	455	326	157	131
8	107	202	1,190	212	242	179	432	529	490	312	155	131
9	107	798	1,230	215	235	178	410	492	496	307	153	129
10	107	590	699	252	231	177	542	537	475	301	152	127
11	106	484	499	317	253	184	451	587	510	287	150	126
12	105	512	402	289	291	959	417	600	499	275	149	126
13	105	285	357	280	312	853	415	633	471	267	146	126
14	105	216	320	289	322	508	400	621	480	262	144	125
15	105	187	320	478	320	414	437	587	482	261	144	124
16	105	168	408	2,230	310	389	450	551	505	258	143	124
17	105	157	453	1,360	293	391	498	484	506	252	142	122
18	111	150	398	1,140	275	322	420	450	477	265	142	117
19	121	145	338	988	278	297	382	455	465	255	140	119
20	146	140	369	792	252	288	401	472	472	243	140	117
21	144	138	611	630	240	288	367	471	462	236	140	117
22	174	140	388	514	234	290	342	425	457	224	140	115
23	174	152	320	439	227	768	326	470	454	215	140	115
24	208	145	291	387	219	972	315	527	427	207	140	115
25	130	348	261	347	215	1,360	306	575	399	201	138	115
26	120	386	255	319	203	2,940	318	618	741	196	136	122
27	114	470	255	306	203	1,400	317	549	697	191	135	140
28	113	3,540	275	299	202	917	342	592	479	186	135	131
29	111	2,230	532	294	-----	726	379	488	421	182	135	131
30	111	1,170	363	294	-----	653	411	480	395	177	135	170
31	110	-----	317	303	-----	550	-----	429	-----	175	137	-----
TOTAL	3,686	14,289	18,166	14,750	7,339	17,320	12,260	15,880	13,984	8,228	4,551	3,818
MEAN	119	476	586	476	262	559	409	512	466	265	147	127
MAX	208	3,540	2,400	2,230	322	2,940	542	633	741	393	172	170
MIN	105	110	255	210	202	177	306	422	344	175	135	115
AC-FT	7,310	28,340	36,030	29,260	14,560	34,350	24,320	31,500	27,740	16,320	9,030	7,570
CAL YR 1970	TOTAL	165,760	MEAN	454	MAX	8,840	MIN	105	AC-FT	328,800		
WTR YR 1971	TOTAL	134,271	MEAN	368	MAX	3,540	MIN	105	AC-FT	266,300		

## PEAK DISCHARGE (BASE, 2,400 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11- 9	1830	7.06	2,960	1-16	1830	6.72	2,640
11-28	0400	8.95	5,230	3-26	0200	8.10	4,120
12- 4	0330	9.41	5,870				



## 11382000 THOMES CREEK AT PASKENTA, CALIF.

LOCATION.--Lat 39°52'57", long 122°33'03", in SW¼NW¼ sec.4, T.23 N., R.6 W., Tehama County, on left bank 0.2 mile upstream from Digger Creek and 0.3 mile upstream from highway bridge at Paskenta.

DRAINAGE AREA.--194 sq mi.

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to 1943, published as Thomas Creek at Paskenta.

GAGE.--Water-stage recorder. Datum of gage is 731.1 ft above mean sea level. Prior to Oct. 1, 1930, nonrecording gage at site 0.3 mile downstream at different datum. Oct. 1, 1930, to Dec. 28, 1938, water-stage recorder at site 1,300 ft upstream and Dec. 29, 1938, to June 20, 1942, at site 1,000 ft upstream at different datum. June 21, 1942, to Sept. 30, 1959, at present site at datum 1.75 ft higher.

AVERAGE DISCHARGE.--51 years, 285 cfs (206,500 acre-ft per year); median of yearly mean discharges, 245 cfs (178,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 9,360 cfs Mar. 26 (gage height, 9.62 ft); minimum daily, 1.9 cfs Oct. 15.

Period of record: Maximum discharge, 37,800 cfs Dec. 22, 1964 (gage height, 15.32 ft, in gage well, 16.4 ft, from floodmarks), from rating curve extended above 14,000 cfs on basis of slope-area measurement of maximum flow; no flow at times in many years.

REMARKS.--Records fair. No storage or large diversions above station. Records of chemical analyses, water temperatures, and suspended-sediment discharge for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	12	380	316	1,180	262	1,010	448	227	71	14	8.7
2	2.0	12	360	304	1,080	246	996	434	204	67	14	9.1
3	2.0	12	742	274	912	241	963	408	186	64	14	9.1
4	2.5	63	2,300	262	783	235	870	402	188	61	14	8.7
5	2.5	261	1,280	246	684	205	821	455	188	57	13	8.3
6	2.8	188	1,290	232	638	196	803	462	195	54	12	8.7
7	2.2	184	2,310	224	562	191	740	476	210	51	12	8.3
8	2.0	140	1,820	244	518	187	650	522	217	49	12	7.9
9	2.2	758	964	329	475	182	626	490	222	47	12	7.5
10	2.2	387	674	684	510	180	677	522	210	46	11	7.1
11	2.2	255	621	838	750	265	562	554	195	44	11	6.7
12	2.2	386	604	750	886	2,130	538	634	184	41	11	6.3
13	2.2	203	525	646	938	910	578	594	175	38	11	5.5
14	2.0	166	423	555	783	630	659	506	164	36	10	5.3
15	1.9	138	519	963	731	540	668	483	156	35	9.1	5.3
16	2.0	101	972	4,260	674	525	668	455	156	33	8.7	5.1
17	2.2	80	702	6,310	630	587	650	384	154	33	8.3	5.1
18	3.1	65	720	5,620	540	510	594	351	142	31	7.9	4.9
19	3.1	56	518	3,780	462	510	546	338	138	30	7.9	4.5
20	4.4	51	488	2,410	412	510	530	342	130	29	7.9	4.5
21	7.0	46	442	1,690	372	510	498	328	121	31	8.3	4.5
22	16	46	358	1,310	348	495	462	296	115	29	8.3	4.7
23	26	61	320	1,120	324	2,120	462	304	110	24	7.7	4.7
24	73	338	288	1,080	300	1,450	427	328	104	22	7.5	4.9
25	39	981	262	1,000	296	1,930	408	384	98	21	7.1	5.3
26	23	680	249	938	278	5,500	390	378	110	19	7.5	5.3
27	18	645	238	977	278	1,970	342	328	107	18	7.9	5.5
28	14	752	249	1,000	271	1,460	333	441	92	16	7.5	6.3
29	13	900	442	1,060	-----	1,320	351	427	82	16	7.5	7.1
30	13	550	320	1,120	-----	1,240	366	408	76	16	7.9	9.5
31	13	-----	300	1,200	-----	1,040	-----	315	-----	14	8.3	-----
TOTAL	302.7	8,517	21,680	41,742	16,615	28,277	18,188	13,197	4,656	1,143	306.5	174.4
MEAN	9.76	284	699	1,347	593	912	606	426	155	36.9	9.89	6.48
MAX	73	981	2,310	6,310	1,180	5,500	1,010	634	227	71	14	9.5
MIN	1.9	12	238	224	271	180	333	296	76	14	7.1	4.5
AC-FT	600	16,890	43,000	82,800	32,960	56,090	36,080	26,180	9,240	2,270	608	386
CAL YR 1970	TOTAL	162,237.1	MEAN	444	MAX	11,500	MIN	1.9	AC-FT	321,800		
WTR YR 1971	TOTAL	154,818.6	MEAN	424	MAX	6,310	MIN	1.9	AC-FT	307,100		

## PEAK DISCHARGE (BASE, 1,800 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 4	0330	7.29	4,040	3-12	1600	7.44	4,340
12- 7	1830	7.48	4,420	3-23	0700	6.82	3,100
12-15	2400	6.19	1,920	3-26	0300	9.62	9,360
1-16	1900	9.10	7,920				

## 11383500 DEER CREEK NEAR VINA, CALIF.

LOCATION.--Lat 40°00'51", long 121°56'50", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.23, T.25 N., R.1 W., Tehama County, on left bank 0.5 mile upstream from concrete diversion dam and 7.9 miles northeast of Vina.

DRAINAGE AREA.--208 sq mi.

PERIOD OF RECORD.--October 1911 to December 1915, March 1920 to December 1937, January 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 479.5 ft above mean sea level (river-profile survey). Prior to Oct. 9, 1928, nonrecording gage at site 0.8 mile downstream at different datum. Oct. 9, 1928, to Jan. 19, 1939, water-stage recorder at present site at datum 2.64 ft higher.

AVERAGE DISCHARGE.--53 years, 315 cfs (228,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,350 cfs Mar. 26 (gage height, 8.04 ft); minimum daily, 95 cfs Oct. 1-3.

Period of record: Maximum discharge, 23,800 cfs Dec. 10, 1937 (gage height, 19.2 ft, present datum, from floodmarks), from rating curve extended above 9,200 cfs on basis of velocity-area studies; minimum, 43 cfs Dec. 13, 1932.

REMARKS.--Records excellent. No storage or large diversions above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	109	860	390	372	217	822	532	472	238	136	118
2	95	107	1,250	396	378	209	765	532	432	229	136	116
3	95	107	1,040	308	361	211	735	595	399	220	134	114
4	97	132	2,390	283	344	215	720	583	378	213	132	114
5	97	499	986	266	322	204	715	591	372	206	130	113
6	98	341	785	253	312	200	740	571	361	202	132	114
7	98	265	790	241	296	198	725	571	358	200	130	114
8	98	201	1,570	234	283	196	682	595	354	194	129	113
9	98	325	1,470	231	274	194	660	579	358	190	127	113
10	99	544	882	280	266	192	844	595	361	186	129	112
11	99	272	642	493	283	200	715	624	347	184	129	110
12	98	376	514	423	333	1,140	664	642	333	180	127	110
13	97	251	438	393	364	1,130	664	660	322	176	124	109
14	97	197	387	378	378	740	633	646	308	174	122	109
15	97	173	378	565	384	595	669	620	299	170	124	107
16	97	158	490	1,650	381	543	687	599	286	168	122	107
17	97	150	510	1,460	364	535	735	551	283	166	120	106
18	103	143	444	1,300	344	456	628	521	274	166	119	106
19	113	137	384	1,180	333	426	579	500	266	178	119	106
20	120	134	441	981	302	414	595	493	261	162	118	107
21	136	132	674	810	283	420	555	486	251	160	118	107
22	139	134	435	678	274	420	507	456	243	154	118	107
23	145	154	364	587	264	1,020	486	450	234	149	118	107
24	199	141	322	521	256	1,290	462	453	231	145	116	107
25	128	227	286	462	246	1,540	447	465	222	145	118	110
26	117	302	277	426	226	3,680	453	500	423	143	116	113
27	112	477	277	399	234	2,220	450	486	477	143	116	129
28	109	2,510	319	384	229	1,550	476	507	312	141	114	119
29	109	1,860	642	372	-----	1,240	500	468	269	139	114	119
30	109	1,740	479	368	-----	1,100	521	456	248	138	116	147
31	109	-----	414	372	-----	937	-----	444	-----	138	118	-----
TOTAL	3,400	12,298	21,140	17,084	8,686	23,632	18,834	16,771	9,734	5,397	3,821	3,383
MEAN	110	410	682	551	310	762	628	541	324	174	123	113
MAX	199	2,510	2,390	1,650	384	3,680	844	660	477	238	136	147
MIN	95	107	277	231	226	192	447	444	222	138	114	106
AC-FT	6,740	24,390	41,930	33,890	17,230	46,870	37,360	33,270	19,310	10,700	7,580	6,710
CAL YR 1970	TOTAL	184,476	MEAN	505	MAX	8,740	MIN	94	AC-FT	365,900		
WTR YR 1971	TOTAL	144,180	MEAN	395	MAX	3,680	MIN	95	AC-FT	286,000		

## PEAK DISCHARGE (BASE, 2,500 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-28	0500	7.15	3,350	12- 8	1800	7.77	4,020
12- 4	0300	7.88	4,160	3-26	0630	8.04	4,350

## 11384000 BIG CHICO CREEK NEAR CHICO, CALIF.

LOCATION.--Lat 39°46'35", long 121°45'10", in Arroyo Chico Grant, Butte County, on right bank 1.8 miles upstream from golf clubhouse in Bidwell Park, 2.6 miles upstream from Lindo Channel, and 7 miles northeast of Chico.

DRAINAGE AREA.--72.4 sq mi.

PERIOD OF RECORD.--May 1930 to current year. Prior to October 1952, published as Chico Creek near Chico.

GAGE.--Water-stage recorder. Altitude of gage is 300 ft (from topographic map). Prior to Oct. 1, 1955, at site 0.6 mile downstream at different datum.

AVERAGE DISCHARGE.--41 years, 146 cfs (105,800 acre-ft per year); median of yearly mean discharges, 122 cfs (88,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,840 cfs Dec. 4 (gage height, 9.17 ft); minimum daily, 22 cfs Oct. 1-3.

Period of record: Maximum discharge, 9,580 cfs Jan. 5, 1965 (gage height, 15.36 ft); minimum, 10 cfs Dec. 11, 1932, Aug. 15, 1939, Sept. 18, 1947.

REMARKS.--Records good. No storage or large diversion above station. Records of chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WRD Calif. 1965: 1964(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	25	720	292	151	73	289	82	64	38	28	25
2	22	25	1,010	270	149	71	252	82	64	39	28	25
3	22	24	870	220	140	70	225	85	57	35	28	25
4	23	42	2,380	190	130	71	204	86	54	34	28	24
5	23	261	1,010	168	122	71	189	85	52	37	27	24
6	24	145	676	150	117	68	179	82	50	34	27	24
7	24	110	545	138	111	68	172	80	48	35	27	24
8	24	73	702	128	106	68	160	79	48	35	27	24
9	24	106	726	125	101	68	150	79	48	34	26	25
10	24	218	464	159	98	66	191	75	49	34	26	24
11	24	110	330	415	97	68	160	73	47	35	26	24
12	24	114	257	357	103	1,060	147	76	46	33	26	24
13	24	83	211	305	109	926	138	72	45	33	25	24
14	23	65	176	262	111	456	133	70	45	34	25	24
15	23	53	157	325	110	338	126	68	43	31	25	24
16	23	46	232	929	108	281	121	66	42	32	25	24
17	23	40	244	1,090	105	277	130	65	40	33	25	24
18	25	39	237	878	99	235	120	63	40	32	25	24
19	27	37	206	727	103	208	113	61	39	31	25	24
20	33	36	222	562	94	189	113	61	39	31	24	24
21	38	35	402	427	90	172	111	59	39	32	24	24
22	51	35	252	343	88	158	105	59	39	30	24	25
23	41	36	198	287	86	297	102	57	38	30	24	24
24	59	36	170	246	83	376	98	56	38	30	24	24
25	34	43	151	213	80	681	95	55	38	30	25	25
26	29	50	141	186	77	2,460	93	60	43	30	24	26
27	27	131	141	170	76	1,250	91	58	58	29	23	31
28	25	1,140	177	160	76	746	88	64	45	29	23	29
29	26	1,180	680	154	-----	524	86	60	39	29	24	28
30	25	940	468	150	-----	413	84	60	38	28	24	41
31	25	-----	343	150	-----	340	-----	58	-----	28	25	-----
TOTAL	861	5,278	14,498	10,176	2,920	12,149	4,265	2,136	1,375	1,005	787	761
MEAN	27.8	176	468	328	104	392	142	68.9	45.8	32.4	25.4	25.4
MAX	59	1,180	2,380	1,090	151	2,460	289	86	64	39	28	41
MIN	22	24	141	125	76	66	84	55	38	28	23	24
AC-FT	1,710	10,470	28,760	20,180	5,790	24,100	8,460	4,240	2,730	1,990	1,560	1,510

CAL YR 1970 TOTAL 93,110 MEAN 255 MAX 6,000 MIN 19 AC-FT 184,700  
WTR YR 1971 TOTAL 56,211 MEAN 154 MAX 2,460 MIN 22 AC-FT 111,500

## PEAK DISCHARGE (BASE, 1,600 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12-4	0430	9.17	3,840	3-26	0315	8.59	3,370
3-12	1615	7.65	2,620				

## SACRAMENTO RIVER BASIN

11384350 MUD CREEK NEAR CHICO, CALIF.

LOCATION.--Lat 39°47'02", long 121°53'06", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.5, T.22 N., R.1 E., Butte County, on left bank 0.1 mile upstream from bridge on State Highway 99E and 5 miles northwest of Chico.

DRAINAGE AREA.--48.9 sq mi.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 170 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 61.8 cfs (44,770 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,420 cfs Nov. 28 (gage height, 7.64 ft); no flow for several months.

Period of record: Maximum discharge, 10,400 cfs Jan. 13, 1969 (gage height, 12.94 ft in gage well, 12.0 ft, from floodmarks); no flow for several months in each year.

Flood of Dec. 22, 1964, reached a stage of 13.23 ft (discharge, 9,880 cfs); maximum stage recorded since reconstruction of the channel, 13.55 ft Jan. 15, 1965 (backwater from debris).

REMARKS.--No storage or diversion above station. During periods of flood flows on Big Chico Creek, flood waters are diverted at Mud Creek diversion dam in sec.18, T.22 N., R.2 E., to Lindo channel and Mud Creek, however, most of the water is diverted to Mud Creek.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	147	62	19	6.7	57	6.5	2.4			
2	0	0	306	116	18	6.4	46	6.6	3.0			
3	0	0	403	48	17	6.5	40	6.2	2.9			
4	0	1.4	1,090	35	16	6.5	34	7.0	1.6			
5	0	13	374	28	15	6.2	30	6.5	1.6			
6	0	9.0	187	23	15	5.7	25	5.9	1.2			
7	0	6.3	157	20	14	5.7	23	5.3	1.0			
8	0	2.2	219	19	13	5.6	21	5.4	.90			
9	0	71	147	18	13	5.4	19	5.2	.60			
10	0	24	85	19	12	5.4	19	4.5	.60			
11	0	8.2	58	35	12	5.1	17	4.1	6.0			
12	0	9.0	42	32	11	19	16	3.9	1.5			
13	0	4.9	33	40	11	21	15	3.7	2.0			
14	0	3.1	25	38	11	14	14	3.3	1.1			
15	0	2.3	29	82	11	13	13	3.1	0			
16	0	1.6	94	731	10	12	12	2.6	0			
17	0	1.2	62	321	10	12	12	2.5	0			
18	0	1.0	103	192	9.7	11	11	2.4	0			
19	0	.80	63	147	11	10	11	2.3	0			
20	0	.70	271	117	9.8	9.4	11	2.4	0			
21	0	.70	849	88	8.9	8.9	11	2.4	0			
22	.10	.70	200	72	8.9	8.6	9.7	2.5	3.5			
23	.10	.80	120	58	8.7	21	9.2	1.8	.50			
24	.10	.90	78	48	8.2	20	9.0	1.5	0			
25	0	1.3	53	39	7.7	149	8.5	1.5	0			
26	0	1.4	43	33	7.3	547	7.8	1.8	14			
27	0	9.2	46	29	7.4	217	7.5	2.5	13			
28	0	1,070	58	26	7.2	152	7.1	3.0	2.4			
29	0	1,280	133	23	-----	117	6.8	2.7	.30			
30	0	277	91	21	-----	93	6.7	2.7	0			
31	0	-----	64	20	-----	71	-----	2.2	-----			
TOTAL	.30	2,801.70	5,630	2,580	322.8	1,591.1	529.3	114.0	60.10	0	0	0
MEAN	.010	93.4	182	83.2	11.5	51.3	17.6	3.68	2.00	0	0	0
MAX	.10	1,280	1,090	731	19	547	57	7.0	14	0	0	0
MIN	0	0	25	18	7.2	5.1	6.7	1.5	0	0	0	0
AC-FT	.6	5,560	11,170	5,120	640	3,160	1,050	226	119	0	0	0

CAL YR 1970 TOTAL 34,934.50 MEAN 95.7 MAX 4,520 MIN 0 AC-FT 69,290  
 WTR YR 1971 TOTAL 13,629.30 MEAN 37.3 MAX 1,280 MIN 0 AC-FT 27,030

## 11384600 LITTLE STONY CREEK ABOVE EAST PARK RESERVOIR, NEAR LODOGA, CALIF.

LOCATION.--Lat 39°17'48", long 122°32'22", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  (revised) sec.28, T.17 N., R.6 W., Colusa County, on left bank 1.1 miles upstream from county bridge on Lodoga-Stonyford Road, 1.4 miles downstream from Frenzel Creek, and 2.8 miles southwest of Lodoga.

DRAINAGE AREA.--45.6 sq mi.

PERIOD OF RECORD.--September 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,300 ft (from topographic map).

AVERAGE DISCHARGE.--5 years, 70.8 cfs (51,290 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,820 cfs Dec. 3 (gage height, 8.36 ft); minimum daily, 0.17 cfs Sept. 17-20.

Period of record: Maximum discharge, 4,000 cfs Jan. 23, 1970 (gage height, 11.39 ft), from rating curve extended above 1,400 cfs; minimum daily, 0.30 cfs Aug. 19, 21, 22, 1970.

REMARKS.--Records good. No known storage or diversions above station. Records of water temperatures for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WRD Calif. 1968: 1967.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	.74	164	132	78	31	117	32	17	6.5	2.3	1.2
2	.43	.75	287	114	75	30	105	34	16	6.1	2.0	1.0
3	.41	1.2	834	94	70	30	92	34	16	5.9	1.7	.95
4	.45	16	1,000	84	66	30	84	32	15	5.9	1.5	.75
5	.49	33	379	76	64	28	78	31	14	5.7	1.5	.60
6	.50	9.9	216	70	62	27	74	30	14	5.5	1.5	.52
7	.55	8.0	193	65	58	27	68	29	13	5.2	1.3	.54
8	.60	4.9	200	63	55	26	65	29	13	4.8	1.1	.53
9	.60	5.7	165	62	52	25	67	28	13	5.1	.84	.50
10	.50	8.7	138	71	51	25	71	26	13	4.9	.95	.48
11	.50	7.4	113	82	50	28	60	25	12	4.8	.93	.40
12	.50	13	94	79	50	478	56	25	12	4.6	.75	.36
13	.50	7.5	86	80	51	247	57	24	11	4.6	.75	.28
14	.50	5.2	76	100	50	185	62	23	11	4.2	.67	.24
15	.50	4.2	132	317	49	142	54	22	11	3.9	.60	.21
16	.50	3.7	177	1,110	49	124	52	21	9.9	3.6	.58	.19
17	.45	3.4	130	949	48	109	54	21	9.1	3.5	.50	.17
18	.54	3.1	125	642	46	95	49	20	9.0	3.8	.50	.17
19	.60	3.1	104	461	44	89	46	20	9.1	3.8	.50	.17
20	1.3	3.0	119	323	42	83	45	19	8.9	3.5	.50	.17
21	1.9	2.7	130	246	40	79	43	19	8.2	3.4	.50	.18
22	4.2	2.8	101	200	39	74	42	18	7.9	3.2	.64	.22
23	2.1	2.8	90	168	38	89	40	17	7.6	3.3	.66	.25
24	2.6	3.2	81	145	37	81	39	17	7.5	3.2	.57	.29
25	1.3	6.8	74	128	35	190	38	16	7.3	3.1	.60	.32
26	.90	8.9	71	113	34	678	36	16	8.1	3.1	.59	.49
27	.83	124	68	103	33	358	35	18	8.3	3.3	.50	.71
28	.78	268	165	95	32	247	35	21	7.4	3.0	.50	.86
29	.77	375	436	90	-----	196	33	19	7.1	2.8	.50	1.2
30	.78	262	204	85	-----	168	32	18	7.2	2.5	.54	4.3
31	.83	-----	154	81	-----	140	-----	17	-----	2.4	.79	-----
TOTAL	27.85	1,198.69	6,306	6,428	1,398	4,159	1,729	721	323.6	129.2	27.36	18.25
MEAN	.90	40.0	203	207	49.9	134	57.6	23.3	10.8	4.17	.88	.61
MAX	4.2	375	1,000	1,110	78	678	117	34	17	6.5	2.3	4.3
MIN	.41	.74	68	62	32	25	32	16	7.1	2.4	.50	.17
AC-FT	55	2,380	12,510	12,750	2,770	8,250	3,430	1,430	642	256	54	36

CAL YR 1970 TOTAL 36,065.16 MEAN 98.8 MAX 1,980 MIN .30 AC-FT 71,540  
WTR YR 1971 TOTAL 22,465.95 MEAN 61.6 MAX 1,110 MIN .17 AC-FT 44,560

## PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 3	1930	8.36	1,820	3-12	1300	7.15	1,220
1-16	1630	7.59	1,440	3-26	0100	7.01	1,150

## SACRAMENTO RIVER BASIN

## RESERVOIRS IN STONY CREEK BASIN, CALIF.

11385100 EAST PARK RESERVOIR NEAR STONYFORD.--Lat 39°21'24", long 122°30'53", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.3, T.17 N., R.6 W., Colusa County, near south side of spillway section on East Park Dam on Little Stony Creek, 1.9 miles southeast of Stonyford. Drainage area, 98.2 sq mi. Period of record, October 1969 to current year. Nonrecording gage read once daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Extremes for current year: Maximum contents, 51,890 acre-ft Mar. 26 (elevation, 1,200.23 ft); minimum, 2,420 acre-ft Oct. 1 (elevation, 1,147.92 ft). Extremes for period of record: Maximum contents, 51,890 acre-ft Mar. 26, 1971 (elevation, 1,200.23 ft); minimum, 2,419 acre-ft Sept. 26-30, 1970 (elevation, 1,147.85 ft).

Reservoir is formed by a concrete arch-type dam. Storage began in 1910. Capacity, 48,211 acre-ft between elevations 1,131.68 ft (invert of sluice pipe) and 1,198.18 ft (crest of spillway). Capacity increased to 50,889 acre-ft with the addition of flashboards to an elevation of 1,199.68 ft. No dead storage. Record of contents furnished by Bureau of Reclamation.

11386100 STONY GORGE RESERVOIR NEAR ELK CREEK.--Lat 39°35'09", long 122°31'54", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.16, T.20 N., R.6 W., Glenn County, on south end of Stony Gorge Dam on Stony Creek, 1.3 miles southeast of Elk Creek. Drainage area, 301 sq mi. Period of record, October 1969 to current year. Nonrecording gage read once daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Extremes for current year: Maximum contents, 54,630 acre-ft Mar. 26 (elevation, 844.20 ft); minimum, 5,130 acre-ft Oct. 17 (elevation, 783.70 ft). Extremes for period of record: Maximum contents, 54,630 acre-ft Mar. 26, 1971 (elevation, 844.20 ft); minimum, 5,130 acre-ft Oct. 17, 1970 (elevation, 783.70 ft).

Reservoir is formed by slab and buttress-type dam. Storage began in 1928. Capacity, 50,383 acre-ft between elevations, 728.0 ft (top of low intake) and 841.0 ft (crest of spillway). No dead storage. Record of contents furnished by Bureau of Reclamation.

## MONTHEND ELEVATIONS AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
EAST PARK RESERVOIR				STONY GORGE RESERVOIR		
Sept. 30.....	1,147.92	2,420	-	787.45	6,440	-
Oct. 31.....	1,148.09	2,480	+60	786.05	5,920	-520
Nov. 30.....	1,164.18	9,200	+6,720	807.20	16,840	+10,920
Dec. 31.....	1,187.08	30,980	+21,780	829.54	36,600	+19,760
CAL YR 1970.....	-	-	+6,570	-	-	+5,242
Jan. 31.....	1,198.40	48,600	+17,620	835.48	43,290	+6,690
Feb. 28.....	1,198.30	48,420	-180	840.39	49,280	+5,990
Mar. 31.....	1,199.82	51,140	+2,720	843.12	53,180	+3,580
Apr. 30.....	1,199.78	51,070	-70	835.72	43,780	-9,400
May 31.....	1,194.94	42,710	-8,360	840.85	50,190	+6,410
June 30.....	1,194.79	42,470	-240	839.30	48,200	-1,990
July 31.....	1,192.24	38,420	-4,050	828.80	35,900	-12,300
Aug. 31.....	1,185.01	28,280	-10,140	814.73	22,560	-13,340
Sept. 30.....	1,180.26	22,650	-5,630	794.25	9,350	-13,210
WTR YR 1971.....	-	-	+20,230	-	-	+1,910

## 11386500 GRINDSTONE CREEK NEAR ELK CREEK, CALIF.

LOCATION.--Lat 39°40'38", long 122°31'51", on line between secs. 15 and 16, T.21 N., R.6 W., Glenn County, on right bank 600 ft upstream from highway bridge, 4.5 miles north of Elk Creek.

DRAINAGE AREA.--156 sq mi.

PERIOD OF RECORD.--October 1935 to November 1937, October 1939 to April 1940, October 1965 to current year. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Altitude of gage is 640 ft (from topographic map). October 1935 to November 1937, at site 0.2 mile downstream at different datum. October 1939 to April 1940, at site 600 ft downstream at different datum.

AVERAGE DISCHARGE.--8 years (1936-37, 1966-71), 182 cfs (131,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,640 cfs Jan. 16 (gage height, 13.13 ft); minimum daily, 0.40 cfs Oct. 1, 6-8.

Period of record: Maximum discharge, 15,600 cfs Jan. 23, 1970 (gage height, 14.55 ft), from rating curve extended above 10,000 cfs on basis of slope-area measurement of maximum flow; no flow at times in many years.

Flood of Dec. 22, 1964, reached a stage of 9.38 ft, from floodmarks, at site 600 ft downstream at different datum (discharge, 22,200 cfs, by slope-area measurement).

REMARKS.--No known diversions above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	17	276	224	382	132	500	110	85	41	4.2	3.4
2	.60	18	326	217	364	116	450	121	72	36	5.0	5.0
3	.60	24	861	172	310	126	440	116	65	33	5.0	4.2
4	.60	91	2,510	160	262	138	400	143	68	31	5.0	5.0
5	.60	178	951	154	254	110	373	148	72	28	4.2	5.0
6	.40	113	774	116	238	106	337	132	68	24	3.4	4.2
7	.40	102	978	97	217	102	302	138	76	24	2.6	5.0
8	.40	68	1,180	89	198	102	270	198	76	24	3.4	5.0
9	.60	298	883	106	184	93	253	160	76	22	3.4	4.2
10	.60	189	1,260	303	198	93	323	160	76	20	2.6	6.0
11	.60	121	450	450	238	182	238	191	72	20	2.6	6.0
12	.60	246	400	319	278	1,740	224	204	65	17	2.6	5.0
13	.60	62	355	244	302	1,000	224	210	65	17	2.6	2.6
14	.60	38	302	160	302	629	238	198	61	15	2.0	1.5
15	1.0	36	341	567	286	475	230	178	61	14	1.5	1.0
16	1.5	31	603	4,550	270	433	217	154	61	12	1.0	1.0
17	1.5	24	460	5,050	230	460	228	138	61	12	1.0	2.6
18	2.0	22	468	4,620	204	373	204	116	61	12	1.0	4.2
19	1.5	22	391	2,610	204	337	191	116	58	11	.60	7.0
20	4.2	20	364	1,580	178	310	178	116	55	11	1.0	9.4
21	12	20	310	1,050	172	278	172	110	52	12	1.0	12
22	33	18	286	758	160	254	154	93	49	11	1.5	15
23	31	18	262	604	154	1,060	172	102	46	8.2	.60	18
24	52	29	254	517	148	858	132	116	41	8.2	.60	18
25	28	462	238	420	154	1,110	121	143	43	7.0	1.0	22
26	17	348	246	382	143	4,550	110	143	46	6.0	.60	24
27	14	269	238	373	143	1,610	97	121	49	6.0	1.0	26
28	15	451	270	373	143	1,160	97	164	46	4.2	1.0	31
29	14	628	469	364	-----	881	102	132	43	5.0	1.0	36
30	14	409	294	364	-----	724	97	132	43	5.0	1.0	36
31	15	-----	238	391	-----	604	-----	97	-----	5.0	2.0	-----
TOTAL	264.30	4,372	17,238	27,384	6,316	20,146	7,074	4,400	1,812	501.6	66.00	325.3
MEAN	8.53	146	556	883	226	650	236	142	60.4	16.2	2.13	10.8
MAX	52	628	2,510	5,050	382	4,550	500	210	85	41	5.0	36
MIN	.40	17	238	89	143	93	97	93	41	4.2	.60	1.0
AC-FT	524	8,670	34,190	54,320	12,530	39,960	14,030	8,730	3,590	995	131	645

CAL YR 1970 TOTAL 117,231.00 MEAN 321 MAX 9,750 MIN .20 AC-FT 232,500  
WTR YR 1971 TOTAL 89,899.20 MEAN 246 MAX 5,050 MIN .40 AC-FT 178,300





11387800 NORTH FORK STONY CREEK NEAR NEWVILLE, CALIF.

LOCATION.--Lat 39°47'05", long 122°28'34", in SW¼SW¼ sec.6, T.22 N., R.5 W., Glenn County, on right bank 150 ft downstream from Bedford Creek and 2.7 miles east of Newville.

DRAINAGE AREA.--63.4 sq mi.

PERIOD OF RECORD.--May 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 531.43 ft above mean sea level.

AVERAGE DISCHARGE.--8 years, 41.2 cfs (29,850 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,180 cfs Nov. 29, Jan. 15; maximum gage height, 5.52 ft Nov. 29; no flow many days.

Period of record: Maximum discharge, 12,500 cfs Jan. 5, 1965 (gage height, 11.48 ft), from rating curve extended above 2,500 cfs on basis of slope-area measurements at gage heights 7.3 and 11.48 ft; no flow at times in each year.

Flood of Apr. 7, 1963, reached a stage of 7.3 ft, from floodmarks (discharge, 4,600 cfs by slope-area measurement).

REMARKS.--Records good. No regulation above station. Probably a few small diversions above the station for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.06	116	50	34	11	30	8.0	4.7	.98	.04	
2	.01	.05	116	54	31	11	26	8.8	4.8	.89	.03	
3	.01	.07	962	33	27	12	25	9.2	4.0	.81	.03	
4	.01	.17	345	30	26	12	22	8.8	3.6	.66	.03	
5	.02	.51	110	28	27	11	21	8.8	3.4	.51	.03	
6	.04	.60	65	25	25	11	20	8.0	2.8	.50	.02	
7	.03	.54	92	24	23	11	20	7.0	2.4	.40	.02	
8	.03	.44	158	22	22	11	20	11	2.2	.22	.02	
9	.03	.37	84	23	21	11	20	10	2.1	.21	.02	
10	.04	.35	53	26	20	11	19	7.3	2.1	.19	.01	
11	.02	.45	38	27	19	12	17	6.3	2.0	.18	.01	
12	.03	.49	29	24	18	260	16	6.0	2.0	.16	.01	
13	.02	.48	33	28	19	58	16	5.7	1.8	.15	.01	
14	.03	.56	25	25	19	33	17	5.4	1.8	.14	.01	
15	.01	.56	155	375	18	29	15	4.8	1.7	.13	.01	
16	.02	.56	120	1,440	18	23	14	4.1	1.6	.12	.01	
17	.03	.69	58	450	17	19	14	4.3	1.4	.11	0	
18	.05	.77	276	239	16	17	13	4.6	1.3	.10	0	
19	.07	.91	97	170	16	15	12	4.6	1.4	.10	0	
20	.08	1.1	134	126	14	14	12	4.4	1.5	.09	0	
21	.12	1.1	99	96	14	14	12	3.9	1.6	.08	0	
22	.14	1.2	61	78	15	13	12	4.2	1.5	.08	0	
23	.15	1.3	50	68	14	18	12	4.3	1.5	.07	0	
24	.19	1.3	45	60	13	15	11	4.1	1.5	.07	0	
25	.14	1.5	39	54	12	233	10	4.0	1.6	.06	0	
26	.12	2.0	36	49	11	490	9.6	4.5	1.6	.06	0	
27	.13	.69	33	46	13	99	9.6	5.0	1.6	.05	0	
28	.12	465	37	41	12	62	9.2	7.6	1.6	.05	0	
29	.06	1,020	59	38	-----	49	8.8	6.3	1.4	.05	0	
30	.07	227	42	37	-----	40	8.8	6.1	1.2	.04	0	
31	.07	-----	37	36	-----	34	-----	5.3	-----	.04	0	-----
TOTAL	1.89	1,799.13	3,604	3,822	534	1,659	472.0	192.4	63.7	7.30	.31	0
MEAN	.061	60.0	116	123	19.1	53.5	15.7	6.21	2.12	.24	.010	0
MAX	.19	1,020	962	1,440	34	490	30	11	4.8	.98	.04	0
MIN	0	.05	25	22	11	11	8.8	3.9	1.2	.04	0	0
AC-FT	3.8	3,570	7,150	7,580	1,060	3,290	936	382	126	14	.6	0

CAL YR 1970 TOTAL 23,171.01 MEAN 63.5 MAX 2,120 MIN 0 AC-FT 45,960  
WTR YR 1971 TOTAL 12,155.73 MEAN 33.3 MAX 1,440 MIN 0 AC-FT 24,110

PEAK DISCHARGE (BASE, 2,000 CFS).--Nov. 29 (1630) 2,180 cfs (5.52 ft); Jan. 15 (2400) 2,180 cfs (5.43 ft).

## SACRAMENTO RIVER BASIN

## 11387990 SOUTH DIVERSION CANAL NEAR ORLAND, CALIF.

LOCATION.--Lat 39°48'36", long 122°19'45", in NE $\frac{1}{4}$  sec.32, T.23 N., R.4 W., Tehama County, on left bank 0.4 mile downstream from Black Butte Dam. and 8.2 miles northwest of Orland.

PERIOD OF RECORD.--July 1955 to current year. Prior to October 1961, published as an adjustment to Stony Creek at Black Butte damsite near Orland.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 372.64 ft above mean sea level. Prior to Oct. 23, 1956, at site 0.5 mile upstream at different datum. Oct. 23, 1956, to Sept. 30, 1960, at present site and datum. Oct. 1, 1960, to Sept. 30, 1961, at datum 1.00 ft lower.

AVERAGE DISCHARGE.--16 years, 108 cfs (78,250 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 320 cfs May 8, 1969; no flow at times in most years.

REMARKS.--Records good. Canal diverts from Black Butte Reservoir at right end of Black Butte Dam; water is used for irrigation. A pump with a capacity of 6 cfs diverted water at times above station and was included in the canal record prior to Mar. 1, 1970. Total diverted during the current year was 1,070 acre-ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	1.7	.10	2.8	.70	.70	3.3	240	116	212	241	173
2	190	1.7	.10	2.3	.70	.70	3.0	240	100	228	223	204
3	192	3.0	.30	2.3	.70	.70	2.2	150	134	239	238	223
4	175	5.8	.60	2.1	.70	.40	2.3	112	183	246	244	220
5	152	2.3	.10	2.1	1.4	1.8	55	90	203	247	245	210
6	124	2.3	.10	2.1	.30	1.8	84	77	212	277	275	184
7	87	2.3	.10	2.1	.30	.70	129	129	232	260	266	169
8	23	2.3	.30	1.7	2.5	40	129	160	267	243	240	183
9	12	2.3	.10	1.0	.10	86	130	144	295	246	261	205
10	31	2.3	.20	.60	0	129	149	147	304	245	254	203
11	26	2.3	.70	.60	.30	141	151	195	277	228	258	211
12	26	2.3	.80	.60	1.1	111	178	240	273	208	268	186
13	44	2.3	1.0	.60	1.4	59	207	234	230	229	227	161
14	63	2.1	1.0	.40	1.5	13	207	230	206	258	196	192
15	60	2.3	1.0	.60	1.5	10	223	236	188	290	191	210
16	58	2.1	.70	5.5	1.5	24	234	202	202	314	198	213
17	58	2.1	.70	.70	1.0	61	228	220	190	291	209	217
18	29	2.1	1.0	.20	1.2	133	170	207	217	282	223	214
19	5.3	2.1	.40	.10	2.1	151	158	210	246	253	226	231
20	.30	2.1	.70	.10	2.1	180	176	235	255	237	226	223
21	.10	2.1	1.0	.70	2.5	182	143	249	265	245	258	182
22	0	2.1	.10	.40	1.4	200	159	243	276	210	246	181
23	1.8	3.4	0	.30	.70	209	168	192	261	233	212	168
24	3.5	.90	0	.30	.70	146	183	247	256	247	205	137
25	3.5	1.5	0	.30	.70	46	182	268	245	245	212	118
26	3.5	1.7	.60	.30	.70	2.0	192	268	217	243	206	144
27	3.5	1.5	3.5	.40	.70	1.0	229	244	195	249	196	151
28	3.5	1.9	3.2	.80	.70	5.0	248	193	141	276	206	166
29	2.8	1.9	3.0	.80	-----	3.9	242	171	159	289	185	185
30	1.7	1.7	3.2	.80	-----	2.1	214	95	195	278	195	186
31	1.7	-----	2.8	.80	-----	2.3	-----	81	-----	251	190	-----
TOTAL	1,561.20	66.50	27.40	34.40	29.20	1,944.10	4,578.8	5,949	6,540	7,799	7,020	5,650
MEAN	50.4	2.22	.88	1.11	1.04	62.7	153	192	218	252	226	188
MAX	192	5.8	3.5	5.5	2.5	209	248	268	304	314	275	231
MIN	0	.90	0	.10	0	.40	2.2	77	100	208	185	118
AC-FT	3,100	132	54	68	58	3,860	9,080	11,800	12,970	15,470	13,920	11,210
WAL YR 1970	TOTAL	41,676.20	MEAN	114	MAX	290	MIN	0	AC-FT	82,660		
CAL YR 1971	TOTAL	41,199.60	MEAN	113	MAX	314	MIN	0	AC-FT	81,720		

11387995 BLACK BUTTE LAKE NEAR ORLAND, CALIF.  
(Formerly published as Black Butte Reservoir near Orland)

LOCATION.--Lat 39°48'50", long 122°20'12", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.29, T.23 N., R.4 W., Tehama County, in control tower in right abutment of main dam on Stony Creek, 8 miles northwest of Orland.

DRAINAGE AREA.--736 sq mi.

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

EXTREMES.--Current year: Maximum contents, 132,394 acre-ft Mar. 29 (elevation, 467.03 ft); minimum, 16,253 acre-ft Nov. 3 (elevation, 421.17 ft).  
Period of record: Maximum contents, 149,700 acre-ft June 8, 9, 1967 (elevation, 471.19 ft); minimum since initial season of operation, 9,420 acre-ft Oct. 27, 1964 (elevation, 413.83 ft).

REMARKS.--Reservoir is formed by seven earthfill dams; storage began Oct. 28, 1963. Usable capacity, 150,000 acre-ft between elevations 414.6 ft (minimum operating level) and 473.5 ft (spillway crest) above mean sea level. Additional storage of 10,000 acre-ft is not available for release. South Diversion Canal (see sta 11397990) diverts at right end of dam. Water is released down Stony Creek for irrigation. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Record of contents furnished by Corps of Engineers, not rounded to Geological Survey standards.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

413.0	8,811	450.0	73,660
415.0	10,300	460.0	105,925
420.0	14,950	470.0	144,621
430.0	28,788	480.0	191,348
440.0	48,072		

CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25,805	16,391	35,312	52,712	60,049	88,074	120,974	113,579	100,992	66,639	49,858	41,939
2	25,104	16,299	37,171	51,249	62,141	88,330	115,387	113,616	99,995	65,710	49,565	41,939
3	24,293	16,253	42,123	49,475	64,068	88,683	109,573	113,800	98,968	64,710	49,206	41,838
4	23,483	16,380	51,780	48,693	65,846	89,068	108,422	114,021	97,812	63,828	48,938	41,634
5	22,689	16,554	55,041	48,960	67,521	89,455	110,043	114,242	96,698	62,901	48,826	41,452
6	21,855	16,836	58,959	49,972	69,113	89,842	110,949	113,836	95,524	61,880	48,648	41,331
7	21,096	16,966	63,403	50,813	70,616	90,230	111,094	113,212	94,326	60,870	48,448	41,129
8	20,724	17,002	69,000	51,295	71,938	90,424	111,167	112,662	92,971	59,845	48,382	40,587
9	20,301	17,134	73,659	51,943	72,810	90,554	111,749	112,041	91,595	58,757	48,293	39,950
10	19,737	17,545	75,493	52,783	73,954	90,457	112,114	111,421	90,230	57,708	48,227	39,220
11	19,224	17,680	72,344	54,035	75,077	90,392	112,589	110,586	88,811	56,671	48,072	38,401
12	18,938	17,939	67,327	55,017	75,970	94,392	112,955	109,609	87,436	55,718	47,962	37,649
13	18,707	18,101	61,984	55,937	76,837	99,995	113,285	108,745	86,325	54,993	47,918	36,886
14	18,364	18,163	56,205	56,671	77,648	100,235	113,506	107,777	85,127	54,250	47,918	36,001
15	18,076	18,226	51,020	58,331	78,706	96,900	113,763	106,884	83,874	53,395	47,940	35,182
16	17,741	18,226	46,977	73,807	79,954	93,763	113,947	105,712	82,599	52,572	47,962	34,373
17	17,472	18,226	42,123	86,927	81,302	94,226	114,057	104,618	81,518	52,152	47,940	33,663
18	17,351	18,163	38,421	94,658	82,289	95,324	114,278	104,512	80,412	51,803	47,742	33,303
19	17,230	18,163	36,057	95,257	82,909	96,396	114,610	103,950	79,100	51,780	47,523	33,015
20	17,206	18,138	38,150	92,282	83,687	97,170	114,463	103,250	77,678	51,873	47,369	32,729
21	17,182	18,088	41,008	86,864	84,437	97,880	114,426	102,726	76,388	51,873	47,020	32,604
22	17,134	18,088	43,152	80,841	85,253	98,389	114,278	102,657	74,988	51,873	46,759	32,284
23	17,074	18,101	44,999	75,553	85,914	99,995	114,168	102,587	73,659	51,780	46,499	31,931
24	17,014	18,176	46,564	69,904	86,420	102,239	114,057	102,482	72,460	51,665	46,068	31,544
25	16,931	18,453	47,896	64,148	86,800	105,217	114,057	102,204	71,476	51,503	45,510	31,230
26	16,836	19,250	49,072	58,506	87,086	118,483	114,021	101,961	70,701	51,434	44,999	30,865
27	16,777	20,058	50,244	55,986	87,436	125,462	113,873	101,788	69,847	51,318	44,343	30,468
28	16,706	23,231	51,411	55,937	87,787	129,491	113,726	101,753	69,169	51,088	43,693	30,073
29	16,624	30,744	53,608	56,279	-----	132,394	113,689	101,753	68,439	50,791	43,256	29,732
30	16,531	33,609	54,609	57,410	-----	131,236	113,689	101,823	67,521	50,403	42,801	29,309
31	16,461	-----	54,059	58,582	-----	126,278	-----	101,788	-----	50,085	42,328	-----
MAX	25,805	33,609	75,493	95,257	87,787	132,394	120,974	114,242	100,992	66,639	49,858	41,939
MIN	16,461	16,253	35,312	48,693	60,049	88,074	108,422	101,753	67,521	50,085	42,328	29,309
(a)	421.35	432.77	442.61	444.46	454.61	465.48	462.15	458.82	447.85	440.90	437.30	430.31
(b)	-10,008	+17,148	+20,450	+4,523	+29,205	+38,491	-12,589	-11,901	-34,267	-17,436	-7,757	-13,019
(c)	707	218	203	400	564	895	1,395	1,738	2,119	2,223	1,941	1,649
CAL YR 1970	b -6,400											
WTR YR 1971	b +2,840											

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

## 11388000 STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, CALIF.

LOCATION.--Lat 39°49'07", long 122°19'26", in SW¼ sec.28, T.23 N., R.4 W., Tehama County, on left bank 200 ft downstream from road bridge, 0.6 mile downstream from Black Butte Dam, and 8.1 miles northwest of Orland.

DRAINAGE AREA.--737 sq mi.

PERIOD OF RECORD.--July 1955 to current year. Prior to October 1962, published as Stony Creek at Black Butte damsite, near Orland.

GAGE.--Water-stage recorder and grouted rock control. Datum of gage is 366.02 ft above mean sea level (levels by Corps of Engineers). Prior to Dec. 12, 1960, water-stage recorder at site 0.6 mile upstream at different datum. Dec. 12, 1960, to Nov. 30, 1963, nonrecording gage at bridge 200 ft upstream at datum 4.04 ft higher.

AVERAGE DISCHARGE (adjusted for diversion to South Diversion Canal since 1956 and for change in contents and evaporation from Black Butte Reservoir since 1964).--16 years, 641 cfs (464,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,490 cfs Jan. 19 (gage height, 7.63 ft); no flow many days. Period of record: Maximum discharge, 36,300 cfs Feb. 24, 1958 (gage height, 11.82 ft, site and datum then in use), from rating curve extended above 7,500 cfs on basis of slope-area measurement of maximum flow; no flow Dec. 8-10, 31, 1956, Jan. 1-10, 1957, Oct. 19 to Nov. 7, Nov. 13-15, 1962. Maximum discharge since regulation by Black Butte Reservoir in 1964, 19,400 cfs Dec. 25, 1964 (gage height, 10.41 ft); no flow at times in each year.

REMARKS.--Records excellent. Many diversions above station for irrigation. Flow regulated by Black Butte Reservoir (see sta 11387995), East Park Reservoir, see sta 11385100, (usable capacity, 50,600 acre-ft), and Stony Gorge Reservoir, see sta 11386100, (usable capacity, 50,100 acre-ft). Prior to October 1956, figures of daily discharge included water diverted to South Diversion Canal, which diverts 0.6 mile above station. Records of chemical analyses and water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204	29	.2	1,480	358	37	3,990	598	541	311	190	299
2	202	28	0	1,480	47	34	3,980	605	575	309	208	304
3	212	28	0	1,470	32	31	3,980	585	570	298	210	293
4	214	28	0	986	28	31	1,730	578	587	279	200	262
5	203	29	0	426	21	28	49	567	590	296	186	255
6	206	29	0	25	28	28	206	556	584	289	184	252
7	208	28	0	23	28	31	606	570	599	294	191	250
8	163	28	0	30	12	60	563	578	620	302	183	256
9	157	28	0	31	.10	78	367	560	629	312	178	261
10	182	28	523	32	0	92	353	546	616	320	160	263
11	174	28	2,490	32	4.7	117	331	587	610	322	180	268
12	96	32	3,240	32	35	115	321	618	607	317	188	270
13	49	32	3,370	32	35	232	332	610	581	318	178	274
14	59	32	3,310	32	35	1,600	346	591	568	338	177	266
15	65	32	3,260	128	35	3,020	334	588	593	330	182	251
16	58	32	3,300	1,230	35	2,730	311	597	590	326	168	246
17	49	32	3,320	3,020	36	563	329	587	529	324	160	247
18	40	32	3,260	4,290	36	116	352	193	514	312	160	251
19	39	32	2,350	5,070	35	111	386	372	509	186	156	251
20	36	32	343	5,040	35	149	576	364	504	136	151	241
21	30	31	18	5,000	35	150	601	318	503	147	154	243
22	30	31	3.9	4,680	36	161	598	150	480	172	156	243
23	29	11	.4	4,060	37	170	586	130	454	186	158	238
24	27	7.3	.2	4,030	37	113	577	132	448	182	238	244
25	27	32	.1	3,770	37	176	571	147	318	189	254	240
26	27	32	.1	3,280	37	459	574	151	306	173	269	227
27	27	34	0	2,120	37	596	575	144	297	166	304	221
28	27	35	0	1,000	37	686	568	127	289	190	311	224
29	27	40	0	844	-----	704	571	104	288	205	312	226
30	28	17	421	474	-----	2,220	584	106	304	211	296	229
31	29	-----	1,140	472	-----	3,970	-----	131	-----	198	288	-----
TOTAL	2,924	869.3	30,349.9	54,619	1,168.80	18,608	25,247	12,490	15,203	7,938	6,330	7,595
MEAN	94.3	29.0	979	1,762	41.7	600	842	403	507	256	204	253
MAX	214	40	3,370	5,070	358	3,970	3,990	618	629	338	312	304
MIN	27	7.3	0	23	0	28	49	104	288	136	151	221
AC-FT	5,800	1,720	60,200	108,300	2,320	36,910	50,080	24,770	30,160	15,750	12,560	15,060
MEAN a	-6.52	323	1,316	1,843	579	1,304	806	430	185	260	336	250
AC-FT a	-401	19,220	80,910	113,300	32,150	80,160	47,970	26,410	10,980	16,010	20,660	14,900

CAL YR 1970 TOTAL 319,935.50 MEAN 877 MAX 12,700 MIN 0 AC-FT 634,600 MEAN a 1,000 AC-FT a 724,200  
WTR YR 1971 TOTAL 183,342.00 MEAN 502 MAX 5,070 MIN 0 AC-FT 363,700 MEAN a 638 AC-FT a 462,300

a Adjusted for change in contents and evaporation in Black Butte Reservoir and for diversion to South Diversion Canal near Orland.

## 11388500 STONY CREEK NEAR HAMILTON CITY, CALIF.

LOCATION.--Lat 39°43'25", long 122°02'47", in Capay Grant, Glenn County, on right bank 2.3 miles southwest of Hamilton City, 6 miles upstream from mouth, and 8 miles east of Orland.

DRAINAGE AREA.--772 sq mi.

PERIOD OF RECORD.--October 1940 to current year. Records for water year 1941 incomplete, yearly estimate published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 151.18 ft above mean sea level (levels by Bureau of Reclamation). Prior to February 1946, at site 3 miles upstream at different datum.

AVERAGE DISCHARGE (unadjusted).--31 years, 442 cfs (320,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,570 cfs Jan. 19 (gage height, 10.06 ft); no flow Nov. 1-3, 14-27. Period of record: Maximum discharge, 39,900 cfs Feb. 25, 1958 (gage height, 18.31 ft); no flow at times in most years.

REMARKS.--Records fair. Flow regulated by East Park Reservoir since 1910 (see sta 11385100), by Stony Gorge Reservoir since 1928 (see sta 11386100), and by Black Butte Reservoir 18.6 miles upstream since October 1963 (see sta 11387995). Diversions for irrigation of about 20,000 acres, maximum potential, above station in the Bureau of Reclamation Orland project.

COOPERATION.--Four discharge measurements and several gage readings furnished by Bureau of Reclamation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	0	72	1,400	540	12	4,390	443	325	166	34	186
2	86	0	40	1,420	244	9.9	4,330	498	482	158	40	186
3	80	0	31	1,420	140	8.8	4,320	530	490	146	17	186
4	98	1.4	88	1,220	116	7.8	2,900	498	474	170	24	162
5	123	5.2	64	656	100	6.0	235	522	466	162	15	134
6	113	7.8	38	190	86	4.6	87	458	458	146	19	158
7	112	6.0	28	77	77	2.1	381	443	443	162	37	124
8	93	4.0	28	60	74	1.4	522	466	443	154	40	118
9	94	4.0	34	53	58	2.3	272	506	482	166	49	109
10	70	3.0	23	49	42	2.5	225	458	474	170	35	103
11	84	2.1	1,690	45	32	5.2	225	429	506	162	35	106
12	74	1.4	3,110	44	25	40	202	458	506	154	28	109
13	28	.80	3,400	42	30	79	182	458	498	138	34	109
14	9.3	0	3,360	39	35	1,320	182	443	498	138	29	118
15	8.2	0	3,430	41	35	2,820	190	443	514	142	25	112
16	5.5	0	3,420	674	34	3,610	206	436	490	138	32	124
17	3.5	0	3,420	2,720	32	1,020	190	458	415	154	28	97
18	5.2	0	3,400	4,080	31	202	198	214	368	158	29	109
19	2.2	0	2,980	5,410	31	100	178	127	350	115	24	82
20	1.4	0	904	5,450	26	67	368	178	350	69	29	100
21	.80	0	345	5,490	19	67	450	170	368	51	33	138
22	3.5	0	186	5,450	17	63	466	127	356	24	29	121
23	3.2	0	125	4,510	19	74	474	72	356	16	29	118
24	2.8	0	90	4,420	17	112	466	51	350	5.4	40	127
25	3.0	0	74	4,280	16	87	474	21	245	6.8	69	134
26	3.0	0	68	3,520	13	326	458	26	215	28	97	166
27	3.0	0	60	2,530	12	506	458	35	240	32	100	142
28	2.2	8.2	53	1,140	13	709	474	61	186	19	121	138
29	1.6	99	50	1,050	-----	763	458	60	162	20	138	146
30	1.2	184	68	640	-----	1,700	474	63	174	34	146	150
31	.25	-----	890	564	-----	4,240	-----	40	-----	30	154	-----
TOTAL	1,202.85	326.90	31,569	58,684	1,914	17,967.6	24,435	9,192	11,684	3,234.2	1,559	3,912
MEAN	38.8	10.9	1,018	1,893	68.4	580	815	297	389	104	50.3	130
MAX	123	184	3,430	5,490	540	4,240	4,390	530	514	170	154	186
MIN	.25	0	23	39	12	1.4	87	21	162	5.4	15	82
AC-FT	2,390	648	62,620	116,400	3,800	35,640	48,470	18,230	23,180	6,420	3,090	7,760
CAL YR 1970	TOTAL	306,962.75	MEAN	841	MAX	12,400	MIN	0	AC-FT	608,900		
WTR YR 1971	TOTAL	165,680.55	MEAN	454	MAX	5,490	MIN	0	AC-FT	328,600		

## 11389000 SACRAMENTO RIVER AT BUTTE CITY, CALIF.

LOCATION.--Lat 39°27'28", long 121°59'35", in SE¼NE¼ sec.32, T.19 N., R.1 W., Glenn County, on left bank 100 ft upstream from highway bridge, 0.5 mile south of Butte City, and at mile 115.8 upstream from Sacramento.

DRAINAGE AREA.--12,081 sq mi.

PERIOD OF RECORD.--April 1921 to September 1938 (low-water periods only), October 1938 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 2.92 ft below mean sea level. Prior to December 1930, at site 0.5 mile upstream at same datum.

AVERAGE DISCHARGE.--33 years (1938-71), 13,040 cfs (9,447,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 95,800 cfs Jan. 18 (gage height, 91.10 ft); minimum daily, 6,810 cfs Oct. 17.

Period of record: Maximum discharge (1940 to current year), 170,000 cfs Feb. 7, 1942 (gage height, 96.87 ft); minimum recorded, 1,050 cfs July 15, 25, 26, 1931 (gage height, 67.49 ft).

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power developments, unmeasured over-bank flow during extreme floods, diversions for irrigation, and return flow from irrigated areas.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,490	7,450	47,800	24,700	26,200	10,100	22,400	13,100	15,600	12,600	11,500	11,900
2	7,510	7,420	38,800	24,800	25,800	9,510	21,700	13,200	16,200	12,200	11,900	11,900
3	7,380	7,430	42,600	24,300	25,400	9,240	23,600	13,300	15,400	12,100	11,900	11,600
4	7,260	7,470	53,100	23,000	25,000	9,150	23,400	13,700	15,100	12,000	11,500	10,600
5	7,230	7,920	87,600	21,900	24,600	9,080	21,400	14,600	14,900	11,900	11,600	10,100
6	7,290	9,200	66,100	21,400	23,300	8,980	20,500	15,700	14,700	11,700	11,300	10,000
7	7,300	10,900	53,000	20,600	21,700	8,930	20,600	16,200	14,500	11,600	11,200	9,970
8	7,270	11,900	54,800	20,100	20,700	8,900	20,100	16,900	14,300	11,500	11,100	9,850
9	7,340	9,450	68,100	19,700	20,200	8,720	18,500	18,000	14,400	11,300	11,100	9,850
10	7,370	18,600	65,000	18,600	19,800	8,560	18,000	18,500	14,400	11,300	11,100	9,910
11	7,280	14,300	52,100	18,900	19,800	8,160	18,900	18,500	14,500	11,200	11,100	10,000
12	7,280	11,100	44,600	21,000	18,600	8,150	19,400	18,300	14,300	11,200	11,000	10,100
13	7,310	11,400	39,300	19,700	18,200	22,100	19,100	18,600	14,200	11,100	11,000	10,000
14	7,220	9,740	34,600	18,100	17,100	18,000	19,300	18,700	14,100	11,100	11,000	10,100
15	7,130	9,440	32,200	17,900	16,300	14,800	19,000	19,000	14,000	11,000	11,000	10,100
16	7,080	9,650	34,000	29,600	15,800	15,700	18,800	18,800	13,900	11,000	11,100	10,200
17	6,810	11,300	38,600	74,800	15,500	13,000	17,300	18,500	13,800	11,000	11,000	10,200
18	6,860	13,600	39,400	83,000	15,100	11,500	16,700	18,200	13,800	10,900	11,100	10,200
19	6,990	14,600	37,800	61,900	13,900	10,400	16,200	17,800	13,600	10,900	11,200	10,100
20	7,080	15,100	32,800	55,900	12,700	10,000	16,000	17,600	13,400	10,800	11,200	10,200
21	7,410	15,200	35,800	49,900	12,000	9,660	16,300	17,200	13,300	10,800	11,300	10,300
22	7,710	15,300	39,700	45,300	11,700	9,380	15,500	16,900	13,300	10,700	11,300	10,300
23	7,750	15,400	29,500	42,100	11,400	9,200	15,000	15,300	13,300	10,600	11,400	10,400
24	7,920	15,600	26,500	40,000	10,200	13,500	14,600	15,000	13,200	10,600	11,500	10,500
25	8,120	16,700	25,000	38,400	10,900	16,100	13,800	15,000	13,100	10,600	11,500	10,500
26	7,760	21,500	23,300	37,200	10,400	30,500	13,500	15,000	12,800	10,600	11,500	10,500
27	7,590	19,800	22,700	35,800	10,300	51,100	13,300	15,300	13,600	10,600	11,500	10,600
28	7,540	29,600	22,400	31,700	10,200	30,800	13,100	15,600	13,800	10,700	11,400	10,800
29	7,540	66,300	24,100	27,600	-----	22,700	12,600	16,200	13,100	10,900	11,600	10,700
30	7,520	76,500	29,400	26,900	-----	19,700	12,900	15,800	12,800	11,100	11,700	10,800
31	7,440	-----	25,600	26,400	-----	21,900	-----	15,500	-----	11,400	11,800	-----
TOTAL	228,780	509,870	1,266.3M	1,021.2M	482,800	457,520	531,500	510,000	421,400	347,000	351,400	312,280
MEAN	7,380	17,000	40,850	32,940	17,240	14,760	17,720	16,450	14,050	11,190	11,340	10,410
MAX	8,120	76,500	87,600	83,000	26,200	51,100	23,600	19,000	16,200	12,600	11,900	11,900
MIN	6,810	7,420	22,400	17,900	10,200	8,150	12,600	13,100	12,800	10,600	11,000	9,850
AC-FT	453,800	1,011M	2,512M	2,026M	957,600	907,500	1,054M	1,012M	835,800	688,300	697,000	619,400
CAL YR 1970	TOTAL 7,594,910		MEAN 20,810		MAX 146,000		MIN 6,760		AC-FT 15,080,000			
WTR YR 1971	TOTAL 6,440,050		MEAN 17,640		MAX 87,600		MIN 6,810		AC-FT 12,770,000			

## 11389500 SACRAMENTO RIVER AT COLUSA, CALIF.

LOCATION.--Lat 39°12'51", long 121°59'57", at north end of Jimeno Grant, Colusa County, on right bank just downstream from highway bridge at Colusa and at mile 89.4 upstream from Sacramento.

DRAINAGE AREA.--12,096 sq mi.

PERIOD OF RECORD.--April 1921 to October 1939 (low-water periods only), June 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2.95 ft below mean sea level. Prior to December 1930, water-stage recorder in center fender pier 50 ft upstream from bridge at same datum.

AVERAGE DISCHARGE.--31 years (1940-71), 11,270 cfs (8,165,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 41,800 cfs Jan. 18 (gage height, 65.31 ft); minimum daily, 6,730 cfs Oct. 18.

Period of record: Maximum discharge (1940 to current year), 49,000 cfs Feb. 8, 1942 (gage height, 69.20 ft); minimum discharge recorded, 820 cfs July 25, 26, 1931 (gage height, 34.79 ft).

REMARKS.--Records excellent. Natural flow of stream affected by storage reservoirs, power development, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,360	7,200	36,900	24,500	25,700	10,700	21,800	12,900	15,700	12,200	11,000	11,400
2	7,380	7,160	33,400	23,900	25,500	10,300	21,300	13,000	16,000	11,900	11,000	11,400
3	7,360	7,190	32,800	23,900	25,100	10,000	22,200	13,200	15,800	11,600	11,300	11,200
4	7,190	7,220	34,400	22,700	24,600	9,890	23,100	13,500	15,300	11,600	11,100	10,500
5	7,100	7,430	39,500	21,500	24,200	9,800	22,000	14,200	15,100	11,500	10,800	9,800
6	7,120	8,250	39,700	20,600	23,400	9,720	20,300	15,200	14,900	11,300	10,900	9,640
7	7,150	9,920	36,600	19,900	22,000	9,630	20,200	16,000	14,700	11,200	10,600	9,610
8	7,120	11,800	35,800	19,200	20,600	9,580	20,100	16,500	14,400	11,000	10,500	9,460
9	7,150	9,950	37,500	18,700	19,900	9,410	18,700	17,500	14,200	10,900	10,400	9,470
10	7,190	13,300	38,700	18,100	19,400	9,300	17,700	18,200	14,300	10,900	10,400	9,510
11	7,170	17,300	36,800	17,300	19,300	8,920	18,100	18,500	14,200	10,900	10,400	9,660
12	7,130	12,200	34,700	19,400	18,900	8,760	18,600	18,400	14,000	10,800	10,400	9,710
13	7,150	11,800	33,400	19,100	18,100	14,600	18,800	18,500	13,900	10,800	10,400	9,660
14	7,110	10,500	31,900	17,700	17,500	21,100	18,800	18,600	13,900	10,700	10,400	9,700
15	6,920	9,860	30,800	17,100	16,600	16,300	18,700	18,900	13,700	10,600	10,400	9,730
16	6,930	9,780	30,600	20,000	16,100	15,700	18,400	19,000	13,600	10,500	10,400	9,760
17	6,750	10,700	32,500	36,300	15,800	14,700	17,600	18,700	13,500	10,600	10,400	9,790
18	6,730	13,000	33,300	41,200	15,400	12,800	16,500	18,400	13,400	10,500	10,400	9,720
19	6,770	14,300	32,800	38,600	14,800	11,500	16,000	18,000	13,200	10,500	10,500	9,700
20	6,860	15,100	31,600	37,000	13,600	10,800	15,600	17,700	13,100	10,400	10,500	9,830
21	7,090	15,400	30,700	35,800	12,800	10,300	15,700	17,400	12,900	10,300	10,500	9,940
22	7,390	15,500	33,500	34,600	12,300	10,000	15,400	17,200	12,900	10,200	10,600	10,000
23	7,470	15,600	30,400	33,800	12,100	9,880	14,900	16,100	12,800	10,100	10,700	10,100
24	7,580	15,700	26,800	33,200	11,300	11,700	14,400	15,300	12,800	10,100	10,800	10,100
25	7,840	16,000	24,700	32,900	11,400	16,000	13,900	15,100	12,700	10,200	10,800	10,100
26	7,640	19,400	22,900	32,600	11,200	19,900	13,300	15,100	12,500	10,200	10,800	10,200
27	7,400	20,700	21,900	32,200	10,900	34,500	13,200	15,200	12,800	10,100	10,800	10,300
28	7,330	21,300	21,300	31,300	10,800	32,100	13,000	15,500	13,400	10,100	10,800	10,400
29	7,310	35,100	21,300	28,500	-----	25,700	12,600	16,000	13,000	10,200	11,000	10,400
30	7,280	39,700	27,200	26,900	-----	21,000	12,500	16,000	12,400	10,400	11,200	10,400
31	7,230	-----	26,500	26,100	-----	20,000	-----	15,700	-----	10,600	11,300	-----
TOTAL	223,200	428,360	980,900	824,600	489,300	444,590	523,300	509,500	415,100	332,900	331,500	301,190
MEAN	7,200	14,280	31,640	26,600	17,480	14,340	17,440	16,440	13,840	10,740	10,690	10,040
MAX	7,840	39,700	39,700	41,200	25,700	34,500	23,100	19,000	16,000	12,200	11,300	11,400
MIN	6,730	7,160	21,300	17,100	10,800	8,760	12,500	12,900	12,400	10,100	10,400	9,460
AC-FT	442,700	849,760	1,946M	1,636M	970,500	881,800	1,038M	1,011M	823,400	660,300	657,500	597,400
CAL YR 1970	TOTAL 5,626,830			MEAN 15,420	MAX 47,800	MIN 6,550	AC-FT 11,160,000					
WTR YR 1971	TOTAL 5,804,440			MEAN 15,900	MAX 41,200	MIN 6,730	AC-FT 11,510,000					

## SACRAMENTO RIVER BASIN

11389700 BUTTE CREEK AT BUTTE MEADOWS, CALIF.

LOCATION.--Lat 40°04'06", long 121°34'25", in NW $\frac{1}{4}$  sec.31, T.26 N., R.4 E., Tehama County, on right bank 1.0 mile downstream from small tributary, 1.5 miles southwest of Butte Meadows, and 15 miles northeast of Forest Ranch.

DRAINAGE AREA.--44.4 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 4,260 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 135 cfs (97,810 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,200 cfs Mar. 26 (gage height, 4.49 ft); minimum daily, 58 cfs for several days in October.

Period of record: Maximum discharge, 4,290 cfs Dec. 22, 1964 (gage height, 7.64 ft); minimum, 46 cfs Sept. 4, 1961.

REMARKS.--Records good. No storage or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	62	104	81	112	97	285	274	262	147	78	69
2	58	62	112	81	114	95	277	282	237	142	77	69
3	58	61	101	105	109	95	279	285	223	136	77	68
4	59	96	136	133	107	97	285	286	220	132	76	67
5	59	213	138	76	105	92	299	293	220	128	76	67
6	59	130	130	75	105	91	316	297	225	125	75	65
7	59	119	150	75	103	91	314	312	235	121	74	65
8	59	92	202	76	101	89	295	326	240	117	74	65
9	59	152	201	77	100	89	320	327	237	114	74	65
10	59	129	150	91	102	89	377	363	246	111	73	65
11	59	109	130	93	113	100	315	423	230	110	73	65
12	59	118	118	85	130	419	305	454	218	107	72	65
13	58	90	111	82	133	284	305	463	207	105	72	67
14	58	82	104	81	135	202	310	447	203	102	72	67
15	58	79	104	82	140	178	326	440	200	100	72	66
16	58	76	104	122	140	172	338	416	228	98	71	66
17	59	75	100	164	135	161	335	373	190	96	71	66
18	67	74	95	185	130	150	296	352	183	98	71	65
19	63	73	92	176	128	150	281	351	178	98	71	65
20	80	72	92	161	122	153	278	361	175	98	70	64
21	73	71	92	149	118	155	253	343	169	101	70	64
22	83	75	88	139	116	155	237	328	164	92	70	66
23	89	74	86	131	113	382	228	341	158	89	70	66
24	76	79	85	123	110	391	218	360	150	86	70	68
25	67	108	84	116	107	462	210	373	147	84	70	74
26	64	100	83	112	103	882	206	403	236	83	70	77
27	63	89	83	111	103	516	208	376	205	82	70	70
28	62	98	85	109	101	403	224	351	176	81	70	83
29	62	120	86	108	-----	365	243	317	163	80	68	79
30	62	111	81	108	-----	343	257	304	154	80	68	71
31	62	-----	81	109	-----	305	-----	271	-----	79	69	-----
TOTAL	1,969	2,889	3,408	3,416	3,235	7,253	8,420	10,892	6,079	3,222	2,234	2,039
MEAN	63.5	96.3	110	110	116	234	281	351	203	104	72.1	68.0
MAX	89	213	202	185	140	882	377	463	262	147	78	83
MIN	58	61	81	75	100	89	206	271	147	79	68	64
AC--FT	3,910	5,730	6,760	6,780	6,420	14,390	16,700	21,600	12,060	6,390	4,430	4,040

CAL YR 1970 TOTAL 60,054 MEAN 165 MAX 2,040 MIN 58 AC-FT 119,100  
WTR YR 1971 TOTAL 55,056 MEAN 151 MAX 882 MIN 58 AC-FT 109,200

## PEAK DISCHARGE (BASE, 350 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-5	1200	3.08	352	5-11	1800	3.68	554
3-12	1500	3.75	715	5-27	1830	3.52	466
3-26	0400	4.49	1,200	6-26	1430	3.08	364
4-10	0100	3.59	504				

NOTE.--No gage-height record July 24 to Aug. 25.



## 11389950 LITTLE BUTTE CREEK AT MAGALIA, CALIF.

LOCATION.--Lat 39°48'38", long 121°35'00", in NW¼NE¼ sec.36, T.23 N., R.3 E., Butte County, on left bank 1,000 ft downstream from Magalia Dam and 0.4 mile northwest of Magalia.

DRAINAGE AREA.--11.4 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 2,160 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 435 cfs Mar. 26 (gage height, 4.87 ft); minimum daily, 0.31 cfs Nov. 2, June 30, July 24.

Period of record: Maximum discharge, 1,180 cfs Jan. 24, 1970 (gage height, 6.47 ft); minimum daily, 0.26 cfs Sept. 2, 1969, June 3, 6, 7, 1970.

REMARKS.--Records fair. Flow regulated by Paradise Reservoir (capacity, 6,430 acre-ft) and Magalia Reservoir (capacity, 3,540 acre-ft). Diversion occurs above Magalia Reservoir through a 30-inch pipeline into Pacific Gas and Electric Co.'s Toadtown Canal when Magalia Reservoir is spilling. Diversion is made from Magalia Reservoir for the municipal supply of Paradise.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.41	.37	13	36	20	5.9	43	5.4	8.8	.32	.36	.39
2	.38	.31	41	37	19	5.2	36	6.5	8.2	.32	.36	.39
3	.34	.35	49	28	18	5.4	31	8.8	5.7	.34	.39	.39
4	.34	.91	91	24	17	5.6	26	12	2.8	.33	.37	.39
5	.34	2.2	27	22	16	4.9	24	12	1.0	.33	.39	.38
6	.34	1.1	13	20	16	3.7	29	9.8	.55	.34	.39	.38
7	.34	.71	8.8	19	14	3.5	37	8.2	.51	.34	.39	.36
8	.37	.65	10	18	13	2.9	33	9.8	.51	.34	.39	.36
9	.44	2.0	10	17	13	2.6	24	9.6	.48	.34	.41	.36
10	.38	.67	5.6	22	12	3.2	33	7.1	.48	.34	.40	.36
11	.38	.90	3.6	40	10	6.7	26	2.5	.48	.36	.38	.36
12	.40	.58	2.2	40	9.0	143	22	1.3	.48	.37	.43	.35
13	.42	.48	1.7	39	9.5	114	20	1.1	.45	.36	.39	.36
14	.38	.45	1.4	34	8.8	47	18	.78	.45	.38	.40	.35
15	.38	.43	2.2	41	8.6	32	14	.45	.45	.37	.37	.34
16	.38	.53	5.9	77	8.7	25	15	.45	.45	.35	.37	.36
17	.41	.48	7.3	95	8.7	23	25	.42	.45	.36	.37	.36
18	.39	.46	6.1	68	8.4	18	20	.42	.45	.38	.36	.36
19	.40	.43	3.5	55	24	14	15	.42	.45	.35	.39	.36
20	.59	.43	3.5	47	17	12	24	.42	.45	.33	.44	.37
21	.54	.43	8.6	41	11	10	30	.42	.42	.32	.49	.36
22	.63	.38	4.7	38	9.8	9.9	18	.42	.42	.32	.43	.45
23	.87	.38	3.1	36	9.9	43	15	.42	.36	.32	.50	.48
24	.54	.41	2.3	36	8.1	52	13	.42	.36	.31	.49	.48
25	.51	.48	1.7	34	7.0	86	12	.42	.36	.33	.43	.51
26	.41	.41	2.0	30	5.9	302	11	.45	.59	.35	.39	.48
27	.41	1.9	2.8	28	6.0	117	9.2	.46	.36	.35	.39	.48
28	.42	5.9	16	26	6.6	73	6.2	.50	.34	.36	.39	.51
29	.39	3.1	119	24	-----	61	6.7	.51	.33	.36	.39	.56
30	.40	5.4	69	22	-----	56	6.0	2.1	.31	.36	.39	.48
31	.37	-----	43	21	-----	49	-----	6.5	-----	.36	.39	-----
TOTAL	13.30	33.23	578.0	1,115	335.0	1,336.5	642.1	110.08	37.44	10.69	12.43	12.12
MEAN	.43	1.11	18.6	36.0	12.0	43.1	21.4	3.55	1.25	.34	.40	.40
MAX	.87	5.9	119	95	24	302	43	12	8.8	.38	.50	.56
MIN	.34	.31	1.4	17	5.9	2.6	6.0	.42	.31	.31	.36	.34
AC-FT	26	66	1,150	2,210	664	2,650	1,270	218	74	21	25	24
(a)	454	157	139	101	158	191	271	459	842	1,230	1,370	942
CAL YR 1970	TOTAL 9,959.30			MEAN 27.3	MAX 720	MIN .26	AC-FT 19,750					
WTR YR 1971	TOTAL 4,235.89			MEAN 11.6	MAX 302	MIN .31	AC-FT 8,400					

a Diversion, in acre-feet, from Magalia Reservoir, furnished by Paradise Irrigation District.

## SACRAMENTO RIVER BASIN

11390000 BUTTE CREEK NEAR CHICO, CALIF.

LOCATION.--Lat 39°43'34", long 121°42'28", in NW¼NW¼ sec.36, T.22 N., R.2 E., Butte County, on right bank 0.7 mile downstream from Little Butte Creek and 7.5 miles east of Chico.

DRAINAGE AREA.--147 sq mi.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Altitude of gage is 320 ft (from topographic map). Prior to Aug. 13, 1944, water-stage recorder at site 0.4 mile upstream at different datum.

AVERAGE DISCHARGE (unadjusted).--41 years, 405 cfs (293,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,080 cfs Mar. 26 (gage height, 7.20 ft); minimum daily, 90 cfs Oct. 29, 30.

Period of record: Maximum discharge, 21,200 cfs Dec. 22, 1964 (gage height, 14.12 ft), from rating curve extended above 8,900 cfs on basis of slope-area measurement at gage height 13.35 ft; minimum, 10 cfs Nov. 29, 1952.

REMARKS.--Records good. Flow slightly regulated by storage in Magalia Reservoir (capacity, 3,540 acre-ft) and since 1957 by Paradise Reservoir (capacity, 6,430 acre-ft). Diversions above station for irrigation and domestic use of about 7,000 acre-ft annually. Butte Creek receives water above station from West Branch Feather River by way of Toadtown Canal. Records of chemical analyses and water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	122	805	480	527	335	943	584	498	272	192	155
2	133	120	1,180	440	533	323	872	598	468	254	192	161
3	134	120	1,230	400	515	321	840	612	444	268	192	155
4	134	163	2,930	370	489	323	816	605	428	259	189	151
5	134	608	1,200	330	468	313	816	612	422	254	186	151
6	138	443	903	310	456	306	832	605	417	254	186	151
7	138	380	797	290	442	300	824	605	422	250	182	151
8	139	287	908	270	426	296	784	633	422	238	186	144
9	130	323	920	260	421	294	752	612	422	242	182	144
10	127	528	700	350	415	292	988	633	422	242	182	144
11	126	345	520	580	445	316	816	672	422	234	182	141
12	127	388	450	508	502	2,190	760	728	406	226	178	144
13	126	297	400	521	519	1,530	752	728	390	218	178	141
14	125	244	350	469	520	921	728	704	380	210	178	141
15	126	218	320	532	512	770	744	680	370	210	175	138
16	127	201	370	988	506	690	744	664	365	214	175	135
17	130	201	410	1,280	487	693	808	612	355	206	172	138
18	137	194	380	1,150	464	621	720	577	350	206	172	135
19	122	185	360	1,070	492	584	672	564	340	210	172	138
20	115	197	400	954	455	560	680	564	335	206	175	141
21	115	201	540	838	433	550	619	564	325	206	175	129
22	138	199	450	739	417	541	605	522	315	203	175	126
23	132	202	400	676	393	1,030	577	534	305	200	175	130
24	174	198	330	624	386	1,160	564	534	300	196	175	142
25	112	267	290	584	371	1,680	546	552	290	200	168	145
26	100	337	285	546	356	4,380	534	591	345	196	168	150
27	92	352	280	528	353	2,160	516	552	400	196	161	171
28	100	1,320	400	523	351	1,570	534	564	325	196	158	164
29	90	1,400	900	516	-----	1,320	552	528	300	196	155	161
30	90	1,090	650	517	-----	1,200	570	516	290	196	151	211
31	120	-----	580	524	-----	1,060	-----	486	-----	192	135	-----
TOTAL	3,863	11,130	20,638	18,167	12,654	28,629	21,508	18,535	11,273	6,850	5,422	4,428
MEAN	125	371	666	586	452	924	717	598	376	221	175	148
MAX	174	1,400	2,930	1,280	533	4,380	988	728	498	272	192	211
MIN	90	120	280	260	351	292	516	486	290	192	135	126
AC-FT	7,660	22,080	40,940	36,030	25,100	56,790	42,660	36,760	22,360	13,590	10,750	8,780
(a)	3,510	2,690	5,400	6,830	6,640	7,510	6,810	6,810	3,850	5,980	3,480	3,610

CAL YR 1970 TOTAL 209,702 MEAN 575 MAX 9,140 MIN 90 AC-FT 415,900  
WTR YR 1971 TOTAL 163,097 MEAN 447 MAX 4,380 MIN 90 AC-FT 323,500

PEAK DISCHARGE (BASE, 2,700 CFS)  
DATE TIME G.H. DISCHARGE DATE TIME G.H. DISCHARGE  
12- 4 0400 6.20 4,820 3-26 0400 7.20 6,080  
3-12 1600 5.93 4,500

a Toadtown Canal diversion, in acre-feet, from West Branch Feather River, furnished by Pacific Gas and Electric Co.  
NOTE.--No gage-height record Dec. 9 to Jan. 12.



## 11390210 CHEROKEE CANAL NEAR NELSON, CALIF.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	23	230	123	70	18	74	22	19	9.9	12	7.9
2	0	23	514	193	68	17	70	20	19	9.2	12	8.5
3	0	22	415	108	64	17	66	20	18	8.5	11	6.7
4	0	26	1,290	94	62	16	64	22	17	9.2	11	7.3
5	0	67	498	90	62	21	62	20	18	9.2	11	6.1
6	0	136	267	86	61	18	61	20	17	9.9	11	5.0
7	0	79	200	82	61	19	62	19	15	11	9.9	4.5
8	0	48	214	82	53	38	62	19	6.7	9.9	9.9	6.7
9	0	46	184	80	23	22	57	19	13	9.2	9.2	8.5
10	0	89	136	82	20	19	57	18	13	6.7	9.9	7.9
11	0	86	120	92	24	25	53	16	13	9.2	11	5.0
12	0	85	110	96	31	68	52	15	11	9.9	6.1	4.0
13	0	66	103	144	53	81	53	14	14	11	5.0	4.0
14	0	53	101	120	52	52	62	13	17	11	5.0	3.5
15	0	51	96	118	53	61	62	9.2	16	9.2	4.5	3.0
16	0	48	144	388	66	45	61	6.4	13	9.2	4.5	2.6
17	0	47	113	261	68	57	52	9.2	12	9.2	4.0	2.6
18	0	44	123	160	48	50	46	11	11	9.2	4.0	1.8
19	0	43	115	130	48	38	45	14	11	9.2	3.5	.13
20	0	43	130	108	20	36	46	11	11	9.2	2.6	1.5
21	0	44	855	97	50	20	48	17	11	9.2	2.6	2.2
22	0	43	238	90	53	33	45	19	9.4	9.9	2.6	2.2
23	19	43	177	86	26	128	45	16	3.7	11	2.3	2.2
24	36	44	147	82	24	131	44	17	6.3	11	.10	2.6
25	36	46	125	78	19	405	39	16	9.2	11	1.2	3.0
26	36	48	120	76	18	595	36	18	11	11	3.5	4.0
27	35	48	139	76	19	199	34	19	14	11	6.1	5.0
28	36	872	156	74	20	141	33	23	13	11	7.9	6.7
29	36	1,370	314	74	-----	110	33	22	11	9.9	8.5	6.1
30	36	392	162	72	-----	95	32	20	11	9.9	11	6.1
31	32	-----	134	70	-----	82	-----	19	-----	11	11	-----
TOTAL	302	4,075	7,670	3,512	1,236	2,657	1,556	523.8	384.3	304.9	213.90	137.33
MEAN	9.74	136	247	113	44.1	85.7	51.9	16.9	12.8	9.84	6.90	4.58
MAX	36	1,370	1,290	388	70	595	74	23	19	11	12	8.5
MIN	0	22	96	70	18	16	32	6.4	3.7	6.7	.10	.13
AC-FT	599	8,080	15,210	6,970	2,450	5,270	3,090	1,040	762	605	424	272
WTR YR 1971	TOTAL	22,572.23	MEAN	61.8	MAX	1,370	MIN	0	AC-FT	44,770		

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,570	7,520	25,800	23,500	23,900	10,800	22,100	10,700	14,700	11,000	9,890	11,100
2	7,580	7,490	25,400	23,100	23,700	10,500	22,100	11,000	14,900	11,000	9,960	11,200
3	7,600	7,470	25,400	23,200	23,500	10,100	22,100	11,200	15,000	10,600	10,300	11,100
4	7,470	7,520	25,500	22,700	23,400	9,950	22,800	11,600	14,500	10,400	10,200	10,700
5	7,370	7,610	26,300	21,900	23,200	9,860	22,400	12,200	14,200	10,300	9,890	9,920
6	7,340	8,100	26,800	21,000	23,000	9,780	20,900	13,200	14,000	10,100	10,000	9,560
7	7,350	9,260	26,400	20,400	22,300	9,680	20,300	14,100	13,700	10,000	9,750	9,490
8	7,330	10,800	26,000	19,700	21,000	9,630	20,100	14,700	13,400	9,840	9,580	9,430
9	7,340	10,700	26,000	19,300	20,200	9,450	19,300	15,600	13,100	9,720	9,550	9,430
10	7,380	10,500	26,300	18,800	19,600	9,300	18,000	16,500	13,000	9,710	9,450	9,510
11	7,410	16,400	26,100	17,900	19,300	9,060	17,800	16,900	12,900	9,800	9,490	9,630
12	7,400	13,500	25,800	19,000	19,000	8,860	18,100	16,900	12,800	9,770	9,460	9,800
13	7,390	11,600	25,500	19,600	18,400	11,100	18,400	17,000	12,600	9,750	9,430	9,820
14	7,380	11,000	25,300	18,700	17,700	20,300	18,200	17,200	12,600	9,690	9,470	9,860
15	7,270	10,300	25,100	17,800	16,900	18,000	18,100	17,400	12,400	9,560	9,540	9,970
16	7,220	10,000	25,000	18,500	16,200	16,300	17,800	17,600	12,100	9,510	9,570	10,100
17	7,120	10,400	25,200	25,600	15,600	15,800	17,200	17,400	12,100	9,510	9,520	10,200
18	6,990	11,600	25,400	27,300	15,400	14,000	15,900	17,200	11,900	9,490	9,470	10,200
19	7,010	13,000	25,300	27,000	15,000	12,700	15,100	16,800	11,800	9,530	9,520	10,100
20	7,090	13,800	25,200	25,900	14,200	11,700	14,400	16,400	11,600	9,440	9,570	10,100
21	7,230	14,700	25,000	25,700	13,300	11,000	14,100	16,100	11,500	9,220	9,610	10,100
22	7,520	14,900	25,400	25,600	12,700	10,500	14,000	15,900	11,400	9,130	9,770	10,200
23	7,710	15,000	25,100	25,500	12,400	10,400	13,300	15,200	11,300	9,010	9,910	10,400
24	7,790	14,900	24,400	25,300	12,000	10,900	12,700	14,100	11,300	8,980	10,100	10,400
25	7,960	14,900	23,800	25,300	11,400	15,000	12,300	13,700	11,200	9,080	10,100	10,400
26	8,010	17,000	23,100	25,200	11,500	17,400	11,600	13,700	11,200	9,180	10,100	10,500
27	7,770	19,300	22,300	25,100	11,100	24,600	11,200	13,700	11,100	9,130	10,200	10,600
28	7,660	19,300	21,700	25,000	10,900	25,100	11,000	14,000	11,900	9,030	10,300	10,700
29	7,630	24,500	21,300	24,600	-----	24,200	10,800	14,500	11,900	9,100	10,400	10,700
30	7,610	25,900	23,400	24,300	-----	22,600	10,400	14,900	11,300	9,310	10,700	10,700
31	7,550	-----	24,000	24,100	-----	21,200	-----	14,800	-----	9,460	10,900	-----
TOTAL	231,050	388,970	773,300	706,600	486,800	429,770	502,500	462,200	377,400	299,350	305,700	305,920
MEAN	7,453	12,970	24,950	22,790	17,390	13,860	16,750	14,910	12,580	9,656	9,861	10,200
MAX	8,010	25,900	26,800	27,300	23,900	25,100	22,800	17,600	15,000	11,000	10,900	11,200
MIN	6,990	7,470	21,300	17,800	10,900	8,860	10,400	10,700	11,100	8,980	9,430	9,430
AC-FT	458,300	771,500	1,534M	1,402M	965,600	852,400	996,700	916,800	748,600	593,800	606,400	606,800
CAL YR 1970	TOTAL	4,712,460	MEAN	12,910	MAX	28,900	MIN	5,460	AC-FT	9,347,000		
WTR YR 1971	TOTAL	5,269,560	MEAN	14,440	MAX	27,300	MIN	6,990	AC-FT	10,450,000		

## SACRAMENTO RIVER BASIN

11390655 SOUTH FORK WILLOW CREEK NEAR FRUTO, CALIF.

LOCATION.--Lat 39°32'28", long 122°23'19", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.35, T.20 N., R.5 W., Glenn County, on right bank 150 ft downstream from county road bridge and 4.5 miles southeast of Fruto.

DRAINAGE AREA.--38.9 sq mi.

PERIOD OF RECORD.--July 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 375 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 4.61 cfs (3,340 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 425 cfs Nov. 29 (gage height, 6.18 ft); no flow for several months.  
Period of record: Maximum discharge, 1,980 cfs Jan. 23, 1970 (gage height, 10.06 ft), from rating curve extended above 230 cfs on basis of slope-area measurement at gage height 9.94 ft; no flow for several months in each year.

REMARKS.--Records good. No known regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	2.4	2.8	3.5	.91	.56	.14				
2		0	2.0	3.0	3.2	.82	.56	.14				
3		0	38	2.4	2.7	.82	.48	.18				
4		0	69	2.1	2.7	.82	.56	.18				
5		0	6.0	2.0	2.7	.82	.56	.18				
6		0	3.0	2.0	2.8	.73	.56	.14				
7		0	2.4	2.0	2.5	.73	.73	.08				
8		0	2.4	2.1	2.4	.73	.56	.14				
9		0	2.5	2.1	2.4	.73	.56	.14				
10		0	2.2	2.1	2.4	.73	.48	.04				
11		0	2.0	2.1	2.2	.82	.48	.03				
12		0	1.6	2.0	2.1	2.4	.48	.03				
13		0	1.8	2.0	2.0	3.0	.48	.02				
14		0	1.6	3.2	2.0	1.5	.48	.01				
15		0	2.7	2.7	2.0	1.2	.34	0				
16		0	4.2	185	1.8	1.2	.34	0				
17		0	3.5	48	1.8	.82	.34	.01				
18		0	75	18	1.5	.73	.23	.02				
19		0	32	13	1.4	.73	.23	.01				
20		0	45	9.3	1.3	.73	.34	.01				
21		0	44	7.2	1.2	.73	.23	0				
22		0	12	6.0	1.3	.73	.23	0				
23		0	7.6	5.4	1.3	.73	.23	0				
24		0	5.4	5.0	1.3	.73	.18	0				
25		0	4.8	4.6	1.2	1.2	.18	0				
26		0	4.4	4.2	1.1	4.6	.18	0				
27		0	3.9	3.9	1.1	2.1	.18	0				
28		3.7	3.7	3.7	1.1	1.2	.18	0				
29		116	3.5	3.7	-----	.91	.14	0				
30		18	3.0	3.5	-----	.73	.14	0				
31		-----	2.7	3.5	-----	.56	-----	0	-----			-----
TOTAL	0	137.7	394.3	358.6	55.0	35.19	11.22	1.50	0	0	0	0
MEAN	0	4.59	12.7	11.6	1.96	1.14	.37	.048	0	0	0	0
MAX	0	116	75	185	3.5	4.6	.73	.18	0	0	0	0
MIN	0	0	1.6	2.0	1.1	.56	.14	0	0	0	0	0
AC-FT	0	273	782	711	109	70	22	3.0	0	0	0	0

CAL YR 1970	TOTAL	4,322.91	MEAN	11.8	MAX	432	MIN	0	AC-FT	8,570
WTR YR 1971	TOTAL	993.51	MEAN	2.72	MAX	185	MIN	0	AC-FT	1,970

## PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-29	1700	6.18	425	12-20	2130	5.77	302
12- 3	2100	5.18	189	1-16	1700	5.78	304
12-18	1030	5.21	194				

## 11390660 WALKER CREEK AT ARTOIS, CALIF.

LOCATION.--Lat 39°37'32", long 122°11'45", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.34, T.21 N., R.3 W., Glenn County, on left bank 500 ft upstream from county road bridge and 0.3 mile north of Artois.

DRAINAGE AREA.--60.4 sq mi.

PERIOD OF RECORD.--July 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 156.4 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--6 years, 22.0 cfs (15,940 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,350 cfs Nov. 29 (gage height, 7.76 ft); no flow many days.

Period of record: Maximum discharge, 3,520 cfs Jan. 9, 1970 (gage height, 10.18 ft), from rating curve extended above 1,500 cfs; no flow at times in each year.

REMARKS.--Records good. Several small storage ponds above station for diversions for irrigation above station.

REVISIONS (WATER YEARS).--WRD Calif. 1969: 1966-68(P).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	0	122	9.9	4.5	.81	1.2	9.1	5.7	5.2	9.4	7.4
2	7.4	0	71	15	4.3	.84	1.1	7.9	3.8	4.1	11	12
3	9.7	0	61	15	3.8	.85	.92	14	6.1	4.5	9.5	9.4
4	9.0	0	425	9.1	3.5	.70	.78	17	3.3	3.9	7.8	8.2
5	7.2	0	132	7.1	3.2	.68	.70	11	1.6	6.4	4.4	4.8
6	12	.89	70	6.0	3.1	.77	.55	8.0	4.7	7.1	2.2	5.7
7	13	1.4	50	9.5	2.9	1.0	1.2	2.5	4.2	4.5	2.2	2.2
8	9.4	1.1	84	14	2.6	1.3	2.1	.92	4.9	2.4	4.8	3.5
9	6.5	.74	110	6.8	2.4	1.4	1.5	1.2	2.0	1.1	8.1	8.0
10	4.1	.44	57	4.5	2.1	.94	1.3	5.4	7.4	4.4	5.5	9.5
11	1.8	.29	37	4.1	2.0	1.3	3.2	5.2	8.8	5.7	4.6	7.2
12	1.1	.60	24	3.9	1.8	6.7	6.5	2.8	14	3.3	2.6	5.3
13	.69	.47	18	4.3	1.9	8.7	5.0	3.4	14	1.0	5.0	3.5
14	.44	.16	31	4.1	1.9	5.7	7.5	3.5	16	.40	9.2	1.5
15	.28	.08	24	3.8	1.7	4.0	7.4	4.4	8.6	.22	6.5	.81
16	.21	.02	129	297	1.7	2.3	6.3	8.2	2.3	4.8	8.2	4.3
17	.28	0	65	358	1.6	1.6	7.5	4.0	.92	9.0	3.2	2.8
18	.93	0	249	93	1.6	1.4	6.8	5.1	.62	5.2	3.5	.83
19	.87	0	218	55	1.3	1.9	5.1	6.9	.32	3.3	4.2	3.5
20	.99	0	71	38	1.1	1.8	3.3	3.6	.25	5.1	2.2	4.5
21	.81	0	286	25	1.1	2.3	4.6	1.3	8.3	3.1	1.0	9.3
22	.52	0	90	16	1.1	3.3	8.3	3.1	14	2.4	8.4	6.8
23	.37	0	51	11	.91	5.5	10	4.4	7.7	1.5	14	8.3
24	.17	0	35	9.3	.92	7.9	6.7	4.2	11	2.2	11	10
25	.12	0	25	8.0	.81	16	4.0	2.8	9.2	5.9	5.6	9.5
26	.09	0	20	7.1	.67	23	3.8	1.2	5.5	3.7	5.5	15
27	.04	0	18	6.3	1.1	8.7	5.1	8.5	6.4	3.8	14	16
28	0	13	16	5.8	1.1	4.2	4.8	15	3.6	1.5	7.1	16
29	0	600	14	5.4	-----	2.6	4.4	20	7.0	2.4	14	10
30	0	403	14	5.1	-----	1.8	9.4	26	7.6	13	19	7.5
31	0	-----	11	4.8	-----	1.1	-----	20	-----	11	7.6	-----
TOTAL	100.01	1,022.19	2,628	1,061.9	56.71	121.09	131.05	230.62	189.81	132.12	221.3	213.34
MEAN	3.23	34.1	84.8	34.3	2.03	3.91	4.37	7.44	6.33	4.26	7.14	7.11
MAX	13	600	425	358	4.5	23	10	26	16	13	19	16
MIN	0	0	11	3.8	.67	.68	.55	.92	.25	.22	1.0	.81
AC-FT	198	2,030	5,210	2,110	112	240	260	457	376	262	439	423
CAL YR 1970	TOTAL	14,130.40	MEAN	38.7	MAX	1,240	MIN	0	AC-FT	28,030		
WTR YR 1971	TOTAL	6,108.14	MEAN	16.7	MAX	600	MIN	0	AC-FT	12,120		

## PEAK DISCHARGE (BASE, 600 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-29	1830	7.76	1,350	12-21	0530	6.30	600
12- 4	0930	6.97	905	1-16	2330	7.13	985
12-18	1900	6.65	745				

## SACRAMENTO RIVER BASIN

11390672 STONE CORRAL CREEK NEAR SITES, CALIF.

LOCATION.--Lat 39°17'18", long 122°18'00", in NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.34, T.17 N., R.4 W., Colusa County, on left bank at road bridge, 2.4 miles southeast of Sites.

DRAINAGE AREA.--38.2 sq mi.

PERIOD OF RECORD.--March 1958 to September 1964, October 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 180 ft (from topographic map).

AVERAGE DISCHARGE.--12 years, 5.72 cfs (4,140 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 683 cfs Dec. 18 (gage height, 9.56 ft); no flow for several months.

Period of record: Maximum discharge, 2,640 cfs Jan. 29, 1968 (gage height, 14.52 ft), from rating curve extended above 1,200 cfs on basis of slope-conveyance study at gage height 13.0 ft; no flow for several months in each year.

Flood of Apr. 2, 1958, reached a stage of 14.93 ft (discharge, 2,500 cfs); flood of Dec. 22, 1964, reached a stage of 13.0 ft from floodmarks (discharge, 1,940 cfs from slope-conveyance study).

REMARKS.--No known diversion or regulation above station.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.80	2.5	2.3	.50	.30	.10				
2		0	.10	8.1	2.1	.40	.30	.10				
3		0	43	3.3	1.7	.40	.30	.10				
4		0	86	1.9	1.5	.40	.30	.10				
5		0	3.5	1.6	1.5	.40	.30	.10				
6		0	.60	1.5	1.5	.40	.30	.10				
7		0	.30	1.3	1.4	.30	.20	.10				
8		0	.30	1.2	1.2	.30	1.1	.10				
9		0	.60	1.1	1.2	.30	.60	.10				
10		0	.40	1.0	1.1	.30	.30	.10				
11		0	.30	1.0	1.0	.30	.20	0				
12		0	.30	.90	1.0	1.1	.20	0				
13		0	.30	1.1	1.0	2.3	.30	0				
14		0	.30	2.6	1.0	1.2	.30	0				
15		0	.40	2.3	1.0	.70	.30	0				
16		0	1.0	212	.90	.50	.20	0				
17		0	.90	65	.90	.30	.20	0				
18		0	215	22	.80	.30	.10	0				
19		0	56	13	.80	.20	.10	0				
20		0	26	9.7	.70	.30	.10	0				
21		0	41	6.8	.60	.30	.10	0				
22		0	11	5.5	.70	.30	.10	0				
23		0	6.3	4.5	.70	.30	.10	0				
24		0	4.5	4.0	.70	.30	.10	0				
25		0	3.5	3.6	.60	.50	.10	0				
26		0	3.9	3.2	.50	1.6	.10	0				
27		0	3.4	3.0	.50	1.6	.10	0				
28		2.9	2.8	2.9	.60	.60	.10	0				
29		56	3.2	2.7	-----	.40	.10	0				
30		15	2.6	2.5	-----	.40	.10	0				
31		-----	2.1	2.3	-----	.30	-----	0	-----			-----
TOTAL	0	73.9	520.40	394.10	29.50	17.50	7.00	1.00	0	0	0	0
MEAN	0	2.46	16.8	12.7	1.05	.56	.23	.032	0	0	0	0
MAX	0	56	215	212	2.3	2.3	1.1	.10	0	0	0	0
MIN	0	0	.10	.90	.50	.20	.10	0	0	0	0	0
AC-FT	0	147	1,030	782	59	35	14	2.0	0	0	0	0
CAL YR 1970	TOTAL	5,797.40	MEAN	15.9	MAX	758	MIN	0	AC-FT	11,500		
WTR YR 1971	TOTAL	1,043.40	MEAN	2.86	MAX	215	MIN	0	AC-FT	2,070		



## 11391000 SACRAMENTO RIVER AT KNIGHTS LANDING, CALIF.

LOCATION.--Lat 38°48'11", long 121°42'55", in NE $\frac{1}{4}$  sec.14, T.11 N., R.2 E., Sutter County, on left bank just upstream from Southern Pacific Railroad bridge at Knights Landing, 13.1 miles upstream from Feather River, and at mile 34.0 upstream from Sacramento.

DRAINAGE AREA.--14,541 sq mi.

PERIOD OF RECORD.--April 1921 to October 1939 (low-water periods only), June 1940 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 2.93 ft below mean sea level. April 1921 to Dec. 9, 1930, in fender pier of railroad bridge at same datum. Water-stage recorder for station at Verona was used as auxiliary gage for this station January 1941 to June 1945. Since Aug. 16, 1945, auxiliary water-stage recorder 6.0 miles downstream from base gage.

AVERAGE DISCHARGE.--31 years (1940-71), 10,660 cfs (7,723,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 27,800 cfs Jan. 18 (gage height, 34.21 ft); minimum daily, 7,450 cfs Oct. 19.

Period of record: Maximum discharge (1940 to current year), 30,800 cfs Jan. 26, 1970 (gage height, 40.86 ft); maximum gage height, 41.83 ft Feb. 8, 1942 (backwater from Feather River and Sutter Bypass); minimum discharge recorded, 250 cfs July 23, 1931 (gage height, 7.80 ft).

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power developments, bypassing for flood control, diversions for irrigation, and considerable return flow from irrigated areas.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8,160	7,830	26,900	24,800	25,300	11,000	20,700	10,700	15,000	11,100	10,100	12,100
2	8,010	7,820	25,700	24,300	25,300	10,800	21,200	11,500	14,900	11,100	10,400	12,200
3	8,060	7,900	26,000	24,300	25,000	10,300	21,300	12,000	15,100	10,900	10,600	12,300
4	7,940	8,030	26,000	24,000	24,800	10,100	21,400	12,500	14,800	10,500	10,600	11,900
5	7,790	8,320	26,500	23,200	24,600	9,980	19,900	13,300	14,400	10,400	10,400	11,200
6	7,790	8,770	27,300	22,100	24,300	9,920	19,100	14,400	13,900	10,300	10,400	10,700
7	7,790	9,820	26,400	21,300	23,500	9,740	19,300	15,300	13,800	10,000	10,300	10,600
8	7,780	11,100	25,300	20,600	22,100	9,640	19,500	15,800	13,900	9,720	10,100	10,600
9	7,760	11,600	24,500	20,000	21,100	9,560	18,100	16,500	13,700	9,660	10,000	10,700
10	7,860	10,700	24,100	19,500	20,600	9,220	17,700	17,200	13,200	9,630	9,890	10,800
11	7,810	15,800	25,200	18,500	20,200	9,020	17,000	17,500	12,900	9,560	9,920	11,100
12	7,830	15,000	24,600	18,500	20,100	8,930	17,500	17,400	12,600	9,750	9,770	11,300
13	7,890	12,800	24,500	20,000	19,200	9,730	17,800	17,700	12,600	9,860	9,720	11,300
14	7,880	11,800	24,600	19,200	18,600	18,700	17,700	18,000	12,300	9,780	9,780	11,100
15	7,740	10,800	25,000	18,000	17,700	18,200	17,600	18,100	12,400	9,530	9,910	11,100
16	7,640	10,300	25,200	17,700	16,800	15,700	17,200	18,300	12,200	9,500	9,980	11,100
17	7,570	10,300	25,400	24,500	16,300	15,300	16,700	18,500	12,100	9,450	10,000	11,300
18	7,460	11,400	25,700	27,300	16,100	13,600	15,400	17,800	11,900	9,380	10,100	11,400
19	7,450	13,200	25,700	27,000	15,900	12,100	14,400	17,600	11,600	9,460	10,200	11,200
20	7,680	14,300	26,000	26,900	15,000	11,300	13,600	17,200	11,600	9,390	10,300	11,100
21	7,760	15,000	25,600	27,000	14,000	10,700	13,500	17,000	11,400	9,190	10,300	11,000
22	8,060	15,200	26,000	26,800	13,200	10,300	13,400	17,000	11,200	9,020	10,600	10,900
23	8,430	15,300	26,000	26,600	12,800	10,200	13,000	16,400	11,100	8,970	10,800	11,000
24	8,530	15,400	25,600	26,600	12,400	10,800	12,600	15,300	11,100	8,860	11,000	11,000
25	8,530	15,500	25,100	26,500	11,700	14,800	12,100	14,700	11,200	9,190	11,000	11,000
26	8,640	16,800	24,400	26,500	11,800	18,700	11,400	14,600	11,200	9,230	11,100	11,100
27	8,440	19,900	23,500	26,400	11,600	26,000	10,800	14,500	11,000	9,320	11,100	11,200
28	8,220	20,000	22,800	26,500	11,300	25,700	10,700	14,900	11,600	9,180	11,200	11,300
29	8,210	25,100	22,000	26,200	-----	23,300	10,600	15,100	11,900	9,200	11,300	11,300
30	8,120	27,300	23,500	25,800	-----	20,800	10,600	15,500	11,300	9,450	11,600	11,400
31	8,010	-----	25,500	25,500	-----	19,300	-----	15,200	-----	9,770	11,900	-----
TOTAL	246,840	403,190	780,600	732,100	511,300	423,440	481,800	487,500	377,900	300,350	324,370	336,300
MEAN	7,963	13,440	25,180	23,620	18,260	13,660	16,060	15,730	12,600	9,689	10,460	11,210
MAX	8,640	27,300	27,300	27,300	25,300	26,000	21,400	18,500	15,100	11,100	11,900	12,300
MIN	7,450	7,820	22,000	17,700	11,300	8,930	10,600	10,700	11,000	8,860	9,720	10,600
AC-FT	489,600	799,700	1,548M	1,452M	1,014M	839,900	955,700	967,000	749,600	595,700	643,400	667,100

CAL YR 1970 TOTAL 4,958,730 MEAN 13,590 MAX 30,400 MIN 5,820 AC-FT 9,836,000  
WTR YR 1971 TOTAL 5,405,690 MEAN 14,810 MAX 27,300 MIN 7,450 AC-FT 10,720,000

## RESERVOIRS IN FEATHER RIVER BASIN, CALIF.

11391370 FRENCHMAN LAKE.--Lat 39°53'37", long 120°11'18", in NW¼NE¼ sec.33, T.24 N., R.16 E., Plumas County, in valve chamber at center of toe of Frenchman Dam on Little Last Chance Creek, 5.4 miles upstream from the confluence with Middle Fork Feather River, and 7.1 miles north of Chilcoot. Drainage area, 81.1 sq mi. Period of record, October 1966 to current year in reports of Geological Survey. November 1961 to September 1966 published in reports of California Department of Water Resources. Gage, water-stage recorder in valve house at center of toe of Frenchman Dam. Datum of gage is at mean sea level (levels by California Department of Water Resources). Extremes for current year: Maximum contents, 58,123 acre-ft May 13 (elevation, 5,589.65 ft); minimum, 40,619 acre-ft Nov. 1-3 (elevation, 5,577.68 ft). Extremes for period 1966 to current year: Maximum contents, 59,093 acre-ft May 22, 1967 (elevation, 5,590.28 ft); minimum, 36,715 acre-ft Nov. 12, 1966 (elevation, 5,574.64 ft).

Reservoir is formed by rockfill dam completed in 1961. Capacity, 53,582 acre-ft between elevations 5,517 (invert of intake) and 5,588 ft (crest of spillway). Dead storage, 1,840 acre-ft. Record of contents furnished by California Department of Water Resources.

11391490 LAKE DAVIS.--Lat 39°53'02", long 120°28'32", in SW¼ sec.1, T.23 N., R.13 E., Plumas County, in control house on left abutment of Grizzly Valley Dam on Big Grizzly Creek, 5.3 miles north of Portola. Drainage area, 44.0 sq mi. Period of record, November 1966 to current year. Gage, water-stage recorder in control house on Grizzly Valley Dam. Datum of gage is at mean sea level (levels by California Department of Water Resources). Extremes for current year: Maximum contents, 84,331 acre-ft May 30 (elevation, 5,774.99 ft); minimum, 70,579 acre-ft Feb. 4 (elevation, 5,771.41 ft). Extremes for period of record: Maximum contents, 92,818 acre-ft May 13, 14, 1969 (elevation, 5,777.05 ft); minimum since initial storage began, 48,276 acre-ft Nov. 13, 1967 (elevation, 5,764.66 ft).

Reservoir is formed by earth- and rockfill dam completed in 1967. Capacity, is 84,040 acre-ft between elevations 5,700 (top of low level intake) and 5,775 ft (crest of spillway). Dead storage, 108 acre-ft. Record of contents furnished by California Department of Water Resources.

11401120 ANTELOPE LAKE.--Lat 40°10'43", long 120°36'35", in SE¼ sec.22, T.27 N., R.12 E., Plumas County, in control house at toe of Antelope Dam on Indian Creek, 1.3 miles south of Boulder Creek Guard Station, 12 miles northeast of Genesee, and 13.9 miles northeast of Taylorsville. Drainage area, 68.6 sq mi. Period of record, October 1966 to current year in reports of Geological Survey. November 1963 to September 1966 published in reports of California Department of Water Resources. Gage, water-stage recorder in control house at toe of Antelope Dam. Datum of gage is at mean sea level (levels by California Department of Water Resources). Extremes for current year: Maximum contents, 24,393 acre-ft May 12, 13 (elevation, 5,003.92 ft); minimum, 2,125 acre-ft Sept. 30 (elevation, 4,964.40 ft). Extremes for period 1966 to current year: Maximum contents, 25,010 acre-ft Jan. 23, 1970 (elevation, 5,004.55 ft); minimum since reservoir first filled, 2,125 acre-ft Sept. 30, 1971 (elevation, 4,964.40 ft).

Reservoir is formed by a rockfill dam. Storage began November 1963. Capacity, 22,239 acre-ft between elevations 4,950 (lip of intake tower) and 5,002 ft (crest of spillway). Record of contents furnished by California Department of Water Resources.

## MONTHEND ELEVATIONS AND CONTENTS, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DATE	FRENCHMAN LAKE			LAKE DAVIS			ANTELOPE LAKE		
	ELEVATION (FEET)a	CONTENTS (ACRE- FEET)	CHANGE IN CONTENTS (ACRE- FEET)	ELEVATION (FEET)a	CONTENTS (ACRE- FEET)	CHANGE IN CONTENTS (ACRE- FEET)	ELEVATION (FEET)a	CONTENTS (ACRE- FEET)	CHANGE IN CONTENTS (ACRE- FEET)
Sept. 30.....	5,578.01	41,051	-1,797	5,772.02	72,829	-1,836	4,999.90	20,657	-734
Oct. 31.....	5,577.69	40,632	-419	5,771.74	71,792	-1,037	4,999.44	20,251	-406
Nov. 30.....	5,578.68	41,937	+1,305	5,772.30	73,875	+2,083	5,000.76	21,427	+1,176
Dec. 31.....	5,579.56	43,118	+1,181	5,773.11	76,945	+3,070	5,002.24	22,790	+1,363
CAL YR 1970....	-	-	-3,521	-	-	-692	-	-	+271
Jan. 31.....	5,581.38	45,624	+2,506	5,771.79	71,976	-4,969	5,002.55	23,081	+291
Feb. 28.....	5,583.16	48,158	+2,534	5,771.83	72,124	+148	5,002.46	22,997	-84
Mar. 31.....	5,587.43	54,580	+6,422	5,773.40	78,061	+5,937	5,003.05	23,555	+558
Apr. 30.....	5,588.94	56,975	+2,395	5,774.21	81,223	+3,162	5,003.32	23,814	+259
May 31.....	5,589.24	57,458	+483	5,774.97	84,250	+3,027	5,003.68	24,160	+346
June 30.....	5,588.03	55,524	-1,934	5,774.81	83,608	-642	5,002.74	23,261	-899
July 31.....	5,586.46	53,077	-2,447	5,774.45	82,172	-1,436	4,996.00	17,371	-5,890
Aug. 31.....	5,582.77	47,596	-5,481	5,773.62	78,913	-3,259	4,983.84	9,257	-8,114
Sept. 30.....	5,581.51	45,806	-1,790	5,773.06	76,754	-2,159	4,964.40	2,125	-7,132
WTR YR 1971....	-	-	+4,755	-	-	+3,925	-	-	-18,532

a Elevation at 2400.

11391400 LITTLE LAST CHANCE CREEK BELOW FRENCHMAN DAM, NEAR CHILCOOT, CALIF.

LOCATION.--Lat 39°53'36", long 120°11'17", in NE¼ sec.33, T.24 N., R.16 E., Plumas County, Plumas National Forest, in valve house at toe of Frenchman Dam, 7.1 miles northwest of Chilcoot.

DRAINAGE AREA.--81.1 sq mi.

PERIOD OF RECORD.--October 1958 to current year. Prior to October 1969 published as Little Last Chance Creek near Chilcoot.

GAGE.--Water-stage recorder and steel-lipped Cipolletti weir. Datum of release gage is 5,480.00 ft (levels by California Department of Water Resources). October 1958 to September 1967, at site 1.9 miles downstream at different datum.

AVERAGE DISCHARGE (unadjusted).--13 years, 28.8 cfs (20,870 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 332 cfs May 13; minimum daily, 1.9 cfs on many days in March. Period of record: Maximum discharge, 784 cfs Feb. 8, 1960 (gage height, 5.56 ft, previous site and datum), from rating curve extended above 310 cfs; no flow Oct. 23, 1959, July 24-27, 29, Aug. 4, 1961. Maximum discharge since construction of Frenchman Dam in 1961, 544 cfs May 23, 1967; minimum, 0.2 cfs on several days in September 1962.

REMARKS.--Flow regulated by Frenchman Reservoir beginning Nov. 7, 1961 (usable capacity, 53,580 acre-ft). Records since October 1967 are combined flow of release from Frenchman Dam and flow over spillway.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	2.0	2.0	2.0	2.1	2.1	2.0	147	226	63	69	25
2	5.4	2.0	2.0	2.0	2.0	2.0	2.0	161	226	54	59	25
3	5.4	2.0	2.0	2.0	2.0	2.0	3.0	188	226	42	68	32
4	5.4	2.0	2.0	2.0	2.0	2.0	19	216	229	42	77	43
5	5.4	2.0	2.0	2.0	2.0	1.9	45	218	229	42	70	43
6	5.4	2.0	2.0	2.0	2.0	1.9	79	221	219	42	65	57
7	5.4	2.0	2.0	2.0	2.0	1.9	108	218	208	36	70	62
8	5.4	2.0	2.0	2.0	2.1	1.9	127	262	196	13	70	53
9	5.4	2.0	2.0	2.0	2.1	1.9	140	282	186	13	64	39
10	5.4	2.0	2.0	2.0	2.1	1.9	163	285	176	13	58	39
11	5.4	2.0	2.0	2.1	2.1	1.9	168	293	152	13	47	39
12	5.4	2.0	2.0	2.1	2.1	1.9	171	326	136	13	33	32
13	5.4	2.0	2.0	2.1	2.1	1.9	175	329	129	13	33	26
14	5.4	2.0	2.0	2.1	2.1	1.9	180	323	120	20	33	26
15	5.4	2.0	2.0	2.1	2.1	1.9	185	311	114	34	38	15
16	5.4	2.0	2.0	2.1	2.2	1.9	190	293	108	28	86	10
17	5.4	2.0	2.0	2.1	2.2	1.9	198	265	102	25	98	10
18	5.4	2.0	2.0	2.1	2.2	1.9	198	234	96	25	114	10
19	5.4	2.0	2.0	2.1	2.2	1.9	185	205	90	25	122	10
20	5.4	2.0	2.0	2.1	2.2	1.9	173	185	86	21	136	10
21	5.4	2.0	2.0	2.2	2.2	1.9	163	203	99	19	150	7.8
22	5.4	2.0	2.0	2.2	2.2	1.9	149	200	115	19	150	4.9
23	5.4	2.0	2.0	2.2	2.2	1.9	134	205	105	31	105	4.9
24	5.4	2.0	2.0	2.2	2.2	1.9	123	198	93	46	74	4.9
25	5.4	2.0	2.0	2.2	2.2	1.9	118	188	96	72	74	4.9
26	5.4	2.0	2.0	2.2	2.2	1.9	134	183	104	88	74	4.9
27	3.5	2.0	2.0	2.2	2.2	1.9	134	183	98	95	74	4.9
28	2.0	2.0	2.0	2.2	2.2	1.9	131	185	83	95	74	4.9
29	2.0	2.0	2.0	2.2	-----	1.9	131	195	66	95	74	4.9
30	2.0	2.0	2.0	2.2	-----	1.9	136	205	65	92	39	4.9
31	2.0	-----	2.0	2.2	-----	1.9	-----	213	-----	77	25	-----
TOTAL	151.3	60.0	62.0	65.2	59.5	59.4	3,864.0	7,120	4,178	1,306	2,323	657.9
MEAN	4.88	2.00	2.00	2.10	2.13	1.92	129	230	139	42.1	74.9	21.9
MAX	5.4	2.0	2.0	2.2	2.2	2.1	198	329	229	95	150	62
MIN	2.0	2.0	2.0	2.0	2.0	1.9	2.0	147	65	13	25	4.9
AC-FT	300	119	123	129	118	118	7,660	14,120	8,290	2,590	4,610	1,300
CAL YR 1970	TOTAL 15,479.2		MEAN 42.4	MAX 164	MIN 2.0	AC-FT 30,700						
WTR YR 1971	TOTAL 19,906.3		MEAN 54.5	MAX 329	MIN 1.9	AC-FT 39,480						



## 11392100 MIDDLE FORK FEATHER RIVER NEAR PORTOLA, CALIF.

LOCATION.--Lat 39°49'13", long 120°26'26", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.29, T.23 N., R.14 E., Plumas County, on right bank 0.8 mile downstream from Big Grizzly Creek and 1.6 miles northeast of Portola.

DRAINAGE AREA.--586 sq mi.

PERIOD OF RECORD.--October 1968 to current year. November 1955 to September 1968 in bulletins of California Department of Water Resources.

GAGE.--Water-stage recorder. Altitude of gage is 4,860 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 6,580 cfs Mar. 27 (gage height, 9.64 ft); minimum daily, 12 cfs Sept. 22.

Period of record: Maximum discharge, 7,640 cfs Jan. 21, 1969 (gage height, 10.18 ft); minimum daily, 3.1 cfs Sept. 11, 12, 1969.

REMARKS.--Flow partly regulated by Frenchman Lake (see sta 11391370) and Lake Davis (see sta 11391490). Records of chemical analyses and suspended-sediment discharge for the current year are published in Part 2 of this report.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	38	167	98	417	220	909	720	1,110	201	44	21
2	14	38	147	98	405	210	788	739	1,150	205	40	22
3	14	38	180	90	395	179	680	879	1,100	202	36	21
4	15	38	351	71	297	237	619	1,050	966	187	32	19
5	15	48	201	62	171	294	592	1,170	832	165	30	16
6	15	60	140	55	185	325	604	1,200	751	139	28	18
7	15	71	154	52	231	304	655	1,150	691	127	27	19
8	15	87	248	56	236	293	758	1,290	624	118	29	15
9	16	102	500	59	238	343	752	1,590	544	109	29	13
10	17	97	764	65	186	400	858	1,780	507	95	29	15
11	18	85	821	76	182	490	901	1,580	461	85	28	15
12	19	91	514	77	208	919	915	1,440	356	80	27	14
13	19	92	270	64	254	1,520	911	1,310	345	77	25	13
14	20	95	193	51	301	3,020	955	1,260	335	73	22	13
15	20	92	114	134	371	2,210	921	1,200	317	71	19	14
16	21	80	79	344	466	1,600	918	1,140	295	65	20	14
17	23	70	75	262	573	1,700	952	1,110	270	63	19	15
18	24	64	75	281	555	1,460	988	1,070	246	64	19	14
19	24	62	75	298	469	1,470	975	988	217	60	17	13
20	27	60	75	317	431	1,360	910	853	186	59	15	13
21	28	58	90	337	415	1,450	865	800	162	60	15	13
22	32	58	94	395	357	1,520	830	809	149	57	16	12
23	38	57	97	563	334	1,740	783	831	141	55	22	13
24	39	59	92	687	334	2,650	731	837	130	52	20	16
25	40	79	90	676	331	2,100	723	797	123	50	29	16
26	42	102	94	627	347	3,600	849	721	139	50	28	17
27	40	166	95	582	339	6,050	906	697	162	48	28	20
28	38	264	96	542	264	3,380	880	706	179	47	24	23
29	37	294	100	506	-----	1,770	802	735	198	45	23	23
30	37	254	98	469	-----	1,230	742	835	198	47	22	28
31	38	-----	97	437	-----	1,030	-----	1,040	-----	46	20	-----
TOTAL	773	2,799	6,186	8,431	9,292	45,074	24,672	32,327	12,884	2,802	782	498
MEAN	24.9	93.3	200	272	332	1,454	822	1,043	429	90.4	25.2	16.6
MAX	42	294	821	687	573	6,050	988	1,780	1,150	205	44	28
MIN	13	38	75	51	171	179	592	697	123	45	15	12
AC-FT	1,530	5,550	12,270	16,720	18,430	89,400	48,940	64,120	25,560	5,560	1,550	988
CAL YR 1970	TOTAL	98,329.8	MEAN	269	MAX	4,580	MIN	5.3	AC-FT	195,000		
WTR YR 1971	TOTAL	146,520.0	MEAN	401	MAX	6,050	MIN	12	AC-FT	290,600		

## SACRAMENTO RIVER BASIN

## 11392500 MIDDLE FORK FEATHER RIVER NEAR CLIO, CALIF.

LOCATION.--Lat 39°45'14", long 120°35'42", in SE $\frac{1}{4}$  sec.23, T.22 N., R.12 E., Plumas County, on left bank 0.6 mile upstream from Frazier Creek, 1.0 mile northwest of Clio, and 2.2 miles southeast of Blairsden.

DRAINAGE AREA.--686 sq mi.

PERIOD OF RECORD.--October 1925 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,380 ft (from topographic map). Prior to July 29, 1953, at site 0.5 mile downstream at different datum.

AVERAGE DISCHARGE.--46 years, 294 cfs (213,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,620 cfs Mar. 27 (gage height, 13.20 ft); minimum daily, 34 cfs Oct. 1, 2.

Period of record: Maximum discharge, 14,500 cfs Feb. 1, 1963 (gage height, 16.19 ft); minimum, 4.3 cfs Sept. 5, 1934.

REMARKS.--Records good. Diversions for irrigation of about 40,000 acres above station, of which 14,500 acres receive supplemental water of about 7,000 acre-ft annually from Little Truckee River. Flow partly regulated by Lake Davis (total usable capacity, 84,000 acre-ft) beginning in November 1966 (see sta 11391490) and by Frenchman Lake (total usable capacity, 53,600 acre-ft) beginning in November 1961 (see sta 11391370). Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	70	302	164	530	305	1,250	955	1,250	314	84	49
2	34	71	283	161	522	269	1,120	975	1,290	312	83	50
3	36	72	237	146	505	266	1,020	1,100	1,230	307	81	50
4	37	84	564	148	451	320	990	1,310	1,110	298	77	48
5	38	168	324	118	271	376	975	1,420	965	274	75	48
6	39	145	253	108	278	403	980	1,440	900	249	72	45
7	39	143	322	103	300	417	990	1,400	885	230	69	46
8	40	118	481	101	310	400	1,050	1,680	865	216	67	48
9	42	145	674	103	300	448	1,030	1,790	794	200	67	45
10	42	162	875	138	293	512	1,280	2,040	766	184	66	44
11	43	138	980	167	324	628	1,170	1,910	722	170	65	44
12	44	162	672	145	371	1,860	1,170	1,750	618	161	64	43
13	44	128	537	117	439	2,020	1,130	1,640	586	151	61	42
14	44	122	358	111	499	3,330	1,190	1,560	564	145	60	43
15	47	121	281	111	610	2,650	1,160	1,500	561	140	58	43
16	46	110	214	358	678	1,980	1,150	1,410	544	131	56	44
17	51	100	162	460	778	2,000	1,230	1,340	496	125	53	44
18	53	93	137	540	758	1,810	1,190	1,260	466	131	51	44
19	54	87	132	578	690	1,780	1,140	1,170	434	124	50	45
20	68	84	132	578	564	1,650	1,100	1,060	403	118	50	45
21	64	83	156	592	526	1,740	1,040	1,020	368	124	49	45
22	72	83	157	589	496	1,840	995	995	330	113	49	45
23	93	81	146	698	469	2,320	980	980	310	107	49	46
24	86	94	146	830	448	3,040	950	1,000	290	103	53	47
25	68	339	148	818	460	2,840	925	990	266	99	51	49
26	68	262	148	758	417	5,260	990	945	370	95	54	52
27	69	206	146	710	439	7,080	1,020	925	355	93	56	55
28	68	358	148	666	368	4,240	1,020	920	330	88	55	57
29	67	423	181	622	-----	2,440	990	920	324	86	52	66
30	69	371	170	578	-----	1,790	970	995	317	84	50	77
31	70	-----	167	550	-----	1,440	-----	1,200	-----	85	50	-----
TOTAL	1,669	4,623	9,633	11,866	13,094	57,454	32,195	39,600	18,709	5,057	1,877	1,449
MEAN	53.8	154	311	383	468	1,853	1,073	1,277	624	163	60.5	48.3
MAX	93	423	980	830	778	7,080	1,280	2,040	1,290	314	84	77
MIN	34	70	132	101	271	266	925	920	266	84	49	42
AC-FT	3,310	9,170	19,110	23,540	25,970	114,000	63,860	78,550	37,110	10,030	3,720	2,870
CAL YR 1970	TOTAL 147,525		MEAN 404	MAX 5,670	MIN 27	AC-FT 292,600						
WTR YR 1971	TOTAL 197,226		MEAN 540	MAX 7,080	MIN 34	AC-FT 391,200						

## 11394500 MIDDLE FORK FEATHER RIVER NEAR MERRIMAC, CALIF.

LOCATION.--Lat 39°42'30", long 121°16'10", in NW¼NE¼ sec.2, T.21 N., R.6 E., Butte County, Plumas National Forest, on left bank 400 ft downstream from bridge on Milsap Bar Road, 500 ft downstream from Little North Fork, 4.5 miles southeast of Merrimac, and 20 miles northeast of Oroville.

DRAINAGE AREA.--1,062 sq mi.

PERIOD OF RECORD.--October 1951 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,560 ft (from topographic map). Prior to Jan. 21, 1965, on right bank at same site and datum.

AVERAGE DISCHARGE.--20 years, 1,464 cfs (1,061,000 acre-ft per year); median of yearly mean discharges, 1,350 cfs (978,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 15,700 cfs Mar. 26 (gage height, 14.11 ft), from rating curve extended above 8,000 cfs on basis of slope-area measurement at gage height 26.5 ft; minimum daily, 142 cfs Oct. 12, 13.

Period of record: Maximum discharge, 86,200 cfs Dec. 22, 1964 (gage height, 26.5 ft, from floodmarks, present site), from rating curve extended above 19,000 cfs on basis of slope-area measurement of maximum flow; minimum, 92 cfs Jan. 2, 1960.

Flood of Dec. 10, 1937, reached a stage of 19.4 ft, from floodmarks (discharge, 46,100 cfs).

REMARKS.--Records good. Diversions above station for irrigation of about 1,000 acres between stations near Clio and near Merrimac. Flow partly regulated by Antelope Lake (see sta 11401120) beginning in 1963, Lake Davis (see sta 11391490) beginning in 1967, and Frenchman Lake (see sta 11391370) beginning in 1961. Records of chemical analyses, water temperatures, and suspended-sediment discharge for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1931: 1960. WRD Calif. 1968: 1956(M), 1963(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153	247	1,910	921	1,810	1,210	4,230	3,390	3,770	1,680	435	272
2	152	247	2,110	870	1,790	1,130	3,920	3,610	3,600	1,600	421	271
3	152	245	1,630	783	1,750	1,140	3,670	3,940	3,540	1,500	409	264
4	154	364	2,450	757	1,700	1,130	3,580	4,170	3,520	1,410	392	264
5	157	1,310	2,110	744	1,540	1,150	3,640	4,300	3,580	1,330	385	260
6	159	1,100	1,860	724	1,400	1,160	3,880	4,340	3,770	1,260	377	256
7	156	1,100	1,890	721	1,400	1,190	3,940	4,270	3,970	1,170	370	250
8	156	758	2,670	698	1,400	1,160	3,770	5,100	4,010	1,110	360	248
9	166	1,390	3,300	699	1,400	1,170	3,710	5,020	3,890	1,040	353	248
10	168	1,660	2,550	828	1,390	1,240	4,730	5,540	3,730	993	352	240
11	171	1,050	2,330	1,200	1,520	1,360	4,140	5,750	3,620	922	345	236
12	142	1,460	2,050	1,120	1,710	5,420	3,910	5,740	3,490	869	342	232
13	142	935	1,590	1,020	1,940	5,800	3,850	5,810	3,290	819	330	232
14	162	734	1,390	1,060	2,120	5,190	3,920	5,710	3,180	784	321	224
15	170	636	1,280	1,040	2,250	4,870	4,170	5,590	3,130	761	320	216
16	171	579	1,340	1,160	2,250	3,780	4,370	5,400	3,160	742	312	208
17	173	531	1,200	2,210	2,200	3,570	4,580	4,820	3,080	712	305	204
18	180	490	1,070	3,550	2,150	3,470	4,050	4,490	2,900	711	300	200
19	191	461	985	3,600	2,000	3,030	3,750	4,580	2,760	694	297	200
20	261	435	969	3,330	1,950	3,010	3,640	4,540	2,670	659	289	208
21	283	418	983	2,910	1,900	3,070	3,390	4,400	2,480	635	285	212
22	330	408	928	2,510	1,750	3,230	3,110	3,960	2,300	611	281	212
23	443	409	870	2,320	1,650	5,020	2,950	4,080	2,160	577	280	212
24	551	475	831	2,290	1,550	6,310	2,780	4,500	2,000	553	280	212
25	349	2,650	791	2,210	1,540	6,580	2,620	4,850	1,850	532	281	212
26	286	2,620	805	2,090	1,390	13,500	2,660	5,280	3,180	509	281	224
27	266	1,530	826	2,000	1,390	11,900	2,720	4,690	3,520	492	281	248
28	258	1,590	867	1,940	1,340	9,000	2,860	4,400	2,350	477	281	260
29	252	1,960	1,160	1,880	-----	6,340	3,010	4,030	1,950	461	278	297
30	249	2,020	1,050	1,850	-----	5,450	3,160	3,980	1,780	446	270	426
31	244	-----	963	1,820	-----	4,800	-----	3,970	-----	439	270	-----
TOTAL	6,847	29,812	46,758	50,855	48,180	126,380	108,710	144,250	92,230	26,498	10,083	7,248
MEAN	221	994	1,508	1,640	1,721	4,077	3,624	4,653	3,074	855	325	242
MAX	551	2,650	3,300	3,600	2,250	13,500	4,730	5,810	4,010	1,680	435	426
MIN	142	245	791	698	1,340	1,130	2,620	3,390	1,780	439	270	200
AC-FT	13,580	59,130	92,740	100,900	95,570	250,700	215,600	286,100	182,900	52,560	20,000	14,380

CAL YR 1970 TOTAL 622,221 MEAN 1,705 MAX 20,600 MIN 142 AC-FT 1,234,000

WTR YR 1971 TOTAL 697,851 MEAN 1,912 MAX 13,500 MIN 142 AC-FT 1,384,000

PEAK DISCHARGE (BASE, 7,000 CFS).--Mar. 12 (2115) 9,270 cfs (11.81 ft); Mar. 26 (1100) 15,700 cfs (14.11 ft).

## SACRAMENTO RIVER BASIN

11394620 FALL RIVER NEAR FEATHER FALLS, CALIF.

LOCATION.--Lat 39°40'00", long 121°08'01", in NW $\frac{1}{4}$  sec.19, T.21 N., R.8 E., Plumas County, on right bank 0.5 mile downstream from Coyote Creek and 8 miles northeast of Feather Falls.

DRAINAGE AREA.--9.89 sq mi.

PERIOD OF RECORD.--July 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,000 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 45.2 cfs (32,750 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 659 cfs Mar. 26 (gage height, 4.94 ft), from rating curve extended as explained below; minimum daily, 1.8 cfs Oct. 1, 2.

Period of record: Maximum discharge, 3,770 cfs Dec. 22, 1964 (gage height, 10.00 ft), from rating curve extended above 200 cfs on basis of slope-area measurement of maximum flow; minimum daily, 1.4 cfs Aug. 23-25, 1970.

REMARKS.--Records good. No regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	4.1	48	21	47	35	136	135	88	28	7.4	4.2
2	1.8	3.8	44	22	48	33	129	140	80	26	7.0	4.1
3	1.9	3.8	38	31	47	33	128	138	75	25	6.6	3.9
4	1.9	11	39	20	45	32	129	134	73	23	6.4	3.7
5	2.0	50	44	19	45	30	136	130	74	22	6.3	3.6
6	2.1	38	47	18	44	29	139	135	75	21	6.2	3.6
7	2.2	36	54	17	42	29	134	140	77	20	6.0	3.6
8	2.2	26	82	17	41	28	126	150	76	19	5.9	3.5
9	2.2	69	97	17	40	28	135	160	74	18	5.7	3.4
10	2.2	57	77	21	41	28	154	170	70	18	5.6	3.4
11	2.2	47	66	22	47	31	141	182	66	17	5.6	3.3
12	2.2	53	58	20	54	151	137	187	63	16	5.4	3.3
13	2.1	35	52	21	60	132	133	198	58	15	5.1	3.2
14	2.0	28	47	23	64	101	141	192	54	14	5.0	3.1
15	2.0	23	44	22	68	86	151	186	52	13	4.9	3.1
16	2.0	20	43	26	68	80	163	172	49	13	4.8	3.0
17	2.1	18	38	68	65	77	149	151	45	12	4.7	2.9
18	2.4	16	35	91	61	72	132	140	42	12	4.6	2.9
19	2.5	15	33	89	58	70	126	135	40	12	4.5	3.0
20	6.2	14	32	84	53	71	125	137	37	11	4.4	3.0
21	5.4	13	33	76	50	73	122	129	34	11	4.4	3.0
22	9.5	13	28	69	48	73	119	122	32	10	4.4	3.0
23	16	12	27	62	45	144	116	124	30	9.8	4.5	3.0
24	12	17	25	56	43	169	113	128	28	9.5	4.4	3.0
25	6.9	64	25	51	40	217	110	130	27	9.3	4.2	3.1
26	5.6	62	24	48	38	517	107	146	60	8.9	4.1	3.3
27	5.1	49	24	46	38	307	105	127	52	8.6	4.0	3.5
28	4.7	48	23	45	37	228	110	120	38	8.3	4.0	3.3
29	4.4	59	24	44	-----	194	120	108	33	7.9	3.9	5.9
30	4.2	53	23	45	-----	174	130	104	30	7.8	3.8	7.2
31	4.1	-----	22	46	-----	151	-----	95	-----	7.5	4.5	-----
TOTAL	123.9	957.7	1,296	1,257	1,377	3,423	3,896	4,445	1,632	453.6	158.3	106.1
MEAN	4.00	31.9	41.8	40.5	49.2	110	130	143	54.4	14.6	5.11	3.54
MAX	16	69	97	91	68	517	163	198	88	28	7.4	7.2
MIN	1.8	3.8	22	17	37	28	105	95	27	7.5	3.8	2.9
AC-FT	246	1,900	2,570	2,490	2,730	6,790	7,730	8,820	3,240	900	314	210

CAL YR 1970 TOTAL 18,330.1 MEAN 50.2 MAX 860 MIN 1.4 AC-FT 36,360  
WTR YR 1971 TOTAL 19,125.6 MEAN 52.4 MAX 517 MIN 1.8 AC-FT 37,940

## PEAK DISCHARGE (BASE, 150 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-12	1530	3.61	262	4-16	1500	3.23	186
3-26	0400	4.94	659	5-13	1730	3.36	212
4-9	2230	3.27	194				



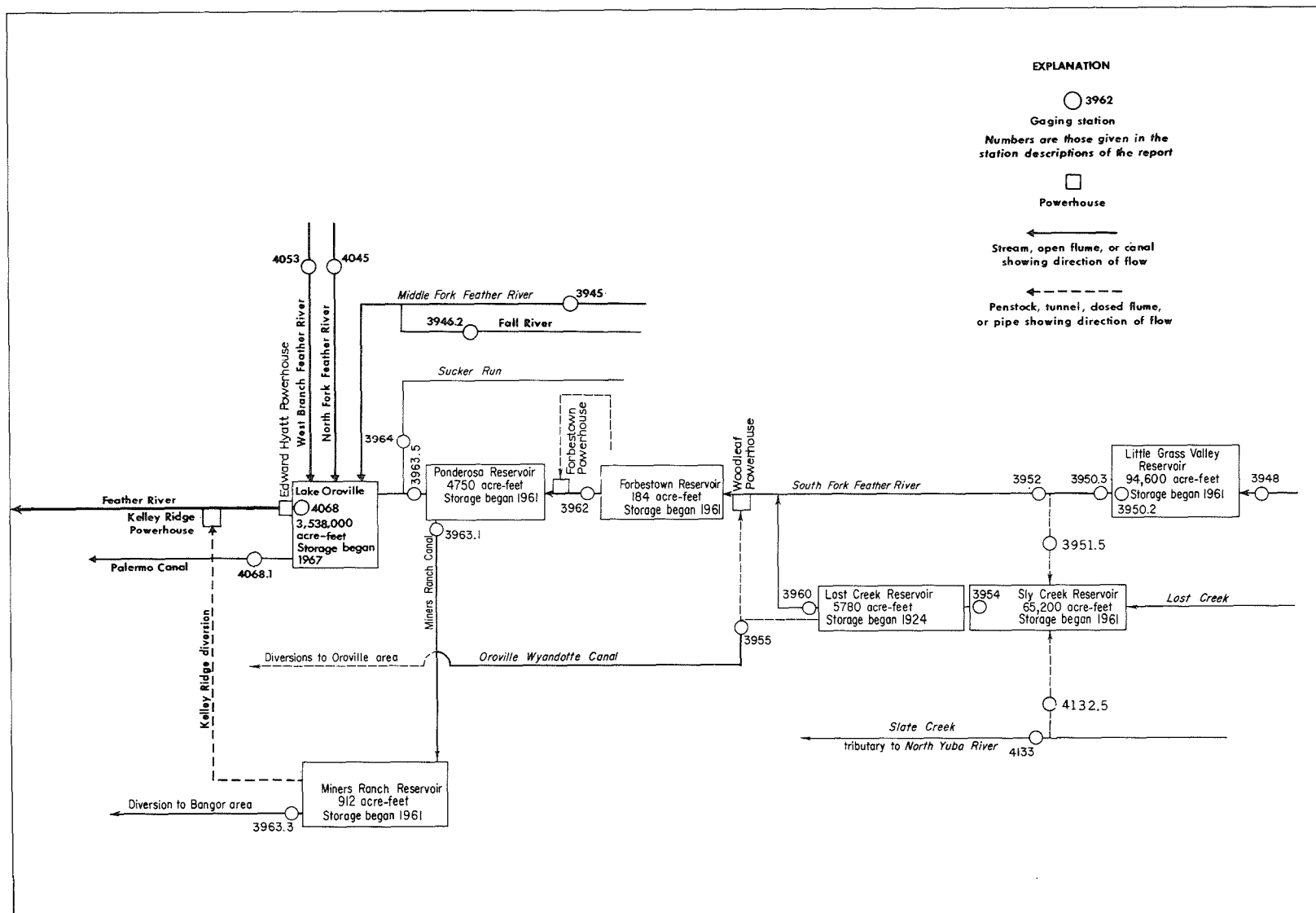


FIGURE 11.--Schematic diagram showing diversions and storage in South Fork Feather River basin.

## SACRAMENTO RIVER BASIN

11394800 SOUTH FORK FEATHER RIVER ABOVE LITTLE GRASS VALLEY RESERVOIR, CALIF.

LOCATION.--Lat 39°45'07", long 120°57'26", in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.22, T.22 N., R.9 E., Plumas County, Plumas National Forest, on right bank 0.5 mile downstream from unnamed tributary, 4.5 miles upstream from Little Grass Valley Dam, and 5 miles north of LaPorte.

DRAINAGE AREA.--8.09 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 5,080 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 31.0 cfs (22,460 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 256 cfs June 26 (gage height, 3.26 ft), from rating curve extended as explained below; maximum gage height, 3.33 ft Jan. 14 (backwater from ice); minimum daily discharge, 0.11 cfs Sept. 14, 15.

Period of record: Maximum discharge, 4,160 cfs Jan. 31, 1963 (gage height, 7.12 ft), from rating curve extended above 140 cfs on basis of slope-area measurement at gage height 5.47 ft; minimum daily, 0.06 cfs Sept. 9-13, 29, 1968, Aug. 24, 25, 1970.

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of South Fork Feather River basin.

REVISIONS (WATER YEARS).--WRD Calif. 1969: 1966(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.95	20	9.5	29	18	66	68	85	55	2.2	.35
2	.20	1.1	21	9.5	29	18	64	77	77	50	2.0	.35
3	.25	1.1	16	9.0	28	18	62	83	74	44	2.0	.35
4	.30	5.6	15	9.0	28	18	64	83	77	40	1.8	.30
5	.30	28	19	8.8	27	17	68	83	90	36	1.6	.30
6	.35	11	27	8.6	26	16	74	92	109	32	1.6	.25
7	.35	8.6	27	8.0	24	16	74	92	128	28	1.4	.25
8	.35	7.4	32	7.4	23	15	70	109	136	26	1.1	.25
9	.35	42	43	7.4	23	16	68	114	136	23	1.1	.20
10	.35	27	32	8.6	23	16	70	131	133	20	.95	.20
11	.41	24	29	9.9	26	16	64	139	131	18	.83	.20
12	.47	26	27	11	29	28	62	151	131	16	.73	.15
13	.47	16	24	11	31	28	64	172	128	15	.55	.15
14	.55	13	22	9.9	34	24	70	176	122	14	.47	.11
15	.55	11	21	14	36	22	79	172	125	13	.47	.11
16	.55	8.6	19	18	37	21	85	160	133	12	.41	.15
17	.55	7.4	18	46	37	21	85	133	125	11	.47	.15
18	.63	6.9	17	59	34	20	74	120	122	9.9	.47	.15
19	.63	6.4	15	59	32	19	68	120	117	9.2	.41	.20
20	.70	5.4	18	59	30	20	66	128	109	8.0	.35	.20
21	.55	4.9	17	53	29	21	60	120	104	7.4	.35	.20
22	1.2	4.9	14	48	28	22	53	107	99	6.9	.35	.20
23	2.2	4.9	13	43	27	49	48	120	87	5.9	.35	.20
24	2.5	8.1	13	38	24	62	44	145	77	5.4	.35	.20
25	1.6	50	13	36	22	64	42	163	68	4.9	.35	.25
26	1.4	32	11	32	21	175	38	198	168	4.5	.30	.30
27	1.1	24	11	31	20	112	37	166	120	4.1	.35	.41
28	.95	23	11	30	19	92	38	148	81	3.7	.30	.41
29	.95	22	12	29	-----	81	46	128	66	3.4	.30	.86
30	.95	21	11	29	-----	79	57	120	60	2.8	.35	1.6
31	.95	-----	9.9	29	-----	72	-----	102	-----	2.8	.35	-----
TOTAL	22.86	452.25	597.9	780.6	776	1,216	1,860	3,920	3,218	531.9	24.61	9.00
MEAN	.74	15.1	19.3	25.2	27.7	39.2	62.0	126	107	17.2	.79	.30
MAX	2.5	50	43	59	37	175	85	198	168	55	2.2	1.6
MIN	.20	.95	9.9	7.4	19	15	37	68	60	2.8	.30	.11
AC-FT	45	897	1,190	1,550	1,540	2,410	3,690	7,780	6,380	1,060	49	18
CAL YR 1970	TOTAL	12,191.81	MEAN	33.4	MAX	700	MIN	.06	AC-FT	24,180		
WTR YR 1971	TOTAL	13,409.12	MEAN	36.7	MAX	198	MIN	.11	AC-FT	26,600		

## PEAK DISCHARGE (BASE, 140 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-26	0600	3.21	237	6-8	1900	3.03	176
5-15	1900	3.09	195	6-26	1230	3.26	256
5-26	1700	3.14	212				

## 11395020 LITTLE GRASS VALLEY RESERVOIR NEAR LAPORTE, CALIF.

LOCATION.--Lat 39°43'25", long 121°01'10", in W $\frac{1}{2}$  sec.31, T.22 N., R.9 E., Plumas County, Plumas National Forest, on right bank 300 ft upstream from dam on South Fork Feather River, 3.3 miles northwest of LaPorte.

DRAINAGE AREA.--25.8 sq mi.

PERIOD OF RECORD.--October 1961 to current year. Monthend elevation and contents only October 1961 to October 1962.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Oroville-Wyandotte Irrigation District). Prior to Nov. 1, 1962, in valve chamber in dam at same datum.

EXTREMES.--Current year: Maximum contents, 93,500 acre-ft June 26 (elevation, 5,046.3 ft); minimum, 52,300 acre-ft Oct. 17-19 (elevation, 5,016.9 ft).

Period of record: Maximum contents, 96,100 acre-ft Apr. 29, 1965 (elevation, 5,047.9 ft); minimum since reservoir first filled, 48,800 acre-ft Oct. 25-28, 1968 (elevation, 5,013.8 ft).

REMARKS.--Reservoir is formed by rockfill dam. Storage began in October 1961. Total capacity, 94,700 acre-ft between elevations 4,876 ft (invert of release valve) and 5,047 ft (top of spillway gates), all of which is usable. Water is released down South Fork Feather River for power development and irrigation downstream. Records, including extremes, represent contents at 2400 hours. See schematic diagram of South Fork Feather River basin.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

5,000	34,600
5,010	44,400
5,020	55,900
5,030	68,900
5,040	83,500
5,048	96,300

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57,400	53,000	56,300	63,400	62,100	58,600	65,100	68,000	91,900	92,500	82,800	70,900
2	56,900	53,000	56,800	63,400	61,900	58,700	65,200	68,500	91,700	92,500	82,500	70,600
3	56,500	53,000	57,200	63,600	61,500	58,900	65,200	69,000	91,400	92,400	82,000	70,200
4	56,000	53,100	57,400	63,600	61,100	58,700	65,200	69,600	91,100	92,200	81,700	69,800
5	55,700	53,600	57,700	63,400	60,800	58,400	65,400	70,300	90,900	92,000	81,300	69,300
6	55,200	53,900	58,000	63,200	60,400	57,800	65,400	71,100	90,700	91,900	81,000	68,900
7	54,700	54,200	58,200	62,800	60,000	57,400	65,500	71,800	90,700	91,500	80,600	68,500
8	54,300	54,300	58,700	62,500	59,700	56,900	65,600	72,500	90,900	91,200	80,300	68,200
9	53,900	54,800	59,300	62,100	59,300	56,500	65,800	73,400	91,200	90,900	79,800	67,800
10	53,500	55,100	59,500	62,000	58,900	55,900	65,900	74,300	91,900	90,600	79,500	67,500
11	53,000	55,400	59,800	61,900	58,600	55,800	66,000	75,300	92,200	90,400	79,100	67,200
12	52,700	55,700	60,000	61,700	58,200	56,100	66,000	76,300	92,500	90,000	78,800	66,800
13	52,400	55,200	60,200	61,500	57,800	56,000	66,200	77,400	92,700	89,600	78,400	66,200
14	52,400	55,900	60,400	61,300	57,600	55,800	66,200	78,500	92,800	89,300	77,900	65,400
15	52,400	55,900	60,700	61,100	57,300	55,500	66,300	79,700	93,000	89,000	77,600	64,700
16	52,400	56,000	61,000	61,000	56,900	55,300	66,700	80,600	93,000	88,700	77,200	64,500
17	52,300	56,100	61,200	60,800	56,700	55,200	66,800	81,400	93,000	88,200	76,800	64,300
18	52,300	56,100	61,300	60,800	56,700	55,400	66,900	82,300	92,800	87,900	76,500	64,300
19	52,300	56,100	61,500	61,100	56,900	55,500	66,900	83,000	92,800	87,600	76,000	62,400
20	52,400	56,300	61,900	61,300	57,100	55,700	67,100	84,000	92,800	87,300	75,600	64,200
21	52,400	56,300	62,000	61,700	57,200	56,000	67,100	84,700	92,700	87,000	75,300	64,100
22	52,600	56,400	62,100	62,000	57,400	56,300	66,900	85,500	92,700	86,500	74,900	63,900
23	52,900	56,100	62,100	62,300	57,600	57,200	66,900	86,300	92,700	86,200	74,400	63,300
24	52,900	56,000	62,300	62,500	57,700	57,800	66,800	87,300	92,700	85,700	74,100	62,900
25	52,900	56,100	62,400	62,600	57,800	58,900	66,700	88,200	92,800	85,400	73,700	62,500
26	52,900	56,100	62,500	62,900	58,000	61,100	66,500	89,500	93,500	85,100	73,400	62,300
27	52,900	56,100	62,600	63,000	58,100	62,300	66,500	90,600	93,300	84,600	73,000	61,900
28	52,900	56,100	62,900	63,200	58,200	63,000	66,800	91,200	92,800	84,300	72,500	61,500
29	52,900	56,100	63,200	63,200	-----	63,700	67,200	91,500	92,700	84,000	72,100	61,300
30	52,900	56,100	63,300	62,900	-----	64,300	67,600	91,700	92,700	83,500	71,700	61,000
31	52,900	-----	63,300	62,500	-----	64,900	-----	92,000	-----	83,200	71,400	-----
MAX	57,400	56,400	63,300	63,600	62,100	64,900	67,600	92,000	93,500	92,500	82,800	70,900
MIN	52,300	53,000	56,300	60,800	56,700	55,200	65,100	68,000	90,700	83,200	71,400	61,000
(a)	5,017.4	5,020.2	5,025.7	5,025.1	5,021.8	5,026.9	5,029.0	5,045.4	5,045.8	5,039.8	5,031.7	5,023.9
(b)	-5,100	+3,200	+7,200	-800	-4,300	+6,700	+2,700	+24,400	+700	-9,500	-11,800	-10,400
CAL YR 1970	b -3,800											
WTR YR 1971	b +3,000											

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11395030 SOUTH FORK FEATHER RIVER BELOW LITTLE GRASS VALLEY DAM, CALIF.

LOCATION.--Lat 39°43'26", long 121°01'16", in SW¼NW¼ sec.31, T.22 N., R.9 E., Plumas County, Plumas National Forest, on left bank 0.1 mile downstream from Little Grass Valley Dam, 0.7 mile downstream from Ice Creek, and 3.5 miles northwest of LaPorte.

DRAINAGE AREA.--25.9 sq mi.

PERIOD OF RECORD.--October 1927 to September 1933 (published as "near LaPorte"), October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,809.0 ft above mean sea level. Prior to Oct. 1, 1960, at site 0.4 mile upstream at different datum. Oct. 1, 1960, to Oct. 30, 1962, at present site and datum. Nov. 1, 1962, to May 31, 1966, at site on outlet works at base of Little Grass Valley Dam 0.1 mile upstream at datum 4,850.00 ft above mean sea level.

AVERAGE DISCHARGE (adjusted for change in contents in Little Grass Valley Reservoir).--17 years, 94.3 cfs (68,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 888 cfs June 1 (gage height, 10.68 ft); minimum daily, 6.2 cfs Nov. 8.

Period of record: Maximum discharge, 4,250 cfs Feb. 1, 1963; minimum, 0.2 cfs Oct. 28-31, Nov. 2, 1961.

REMARKS.--Records good. Flow regulated by Little Grass Valley Reservoir (see sta 11395020) beginning in October 1961. No diversion above station. See schematic diagram of South Fork Feather River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216	7.4	137	6.3	248	6.8	109	12	351	151	196	179
2	216	7.4	6.6	6.3	248	6.7	206	12	408	151	196	179
3	216	7.3	6.6	6.3	248	6.7	206	12	408	153	196	177
4	216	7.7	6.4	6.3	248	128	206	13	412	153	196	177
5	216	9.1	6.8	94	248	239	206	13	416	151	196	177
6	216	6.4	7.0	193	248	239	206	13	420	151	196	177
7	216	6.4	6.9	193	248	239	206	14	340	175	193	177
8	216	6.2	7.7	193	248	239	206	14	281	196	193	177
9	216	9.7	8.1	193	248	239	206	14	161	198	191	177
10	216	8.1	7.2	193	248	239	206	15	61	196	191	175
11	216	8.0	6.9	193	248	239	206	15	123	196	191	175
12	216	8.2	6.8	193	245	242	206	15	179	196	191	191
13	94	7.0	6.7	193	245	239	206	16	179	196	189	322
14	7.3	6.8	6.6	193	245	239	206	16	179	196	186	436
15	7.3	6.7	6.4	193	245	236	206	15	247	198	186	314
16	7.3	6.6	6.4	193	245	236	206	15	275	198	186	136
17	7.3	6.4	6.4	193	245	122	206	14	239	198	186	8.8
18	7.4	6.4	6.4	196	122	6.9	206	14	239	196	186	8.8
19	7.4	6.4	6.4	100	6.9	6.9	206	14	239	196	186	8.8
20	7.5	6.4	6.4	8.1	6.9	7.0	206	14	239	196	186	8.8
21	7.4	6.4	6.4	7.8	6.9	6.9	203	15	210	196	184	81
22	7.5	6.4	6.3	7.5	6.9	6.9	203	14	189	196	184	173
23	8.0	113	6.3	7.3	6.9	8.4	203	15	121	196	184	173
24	7.8	216	6.3	7.2	6.8	8.7	203	16	63	196	184	171
25	7.5	216	6.3	7.2	6.8	8.7	203	16	63	196	184	171
26	7.5	216	6.3	7.2	6.8	17	203	18	186	196	181	171
27	7.5	216	6.3	7.2	6.8	9.2	103	16	318	198	181	171
28	7.4	216	6.3	7.2	6.8	8.1	11	140	346	198	179	171
29	7.4	216	6.3	121	-----	7.8	12	272	236	198	179	171
30	7.4	216	6.3	251	-----	7.7	12	275	153	198	179	171
31	7.4	-----	6.3	248	-----	7.4	-----	275	-----	198	179	-----
TOTAL	2,820.3	1,782.4	335.1	3,417.9	4,388.5	3,252.8	5,379	1,352	7,281	5,807	5,815	5,005.2
MEAN	91.0	59.4	10.8	110	157	105	179	43.6	243	187	188	167
MAX	216	216	137	251	248	242	206	275	420	198	196	436
MIN	7.3	6.2	6.3	6.3	6.8	6.7	11	12	61	151	179	8.8
AC-FT	5,590	3,540	665	6,780	8,700	6,450	10,670	2,680	14,440	11,520	11,530	9,930

CAL YR 1970 TOTAL 46,428.3 MEAN 127 MAX 2,400 MIN 6.0 AC-FT 92,090 MEAN a 122 AC-FT a 88,380  
WTR YR 1971 TOTAL 46,636.2 MEAN 128 MAX 436 MIN 6.2 AC-FT 92,500 MEAN a 132 AC-FT a 95,490

a Adjusted for change in contents in Little Grass Valley Reservoir.

## 11395200 SOUTH FORK FEATHER RIVER BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CALIF.

LOCATION.--Lat 39°38'51", long 121°07'04", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.30, T.21 N., R.8 E., Plumas County, Plumas National Forest, on right bank 0.1 mile downstream from diversion dam, 3.1 miles upstream from Rock Creek, and 5.8 miles north of Strawberry Valley.

DRAINAGE AREA.--37.7 sq mi.

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

GAGE.--Water-stage recorder and since Nov. 7, 1962, concrete control. Datum of gage is 3,535.02 ft above mean sea level (levels by Oroville-Wyandotte Irrigation District).

AVERAGE DISCHARGE (adjusted for diversion to South Fork tunnel).--11 years, 154 cfs (111,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 848 cfs June 3 (gage height, 6.32 ft); minimum daily, 3.2 cfs Nov. 3.

Period of record: Maximum discharge, 6,330 cfs Jan. 31, 1963 (gage height, 13.21 ft), from rating curve extended above 500 cfs on basis of computation of maximum flow over diversion dam; minimum daily, 0.3 cfs Dec. 25, 1962, to Jan. 2, 1963, Mar. 1-3, 1963.

REMARKS.--Records good. Flow regulated by Little Grass Valley Reservoir (see sta 11395020). South Fork diversion tunnel (maximum capacity about 600 cfs) 500 ft upstream, diverts to Sly Creek Reservoir (see sta 11395400); diversion began in November 1961. See schematic diagram of South Fork Feather River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	8.5	6.5	5.5	6.1	5.5	4.9	9.2	9.8	10	9.8	9.8
2	8.8	6.3	6.1	5.3	6.1	5.5	5.3	9.2	10	10	9.8	9.8
3	8.8	3.2	5.9	5.3	6.1	5.5	5.3	9.2	110	10	9.8	9.8
4	8.8	3.4	5.9	5.3	6.1	5.5	5.3	9.2	17	10	9.5	9.8
5	8.8	3.8	5.9	5.3	6.1	5.9	5.3	9.2	10	10	9.5	9.8
6	8.8	3.8	5.9	5.7	6.1	5.9	5.3	9.2	10	10	9.5	9.8
7	8.8	3.8	5.9	5.9	6.1	5.9	5.3	9.2	10	10	9.5	9.8
8	8.8	3.6	5.9	5.9	6.1	5.9	5.3	9.2	9.8	10	9.5	9.8
9	9.0	3.8	5.9	5.9	6.1	5.9	5.3	9.2	9.5	10	9.5	9.8
10	9.0	4.8	5.9	5.9	19	5.9	5.5	9.2	9.2	10	9.5	9.8
11	9.0	6.3	5.9	9.2	6.1	5.9	5.5	9.2	9.2	10	9.5	9.8
12	9.0	6.3	5.9	5.9	6.1	7.4	5.5	9.2	9.5	10	9.5	9.8
13	9.0	6.3	5.9	5.9	6.1	6.5	5.5	9.2	9.5	10	9.5	9.8
14	8.5	6.1	5.9	5.9	6.1	6.3	5.5	9.2	9.5	10	9.5	9.8
15	8.5	6.1	5.9	5.9	6.1	6.1	5.5	9.2	9.8	10	9.5	9.5
16	8.5	6.1	5.9	6.1	6.1	6.3	5.5	9.2	9.8	10	9.5	9.2
17	8.5	6.1	5.7	6.1	6.1	6.1	5.7	9.2	9.8	10	9.5	9.0
18	8.5	6.1	5.5	6.1	6.1	5.9	5.7	9.2	9.5	10	9.8	8.8
19	8.5	6.1	5.5	6.1	6.1	5.9	5.7	9.2	9.5	10	9.8	8.8
20	8.8	6.1	5.5	5.9	5.9	5.9	5.7	9.2	9.8	10	9.8	8.8
21	8.8	6.1	5.5	5.9	5.9	5.9	5.7	9.2	9.8	10	9.8	13
22	8.5	6.1	5.5	5.7	5.9	6.1	5.7	9.2	9.8	10	9.8	9.0
23	8.8	6.1	5.7	5.7	19	6.5	5.7	9.2	9.8	10	9.8	9.0
24	8.5	6.5	5.7	5.7	5.5	6.5	5.5	9.2	9.5	10	9.8	9.0
25	8.5	6.5	5.7	5.7	5.5	6.7	5.3	9.2	9.5	10	9.8	9.0
26	8.5	6.5	5.7	5.7	5.5	221	5.3	9.2	10	10	9.8	9.0
27	8.5	6.5	5.7	5.7	5.5	9.9	5.3	9.2	10	9.8	9.8	9.0
28	8.5	6.7	5.7	5.7	5.5	5.7	13	9.2	10	9.5	9.8	9.0
29	8.5	6.7	5.7	5.9	-----	5.5	7.2	9.5	10	9.5	9.8	9.0
30	8.5	6.7	5.5	6.1	-----	7.9	9.2	9.5	10	9.5	9.8	9.2
31	8.5	-----	5.5	6.1	-----	32	-----	9.5	-----	9.5	9.8	-----
TOTAL	269.3	171.0	179.3	183.0	193.0	433.4	176.5	286.1	399.6	307.8	299.6	285.5
MEAN	8.69	5.70	5.78	5.90	6.89	14.0	5.88	9.23	13.3	9.93	9.66	9.52
MAX	9.0	8.5	6.5	9.2	19	221	13	9.5	110	10	9.8	13
MIN	8.5	3.2	5.5	5.3	5.5	5.5	4.9	9.2	9.2	9.5	9.5	8.8
AC-FT	534	339	356	363	383	860	350	567	793	611	594	566
MEAN a	98.7	97.8	75.9	172	238	280	340	163	271	196	195	176
AC-FT a	6,070	5,820	4,670	10,560	13,230	17,230	20,240	10,000	16,130	12,030	12,020	10,480
(b)	5,540	5,480	4,310	10,200	12,850	16,370	19,890	9,430	15,340	11,420	11,430	9,910

CAL YR 1970 TOTAL 30,349.1 MEAN 83.1 MAX 3,030 MIN 3.2 AC-FT 60,200 MEAN a 189 AC-FT a 136,800  
WTR YR 1971 TOTAL 3,184.1 MEAN 8.72 MAX 221 MIN 3.2 AC-FT 6,320 MEAN a 191 AC-FT a 138,500

a Adjusted for diversion to South Fork tunnel.

b Diversion, in acre-feet, from South Fork Feather River to South Fork diversion tunnel.

## SACRAMENTO RIVER BASIN

11395400 SLY CREEK RESERVOIR NEAR STRAWBERRY VALLEY, CALIF.

LOCATION.--Lat 39°35'01", long 121°06'45", in NW¼NW¼ sec.20, T.20 N., R.3 E., Butte County, Plumas National Forest, on right bank 100 ft upstream from dam on Lost Creek, 1.4 miles northwest of Strawberry Valley.

DRAINAGE AREA.--24.0 sq mi.

PERIOD OF RECORD.--November 1961 to current year (fragmentary prior to Mar. 14, 1962).

GAGE.--Nonrecording gage read once daily. Datum of gage is at mean sea level (levels by Oroville-Wyandotte Irrigation District). Prior to Sept. 30, 1966, water-stage recorder in valve chamber inside dam at same datum.

EXTREMES.--Current year: Maximum contents, 65,000 acre-ft June 19 (elevation, 3,529.9 ft); minimum, 12,600 acre-ft Jan. 15 (elevation, 3,404.4 ft).  
Period of record: Maximum contents, 65,500 acre-ft June 2-5, 11, 12, 1962, Apr. 7, 1963 (elevation, 3,531.5 ft); minimum, 8,430 acre-ft Jan. 28, 29, 1966 (elevation, 3,385.5 ft).

REMARKS.--Reservoir is formed by earthfill dam. Storage began in November 1961. Total capacity, 65,600 acre-ft (revised) between elevations 3,285 ft (invert of outlet) and 3,531 ft (top of spillway gate) all of which is available for release. Water is diverted into reservoir from South Fork Feather River through South Fork diversion tunnel and from North Yuba River basin through Slate Creek tunnel. Records, including extremes, show contents at time nonrecording gage was read. See schematic diagram of South Fork Feather River basin.

COOPERATION.--Reservoir nonrecording gage readings furnished by Oroville-Wyandotte Irrigation District.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

3,380	7,360
3,400	11,500
3,420	16,600
3,450	26,300
3,480	38,500
3,510	53,400
3,532	66,200

## CONTENTS, IN ACRE-FEET, AT 1600, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36,400	26,600	21,500	17,600	16,300	18,200	37,800	62,900	62,800	64,000	53,900	40,600
2	36,200	26,000	22,700	16,300	16,600	18,000	39,300	63,400	62,900	63,700	53,500	40,200
3	35,900	25,600	22,800	15,900	16,900	17,800	39,900	63,900	62,800	63,500	53,100	39,800
4	35,900	25,200	22,800	15,100	17,100	16,900	41,200	63,000	62,900	63,100	52,800	39,400
5	35,900	25,600	24,500	14,500	17,300	16,900	42,400	62,900	63,000	62,500	52,500	38,900
6	34,900	26,000	23,400	13,800	17,400	16,700	43,600	62,700	63,000	62,100	51,800	38,500
7	34,800	25,700	23,700	13,500	17,600	16,600	45,300	62,300	63,100	61,600	51,300	38,100
8	34,800	25,600	24,100	13,300	17,800	16,500	46,700	61,100	62,900	61,300	51,100	37,800
9	34,700	25,600	24,900	13,100	17,800	16,400	47,800	61,000	62,800	60,900	50,600	37,400
10	34,300	25,500	25,100	13,000	17,900	16,300	49,200	60,700	62,900	60,500	50,300	36,400
11	34,100	25,100	25,600	12,600	18,100	16,300	50,600	60,400	63,100	60,600	49,900	36,100
12	34,000	25,100	25,600	12,800	18,300	17,100	52,300	60,100	63,300	60,300	49,500	35,900
13	33,800	25,200	25,400	13,000	18,700	19,300	53,900	61,200	63,600	60,100	49,100	35,700
14	33,600	24,300	25,100	13,000	19,300	20,200	54,900	61,600	63,800	59,900	48,500	35,400
15	33,500	23,600	25,500	12,600	19,600	20,800	55,900	62,200	64,000	59,500	48,000	35,000
16	33,300	22,900	25,000	13,000	19,900	21,400	57,000	63,000	64,300	60,100	47,600	35,500
17	33,200	22,100	24,900	13,400	21,300	22,100	58,900	63,400	64,600	60,000	47,200	35,100
18	32,800	21,400	24,400	13,800	21,900	22,200	60,300	64,000	64,800	59,100	46,700	34,300
19	32,600	20,600	24,000	15,300	23,000	22,300	61,700	64,000	65,000	59,100	46,300	32,900
20	32,500	19,900	23,600	16,100	23,600	22,300	62,700	63,100	64,800	59,700	45,900	31,700
21	32,300	19,000	23,200	16,600	23,700	22,700	62,700	62,700	64,800	59,000	45,500	31,400
22	32,100	18,300	22,900	16,800	21,100	22,500	63,000	62,200	64,800	58,300	45,100	31,200
23	30,400	17,600	22,000	17,100	20,700	23,400	62,400	61,700	64,600	57,500	44,800	30,100
24	30,200	17,400	21,400	17,000	20,300	25,400	62,500	61,200	64,500	56,800	44,300	29,500
25	29,800	17,700	20,700	16,700	19,800	26,900	62,200	61,500	64,000	56,600	43,700	29,000
26	29,200	18,700	20,100	16,500	19,500	31,100	62,000	62,100	63,900	56,200	43,300	28,800
27	28,500	19,100	19,500	16,300	19,200	33,200	62,000	62,700	64,300	56,100	42,800	28,900
28	28,000	19,700	18,700	16,100	18,600	34,900	62,100	63,100	64,600	55,800	42,300	29,000
29	27,700	20,100	18,500	15,900	-----	35,400	62,100	63,000	64,900	55,100	41,900	28,700
30	27,500	21,100	18,200	16,000	-----	35,800	62,200	62,800	64,500	54,700	41,500	28,900
31	27,200	-----	17,900	16,100	-----	36,800	-----	62,900	-----	54,200	41,000	-----
MAX	36,400	26,600	25,600	17,600	23,700	36,800	63,000	64,000	65,000	64,000	53,900	40,600
MIN	27,200	17,400	17,900	12,600	16,300	16,300	37,800	60,100	62,800	54,200	41,000	28,700
(a)	3,452.3	3,434.7	3,424.6	3,418.0	3,426.8	3,476.0	3,525.2	3,526.4	3,529.0	3,511.4	3,485.4	3,456.8
(b)	-9,400	-6,100	-3,200	-1,800	+2,500	+18,200	+25,400	+700	+1,600	-10,300	-13,200	-12,100

CAL YR 1970 b -19,100  
WTR YR 1971 b -7,700

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

## 11395500 OROVILLE-WYANDOTTE CANAL NEAR CLIPPER MILLS, CALIF.

LOCATION.--Lat 39°33'15", long 121°11'31", in NE $\frac{1}{4}$  sec.33, T.20 N., R.7 E., Butte County, in concrete valve house at head of canal, 2.5 miles north of Clipper Mills.

PERIOD OF RECORD.--October 1927 to September 1941 (published as Forbestown Ditch), October 1954 to current year. Monthly discharge only for October 1953 to September 1961, published with records for Lost Creek near Clipper Mills.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 3,166.0 ft above mean sea level (levels by Oroville-Wyandotte Irrigation District). Prior to Sept. 30, 1941, nonrecording gages and Oct. 1, 1941, to Nov. 16, 1962, water-stage recorder at sites at different datums 4 miles upstream in abandoned portion of canal 0.3 mile downstream from Lost Creek Dam.

AVERAGE DISCHARGE.--32 years, 17.5 cfs (12,680 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 43 cfs Aug. 9 to Sept. 9, 1937; no flow at times in many years.

REMARKS.--Records good. Water is discharged to canal through valve in Woodleaf penstock. Prior to Nov. 16, 1962, canal diverted from Lost Creek Dam. Water is used for irrigation and domestic supply. Demand for water reduced when a large lumber mill closed at Woodleaf in 1962. See schematic diagram of South Fork Feather River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	10	3.0	.70	.55	.70	.55	.48	5.9	7.6	15	18
2	13	10	3.4	.70	.55	.78	.55	.48	5.0	6.6	14	18
3	14	10	3.2	.70	.55	.78	.55	.48	3.4	4.9	14	18
4	14	11	3.4	.70	.55	.78	.55	.48	3.1	3.5	16	18
5	11	11	3.4	.70	.55	.70	.55	.48	5.7	11	15	18
6	11	6.4	3.2	.70	.55	.70	.55	.48	8.6	14	16	18
7	11	2.2	3.2	.70	.55	.70	.55	.48	8.0	12	15	18
8	11	2.2	3.1	.70	.55	.70	.55	.48	7.2	9.2	15	19
9	11	2.8	2.8	.70	.55	.78	.55	.48	6.8	9.5	16	19
10	11	3.4	2.7	.70	.55	.70	.55	.48	6.6	12	17	19
11	13	3.0	2.5	.70	.48	.70	.55	.48	6.0	12	17	19
12	13	2.6	1.6	.70	.48	.70	.55	.48	5.6	11	16	19
13	12	2.5	.70	.70	.48	.70	.55	.48	5.0	11	15	19
14	12	2.2	.70	.62	.48	.70	.55	.48	4.4	11	16	19
15	12	2.1	.78	.62	.55	.70	.55	.48	9.0	12	16	19
16	12	2.0	.78	.62	.62	.70	.55	.48	10	11	17	19
17	12	2.0	.78	.62	.62	.70	.55	.48	8.8	9.5	18	19
18	12	1.8	.78	.62	.62	.70	.55	.48	7.8	9.9	19	19
19	11	1.8	.78	.62	.62	.70	.55	.48	6.5	10	19	19
20	10	1.8	.78	.62	.62	.70	.55	.62	5.2	12	18	19
21	10	1.8	.78	.62	.62	.70	.55	.70	7.8	13	18	19
22	10	2.5	.78	.62	.62	.70	.48	.70	8.8	12	18	19
23	11	2.8	.70	.62	.62	.70	.48	.70	8.4	12	18	19
24	12	2.8	.70	.62	.62	.70	.48	.70	7.4	14	18	19
25	11	3.1	.70	.62	.70	.70	.48	.70	4.3	16	18	18
26	11	3.1	.70	.62	.70	.78	.48	5.0	3.5	18	18	18
27	12	2.4	.70	.55	.70	.78	.48	5.9	6.9	17	18	19
28	11	2.2	.70	.55	.70	.70	.48	4.6	8.8	15	18	18
29	11	2.4	.78	.55	-----	.94	.48	3.7	8.8	15	18	18
30	11	3.1	.70	.55	-----	.62	.48	2.8	8.4	15	18	18
31	11	-----	.70	.55	-----	.55	-----	5.6	-----	15	18	-----
TOTAL	361	117.0	49.52	19.91	16.35	22.19	15.87	40.84	201.7	361.7	522	558
MEAN	11.6	3.90	1.60	.64	.58	.72	.53	1.32	6.72	11.7	16.8	18.6
MAX	14	11	3.4	.70	.70	.94	.55	5.9	10	18	19	19
MIN	10	1.8	.70	.55	.48	.55	.48	.48	3.1	3.5	14	18
AC-FT	716	232	98	39	32	44	31	81	400	717	1,040	1,110
CAL YR 1970	TOTAL	2,621.41	MEAN	7.18	MAX	20	MIN	.31	AC-FT	5,200		
WTR YR 1971	TOTAL	2,286.08	MEAN	6.26	MAX	19	MIN	.48	AC-FT	4,530		

## SACRAMENTO RIVER BASIN

## 11396000 LOST CREEK NEAR CLIPPER MILLS, CALIF.

LOCATION.--Lat 39°34'25", long 121°08'26", in SW $\frac{1}{4}$  sec.24, T.20 N., R.7 E., Butte County, Plumas National Forest, on left bank 0.3 mile downstream from Lost Creek Reservoir and 2.8 miles north of Clipper Mills.

DRAINAGE AREA.--30.0 sq mi.

PERIOD OF RECORD.--October 1927 to September 1941, October 1948 to current year. Records for Woodleaf powerplant from February 1963 to September 1966 in files of Geological Survey.

GAGE.--Water-stage recorder. Altitude of gage is 3,170 ft (from topographic map).

AVERAGE DISCHARGE.--27 years (1927-41, 1948-61, prior to regulation by Sly Creek Reservoir), 73.0 cfs (52,850 acre-ft per year); 10 years (1961-71), 30.0 cfs (21,740 acre-ft per year), unadjusted.

EXTREMES.--Current year: Maximum discharge, 686 cfs Sept. 15 (gage height, 3.51 ft); minimum daily, 0.06 cfs July 20-22.

Period of record: Maximum discharge, 5,000 cfs Dec. 22, 1955 (gage height, 6.90 ft); no flow at times in some years.

REMARKS.--Records fair. Flow regulated by Sly Creek Reservoir 1.5 miles upstream (see sta 11395400) and Lost Creek Reservoir 0.3 mile upstream (usable capacity, 5,920 acre-ft with flashboards). Water is diverted into Sly Creek Reservoir through South Fork diversion tunnel from South Fork Feather River and through Slate Creek tunnel from North Yuba River basin. Woodleaf tunnel diverts from Lost Creek Reservoir to Woodleaf powerhouse. Oroville-Wyandotte Canal (see sta 11395500) diverts from Woodleaf penstock for irrigation and domestic use. Records represent seepage, release, or spill from Lost Creek Dam to Lost Creek. See schematic diagram of South Fork Feather River basin.

REVISIONS.--WRD Calif. 1968: 1967.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.37	.07	2.3	.58	.66	.26	.52	.11	2.1	1.5	2.8	1.0
2	.34	.07	3.6	.52	.66	.24	.46	.11	2.0	1.7	2.5	1.0
3	.37	.07	1.9	.49	.66	.24	.40	3.2	1.9	1.8	2.2	1.0
4	.37	.29	5.4	.43	.62	.24	.37	28	1.8	1.7	2.0	.98
5	.37	.65	2.2	.43	.58	.24	.34	.61	1.8	1.6	1.9	.98
6	1.7	.51	1.5	.40	.55	.24	.34	.23	1.7	1.6	1.7	.98
7	1.7	.40	1.4	.37	.52	.24	.31	4.2	1.7	1.6	1.5	.98
8	1.0	.20	1.9	.37	.49	.24	.28	6.8	1.7	1.6	1.5	.94
9	1.0	.48	1.8	.34	.49	.24	.31	6.8	1.6	1.6	1.5	.94
10	1.4	.37	1.3	.46	.46	.24	.37	6.2	1.6	1.5	1.5	.94
11	.98	.31	1.0	1.2	.49	.26	.28	5.3	1.5	1.5	1.3	.94
12	.94	.34	.86	1.0	.49	3.2	.26	5.1	1.5	1.5	1.3	.94
13	.90	.22	.74	.90	.49	1.1	.24	4.5	1.4	1.3	1.1	.98
14	.90	.18	.62	.90	.49	.82	.24	4.3	1.4	.90	1.0	.98
15	.90	.14	.68	.90	.52	.66	.22	4.3	1.4	1.6	1.0	83
16	.86	.12	.90	1.0	.49	.58	.24	4.1	1.3	.93	1.0	1.3
17	.82	.12	.74	1.5	.43	.55	.24	3.7	1.3	.08	1.0	2.4
18	.82	.11	.62	1.5	.46	.49	.22	3.5	1.2	.07	1.0	2.8
19	.82	.11	.52	1.6	.49	.46	.18	3.5	1.2	.07	1.0	2.5
20	.90	.11	.52	1.7	.43	.46	.22	3.1	1.3	.06	1.0	2.4
21	.86	.11	.49	1.5	.37	.43	.18	2.8	1.4	.06	1.0	2.3
22	.86	.12	.43	1.4	.37	.40	.18	2.5	1.3	.06	1.0	2.2
23	.94	.12	.40	1.2	.34	.82	.16	2.4	1.3	2.2	1.0	2.2
24	.78	.34	.37	1.1	.31	.86	.16	2.4	1.2	4.5	1.0	2.2
25	.74	.90	.34	.90	.31	1.8	.14	2.4	1.1	4.3	1.0	2.1
26	.74	.66	.34	.82	.28	5.3	.14	2.3	1.1	3.8	1.0	2.1
27	.70	.70	.37	.78	.28	2.3	.14	2.2	.98	3.4	1.0	2.2
28	.54	2.0	.46	.74	.28	1.5	.12	2.2	.86	3.4	1.0	2.3
29	.09	2.0	1.2	.70	-----	.94	.12	2.1	.74	3.1	1.0	2.4
30	.07	3.0	.78	.70	-----	.74	.11	2.1	1.3	3.0	1.0	2.2
31	.07	-----	.66	.70	-----	.58	-----	2.1	-----	2.9	1.0	-----
TOTAL	23.85	14.82	36.34	27.13	13.01	26.67	7.49	123.16	42.68	54.93	40.8	130.18
MEAN	.77	.49	1.17	.88	.46	.86	.25	3.97	1.42	1.77	1.32	4.34
MAX	1.7	3.0	5.4	1.7	.66	5.3	.52	28	2.1	4.5	2.8	83
MIN	.07	.07	.34	.34	.28	.24	.11	.11	.74	.06	1.0	.94
AC-FT	47	29	72	54	26	53	15	244	85	109	81	258
(a)	41,591	27,910	29,953	32,901	32,687	32,383	32,794	33,852	32,406	28,338	27,575	23,723
CAL YR 1970	TOTAL	15,606.51	MEAN	42.8	MAX	2,240	MIN	.07	AC-FT	30,960		
WTR YR 1971	TOTAL	541.06	MEAN	1.48	MAX	83	MIN	.06	AC-FT	1,070		

a Diversion, in acre-feet, to Woodleaf powerplant; furnished by Oroville-Wyandotte Irrigation District.



## 11396200 SOUTH FORK FEATHER RIVER BELOW FORBESTOWN DAM, CALIF.

LOCATION.--Lat 39°33'05", long 121°12'30", in NE $\frac{1}{4}$  sec.32, T.20 N., R.7 E., Butte County, Plumas National Forest, on right bank 500 ft downstream from Forbestown Dam, 0.4 mile upstream from Oroleve Creek, and 4.0 miles northeast of Forbestown.

DRAINAGE AREA.--87.5 sq mi.

PERIOD OF RECORD.--July 1962 to current year. Records for Forbestown powerplant from February 1963 to September 1966 in files of Geological Survey.

GAGE.--Water-stage recorder. Altitude of gage is 1,690 ft (from topographic map).

AVERAGE DISCHARGE.--9 years, 75.7 cfs (54,840 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,220 cfs Mar. 26 (gage height, 8.27 ft); minimum daily, 2.8 cfs Dec. 17, 18, Feb. 26.

Period of record: Maximum discharge, 7,510 cfs Jan. 31, 1963 (gage height, 13.85 ft in gage well, 15.3 ft, from floodmarks); minimum daily, 0.6 cfs Apr. 4, 1963.

REMARKS.--Records fair. Flow regulated by Little Grass Valley Reservoir (see sta 11395020), Sly Creek Reservoir (see sta 11395400), and smaller reservoirs. Water from North Yuba River basin is imported through Slate Creek tunnel (see sta 11413250) to Sly Creek Reservoir. Oroville-Wyandotte Canal (see sta 11395500) diverts above station. Tunnel 600 ft above station diverts most flow through Forbestown powerplant except fishwater releases and uncontrolled spill over Forbestown Dam. See schematic diagram of South Fork Feather River basin.

REVISIONS.--WRD Calif. 1968: 1967 diversions.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	9.8	12	3.1	24	2.9	65	9.6	9.1	8.0	10	11
2	9.6	7.9	86	3.1	25	2.9	65	9.6	9.1	8.3	10	11
3	9.6	3.0	45	3.1	23	2.9	57	9.4	71	8.3	10	11
4	9.6	3.2	224	3.1	19	2.9	51	37	8.5	8.3	10	11
5	9.6	3.2	17	3.1	17	2.9	45	14	10	8.3	10	11
6	9.3	3.3	3.2	3.1	14	2.9	40	9.4	7.8	8.7	10	11
7	9.3	3.2	3.2	3.1	12	2.9	42	9.4	7.8	9.1	11	11
8	9.3	3.2	31	3.2	9.9	2.9	34	14	7.8	9.4	11	11
9	9.3	3.3	67	3.2	8.0	2.9	34	13	7.8	9.4	11	11
10	9.3	3.2	39	3.2	14	2.9	64	12	7.8	9.4	11	11
11	9.3	3.2	10	15	15	2.9	39	18	7.8	9.4	11	11
12	9.3	3.2	3.3	9.8	22	172	34	18	7.8	9.4	11	11
13	9.6	3.2	3.2	64	23	110	29	12	7.8	9.4	11	11
14	9.6	3.2	3.2	52	25	45	21	9.4	7.8	9.6	11	11
15	9.6	3.2	3.3	6.2	27	30	21	9.1	7.8	9.4	11	11
16	9.6	3.2	19	16	26	23	26	9.1	7.8	9.4	11	10
17	9.6	3.2	2.8	49	23	22	38	9.1	7.8	9.4	11	10
18	9.6	3.2	2.8	85	21	11	21	9.1	7.8	9.4	11	10
19	9.8	3.3	3.0	86	26	6.5	14	9.1	7.8	9.4	11	10
20	9.8	3.3	3.1	65	16	4.4	17	9.1	7.8	9.6	11	10
21	9.8	3.3	3.1	47	12	3.6	9.9	9.1	7.8	9.6	11	10
22	9.8	3.3	3.1	36	10	2.9	5.6	9.1	7.8	9.6	11	10
23	9.8	3.3	3.1	25	21	76	3.9	9.1	7.8	9.6	11	10
24	9.6	3.4	3.1	15	4.9	89	3.8	9.1	8.0	9.6	11	10
25	9.8	3.4	3.1	18	3.6	192	3.8	9.1	8.0	9.6	11	11
26	9.8	3.4	3.1	27	2.8	801	3.8	9.1	8.0	9.8	11	10
27	9.6	3.4	3.1	25	2.9	275	3.8	9.1	8.0	9.8	11	10
28	9.8	6.1	3.1	23	2.9	196	5.7	13	8.0	9.8	11	10
29	9.6	7.2	37	22	-----	145	3.8	9.1	8.0	9.8	11	10
30	9.6	5.7	14	23	-----	116	7.3	32	8.0	9.8	11	10
31	9.8	-----	3.1	23	-----	109	-----	8.9	-----	10	11	-----
TOTAL	297.3	118.0	660.0	763.3	450.0	2,461.3	808.4	376.1	304.1	288.6	335	316
MEAN	9.59	3.93	21.3	24.6	16.1	79.4	26.9	12.1	10.1	9.31	10.8	10.5
MAX	9.8	9.8	224	86	27	801	65	37	71	10	11	11
MIN	9.3	3.0	2.8	3.1	2.8	2.9	3.8	8.9	7.8	8.0	10	10
AC-FT	590	234	1,310	1,510	893	4,880	1,600	746	603	572	664	627
(a)	17,157	30,244	36,690	37,434	35,254	37,253	37,580	37,386	34,470	29,166	27,305	23,323
CAL YR 1970	TOTAL 49,359.7	MEAN 135	MAX 5,750	MIN 2.8	AC-FT 97,900							
WTR YR 1971	TOTAL 7,178.1	MEAN 19.7	MAX 801	MIN 2.8	AC-FT 14,240							

a Diversion to Forbestown powerplant, in acre-feet, furnished by Oroville-Wyandotte Irrigation District.

## SACRAMENTO RIVER BASIN

11396310 MINERS RANCH CANAL BELOW PONDEROSA DAM, NEAR FORBESTOWN, CALIF.

LOCATION.--Lat 39°33'00", long 121°18'20", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.33, T.20 N., R.6 E., Butte County, on right bank 800 ft downstream from Ponderosa Dam and 3 miles northwest of Forbestown.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 975 ft (from topographic map).

AVERAGE DISCHARGE.--9 years, 221 cfs (160,100 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 278 cfs June 25, 1971; no flow at times in most years.

REMARKS.--Records good. Canal diverts from South Fork Feather River at Ponderosa Dam. Water is used for power development and irrigation. See schematic diagram of South Fork Feather River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	254	234	220	220	248	251	229	219	258	275	259	263
2	254	226	219	220	248	251	229	219	257	276	261	263
3	253	232	218	220	250	252	229	220	254	275	261	263
4	252	238	218	220	250	252	229	220	248	275	261	263
5	254	241	218	220	248	252	229	219	245	274	261	263
6	256	242	219	220	248	252	229	226	245	272	262	262
7	256	245	219	220	248	252	228	232	244	271	262	264
8	256	246	219	220	248	252	227	230	245	274	262	271
9	254	246	219	220	248	252	226	230	245	271	262	271
10	253	232	219	220	247	252	226	230	247	272	262	271
11	223	229	219	220	248	251	225	230	254	272	262	271
12	53	228	220	220	247	219	224	232	258	274	262	271
13	0	230	220	220	247	187	223	232	262	276	262	271
14	0	232	220	220	246	183	222	232	262	274	263	271
15	0	233	220	220	246	193	221	232	254	267	263	268
16	0	233	220	220	246	163	220	232	251	272	264	272
17	72	233	220	220	247	218	219	58	254	274	266	272
18	116	51	220	220	247	216	216	.90	259	270	264	272
19	24	0	220	220	246	215	215	7.9	266	267	264	272
20	55	75	220	220	241	232	215	0	271	194	266	268
21	142	220	220	220	241	250	215	92	274	209	267	271
22	141	220	220	220	245	250	215	252	275	259	267	272
23	175	220	220	220	250	250	215	261	275	259	266	274
24	198	220	220	220	250	250	215	257	272	259	266	274
25	198	220	220	220	250	218	215	256	278	259	266	272
26	222	220	220	230	251	192	216	254	276	261	267	270
27	239	220	220	245	251	188	218	257	275	261	267	96
28	238	220	220	247	252	188	215	262	274	261	267	0
29	238	220	220	248	-----	187	216	261	274	259	267	0
30	236	220	220	248	-----	209	218	259	275	258	267	0
31	235	-----	220	248	-----	229	-----	259	-----	259	268	-----
TOTAL	5,347	6,326	6,807	6,966	6,934	7,006	6,639	6,371.80	7,827	8,179	8,184	7,091
MEAN	172	211	220	225	248	226	221	206	261	264	264	236
MAX	256	246	220	248	252	252	229	262	278	276	268	274
MIN	0	0	218	220	241	163	215	0	244	194	259	0
AC-FT	10,610	12,550	13,500	13,820	13,750	13,900	13,170	12,640	15,520	16,220	16,230	14,070
(a)	8,540	11,940	13,330	13,450	13,220	13,430	12,350	10,430	12,780	13,650	13,640	12,180

CAL YR 1970 TOTAL 82,671.10 MEAN 226 MAX 267 MIN 0 AC-FT 164,000  
WTR YR 1971 TOTAL 83,677.80 MEAN 229 MAX 278 MIN 0 AC-FT 166,000

a Diversion, in acre-feet, to Kelly Ridge powerplant; furnished by Oroville-Wyandotte Irrigation District.

## 11396330 BANGOR CANAL BELOW MINERS RANCH RESERVOIR, NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°30'17", long 121°27'17", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.18, T.19 N., R.5 E., Butte County, on left bank 400 ft downstream from outlet at Miners Ranch Dam and 5 miles east of Oroville.

PERIOD OF RECORD.--January 1963 to current year.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 815 ft (from topographic map).

AVERAGE DISCHARGE.--8 years, 15.4 cfs (11,160 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 65 cfs Aug. 17-20, 1963; no flow for several days in 1965 and 1969.

REMARKS.--Records excellent. Flow regulated by Miners Ranch Reservoir (capacity, 912 acre-ft). Canal completed in November 1962. Water is used for irrigation. See schematic diagram of South Fork Feather River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	4.9	4.0	4.4	4.2	4.0	4.4	23	29	25	27	24
2	27	6.6	3.7	4.4	4.2	4.0	4.4	23	29	25	27	24
3	27	7.5	3.5	4.4	4.2	4.0	4.4	23	29	25	27	26
4	27	7.8	3.7	4.2	4.2	4.0	4.4	23	28	25	27	27
5	27	7.8	3.7	4.2	4.2	4.0	4.6	23	28	25	26	27
6	27	7.8	4.0	4.2	4.2	4.0	8.4	23	28	25	26	27
7	27	7.8	4.2	4.2	4.2	4.0	11	23	28	25	26	27
8	27	7.8	4.2	4.2	4.2	4.0	10	23	28	25	26	27
9	27	7.8	4.2	4.2	4.2	4.0	10	23	27	25	26	27
10	27	7.5	4.2	4.2	4.2	4.0	10	23	27	25	26	27
11	27	7.5	4.4	4.4	4.2	4.0	10	23	26	25	26	28
12	28	7.5	4.4	4.4	4.2	4.0	10	23	26	26	26	28
13	25	7.5	4.6	4.4	4.2	4.0	10	23	26	26	26	28
14	22	7.5	4.6	4.4	4.2	4.0	10	24	26	26	26	28
15	20	7.5	4.9	4.4	4.2	3.7	18	24	26	26	27	28
16	17	7.5	4.9	4.4	4.2	3.7	23	24	25	26	29	28
17	15	7.5	4.9	4.4	4.2	3.7	23	24	25	26	29	28
18	17	7.5	4.9	4.4	4.2	3.7	23	25	25	26	29	28
19	18	7.5	4.9	4.4	4.2	4.4	23	24	25	26	29	28
20	11	7.5	4.6	4.4	4.2	5.2	23	23	25	26	28	28
21	4.9	7.5	4.6	4.4	4.2	4.9	23	23	25	26	28	28
22	4.9	7.5	4.4	4.4	4.2	4.6	23	24	25	26	28	28
23	4.9	7.5	4.4	4.4	4.0	4.6	23	25	25	26	28	28
24	4.9	7.2	4.2	4.4	4.0	4.6	23	25	25	27	25	28
25	4.9	7.2	4.0	4.4	4.2	4.6	23	27	25	27	24	28
26	4.9	7.2	4.0	4.4	4.0	4.0	23	29	25	27	24	28
27	4.9	7.2	4.0	4.4	4.0	3.5	23	29	25	27	24	28
28	4.9	7.2	4.0	4.4	4.0	3.7	23	29	25	27	25	28
29	4.9	7.2	4.4	4.4	-----	4.2	23	29	25	27	25	28
30	4.9	5.4	4.4	4.4	-----	4.2	23	29	25	27	24	29
31	4.9	-----	4.4	4.4	-----	4.4	-----	29	-----	27	24	-----
TOTAL	523.9	219.4	133.3	135.0	116.6	127.7	474.6	765	786	803	818	824
MEAN	16.9	7.31	4.30	4.35	4.16	4.12	15.8	24.7	26.2	25.9	26.4	27.5
MAX	28	7.8	4.9	4.4	4.2	5.2	23	29	29	27	29	29
MIN	4.9	4.9	3.5	4.2	4.0	3.5	4.4	23	25	25	24	24
AC-FT	1,040	435	264	268	231	253	941	1,520	1,560	1,590	1,620	1,630

CAL YR 1970 TOTAL 6,300.4 MEAN 17.3 MAX 30 MIN 2.0 AC-FT 12,500  
WTR YR 1971 TOTAL 5,726.5 MEAN 15.7 MAX 29 MIN 3.5 AC-FT 11,360

## 11396350 SOUTH FORK FEATHER RIVER AT PONDEROSA DAM, CALIF.

LOCATION.--Lat 39°32'52", long 121°18'11", in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.33, T.20 N., R.6 E., Butte County, at entrance to Miners Ranch Canal on the left end of Ponderosa Dam, 2,800 ft upstream from Sucker Run, and 2.6 miles northwest of Forbestown.

DRAINAGE AREA.--108 sq mi.

PERIOD OF RECORD.--July 1962 to current year.

GAGE.--Water-stage recorder, high level sluice gate, and concrete spillway of Ponderosa Dam. Datum of gage is at mean sea level (levels by Oroville-Wyandotte Irrigation District). Prior to Oct. 1, 1967, at site 1,800 ft downstream at different datum.

AVERAGE DISCHARGE (adjusted for diversion to Miners Ranch Canal).--9 years, 490 cfs (355,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,010 cfs Mar. 26 (elevation, 957.64 ft); minimum daily, 42 cfs Oct. 1.

Period of record: Maximum discharge, 11,000 cfs Dec. 22, 1964 (gage height, 11.52 ft in gage well, 12.7 ft, outside from floodmarks, site and datum then in use); no flow for several months in 1968-70.

REMARKS.--Records good. Records are combined flow through sluice gate and flow over spillway. Flow regulated by several reservoirs and diversions. Water is imported from North Yuba River basin through Slate Creek tunnel. Miners Ranch Canal (see sta 11396310) diverts at Ponderosa Dam for power development and irrigation; diversion began in October 1962. See schematic diagram of South Fork Feather River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	42	89	632	460	438	394	568	427	330	310	175	173		
2	100	84	882	432	438	213	562	422	335	310	177	178		
3	102	86	669	416	438	171	538	427	394	305	177	179		
4	95	89	1,340	410	438	350	520	454	366	305	176	173		
5	101	90	672	405	432	366	514	449	350	305	178	167		
6	105	94	532	378	427	361	496	416	340	300	178	164		
7	103	251	508	378	422	356	496	405	335	129	179	159		
8	103	231	520	378	422	350	478	405	330	74	176	166		
9	99	236	612	366	422	350	472	405	330	171	173	169		
10	99	308	526	378	422	350	544	405	335	175	171	177		
11	86	262	502	550	432	361	502	400	320	173	165	175		
12	82	276	466	568	432	837	466	405	325	167	163	174		
13	91	267	432	450	432	773	460	410	315	167	167	170		
14	97	258	405	475	432	632	460	405	315	174	176	170		
15	98	249	271	550	438	568	449	356	320	170	173	172		
16	100	227	295	532	438	520	454	361	320	172	164	171		
17	104	218	478	632	438	508	466	528	325	173	173	175		
18	103	376	490	652	432	484	454	626	310	164	172	173		
19	100	515	422	652	444	472	444	606	295	156	171	169		
20	110	395	416	606	432	449	444	612	295	168	176	161		
21	108	211	460	568	432	422	438	528	295	174	173	167		
22	107	200	432	538	427	416	427	335	280	171	173	173		
23	109	214	422	514	422	387	422	340	270	170	171	174		
24	104	246	405	502	416	580	422	320	300	170	170	174		
25	103	416	405	484	405	774	416	320	310	174	172	174		
26	106	432	383	472	405	2,200	416	330	325	167	177	176		
27	105	400	400	460	405	1,150	410	330	320	165	175	175		
28	107	600	416	449	400	902	416	345	310	173	174	175		
29	108	544	448	444	-----	780	416	356	310	173	171	173		
30	98	561	538	444	-----	690	422	309	310	172	172	173		
31	89	-----	508	444	-----	645	-----	345	-----	176	176	-----		
TOTAL	3,064	8,425	15,887	14,987	11,961	17,811	13,992	12,782	9,615	5,953	5,364	5,149		
MEAN	98.8	281	512	483	427	575	466	412	321	192	173	172		
MAX	110	600	1,340	652	444	2,200	568	626	394	310	179	179		
MIN	42	84	271	366	400	171	410	309	270	74	163	159		
AC-FT	6,080	16,710	31,510	29,730	23,720	35,330	27,750	25,350	19,070	11,810	10,640	10,210		
MEAN a	271	492	732	708	675	801	688	618	581	456	437	408		
AC-FT a	16,690	29,260	45,010	43,550	37,470	49,230	40,920	37,990	34,590	28,030	26,870	24,270		
CAL YR 1970	TOTAL 138,838.00		MEAN 380		MAX 8,380		MIN 0		AC-FT 275,400		MEAN a 607		AC-FT a 439,300	
WTR YR 1971	TOTAL 124,990.00		MEAN 342		MAX 2,200		MIN 42		AC-FT 247,900		MEAN a 572		AC-FT a 413,900	

a Adjusted for diversion to Minor Ranch Canal.

## 11396400 SUCKER RUN NEAR FORBESTOWN, CALIF.

LOCATION.--Lat 39°33'12", long 121°18'04", in NW¼NE¼ sec.33, T.20 N., R.6 E., Butte County, on left bank at upstream side of road bridge, 0.7 mile upstream from confluence with South Fork Feather River, and 2.8 miles northwest of Forbestown.

DRAINAGE AREA.--18.7 sq mi.

PERIOD OF RECORD.--June 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 960 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 26.3 cfs (19,050 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 925 cfs Mar. 26 (gage height, 5.27 ft); minimum daily, 3.2 cfs Oct. 5.

Period of record: Maximum discharge, 1,320 cfs Jan. 21, 1967 (gage height, 6.03 ft), from rating curve extended as explained below; minimum daily, 0.40 cfs Oct. 7, 1966.

Flood of Dec. 22, 1964, reached a stage of 7.4 ft, from floodmarks, discharge, 2,190 cfs from rating curve extended above 600 cfs on basis of computation of maximum flow over rock control.

REMARKS.--Records good for flows above 15 cfs, poor below. See schematic diagram of South Fork Feather River basin.

REVISIONS (WATER YEARS).--WRD Calif. 1969: 1966-68(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	5.9	102	44	35	23	55	29	23	12	5.8	4.3
2	3.3	6.4	205	41	34	23	50	30	22	12	5.9	4.3
3	3.4	6.9	146	35	32	23	47	30	21	12	4.8	4.1
4	3.4	12	362	32	31	23	44	34	20	11	4.8	3.9
5	3.2	30	98	30	30	22	42	31	20	9.3	4.8	3.9
6	3.5	31	59	28	29	22	40	30	19	9.3	4.8	3.9
7	3.4	22	52	27	29	22	41	29	18	9.3	4.8	3.9
8	3.3	14	72	26	28	21	39	30	18	9.1	4.9	3.9
9	3.4	21	66	25	28	21	40	29	18	9.1	4.9	3.9
10	3.7	24	44	31	27	21	66	28	18	9.1	4.8	3.9
11	3.8	16	37	86	27	23	43	26	17	9.1	4.7	3.8
12	3.8	19	32	61	28	185	40	25	16	8.9	4.4	3.9
13	3.8	13	29	48	27	81	38	25	16	8.7	4.3	3.9
14	4.0	12	26	58	27	51	36	24	15	8.4	4.3	3.9
15	4.1	11	32	62	27	44	35	24	14	8.3	4.5	3.9
16	4.2	11	56	85	26	41	35	23	14	8.4	4.4	3.8
17	4.2	10	44	101	26	40	44	23	14	8.1	4.3	4.0
18	4.4	9.6	37	88	25	35	36	22	14	8.2	4.3	4.1
19	4.7	11	33	78	31	33	34	22	13	8.1	4.3	4.2
20	5.5	11	33	68	27	32	38	21	12	7.7	4.0	4.3
21	5.1	11	41	59	25	31	38	21	12	7.6	3.9	4.3
22	5.6	12	36	52	25	30	36	21	11	7.5	4.1	4.3
23	7.4	12	33	48	25	75	34	20	11	6.9	4.2	4.3
24	6.6	18	30	45	24	61	34	19	12	6.6	4.1	4.3
25	5.2	48	28	42	24	145	33	19	12	6.6	4.0	4.3
26	5.2	38	28	39	23	496	32	21	21	6.4	3.9	4.6
27	5.3	35	30	39	23	147	32	21	17	6.2	3.9	4.5
28	5.3	120	37	38	23	100	32	25	15	6.2	4.0	4.5
29	5.3	97	136	37	-----	79	31	23	13	6.1	4.0	5.0
30	5.5	124	67	36	-----	67	30	33	12	6.1	3.9	6.4
31	5.6	-----	49	35	-----	60	-----	24	-----	6.0	4.2	-----
TOTAL	138.5	811.8	2,080	1,524	766	2,077	1,175	782	478	258.3	138.0	126.3
MEAN	4.47	27.1	67.1	49.2	27.4	67.0	39.2	25.2	15.9	8.33	4.45	4.21
MAX	7.4	124	362	101	35	496	66	34	23	12	5.9	6.4
MIN	3.2	5.9	26	25	23	21	30	19	11	6.0	3.9	3.8
AC-FT	275	1,610	4,130	3,020	1,520	4,120	2,330	1,550	948	512	274	251

CAL YR 1970 TOTAL 14,294.3 MEAN 39.2 MAX 503 MIN 3.2 AC-FT 28,350  
WTR YR 1971 TOTAL 10,354.9 MEAN 28.4 MAX 496 MIN 3.2 AC-FT 20,540

## PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 4	0330	4.53	612	3-26	0330	5.27	925
3-12	1500	4.19	486				

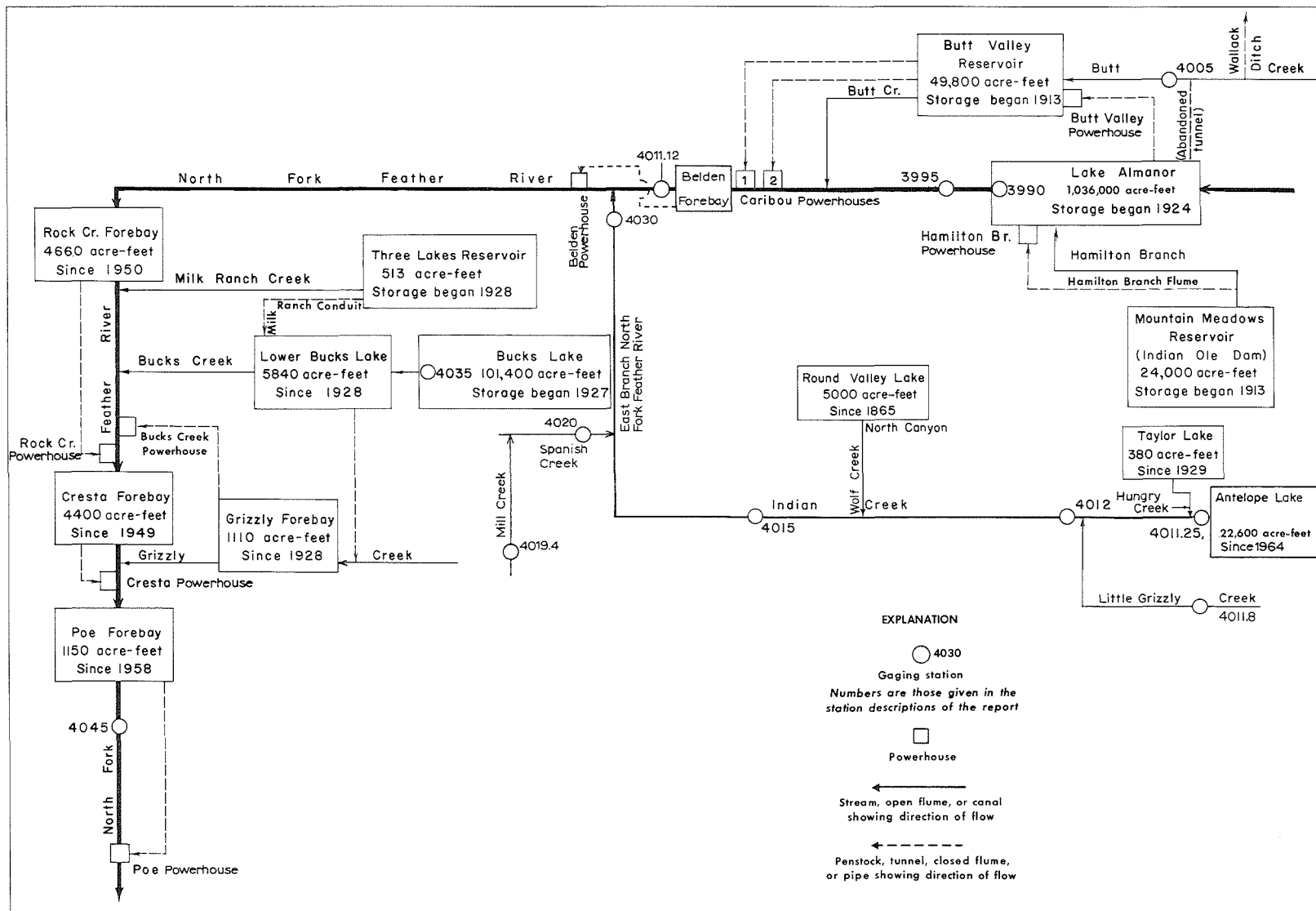


FIGURE 12.—Schematic diagram showing diversions and storage in North Fork Feather River basin.

## 11399000 LAKE ALMANOR AT PRATTVILLE, CALIF.

LOCATION.--Lat 40°12'50", long 121°09'40", in SW¼NE¼ sec.11, T.27 N., R.7 E., Plumas County, Plumas National Forest, at outlet tower to No. 2 tunnel on North Fork Feather River at Prattville, 4.7 miles northwest of Lake Almanor Dam, and 5.6 miles northwest of Canyon Dam.

DRAINAGE AREA.--491 sq mi.

PERIOD OF RECORD.--July 1913 to current year. Monthly contents only for some periods, published in WSP 1315-A. Published as "near Prattville" 1937-60. Prior to October 1964, records published as usable contents.

GAGE.--Nonrecording gage monitored once daily. Datum of gage is 10.23 ft below mean sea level (levels by Pacific Gas and Electric Co.). Prior to June 1, 1965, nonrecording gage at site 4.7 miles southeast at same datum.

EXTREMES (at 2400).--Current year: Maximum contents observed, 1,078,000 acre-ft June 28 (gage height, 4,491.58 ft); minimum observed, 700,000 acre-ft Mar. 11 (gage height, 4,476.22 ft).  
Period of record: Maximum contents, 1,078,000 acre-ft June 28, 1971 (gage height, 4,491.58 ft); minimum, 5,230 acre-ft Feb. 5, 1918 (gage height, 4,416.1 ft).

REMARKS.--Lake is formed by earthfill dam; storage began in July 1913; dam raised to gage height 4,455 ft in 1917 and 4,515 ft in 1927. Capacity, 1,036,000 acre-ft between gage heights 4,490 (upper storage limit) and 4,422 ft (bottom of lowest outlet) of which 8,950 acre-ft is not available for release. Water is diverted by tunnel and penstock to Butt Valley Reservoir and powerhouse for use in Caribou powerplants; some water also released down North Fork Feather River (see sta 11399500). Figures given herein represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Record of contents collected by Pacific Gas and Electric Co. under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS.--WSP 1931: Drainage area.

## CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,422	8,950	4,432	34,200	4,450	220,800	4,475	672,700
4,424	10,100	4,434	49,500	4,455	294,500	4,480	787,300
4,426	11,300	4,437	74,200	4,460	376,700	4,485	908,500
4,428	13,500	4,440	101,900	4,465	467,000	4,490	1,036,000
4,430	21,200	4,445	156,400	4,470	565,500	4,492	1,089,000

## CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	864.5	816.9	775.9	761.4	747.7	725.0	764.5	854.6	1,002	1,075	1,039	952.4
2	864.5	813.8	778.5	758.7	747.7	722.5	767.3	858.7	1,007	1,074	1,038	948.8
3	865.3	810.0	781.4	755.6	746.6	719.5	769.6	863.1	1,010	1,072	1,036	945.8
4	866.2	809.3	782.5	753.1	746.4	717.2	772.2	867.5	1,015	1,071	1,034	942.8
5	865.8	808.8	780.2	750.3	744.7	714.5	775.2	872.4	1,019	1,070	1,032	940.2
6	864.3	808.4	785.4	747.3	743.4	711.5	777.6	876.8	1,022	1,069	1,028	939.2
7	862.8	806.0	787.7	744.3	741.7	709.5	779.9	882.2	1,026	1,066	1,027	938.7
8	862.1	803.8	789.6	741.7	739.9	707.9	782.8	887.8	1,030	1,063	1,024	937.7
9	861.1	804.3	792.2	738.3	737.1	705.2	786.1	893.0	1,034	1,060	1,021	936.5
10	862.1	805.0	795.0	736.0	734.8	702.7	789.4	898.2	1,038	1,058	1,019	933.4
11	862.8	805.5	797.2	734.4	731.8	700.0	791.7	904.2	1,041	1,056	1,016	933.2
12	862.1	803.8	796.7	736.7	731.4	706.1	794.8	909.7	1,045	1,053	1,013	934.7
13	860.9	801.2	794.8	736.0	733.5	707.9	797.7	915.4	1,048	1,051	1,010	935.2
14	859.9	798.6	792.0	734.6	735.5	709.9	800.7	920.6	1,051	1,048	1,007	934.7
15	858.7	795.5	790.6	733.0	736.9	711.7	803.6	926.4	1,054	1,046	1,004	932.9
16	857.7	793.2	792.9	732.3	738.3	714.5	808.1	931.2	1,057	1,044	1,001	930.2
17	856.7	788.0	793.2	734.6	738.3	716.1	812.2	935.2	1,059	1,046	998.2	925.6
18	856.3	788.0	792.0	736.7	739.7	717.0	815.3	939.0	1,061	1,048	995.6	922.4
19	853.3	784.9	789.6	739.4	739.2	718.3	818.1	943.3	1,064	1,048	992.0	919.1
20	851.6	782.1	788.2	741.7	738.3	720.2	822.0	947.8	1,067	1,046	989.2	916.1
21	848.7	779.0	785.8	744.3	736.9	722.0	825.1	951.3	1,069	1,045	986.1	912.9
22	846.1	777.1	783.2	746.6	735.5	722.2	828.9	954.6	1,068	1,043	983.0	909.7
23	844.9	778.8	780.4	748.4	733.9	725.9	832.3	958.5	1,068	1,044	980.2	906.4
24	841.5	771.7	777.4	750.8	732.5	726.8	835.0	962.8	1,067	1,046	977.3	903.4
25	838.6	770.6	774.5	752.6	730.9	735.8	837.4	966.9	1,067	1,047	974.5	900.2
26	835.7	768.0	771.7	753.1	729.1	742.7	839.5	972.7	1,073	1,045	972.0	898.2
27	832.3	768.0	769.4	752.8	727.9	746.6	842.4	977.8	1,075	1,043	968.9	895.3
28	828.9	768.7	767.3	751.5	726.6	750.5	845.3	982.7	1,078	1,040	965.3	891.8
29	826.1	769.6	764.7	750.1	-----	754.2	848.2	987.6	1,077	1,039	962.3	889.8
30	822.9	771.7	761.7	748.7	-----	758.0	851.2	992.5	1,076	1,039	958.2	886.9
31	820.1	-----	759.4	748.9	-----	761.2	-----	997.9	-----	1,039	955.4	-----
MAX	866.2	816.9	797.2	761.4	747.7	761.2	851.2	997.9	1,078	1,075	1,039	952.4
MIN	820.1	768.0	759.4	732.3	726.6	700.0	764.5	854.6	1,002	1,039	955.4	886.9
(a)	4,481.38	4,479.34	4,478.81	4,478.36	4,477.39	4,478.89	4,482.67	4,488.53	4,491.50	4,490.10	4,486.87	4,484.13
(b)	-44,700	-48,400	-12,300	-10,500	-22,300	+34,600	+90,000	+146,700	+78,100	-37,000	-83,600	-68,500

CAL YR 1970      b +69,500  
WTR YR 1971      b +22,100

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

## 11399500 NORTH FORK FEATHER RIVER NEAR PRATTVILLE, CALIF.

LOCATION.--Lat 40°10'10", long 121°05'29", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.28, T.27 N., R.8 E., Plumas County, Plumas National Forest, on left bank 0.5 mile downstream from Almanor Dam, 4.5 miles southeast of Prattville, and 9 miles upstream from Butt Creek.

DRAINAGE AREA.--493 sq mi.

PERIOD OF RECORD.--June 1905 to current year (daily discharges for July 1921 to September 1936 include water diverted through Almanor-Butt Creek tunnel). Records for water year 1911 incomplete, yearly estimate published in WSP 1315-A. Published as "below Prattville" prior to 1911. Supplemental records for Almanor-Butt Creek tunnel diversion computed November 1924 to Dec. 30, 1958, as difference of flow between Butt Creek above Almanor-Butt Creek tunnel (unpublished prior to 1936 and since 1964), and Butt Creek below Almanor-Butt Creek tunnel (unpublished prior to 1936 and 1960-64).

GAGE.--Water-stage recorder and broad-crested weir. Altitude of gage is 4,380 ft (from topographic map). Prior to Oct. 1, 1936, nonrecording gages or water-stage recorders at several sites within half a mile of present site at various datums.

AVERAGE DISCHARGE (adjusted for diversion and leakage).--66 years, 905 cfs (655,700 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 48 cfs Apr. 22; minimum daily, 5.1 cfs Feb. 20, 21. Period of record: Maximum discharge, 10,000 cfs Mar. 19, 1907, before construction of dam (gage height, 16.2 ft at former site), from rating curve extended above 3,700 cfs; no flow Apr. 15, 16, 1914, at times January to April 1919, Apr. 21, 1923.

REMARKS.--Flow regulated by Lake Almanor 0.5 mile upstream (see sta 11399000) and Mountain Meadows Reservoir since 1924 (capacity, 24,000 acre-ft). Water diverted for power from Lake Almanor through old Almanor-Butt Creek tunnel to Butt Creek until Dec. 30, 1958. Diversion through new tunnel and Butt Valley powerhouse began Dec. 31, 1958. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1245: 1951 (yearly summaries). WSP 1285: 1952 (yearly summaries).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	GCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	37	36	36	33	37	41	37	40	37	37	34
2	40	37	36	35	33	37	41	37	40	37	36	34
3	40	37	36	34	33	37	41	38	40	37	36	34
4	40	37	36	34	33	37	42	38	40	37	36	34
5	40	37	36	34	33	37	39	38	40	37	36	34
6	40	37	35	34	33	37	36	38	41	37	36	34
7	40	37	36	33	33	36	36	38	41	37	36	34
8	40	37	36	33	33	36	36	38	41	37	36	34
9	40	37	36	33	33	36	37	39	41	37	36	34
10	39	37	36	33	33	36	37	39	42	37	36	34
11	40	37	36	33	32	36	36	39	42	37	36	34
12	39	37	36	33	32	37	36	36	42	37	36	34
13	39	37	36	33	33	37	36	35	42	37	36	34
14	39	37	36	32	33	37	35	36	42	37	36	34
15	39	37	36	32	33	37	36	37	42	37	35	34
16	39	36	36	33	33	37	36	37	42	37	35	34
17	39	36	36	33	33	37	36	37	39	37	35	34
18	39	36	36	33	44	37	37	37	37	37	35	33
19	39	36	36	33	5.5	37	37	37	37	37	35	33
20	39	36	36	33	5.1	37	37	37	37	37	35	33
21	39	36	36	33	5.1	38	36	37	37	37	35	36
22	39	36	36	33	16	37	48	38	37	37	35	38
23	39	36	36	33	29	39	36	38	37	38	35	38
24	38	36	36	33	35	39	36	38	37	37	35	38
25	38	36	36	33	37	40	36	38	37	37	35	38
26	38	35	36	33	37	46	36	38	37	37	34	37
27	38	35	36	33	36	41	37	39	37	37	34	37
28	38	36	36	33	36	40	37	39	37	37	34	37
29	38	36	36	33	-----	41	37	39	37	37	34	37
30	38	36	36	33	-----	42	37	39	37	37	34	37
31	37	-----	35	33	-----	41	-----	40	-----	37	34	-----
TOTAL	1,210	1,093	1,114	1,030	844.7	1,179	1,124	1,171	1,178	1,148	1,094	1,050
MEAN	39.0	36.4	35.9	33.2	30.2	38.0	37.5	37.8	39.3	37.0	35.3	35.0
MAX	40	37	36	36	44	46	48	40	42	38	37	38
MIN	37	35	35	32	5.1	36	35	35	37	37	34	33
AC-FT	2,400	2,170	2,210	2,040	1,680	2,340	2,230	2,320	2,340	2,280	2,170	2,080
MEAN a	1,352	2,089	1,320	1,260	1,307	899	46.4	63.6	488	1,631	2,080	1,875
AC-FT a	83,160	124,300	81,140	77,500	72,600	55,270	2,760	3,910	29,060	100,300	127,900	111,600

CAL YR 1970 TOTAL 13,486.7 MEAN 36.9 MAX 66 MIN 8.9 AC-FT 26,750 MEAN a 1,090 AC-FT a 789,000  
WTR YR 1971 TOTAL 13,235.7 MEAN 36.3 MAX 48 MIN 5.1 AC-FT 26,250 MEAN a 1,201 AC-FT a 869,500

a Adjusted for diversion through Butt Valley powerhouse and leakage from Almanor-Butt Creek tunnel No. 1.





## 11401112 NORTH FORK FEATHER RIVER BELOW BELDEN DAM, CALIF.

LOCATION.--Lat 40°04'18", long 121°09'46", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.26, T.26 N., R.7 E., Plumas County, Plumas National Forest, on left bank 0.2 mile downstream from Belden Dam, 0.4 mile upstream from Deadwood Canyon, and 6.2 miles northeast of Belden.

DRAINAGE AREA.--612 sq mi.

PERIOD OF RECORD.--October 1969 to current year. July 1959 to September 1969 in files of Pacific Gas and Electric Co.

GAGE.--Water-stage recorder. Altitude of gage is 2,900 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 529 cfs Mar. 31 (gage height, 4.94 ft); minimum daily, 12 cfs June 15.

Period of record: Maximum discharge, 1,870 cfs Mar. 9, 1970 (gage height, 7.46 ft); minimum daily, 12 cfs June 15, 1971.

REMARKS.--Flow regulated by Belden Reservoir 0.2 mile upstream, Lake Almanor (see sta 11399000), Butt Valley Reservoir, and Mountain Meadows Reservoir (combined capacity, 1,104,260 acre-ft). Diversion through tunnel to Belden powerhouse began on Aug. 27, 1969. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	72	68	69	69	68	187	65	63	63	60	66
2	63	71	70	71	70	69	321	64	63	65	58	66
3	64	71	68	71	70	68	214	65	63	66	58	65
4	65	69	71	71	71	68	221	63	61	64	58	64
5	66	70	71	69	71	67	230	65	62	63	62	112
6	67	69	68	67	67	68	235	64	64	67	59	133
7	67	71	68	69	70	67	239	63	65	66	61	133
8	68	71	63	71	69	68	237	61	64	67	62	144
9	69	71	68	69	70	67	149	63	63	66	62	146
10	69	70	70	68	69	66	67	64	63	67	62	149
11	68	69	67	70	68	64	67	64	58	67	63	154
12	67	69	68	68	70	67	69	62	58	67	63	154
13	69	69	70	67	71	65	69	60	59	67	62	154
14	70	67	69	67	71	65	69	60	57	67	62	153
15	26	68	66	67	69	65	67	60	12	65	61	151
16	45	67	67	65	68	62	69	64	15	62	61	149
17	85	67	67	66	68	61	67	66	16	65	62	149
18	86	68	68	69	66	64	69	64	34	63	62	154
19	30	68	67	70	67	64	70	62	61	62	62	158
20	15	70	69	67	69	65	68	64	62	63	61	156
21	15	70	70	71	68	65	66	60	62	63	61	156
22	14	69	69	70	69	66	66	62	63	64	62	156
23	33	69	69	69	67	66	66	64	64	64	112	156
24	63	70	68	68	67	66	66	62	65	67	173	156
25	63	71	69	67	67	64	66	60	64	63	177	158
26	28	67	69	68	67	66	67	57	62	65	179	162
27	41	66	71	70	67	66	68	59	63	62	179	158
28	82	66	70	69	67	60	66	59	62	58	179	160
29	77	68	70	71	-----	69	67	60	63	60	183	108
30	74	68	69	71	-----	221	65	62	63	60	183	65
31	74	-----	69	70	-----	237	-----	61	-----	63	106	-----
TOTAL	1,811	2,071	2,126	2,135	1,922	2,364	3,447	1,929	1,694	1,991	2,815	4,045
MFAN	58.4	69.0	68.6	68.9	68.6	76.3	115	62.2	56.5	64.2	90.8	135
MAX	88	72	71	71	71	237	321	66	65	67	183	162
MIN	14	66	63	65	66	60	65	57	12	58	58	64
AC-FT	3,590	4,110	4,220	4,230	3,810	4,690	6,840	3,830	3,360	3,950	5,580	8,020
CAL YR 1970	TOTAL 46,036		MEAN 126		MAX 926		MIN 14		AC-FT 91,310			
WTR YR 1971	TOTAL 28,350		MEAN 77.7		MAX 321		MIN 12		AC-FT 56,230			

## 11401125 INDIAN CREEK NEAR BOULDER CREEK GUARD STATION, NEAR TAYLORSVILLE, CALIF.

LOCATION.--Lat 40°10'42", long 120°36'35", in SE $\frac{1}{4}$  sec.22, T.27 N., R.12 E., Plumas County, on left bank 150 ft downstream from Antelope Dam, 1.0 mile upstream from Cold Stream, 2.2 miles south of Boulder Creek Guard Station, 12.1 miles northeast of Genesee, and 17.1 miles northeast of Taylorsville.

DRAINAGE AREA.--68.6 sq mi.

PERIOD OF RECORD.--October 1965 to current year. June 1961 to September 1965 in reports of California Department of Water Resources.

GAGE.--Water-stage recorder and steel-lipped weir. Supplementary water-stage recorder on dam and concrete spillway. Altitude of gage is 4,930 ft (from topographic map). October 1965 to September 1968, at site 0.9 mile downstream at different datum.

AVERAGE DISCHARGE.--6 years, 82.3 cfs (59,630 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 485 cfs May 14 (includes flow over spillway); minimum daily, 10 cfs for several months.

Period of record: Maximum discharge, 828 cfs May 24, 1967 and Jan. 24, 1970 (combined flow); minimum daily, 3.7 cfs Sept. 14-18, 1966.

REMARKS.--Flow regulated since Nov. 25, 1963 by Antelope Lake (capacity, 22,500 acre-ft) and storage in Taylor Lake since 1929 (capacity, 380 acre-ft). Some diversions for irrigation upstream. See schematic diagram of North Fork Feather River basin. Records since October 1968 are combined flow of release from Antelope Dam and flow over spillway.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	10	10	23	71	52	192	281	379	115	135	122
2	10	10	10	26	71	49	197	300	347	106	135	122
3	10	10	10	23	69	50	200	351	330	97	134	122
4	10	10	10	23	69	50	206	416	324	90	134	122
5	10	10	10	21	69	49	211	465	320	86	133	122
6	10	10	10	21	69	47	217	427	310	135	133	122
7	10	10	10	21	67	47	220	412	304	160	132	122
8	10	10	10	21	65	46	226	434	301	141	132	122
9	10	10	10	21	61	46	232	419	297	140	132	121
10	10	10	10	22	65	46	271	431	284	140	131	121
11	10	10	10	27	69	47	259	446	272	140	131	121
12	10	10	10	30	73	79	244	461	256	140	130	121
13	10	10	10	35	75	103	244	481	238	140	130	121
14	10	10	10	41	77	94	244	481	226	140	129	121
15	10	10	10	37	79	85	256	469	218	140	129	121
16	10	10	10	34	81	77	278	465	207	140	129	121
17	10	10	10	35	79	73	307	416	190	140	128	121
18	10	10	10	57	77	65	281	376	175	140	128	121
19	10	10	10	101	77	63	253	361	165	139	127	121
20	10	10	10	114	69	63	244	361	155	139	127	121
21	10	10	11	112	65	69	235	379	145	139	127	121
22	10	10	12	101	65	77	214	358	135	138	126	121
23	10	10	12	90	65	110	203	354	128	138	126	120
24	10	10	14	81	61	150	189	354	119	138	125	119
25	10	10	14	73	57	173	183	358	113	137	125	118
26	10	10	15	71	54	253	192	368	140	136	124	117
27	10	10	17	71	52	259	194	365	172	136	124	95
28	10	10	18	71	54	223	203	390	157	136	123	113
29	10	10	24	71	-----	203	226	416	140	135	123	110
30	10	10	23	71	-----	200	253	423	126	135	123	107
31	10	-----	23	71	-----	192	-----	408	-----	135	122	-----
TOTAL	310	300	383	1,616	1,905	3,140	6,874	12,426	6,673	4,111	3,987	3,569
MEAN	10.0	10.0	12.4	52.1	68.0	101	229	401	222	133	129	119
MAX	10	10	24	114	81	259	307	481	379	160	135	122
MIN	10	10	10	21	52	46	183	281	113	86	122	95
AC-FT	615	595	760	3,210	3,780	6,230	13,630	24,650	13,240	8,150	7,910	7,080

CAL YR 1970 TOTAL 24,436 MEAN 66.9 MAX 766 MIN 10 AC-FT 48,470  
WTR YR 1971 TOTAL 45,294 MEAN 124 MAX 481 MIN 10 AC-FT 89,840

## SACRAMENTO RIVER BASIN

11401180 LITTLE GRIZZLY CREEK NEAR GENESEE, CALIF.

LOCATION.--Lat 40°00'50", long 120°45'11", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.21, T.25 N., R.11 E., Plumas County, Plumas National Forest, on right bank 2.5 miles upstream from Indian Creek and 2 miles south of Genesee.

DRAINAGE AREA.--29.6 sq mi.

PERIOD OF RECORD.--August 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,180 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 59.1 cfs (42,820 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 580 cfs Mar. 26 (gage height, 4.25 ft); minimum daily, 6.4 cfs Oct. 1, 2.

Period of record: Maximum discharge, 1,800 cfs Jan. 24, 1970 (gage height, 6.15 ft), from rating curve extended above 500 cfs on basis of slope-area measurement at gage height, 5.90 ft; minimum daily, 3.5 cfs Sept. 10, 11, 30, 1966.

REMARKS.--Records good. No known diversion or regulation above station. Records of water temperatures for the current year are published in Part 2 of this report. See schematic diagram of North Fork Feather River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	7.4	27	18	42	27	92	136	204	106	20	12
2	6.4	7.4	23	14	43	26	88	154	194	102	20	12
3	6.5	7.4	25	14	43	26	89	181	191	89	19	12
4	6.5	8.4	46	16	40	26	93	214	198	79	18	12
5	6.5	27	40	18	38	24	101	213	208	73	18	12
6	6.6	17	40	18	36	23	114	196	236	68	18	12
7	6.7	14	46	17	34	23	119	182	271	63	17	12
8	6.9	12	59	16	33	23	109	243	293	58	17	12
9	6.9	22	70	17	33	23	110	237	291	54	16	11
10	6.9	27	49	23	34	23	124	270	286	50	16	11
11	6.8	20	39	26	38	24	105	311	282	48	16	11
12	6.6	29	32	25	44	151	102	361	282	44	15	11
13	6.6	17	28	23	52	112	106	378	270	42	15	11
14	6.6	14	25	23	59	60	118	367	257	39	15	11
15	6.6	12	23	23	62	44	138	364	259	37	15	11
16	6.6	11	23	24	62	37	150	337	269	35	14	11
17	6.6	10	22	64	57	34	141	266	271	34	14	10
18	7.0	9.9	20	126	51	31	115	232	251	36	14	11
19	7.1	9.6	19	118	47	30	104	226	236	35	14	11
20	8.4	9.3	18	104	43	31	100	237	228	36	14	11
21	8.1	9.0	18	95	40	33	89	239	213	32	14	11
22	8.9	9.6	18	75	39	36	80	210	200	29	14	11
23	11	9.6	17	63	37	126	73	215	181	27	14	11
24	10	12	15	53	35	144	67	270	164	26	13	10
25	8.0	108	15	46	34	126	61	311	146	25	13	11
26	7.8	70	18	42	30	418	67	351	238	24	13	12
27	7.2	41	18	41	31	198	69	329	210	23	13	12
28	7.2	35	18	40	30	138	80	297	161	22	13	12
29	7.3	36	19	40	-----	118	99	269	134	22	13	14
30	7.3	32	18	40	-----	116	117	262	119	21	12	14
31	7.4	-----	18	41	-----	102	-----	224	-----	21	13	-----
TOTAL	225.4	653.6	866	1,303	1,167	2,353	3,020	8,082	6,743	1,398	470	345
MEAN	7.27	21.8	27.9	42.0	41.7	75.9	101	261	225	45.1	15.2	11.5
MAX	11	108	70	126	62	418	150	378	293	106	20	14
MIN	6.4	7.4	15	14	30	23	61	136	119	21	12	10
AC-FT	447	1,300	1,720	2,580	2,310	4,670	5,990	16,030	13,370	2,770	932	684

CAL YR 1970 TOTAL 20,380.5 MEAN 55.8 MAX 922 MIN 6.4 AC-FT 40,420  
WTR YR 1971 TCTAL 26,626.0 MEAN 72.9 MAX 418 MIN 6.4 AC-FT 52,810

## PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-12	1530	3.57	324	5-26	1800	3.77	370
3-26	0630	4.25	580	6-8	2000	3.59	335
5-13	1800	4.00	422	6-26	1500	3.56	338

LOCATION.--Lat 40°02'53", long 120°49'01", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.12, T.25 N., R.10 E., Plumas County, on right bank 0.3 mile upstream from Montgomery Creek and 2.3 miles southeast of Taylorsville.

PERIOD OF RECORD.--May 1957 to current year.

AVERAGE DISCHARGE.--14 years, 394 cfs (285,500 acre-ft per year).

Period of record: Maximum discharge, 30,200 cfs Feb. 1, 1963 (gage height, 10.65 ft, site and datum then in use), from rating curve extended above 3,000 cfs on basis of slope-area measurements at gage heights 10.3 and 10.65 ft; minimum daily, 13 cfs Aug. 2-4, 1961.

Flood of Dec. 23, 1955, reached a stage of 11.5 ft, from floodmarks, site and datum then in use (discharge, unknown).

REMARKS.--Flow partly regulated by Antelope Lake (see sta 11401120) and storage in Taylor Lake since 1929 (capacity, 380 acre-ft). Some diversions for irrigation upstream. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	65	206	159	407	273	1,860	1,580	2,360	484	214	163
2	43	63	241	151	390	245	1,870	1,640	2,240	460	207	157
3	43	61	205	115	370	277	1,910	2,080	2,200	337	202	157
4	44	60	337	137	363	286	1,990	2,600	2,020	338	196	157
5	44	116	270	140	362	272	2,100	2,520	2,120	326	193	157
6	44	125	268	155	347	255	2,310	2,230	1,900	326	191	154
7	44	115	310	155	334	262	2,250	2,050	1,800	370	186	157
8	45	96	376	146	326	261	1,960	2,540	1,720	342	184	157
9	45	101	465	146	317	261	2,060	2,390	1,640	329	184	157
10	44	126	365	164	323	268	2,550	2,270	1,540	322	180	155
11	39	111	314	198	347	276	1,970	2,300	1,460	314	180	158
12	36	131	253	197	408	806	1,840	2,660	1,370	306	177	158
13	34	113	220	199	479	1,040	1,890	2,480	1,290	295	175	157
14	34	97	205	208	546	804	1,870	2,330	1,200	288	171	155
15	34	88	186	195	594	645	2,020	2,200	1,140	284	170	152
16	35	83	182	203	625	579	2,040	2,080	1,100	273	168	152
17	35	82	170	310	605	617	2,090	1,820	1,060	267	168	152
18	37	90	165	796	538	539	1,810	1,620	984	280	166	149
19	38	88	157	1,110	504	508	1,540	1,510	914	276	168	149
20	41	84	152	1,110	446	548	1,490	1,480	862	276	163	154
21	45	83	159	992	424	654	1,390	1,600	796	273	163	154
22	49	83	150	865	412	819	1,230	1,660	702	259	165	154
23	54	85	139	752	390	1,550	1,130	1,910	644	248	165	150
24	71	84	134	658	359	2,200	1,060	1,670	598	241	163	152
25	83	275	120	569	363	2,160	1,040	1,680	547	235	165	149
26	83	330	141	508	320	4,630	1,450	1,690	743	233	170	152
27	78	213	153	464	300	3,300	1,450	1,670	884	227	180	152
28	74	205	151	438	295	2,550	1,350	1,850	731	225	170	144
29	70	214	160	426	-----	2,380	1,430	1,920	613	225	166	157
30	69	207	149	420	-----	2,640	1,490	2,160	519	219	164	166
31	67	-----	155	417	-----	2,320	-----	2,270	-----	217	165	-----
TOTAL	1,546	3,674	6,658	12,503	11,494	34,225	52,440	62,460	37,697	9,155	5,479	4,637
MEAN	49.9	122	215	403	411	1,104	1,748	2,015	1,257	295	177	155
MAX	83	330	465	1,110	625	4,630	2,550	2,660	2,360	484	214	166
MIN	34	60	120	115	295	245	1,040	1,480	519	217	163	144
AC-FT	3,070	7,290	13,210	24,800	22,800	67,890	104,000	123,900	74,770			

## SACRAMENTO RIVER BASIN

11401500 INDIAN CREEK NEAR CRESCENT MILLS, CALIF.

LOCATION.--Lat 40°04'42", long 120°55'36", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.25, T.26 N., R.9 E., Plumas County, on left bank 0.8 mile upstream from Dixie Creek and 1.5 miles south of Crescent Mills.

DRAINAGE AREA.--739 sq mi.

PERIOD OF RECORD.--January 1906 to December 1909, September 1911 to March 1918, October 1930 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,500 ft (from topographic map). Prior to March 1918, nonrecording gage at site 800 ft upstream at different datum.

AVERAGE DISCHARGE.--50 years (1906-9, 1911-17, 1930-71), 557 cfs (403,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,930 cfs Mar. 27 (gage height, 11.63 ft); minimum daily, 33 cfs Oct. 3.

Period of record: Maximum discharge observed, 25,000 cfs Mar. 19, 1907 (gage height, 20.2 ft, site and datum then in use); minimum, 1.7 cfs Aug. 25, 1931.

REMARKS.--Records good. Natural flow affected by storage in Round Valley Reservoir since 1865 (capacity, 5,000 acre-ft), Taylor Lake since 1929 (capacity, 380 acre-ft), and Antelope Lake since November 1963, (see sta 11401120). Diversions above station for irrigation of about 11,800 acres of which 9,700 acres is in Indian and Genesee Valleys. See schematic diagram of North Fork Feather River basin. Records of water temperatures for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1445: 1906-9, WSP 1931: 1956, 1958(M). WRD Calif. 1968: 1967.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	104	870	380	730	446	2,660	2,010	2,800	627	217	159
2	34	99	1,090	329	749	395	2,450	2,100	2,680	577	208	158
3	33	98	745	239	713	468	2,380	2,580	2,550	510	195	156
4	39	103	1,320	256	699	449	2,490	3,060	2,340	466	186	156
5	40	223	922	257	676	412	2,600	3,370	2,350	425	184	154
6	37	285	780	270	653	384	2,810	3,060	2,130	389	190	152
7	42	273	839	276	619	396	2,830	2,750	2,010	453	188	150
8	35	205	1,090	265	616	378	2,480	2,980	1,920	412	178	148
9	36	190	1,390	268	605	380	2,470	3,050	1,830	392	175	146
10	34	308	940	361	609	385	3,180	2,880	1,720	386	175	144
11	36	235	745	574	657	399	2,700	2,860	1,600	370	175	146
12	36	281	613	458	766	1,710	2,340	3,110	1,540	350	182	148
13	36	232	519	409	882	3,440	2,340	3,080	1,470	331	177	150
14	40	192	470	405	980	1,980	2,300	2,950	1,360	310	169	152
15	45	168	434	450	1,040	1,360	2,480	2,760	1,270	294	165	144
16	43	152	581	616	1,070	1,110	2,560	2,600	1,220	285	143	136
17	44	142	480	1,020	1,000	1,140	2,720	2,250	1,160	271	139	134
18	53	136	427	2,040	879	972	2,420	1,990	1,080	289	147	131
19	58	131	368	2,350	846	884	2,010	1,850	1,000	298	151	136
20	72	126	338	2,010	752	897	1,920	1,800	940	298	153	151
21	92	124	350	1,690	717	1,010	1,810	1,940	896	316	146	145
22	96	125	325	1,430	692	1,230	1,630	1,920	828	276	149	145
23	107	128	304	1,200	653	2,390	1,510	2,190	772	250	154	151
24	147	128	284	1,050	602	3,620	1,410	1,950	719	247	161	154
25	130	422	250	904	603	3,580	1,360	1,960	672	248	166	162
26	118	740	268	818	526	6,740	1,690	2,000	901	240	170	166
27	104	455	291	768	514	8,050	1,780	1,940	1,140	223	190	194
28	99	634	292	743	498	5,670	1,680	2,200	917	223	175	195
29	98	762	460	728	-----	4,190	1,790	2,310	768	225	174	206
30	95	747	483	722	-----	3,780	1,900	2,510	683	217	173	244
31	100	-----	421	725	-----	3,430	-----	2,700	-----	220	165	-----
TOTAL	2,014	7,948	18,689	24,011	20,346	61,675	66,700	76,710	43,266	10,418	5,320	4,713
MEAN	65.0	265	603	775	727	1,990	2,223	2,475	1,442	336	172	157
MAX	147	762	1,390	2,350	1,070	8,050	3,180	3,370	2,800	627	217	244
MIN	33	98	250	239	498	378	1,360	1,800	672	217	139	131
AC-FT	3,990	15,760	37,070	47,630	40,360	122,300	132,300	152,200	85,820	20,660	10,550	9,350
CAL YR 1970	TOTAL 265,596	MEAN 728	MAX 15,600	MIN 15	AC-FT 526,800							
WTR YR 1971	TOTAL 341,810	MEAN 936	MAX 8,050	MIN 33	AC-FT 678,000							

## PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 4	0830	5.89	1,510	3-27	0200	11.63	8,930
12- 9	0600	5.92	1,530	4-10	1100	7.89	3,330
1-19	0100	7.08	2,500	5- 5	0200	7.99	3,450
3-13	0130	8.48	4,040	6- 1	1030	7.45	2,870

## 11401940 MILL CREEK NEAR QUINCY, CALIF.

LOCATION.--Lat 39°56'03", long 120°54'18", in NE¼NW¼ sec.19, T.24 N., R.10 E., Plumas County, on left bank at culvert on State Highways 70 and 89, 2.2 miles east of Quincy.

DRAINAGE AREA.--6.72 sq mi.

PERIOD OF RECORD.--Water years 1963-65 (annual maximum), October 1965 to September 1971 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder and crest-stage gage with culvert control, and float operated rain gage. Altitude of gage is 3,500 ft (from topographic map). Prior to July 24, 1967, at site 38 ft downstream at datum 0.55 ft lower.

AVERAGE DISCHARGE.--6 years, 9.07 cfs (6,570 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 300 cfs Mar. 26 (gage height, 3.97 ft); no flow for several months.

Period of record: Maximum discharge, 601 cfs Dec. 22, 1964 (gage height, 7.02 ft, site and datum then in use), from rating curve extended above 220 cfs on basis of computation of flow through culvert at gage heights 5.53 and 7.02 ft; no flow for several months each year.

REMARKS.--Records fair. Some diversion for irrigation upstream from station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	12	3.2	3.2	2.8	36	30	20	12		
2	0	0	13	3.0	3.2	2.6	33	33	17	11		
3	0	0	9.2	4.0	3.2	2.6	31	35	16	10		
4	0	.01	32	5.5	3.2	2.6	30	36	16	9.7		
5	0	3.8	20	5.0	3.2	2.4	32	36	17	9.2		
6	0	5.5	17	5.0	3.0	2.2	34	35	19	8.7		
7	0	3.4	21	5.0	2.8	2.2	34	35	21	7.3		
8	0	1.8	31	4.2	2.6	2.2	31	38	23	5.8		
9	0	5.4	29	3.4	2.6	2.2	31	37	22	5.8		
10	0	5.2	20	3.4	2.6	2.1	39	38	23	5.2		
11	0	3.7	13	4.2	3.0	2.7	34	39	22	0		
12	0	5.5	10	3.7	3.7	84	31	43	23	0		
13	0	2.8	8.8	3.2	5.0	39	30	43	21	0		
14	0	1.9	7.7	3.4	5.5	23	31	43	21	0		
15	0	1.4	6.8	3.2	6.5	17	32	43	22	0		
16	0	1.0	5.5	4.2	6.2	17	34	39	21	0		
17	0	.76	5.0	7.7	5.5	16	34	34	21	0		
18	0	.70	4.5	15	5.0	16	31	32	20	0		
19	0	.58	4.5	16	5.0	15	29	30	18	0		
20	.04	.70	4.5	13	4.5	14	28	32	18	0		
21	.01	.53	4.5	10	4.2	15	28	28	17	0		
22	.01	.53	4.0	7.3	4.2	16	27	22	18	0		
23	.34	.38	3.4	6.2	4.0	56	26	24	17	0		
24	.03	.69	3.2	5.2	3.7	43	25	29	16	0		
25	0	11	4.0	4.8	3.4	58	24	31	15	0		
26	0	11	3.7	4.2	3.2	146	25	34	24	0		
27	0	6.5	2.6	3.7	3.0	52	26	32	21	0		
28	0	7.3	3.0	3.4	3.0	50	27	32	17	0		
29	0	11	4.5	3.2	-----	45	28	28	15	0		
30	0	11	3.7	3.2	-----	43	28	28	14	0		
31	0	-----	3.7	3.2	-----	39	-----	25	-----	0		
TOTAL	.43	104.08	314.8	169.7	108.2	830.6	909	1,044	575	84.7	0	0
MEAN	.014	3.47	10.2	5.47	3.86	26.8	30.3	33.7	19.2	2.73	0	0
MAX	.34	11	32	16	6.5	146	39	43	24	12	0	0
MIN	0	0	2.6	3.0	2.6	2.1	24	22	14	0	0	0
AC-FT	.9	206	624	337	215	1,650	1,800	2,070	1,140	168	0	0
(a)	2.05	9.92	8.99	2.58	.22	8.73	2.47	3.47	.65	0	0	0
CAL YR 1970	TOTAL	4,984.83	MEAN	13.7	MAX	271	MIN	0	AC-FT	9,890		
WTR YR 1971	TOTAL	4,140.51	MEAN	11.3	MAX	146	MIN	0	AC-FT	8,210		

a Precipitation, in inches.

## 11402000 SPANISH CREEK ABOVE BLACKHAWK CREEK, AT KEDDIE, CALIF.

LOCATION.--Lat 40°00'11", long 120°57'12", in NE $\frac{1}{4}$  sec.27, T.25 N., R.9 E., Plumas County, on right bank 200 ft upstream from Blackhawk Creek and 0.9 mile southeast of Keddle.

DRAINAGE AREA.--184 sq mi.

PERIOD OF RECORD.--October 1933 to current year. Prior to October 1953, published as "at Keddle." Records for October 1911 to September 1933 at site 1.2 miles downstream not equivalent owing to inflow.

GAGE.--Water-stage recorder. Datum of gage is 3,129.86 ft above mean sea level.

AVERAGE DISCHARGE.--38 years, 269 cfs (194,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,870 cfs Mar. 26 (gage height, 10.23 ft); minimum daily, 37 cfs Oct. 3-8, Sept. 15.

Period of record: Maximum discharge, 15,400 cfs Dec. 22, 1964 (gage height, 13.53 ft), from rating curve extended above 5,200 cfs on basis of slope-area measurement at gage height 12.47 ft; minimum, 3.8 cfs Aug. 12, 1934.

REMARKS.--Records good. Flow regulated by five small reservoirs having a combined capacity of 800 acre-ft. Approximately 4,600 acres irrigated above station (from information furnished by U.S. Forest Service). City of Quincy diverts about 450 acre-ft annually for municipal supply. See schematic diagram of North Fork Feather River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	51	576	199	268	180	805	628	682	206	66	46
2	38	51	877	185	274	167	733	669	592	185	65	48
3	37	51	480	145	260	170	704	765	560	167	60	50
4	37	61	1,110	150	245	173	710	826	558	154	58	48
5	37	188	593	133	232	167	748	814	567	153	58	43
6	37	197	490	141	229	156	839	777	549	145	58	43
7	37	211	598	138	227	155	815	737	562	134	57	45
8	37	130	905	134	225	157	714	914	556	128	56	48
9	41	131	1,030	136	222	163	694	812	542	123	56	47
10	40	270	548	171	222	168	1,170	854	520	116	57	47
11	39	143	396	332	261	185	811	900	497	110	57	47
12	39	226	311	275	318	2,840	716	909	473	104	55	48
13	38	147	262	229	365	1,950	706	953	457	99	54	49
14	38	111	229	221	405	878	712	901	436	96	53	46
15	39	97	210	228	422	613	775	869	418	91	49	37
16	39	89	337	307	434	520	802	827	413	89	46	41
17	39	84	265	649	388	548	948	689	397	86	45	42
18	40	81	223	1,060	340	459	709	614	376	87	50	41
19	45	78	194	953	331	423	606	590	358	88	48	42
20	62	75	188	750	290	418	606	603	342	84	45	44
21	63	73	192	611	267	442	558	643	317	75	44	50
22	67	73	177	488	252	467	496	537	296	72	43	48
23	71	73	165	412	235	1,630	459	548	277	66	43	47
24	98	72	152	359	220	1,510	435	603	254	67	43	47
25	66	326	137	312	219	1,630	409	644	232	67	43	47
26	58	426	144	286	202	6,120	473	721	378	66	46	51
27	55	243	145	275	197	2,620	440	661	452	66	45	62
28	54	394	148	270	192	1,590	478	715	312	66	46	58
29	53	419	296	263	-----	1,250	544	668	258	68	46	59
30	53	430	256	264	-----	1,140	586	759	227	69	44	101
31	52	-----	212	268	-----	963	-----	740	-----	70	46	-----
TOTAL	1,491	5,001	11,846	10,344	7,742	29,852	20,201	22,890	12,858	3,197	1,582	1,472
MEAN	48.1	167	382	334	277	963	673	738	429	103	51.0	49.1
MAX	98	430	1,110	1,060	434	6,120	1,170	953	682	206	66	101
MIN	37	51	137	133	192	155	409	537	227	66	43	37
AC-FT	2,960	9,920	23,500	20,520	15,360	59,210	40,070	45,400	25,500	6,340	3,140	2,920
CAL YR 1970	TOTAL 134,807 MEAN 369 MAX 7,940 MIN 19 AC-FT 267,400											
WTR YR 1971	TOTAL 128,476 MEAN 352 MAX 6,120 MIN 37 AC-FT 254,800											

## PEAK DISCHARGE (BASE, 1,700 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-12	1900	8.55	6,020	3-26	0800	10.23	8,870
3-24	1300	5.84	2,420				



## 11403000 EAST BRANCH OF NORTH FORK FEATHER RIVER NEAR RICH BAR, CALIF.

LOCATION.--Lat 40°00'38", long 121°13'03", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.20, T.25 N., R.7 E., Plumas County, Plumas National Forest, on left bank 0.5 mile upstream from mouth and 1.3 miles west of Rich Bar.

DRAINAGE AREA.--1,025 sq mi.

PERIOD OF RECORD.--October 1950 to September 1961, December 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,300 ft (from topographic map). Prior to Nov. 29, 1950, at site 30 ft downstream at same datum.

AVERAGE DISCHARGE.--14 years (1950-51, 1969-71), 1,145 cfs (829,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 15,900 cfs Mar. 26 (gage height, 12.19 ft); minimum daily, 101 cfs Oct. 4.

Period of record: Maximum discharge, 48,000 cfs Dec. 23, 1955 (gage height, 16.52 ft), from rating curve extended above 15,000 cfs on basis of study of upstream and downstream peak discharges; minimum, 39 cfs Sept. 6, 7, 1955, July 28, Aug. 23, 1961.

REMARKS.--No storage or diversion between stations on Indian and Spanish Creeks and station near Rich Bar.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	193	1,890	886	1,270	886	4,290	3,060	3,830	986	358	257
2	107	188	2,480	827	1,290	794	3,740	3,210	3,660	900	347	282
3	104	185	1,650	675	1,260	876	3,630	3,690	3,490	836	334	282
4	101	237	2,560	626	1,220	871	3,710	4,220	3,290	765	316	280
5	111	550	1,930	626	1,170	832	3,830	4,630	3,320	726	311	273
6	107	753	1,620	646	1,140	785	4,100	4,300	3,090	680	313	268
7	104	744	1,670	683	1,110	794	4,150	3,950	2,950	689	311	268
8	119	572	2,310	650	1,100	776	3,740	4,230	2,860	671	303	268
9	106	564	2,870	646	1,080	785	3,670	4,300	2,730	632	294	266
10	109	780	1,940	709	1,080	794	4,720	4,160	2,580	620	294	266
11	104	622	1,500	1,110	1,150	876	4,110	4,180	2,450	599	291	264
12	107	675	1,260	1,120	1,330	5,920	3,580	4,370	2,320	575	294	266
13	104	614	1,100	974	1,500	5,350	3,560	4,450	2,200	548	291	271
14	102	487	996	942	1,650	2,850	3,500	4,270	2,070	525	282	280
15	109	426	932	985	1,710	2,150	3,770	4,050	1,950	500	277	264
16	114	390	1,160	1,220	1,770	1,900	3,850	3,880	1,890	479	264	253
17	112	361	1,080	2,030	1,670	1,900	4,150	3,410	1,800	472	251	253
18	118	340	969	3,500	1,520	1,670	3,670	3,020	1,690	465	249	249
19	129	323	866	4,050	1,460	1,570	3,110	2,820	1,590	489	253	247
20	166	307	822	3,350	1,330	1,580	2,950	2,770	1,510	482	255	262
21	222	296	832	2,660	1,250	1,700	2,800	2,930	1,440	482	249	268
22	234	292	785	2,260	1,200	1,920	2,510	2,810	1,340	455	242	266
23	270	300	744	1,960	1,140	4,830	2,300	3,120	1,250	420	245	268
24	376	327	700	1,740	1,080	5,480	2,160	2,940	1,160	401	249	271
25	303	771	638	1,550	1,060	5,780	2,060	3,000	1,070	401	251	275
26	250	1,460	646	1,420	990	13,900	2,420	3,120	1,330	395	255	284
27	213	1,060	687	1,340	958	10,600	2,580	2,970	1,880	375	262	318
28	196	1,270	696	1,300	942	7,440	2,500	3,280	1,460	366	262	334
29	188	1,580	953	1,280	-----	5,780	2,710	3,400	1,230	372	255	331
30	185	1,540	1,070	1,260	-----	5,350	2,900	3,610	1,060	361	253	404
31	183	-----	953	1,270	-----	4,990	-----	3,820	-----	364	249	-----
TOTAL	4,854	18,207	40,309	44,295	35,430	101,729	100,770	111,970	64,490	17,031	8,660	8,338
MEAN	157	607	1,300	1,429	1,265	3,282	3,359	3,612	2,150	549	279	278
MAX	370	1,580	2,870	4,050	1,770	13,900	4,720	4,630	3,830	986	358	404
MIN	101	185	638	626	942	776	2,060	2,770	1,060	361	242	247
AC-FT	9,630	36,110	79,950	87,860	70,280	201,800	199,900	222,100	127,900	33,780	17,180	16,540
CAL YR 1970	TOTAL	491,500	MEAN	1,347	MAX	28,800	MIN	78	AC-FT	974,900		
WTR YR 1971	TOTAL	556,083	MEAN	1,524	MAX	13,900	MIN	101	AC-FT	1,103,000		

## SACRAMENTO RIVER BASIN

## 11403500 BUCKS LAKE NEAR BUCKS LODGE, CALIF.

LOCATION.--Lat 39°53'45", long 121°12'10", in NW¼ sec.33, T.24 N., R.7 E., Plumas County, Plumas National Forest, in intake tower No. 2 upstream from dam on Bucks Creek, 2 miles northwest of Bucks Lodge, and 15 miles west of Quincy.

DRAINAGE AREA.--28.6 sq mi.

PERIOD OF RECORD.--1927-28 (year-end contents only, published in WSP 1315-A), October 1928 to current year. Prior to October 1954 published as Bucks Creek Reservoir near Bucks Ranch.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Feather River Power Co.).

EXTREMES.--Current year: Maximum contents, 103,300 acre-ft July 2 (elevation, 5,155.76 ft); minimum, 35,800 acre-ft Mar. 11 (elevation, 5,112.64 ft).

Period of record: Maximum contents, 105,800 acre-ft June 23, 1938 (elevation, 5,157.1 ft); minimum, 12,330 acre-ft Feb. 27, 1929 (elevation, 5,090.7 ft).

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam completed in 1927; storage began in May 1927. Capacity, 101,700 acre-ft between elevations 5,064.75 (sill of outlet gate) and 5,154.85 ft (spillway crest) above mean sea level. Released water flows down Bucks Creek to Lower Bucks Lake, where it enters tunnel that discharges into Grizzly Creek, thence to Bucks Creek powerhouse. Figures given herein represent total contents, of which 274 acre-ft is not available for release. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Record of contents collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

5,064.75	274	5,075	2,400	5,100	21,200	5,125	52,500
5,066	388	5,080	4,740	5,105	26,600	5,130	60,000
5,068	635	5,085	7,920	5,110	32,500	5,140	75,900
5,070	977	5,090	11,700	5,115	38,800	5,150	93,000
5,072	1,440	5,095	16,200	5,120	45,500	5,160	111,200

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64,261	50,929	52,040	52,272	45,839	38,059	43,262	54,862	81,599	103,093	93,171	79,547
2	63,777	50,527	52,417	51,909	45,522	37,764	43,572	55,365	82,072	103,258	93,825	79,062
3	63,309	50,098	52,984	51,548	45,218	37,456	43,897	55,870	82,886	103,075	93,577	78,561
4	62,843	50,169	53,174	51,188	44,917	37,239	44,236	56,480	83,651	102,838	93,347	78,078
5	62,363	50,814	53,349	50,814	44,603	36,844	44,603	57,048	84,555	102,600	92,959	77,829
6	61,884	51,217	53,539	50,441	44,412	36,527	45,026	57,589	85,308	102,327	92,430	77,829
7	61,375	51,418	53,891	50,069	43,978	36,198	45,396	58,221	86,459	102,053	91,938	77,845
8	60,930	51,620	54,346	49,727	43,667	36,009	45,742	58,871	87,476	101,708	91,446	77,845
9	60,485	52,257	54,641	49,357	43,356	36,034	46,282	59,555	88,394	101,380	90,973	77,845
10	59,996	52,548	54,803	49,144	43,046	35,820	46,727	60,394	89,384	101,054	90,501	77,712
11	59,570	53,086	55,084	49,031	42,751	35,857	47,090	61,283	90,344	100,709	90,012	77,463
12	59,099	53,130	55,247	48,819	42,496	36,641	47,439	62,239	91,289	100,365	89,524	77,248
13	58,644	52,882	55,380	48,748	42,229	36,959	47,818	63,231	92,184	99,795	89,002	76,966
14	58,161	52,548	55,365	48,578	42,028	37,252	48,226	64,230	93,135	99,615	88,498	76,486
15	57,694	52,112	55,528	48,324	42,002	37,431	48,705	65,265	94,072	99,236	87,978	75,991
16	57,243	51,750	55,602	48,085	41,829	37,648	49,343	66,164	94,941	98,840	87,476	75,563
17	56,794	51,361	55,588	47,944	41,549	37,828	49,813	66,956	95,902	98,462	86,993	74,987
18	56,376	50,986	55,484	48,071	41,311	37,931	50,184	67,752	96,741	98,067	86,493	74,446
19	55,899	50,599	55,365	48,395	41,059	37,982	50,527	68,580	97,600	97,654	85,977	73,955
20	55,691	50,212	55,439	48,649	40,755	37,918	50,958	69,555	98,408	97,242	85,479	73,466
21	55,350	49,841	55,410	48,847	40,466	37,866	51,289	70,341	98,804	96,955	84,965	72,977
22	54,995	49,485	55,261	48,889	40,190	37,828	51,721	71,130	98,966	96,777	84,486	72,489
23	54,833	49,116	55,010	48,607	39,902	38,330	51,881	72,100	99,200	96,616	83,991	72,003
24	54,420	49,003	54,656	48,324	39,601	38,743	52,185	73,221	99,488	96,419	83,497	71,517
25	54,008	49,627	54,273	48,001	39,288	39,706	52,417	74,528	99,849	96,241	83,004	71,049
26	56,525	49,898	53,979	47,692	38,989	40,993	52,737	75,892	101,108	96,045	82,512	70,647
27	53,130	50,384	53,715	47,369	38,666	41,563	53,028	77,016	101,599	95,688	82,021	70,196
28	52,693	50,785	53,598	47,062	38,368	41,948	53,422	78,161	101,926	95,226	81,548	69,715
29	52,214	51,116	53,393	46,741	-----	42,309	53,862	79,112	102,236	94,764	81,042	69,507
30	51,678	51,606	53,028	46,449	-----	42,643	54,346	80,151	102,673	94,462	80,537	69,075
31	51,346	-----	52,664	46,130	-----	42,979	-----	80,958	-----	94,249	80,050	-----
MAX	64,261	53,130	55,602	52,272	45,839	42,979	54,346	80,958	102,673	103,258	93,825	79,547
MIN	51,346	49,003	52,040	46,130	38,368	35,820	43,262	54,862	81,599	94,249	80,050	69,075
(a)	5,124.17	5,124.35	5,125.08	5,120.47	5,114.67	5,118.17	5,126.23	5,143.04	5,155.41	5,150.74	5,142.50	5,135.80
(b)	-13,400	+260	+1,060	-6,530	-7,460	+4,610	+11,370	+26,610	+21,700	-8,420	-14,200	-10,980

CAL YR 1970 b +5,810  
WTR YR 1971 b +4,340

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet, rounded to Geological Survey standards.

## 11404500 NORTH FORK FEATHER RIVER AT PULGA, CALIF.

LOCATION.--Lat 39°47'39", long 121°27'03", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.6, T.22 N., R.5 E., Butte County, Plumas National Forest, on left bank between railroad and highway bridges, 0.5 mile downstream from Flea Valley Creek and Pulga, and 1.5 miles downstream from Poe Dam.

DRAINAGE AREA.--1,953 sq mi.

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods and yearly estimates for water years 1911 and 1938, published in WSP 1315-A. Prior to October 1960, published as "at Big Bar."

GAGE.--Water-stage recorder. Datum of gage is 1,304.88 ft above mean sea level (levels by Pacific Gas and Electric Co.). Prior to Oct. 1, 1937, at site 1.1 miles upstream at different datum. Oct. 1, 1937, to Sept. 30, 1958, at present site at datum 5.00 ft higher.

AVERAGE DISCHARGE (including diversion through Poe powerhouse).--61 years, 2,975 cfs (2,155,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 21,900 cfs Mar. 26 (gage height, 21.04 ft); minimum daily, 53 cfs Sept. 25.

Period of record (prior to diversion to Poe powerhouse): Maximum discharge 72,400 cfs Dec. 23, 1955 (gage height, 35.60 ft, present datum), from rating curve extended above 34,000 cfs; minimum daily, 235 cfs Oct. 31, 1932.

1958 to current year: Maximum discharge, 73,000 cfs Dec. 22, 1964 (gage height, 35.80 ft), from rating curve extended above 34,000 cfs; minimum daily, 33 cfs June 25, 1961.

REMARKS.--Records good. Flow regulated by Lake Almanor (see sta 11399000) Bucks Lake (see sta 11403500), Mountain Meadows Reservoir, Butt Valley Reservoir, and five forebays (combined capacity, 1,239,000 acre-ft). Diversion through Poe powerhouse began on May 29, 1958. See schematic diagram of North Fork Feather River basin. Record of water temperatures for the current year is published in Part 2 of this report.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 931: 1938(M), 1940. WSP 1515: 1935.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	63	256	123	106	87	2,540	648	2,080	66	63	64
2	64	62	495	116	105	85	2,010	869	1,470	65	64	57
3	64	61	336	108	105	86	1,560	1,740	1,610	65	63	61
4	64	72	924	105	102	86	1,690	2,110	898	65	63	61
5	64	1,610	480	100	100	85	1,850	2,660	921	66	61	60
6	64	2,200	245	98	98	85	2,210	2,280	883	65	61	59
7	63	2,010	209	96	98	85	2,210	2,520	1,110	65	63	62
8	63	1,540	381	94	97	84	1,740	2,550	1,020	64	62	223
9	63	2,550	1,400	92	95	83	1,820	2,180	729	64	62	577
10	63	2,250	942	107	94	83	4,380	2,820	576	64	99	646
11	64	2,030	125	151	96	86	2,300	3,470	677	64	67	607
12	64	1,940	113	138	100	4,080	1,610	3,060	286	65	66	525
13	62	1,730	106	141	101	6,010	1,710	3,020	73	63	65	296
14	62	1,520	101	155	99	1,810	1,460	3,630	71	63	65	60
15	62	1,530	103	169	99	421	2,500	2,540	544	63	65	58
16	62	1,680	112	232	98	125	3,140	2,060	87	63	66	58
17	62	1,240	116	257	97	124	2,840	1,390	70	64	64	68
18	63	1,290	114	1,470	96	117	1,650	1,650	67	64	66	55
19	62	1,320	107	3,020	98	114	903	682	67	63	65	55
20	68	1,310	108	1,540	93	111	852	791	67	65	65	54
21	63	1,250	123	649	91	110	507	865	68	64	65	54
22	75	1,400	117	173	91	108	420	463	67	65	66	56
23	77	1,320	109	133	91	2,430	572	986	65	64	64	56
24	70	1,370	101	124	90	4,850	170	1,870	91	65	66	56
25	63	2,210	97	119	90	5,190	120	1,700	67	64	65	53
26	63	680	95	115	88	16,800	102	1,610	250	60	77	56
27	63	319	93	113	88	12,100	98	1,380	178	63	64	55
28	63	208	105	120	87	7,970	100	1,350	69	64	64	56
29	63	373	212	108	-----	5,310	98	1,270	377	64	63	62
30	62	395	154	107	-----	4,260	403	1,340	69	64	64	60
31	62	-----	133	106	-----	3,600	-----	1,500	-----	64	65	-----
TOTAL	1,991	37,533	8,112	10,179	2,693	76,575	43,565	57,004	14,607	1,987	2,038	4,270
MEAN	64.2	1,251	262	328	96.2	2,470	1,452	1,839	487	64.1	65.7	142
MAX	77	2,550	1,400	3,020	106	16,800	4,380	3,630	2,080	66	99	646
MIN	62	61	93	92	87	83	98	463	65	60	61	53
AC-FT	3,950	74,450	16,090	20,190	5,340	151,900	86,410	113,100	28,970	3,940	4,040	8,470
MEAN a	1,990	3,710	4,260	4,320	4,020	6,500	5,720	6,130	4,600	2,870	3,070	2,460
AC-FT a	122,600	220,700	262,200	265,400	223,200	399,800	340,500	377,200	273,500	176,500	188,600	146,100
CAL YR 1970	TOTAL 436,147		MEAN 1,195	MAX 39,400	MIN 48	AC-FT 865,100		MEAN a 3,995		AC-FT a 2,892,000		
WTR YR 1971	TOTAL 260,554		MEAN 714	MAX 16,800	MIN 53	AC-FT 516,800		MEAN a 4,138		AC-FT a 2,996,000		

a Adjusted for diversion through Poe powerhouse.

## SACRAMENTO RIVER BASIN

11405300 WEST BRANCH FEATHER RIVER NEAR PARADISE, CALIF.

LOCATION.--Lat 39°47'12", long 121°33'42", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.6, T.22 N., R.4 E., Butte County, on right bank 0.6 mile upstream from Griffin Gulch and 4.0 miles northeast of Paradise.

DRAINAGE AREA.--110 sq mi.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,370 ft (from topographic map). Prior to June 1, 1970, on left bank at same datum.

AVERAGE DISCHARGE.--14 years, 318 cfs (230,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,990 cfs Mar. 26 (gage height, 13.62 ft); minimum daily, 0.72 cfs Sept. 18, 19.

Period of record: Maximum discharge, 26,300 cfs Dec. 22, 1964 (gage height, 26.2 ft, from floodmarks), from rating curve extended above 14,000 cfs; minimum, 0.3 cfs Aug. 31, Sept. 1, 2, 1960, Sept. 8, 1962.

REMARKS.--Records good. Dewey, Miners, and Hendricks Canals divert from headwaters of West Branch Feather River into Butte Creek basin for power development at DeSabra and Centerville plants of Pacific Gas and Electric Co. Upper Miocene Canal diverts about 50 cfs to Lime Saddle powerplant. Flow regulated by Round Valley Reservoir (usable capacity, 5,000 acre-ft) and Philbrook Reservoir (capacity, 5,010 acre-ft). Records of water temperatures for the current year are published in Part 2 of this report.

REVISIONS.--WRD Calif. 1968: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.6	517	222	304	208	760	588	468	144	5.8	7.7
2	1.1	1.6	824	208	322	202	715	588	398	124	5.1	1.1
3	1.1	1.6	806	170	295	198	695	588	377	104	4.0	.93
4	1.1	32	1,760	156	271	196	735	568	394	105	3.4	.87
5	1.3	789	845	146	253	172	775	600	436	95	2.6	.87
6	1.3	280	695	137	242	140	790	588	484	82	4.2	.87
7	1.3	289	616	131	230	137	740	620	548	70	4.4	.87
8	1.4	131	848	130	225	162	655	670	564	56	4.4	.93
9	1.4	643	952	128	218	174	653	612	556	56	4.2	.87
10	1.4	450	560	200	215	160	990	765	556	47	2.6	.87
11	1.4	220	419	367	265	154	730	805	452	43	1.7	.93
12	1.4	295	340	286	370	2,480	670	1,000	430	36	1.7	.93
13	1.4	118	286	245	398	1,350	670	996	380	30	1.7	.93
14	1.3	77	242	253	384	770	660	930	380	28	1.6	.93
15	1.4	58	246	323	367	588	730	905	374	26	1.9	.87
16	1.4	44	331	597	358	500	750	850	388	26	1.7	.81
17	1.4	27	283	900	328	472	828	705	364	24	1.6	.81
18	1.6	20	248	890	292	394	632	655	361	23	4.2	.72
19	2.6	16	218	825	316	361	568	680	374	23	5.1	.72
20	62	13	208	695	256	361	600	715	361	21	5.1	.76
21	54	13	242	608	238	361	516	700	331	18	5.1	.76
22	76	12	205	472	242	361	456	580	310	17	5.1	.81
23	102	14	184	398	245	1,180	426	685	274	15	5.1	.81
24	143	20	166	355	232	1,230	398	765	245	12	5.1	.81
25	52	521	140	322	222	1,640	380	815	194	13	1.9	.87
26	39	308	146	301	218	4,420	367	915	403	11	1.4	.93
27	30	240	150	295	222	1,820	364	755	453	10	1.3	1.7
28	20	627	231	289	208	1,310	416	685	262	9.4	1.4	1.3
29	20	790	670	286	-----	1,110	492	596	205	7.2	1.4	1.8
30	17	808	343	289	-----	1,000	552	588	184	7.2	1.4	23
31	2.8	-----	259	301	-----	850	-----	508	-----	6.9	14	-----
TOTAL	644.2	6,859.8	13,980	10,925	7,736	24,461	18,713	22,020	11,506	1,289.7	110.2	57.08
MEAN	20.8	229	451	352	276	789	624	710	384	41.6	3.55	1.90
MAX	143	808	1,760	900	398	4,420	990	1,000	564	144	14	23
MIN	1.1	1.6	140	128	208	137	364	508	184	6.9	1.3	.72
AC-FT	1,280	13,610	27,730	21,670	15,340	48,520	37,120	43,680	22,820	2,560	219	113

CAL YR 1970 TOTAL 161,681.40 MEAN 443 MAX 10,800 MIN 1.0 AC-FT 320,700  
WTR YR 1971 TOTAL 118,301.98 MEAN 324 MAX 4,420 MIN .72 AC-FT 234,700

## PEAK DISCHARGE (BASE, 2,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 4	0300	9.73	2,980	3-26	0330	13.62	6,990
3-12	1430	11.93	5,150				

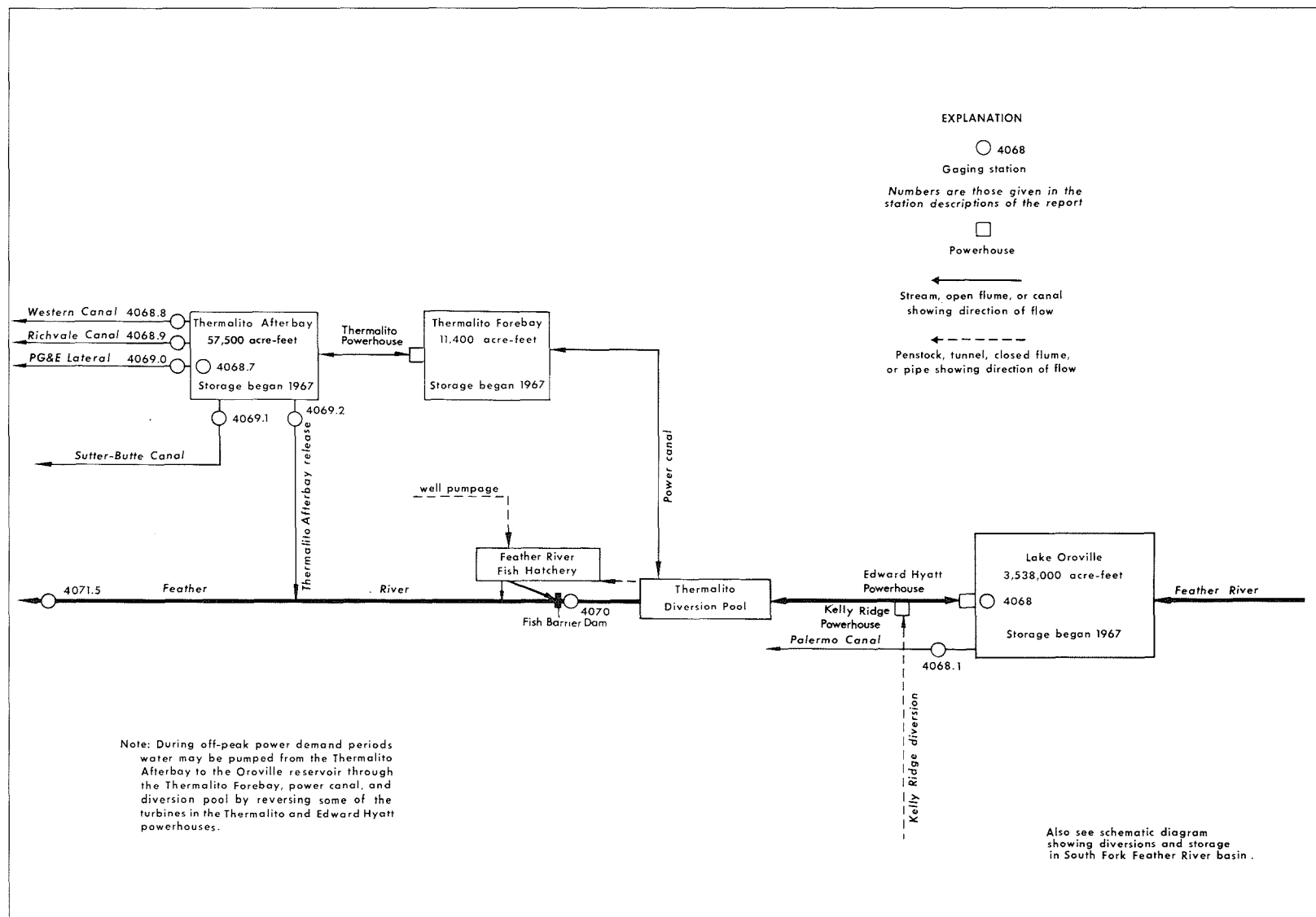


FIGURE 13.--Schematic diagram showing diversions and storage from Feather River at Lake Oroville.

## 11406800 LAKE OROVILLE NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°32'00", long 121°28'25", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.1, T.19 N., R.4 E., Butte County, near intake structure at left end of Oroville Dam on Feather River, 1.0 mile downstream from North Fork Feather River, and 4.2 miles east of Oroville.

DRAINAGE AREA.--3,607 sq mi.

PERIOD OF RECORD.--November 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.47 ft above mean sea level (levels by California Department of Water Resources).

EXTREMES.--Current year: Maximum contents, 3,533,000 acre-ft June 2 (gage height, 899.71 ft); minimum, 2,453,000 acre-ft Oct. 23 (gage height, 822.26 ft).

Period of record: Maximum contents, 3,503,200 acre-ft June 2, 1971 (gage height, 899.71 ft); minimum since initial storage began, 1,643,000 acre-ft Sept. 3, 1968 (gage height, 746.27 ft).

REMARKS.--Reservoir is formed by an earthfill dam with concrete chute type sidehill spillway completed May 13, 1968; storage began Nov. 14, 1967. Usable capacity, 2,686,000 acre-ft between elevations 640.0 ft (minimum power pool) and 900.0 ft (normal maximum pool). Dead storage, 852,200 acre-ft. Total capacity at normal maximum pool 3,538,000 acre-ft; temporary detention storage occurred at times during dam construction; maximum was 155,200 acre-ft Dec. 23, 1964. Water is released to Edward Hyatt powerhouse through penstock in left abutment of dam and to Palermo Canal through concrete tunnel also in left abutment of dam. Three of the total of six turbines in the Edward Hyatt powerplant are reversible and during periods of low power demand water is pumped at times from the river back into Lake Oroville. Records, including extremes, represent total contents at 2400 hours. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources under general supervision of the Geological Survey, in connection with a Federal Power Commission project. Contents rounded to Geological Survey standards.

CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FEET)

730	1,498,000	790	2,081,000	850	2,808,000
740	1,586,000	800	2,192,000	860	2,945,000
750	1,678,000	810	2,307,000	870	3,086,000
760	1,773,000	820	2,426,000	880	3,232,000
770	1,872,000	830	2,549,000	890	3,382,000
780	1,974,000	840	2,676,000	900	3,538,000

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,532	2,468	2,666	2,796	2,817	3,102	3,241	3,272	3,532	3,511	3,352	3,021
2	2,522	2,466	2,682	2,794	2,828	3,109	3,233	3,290	3,533	3,506	3,340	3,010
3	2,524	2,462	2,695	2,792	2,839	3,116	3,241	3,292	3,528	3,503	3,329	3,000
4	2,525	2,461	2,723	2,790	2,847	3,123	3,260	3,298	3,520	3,507	3,319	2,989
5	2,516	2,467	2,733	2,787	2,856	3,129	3,266	3,299	3,512	3,510	3,310	2,993
6	2,508	2,472	2,742	2,784	2,869	3,140	3,271	3,299	3,512	3,507	3,301	2,980
7	2,500	2,484	2,747	2,784	2,882	3,151	3,273	3,300	3,512	3,503	3,294	2,962
8	2,492	2,493	2,754	2,784	2,890	3,152	3,272	3,312	3,510	3,499	3,291	2,943
9	2,483	2,499	2,766	2,786	2,898	3,152	3,271	3,334	3,507	3,495	3,283	2,924
10	2,485	2,507	2,773	2,794	2,904	3,149	3,280	3,340	3,504	3,495	3,274	2,898
11	2,486	2,520	2,773	2,798	2,911	3,140	3,294	3,349	3,500	3,503	3,265	2,883
12	2,479	2,526	2,772	2,795	2,919	3,165	3,293	3,358	3,501	3,499	3,252	2,877
13	2,472	2,529	2,776	2,790	2,934	3,184	3,283	3,368	3,506	3,493	3,238	2,859
14	2,465	2,538	2,772	2,790	2,949	3,190	3,281	3,380	3,501	3,487	3,232	2,842
15	2,460	2,547	2,769	2,788	2,962	3,188	3,279	3,398	3,496	3,479	3,231	2,824
16	2,457	2,549	2,767	2,789	2,971	3,179	3,280	3,423	3,495	3,469	3,221	2,809
17	2,462	2,550	2,764	2,803	2,980	3,168	3,294	3,428	3,494	3,464	3,209	2,796
18	2,469	2,550	2,761	2,806	2,988	3,156	3,303	3,432	3,494	3,464	3,197	2,792
19	2,463	2,552	2,765	2,805	2,999	3,146	3,297	3,434	3,501	3,455	3,183	2,792
20	2,461	2,553	2,778	2,795	3,013	3,140	3,290	3,437	3,516	3,446	3,169	2,783
21	2,459	2,561	2,787	2,784	3,026	3,144	3,282	3,443	3,518	3,438	3,157	2,772
22	2,456	2,569	2,788	2,784	3,034	3,139	3,274	3,456	3,519	3,429	3,147	2,761
23	2,453	2,569	2,786	2,780	3,042	3,147	3,268	3,476	3,518	3,420	3,135	2,751
24	2,462	2,568	2,782	2,779	3,052	3,157	3,271	3,483	3,516	3,413	3,121	2,742
25	2,469	2,576	2,782	2,778	3,058	3,175	3,284	3,491	3,512	3,410	3,106	2,740
26	2,466	2,593	2,782	2,777	3,067	3,250	3,280	3,499	3,515	3,402	3,092	2,747
27	2,463	2,599	2,784	2,777	3,081	3,276	3,276	3,504	3,528	3,386	3,078	2,742
28	2,460	2,621	2,786	2,778	3,092	3,280	3,271	3,506	3,524	3,376	3,067	2,735
29	2,458	2,643	2,793	2,782	-----	3,270	3,268	3,506	3,515	3,369	3,062	2,731
30	2,455	2,656	2,795	2,792	-----	3,257	3,266	3,516	3,514	3,358	3,050	2,730
31	2,461	-----	2,796	2,806	-----	3,247	-----	3,525	-----	3,353	3,035	-----
MAX	2,532	2,656	2,796	2,806	3,092	3,280	3,303	3,525	3,533	3,511	3,352	3,021
MIN	2,453	2,461	2,666	2,777	2,817	3,102	3,233	3,272	3,494	3,353	3,035	2,730
(a)	822.93	838.40	849.04	849.83	870.40	881.07	882.29	899.20	898.50	888.07	866.43	844.13
(b)	-81,000	+195,000	+140,000	+10,000	+286,000	+155,000	+19,000	+259,000	-11,000	-161,000	-318,000	-305,000
(c)	6,149	1,750	928	1,335	1,668	2,630	4,038	5,830	8,647	12,900	13,390	11,240

CAL YR 1970 b -124,000

WTR YR 1971 b +188,000

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

## 11406810 PALERMO CANAL NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°31'59", long 121°28'55", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.1, T.19 N., R.4 E., Butte County, on right bank 50 ft downstream from Oroville Dam and 4.4 miles east of Oroville.

PERIOD OF RECORD.--April 1965 to current year. Daily discharge of diversion from Kelly Ridge penstock for period April 1965 to October 1968 when Kelly Ridge penstock supplied the entire flow of Palermo Canal are in files of California District office of Geological Survey.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 547.67 ft (levels by California Department of Water Resources), April 1965 to October 1968, water-stage recorder and Parshall flume at site of diversion from Kelly Ridge penstock, 0.4 mile downstream at different datum.

AVERAGE DISCHARGE.--6 years, 12.6 cfs (9,130 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 28 cfs several days in July to September 1967; no flow several days in 1967, 1970.

REMARKS.--Canal diverts from left end of Oroville Dam. Water is used for irrigation near Oroville. During period of construction of Oroville Dam, water was released from Kelly Ridge penstock to meet irrigation requirements.

COOPERATION.--Records collected by California Department of Water Resources under general supervision of Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	4.6	3.6	5.1	5.2	4.8	5.6	12	22	22	21	20
2	20	4.6	5.0	5.2	5.2	4.6	5.5	12	22	22	21	20
3	20	4.4	5.0	5.1	5.2	4.6	5.5	12	22	22	21	20
4	20	4.4	5.0	5.1	5.2	4.7	5.4	12	22	22	21	20
5	20	4.3	5.0	5.0	5.2	4.6	5.5	12	22	22	21	20
6	20	4.4	5.0	5.1	5.2	4.7	5.5	12	22	22	21	20
7	21	4.4	5.0	5.1	5.2	4.7	5.4	12	22	22	21	20
8	20	4.4	5.1	5.1	5.3	4.7	5.5	11	22	22	21	20
9	20	4.4	5.0	5.1	5.3	4.7	5.5	11	22	22	21	20
10	20	4.4	5.0	5.2	5.2	4.7	5.5	11	22	21	21	20
11	20	4.5	5.1	5.2	5.2	4.7	5.5	11	22	21	21	20
12	20	4.5	5.0	5.2	5.2	4.7	5.6	11	22	21	21	20
13	20	4.5	5.0	5.2	5.3	4.8	5.5	12	22	21	21	20
14	20	4.6	5.0	5.1	5.3	4.8	5.6	12	22	21	21	20
15	20	4.6	5.0	5.1	5.3	4.8	5.6	12	22	21	21	20
16	20	4.6	5.1	5.1	4.9	4.8	5.6	12	22	21	21	20
17	20	4.6	5.0	5.1	4.5	5.0	5.7	12	22	21	21	20
18	20	4.7	5.0	5.1	4.5	5.4	5.7	14	22	21	21	20
19	16	4.7	5.1	5.1	4.5	5.4	5.7	19	22	21	21	20
20	6.4	4.5	5.1	5.1	4.5	5.4	5.8	21	22	21	21	20
21	4.3	4.4	5.1	5.0	4.5	5.4	5.8	22	22	21	21	20
22	4.4	4.4	5.1	5.1	4.6	5.5	5.8	22	22	21	21	20
23	4.3	4.4	5.1	5.1	4.6	5.5	5.8	22	22	21	21	20
24	4.3	4.4	5.0	5.1	4.6	5.5	5.9	22	22	21	20	20
25	4.4	4.4	5.1	5.1	4.6	5.5	5.9	22	22	21	20	20
26	4.4	4.4	5.0	5.1	4.7	5.6	10	22	22	21	20	20
27	4.4	4.4	5.1	5.2	4.8	5.6	12	22	22	21	20	20
28	4.4	4.5	5.0	5.2	4.9	5.6	12	22	22	21	20	20
29	4.4	4.5	5.1	5.1	-----	5.6	12	22	22	21	20	19
30	4.5	4.4	5.1	5.2	-----	5.6	12	22	22	21	20	19
31	4.5	-----	5.1	5.2	-----	5.7	-----	22	-----	21	20	-----
TOTAL	432.7	134.3	154.9	158.8	138.7	157.7	198.4	495	660	660	643	598
MEAN	14.0	4.48	5.00	5.12	4.95	5.09	6.61	16.0	22.0	21.3	20.7	19.9
MAX	21	4.7	5.1	5.2	5.3	5.7	12	22	22	22	21	20
MIN	4.3	4.3	3.6	5.0	4.5	4.6	5.4	11	22	21	20	19
AC-FT	858	266	307	315	275	313	394	982	1,310	1,310	1,280	1,190

CAL YR 1970 TOTAL 4,825.00 MEAN 13.2 MAX 23 MIN 0 AC-FT 9,570  
WTR YR 1971 TOTAL 4,431.50 MEAN 12.1 MAX 22 MIN 3.6 AC-FT 8,790

## SACRAMENTO RIVER BASIN

## 11406870 THERMALITO AFTERBAY NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°27'30", long 121°38'17", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.33, T.19 N., R.3 E., Butte County, at dam 195 ft northeast of centerline of outlet structure and 5.7 miles southwest of Oroville.

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.47 ft above mean sea level (levels by California Department of Water Resources). Auxiliary water-stage recorder 90 ft southwest of centerline of Western Canal outlet, and 7.2 miles west of Oroville.

EXTREMES.--Current year: Maximum contents, 54,822 acre-ft May 14 (gage height, 135.98 ft); minimum, 15,868 acre-ft Nov. 22 (gage height, 124.30 ft).

Period of record: Maximum contents, 57,300 acre-ft May 24, 1969 (gage height, 136.56 ft); minimum since initial operation began, 5,590 acre-ft Mar. 1, 1968 (gage height, 119.09 ft).

REMARKS.--Reservoir is formed by an earthfill dam completed in 1967; diversion from the reservoir began Oct. 12, 1967. Usable capacity, 61,134 acre-ft between gage heights 120.0 and 139.0 ft, extreme operating levels. Normal operating range is 123 to 136.5 ft. Water is released to four canals and to the Feather River from the reservoir (see sta 11406880, 11406890, 11406900, 11406910, 11406920). Total maximum release to the four canals is approximately 4,000 cfs. Water is pumped, at times, from Thermalito afterbay back into Thermalito forebay during off-peak periods to be re-released through Thermalito powerplant for power generation during peak demand periods. Records, including extremes, represent total contents at 2400 hours. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FEET)

120.0	7,054	128.0	25,832
122.0	10,792	130.0	32,150
124.0	15,157	134.0	46,719
126.0	20,171	139.0	68,198

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29,416	24,970	32,417	34,654	26,737	35,485	44,763	39,120	22,694	52,641	29,799	46,011
2	33,901	27,104	36,537	36,115	27,104	35,834	44,608	24,239	21,470	54,653	33,020	49,276
3	27,288	30,282	39,742	36,045	27,627	35,975	34,654	26,494	24,123	53,517	36,185	50,660
4	20,735	32,886	44,454	35,485	28,530	36,115	21,142	29,448	28,625	46,325	39,266	48,792
5	24,123	35,869	45,074	36,820	30,056	38,757	21,087	36,962	31,621	39,230	41,937	33,358
6	26,494	39,632	42,617	38,250	27,226	35,277	22,357	45,074	27,596	38,829	44,957	30,250
7	28,782	34,242	43,761	38,322	24,472	31,621	24,823	53,057	27,658	39,449	44,222	32,283
8	31,357	28,940	44,299	38,902	26,042	35,695	23,530	50,824	29,289	40,666	42,314	34,448
9	34,037	33,020	43,684	38,648	27,782	38,539	33,358	38,757	32,350	41,937	44,377	37,069
10	27,473	34,517	41,112	32,217	30,899	42,465	36,891	42,883	36,185	38,395	45,924	41,224
11	20,870	29,162	41,937	35,799	34,242	51,111	27,844	46,600	40,517	27,503	45,580	42,807
12	23,232	30,509	42,314	40,517	37,675	52,350	30,639	51,316	40,777	28,217	47,075	35,000
13	25,832	31,489	37,389	44,724	35,000	51,977	40,406	53,141	35,939	30,282	49,600	37,926
14	28,280	25,952	37,747	45,463	32,217	47,075	43,225	54,822	42,239	32,751	42,503	40,074
15	30,964	20,600	38,539	44,918	30,056	44,222	47,075	47,114	46,798	36,927	30,997	42,276
16	32,953	21,663	39,193	41,411	33,391	45,815	50,088	32,217	47,432	41,786	28,155	42,352
17	26,555	23,404	39,853	27,534	37,033	47,631	41,187	33,935	47,990	39,193	28,593	42,163
18	20,171	25,236	42,807	28,656	39,339	48,873	30,444	36,749	49,195	33,121	32,051	35,103
19	22,050	26,555	37,962	29,703	41,187	47,353	33,697	41,486	45,112	34,037	33,697	25,266
20	24,007	26,798	28,280	34,448	38,322	42,503	38,322	45,346	35,625	34,827	35,730	25,088
21	26,646	21,361	26,042	37,033	35,625	29,098	44,686	48,792	37,425	35,381	35,069	26,981
22	30,476	15,868	27,411	30,444	37,460	24,065	49,438	42,883	38,612	35,625	33,121	29,799
23	34,758	17,459	28,940	29,512	38,720	23,863	54,568	32,017	40,258	35,904	32,517	31,292
24	28,593	22,245	32,350	28,405	40,369	27,782	50,988	34,861	43,111	33,493	34,448	34,037
25	22,273	27,689	32,417	29,448	40,666	31,819	36,150	38,684	47,432	29,162	36,820	30,541
26	25,623	23,090	32,017	29,992	41,112	34,586	36,326	44,068	47,870	30,412	39,413	19,667
27	28,593	28,405	31,324	30,964	38,250	36,749	36,396	47,990	41,224	32,617	42,239	22,554
28	31,687	26,222	32,217	32,953	35,485	38,902	38,612	51,111	46,640	34,448	42,617	26,616
29	34,792	22,977	32,886	34,380	-----	41,337	41,862	51,316	53,392	37,246	36,679	30,089
30	36,749	28,468	33,697	32,084	-----	43,455	44,802	40,332	52,724	39,963	37,675	33,155
31	30,866	-----	33,799	27,165	-----	44,763	-----	29,992	-----	37,389	42,390	-----
MAX	36,749	39,632	45,074	45,463	41,187	52,350	54,568	54,822	53,392	54,653	49,600	50,660
MIN	20,171	15,868	26,042	27,165	24,472	23,863	21,087	24,239	21,470	27,503	28,155	19,667
(a)	129.61	128.86	130.49	128.44	130.98	133.50	133.51	129.34	135.48	131.52	132.88	130.30
(b)	+5,630	-2,398	+5,331	-6,634	+8,320	+9,278	+39	-14,810	+22,732	-15,335	+5,001	-9,235
(c)	1,863	672	672	448	474	947	1,422	2,205	2,776	3,460	3,710	3,278

CAL YR 1970 b -3,451  
WTR YR 1971 b +7,920

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





## SACRAMENTO RIVER BASIN

11406890 RICHVALE CANAL AT INTAKE, NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°30'19", long 121°41'06", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.18, T.19 N., R.3 E., Butte County, on right bank 500 ft downstream from axis of Thermalito Afterbay Dam and 7.3 miles west of Oroville.

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

GAGE.--Water-stage recorder. Datum of gage is 100.47 ft (revised) above mean sea level (levels by California Department of Water Resources).

EXTREMES.--Period of record: Maximum daily discharge, 393 cfs Apr. 28, 1971; no flow for several months each year.

REMARKS.--Canal diverts from Thermalito afterbay; water is used for irrigation. The canal is part of the Oroville project. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources under general supervision of Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28						0	389	218	249	256	216
2	30						0	385	214	250	242	208
3	30						0	389	214	248	236	207
4	29						0	390	215	247	237	205
5	27						0	389	216	246	238	204
6	28						0	389	217	245	242	205
7	10						0	391	216	263	240	202
8	0						0	388	217	269	239	205
9	0						0	385	210	269	237	190
10	0						0	390	208	269	234	186
11	0						0	319	209	264	232	184
12	0						0	289	211	280	233	182
13	0						56	288	209	267	234	160
14	0						82	290	209	256	233	148
15	0						102	289	211	259	232	98
16	0						182	287	220	240	230	61
17	0						210	289	225	228	230	54
18	0						211	289	226	230	231	52
19	0						212	292	224	232	234	53
20	0						212	292	222	232	235	53
21	0						210	286	247	230	235	54
22	0						210	287	256	228	236	48
23	0						210	288	254	228	223	45
24	0						209	289	252	225	221	22
25	0						211	253	249	224	222	6.5
26	0						285	235	247	245	222	10
27	0						375	235	246	253	221	8.9
28	0						393	235	245	253	218	8.9
29	0				-----		392	236	247	252	218	2.8
30	0				-----		390	234	248	251	217	0
31	0	-----			-----		-----	233	-----	254	218	-----
TOTAL	182	0	0	0	0	0	4,152	9,620	6,802	7,686	7,176	3,279.1
MEAN	5.87	0	0	0	0	0	138	310	227	248	231	109
MAX	30	0	0	0	0	0	393	391	256	280	256	216
MIN	0	0	0	0	0	0	0	233	208	224	217	0
AC-FT	361	0	0	0	0	0	8,240	19,080	13,490	15,250	14,230	6,500
CAL YR 1970	TOTAL	32,597.00	MEAN	89.3	MAX	263	MIN	0	AC-FT	64,660		
WTR YR 1971	TOTAL	38,897.10	MEAN	107	MAX	393	MIN	0	AC-FT	77,150		

## 11406900 PACIFIC GAS AND ELECTRIC CO. LATERAL AT INTAKE, NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°29'22", long 121°41'12", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.19, T.19 N., R.3 E., Butte County, on right bank 82 ft downstream from axis of Thermalito Afterbay Dam and 7.2 miles west of Oroville.

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

GAGE.--Water-stage recorder. Datum of gage is 113.47 ft (revised) above mean sea level (levels by California Department of Water Resources).

EXTREMES.--Period of record: Maximum daily discharge, 32 cfs Apr. 24, 1970, Apr. 26, 1971; no flow for several months in each year.

REMARKS.--Flow regulated at Outlet Works from Thermalito afterbay; water is used for irrigation. Records include diversions from Thermalito afterbay into Pacific Gas and Electric Co. lateral via Duncan lateral siphon in some years. No diversion was made during the 1971 water year to Duncan lateral siphon.

COOPERATION.--Records collected by California Department of Water Resources under general supervision of Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60						0	16	8.4	11	15	5.7
2	0						0	14	7.1	10	13	5.8
3	0						0	13	6.7	11	12	5.9
4	0						0	11	6.7	10	12	5.8
5	0						0	11	6.4	10	12	5.6
6	0						0	18	7.2	10	12	5.1
7	0						0	20	7.0	11	12	4.8
8	0						0	17	8.4	11	12	4.8
9	0						0	17	11	11	12	4.9
10	0						0	13	13	11	12	3.7
11	0						0	12	13	11	12	2.5
12	0						0	12	13	11	12	2.5
13	0						0	11	10	13	12	2.4
14	0						0	11	9.0	14	12	2.4
15	0						0	10	9.2	12	11	2.4
16	0						0	10	10	11	11	1.0
17	0						0	14	11	10	12	.10
18	0						0	14	11	11	12	.10
19	0						0	12	11	11	12	0
20	0						0	10	11	12	11	0
21	0						0	10	12	12	10	0
22	0						5.0	10	13	12	10	0
23	0						8.1	11	13	12	9.4	0
24	0						11	9.9	13	12	9.2	0
25	0						24	9.5	12	12	8.3	0
26	0						32	9.1	12	12	7.1	0
27	0						27	8.4	12	12	7.3	0
28	0						26	8.4	14	12	7.3	0
29	0						28	8.5	17	12	7.3	0
30	0						22	8.4	14	12	7.0	0
31	0	-----			-----		-----	8.4	-----	13	6.2	-----
TOTAL	.60	0	0	0	0	0	183.1	367.6	322.1	355	330.1	65.50
MEAN	.019	0	0	0	0	0	6.10	11.9	10.7	11.5	10.6	2.18
MAX	.60	0	0	0	0	0	32	20	17	14	15	5.9
MIN	0	0	0	0	0	0	0	8.4	6.4	10	6.2	0
AC-FT	1.2	0	0	0	0	0	363	729	639	704	655	130

CAL YR 1970 TOTAL 1,524.1 MEAN 4.18 MAX 32 MIN 0 AC-FT 3,020  
WTR YR 1971 TOTAL 1,624.00 MEAN 4.45 MAX 32 MIN 0 AC-FT 3,220

## SACRAMENTO RIVER BASIN

## 11406910 SUTTER BUTTE CANAL AT INTAKE, NEAR OROVILLE, CALIF.

LOCATION.--Lat 39°27'02", long 121°39'26", in NW corner of Boga Fernandez Grant, T.18 N., R.3 E., Butte County, on left bank 675 ft downstream from Thermalito Afterbay Dam and 6.8 miles southwest of Oroville.

PERIOD OF RECORD.--November 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 109.97 ft above mean sea level (levels by California Department of Water Resources). Prior to May 1, 1970, at datum 9.50 ft lower.

EXTREMES.--Period of record: Maximum daily discharge, 2,110 cfs Apr. 22-24, 1968; no flow for several months each year.

REMARKS.--Water is diverted from Thermalito afterbay and is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources under general supervision of Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	544	210				0	233	1,790	1,190	1,350	1,460	1,060
2	538	212				0	257	1,790	1,170	1,340	1,450	1,050
3	538	162				96	258	1,720	1,140	1,360	1,460	1,050
4	538	112				145	257	1,540	1,130	1,370	1,480	1,050
5	539	112				219	257	1,400	1,140	1,370	1,510	1,040
6	522	112				337	323	1,310	1,140	1,400	1,510	1,050
7	513	112				371	359	1,290	1,140	1,390	1,510	1,030
8	512	112				416	357	1,340	1,180	1,410	1,480	988
9	494	112				524	341	1,350	1,210	1,440	1,490	926
10	485	108				599	327	1,310	1,240	1,440	1,450	907
11	484	107				608	377	1,250	1,220	1,420	1,440	910
12	485	109				470	401	1,250	1,230	1,430	1,420	908
13	486	109				366	472	1,240	1,240	1,460	1,410	873
14	482	109				366	522	1,240	1,230	1,470	1,410	813
15	487	110				365	584	1,220	1,230	1,520	1,410	799
16	490	109				366	659	1,220	1,280	1,520	1,410	786
17	486	109				366	748	1,230	1,340	1,510	1,420	762
18	486	108				366	862	1,210	1,340	1,500	1,420	740
19	488	107				365	997	1,190	1,320	1,490	1,420	734
20	465	106				365	1,090	1,210	1,310	1,490	1,420	708
21	452	105				365	1,110	1,230	1,310	1,500	1,430	695
22	394	106				398	1,210	1,210	1,350	1,500	1,440	680
23	316	106				398	1,330	1,200	1,420	1,480	1,440	639
24	287	106				397	1,500	1,220	1,410	1,480	1,400	604
25	287	106				349	1,560	1,260	1,410	1,480	1,310	586
26	269	106				282	1,580	1,280	1,420	1,480	1,280	587
27	260	37				262	1,640	1,290	1,400	1,480	1,210	564
28	258	5.0				262	1,710	1,250	1,400	1,480	1,150	513
29	251	4.7			-----	261	1,760	1,240	1,350	1,480	1,110	496
30	230	4.3			-----	261	1,790	1,240	1,350	1,480	1,100	496
31	210	-----			-----	204	-----	1,220	-----	1,480	1,090	-----
TOTAL	13,276	3,133.0	0	0	0	10,139	24,871	40,740	38,240	45,020	42,950	24,044
MEAN	428	104	0	0	0	327	829	1,314	1,275	1,452	1,385	801
MAX	544	212	0	0	0	608	1,790	1,790	1,420	1,520	1,510	1,060
MIN	210	4.3	0	0	0	0	233	1,190	1,130	1,340	1,090	496
AC-FT	26,330	6,210	0	0	0	20,110	49,330	80,810	75,850	89,300	85,190	47,690
CAL YR 1970	TOTAL	243,981.00	MEAN	668	MAX	1,760	MIN	0	AC-FT	483,900		
WTR YR 1971	TOTAL	242,413.00	MEAN	664	MAX	1,790	MIN	0	AC-FT	480,800		

LOCATION.--Lat 39°27'23", long 121°38'10", in NW 1/4 sec.33, T.19 N., R.3 E., Butte County, on left bank of outlet channel 955 ft downstream from centerline of Thermalito Afterbay Dam and 5.7 miles southwest of Oroville.

GAGE.--Water-stage recorder. Datum of gage is 113.47 ft above mean sea level (levels by California Department of Water Resources). Prior to May 1, 1970, datum was 100.47 ft above mean sea level.

EXTREMES.--Current year: Maximum discharge, 17,600 cfs Mar. 27 (gage height, 9.04 ft); minimum daily, 893 cfs Feb. 18.  
Period of record: Maximum discharge, 21,600 cfs Jan. 28, 1970 (gage height, 23.30 ft); no flow for many days in 1968.

REMARKS.--Flow regulated by gates at Thermalito afterbay outlet 955 ft upstream. See schematic diagram showing diversions and storage from Feather River at Lake Oroville. Records of water temperatures for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,620	2,550	2,330	6,210	2,040	1,500	17,000	6,050	3,500	4,870	3,930	7,140
2	2,580	2,690	2,960	6,390	1,840	1,500	16,900	6,020	9,450	4,870	3,970	7,110
3	2,530	2,580	3,890	6,590	1,610	1,510	13,100	6,080	9,610	4,880	3,980	7,100
4	2,540	2,910	4,850	6,580	1,500	1,420	8,950	6,080	9,650	4,880	3,980	7,080
5	2,560	2,940	5,520	5,620	1,490	1,490	8,890	6,080	9,600	4,860	3,980	6,990
6	2,570	2,620	5,560	5,350	1,490	1,480	8,960	6,070	9,560	4,960	3,980	7,060
7	2,570	2,560	5,960	5,070	1,470	1,510	9,540	6,070	9,300	4,540	3,980	7,100
8	2,570	2,550	6,560	4,790	1,470	2,280	9,920	6,080	8,400	4,070	3,960	7,140
9	2,560	2,580	6,560	4,530	1,500	3,300	9,920	6,030	7,420	4,000	3,980	7,210
10	2,540	2,550	7,020	4,310	1,500	4,630	9,910	6,790	7,110	3,990	4,700	7,180
11	2,560	2,570	7,550	4,520	1,490	5,670	9,870	6,790	6,840	3,950	5,680	7,090
12	2,560	2,560	7,540	6,500	1,490	7,020	10,400	6,810	6,070	3,990	6,660	7,010
13	2,580	2,560	7,530	7,060	1,480	10,800	10,900	6,800	6,070	3,980	7,100	7,290
14	2,560	2,560	7,560	7,040	1,480	13,000	10,900	6,810	6,110	3,970	7,050	8,260
15	2,560	2,540	7,570	9,000	1,480	13,400	10,900	6,750	6,100	3,980	7,030	3,340
16	2,560	2,590	7,580	10,500	1,490	13,500	10,900	6,770	6,050	3,980	7,090	9,360
17	2,560	2,560	7,560	10,400	1,500	13,500	10,900	6,860	5,850	3,960	7,100	8,330
18	2,560	2,560	7,080	10,600	893	13,500	10,900	6,390	4,880	3,930	5,040	7,370
19	2,580	2,560	6,010	13,400	1,500	13,400	10,900	5,580	3,880	3,960	7,080	7,010
20	2,570	2,560	5,000	14,500	1,490	13,400	10,400	4,830	2,800	3,970	7,100	7,090
21	2,570	2,560	4,050	14,400	1,470	13,300	9,430	4,380	2,770	3,970	7,090	7,100
22	2,570	2,570	5,150	13,300	1,490	12,900	8,470	4,260	3,510	3,970	7,070	6,850
23	2,580	2,440	6,570	10,700	1,500	12,000	7,430	4,220	3,860	3,970	7,080	6,290
24	2,570	2,130	5,670	9,390	1,480	12,200	6,870	4,290	3,880	3,980	7,090	5,800
25	2,570	2,140	5,580	8,450	1,490	13,600	6,910	4,310	3,980	3,970	7,090	5,290
26	2,580	2,110	5,570	7,430	1,510	16,300	7,010	4,540	3,890	4,000	7,090	4,740
27	2,570	2,140	5,570	6,450	1,490	17,500	7,000	5,510	3,850	3,990	7,100	4,310
28	2,570	2,130	5,570	5,460	1,470	17,500	6,990	7,350	3,890	3,990	7,080	3,840
29	2,600	2,110	5,570	4,510	-----	17,500	6,100	9,160	4,600	3,990	7,310	3,360
30	2,600	2,120	5,770	3,460	-----	17,500	6,060	9,500	4,880	3,980	7,070	2,860
31	2,570	-----	6,130	2,540	-----	17,300	-----	9,570	-----	3,960	7,130	-----
TOTAL	79,640	74,600	183,390	235,050	42,103	305,410	292,330	192,330	193,260	129,360	185,270	179,700
MEAN	2,569	2,487	5,916	7,582	1,504	9,852	9,744	6,220	6,107	4,173	5,976	6,657
MAX	2,620	2,940	7,580	14,500	2,040	17,500	17,000	9,570	9,650	4,960	7,130	9,360
MIN	2,530	2,110	2,330	2,540	893	1,420	6,060	4,220	2,770	3,930	3,930	2,860
AC-FT	158,000	148,000	363,800	466,200	83,510	605,800	579,800	382,500	363,500	256,600	367,500	376,100
CAL YR 1970	TOTAL	1,733,410	MEAN	4,749	MAX	21,200	MIN	1,040	AC-FT	3,438,000		
WTR YR 1971	TOTAL	2,102,943	MEAN	5,761	MAX	17,500	MIN	893	AC-FT	4,171,000		

## 11407000 FEATHER RIVER AT OROVILLE, CALIF.

LOCATION.--Lat 39°31'13", long 121°32'48", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.8, T.19 N., R.4 E., Butte County, on right bank 300 ft upstream from fish barrier dam on Feather River, and 0.8 mile northeast of Oroville Post Office.

DRAINAGE AREA.--3,624 sq mi.

PERIOD OF RECORD.--October 1901 to current year. October 1934 to September 1961 published as "near Oroville." Records since October 1967 equivalent to earlier records if diversions out of Thermalito afterbay are added to flow past station. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 148.97 ft above mean sea level (levels by California Department of Water Resources). Jan. 1, 1902, to Dec. 15, 1912, nonrecording gages at several locations 0.2 mile downstream at various datums. Dec. 16, 1912, to Sept. 30, 1934, water-stage recorder at site 0.2 mile downstream at datum 139.53 ft above mean sea level. Oct. 1, 1934, to June 30, 1962, water-stage recorder at site 5.0 miles upstream at datum 182.02 ft above mean sea level. July 1, 1962, to Sept. 30, 1964, water-stage recorder at site 0.2 mile downstream at mean sea level datum.

AVERAGE DISCHARGE (adjusted for diversions into and out of, change in storage of, and evaporation from Lake Oroville, Thermalito diversion pool, Thermalito forebay, and Thermalito afterbay).--70 years, 5,921 cfs (4,290,000 acre-ft per year).

EXTREMES (River only).--Current year: Maximum discharge, 7,650 cfs Mar. 26 (gage height, 4.12 ft); minimum daily, 291 cfs Nov. 9, 10.

Period of record: Maximum discharge observed, 230,000 cfs Mar. 19, 1907 (elevation, 167.5 ft above mean sea level); minimum daily, 291 cfs Nov. 9, 10, 1970.

(Combined flow).--Current year: Maximum discharge, 7,720 cfs Mar. 26; minimum daily, 386 cfs Jan. 9, 10.

Period of record (since construction of Oroville Dam).--Maximum discharge, 56,400 cfs Jan. 25, 1970; minimum daily, 353 cfs May 28, 1969.

Flood of February 1881 reached a stage of 25 ft from floodmarks, site and datum in use from Dec. 16, 1912, to Sept. 30, 1934.

REMARKS.--Flow regulated by Lake Oroville (see sta 11406800) and other powerplants and reservoirs above station. Several diversions above station for power and irrigation. Feather River Fish Hatchery diverts up to 120 cfs at Thermalito diversion dam 0.4 mile upstream from gage. Diverted flow returns to Feather River approximately 0.3 mile downstream from gage. Daily figures shown are combined figures of river flow and diversion to fish hatchery. See REMARKS for upstream stations and schematic diagrams showing diversions from Feather River at Lake Oroville and for South Fork Feather River basin. Records of chemical analyses, water temperatures, and suspended-sediment discharge for the current year are published in Part 2 of this report.

COOPERATION.--Records collected by California Department of Water Resources under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1966.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	406	418	409	408	400	406	421	404	398	414	403	407
2	406	416	414	413	401	409	408	405	404	417	410	409
3	406	409	410	413	400	411	395	412	402	415	407	409
4	403	408	420	413	398	410	396	413	406	417	404	409
5	399	405	414	413	398	410	407	410	408	418	409	406
6	409	403	410	413	398	410	413	398	402	424	424	413
7	410	401	412	413	397	421	414	397	408	419	406	413
8	415	401	411	399	399	423	413	393	408	407	410	410
9	416	402	413	386	399	411	409	399	409	409	412	413
10	412	404	409	386	400	411	402	402	415	407	410	412
11	407	411	411	402	399	410	402	407	415	402	407	409
12	409	412	411	415	400	403	416	406	414	406	411	405
13	409	412	407	414	396	406	415	401	412	408	407	407
14	408	414	412	413	394	408	416	399	414	410	404	407
15	409	412	412	412	394	413	405	394	412	405	405	416
16	410	414	412	415	401	419	400	394	410	404	409	411
17	409	414	410	415	413	415	401	401	414	401	414	412
18	407	415	413	411	991	409	405	401	412	400	408	406
19	407	413	407	407	405	407	410	399	412	400	407	406
20	414	412	403	408	406	408	407	401	413	403	407	412
21	420	411	413	405	412	404	408	401	414	399	402	414
22	421	411	414	404	418	410	409	401	416	394	402	410
23	422	413	415	405	416	420	408	404	416	396	402	404
24	415	416	415	403	418	414	401	411	412	401	402	406
25	414	415	411	403	414	427	394	415	410	403	405	406
26	413	411	411	402	408	2,480	405	410	412	413	411	403
27	416	412	412	403	408	6,910	414	400	410	407	411	406
28	413	428	410	405	408	6,960	412	401	414	406	413	404
29	414	431	414	405	-----	6,960	409	400	413	404	407	402
30	415	414	409	401	-----	5,530	408	395	412	406	407	337
31	419	-----	408	403	-----	2,510	-----	395	-----	404	411	-----
TOTAL	12,753	12,358	12,752	12,608	11,891	41,645	12,228	12,469	12,317	12,619	12,647	12,244
MEAN	411	412	411	407	425	1,343	408	402	411	407	408	408
MAX	422	431	420	415	991	6,960	421	415	416	424	424	416
MIN	399	401	403	386	394	403	394	393	398	394	402	337
AC-FT	25,300	24,510	25,290	25,010	23,590	82,600	24,250	24,730	24,430	25,030	25,090	24,290
MEAN a	2,625	6,406	8,720	8,099	6,992	14,270	11,780	12,980	8,976	4,269	3,742	3,206
AC-FT a	161,400	381,200	536,200	498,000	402,200	877,300	700,700	798,400	534,100	262,500	230,100	190,800
CAL YR 1970	TOTAL 859,566	MEAN 2,355	MAX 53,300	MIN 385	AC-FT 1,705,000	MEAN a 8,241	AC-FT a 5,966,000					
WTR YR 1971	TOTAL 178,531	MEAN 489	MAX 6,960	MIN 386	AC-FT 354,100	MEAN a 7,698	AC-FT a 5,573,000					

a Adjusted for diversions in and out of, change in storage of, and evaporation from Lake Oroville, Thermalito diversion pool, Thermalito forebay, and Thermalito afterbay.

LOCATION.--Lat 39°22'00", long 121°38'46", in SW $\frac{1}{4}$  sec.33, T.18 N., R.3 E., Butte County, on right bank 300 ft upstream from highway bridge and 2.7 miles east of Gridley.

PERIOD OF RECORD.--October 1964 to current year. January 1944 to September 1964 are published in reports by California Department of Water Resources.

EXTREMES.--Current year: Maximum discharge, 24,300 cfs Mar. 30 (gage height, 33.61 ft); minimum daily, 1,770 cfs Mar. 1.  
Period of record: Maximum discharge, 151,000 cfs Dec. 23, 1964 (gage height, 50.43 ft, present datum); minimum daily, 117 cfs June 27, 1966. Maximum discharge since construction of Oroville Dam in 1967, 72,900 cfs Jan. 27, 1970 (gage height, 42.81 ft).  
Flood of Dec. 23, 1955, reached a stage of 52.25 ft (present datum), discharge unknown.

REMARKS.--Flow regulated by Lake Oroville since November 1967 (see sta 11406800) and Thermalito afterbay release to the Feather River since December 1968 (see sta 11406920). See schematic diagram showing diversions and storage from Feather River at Lake Oroville. Records of water temperatures and suspended-sediment discharge for the current year are published in Part 2 of this report.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,110	3,070	2,880	6,590	2,620	1,770	17,500	6,560	9,720	5,290	4,540	7,640
2	3,090	3,290	3,530	6,850	2,410	1,800	17,300	6,490	9,680	5,290	4,570	7,590
3	3,030	3,080	4,420	6,930	2,150	1,840	14,400	6,560	9,880	5,330	4,580	7,560
4	3,030	3,300	5,590	6,660	2,010	1,830	10,000	6,540	9,920	5,350	4,580	7,540
5	3,030	3,730	6,280	6,230	1,980	1,800	9,650	6,510	9,890	5,320	4,590	7,470
6	3,050	3,220	6,330	5,940	1,890	1,820	9,780	6,470	9,870	5,410	4,580	7,520
7	3,030	3,120	6,600	5,640	1,830	1,800	10,200	6,460	9,650	5,040	4,590	7,520
8	3,050	3,080	7,250	5,390	1,820	2,420	10,600	6,440	8,780	4,570	4,580	7,540
9	3,040	3,110	7,210	5,010	1,830	3,380	10,600	6,360	7,930	4,460	4,580	7,630
10	3,920	3,090	7,530	4,870	1,830	4,850	10,600	6,990	7,530	4,460	5,260	7,610
11	3,060	3,120	8,130	4,890	1,840	5,930	10,500	7,060	7,310	4,420	6,390	7,560
12	3,050	3,090	8,110	6,650	1,820	7,020	10,800	7,090	6,610	4,480	7,420	7,440
13	3,050	3,090	8,100	7,410	1,810	10,500	11,400	7,090	6,540	4,500	7,910	7,670
14	3,040	3,110	8,110	7,430	1,800	13,000	11,400	7,090	6,580	4,500	7,920	8,570
15	3,060	3,080	8,150	8,910	1,800	13,500	11,400	7,050	6,600	4,520	7,840	9,640
16	3,050	3,110	8,170	10,800	1,800	13,600	11,400	7,020	6,540	4,520	7,920	9,840
17	3,050	3,090	8,140	10,900	1,810	13,600	11,400	7,060	6,340	4,500	7,950	8,910
18	3,040	3,080	7,770	11,100	1,780	13,600	11,300	6,820	5,360	4,500	6,020	7,860
19	3,040	3,070	6,690	13,500	1,820	13,500	11,400	5,920	4,480	4,540	7,870	7,440
20	3,090	3,090	5,760	15,000	1,780	13,500	11,000	5,250	3,440	4,580	7,890	7,490
21	3,080	3,090	4,800	14,900	1,790	13,500	10,000	4,830	3,220	4,630	7,850	7,530
22	3,080	3,090	5,370	14,000	1,800	13,200	9,140	4,690	3,910	4,670	7,780	7,350
23	3,110	3,010	7,080	11,800	1,810	12,400	8,130	4,640	4,260	4,640	7,770	6,830
24	3,070	2,720	6,340	10,200	1,820	12,300	7,430	4,690	4,310	4,600	7,750	6,330
25	3,060	2,710	6,140	9,210	1,790	13,660	7,420	4,720	4,280	4,590	7,740	5,780
26	3,050	2,670	6,120	8,170	1,790	16,800	7,520	4,890	4,320	4,640	7,710	5,190
27	3,060	2,720	6,120	7,170	1,820	23,800	7,500	5,730	4,280	4,630	7,720	4,750
28	3,060	2,830	6,160	6,240	1,790	24,000	7,500	7,410	4,290	4,600	7,650	4,330
29	3,090	2,900	6,180	5,290	-----	24,100	6,740	9,220	4,920	4,620	7,560	3,860
30	3,100	2,820	6,270	4,190	-----	23,400	6,590	9,660	5,290	4,600	7,580	3,350
31	3,070	-----	6,620	3,230	-----							

## SACRAMENTO RIVER BASIN

11407300 NORTH HONCUT CREEK NEAR BANGOR, CALIF.

LOCATION.--Lat 39°20'32", long 121°29'25", in SW $\frac{1}{4}$  sec.11, T.17 N., R.4 E., Butte County, on left bank 0.2 mile upstream from unnamed tributary and 5.7 miles southwest of Bangor.

DRAINAGE AREA.--47.1 sq mi.

PERIOD OF RECORD.--October 1960 to September 1962, July 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 125 ft (from topographic map). Prior to September 1962, at site 50 ft upstream at same datum.

AVERAGE DISCHARGE.--10 years, 49.6 cfs (35,940 acre-ft per year); median of yearly mean discharges, 41 cfs (29,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,480 cfs Dec. 2 (gage height, 9.02 ft); no flow many days.

Period of record: Maximum discharge, 10,700 cfs Dec. 26, 1964 (gage height, 11.57 ft), from rating curve extended above 4,600 cfs; no flow for many days in 1961, 1962, 1966, 1968, 1971.

REMARKS.--Small diversions above station for irrigation. Slight regulation occurs from Lake Wyandotte (capacity, 1,460 acre-ft).

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	2.0	364	90	23	10	34	15	12	3.7		0
2	2.3	1.8	1,190	145	23	9.9	30	15	11	3.2		0
3	1.6	1.5	232	90	22	9.5	26	15	10	3.1		0
4	1.4	2.3	1,340	68	20	9.2	24	16	9.9	2.5		0
5	2.5	4.9	317	56	19	9.2	21	16	9.2	2.0		0
6	3.2	24	150	46	19	8.8	19	15	8.4	1.6		0
7	3.2	34	117	39	19	9.0	22	14	7.6	.80		0
8	2.7	13	200	35	18	9.0	21	14	7.0	.50		0
9	2.8	8.9	198	32	18	8.8	20	14	6.6	.70		0
10	3.1	13	105	30	17	8.8	28	13	6.5	1.0		0
11	3.2	12	75	183	17	9.2	24	13	6.0	1.0		0
12	3.4	14	57	155	16	97	20	12	5.6	1.0		0
13	3.5	13	45	228	15	81	18	11	4.8	.90		0
14	3.4	11	41	200	15	32	17	11	4.3	.70		0
15	3.1	9.4	34	131	15	34	16	10	4.0	.50		0
16	3.0	8.4	103	197	15	26	19	8.9	3.5	.40		0
17	2.8	7.8	172	213	15	23	27	8.4	3.1	.50		0
18	2.7	7.3	108	129	13	20	23	8.0	2.8	.80		0
19	2.9	7.0	83	99	14	17	20	7.6	2.4	.90		0
20	3.9	6.6	63	82	13	15	24	7.0	1.9	.80		0
21	6.6	6.9	598	67	12	14	39	7.0	1.1	.60		0
22	4.5	7.2	220	56	13	15	27	7.0	1.3	.50		0
23	4.2	7.3	118	47	11	87	23	8.2	.60	.30		0
24	8.4	7.3	87	41	11	146	21	9.3	1.1	.10		0
25	5.6	8.1	67	37	11	572	19	9.3	1.2	0		0
26	3.5	11	71	34	10	1,020	18	9.2	2.4	0		0
27	2.6	11	118	31	10	162	17	9.5	5.8	.10		0
28	2.3	304	126	29	10	97	17	11	5.2	.10		.50
29	2.1	1,130	498	27	-----	68	16	12	4.2	0		1.0
30	2.0	443	174	75	-----	51	16	14	3.9	0		1.5
31	2.0	-----	112	24	-----	41	-----	15	-----	0		-----
TOTAL	100.6	2,137.7	7,183	2,666	434	2,719.4	666	355.4	153.40	28.30	0	3.00
MEAN	3.25	71.3	232	86.0	15.5	87.7	22.2	11.5	5.11	.91	0	.10
MAX	8.4	1,130	1,340	228	23	1,020	39	16	12	3.7	0	1.5
MIN	1.4	1.5	34	24	10	8.8	16	7.0	.60	0	0	0
AC-FT	200	4,240	14,250	5,290	861	5,390	1,320	705	304	56	0	6.0
CAL YR 1970	TOTAL	34,578.10	MEAN	94.7	MAX	2,820	MIN	.40	AC-FT	68,590		
WTR YR 1971	TOTAL	16,446.80	MEAN	45.1	MAX	1,340	MIN	0	AC-FT	32,620		



## 11407500 SOUTH HONCUT CREEK NEAR BANGOR, CALIF.

LOCATION.--Lat 39°22'04", long 121°22'16", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.35, T.18 N., R.5 E., Butte County, on right bank 2.3 miles southeast of Bangor, 3.3 miles upstream from Tennessee Creek, and 16.3 miles southeast of Oroville.

DRAINAGE AREA.--30.6 sq mi.

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 620 ft (from topographic map).

AVERAGE DISCHARGE.--21 years, 36.4 cfs (26,370 acre-ft per year); median of yearly mean discharges, 31 cfs (22,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,300 cfs Mar. 26 (gage height, 8.90 ft); minimum daily, 0.13 cfs Oct. 1.

Period of record: Maximum discharge, 17,600 cfs Dec. 26, 1964 (gage height, 19.25 ft), from rating curve extended above 2,200 cfs on basis of slope-area measurements at gage heights 11.15 and 19.25 ft; no flow at times in most years.

REMARKS.--Records good October through April, poor May through September. Some small diversions upstream for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	1.8	234	63	20	10	43	10	5.7	3.3	1.1	2.2
2	.19	1.8	768	73	19	9.3	37	10	5.7	2.7	.75	2.3
3	.23	1.8	250	46	19	9.5	32	12	5.3	2.4	1.0	2.3
4	.27	3.1	986	39	18	9.7	29	15	4.6	2.0	.97	1.8
5	.24	10	203	35	18	9.3	27	14	4.1	1.4	.70	1.6
6	.36	22	94	30	17	8.2	25	13	3.7	1.4	.58	1.6
7	.49	11	72	27	17	7.9	27	12	4.1	1.3	.49	1.7
8	.56	4.0	176	25	16	7.9	24	13	4.3	1.3	.55	1.7
9	.52	2.8	123	23	16	7.1	24	12	4.6	1.2	.80	1.7
10	.44	16	66	31	15	7.0	49	11	4.0	1.1	.85	1.7
11	.36	8.0	45	299	15	8.4	26	9.8	4.1	1.3	1.2	1.8
12	.32	12	34	143	15	284	22	8.2	4.0	1.2	1.4	1.8
13	.29	6.0	29	167	12	81	21	7.2	3.4	1.1	1.5	1.8
14	.25	3.5	25	230	12	38	20	6.9	3.5	1.1	1.3	1.6
15	.23	2.5	23	136	12	31	19	6.2	3.5	1.1	1.3	1.3
16	.21	1.8	141	153	12	24	18	5.5	3.0	2.3	1.5	1.3
17	.20	1.6	129	145	11	22	26	5.3	3.3	2.0	1.7	1.2
18	.20	1.4	74	97	11	18	19	4.8	3.4	1.4	1.8	.91
19	.20	1.2	54	77	14	16	17	4.6	3.1	1.4	2.0	.97
20	.45	1.2	46	63	12	14	22	4.6	2.7	1.2	2.0	1.2
21	.63	1.1	248	51	11	13	24	4.5	2.3	2.1	2.0	1.3
22	1.9	1.1	125	44	11	12	19	4.5	2.0	2.1	2.0	1.5
23	3.7	1.1	79	38	11	122	18	4.1	2.4	2.2	2.2	1.6
24	4.1	1.3	56	34	10	127	16	4.0	2.3	1.7	2.2	1.7
25	2.3	38	43	30	9.5	473	14	3.4	2.2	1.8	2.0	1.8
26	1.9	35	41	28	9.2	1,040	13	4.0	2.9	2.2	2.0	2.2
27	1.6	15	67	26	9.9	188	12	4.2	4.1	2.4	2.0	2.2
28	1.0	326	80	24	11	111	11	7.3	2.9	2.6	2.0	2.0
29	1.1	357	283	23	-----	81	11	8.2	3.3	1.8	2.0	2.3
30	1.1	304	113	21	-----	65	11	8.9	3.7	1.8	2.0	3.7
31	1.7	-----	77	20	-----	52	-----	7.2	-----	1.5	2.0	-----
TOTAL	27.17	1,193.1	4,784	2,241	383.6	2,906.3	676	245.4	108.2	54.4	45.89	52.78
MEAN	.88	39.8	154	72.3	13.7	93.8	22.5	7.92	3.61	1.75	1.48	1.76
MAX	4.1	357	986	299	20	1,040	49	15	5.7	3.3	2.2	3.7
MIN	.13	1.1	23	20	9.2	7.0	11	3.4	2.0	1.1	.49	.91
AC-FT	54	2,370	9,490	4,450	761	5,760	1,340	487	215	108	91	105
CAL YR 1970	TOTAL	21,705.74	MEAN	59.5	MAX	1,700	MIN	0	AC-FT	43,050		
WTR YR 1971	TOTAL	12,717.84	MEAN	34.8	MAX	1,040	MIN	.13	AC-FT	25,230		

## PEAK DISCHARGE (BASE, 1,400 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-30	2045	7.34	1,580	3-12	1530	7.34	1,580
12- 2	0445	8.17	2,450	3-26	0200	8.90	3,300
12- 4	0600	7.84	2,080				





## SACRAMENTO RIVER BASIN

## 11407800 JACKSON MEADOWS RESERVOIR NEAR SIERRA CITY, CALIF.

LOCATION.--Lat 39°30'40", long 120°33'15", in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.18, T.19 N., R.13 E., Sierra County, Tahoe National Forest, on right bank at Jackson Meadows Dam on Middle Yuba River, 0.7 mile downstream from Pass Creek, and 5.7 miles southeast of Sierra City.

DRAINAGE AREA.--37.6 sq mi.

PERIOD OF RECORD.--November 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Nevada Irrigation District).

EXTREMES.--Current year: Maximum contents, 71,000 acre-ft June 26 (elevation, 6,037.7 ft); minimum, 28,900 acre-ft Nov. 23, 24 (elevation, 5,991.8 ft).

Period of record: Maximum contents, 71,000 acre-ft on several days in 1969-71 (elevation, 6,037.7 ft); minimum since reservoir first filled, 20,300 acre-ft Oct. 21 to Nov. 1, 1968 (elevation, 5,978.7 ft).

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Nov. 9, 1964. Usable capacity, 66,700 acre-ft between elevations 5,933.0 (bottom of intake tower) and 6,036.0 ft (top of spillway Tainter gates). Dead storage, 2,500 acre-ft. Records, including extremes, represent total contents at 2400 hours.

REVISIONS (WATER YEARS).--WRD Calif. 1970: 1969.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

5,960	10,600	6,010	43,900
5,970	15,400	6,020	53,200
5,980	21,000	6,030	63,000
5,990	27,600	6,040	73,500
6,000	35,300		

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49,800	34,400	31,000	34,100	37,900	41,500	46,300	56,400	69,700	69,800	69,600	68,900
2	49,200	34,000	31,200	34,200	38,100	41,600	46,500	56,900	69,600	69,800	69,500	68,700
3	48,800	33,600	31,400	34,200	38,200	41,700	46,700	57,500	69,600	69,700	69,500	68,400
4	48,200	33,200	31,600	34,200	38,300	41,800	47,000	58,000	69,800	69,600	69,500	68,200
5	47,700	33,200	31,700	34,300	38,400	41,900	47,300	58,500	70,000	69,500	69,400	67,900
6	47,100	33,000	31,700	34,300	38,500	42,000	47,700	58,800	70,500	69,400	69,500	67,700
7	46,600	32,700	31,900	34,400	38,600	42,000	48,000	59,000	70,800	69,600	69,500	67,300
8	46,000	32,300	32,000	34,400	38,700	42,100	48,300	59,400	70,900	69,800	69,500	66,700
9	45,600	32,000	32,100	34,400	38,800	42,200	48,700	59,800	70,800	69,900	69,400	66,100
10	45,000	31,800	32,200	34,500	39,000	42,300	49,000	60,500	70,800	69,900	69,400	65,500
11	44,500	31,600	32,400	34,700	39,000	42,300	49,300	61,200	70,800	69,900	69,400	64,800
12	44,900	31,300	32,400	34,900	39,200	42,600	49,700	62,000	70,900	69,900	69,400	64,200
13	43,400	31,000	32,400	35,000	39,400	42,700	50,000	63,000	70,900	69,900	69,400	63,600
14	42,900	30,500	32,500	35,100	39,500	42,800	50,400	64,000	70,800	69,900	69,400	63,200
15	42,300	30,300	32,700	35,200	39,600	42,900	50,900	65,000	70,900	69,900	69,400	62,400
16	41,800	30,100	32,900	35,300	39,800	43,100	51,500	65,900	70,900	69,900	69,400	61,700
17	41,300	30,000	33,000	35,500	40,000	43,100	51,900	66,400	70,900	69,900	69,300	61,100
18	40,700	29,900	33,100	35,800	40,200	43,100	52,300	66,900	70,800	69,900	69,300	60,400
19	40,200	29,700	33,200	36,100	40,200	43,200	52,700	67,500	70,800	69,800	69,300	59,800
20	39,700	29,500	33,200	36,300	40,400	43,300	53,000	68,400	70,800	69,800	69,300	59,200
21	39,200	29,300	33,400	36,600	40,500	43,400	53,400	68,900	70,700	69,700	69,300	58,600
22	38,700	29,100	33,500	36,800	40,600	43,500	53,700	69,400	70,600	69,700	69,200	58,000
23	38,300	28,900	33,600	36,900	40,800	43,700	53,800	69,900	70,500	69,600	69,200	57,400
24	37,700	28,900	33,600	37,000	40,900	43,900	54,100	70,500	70,400	69,600	69,200	56,700
25	37,200	29,800	33,600	37,200	40,900	44,200	54,300	70,800	70,300	69,600	69,200	56,100
26	36,700	30,100	33,700	37,300	41,100	44,800	54,600	70,900	71,000	69,600	69,200	55,400
27	36,300	30,300	33,800	37,300	41,300	45,100	54,800	70,600	70,700	69,600	69,200	54,900
28	35,800	30,400	33,900	37,500	41,400	45,400	55,100	70,400	70,400	69,600	69,200	54,600
29	35,500	30,600	34,000	37,600	-----	45,600	55,400	70,200	70,200	69,600	69,200	54,500
30	35,100	30,800	34,000	37,700	-----	45,800	55,800	70,000	69,900	69,600	69,100	54,500
31	34,700	-----	34,000	37,900	-----	46,000	-----	69,900	-----	69,600	69,100	-----
MAX	49,800	34,400	34,000	37,900	41,400	46,000	55,800	70,900	71,000	69,900	69,600	68,900
MIN	34,700	28,900	31,000	34,100	37,900	41,500	46,300	56,400	69,600	69,400	69,100	54,500
(a)	5,999.2	5,994.3	5,998.4	6,003.0	6,007.1	6,012.3	6,022.7	6,036.7	6,036.7	6,036.4	6,035.9	6,021.4
(b)	-15,600	-3,900	+3,200	+3,900	+3,500	+4,600	+9,800	+14,100	0	-300	-500	-14,600

CAL YR 1970 b +3,900

WTR YR 1971 b +4,200

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11407900 MIDDLE YUBA RIVER BELOW JACKSON MEADOWS DAM, NEAR SIERRA CITY, CALIF.

LOCATION.--Lat 39°30'58", long 120°33'40", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.18, T.19 N., R.13 E., Sierra County, Tahoe National Forest, on right bank 0.6 mile downstream from Jackson Meadows Dam, and 5.2 miles southeast of Sierra City.

DRAINAGE AREA.--38.3 sq mi.

PERIOD OF RECORD.--October 1964 to current year. If record for Milton-Bowman tunnel near Graniteville is added to record published as Middle Yuba River at Milton, a record equivalent to this site can be obtained for the period 1928-64.

GAGE.--Water-stage recorder. Datum of gage is 5,717.20 ft above mean sea level (levels by Nevada Irrigation District).

AVERAGE DISCHARGE (adjusted for storage in Jackson Meadows Reservoir).--7 years, 126 cfs (91,290 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 800 cfs June 27 (gage height, 4.99 ft); minimum daily, 4.8 cfs Nov. 20-23.

Period of record: Maximum discharge, 2,300 cfs Sept. 1, 1965 (gage height, 6.60 ft), from rating curve extended above 1,100 cfs on basis of computation of flow over dam at gage height, 10.57 ft; minimum daily, 0.1 cfs Oct. 1, 2, 1964.

Maximum stage known since at least 1925, 10.57 ft Jan. 31, 1963, from floodmarks (discharge, 10,000 cfs, by computation of flow over dam, adjusted for diversion and inflow).

REMARKS.--Records fair. Flow regulated by Jackson Meadows Reservoir since November 1964 (see sta 11407800).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	272	203	8.0	5.8	8.6	5.3	11	17	272	304	20	63
2	272	203	8.0	5.8	8.6	5.3	11	17	222	268	20	123
3	272	210	7.4	5.8	8.6	5.3	12	16	203	238	17	118
4	272	218	7.4	5.3	8.0	5.3	14	15	206	210	14	107
5	272	222	7.4	5.3	8.0	5.3	14	15	272	196	11	106
6	268	222	7.4	5.3	8.0	5.3	14	126	385	182	11	104
7	264	218	8.0	5.3	8.0	5.3	14	238	536	72	11	128
8	264	218	8.6	5.3	7.4	5.3	14	242	662	46	11	267
9	264	218	8.6	5.3	7.4	5.3	14	242	674	75	11	254
10	259	214	8.0	5.8	7.4	5.3	14	242	674	81	11	245
11	254	214	8.0	6.3	7.4	5.3	14	242	668	83	11	230
12	250	214	8.0	6.8	7.4	6.3	14	242	674	83	11	227
13	250	218	8.0	8.0	8.0	5.3	14	242	680	81	10	222
14	254	214	8.0	8.0	8.0	5.3	14	242	692	79	10	227
15	264	218	7.4	5.8	8.6	5.3	16	242	674	81	9.2	222
16	259	218	8.0	6.3	9.2	5.3	16	242	704	77	9.2	245
17	259	214	7.4	8.6	8.6	5.3	15	242	710	71	9.2	257
18	259	214	7.4	9.2	8.6	5.3	14	242	692	73	9.2	254
19	259	90	6.3	8.6	8.6	5.3	11	242	662	71	8.6	239
20	259	4.8	5.8	9.2	8.6	5.3	11	242	650	71	8.6	222
21	259	4.8	5.8	9.2	8.0	5.3	11	242	614	61	8.6	214
22	259	4.8	5.8	8.6	7.4	5.3	9.9	242	572	56	8.6	227
23	259	4.8	5.8	8.0	6.8	6.8	9.9	318	524	44	8.6	227
24	259	6.8	5.8	8.0	6.8	9.2	9.9	542	468	36	7.4	222
25	264	23	5.8	8.0	6.8	11	9.9	722	418	28	6.3	236
26	264	13	5.8	8.0	6.8	25	9.9	776	548	25	6.4	245
27	230	9.2	5.8	8.0	6.8	14	9.9	704	740	23	6.5	176
28	192	8.6	5.8	8.0	5.8	12	9.9	566	560	22	6.5	109
29	200	8.0	5.8	8.6	-----	11	11	450	423	20	6.5	64
30	203	8.0	5.8	8.6	-----	12	15	396	350	20	6.5	52
31	203	-----	5.8	8.6	-----	12	-----	335	-----	20	6.5	-----
TOTAL	7,838	4,055.8	216.9	223.4	218.2	230.6	377.3	8,883	16,129	2,797	311.4	5,632
MEAN	253	135	7.00	7.21	7.79	7.44	12.6	287	538	90.2	10.0	188
MAX	272	222	8.6	9.2	9.2	25	16	776	740	304	20	267
MIN	192	4.8	5.8	5.3	5.8	5.3	9.9	15	203	20	6.3	52
AC-FT	15,550	8,040	430	443	433	457	748	17,620	31,990	5,550	618	11,170

CAL YR 1970 TOTAL 40,867.2 MEAN 112 MAX 584 MIN 4.2 AC-FT 81,060 MEAN a 117 AC-FT a 84,960  
 WTR YR 1971 TOTAL 46,912.6 MEAN 129 MAX 776 MIN 4.8 AC-FT 93,050 MEAN a 134 AC-FT a 97,250

a Adjusted for change in contents in Jackson Meadows Reservoir.

## SACRAMENTO RIVER BASIN

## 11408000 MILTON-BOWMAN TUNNEL OUTLET NEAR GRANITEVILLE, CALIF.

LOCATION.--Lat 39°27'36", long 120°36'40", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.3, T.18 N., R.12 E., Nevada County, on right bank 100 ft downstream from tunnel outlet near upper end of Bowman Lake, and 6.9 miles east of Graniteville.

PERIOD OF RECORD.--May 1928 to September 1930, February 1931 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1962, published as Milton-Bowman tunnel at outlet.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 5,600 ft (from topographic map). Prior to Sept. 22, 1964, at datum 0.56 ft higher.

AVERAGE DISCHARGE.--43 years, 71.8 cfs (52,020 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 492 cfs Feb. 11, 1941; minimum daily, 0.4 cfs Oct. 7, 1944.

REMARKS.--Records good. Tunnel diverts from Middle Yuba River at Milton, in sec.12, T.19 N., R.12 E., and discharges into Bowman Lake. Practically the entire flow of Middle Yuba River is diverted during low and medium flows. Middle Yuba River flow is regulated by Jackson Meadows Reservoir (see sta 11407800) since November 1964. See schematic diagram of Yuba River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255	201	19	10	15	12	28	38	306	105	23	39
2	255	201	18	10	15	12	28	42	301	103	24	128
3	254	208	16	10	15	11	28	42	301	103	20	123
4	254	215	16	9.8	15	11	30	40	303	114	16	109
5	254	232	15	9.8	14	11	33	37	308	130	15	105
6	253	224	16	9.8	14	11	35	117	312	129	14	102
7	252	216	16	9.8	14	11	35	263	317	144	12	157
8	251	213	18	9.8	14	11	32	280	320	83	11	328
9	251	222	21	9.8	14	11	32	276	195	106	10	327
10	250	222	18	10	14	11	37	286	77	125	11	316
11	249	223	16	11	14	11	32	288	76	128	11	306
12	249	229	16	11	15	14	31	269	76	126	10	296
13	248	228	15	10	15	14	32	275	75	118	9.7	298
14	250	224	15	9.8	16	12	34	285	74	110	9.2	308
15	255	222	15	10	16	12	38	290	74	107	8.7	298
16	255	221	16	11	17	12	42	286	75	101	8.5	304
17	254	218	15	16	16	12	40	282	74	97	8.2	340
18	253	217	14	20	16	12	34	280	74	104	8.5	328
19	252	144	13	20	15	12	30	289	72	98	8.2	313
20	254	14	13	19	15	12	30	289	72	88	8.0	296
21	252	11	13	19	14	13	28	286	72	80	7.8	288
22	254	10	12	18	14	13	25	275	70	69	7.8	306
23	254	9.8	12	17	13	18	24	288	70	61	7.8	299
24	252	12	12	16	13	24	23	319	68	50	7.5	315
25	248	77	12	16	13	27	22	327	81	41	7.8	308
26	247	42	12	15	12	64	22	328	113	35	7.8	358
27	232	25	11	15	13	40	22	325	110	33	8.0	271
28	198	23	11	15	12	34	23	321	107	30	7.8	162
29	205	21	12	15	-----	32	26	317	105	28	7.8	89
30	204	20	11	15	-----	32	32	312	104	26	7.5	71
31	204	-----	10	15	-----	30	-----	310	-----	24	7.5	-----
TOTAL	7,598	4,344.8	449	412.6	403	562	908	7,662	4,382	2,696	331.1	7,288
MEAN	245	145	14.5	13.3	14.4	18.1	30.3	247	146	87.0	10.7	243
MAX	255	232	21	20	17	64	42	328	320	144	24	358
MIN	198	9.8	10	9.8	12	11	22	37	68	24	7.5	39
AC-FT	15,070	8,620	891	818	799	1,110	1,800	15,200	8,690	5,350	657	14,460

CAL YR 1970 TOTAL 39,495.7 MEAN 108 MAX 361 MIN 1.9 AC-FT 78,340  
WTR YR 1971 TOTAL 37,036.5 MEAN 101 MAX 358 MIN 7.5 AC-FT 73,460

## 11408850 MIDDLE YUBA RIVER NEAR CAMPTONVILLE, CALIF.

LOCATION.--Lat 39°25'01", long 120°57'06", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.15, T.18 N., R.9 E., Sierra County, Tahoe National Forest, on right bank 0.6 mile downstream from Kanaka Creek, and 5.8 miles southeast of Camptonville.

DRAINAGE AREA.--136 sq mi.

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,170 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 4,410 cfs Mar. 26 (gage height, 10.97 ft); minimum daily, 21 cfs Oct. 17.

Period of record: Maximum discharge, 12,300 cfs Jan. 21, 1970 (gage height, 14.80 ft); minimum daily, 21 cfs Oct. 17, 1971.

REMARKS.--Records good. Natural flow of stream affected by Jackson Meadows Reservoir since November 1964 (see sta 11407800), Milton-Bowman tunnel (see sta 11408000) which diverts above station to Bowman Lake (see sta 11415500), and other small diversions above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	32	670	239	450	231	725	478	506	526	76	41
2	27	32	911	229	458	221	670	534	410	486	73	40
3	27	32	492	205	447	221	630	534	365	437	71	40
4	26	45	894	195	422	221	626	558	368	401	68	39
5	27	194	660	185	395	215	645	518	410	342	68	38
6	27	308	550	173	356	207	675	534	570	312	66	38
7	28	189	492	167	320	205	670	542	780	285	66	39
8	28	109	538	163	312	203	590	770	967	188	64	39
9	28	143	626	163	310	203	566	690	1,060	164	63	38
10	28	318	475	205	318	203	745	760	1,250	157	64	40
11	28	194	401	410	386	213	614	834	1,240	152	63	40
12	26	339	350	404	468	684	574	798	1,240	143	59	39
13	22	185	315	335	496	822	566	846	1,220	137	58	38
14	22	128	285	308	500	562	570	852	1,170	132	57	38
15	22	103	260	290	500	482	626	858	1,140	127	55	37
16	22	88	315	298	486	440	655	828	1,190	122	54	36
17	21	78	288	763	440	422	675	695	1,220	118	54	37
18	22	72	255	1,240	395	407	566	614	1,140	118	52	36
19	22	67	231	1,230	383	389	506	606	1,080	111	51	36
20	33	64	225	1,120	344	380	503	626	1,040	106	48	37
21	36	60	231	942	320	374	461	660	995	100	48	38
22	42	58	215	735	302	371	425	538	924	97	46	37
23	64	57	203	635	285	512	395	574	870	92	46	38
24	87	69	195	550	268	765	380	725	798	89	45	39
25	52	786	187	482	260	885	356	1,020	730	87	44	39
26	39	832	183	437	245	3,090	344	1,240	996	86	43	41
27	35	392	187	416	243	1,800	326	1,150	1,220	85	42	43
28	35	486	203	413	243	1,210	335	960	900	83	41	44
29	33	630	335	410	-----	988	368	780	705	80	41	48
30	32	566	310	425	-----	918	422	715	586	78	39	79
31	32	-----	258	440	-----	810	-----	606	-----	78	40	-----
TOTAL	1,001	6,656	11,740	14,207	10,352	18,654	16,209	22,443	27,090	5,519	1,705	1,212
MEAN	32.3	222	379	458	370	602	540	724	903	178	55.0	40.4
MAX	87	832	911	1,240	500	3,090	745	1,240	1,250	526	76	79
MIN	21	32	183	163	243	203	326	478	365	78	39	36
AC-FT	1,990	13,200	23,290	28,180	20,530	37,000	32,150	44,520	53,730	10,950	3,380	2,400
CAL YR 1970	TOTAL 133,216		MEAN 365	MAX 7,040	MIN 21	AC-FT 264,200						
WTR YR 1971	TOTAL 136,788		MEAN 375	MAX 3,090	MIN 21	AC-FT 271,300						

## 11408880 MIDDLE YUBA RIVER BELOW OUR HOUSE DAM, CALIF.

LOCATION.--Lat 39°24'42", long 120°59'49", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.20, T.18 N., R.9 E., Sierra County, Tahoe National Forest, on right bank 400 ft downstream from Our House Dam and 4.0 miles southeast of Camptonville.

DRAINAGE AREA.--145 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 1,967.51 ft above mean sea level.

EXTREMES.--Current year: Maximum discharge, 4,530 cfs Mar. 26 (gage height, 16.78 ft); minimum daily, 3.2 cfs Oct. 21 to Nov. 4.

Period of record: Maximum discharge, 12,500 cfs Jan. 21, 1970 (gage height, 10.70 ft); minimum daily, 3.2 cfs Oct. 21 to Nov. 4, 1970.

REMARKS.--Records good. Natural flow of stream affected by Jackson Meadows Reservoir since November 1964 (see sta 11407800), Milton-Bowman tunnel (see sta 11408000) which diverts above station to Bowman Lake (see sta 11415500), Lohman Ridge tunnel since October 1968 which diverts 400 ft upstream to Oregon Creek and thence to Bullards Bar Reservoir via Camptonville tunnel. Other small diversions above station. See schematic diagram showing diversions and storage in Yuba River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	3.2	255	29	125	49	43	51	47	41	32	33
2	29	3.2	570	29	131	49	43	50	47	40	31	33
3	29	3.2	103	28	99	50	42	52	46	39	31	33
4	29	3.2	697	28	64	50	42	50	46	40	31	33
5	29	3.4	285	27	42	50	42	50	46	39	31	33
6	29	3.9	146	26	33	50	43	50	47	39	31	33
7	29	3.7	125	27	32	49	45	52	50	38	31	33
8	29	3.5	179	26	33	49	45	56	88	37	31	33
9	29	4.1	281	26	33	49	45	56	200	36	32	33
10	29	4.8	116	33	32	49	48	57	371	36	31	33
11	29	4.5	40	215	67	49	46	58	366	36	31	32
12	29	18	29	135	139	281	45	58	366	36	32	32
13	29	26	28	55	163	89	44	59	351	36	32	32
14	29	25	27	43	162	47	44	59	314	36	31	32
15	29	24	27	32	159	47	48	59	290	35	32	32
16	29	24	38	79	146	47	50	58	326	35	32	32
17	29	24	30	620	107	47	49	56	340	34	32	32
18	29	24	29	976	70	46	48	55	289	34	31	32
19	29	23	28	812	63	45	48	55	231	34	32	32
20	16	23	28	615	40	45	46	55	189	34	32	32
21	3.2	23	29	442	39	45	46	55	138	33	32	32
22	3.2	23	28	308	39	45	46	54	75	33	32	32
23	3.2	23	27	210	39	48	46	54	48	33	32	32
24	3.2	23	27	145	37	52	46	56	46	33	32	32
25	3.2	189	27	101	34	393	46	153	44	33	32	32
26	3.2	216	27	84	35	3,020	44	356	248	33	32	32
27	3.2	27	27	83	38	1,140	44	290	375	32	32	32
28	3.2	82	29	87	38	491	44	112	80	32	32	32
29	3.2	193	112	91	-----	331	48	51	44	32	33	32
30	3.2	116	50	107	-----	283	50	50	43	32	33	34
31	3.2	-----	29	115	-----	51	-----	48	-----	32	33	-----
TOTAL	602.2	1,166.7	3,473	5,634	2,039	7,136	1,366	2,375	5,191	1,093	984	972
MEAN	19.4	38.9	112	182	72.8	230	45.5	76.6	173	35.3	31.7	32.4
MAX	29	216	697	976	163	3,020	50	356	375	41	33	34
MIN	3.2	3.2	27	26	32	45	42	48	43	32	31	32
AC-FT	1,190	2,310	6,890	11,180	4,040	14,150	2,710	4,710	10,300	2,170	1,950	1,930
(a)	950	11,850	18,100	19,060	17,990	25,550	31,790	43,060	47,350	9,580	1,680	650
CAL YR 1970	TOTAL 72,304.9	MEAN 198	MAX 6,850	MIN 3.2	AC-FT 143,400							
WTR YR 1971	TOTAL 32,031.9	MEAN 87.8	MAX 3,020	MIN 3.2	AC-FT 63,540							

a Diversion, in acre-feet, to Lohman Ridge tunnel.



## 11409300 OREGON CREEK AT CAMPTONVILLE CALIF.

LOCATION.--Lat 39°26'46", long 121°02'43", in SE1/4 sec.11, T.18 N., R.8 E., Yuba County, Tahoe National Forest, on right bank 25 ft downstream from County bridge, 0.5 mile southeast of Camptonville, and 5.5 miles upstream from mouth.

DRAINAGE AREA.--23.0 sq mi.

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,230 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 1,710 cfs Mar. 26 (gage height, 8.17 ft); minimum daily, 1.7 cfs Sept. 18, 19.

Period of record: Maximum discharge, 3,130 cfs Jan. 21, 1970 (gage height, 10.07 ft); minimum daily, 1.7 cfs Sept. 14, 17-19, 1970, Sept. 18, 19, 1971.

REMARKS.--Records good. No regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	3.5	228	81	169	62	216	90	42	11	5.0	4.3
2	2.0	3.5	379	74	173	58	194	95	38	10	4.9	3.9
3	2.0	3.4	200	64	160	57	179	94	34	9.6	4.6	3.8
4	2.1	5.4	411	58	146	56	168	100	31	9.2	4.4	3.5
5	2.2	24	292	53	134	52	164	94	29	8.9	4.6	3.3
6	2.2	43	230	50	128	50	166	97	28	8.4	4.7	2.8
7	2.3	72	217	47	121	49	166	98	27	8.0	4.7	2.9
8	2.3	26	250	46	117	48	148	135	27	7.7	4.9	2.7
9	2.4	26	254	47	113	49	139	124	26	7.4	4.9	2.5
10	2.4	67	156	89	118	50	194	118	25	7.2	4.8	2.6
11	2.3	44	158	244	146	68	164	119	23	7.1	4.7	2.5
12	2.4	73	135	161	173	377	148	117	22	6.7	4.7	2.5
13	2.4	38	117	126	183	327	138	116	20	6.4	4.6	2.4
14	2.4	27	102	111	182	225	132	111	19	6.1	4.6	2.1
15	2.3	21	97	101	184	190	131	103	18	5.7	4.6	2.3
16	2.3	18	130	141	178	174	133	97	17	5.6	4.6	2.0
17	2.4	15	108	325	159	172	151	88	16	5.4	4.3	1.9
18	2.6	14	94	383	143	158	130	78	15	5.4	4.1	1.7
19	2.8	12	84	362	141	148	116	73	14	5.2	4.1	1.7
20	4.8	11	79	325	123	144	114	70	13	5.0	4.0	2.3
21	5.3	11	77	276	110	143	106	70	13	4.8	3.9	2.3
22	6.8	10	68	233	103	140	100	63	12	4.8	4.0	2.1
23	15	9.4	62	201	95	243	94	58	11	4.6	4.3	2.3
24	15	16	57	179	88	338	89	56	11	4.4	4.2	2.3
25	5.9	208	54	159	83	482	84	55	10	5.0	4.0	3.2
26	4.4	246	54	149	75	1,250	80	60	33	5.4	3.9	3.4
27	3.8	103	59	148	74	665	75	55	22	5.2	3.7	4.5
28	3.6	134	69	149	69	430	74	52	15	5.1	3.5	4.0
29	3.5	218	150	150	-----	328	75	47	13	4.9	3.4	4.6
30	3.4	190	115	157	-----	285	80	49	11	4.8	3.3	10
31	3.5	-----	91	164	-----	244	-----	43	-----	4.9	3.9	-----
TOTAL	118.8	1,697.2	4,617	4,853	3,688	7,062	3,948	2,625	635	199.9	133.9	92.4
MEAN	3.83	56.6	149	157	132	228	132	84.7	21.2	6.45	4.32	3.08
MAX	15	246	411	383	184	1,250	216	135	42	11	5.0	10
MIN	2.0	3.4	54	46	69	48	74	43	10	4.4	3.3	1.7
AC-FT	236	3,370	9,160	9,630	7,320	14,010	7,830	5,210	1,260	397	266	183

CAL YR 1970 TOTAL 31,626.6 MEAN 86.6 MAX 1,860 MIN 1.7 AC-FT 62,730  
WTR YR 1971 TOTAL 29,670.2 MEAN 81.3 MAX 1,250 MIN 1.7 AC-FT 58,850

## PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 2	0500	5.86	581	3-12	1730	6.60	870
12- 4	0645	5.73	536	3-26	0645	8.17	1,710

## 11409400 OREGON CREEK BELOW LOG CABIN DAM, NEAR CAMPTONVILLE, CALIF.

LOCATION.--Lat 39°26'18", long 121°03'28", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.11, T.18 N., R.8 E., Yuba County, Tahoe National Forest, on right bank 200 ft upstream from High Point Ravine, and 1.2 miles southwest of Camptonville.

DRAINAGE AREA.--29.1 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,911.56 ft above mean sea level (levels by Yuba County Water Agency).

EXTREMES.--Current year: Maximum discharge, 2,450 cfs Mar. 26 (gage height, 6.19 ft); minimum daily, 1.5 cfs Oct. 6.

Period of record: Maximum discharge, 4,180 cfs Jan. 21, 1970 (gage height, 7.02 ft); maximum gage height, 7.51 ft Jan. 16, 1970; minimum daily discharge, 1.5 cfs Sept. 23, 1970, Oct. 6, 1970.

REMARKS.--Records good. Camptonville tunnel (maximum capacity, about 830 cfs) 1,100 ft upstream, diverts to New Bullards Bar Reservoir (see sta 11413515); diversion began October 1968. See schematic diagram showing diversions and storage in Yuba River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	6.7	311	61	5.4	7.1	11	12	14	11	6.9	5.6
2	4.2	6.6	562	46	5.4	7.1	11	13	12	11	6.8	5.1
3	3.4	7.0	275	17	5.4	7.0	11	14	12	10	6.8	4.9
4	2.6	7.3	689	6.8	5.4	6.6	11	14	12	10	6.8	5.1
5	1.9	8.2	429	6.1	5.4	6.4	11	13	12	10	6.8	5.1
6	1.5	9.0	329	6.1	5.4	6.4	12	13	13	10	6.8	4.9
7	3.8	8.9	283	6.4	5.4	6.4	14	14	13	10	6.8	4.7
8	4.5	8.1	319	6.1	5.4	6.4	14	13	14	9.0	6.8	4.7
9	4.8	8.1	313	6.1	5.4	6.4	14	13	14	8.6	6.8	4.4
10	5.5	8.7	242	56	5.4	6.4	15	13	15	8.7	6.7	4.2
11	5.4	8.4	197	385	5.4	6.4	14	13	15	8.7	6.1	4.4
12	5.1	8.6	146	258	5.4	293	14	13	14	8.7	5.9	4.4
13	5.2	8.1	96	194	5.6	610	14	13	15	8.7	5.9	4.4
14	4.7	7.9	57	176	5.6	247	14	13	15	8.7	5.9	5.1
15	4.5	7.6	35	150	5.6	144	14	13	14	8.4	5.8	5.9
16	4.5	7.6	133	203	5.6	94	13	14	14	8.1	6.1	5.9
17	4.5	7.5	100	522	5.9	67	11	13	13	8.4	6.1	5.6
18	4.8	7.5	56	680	5.9	6.9	10	13	13	8.4	6.1	5.1
19	5.4	7.6	27	586	6.1	6.8	9.5	13	13	8.3	5.9	4.9
20	5.9	7.5	15	187	6.1	6.8	12	13	12	8.1	5.9	4.9
21	6.5	7.4	20	5.6	6.1	6.8	13	13	12	8.1	5.9	4.9
22	6.7	7.3	8.1	5.6	6.1	6.8	13	13	12	8.1	5.9	5.1
23	7.7	7.3	6.1	5.6	6.1	7.3	12	13	12	8.1	5.9	5.4
24	7.6	7.7	6.1	5.6	6.1	17	12	14	11	8.1	5.9	5.1
25	7.1	128	5.9	5.6	6.0	201	12	14	11	8.1	5.6	5.4
26	7.0	529	6.0	5.5	6.5	1,690	12	14	12	6.4	5.6	5.4
27	7.0	102	6.5	5.4	7.2	922	12	14	11	4.1	5.6	5.1
28	7.0	143	32	5.4	7.1	638	12	14	11	5.2	5.6	2.0
29	7.0	278	246	5.4	-----	498	12	14	11	7.1	5.6	9.1
30	6.6	243	179	5.4	-----	212	12	13	11	6.7	5.4	41
31	6.6	-----	101	5.4	-----	9.2	-----	14	-----	6.8	5.4	-----
TOTAL	162.4	1,609.6	5,230.7	3,619.1	162.4	5,756.2	371.5	413	383	259.6	190.1	187.8
MEAN	5.24	53.7	169	117	5.80	186	12.4	13.3	12.8	8.37	6.13	6.26
MAX	7.7	529	689	680	7.2	1,690	15	14	15	11	6.9	41
MIN	1.5	6.6	5.9	5.4	5.4	6.4	9.5	12	11	4.1	5.4	2.0
AC-FT	372	3,190	10,380	7,180	322	11,420	737	819	760	515	377	373
(a)	927	12,920	19,310	24,060	26,930	31,850	40,950	48,830	48,180	9,570	1,640	508

CAL YR 1970 TOTAL 25,415.8 MEAN 69.6 MAX 2,250 MIN 1.5 AC-FT 50,410  
WTR YR 1971 TOTAL 18,345.4 MEAN 50.3 MAX 1,690 MIN 1.5 AC-FT 36,390

a Camptonville tunnel diversion, in acre-feet, to Bullards Bar Reservoir.

## 11413000 NORTH YUBA RIVER BELOW GOODYEARS BAR, CALIF.

LOCATION.--Lat 39°31'30", long 120°56'13", in SW $\frac{1}{4}$  sec.11, T.19 N., R.9 E., Sierra County, Tahoe National Forest, on right bank 200 ft downstream from St. Catherine Creek, 3.1 miles southwest of Goodyears Bar, and 6.4 miles southwest of Downieville.

DRAINAGE AREA.--250 sq mi.

PERIOD OF RECORD.--October 1930 to current year. Prior to October 1949, published as North Fork Yuba River below Goodyears Bar. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 2,435 ft above mean sea level (river-profile survey).

AVERAGE DISCHARGE.--41 years, 753 cfs (545,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,360 cfs Mar. 26 (gage height, 11.00 ft); minimum daily, 126 cfs Oct. 2-4, 15.

Period of record: Maximum discharge, 40,000 cfs Feb. 1, 1963 (gage height, 23.8 ft, from floodmarks), from rating curve extended above 8,500 cfs on basis of one float measurement at 17,900 cfs and slope-area measurements at gage heights 19.15 and 23.8 ft; minimum, 69 cfs Aug. 26, 1931.

REMARKS.--Records good. Several small diversions above station for irrigation and mining. See schematic diagram of Yuba River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	156	1,170	560	1,040	575	1,550	1,540	1,540	1,460	400	237
2	126	157	1,530	530	970	555	1,490	1,680	1,420	1,380	387	233
3	126	156	1,030	470	910	558	1,440	1,680	1,430	1,300	374	230
4	126	255	1,370	450	854	545	1,460	1,650	1,470	1,220	363	223
5	127	824	1,170	420	816	527	1,540	1,560	1,680	1,170	357	219
6	128	772	1,080	400	783	508	1,640	1,610	2,060	1,110	351	215
7	128	716	1,060	390	754	502	1,630	1,660	2,430	1,050	344	215
8	129	410	1,200	380	735	495	1,460	2,380	2,610	991	335	212
9	131	716	1,350	384	724	497	1,450	2,110	2,600	942	330	205
10	131	1,100	1,020	502	745	494	1,760	2,440	2,680	899	331	203
11	129	668	860	828	873	535	1,490	2,660	2,640	843	318	201
12	129	982	760	790	998	1,800	1,420	2,690	2,690	795	309	199
13	128	540	700	691	1,080	1,530	1,460	2,940	2,640	765	299	195
14	127	414	650	663	1,100	1,070	1,490	2,990	2,560	743	292	191
15	126	351	640	631	1,110	921	1,670	3,000	2,600	727	287	187
16	127	310	790	667	1,070	854	1,790	2,880	2,760	706	282	185
17	128	286	690	1,280	985	839	1,780	2,410	2,740	686	277	181
18	129	267	610	2,140	906	779	1,510	2,210	2,610	704	273	178
19	132	252	570	2,070	884	751	1,380	2,250	2,590	660	269	180
20	170	241	550	1,870	804	762	1,400	2,410	2,520	627	263	182
21	172	234	560	1,590	759	781	1,290	2,420	2,380	611	261	180
22	247	229	520	1,330	731	793	1,210	1,990	2,260	573	260	180
23	309	225	480	1,150	700	1,300	1,150	2,220	2,130	543	259	180
24	293	274	470	1,070	670	1,940	1,100	2,640	1,990	519	255	178
25	181	2,360	450	980	651	2,050	1,060	2,930	1,830	499	252	182
26	168	1,750	450	930	618	5,540	1,030	3,140	3,510	480	249	201
27	154	992	460	900	616	3,210	1,000	2,710	2,670	460	249	215
28	152	1,020	520	910	605	2,340	1,050	2,280	1,980	445	245	202
29	153	1,170	830	930	-----	2,000	1,170	1,990	1,660	431	241	225
30	150	1,090	710	960	-----	1,910	1,320	1,930	1,530	417	236	291
31	153	-----	620	1,000	-----	1,720	-----	1,690	-----	410	239	-----
TOTAL	4,736	18,917	24,870	27,866	23,491	38,681	42,190	70,650	68,210	24,166	9,187	6,106
MEAN	153	631	802	859	839	1,248	1,406	2,280	2,274	780	296	204
MAX	309	2,360	1,530	2,140	1,110	5,540	1,790	3,140	3,510	1,460	400	291
MIN	126	156	450	380	605	494	1,000	1,540	1,420	410	236	178
AC-FT	9,390	37,520	49,330	55,270	46,550	76,720	83,680	140,200	135,300	47,930	18,220	12,110
CAL YR 1970	TOTAL 339,632	MEAN 930	MAX 14,400	MIN 126	AC-FT 673,700							
WTR YR 1971	TOTAL 359,110	MEAN 984	MAX 5,540	MIN 126	AC-FT 712,300							

## PEAK DISCHARGE (BASE, 3,200 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1545	8.05	3,480	5-25	2215	8.20	3,640
3-12	1730	7.93	3,340	6-26	1715	10.31	6,330
3-26	0730	11.00	7,360	6-16	2245	8.02	3,440
5-14	2300	8.10	3,530				

NOTE.--No gage-height record Dec. 8 to Jan. 7.

## SACRAMENTO RIVER BASIN

11413100 NORTH YUBA RIVER ABOVE SLATE CREEK NEAR STRAWBERRY VALLEY, CALIF.

LOCATION.--Lat 39°31'29", long 121°05'26", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.9, T.19 N., R.8 E., Yuba County, Tahoe National Forest, on left bank 500 ft upstream from Slate Creek, and 2.8 miles southeast of Strawberry Valley.

DRAINAGE AREA.--351 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 1,953.44 ft above mean sea level.

EXTREMES.--Current year: Maximum discharge, 15,500 cfs Mar. 26 (gage height, 14.22 ft); minimum daily, 145 cfs Oct. 1-7, 15, 16.

Period of record: Maximum discharge, 35,800 cfs Jan. 22, 1970 (gage height, 19.91 ft in gage well, 20.7 ft, from floodmarks); minimum daily, 138 cfs Sept. 29, 1968.

Flood of Dec. 22, 1964, reached a stage of 29.8 ft, from floodmarks (discharge, 63,400 cfs from slope-area measurement).

REMARKS.--Records good. Several small diversions above station for irrigation and mining.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	CCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	145	188	2,200	877	1,630	929	2,640	2,270	2,070	1,710	400	253
2	145	189	3,210	827	1,680	889	2,470	2,500	1,870	1,620	382	256
3	145	189	1,800	731	1,610	896	2,380	2,460	1,860	1,510	368	243
4	145	269	2,970	706	1,500	878	2,410	2,440	1,880	1,420	357	237
5	145	1,290	2,180	683	1,400	842	2,520	2,300	2,110	1,350	355	233
6	145	1,150	1,910	657	1,340	812	2,740	2,430	2,580	1,280	351	230
7	145	1,150	1,800	632	1,290	812	2,710	2,440	3,110	1,200	343	229
8	148	697	2,150	620	1,250	800	2,380	3,460	3,350	1,130	332	228
9	151	1,030	2,600	625	1,230	809	2,310	3,080	3,350	1,070	326	222
10	153	1,750	1,840	775	1,260	804	3,170	3,500	3,380	1,010	327	220
11	150	1,000	1,500	1,560	1,500	866	2,520	3,910	3,330	945	320	222
12	150	1,600	1,330	1,410	1,750	4,300	2,340	3,810	3,390	883	312	219
13	150	912	1,190	1,150	1,910	3,560	2,360	4,200	3,290	844	300	215
14	147	680	1,080	1,100	1,940	2,170	2,400	4,220	3,200	812	290	211
15	145	557	1,030	1,050	1,950	1,780	2,680	4,200	3,200	793	287	207
16	145	474	1,290	1,080	1,910	1,610	2,890	4,060	3,390	767	284	205
17	146	425	1,150	2,160	1,740	1,590	2,940	3,390	3,390	740	281	201
18	148	390	1,030	3,870	1,590	1,470	2,390	3,040	3,210	752	276	197
19	153	360	931	3,730	1,540	1,420	2,140	3,060	3,130	714	273	200
20	190	343	892	3,340	1,390	1,430	2,140	3,250	3,060	674	269	203
21	211	324	903	2,790	1,310	1,470	1,950	3,340	2,880	651	266	203
22	269	319	819	2,290	1,240	1,500	1,800	2,660	2,700	605	263	200
23	368	313	745	1,960	1,180	2,600	1,700	2,950	2,550	570	265	200
24	455	344	734	1,760	1,120	4,250	1,630	3,510	2,360	537	264	198
25	243	3,350	704	1,590	1,090	4,330	1,550	3,900	2,160	514	259	200
26	211	3,270	699	1,500	1,020	11,600	1,510	4,250	3,390	496	256	219
27	194	1,650	729	1,480	1,020	6,270	1,460	3,690	3,430	474	254	245
28	187	1,630	770	1,490	995	4,450	1,540	3,100	2,400	457	253	231
29	187	2,030	1,350	1,490	-----	3,690	1,730	2,640	1,970	443	253	238
30	183	2,000	1,190	1,540	-----	3,420	1,960	2,610	1,790	423	247	388
31	186	-----	969	1,590	-----	3,000	-----	2,270	-----	412	248	-----
TOTAL	5,685	29,873	43,695	47,063	40,385	75,247	67,360	98,940	83,780	26,806	9,261	6,753
MEAN	183	996	1,410	1,518	1,442	2,427	2,245	3,192	2,793	865	299	225
MAX	455	3,350	3,210	3,870	1,950	11,600	3,170	4,250	3,430	1,710	400	388
MIN	145	188	699	620	995	800	1,460	2,270	1,790	412	247	197
AC-FT	11,280	59,250	86,670	93,350	80,100	149,300	133,600	196,200	166,200	53,170	18,370	13,390

CAL YR 1970 TOTAL 525,089 MEAN 1,439 MAX 24,000 MIN 145 AC-FT 1,042,000  
WTR YR 1971 TOTAL 534,848 MEAN 1,465 MAX 11,600 MIN 145 AC-FT 1,061,000

## PEAK DISCHARGE (BASE, 4,500 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1715	10.55	5,240	5-13	2400	10.31	4,760
3-12	1715	11.94	8,460	5-25	2345	10.30	4,740
3-26	0800	14.22	15,500	6-26	2400	10.44	5,020

LOCATION.--Lat 39°36'57", long 121°03'03", in SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.2, T.20 N., R.8 E., Plumas County, Plumas National Forest, on right bank 30 ft upstream from diversion dam on Slate Creek, 0.3 mile upstream from Fency Ravine, and 4.5 miles northeast of town of Strawberry Valley.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

EXTREMES.--Period of record: Maximum daily discharge, 863 cfs Apr. 6, 1963; no flow many days in each year.

REMARKS.--Records good. Tunnel diverts water from Slate Creek to Sly Creek Reservoir (see sta 11395400) for power development. See schematic diagram of South Fork Feather River basin.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	6.5	248	73	206	117	613	527	0	148	11	3.8
2	1.0	6.2	256	66	227	109	567	543	0	132	9.5	3.8
3	2.1	6.0	176	53	229	109	549	283	0	118	8.4	3.1
4	2.1	43	176	58	213	105	579	0	0	106	7.3	2.7
5	2.1	330	238	63	197	98	652	0	0	97	6.5	2.3
6	2.1	200	281	62	187	95	701	0	0	89	5.5	2.1
7	2.1	186	293	62	183	96	694	0	0	81	4.9	1.7
8	2.1	105	476	60	180	97	585	0	0	74	3.8	1.5
9	2.1	398	700	61	174	103	577	0	290	69	3.1	1.1
10	2.1	333	404	90	181	100	821	0	587	64	2.5	.66
11	2.1	215	290	117	241	117	708	0	544	58	2.3	.80
12	2.1	300	234	97	308	526	663	386	552	54	1.1	.66
13	2.1	142	198	81	349	201	633	843	466	49	.66	.43
14	1.9	93	170	81	356	281	671	725	407	45	.17	.17
15	1.7	69	157	91	369	203	789	545	422	43	.11	.03
16	1.7	56	156	94	366	248	834	544	446	40	2.5	0
17	1.9	47	137	386	316	306	834	542	403	39	6.8	0
18	2.1	41	120	774	279	280	789	214	334	37	6.2	0
19	2.7	35	108	669	254	271	682	0	203	35	6.0	0
20	11	32	104	547	223	282	389	0	143	33	5.2	0
21	12	29	107	427	203	300	0	0	217	30	4.9	0
22	24	28	93	343	186	299	0	0	229	27	4.9	0
23	51	26	85	279	173	648	0	0	210	24	5.2	0
24	48	48	79	233	160	836	0	356	186	21	4.9	0
25	16	665	74	205	152	834	0	837	167	20	4.7	0
26	11	545	80	193	140	315	0	842	567	18	4.3	0
27	8.4	282	78	187	137	145	187	838	458	16	3.8	0
28	7.5	223	74	185	128	152	349	348	228	15	3.4	0
29	7.0	314	68	185	-----	158	444	0	183	14	2.9	3.0
30	6.8	300	82	193	-----	168	468	0	162	13	2.7	15
31	6.5	-----	76	201	-----	448	-----	0	-----	12	4.7	-----
TOTAL	245.3	5,103.7	5,818	6,216	6,317	8,047	14,778	8,373	7,404	1,621	139.94	42.85
MEAN	7.91	170	188	201	226	260	493	270	247	52.3	4.51	1.43
MAX	51	665	700	774	369	836	834	843	587	148	11	15
MIN	0	6.0	68	53	128	95	0	0	0	12	.11	0
AC-FT	487	10,120	11,540	12,330	12,530	15,960	29,310	16,610	14,690	3,220	278	85
CAL YR 1970	TOTAL	32,920.60		MEAN	90.2	MAX	834	MIN	0	AC-FT	65,300	
WTR YR 1971	TOTAL	64,105.79		MEAN	176	MAX	843	MIN	0	AC-FT	127,200	

## 11413300 SLATE CREEK BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CALIF.

LOCATION.--Lat 39°36'52", long 121°03'04", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.2, T.20 N., R.8 E., Plumas County, Plumas National Forest, on right bank 300 ft downstream from diversion dam, 0.2 mile upstream from Feney Ravine, and 4.5 miles northeast of town of Strawberry Valley.

DRAINAGE AREA.--49.4 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 3,570 ft (from topographic map).

AVERAGE DISCHARGE (adjusted for diversion to Slate Creek tunnel).--11 years, 216 cfs (156,500 acre-ft per year).

EXTREMES (Creek only).--Current year: Maximum discharge, 3,770 cfs Mar. 26 (gage height, 10.04 ft); minimum daily, 5.0 cfs Oct. 1.

Period of record: Maximum discharge, 13,100 cfs Dec. 22, 1964 (gage height, 16.42 ft), from rating curve extended above 5,500 cfs on basis of computed flow over dam at gage heights 12.75 and 15.90 ft; minimum, 0.3 cfs Mar. 4, 5, 1962.

(Combined flow).--Current year: Maximum discharge, 3,960 cfs Mar. 26; minimum daily, 5.0 cfs Oct. 1. Period of record: Maximum discharge, 13,900 cfs Dec. 22, 1964; minimum daily, 2.3 cfs Nov. 23, 1961.

REMARKS.--Records good. Slate Creek tunnel (see sta 11413250) diverts at diversion dam 300 ft upstream up to 900 cfs from Slate Creek Reservoir (capacity, 223 acre-ft) to Sly Creek Reservoir (see sta 11395400). Diversion began in February 1962. See schematic diagram of South Fork Feather River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	5.0	6.1	72	12	13	19	20	35	400	15	18	12		
2	5.4	6.1	81	12	14	19	20	48	360	15	19	12		
3	5.4	6.1	20	13	13	19	20	287	345	15	18	12		
4	5.4	6.1	43	13	13	19	20	530	351	15	18	12		
5	5.7	18	37	12	13	19	20	530	376	16	18	12		
6	5.7	38	22	12	13	19	20	579	422	16	18	12		
7	5.7	34	28	12	13	19	20	572	456	16	18	12		
8	5.7	23	69	12	13	19	20	638	464	16	18	12		
9	5.7	52	46	12	16	19	20	628	257	16	18	12		
10	5.7	27	13	12	18	18	86	705	15	16	18	12		
11	5.7	15	12	12	18	18	20	750	15	16	18	12		
12	5.7	18	12	12	19	633	20	562	15	16	18	12		
13	5.7	12	12	12	19	613	20	351	15	17	18	12		
14	5.7	10	12	12	19	267	20	339	15	17	18	12		
15	5.7	9.4	12	13	19	130	37	333	15	17	18	12		
16	6.1	8.1	12	13	20	68	79	282	15	17	15	12		
17	6.1	7.3	12	13	20	21	103	164	15	17	11	12		
18	6.1	6.9	12	23	20	20	20	364	15	17	11	11		
19	6.1	6.9	12	14	20	19	19	558	120	17	11	11		
20	6.1	6.5	13	14	20	19	186	576	135	17	11	11		
21	6.1	6.5	13	14	20	19	418	558	43	18	11	11		
22	6.1	6.5	12	14	20	19	375	506	15	18	11	8.6		
23	6.1	6.5	13	14	20	163	345	537	15	18	11	11		
24	6.1	18	13	14	19	324	327	395	15	18	11	11		
25	6.1	49	13	14	19	288	309	116	15	18	11	11		
26	6.1	34	13	13	19	2,360	300	285	92	18	11	12		
27	6.1	20	13	13	19	1,150	120	155	15	18	11	14		
28	6.1	45	13	13	19	719	20	334	15	18	11	13		
29	6.1	74	13	13	-----	551	20	492	15	18	11	16		
30	6.1	103	12	13	-----	509	22	492	15	18	11	22		
31	6.1	-----	12	13	-----	217	-----	439	-----	18	11	-----		
TOTAL	181.5	679.0	692	408	488	8,316	3,046	13,140	4,076	522	451	366.6		
MEAN	5.85	22.6	22.3	13.2	17.4	268	102	424	136	16.8	14.5	12.2		
MAX	6.1	103	81	23	20	2,360	418	750	464	18	19	22		
MIN	5.0	6.1	12	12	13	18	19	35	15	15	11	8.6		
AC-FT	360	1,350	1,370	809	968	16,490	6,040	26,060	8,080	1,040	895	727		
MEAN a	13.8	193	210	214	243	528	594	694	383	69.3	19.0	13.6		
AC-FT a	847	11,470	12,910	13,140	13,500	32,450	35,350	42,670	22,770	4,260	1,170	812		
CAL YR 1970	TOTAL	56,271.0	MEAN	154	MAX	4,500	MIN	3.4	AC-FT	111,600	MEAN a	244	AC-FT a	176,900
WTR YR 1971	TOTAL	32,366.1	MEAN	88.7	MAX	2,360	MIN	5.0	AC-FT	64,200	MEAN a	264	AC-FT a	191,300

a Adjusted for diversion to Slate Creek tunnel.

## 11413510 NEW COLGATE POWERPLANT NEAR FRENCH CORRAL, CALIF.

LOCATION.--Lat 39°19'51", long 121°11'23", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.16, T.17 N., R.7 E., Yuba County, at powerplant on right bank of Yuba River, 0.3 mile upstream from Dobbins Creek, and 2.3 miles northwest of French Corral.

PERIOD OF RECORD.--October 1966 to current year. Records of daily discharge for October 1960 to September 1966 are available in files of Geological Survey. Prior to October 1969, published as "Colgate powerplant."

GAGE.--Recorded output from powerplant turbines.

EXTREMES.--Period of record: Maximum daily discharge, 4,200 cfs June 2, 1971; no flow for several days in each year.

REMARKS.--Water is diverted from North Yuba River at New Bullards Bar Dam (see sta 11413515). Colgate powerplant was rebuilt during the 1970 water year with an increased capacity. Browns Valley ditch diverts up to 10 cfs at times from the head of the penstock for use in irrigation. No water was diverted during the current year.

COOPERATION.--Records collected by Yuba County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,130	2,150	1,650	3,090	3,020	725	36	1,620	2,860	2,670	2,080	2,450
2	2,970	1,480	617	3,130	3,080	990	23	728	4,200	3,080	2,180	2,890
3	1,640	2,770	154	3,120	3,080	882	0	937	3,130	3,170	3,260	2,970
4	2,260	2,810	50	3,120	3,080	924	0	1,760	3,050	2,450	3,230	3,250
5	2,050	2,780	163	3,110	3,070	847	0	1,820	3,190	1,890	3,020	2,830
6	2,810	1,790	225	3,110	3,070	682	1,800	1,700	3,150	2,000	2,570	1,320
7	1,570	2,170	103	3,110	3,070	392	2,520	1,560	2,800	3,110	2,610	2,750
8	2,550	2,390	957	3,100	3,000	323	1,880	457	3,210	3,170	2,180	3,090
9	2,560	2,830	3,000	3,100	2,450	219	2,670	16	3,200	3,200	2,080	3,150
10	1,790	2,940	2,470	3,080	2,870	144	1,150	1,030	3,270	2,690	2,780	2,950
11	1,760	2,950	2,860	3,090	2,860	92	380	1,600	3,340	2,530	3,200	1,530
12	1,950	2,950	2,950	3,080	2,850	632	10	2,440	3,290	2,670	2,630	1,640
13	2,550	2,380	2,930	2,500	2,840	153	330	3,110	3,350	3,060	3,080	2,900
14	2,260	2,830	2,930	2,280	2,910	0	600	2,120	3,240	2,970	2,620	3,080
15	2,690	2,230	2,950	2,540	3,000	70	1,690	1,080	3,120	2,640	2,240	3,260
16	2,070	2,790	2,970	1,010	2,990	30	2,360	402	2,640	2,650	2,260	2,900
17	1,360	2,730	2,950	1,440	2,190	0	974	1,180	2,610	2,570	2,730	2,390
18	1,690	2,830	2,950	1,140	1,330	185	521	2,080	3,420	3,050	3,060	979
19	2,230	2,920	2,940	2,880	1,830	7.0	1,240	2,280	2,830	3,090	3,080	1,420
20	1,330	2,950	2,950	3,010	2,270	297	1,710	1,990	3,430	3,100	2,650	1,830
21	1,750	1,970	3,010	2,920	2,210	0	2,260	1,770	3,490	3,290	2,430	1,960
22	1,400	2,470	2,960	3,100	2,080	141	2,480	626	3,470	2,630	1,270	2,470
23	1,440	2,950	2,990	2,850	1,350	3.0	2,170	30	3,470	2,280	2,680	2,120
24	1,010	2,460	2,980	3,060	1,510	31	964	862	3,430	871	3,020	1,080
25	227	2,930	2,980	2,840	1,650	119	1,230	2,650	3,300	1,790	3,200	1,450
26	1,340	1,380	2,980	3,090	968	110	1,880	1,680	3,190	2,460	3,210	1,890
27	2,220	601	2,970	3,100	1,330	43	2,180	1,810	3,530	2,880	3,210	1,750
28	2,570	1,870	2,990	3,090	915	0	2,010	1,890	3,530	3,460	2,100	1,480
29	2,410	1,790	3,140	3,040	-----	0	1,860	2,850	3,090	2,760	2,120	2,200
30	2,550	540	2,740	3,090	-----	0	2,120	2,680	2,880	3,460	2,060	2,170
31	2,850	-----	3,080	3,080	-----	0	-----	2,510	-----	2,760	3,310	-----
TOTAL	62,987	70,631	71,589	87,300	66,873	8,041.0	39,048	49,268	96,710	84,401	82,150	68,149
MEAN	2,032	2,354	2,309	2,816	2,388	259	1,302	1,589	3,224	2,723	2,650	2,272
MAX	3,130	2,950	3,140	3,130	3,080	990	2,670	3,110	4,200	3,460	3,310	3,260
MIN	227	540	50	1,010	915	0	0	16	2,610	871	1,270	979
AC-FT	124,900	140,100	142,000	173,200	132,600	15,950	77,450	97,720	191,800	167,400	162,900	135,200
CAL YR 1970	TOTAL 597,409.00		MEAN 1,637		MAX 3,260		MIN 0		AC-FT 1,185,000			
WTR YR 1971	TOTAL 787,147.00		MEAN 2,157		MAX 4,200		MIN 0		AC-FT 1,561,000			

## SACRAMENTO RIVER BASIN

## 11413515 NEW BULLARDS BAR RESERVOIR NEAR NORTH SAN JUAN, CALIF.

LOCATION.--Lat 39°23'34", long 121°08'25", in SE $\frac{1}{4}$  NW $\frac{1}{4}$  sec.25, T.18 N., R.7 E., Yuba County, Plumas National Forest, in center of dam on North Yuba River 2.2 miles upstream from Middle Yuba River, and 2.4 miles northwest of North San Juan.

DRAINAGE AREA.--489 sq mi.

PERIOD OF RECORD.--February 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Yuba County Water Agency).

EXTREMES.--Current year: Maximum contents, 963,364 acre-ft June 27 (elevation, 1,955.43 ft); minimum, 439,436 acre-ft Feb. 16 (elevation, 1,817.66 ft).  
Period of record: Maximum contents, 963,364 acre-ft June 27, 1971 (elevation, 1,955.43 ft); minimum since initial season of normal operation, 439,436 acre-ft Feb. 16, 1971 (elevation, 1,817.66 ft).

REMARKS.--Reservoir is formed by concrete-arch dam with a concrete sidehill spillway. Spill controlled by three 30- by 53-foot radial gates. Storage began in January 1969. Usable capacity, 727,380 acre-ft between elevations 1,732.0 ft (minimum power pool) and 1,955.0 ft (normal gross pool). Dead storage, 233,920 acre-ft. Total capacity at normal gross pool (1,955.0 ft), 961,300 acre-ft. Water is released to Colgate powerplant through a tunnel at the dam. Water is diverted into the reservoir from Middle Yuba River via Lohman Ridge tunnel to Oregon Creek then via Camptonville tunnel. Records represent total contents.

COOPERATION.--Records collected by Yuba County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-Feet)

1,600.0	64,900	1,750.0	270,110
1,630.0	90,570	1,800.0	389,980
1,660.0	122,990	1,850.0	539,750
1,690.0	162,980	1,900.0	721,130
1,720.0	211,770	1,960.0	985,471

## CONTENTS, IN ACRE-Feet, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	684,699	577,121	523,072	506,060	465,325	443,546	650,254	759,923	929,508	959,721	858,963	720,179
2	678,960	574,644	532,382	502,328	463,731	443,897	657,653	764,731	928,665	958,094	855,771	715,198
3	676,027	569,782	538,429	498,361	462,051	444,512	664,525	769,270	927,823	956,421	850,156	710,081
4	672,001	564,808	549,346	494,101	459,955	445,069	671,131	773,286	927,168	955,085	844,829	704,207
5	668,483	561,958	559,983	489,926	457,656	445,625	678,655	776,816	926,795	955,085	840,356	698,753
6	661,209	561,992	561,045	485,400	455,187	446,417	682,170	780,732	927,635	954,310	836,072	696,812
7	660,470	561,687	565,862	480,963	452,519	447,740	685,389	784,955	930,727	951,310	831,982	691,780
8	655,786	559,050	569,099	476,519	449,801	449,182	688,579	793,190	933,495	947,803	828,458	686,388
9	651,256	555,008	569,885	471,887	448,415	450,804	689,813	802,117	936,314	943,963	825,212	680,524
10	647,920	554,168	570,192	467,738	446,064	452,726	696,152	809,739	938,342	941,126	820,636	675,304
11	644,780	550,884	568,689	466,561	444,219	454,949	702,919	817,494	940,134	938,483	815,218	672,646
12	641,280	549,078	566,474	464,994	442,991	461,122	709,414	823,570	942,071	935,187	810,722	669,995
13	636,509	546,884	563,890	463,881	442,231	475,298	715,316	827,854	943,821	930,961	805,604	664,714
14	632,527	543,657	561,112	463,130	441,415	481,793	720,535	834,416	945,432	927,169	801,227	659,085
15	627,507	540,079	558,072	461,541	440,453	487,752	724,067	842,810	947,659	924,085	797,329	652,929
16	623,667	535,795	556,252	463,100	439,436	492,673	727,052	852,363	950,464	920,686	793,739	647,624
17	621,320	531,303	553,999	465,054	439,842	497,324	733,206	858,876	953,654	917,433	789,108	643,304
18	618,367	526,737	551,218	471,584	441,590	501,319	738,870	862,612	954,773	913,309	783,658	641,830
19	614,385	521,778	548,112	474,697	442,348	505,427	742,338	866,671	956,803	908,967	778,253	639,442
20	612,380	516,557	544,916	477,103	441,706	508,950	745,170	871,191	958,429	904,502	773,742	636,289
21	609,668	513,545	541,864	479,366	440,920	513,160	747,115	876,897	959,147	899,686	769,724	632,855
22	607,639	509,459	538,429	479,918	440,162	517,136	748,008	883,079	959,386	895,937	767,823	628,487
23	606,111	504,287	534,743	480,041	440,803	522,910	749,226	890,698	959,386	892,974	763,208	624,934
24	605,472	500,090	530,943	479,181	440,891	534,907	752,441	898,141	958,811	892,428	757,912	623,197
25	605,720	499,649	526,998	478,293	440,540	545,580	754,644	902,299	958,046	890,243	752,238	620,780
26	603,700	506,694	523,104	476,427	441,327	574,784	755,665	909,494	961,781	886,702	746,466	617,649
27	599,704	510,447	519,454	474,474	441,561	596,976	755,870	915,717	963,364	887,309	740,764	614,814
28	594,990	511,882	515,883	472,496	442,465	610,738	755,992	920,824	962,356	876,536	737,300	612,381
29	570,718	514,281	514,121	470,674	-----	621,934	756,605	923,573	961,040	872,133	733,807	608,920
30	586,187	519,293	512,616	468,706	-----	632,125	757,464	926,374	959,865	866,317	730,284	605,507
31	580,916	-----	510,000	466,953	-----	641,868	-----	978,619	-----	862,033	724,465	-----
MAX	684,699	577,121	570,192	506,060	465,325	641,868	757,464	978,619	963,364	959,721	858,963	720,179
MIN	570,718	499,649	510,000	461,541	439,436	443,546	650,254	759,923	926,795	862,033	724,465	605,507
(a)	1,862.2	1,843.7	1,840.7	1,827.0	1,818.7	1,879.3	1,909.0	1,948.1	1,954.7	1,933.5	1,900.8	1,869.3
(b)	-109,629	-61,623	-9,293	-43,047	-24,488	+198,413	+115,596	+171,150	+31,210	-97,932	-137,569	-118,958
CAL YR 1970	b	-232,180										
WTR YR 1971	b	-85,033										

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



## 11413520 NORTH YUBA RIVER BELOW NEW BULLARDS BAR DAM, NEAR NORTH SAN JUAN, CALIF.

LOCATION.--Lat 39°22'48", long 121°08'19", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.36, T.18 N., R.7 E., Yuba County, Plumas National Forest, on right bank 1.1 miles downstream from New Bullards Bar Dam, and 2 miles northwest of North San Juan.

DRAINAGE AREA.--490 sq mi.

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft (from topographic map).

AVERAGE DISCHARGE.--5 years, 862 cfs (624,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,820 cfs June 28 (gage height, 8.83 ft); minimum daily, 1.8 cfs Feb. 6, 10.

Period of record: Maximum discharge, 56,200 cfs Jan. 22, 1970 (gage height, 35.29 ft), from rating curve extended above 40,000 cfs on basis of computation of flow over old Colgate Dam referenced to floodmarks at 49.8 ft; minimum daily, 0.42 cfs Nov. 5, 1966.

REMARKS.--Records good except those for periods of no-gage height record, which are poor. Flow regulated by New Bullards Bar Reservoir (see sta 11413515) since 1969. Colgate powerplant (see sta 11413510) diverts from New Bullards Bar Dam 1.1 miles upstream. Water is diverted out of basin through Slate Creek tunnel (see sta 11413250). See schematic diagram of Yuba River basin. Records of water temperatures for the period July through September 1971 are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	2.5	8.0	5.3	2.2	3.5	11	7.9	6.1	9.7	6.5	4.7
2	2.8	2.5	13	5.0	2.1	3.9	11	7.9	6.1	7.9	6.5	4.7
3	2.7	2.5	11	4.5	2.0	4.3	10	8.0	6.1	7.6	6.5	4.7
4	2.7	2.5	21	4.3	2.0	4.2	10	8.1	6.1	7.3	6.5	4.7
5	2.7	3.5	8.9	4.2	1.9	3.9	10	7.8	6.0	7.3	6.5	5.0
6	2.7	3.7	6.2	4.0	1.8	4.2	10	7.8	6.0	7.3	6.5	5.0
7	2.7	3.8	5.2	4.0	1.9	4.2	10	7.8	5.9	7.3	6.5	5.0
8	2.7	2.8	5.0	3.9	1.9	4.2	10	8.0	5.9	7.2	6.1	5.0
9	2.7	2.5	4.8	3.8	1.9	4.2	10	8.0	5.9	7.0	6.1	5.0
10	2.7	3.5	4.4	4.6	1.8	4.2	12	8.1	6.0	7.1	6.1	5.0
11	2.7	3.2	4.1	11	1.9	4.6	10	8.1	6.0	6.9	6.0	5.0
12	2.6	3.3	3.8	9.2	1.9	8.5	10	8.0	6.0	6.9	5.8	5.0
13	2.6	3.1	3.6	7.7	1.9	6.6	10	5.9	6.0	6.9	5.8	5.0
14	2.6	2.9	3.6	7.2	2.0	5.7	10	5.5	6.1	6.9	5.8	5.0
15	2.6	2.7	3.9	5.7	1.9	5.2	10	5.3	6.1	6.9	5.8	5.0
16	2.6	2.7	7.8	5.3	1.9	5.0	10	5.3	6.2	6.5	5.8	5.0
17	2.6	2.7	7.0	5.5	1.9	4.9	11	5.3	6.2	6.5	5.8	5.0
18	2.6	2.5	5.6	5.0	2.0	4.7	10	5.3	6.0	6.5	5.8	5.0
19	2.6	2.4	4.7	4.4	2.3	4.8	9.9	5.4	6.2	6.5	5.8	5.0
20	2.6	2.3	4.6	3.9	2.1	6.9	9.6	5.4	6.3	6.5	5.4	5.0
21	2.5	2.2	5.5	3.6	2.1	8.5	8.5	5.6	6.2	6.5	5.4	5.0
22	2.5	2.2	5.0	4.1	2.2	8.6	8.1	5.7	6.3	6.5	5.4	5.0
23	2.5	2.2	4.5	5.1	2.2	12	8.0	5.7	6.4	6.5	5.4	5.0
24	2.5	4.1	4.1	5.2	2.2	11	8.0	5.7	6.4	6.5	5.4	5.0
25	2.5	7.4	3.8	5.1	2.2	16	8.0	5.7	6.4	6.5	5.4	5.4
26	2.5	6.0	3.7	4.8	2.2	27	8.0	5.9	7.0	6.5	5.1	5.4
27	2.5	4.2	4.4	4.9	2.7	17	8.0	5.8	6.8	6.5	5.1	5.0
28	2.5	5.4	5.5	7.1	3.6	12	8.0	6.0	370	6.5	5.1	5.0
29	2.5	5.5	10	4.8	-----	12	7.9	6.0	325	6.5	4.7	5.0
30	2.4	5.4	7.8	3.0	-----	11	7.9	5.8	66	6.5	4.7	5.0
31	2.4	-----	6.0	2.4	-----	11	-----	6.2	-----	6.5	4.7	-----
TOTAL	80.6	102.2	196.5	158.6	58.7	243.8	284.9	203.0	927.7	214.2	178.0	149.6
MEAN	2.60	3.41	6.34	5.12	2.10	7.86	9.50	6.55	30.9	6.91	5.74	4.99
MAX	2.8	7.4	21	11	3.6	27	12	8.1	370	9.7	6.5	5.4
MIN	2.4	2.2	3.6	2.4	1.8	3.5	7.9	5.3	5.9	6.5	4.7	4.7
AC-FT	160	203	390	315	116	484	565	403	1,840	425	353	297

CAL YR 1970 TOTAL 327,565.6 MEAN 897 MAX 42,100 MIN 1.3 AC-FT 649,700  
WTR YR 1971 TOTAL 2,797.8 MEAN 7.6 MAX 370 MIN 1.8 AC-FT 5,550

NOTE.--No gage-height record Oct. 1 to Nov. 12.

## SACRAMENTO RIVER BASIN

11413600 SWEETLAND CREEK NEAR NORTH SAN JUAN, CALIF.

LOCATION.--Lat 39°20'18", long 121°06'58", in NE¼ sec.18, T.17 N., R.8 E., Nevada County, on left bank at culvert on State Highway 49, 2.2 miles southwest of North San Juan.

DRAINAGE AREA.--2.68 sq mi.

PERIOD OF RECORD.--Water years 1963-68 (annual maximum), October 1968 to current year.

GAGE.--Water-stage recorder, crest-stage gages, float operated rain gage, and culvert control. Prior to October 1968, crest-stage gage only. Altitude of gage is 1,860 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 256 cfs Mar. 26 (gage height, 5.17 ft); no flow for several months.

Period of record: Maximum discharge, 600 cfs Dec. 22, 1964 (gage height, 7.04 ft); no flow for several months each year.

REMARKS.--Records good. No known diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	32	6.6	2.6	.54	4.1	1.3	.76	.02		
2		0	66	11	2.4	.54	3.4	1.4	.76	.02		
3		0	22	9.6	2.0	.76	3.2	1.9	.68	.01		
4		0	110	9.0	1.4	1.0	2.6	2.2	.60	0		
5		0	18	9.0	1.3	1.0	2.6	1.7	.76	0		
6		.13	6.6	7.8	1.3	.84	2.6	1.4	.60	0		
7		.05	5.2	7.2	1.0	.84	3.4	1.4	.42	0		
8		.03	5.8	5.5	1.0	.84	2.6	3.2	.32	0		
9		.05	4.4	2.2	1.0	.94	2.8	1.9	.32	0		
10		.08	3.0	4.1	.94	.94	7.0	1.3	.24	0		
11		.11	2.6	21	.94	1.7	3.0	1.0	.21	0		
12		.18	2.2	18	.94	19	2.6	.84	.18	0		
13		.11	1.9	20	.94	6.2	2.2	.76	.13	0		
14		.09	1.6	24	.84	3.8	2.2	.76	.11	0		
15		.08	3.4	17	.68	3.0	2.0	.68	.11	0		
16		.08	58	19	.68	2.4	2.0	.60	.06	0		
17		.06	27	26	.68	2.4	4.2	.48	.05	0		
18		.06	11	18	.68	1.7	2.4	.42	.05	0		
19		.06	6.6	14	1.2	1.7	2.0	.42	.04	0		
20		.06	7.4	13	.84	1.6	2.6	.42	.03	0		
21		.06	18	11	.68	1.4	2.6	.37	.02	0		
22		.06	9.0	11	.68	1.3	2.0	.37	.02	0		
23		.05	5.5	8.4	.60	11	1.9	.37	.01	0		
24		1.5	4.1	5.5	.60	5.8	1.9	.37	.01	0		
25		5.7	3.2	3.8	.54	58	1.7	.37	.01	0		
26		3.8	3.8	3.4	.54	116	1.7	.42	.08	0		
27		2.0	7.4	3.2	.54	20	1.6	.42	.11	0		
28		15	8.9	3.0	.60	10	1.4	.68	.06	0		
29		18	18	2.8	-----	7.2	1.4	.76	.03	0		
30		12	9.6	2.8	-----	6.2	1.3	2.3	.03	0		
31		-----	5.8	2.4	-----	4.8	-----	.94	-----	0		-----
TOTAL	0	59.40	488.0	319.3	28.14	293.44	77.0	31.45	6.81	.05	0	0
MEAN	0	1.98	15.7	10.3	1.01	9.47	2.57	1.01	.23	.002	0	0
MAX	0	18	110	26	2.6	116	7.0	3.2	.76	.02	0	0
MIN	0	0	1.6	2.2	.54	.54	1.3	.37	.01	0	0	0
AC-FT	0	118	968	633	56	582	153	62	14	.1	0	0
(a)	-	7.09	12.65	4.62	.72	7.66	1.90	2.07	.90	0	0	0
CAL YR 1970	TOTAL	1,903.67	MEAN	5.22	MAX	185	MIN	0	AC-FT	3,780		
WTR YR 1971	TOTAL	1,303.59	MEAN	3.57	MAX	116	MIN	0	AC-FT	2,590		

a Precipitation, in inches.

## 11414000 SOUTH YUBA RIVER NEAR CISCO, CALIF.

LOCATION.--Lat 39°19'12", long 120°33'38", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.19, T.17 N., R.13 E., Nevada County, Tahoe National Forest, on right bank 0.7 mile downstream from Rattlesnake Creek, 1.3 miles west of Cisco Grove, and 1.5 miles northwest of Cisco.

DRAINAGE AREA.--51.8 sq mi.

PERIOD OF RECORD.--April 1942 to current year. Prior to October 1949, published as South Fork Yuba River near Cisco.

GAGE.--Water-stage recorder. Altitude of gage is 5,520 ft (from river-profile map). Prior to October 1945, water-stage recorder at site 200 ft upstream at same datum.

AVERAGE DISCHARGE.--29 years, 201 cfs (145,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,370 cfs June 26 (gage height, 9.08 ft); minimum daily, 16 cfs Aug. 19.

Period of record: Maximum discharge, 18,400 cfs Jan. 31, 1963 (gage height, 19.6 ft, from floodmarks in gage house, 20.6 ft from outside floodmarks), from rating curve extended above 4,600 cfs on basis of slope-area measurement at gage height 15.8 ft; minimum daily, 0.1 cfs Nov. 5-7, 1954.

REMARKS.--Records good. Low flow regulated by Lake Van Norden (capacity, 4,320 acre-ft, 5,260 acre-ft with flashboards).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	30	98	63	135	73	201	674	331	449	30	17
2	44	28	96	65	140	75	222	700	286	420	28	17
3	45	18	101	67	124	72	239	587	356	370	27	17
4	40	27	95	55	110	71	293	485	472	319	26	25
5	30	281	119	56	102	69	377	441	790	295	25	26
6	25	112	140	57	99	69	421	510	1,110	269	25	25
7	23	62	140	60	100	72	338	567	1,250	236	23	25
8	21	54	150	66	102	71	270	789	1,240	215	23	25
9	30	245	158	70	104	71	315	693	1,160	189	22	25
10	30	230	109	66	120	71	355	1,050	1,160	166	21	25
11	30	230	101	65	184	72	259	1,120	1,140	139	20	25
12	30	235	99	56	228	96	289	1,090	1,160	110	20	25
13	30	101	95	55	239	92	376	1,240	1,120	105	19	25
14	30	78	90	60	220	76	437	1,250	1,080	102	19	24
15	29	72	82	63	197	73	589	1,230	1,140	99	18	24
16	21	64	74	65	175	73	621	1,090	1,200	93	17	24
17	21	60	76	206	141	77	505	825	1,140	88	17	24
18	21	59	74	506	120	74	322	790	1,040	105	17	24
19	21	55	72	432	114	80	265	885	1,080	80	16	24
20	25	53	75	341	102	104	304	1,030	1,020	70	18	24
21	24	52	77	237	96	126	248	922	930	62	18	24
22	28	51	76	173	93	129	207	647	840	55	18	24
23	29	50	70	141	89	171	185	980	715	50	18	24
24	30	92	59	123	86	214	180	1,250	692	46	18	23
25	25	1,140	59	111	86	250	165	1,340	624	42	18	24
26	24	353	62	110	78	541	161	1,240	1,630	39	19	25
27	31	170	63	116	76	245	159	846	1,080	37	19	25
28	32	130	64	119	76	214	215	612	596	36	18	24
29	31	138	63	122	-----	231	352	539	472	34	18	25
30	31	116	59	128	-----	297	507	564	479	32	17	42
31	30	-----	60	134	-----	241	-----	409	-----	30	18	-----
TOTAL	908	4,386	2,756	3,988	3,536	4,190	9,377	26,395	27,333	4,382	630	730
MEAN	29.3	146	88.9	129	126	135	313	851	911	141	20.3	24.3
MAX	47	1,140	158	506	239	541	621	1,340	1,630	449	30	42
MIN	21	18	59	55	76	69	159	409	286	30	16	17
AC-FT	1,800	8,700	5,470	7,910	7,010	8,310	18,600	52,350	54,220	8,690	1,250	1,450

CAL YR 1970 TOTAL 81,149 MEAN 222 MAX 4,140 MIN 15 AC-FT 161,000  
WTR YR 1971 TOTAL 88,611 MEAN 243 MAX 1,630 MIN 16 AC-FT 175,800

## PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1400	7.09	1,860	6-7	2100	7.08	1,860
5-14	2130	6.92	1,760	6-26	1730	9.08	3,370
5-25	2130	7.18	1,930				



## 11414140 LAKE SPAULDING NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°19'35", long 120°38'32", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.20, T.17 N., R.12 E., Nevada County, on left abutment of Spaulding Dam on South Yuba River, 2.5 miles northeast of Emigrant Gap.

DRAINAGE AREA.--118 sq mi.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,809.6 ft above mean sea level (levels by Pacific Gas and Electric Co.). Prior to July 1968, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 74,844 acre-ft June 22 (gage height, 205.1 ft); minimum, 4,888 acre-ft Feb. 23, 24 (gage height, 51.5 ft).

Period of record: Maximum contents, 75,100 acre-ft July 13, 1967 (gage height, 205.5 ft); minimum 4,888 acre-ft Feb. 23, 24, 1971 (gage height, 51.5 ft).

REMARKS.--Lake is formed by three concrete-arch dams with spillway on the middle arc. Storage began in 1913. Capacity, 74,773 acre-ft between gage heights 0.6 ft (bottom of outlet) and 205.0 ft (top of radial gates). Released water flows through Spaulding powerhouses Nos. 1 and 2. Flow through powerhouse No. 1 is transported out of Yuba River basin by Drum Canal to Bear River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co. under general supervision of Geological Survey, in connection with a Federal Power Commission project. Contents not rounded to Geological Survey standards.

## CAPACITY TABLE (GAGE HEIGHT, IN FEET, AND CONTENTS, IN ACRE-FEET)

11	329	50	4,578
15	427	70	9,632
20	566	100	19,541
25	874	150	41,545
30	1,352	200	71,329
40	2,742	206	75,473

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61,104	26,995	24,609	9,540	7,030	5,502	12,862	18,272	59,861	74,774	71,738	61,856
2	60,295	25,952	24,008	9,627	6,977	5,800	12,700	19,428	59,368	74,774	71,602	61,417
3	59,245	24,931	23,336	9,715	6,874	5,754	12,571	20,433	59,122	74,774	71,398	60,917
4	57,961	24,048	22,788	9,686	6,697	5,708	12,735	21,293	59,122	74,774	71,194	60,605
5	56,391	24,851	22,247	9,598	6,472	5,685	13,375	21,787	59,985	74,774	70,991	60,171
6	54,961	24,810	21,940	9,569	6,228	5,479	14,254	22,633	61,856	74,355	70,788	59,799
7	53,667	24,528	21,483	9,453	6,012	5,662	14,717	23,651	62,550	74,146	70,653	59,368
8	52,157	23,889	21,218	9,453	5,871	5,616	14,850	25,705	65,884	74,077	70,383	58,876
9	51,239	24,248	20,805	9,627	5,685	5,300	15,152	27,037	67,651	73,938	70,047	58,326
10	50,217	24,408	20,100	9,832	5,754	5,081	15,828	29,442	69,110	73,869	69,912	57,718
11	49,258	24,368	19,209	10,039	6,252	5,081	15,999	31,131	70,585	73,661	69,644	56,942
12	48,308	24,408	18,451	9,921	6,522	5,731	16,067	34,268	72,627	73,315	69,444	56,331
13	47,202	23,889	17,703	9,598	6,747	5,708	16,342	37,011	73,730	72,695	68,977	55,673
14	46,272	23,140	16,792	9,337	6,798	5,434	16,618	39,499	73,869	72,627	67,981	55,079
15	45,081	22,362	15,931	9,136	6,772	5,147	17,810	41,804	73,730	72,558	66,993	54,253
16	43,905	23,061	15,185	9,251	6,697	5,147	18,631	43,745	74,216	72,352	66,339	53,784
17	42,848	23,810	14,419	10,427	6,621	5,212	19,355	44,812	74,146	72,284	66,014	53,025
18	41,960	24,528	13,504	12,220	6,012	5,060	19,318	45,620	73,938	72,079	65,689	52,100
19	41,286	25,175	12,475	13,182	5,731	5,060	19,064	46,763	74,216	71,942	65,430	50,954
20	40,516	24,931	11,527	13,601	5,731	5,345	19,064	48,531	74,077	71,806	65,235	51,182
21	38,996	23,969	10,638	13,504	5,662	5,547	18,739	49,822	74,146	71,806	65,042	51,640
22	38,146	22,944	9,715	13,086	5,103	5,525	18,415	50,330	74,844	71,602	64,848	52,042
23	36,913	22,093	9,165	12,475	4,888	6,060	17,987	51,755	74,704	71,533	64,655	52,388
24	35,795	21,293	8,908	11,809	4,888	6,621	17,492	53,608	74,774	71,398	64,334	52,735
25	34,980	25,746	9,337	11,064	4,974	7,292	16,966	55,912	74,774	71,126	63,885	53,084
26	33,423	26,410	10,128	10,307	4,974	11,218	16,411	58,143	74,774	71,058	63,757	53,550
27	32,267	26,158	10,397	9,657	4,952	11,683	15,931	59,183	74,634	71,330	63,630	53,959
28	30,906	25,705	10,158	8,880	5,147	11,966	15,692	59,676	74,634	71,602	63,184	54,194
29	29,926	25,542	9,686	8,319	-----	12,283	16,067	59,799	74,774	71,874	62,867	54,606
30	29,005	25,134	9,366	7,800	-----	12,894	16,931	60,109	74,774	72,011	62,486	55,079
31	27,927	-----	9,395	7,398	-----	12,958	-----	60,109	-----	71,874	62,171	-----
MAX	61,104	26,995	24,609	13,601	7,030	12,958	19,355	60,109	74,844	74,774	71,738	61,856
MIN	27,927	21,293	8,908	7,398	4,888	5,060	12,571	18,272	59,122	71,058	62,171	50,954
(a)	121.2	114.5	69.2	62.0	52.7	80.8	92.7	182.7	205.0	200.8	186.0	174.4
(b)	-33,866	-2,793	-15,739	-1,997	-2,251	+7,811	+3,973	+43,178	+14,665	-2,900	-9,703	-7,092
CAL YR 1970	MAX 74,425	MIN 8,908	b -26,981									
WTR YR 1971	MAX 74,844	MIN 4,888	b -6,714									

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

b Change in contents, in acre-feet.

## SACRAMENTO RIVER BASIN

## 11414170 DRUM CANAL AT INTAKE NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°19'28", long 120°38'37", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.20, T.17 N., R.12 E., Nevada County, in Tahoe National Forest, in Spaulding No. 1 powerhouse and 2.4 miles northeast of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,880 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 536 cfs (388,300 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 838 cfs Apr. 11, 16, May 14, 1969; no flow for several days in most years.

REMARKS.--Canal diverts from Spaulding No. 1 powerhouse at Lake Spaulding Dam. Water is used for irrigation and power in the Bear River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	673	740	733	245	713	274	727	823	822	829	729	740
2	692	740	730	245	714	379	838	826	823	832	729	750
3	570	740	737	226	709	494	838	820	822	832	729	755
4	717	714	726	250	702	491	838	822	822	830	730	753
5	716	689	737	323	695	491	838	826	822	830	731	754
6	720	652	736	329	688	489	838	812	826	822	731	753
7	705	582	731	298	682	488	838	820	829	826	737	757
8	717	641	736	230	677	543	838	826	829	760	740	758
9	733	703	727	232	676	568	838	820	825	720	740	755
10	743	716	741	309	687	536	838	810	823	721	740	753
11	743	723	753	403	700	499	838	810	826	720	738	757
12	740	721	750	485	709	574	838	817	826	719	737	758
13	738	720	753	447	712	656	838	823	829	719	740	757
14	740	716	753	398	710	649	838	825	829	719	740	757
15	738	723	741	276	707	586	788	825	829	721	738	758
16	736	11	738	435	699	513	817	823	830	720	740	763
17	736	1.2	747	714	688	532	822	823	829	720	744	757
18	738	1.2	747	721	549	551	825	825	826	720	740	757
19	743	1.2	747	723	496	549	822	823	826	720	741	764
20	737	390	747	731	499	554	823	822	829	720	740	88
21	737	760	747	738	544	651	822	828	828	720	740	0
22	734	755	747	736	551	651	822	830	826	720	738	0
23	729	754	747	731	523	680	822	828	829	721	741	0
24	734	753	493	734	447	689	825	823	826	721	743	0
25	733	726	220	741	399	689	826	826	825	723	741	0
26	741	726	249	736	321	700	825	826	823	662	712	0
27	740	730	454	750	215	724	828	825	823	496	743	0
28	741	738	755	758	280	724	828	820	822	514	740	0
29	736	738	755	744	-----	724	825	825	825	502	741	0
30	734	736	757	729	-----	724	825	820	828	633	741	0
31	736	-----	488	716	-----	755	-----	822	-----	726	741	-----
TOTAL	22,470	18,340.6	21,222	16,133	16,692	18,127	24,766	25,494	24,777	22,338	22,855	14,444
MEAN	725	611	685	520	596	585	826	822	826	721	737	481
MAX	743	760	757	758	714	755	838	830	832	832	744	764
MIN	570	1.2	220	226	215	274	727	810	822	496	712	0
AC-FT	44,570	36,380	42,090	32,000	33,110	35,950	49,120	50,570	49,150	44,310	45,330	28,650
CAL YR 1970	TOTAL	231,806.61	MEAN	635	MAX	814	MIN	0	AC-FT	459,800		
WTR YR 1971	TOTAL	247,658.60	MEAN	679	MAX	838	MIN	0	AC-FT	491,200		

## 11414190 DRUM CANAL ABOVE DRUM FOREBAY, NEAR BLUE CANYON, CALIF.

LOCATION.--Lat 39°15'50", long 120°43'47", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.10, T.16 N., R.11 E., Placer County, on right bank 1.2 miles west of Blue Canyon and 1.5 miles upstream from Drum Forebay.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,800 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 544 cfs (394,100 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 782 cfs Sept. 16, 1971; no flow at times in most years.

REMARKS.--Flow represents water diverted from South Yuba River through Spaulding No. 1 powerplant plus diversion from North Fork American River basin by way of Lake Valley Canal (see sta 11426190). This water enters the Bear River at Drum Forebay.

COOPERATION.--Records collected by Pacific Gas and Electric Co. under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543	759	641	248	712	282	733	761	759	761	757	761
2	567	759	639	253	708	369	740	757	759	763	757	771
3	733	757	645	232	706	486	740	759	759	763	757	778
4	742	752	641	294	702	486	742	759	759	763	757	776
5	746	740	647	324	691	486	740	757	759	763	754	778
6	748	706	649	324	679	484	718	759	761	759	754	774
7	746	600	649	328	679	482	729	754	765	767	759	776
8	746	740	651	305	676	528	731	757	765	765	761	780
9	754	742	643	235	670	561	733	761	763	761	761	776
10	765	744	641	239	668	534	740	759	761	763	759	771
11	765	754	654	308	679	498	731	761	761	763	757	776
12	765	765	654	396	685	565	744	759	761	763	757	778
13	759	757	658	476	697	641	754	761	761	761	761	774
14	761	746	656	441	702	635	757	761	761	761	761	778
15	757	754	647	400	702	587	759	761	761	763	761	778
16	752	105	612	280	695	502	761	761	761	763	761	782
17	752	7.8	645	415	683	518	757	761	761	763	763	778
18	757	0	645	697	676	543	757	759	761	761	761	778
19	757	1.3	647	706	614	539	759	759	759	761	763	774
20	754	301	649	708	486	547	757	759	759	761	763	95
21	746	672	649	716	486	581	757	757	757	761	761	38
22	750	668	649	721	583	654	754	759	754	759	761	41
23	746	666	771	716	547	687	759	761	757	761	763	17
24	742	668	771	710	443	700	752	761	757	759	763	0
25	740	641	771	714	398	716	754	754	759	759	763	0
26	754	633	280	718	335	683	754	761	757	714	731	0
27	765	633	280	727	223	691	754	761	752	532	763	0
28	765	643	361	742	287	735	757	759	759	547	763	0
29	765	647	662	746	-----	735	759	759	759	532	763	0
30	757	645	577	731	-----	716	759	757	759	647	765	0
31	757	-----	433	729	-----	718	-----	759	-----	754	765	-----
TOTAL	22,956	18,006.1	19,117	15,579	16,812	17,889	22,441	23,533	22,786	22,773	23,545	14,928
MEAN	741	600	617	503	600	577	748	759	760	735	760	498
MAX	765	765	771	746	712	735	761	761	765	767	765	782
MIN	543	0	280	232	223	282	718	754	752	532	731	0
AC-FT	45,530	35,720	37,920	30,900	33,350	35,480	44,510	46,680	45,200	45,170	46,700	29,610
CAL YR 1970	TOTAL	224,048.10	MEAN	614	MAX	771	MIN	0	AC-FT	444,400		
WTR YR 1971	TOTAL	240,365.10	MEAN	659	MAX	782	MIN	0	AC-FT	476,800		

## 11414200 SOUTH YUBA CANAL NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°18'45", long 120°39'45", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.30, T.17 N., R.12 E., Nevada County, on left bank of concrete flume 400 ft downstream from Bowman Lake Road and 2.5 miles northeast of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,640 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 108 cfs (78,250 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 165 cfs Aug. 3, 1965; no flow Apr. 20-22, 1966, Apr. 6-11, 1971.

REMARKS.--Canal diverts from South Yuba River below Lake Spaulding. Water is diverted to Deer Creek powerhouse where it enters Deer Creek. See schematic diagram showing diversion and storage in Bear River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co. under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	95	80	92	55	50	110	110	145	144	115	116
2	121	93	80	91	41	41	108	110	145	143	115	117
3	123	91	79	92	42	42	109	110	143	144	115	118
4	110	91	80	96	42	43	110	111	143	144	116	118
5	103	77	80	96	42	43	30	110	140	144	116	116
6	77	69	78	97	42	43	0	112	140	144	116	114
7	76	69	74	98	41	43	0	107	129	143	116	114
8	75	76	122	99	41	42	0	112	138	144	116	114
9	74	83	141	100	42	43	0	119	142	116	116	114
10	74	87	140	97	42	44	0	44	146	97	116	114
11	74	88	138	97	42	44	0	32	146	97	116	113
12	74	88	137	97	42	47	64	32	147	97	116	113
13	74	67	135	97	42	44	118	94	148	97	116	113
14	74	83	134	97	42	44	119	142	147	97	116	114
15	74	86	133	99	41	44	119	140	147	97	116	115
16	93	29	128	100	41	44	121	143	147	97	115	115
17	100	31	130	97	41	44	123	145	146	97	115	117
18	99	31	129	98	42	46	122	145	146	97	118	118
19	101	70	126	90	42	43	122	146	142	97	118	117
20	105	86	125	77	42	42	122	147	143	108	120	118
21	103	87	105	104	41	42	122	148	145	115	118	117
22	103	86	90	129	41	41	121	148	145	115	121	116
23	103	62	89	128	41	43	120	146	145	115	121	116
24	101	60	93	125	42	75	120	145	145	115	118	116
25	101	65	94	123	42	72	119	149	145	115	116	116
26	100	86	94	122	43	49	118	146	144	115	115	118
27	94	84	93	101	54	40	117	147	143	115	115	118
28	93	85	91	74	67	39	116	147	144	115	115	119
29	93	86	91	72	-----	38	120	148	144	115	116	117
30	93	82	93	72	-----	67	112	146	143	116	116	116
31	93	-----	92	72	-----	121	-----	146	-----	116	116	-----
TOTAL	2,900	2,273	3,294	3,029	1,218	1,503	2,682	3,827	4,313	3,611	3,610	3,477
MEAN	93.5	75.8	106	97.7	43.5	48.5	89.4	123	144	116	116	116
MAX	123	95	141	129	67	121	123	149	148	144	121	119
MIN	74	29	74	72	41	38	0	32	129	97	115	113
AC-FT	5,750	4,510	6,530	6,010	2,420	2,980	5,320	7,590	8,550	7,160	7,160	6,900
CAL YR 1970	TOTAL 39,922.4		MEAN 109	MAX 141	MIN 1.9	AC-FT 79,190						
WTR YR 1971	TOTAL 35,737.0		MEAN 97.9	MAX 149	MIN 0	AC-FT 70,880						



## 11414250 SOUTH YUBA RIVER AT LANGS CROSSING, NEAR EMIGRANT GAP, CALIF.

LOCATION.--Lat 39°19'07", long 120°39'27", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.20, T.17 N., R.12 E., Nevada County, on right bank 150 ft downstream from road bridge, 0.8 mile downstream from Spaulding Nos. 1 and 2 powerplants, and 1.6 miles northeast of Emigrant Gap.

DRAINAGE AREA.--120 sq mi.

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,432.44 ft above mean sea level (levels by Pacific Gas and Electric Co.).

AVERAGE DISCHARGE.--5 years, 113 cfs (81,870 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 9,510 cfs June 26 (gage height, 14.30 ft); minimum daily, 4.6 cfs Aug. 30.

Period of record: Maximum discharge, 9,700 cfs Jan. 22, 1970 (gage height, 14.45 ft); minimum daily, 3.1 cfs Nov. 5-7, 1967.

REMARKS.--Flow regulated by Lake Spaulding (see sta 11414140).

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	5.7	18	8.2	11	8.2	14	26	33	374	11	4.8
2	6.4	5.9	20	7.6	12	9.4	13	23	32	339	11	5.2
3	6.4	5.9	16	7.2	11	8.0	12	26	32	221	11	5.9
4	6.1	8.7	23	7.0	10	7.6	12	24	31	139	11	5.9
5	6.4	31	24	6.6	9.4	7.0	11	23	33	96	11	5.9
6	5.4	28	20	6.6	8.8	6.8	11	23	35	39	10	5.7
7	5.4	19	20	6.6	8.6	6.6	12	32	47	25	10	5.7
8	5.7	12	20	6.6	9.6	6.5	13	28	38	17	10	5.4
9	5.7	11	20	7.0	11	6.4	16	94	35	16	9.9	5.4
10	5.7	10	18	8.0	13	6.6	19	142	32	16	9.6	5.4
11	5.7	11	15	9.2	14	8.0	15	144	51	15	9.3	5.2
12	5.7	16	13	8.7	16	10	13	101	183	15	9.3	5.2
13	5.7	10	12	7.9	15	9.9	11	22	848	14	11	5.2
14	5.7	8.7	11	7.4	14	9.8	10	26	1,550	14	16	5.0
15	5.7	7.6	10	9.0	13	9.8	9.7	22	1,510	13	14	5.4
16	5.7	6.6	10	13	12	9.7	14	20	1,630	13	12	6.1
17	5.7	6.4	10	21	11	9.7	12	20	1,840	13	11	6.1
18	5.7	6.4	10	26	10	9.6	11	20	1,590	12	10	6.1
19	5.7	6.1	10	23	9.2	9.6	12	20	1,460	12	9.3	6.4
20	5.7	5.7	9.6	20	8.6	9.7	11	20	1,610	12	8.7	6.6
21	5.7	5.4	9.3	17	8.2	10	11	20	1,300	12	8.4	6.1
22	6.1	5.4	9.0	14	7.8	11	10	21	546	11	8.2	5.9
23	9.9	4.8	8.4	13	7.6	13	11	24	1,130	11	7.9	5.9
24	8.4	8.2	7.9	12	7.3	16	11	26	924	11	7.6	6.1
25	6.6	38	7.9	11	7.2	22	11	30	606	11	7.4	6.1
26	6.4	32	7.6	11	7.0	27	10	29	3,270	11	7.6	6.1
27	5.7	17	7.4	10	6.8	23	10	29	2,050	11	7.4	6.1
28	5.4	20	8.6	10	7.2	21	10	28	806	11	7.4	6.1
29	5.4	32	9.8	10	-----	19	17	28	364	11	6.1	7.1
30	5.4	21	9.2	11	-----	17	23	30	346	11	4.6	12
31	5.4	-----	8.4	11	-----	15	-----	32	-----	11	4.8	-----
TOTAL	187.0	405.5	403.1	346.6	286.3	362.9	375.7	1,153	23,962	1,537	292.5	180.1
MEAN	6.03	13.5	13.0	11.2	10.2	11.7	12.5	37.2	799	49.6	9.44	6.00
MAX	9.9	38	24	26	16	27	23	144	3,270	374	16	12
MIN	5.4	4.8	7.4	6.6	6.8	6.4	9.7	20	31	11	4.6	4.8
AC-FT	371	804	800	687	568	720	745	2,290	47,530	3,050	580	357

CAL YR 1970 TOTAL 22,686.4 MEAN 62.2 MAX 7,620 MIN 4.8 AC-FT 45,000  
WTR YR 1971 TOTAL 29,491.7 MEAN 80.8 MAX 3,270 MIN 4.6 AC-FT 58,500

NOTE.--No gage-height record Dec. 25 to Apr. 15.

## 11415500 BOWMAN LAKE NEAR GRANITEVILLE, CALIF.

LOCATION.--Lat 39°27'01", long 120°39'10", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.5, T.18 N., R.12 E., Nevada County, on rockfill portion of Bowman Dam on Canyon Creek, 4.5 miles east of Graniteville, and 8 miles south of Sierra City.

DRAINAGE AREA.--27.1 sq mi.

PERIOD OF RECORD.--December 1926 to current year.

GAGE.--Water-stage recorder. Prior to Oct. 8, 1964, nonrecording gage at same site and datum. Datum of gage is at mean sea level (levels by Nevada Irrigation District).

EXTREMES.--Current year: Maximum contents, 69,500 acre-ft June 26 (elevation, 5,564.6 ft); minimum, 25,100 acre-ft Mar. 23, 24 (elevation, 5,501.8 ft).

Period of record: Maximum contents, 71,000 acre-ft May 30, 1965 (elevation, 5,566.5 ft); minimum observed under normal operating conditions since reservoir first filled, 1,000 acre-ft Mar. 4, 1931 (elevation, 5,430.1 ft).

REMARKS.--Lake is formed by one rockfill and one concrete-arch dam; storage began in November 1926. Total capacity, 68,200 acre-ft between elevations 5,400 ft (bottom of outlet tunnel) and 5,563 ft (crest of concrete-arch dam) above mean sea level. Flashboards are occasionally added, increasing elevation to 5,565.8 ft and capacity to 70,400 acre-ft, all of which is available for release. Lake receives water from Middle Yuba River through Milton-Bowman tunnel (see sta 11408000), and releases it through Bowman-Spaulding Canal (see sta 11416000), which conveys it to reservoirs of Pacific Gas and Electric Co. Water is eventually used for irrigation by Nevada Irrigation District. Lake completely drained for inspection and repair Nov. 25 to Dec. 9, 1949, Oct. 1-20, 1966.

COOPERATION.--One hundred and sixty nonrecording gage readings furnished by Nevada Irrigation District.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

5,430	900	5,470	10,200
5,435	1,400	5,480	14,200
5,440	2,100	5,510	30,000
5,450	4,100	5,540	49,800
5,460	6,900	5,570	73,800

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47,500	55,400	55,900	47,700	40,600	33,000	27,200	28,100	61,100	68,800	61,500	44,800
2	47,400	55,200	55,900	47,400	40,400	32,600	27,100	28,600	61,700	68,800	61,000	44,400
3	47,400	54,900	55,700	46,900	40,100	32,200	27,100	29,000	62,300	68,800	60,500	44,100
4	47,700	54,800	55,600	46,500	39,900	31,800	27,100	29,300	63,000	68,800	60,000	43,700
5	48,200	55,100	55,500	46,200	39,600	31,400	27,200	29,600	63,900	68,800	59,400	43,400
6	48,700	55,200	55,200	45,600	39,300	31,100	27,400	29,900	64,900	68,800	58,900	42,900
7	49,200	55,200	55,100	45,200	39,000	30,700	27,500	30,700	66,000	68,800	58,400	42,800
8	49,700	55,100	54,900	44,800	38,600	30,200	27,600	31,800	67,200	68,600	57,900	42,800
9	50,200	55,600	54,800	44,300	38,200	29,700	27,600	32,900	68,100	68,500	57,300	42,900
10	50,800	56,000	54,500	43,900	37,900	29,300	27,700	34,100	68,800	68,400	56,800	42,900
11	51,400	56,400	54,400	43,600	37,600	29,000	27,700	35,400	69,100	68,300	56,300	43,000
12	52,000	56,800	54,100	43,200	37,500	28,600	27,700	36,600	69,100	68,100	55,700	43,000
13	52,500	56,900	53,800	42,900	37,400	28,400	27,800	38,100	69,200	68,000	55,200	43,000
14	53,000	56,900	53,400	43,100	37,300	28,100	27,900	39,600	69,100	67,800	54,600	43,000
15	53,600	56,800	53,200	43,000	37,100	28,000	28,200	41,100	69,100	67,600	54,000	43,000
16	53,900	56,800	53,100	42,500	37,000	27,800	28,600	42,400	69,100	67,400	53,500	43,000
17	54,700	56,700	52,800	42,600	36,800	27,200	28,900	43,500	69,100	67,100	52,900	43,100
18	54,900	56,600	52,500	43,000	36,500	26,700	29,000	44,400	69,000	66,900	52,400	43,200
19	55,100	56,400	52,100	43,300	36,100	26,300	29,000	45,500	69,100	66,800	51,700	43,200
20	55,200	55,800	51,800	43,400	35,900	25,900	28,900	46,700	69,000	66,400	51,200	43,200
21	55,400	55,300	51,500	43,400	35,700	25,600	28,900	47,800	68,900	66,200	50,500	43,200
22	55,600	54,800	51,200	43,200	35,400	25,200	28,700	48,800	68,800	65,900	50,000	43,200
23	55,800	54,200	50,800	43,100	35,000	25,100	28,600	50,000	68,800	65,500	49,400	43,200
24	55,900	53,900	50,400	42,900	34,700	25,100	28,400	51,600	68,800	65,200	49,000	43,200
25	56,000	56,000	50,000	42,600	34,400	25,800	28,100	53,300	68,800	64,700	48,400	43,200
26	56,000	56,400	49,600	42,300	34,000	26,900	27,900	55,200	69,500	64,300	47,800	43,300
27	56,100	56,300	49,200	42,100	33,700	27,200	27,700	56,600	69,100	63,900	47,400	43,300
28	56,100	56,300	48,900	41,800	33,400	27,200	27,500	57,700	68,900	63,400	46,900	42,900
29	56,000	56,000	48,600	41,300	-----	27,200	27,500	58,700	68,900	62,900	46,300	42,600
30	55,700	56,000	48,300	41,000	-----	27,200	27,700	59,600	68,800	62,400	45,700	42,200
31	55,600	-----	48,000	40,800	-----	27,300	-----	60,400	-----	62,000	45,200	-----
MAX	56,100	56,900	55,900	47,700	40,600	33,000	29,000	60,400	69,500	68,800	61,500	44,800
MIN	47,400	53,900	48,000	40,800	33,400	25,100	27,100	28,100	61,100	62,000	45,200	42,200
(a)	5,547.2	5,547.7	5,537.4	5,527.2	5,515.6	5,505.5	5,506.2	5,553.2	5,563.8	5,555.2	5,533.5	5,529.2
(b)	+8,100	+400	-8,000	-7,200	-7,400	-6,100	+400	+32,700	+8,400	-6,800	-16,800	-3,000

CAL YR 1970 b -8,300

WTR YR 1971 b -5,300

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

NOTE.--Gage-height record for Feb. 19 to Mar. 31 based on once-daily nonrecording readings.

11416000 BOWMAN-SPAULDING CANAL INTAKE NEAR GRANITEVILLE, CALIF.  
(Formerly published as Bowman-Spaulling Canal Intake near Sierra City)

LOCATION.--Lat 39°26'26", long 120°39'30", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.8, T.18 N., R.12 E., Nevada County, Tahoe National Forest, on left bank 0.6 mile downstream from Bowman Dam, 4.5 miles east of Graniteville, and 8.5 miles south of Sierra City.

PERIOD OF RECORD.--October 1927 to current year. Prior to October 1962, published as Bowman-Spaulling Canal at Intake near Sierra City. October 1962 to October 1970 published as "near Sierra City."

GAGE.--Water-stage recorder. Datum of gage is 5,390.39 ft above mean sea level. Prior to July 1965 at site 0.3 mile upstream at different datum.

AVERAGE DISCHARGE.--44 years, 152 cfs (110,100 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 328 cfs Oct. 30, 31, Nov. 4, 1970; no flow at times in most years.

REMARKS.--Records good. Canal diverts from left bank of Canyon Creek at diversion dam 500 ft downstream from Bowman Dam. Water is diverted to Lake Spaulding and after passing through several powerhouses is used for irrigation by Nevada Irrigation District.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	284	326	247	246	220	275	179	166	175	250	292	312
2	284	325	229	246	221	274	199	125	175	254	292	308
3	283	324	221	248	218	272	194	129	182	258	292	307
4	107	328	232	248	220	272	179	131	188	266	297	306
5	J	280	232	248	222	270	163	133	196	272	299	306
6	0	267	230	247	223	274	140	149	181	277	298	304
7	0	284	230	247	224	276	151	152	151	283	299	302
8	J	286	232	246	229	274	182	96	124	281	303	302
9	0	284	229	246	233	272	186	89	117	278	304	300
10	0	263	218	246	247	271	172	96	136	278	307	300
11	0	260	177	245	258	270	170	67	149	278	307	302
12	0	255	220	241	247	245	182	56	150	278	306	302
13	0	275	224	238	205	232	180	64	152	276	304	302
14	0	288	233	238	200	251	174	51	151	277	303	299
15	0	299	239	234	212	263	159	47	154	278	303	300
16	0	302	239	233	220	268	119	59	159	277	306	302
17	35	302	224	228	220	266	125	82	159	277	307	300
18	154	302	230	199	239	266	170	103	161	277	308	300
19	212	302	244	179	258	263	187	114	172	277	312	299
20	217	302	248	179	254	263	192	99	180	277	320	299
21	217	302	253	184	254	252	193	79	180	277	320	298
22	218	304	254	190	258	250	205	104	200	277	316	300
23	220	308	252	203	264	230	223	126	214	278	314	304
24	218	311	251	214	269	174	229	106	220	277	315	300
25	218	179	252	217	269	158	228	78	234	277	314	300
26	222	210	251	220	272	45	228	56	234	277	314	300
27	226	258	250	220	275	93	235	66	226	277	312	299
28	226	258	248	220	275	160	229	86	222	288	317	299
29	284	256	248	221	-----	179	198	138	221	294	319	298
30	328	248	247	221	-----	164	180	173	234	294	315	294
31	328	-----	247	220	-----	155	-----	174	-----	293	315	-----
TOTAL	4,281	8,488	7,331	7,012	6,706	7,177	5,551	3,194	5,397	8,578	9,530	9,044
MEAN	138	283	236	226	240	232	185	103	180	277	307	301
MAX	328	328	254	248	275	276	235	174	234	294	320	312
MIN	0	179	177	179	200	45	119	47	117	250	292	294
AC-FT	8,490	16,840	14,540	13,910	13,300	14,240	11,010	6,340	10,700	17,010	18,900	17,940
CAL YR 1970	TOTAL 85,415.9		MEAN 234	MAX 328	MIN 0	AC-FT 169,400						
WTR YR 1971	TOTAL 82,289.0		MEAN 225	MAX 328	MIN 0	AC-FT 163,200						

## 11416100 BOWMAN-SPAULDING CANAL AT JORDAN CREEK SIPHON VENTURI, NEAR EMGRANT GAP, CALIF.

LOCATION.--Lat 39°20'32", long 120°38'26", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.16, T.17 N., R.12 E., Nevada County, at outlet of Jordan Creek siphon 0.6 mile downstream from Fuller Lake and 3.5 miles northeast of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,440 ft above mean sea level (from topographic map).

AVERAGE DISCHARGE.--7 years, 224 cfs (162,300 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 330 cfs Dec. 22, 1964; no flow at times in most years.

REMARKS.--Records show water diverted from Bowman Lake (see sta 11415500) plus numerous small tributaries before it enters Lake Spaulding (see sta 11414140). See schematic diagram of Yuba River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co. under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	269	292	277	263	267	286	312	307	310	300	283	288
2	272	292	266	262	267	291	307	298	303	305	282	290
3	270	293	257	259	265	296	294	292	300	305	282	298
4	134	295	266	260	262	294	290	305	300	305	283	301
5	26	298	267	262	260	293	292	296	306	306	287	301
6	0	294	264	260	260	295	299	297	311	305	287	300
7	0	298	260	260	259	298	297	306	310	306	286	299
8	0	291	263	260	262	295	285	309	312	305	286	296
9	26	293	273	260	269	300	295	300	303	305	287	294
10	26	300	266	264	281	309	300	308	301	298	286	295
11	26	288	214	273	292	301	305	314	307	294	286	295
12	26	272	259	273	291	313	304	306	310	294	289	294
13	36	296	258	267	282	302	305	312	310	294	288	292
14	36	292	259	266	279	291	305	313	309	291	285	290
15	36	292	259	263	281	300	289	309	305	291	286	292
16	36	292	268	260	281	310	306	305	305	291	287	290
17	36	291	268	279	280	298	289	299	307	291	287	291
18	171	290	256	296	288	285	280	299	303	291	288	291
19	212	294	256	285	295	296	284	308	302	286	289	290
20	218	291	257	275	291	305	298	311	304	284	290	289
21	217	292	267	266	291	308	296	306	301	284	291	289
22	216	291	269	263	289	307	294	284	296	283	292	289
23	217	290	264	264	288	311	291	298	304	283	290	289
24	218	292	260	266	287	298	292	306	303	281	289	291
25	214	297	262	263	287	295	295	307	304	279	289	293
26	212	289	264	264	296	300	293	308	311	278	288	293
27	214	294	266	265	293	312	290	296	309	278	288	294
28	216	295	272	265	288	296	296	287	300	278	287	294
29	252	297	272	265	-----	296	303	288	303	285	289	293
30	291	295	269	265	-----	305	302	305	298	288	289	295
31	290	-----	265	266	-----	300	-----	312	-----	285	289	-----
TOTAL	4,413	8,776	8,143	8,259	7,831	9,286	8,888	9,391	9,147	9,049	8,905	8,796
MEAN	142	293	263	266	280	300	296	303	305	292	287	293
MAX	291	300	277	296	296	313	312	314	312	306	292	301
MIN	0	272	214	259	259	285	280	284	296	278	282	288
AC-FT	8,750	17,410	16,150	16,380	15,530	18,420	17,630	18,630	18,140	17,950	17,660	17,450
CAL YR 1970	TOTAL	97,230	MEAN	266	MAX	316	MIN	0	AC-FT	192,900		
WTR YR 1971	TOTAL	100,884	MEAN	276	MAX	314	MIN	0	AC-FT	200,100		

## 11416500 CANYON CREEK BELOW BOWMAN LAKE, CALIF.

LOCATION.--Lat 39°26'23", long 120°39'39", in SE $\frac{1}{4}$  sec.7, T.18 N., R.12 E., Nevada County, on left bank 1 mile downstream from Bowman Dam, 3 miles upstream from Texas Creek, and 9 miles south of Sierra City.

DRAINAGE AREA.--28.3 sq mi.

PERIOD OF RECORD.--January 1927 to current year.

GAGE.--Water-stage recorder and concrete control. Concrete control covered with rocks Jan. 22, 1970. Altitude of gage is 5,100 ft (from topographic map).

AVERAGE DISCHARGE.--44 years, 40.4 cfs (29,270 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,440 cfs June 26 (gage height, 6.76 ft); minimum daily, 0.85 cfs June 7.

Period of record: Maximum discharge, 3,740 cfs Jan. 22, 1970 (gage height, 9.42 ft in gage well, 10.32 ft, from floodmarks), from rating curve extended above 1,500 cfs on basis of slope-area measurement of maximum flow; no flow at times.

REMARKS.--Records good. Flow regulated by French Lake (usable capacity, 13,840 acre-ft), by Bowman Lake (see sta 11415500), several smaller reservoirs, and diversion into Bowman-Spaulding Canal (see sta 11416000). See schematic diagram showing diversions and storage in Yuba River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	1.3	3.0	1.4	2.3	1.2	2.2	3.3	1.4	102	2.2	1.9
2	3.5	1.9	2.8	1.4	2.4	1.2	2.3	2.8	1.2	79	1.9	1.9
3	3.5	1.6	2.3	1.3	2.2	1.2	2.5	2.4	1.1	55	1.7	1.8
4	3.3	2.9	2.4	1.2	2.0	1.4	2.9	3.3	1.0	35	1.6	1.7
5	5.3	11	2.8	1.2	1.9	1.4	3.4	2.4	.95	38	1.6	1.3
6	3.8	6.0	3.0	1.2	1.9	1.6	3.4	2.4	.90	31	1.6	1.3
7	3.8	4.6	3.4	1.2	1.9	1.8	2.9	2.5	.85	16	1.8	1.6
8	3.8	4.6	4.9	1.3	1.9	2.0	2.1	3.5	2.2	8.1	1.8	2.2
9	3.7	9.8	5.2	1.4	2.0	2.2	2.4	2.8	3.8	4.8	1.9	2.1
10	3.8	5.4	3.3	1.4	2.6	2.2	4.6	3.3	3.8	4.5	1.8	1.8
11	3.5	4.9	2.8	1.6	4.0	2.4	2.4	2.5	251	4.1	1.6	1.7
12	3.0	6.4	2.6	1.6	4.6	6.9	2.5	2.5	405	3.2	1.6	1.5
13	3.3	3.5	2.4	1.8	3.7	4.0	2.8	2.4	405	4.3	1.5	1.6
14	3.1	2.8	2.2	1.6	3.3	2.9	3.5	2.2	435	4.6	1.5	3.3
15	3.1	2.4	2.1	1.4	3.5	2.5	4.0	2.1	380	2.8	1.4	2.9
16	3.1	2.2	2.2	1.8	3.1	2.6	3.4	1.8	390	2.7	1.4	2.6
17	3.3	1.8	2.0	7.4	2.4	2.8	2.8	1.6	390	2.7	1.3	2.4
18	2.9	1.6	1.9	7.1	2.2	2.6	2.0	1.4	321	2.6	1.6	2.3
19	1.9	1.6	1.8	5.1	2.1	2.8	1.9	1.4	316	2.6	2.4	2.3
20	2.5	1.5	1.8	4.0	1.9	3.1	2.0	1.4	316	2.6	2.2	2.2
21	2.1	1.6	1.8	3.1	1.8	3.7	1.7	1.4	298	2.4	1.9	2.2
22	2.4	1.9	1.8	2.6	1.8	4.1	1.6	1.3	214	2.3	1.6	2.2
23	3.3	1.9	1.7	2.3	1.7	9.0	1.6	1.3	160	2.2	1.6	2.1
24	3.1	2.5	1.6	2.2	1.7	7.6	1.6	1.3	90	2.2	1.6	2.0
25	2.1	19	1.6	2.1	1.7	11	1.6	1.2	58	2.2	1.4	2.1
26	1.8	8.1	1.6	2.1	1.6	25	1.6	1.3	583	2.2	1.3	2.1
27	1.7	3.8	1.6	2.1	1.5	3.8	1.9	1.2	889	2.2	1.3	2.1
28	1.6	3.0	1.6	2.1	1.4	2.9	2.4	1.1	378	2.2	1.3	2.0
29	1.6	4.3	1.6	2.1	-----	3.0	2.8	1.1	207	2.2	1.3	2.1
30	1.5	3.7	1.4	2.2	-----	3.4	3.3	1.2	142	2.2	1.4	2.2
31	1.3	-----	1.4	2.3	-----	2.5	-----	1.3	-----	2.2	2.0	-----
TOTAL	90.1	127.6	72.6	71.6	65.1	124.8	76.1	61.7	6,645.20	430.1	51.1	61.5
MEAN	2.91	4.25	2.34	2.31	2.33	4.03	2.54	1.99	222	13.9	1.65	2.05
MAX	5.3	19	5.2	7.4	4.6	25	4.6	3.5	889	102	2.4	3.3
MIN	1.3	1.3	1.4	1.2	1.4	1.2	1.6	1.1	.85	2.2	1.3	1.3
AC-FT	179	253	144	142	129	248	151	122	13,180	853	101	122

CAL YR 1970 TOTAL 16,291.80 MEAN 44.6 MAX 2,970 MIN 1.3 AC-FT 32,310  
WTR YR 1971 TOTAL 7,877.50 MEAN 21.6 MAX 889 MIN .85 AC-FT 15,630

## 11417000 SOUTH YUBA RIVER NEAR WASHINGTON, CALIF.

LOCATION.--Lat 39°21'38", long 120°46'14", on line between secs.5 and 8, T.17 N., R.11 E., Nevada County, on left bank 800 ft upstream from unnamed tributary, and 1.5 miles east of Washington.

DRAINAGE AREA.--198 sq mi.

PERIOD OF RECORD.--March 1942 to September 1953, October 1956 to current year. Prior to October 1949, published as South Fork Yuba River near Washington.

GAGE.--Water-stage recorder. Altitude of gage is 2,735 ft (from river-profile map). Mar. 14, 1942, to Sept. 30, 1945, at site 150 ft upstream at present datum. Oct. 1, 1945, to July 14, 1949, on right bank 50 ft downstream at present datum. July 15, 1949, to Sept. 30, 1953, on right bank 0.8 mile upstream at different datum. Oct. 1, 1956, to Apr. 24, 1963, at site 50 ft downstream at present datum. Apr. 25, 1963, to Feb. 26, 1965, at site 50 ft downstream at present datum.

AVERAGE DISCHARGE.--26 years, 292 cfs (211,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,040 cfs June 26 (gage height, 9.84 ft); minimum daily, 21 cfs Oct. 13-16.

Period of record: Maximum discharge, 35,300 cfs Dec. 23, 1964 (gage height, 20.0 ft, from floodmarks), from rating curve extended above 6,500 cfs on basis of slope-area measurement at gage height 16.60 ft in gage well, 17.8 ft, from floodmarks; minimum, 9.1 cfs Oct. 18, 1950.

Flood of Dec. 23, 1955, reached a stage of 17.8 ft, from floodmarks (discharge, 26,300 cfs).

REMARKS.--Records good. Natural flow affected by Lake Spaulding beginning in 1912 (see sta 11414140), Bowman Lake (see sta 11415500), Fordyce Lake beginning in 1926 (capacity, 46,700 acre-ft), diversions into and out of basin for several powerhouses and for irrigation of about 20,000 acres by Nevada Irrigation District. See schematic diagram for Yuba River basin.

REVISIONS (WATER YEARS).--WSP 1515: 1943(M), 1951.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	28	341	123	184	100	250	200	147	531	48	34
2	24	28	466	119	186	97	240	199	135	495	46	34
3	24	28	248	110	170	98	233	195	130	355	45	34
4	25	35	350	106	149	98	235	233	125	236	45	34
5	24	213	300	102	138	96	244	204	128	172	44	33
6	24	270	255	101	134	94	248	198	143	112	44	33
7	22	179	250	99	129	93	252	199	157	94	44	34
8	22	111	265	99	127	93	236	280	142	69	42	34
9	22	121	275	103	127	94	206	232	137	60	41	34
10	23	134	200	133	135	96	317	311	128	57	40	34
11	22	103	158	186	199	105	231	427	241	56	40	34
12	22	201	145	150	257	527	214	407	522	54	39	33
13	21	111	132	138	247	333	214	407	1,140	49	38	33
14	21	92	120	134	236	217	216	270	1,950	53	37	34
15	21	84	130	126	237	193	237	267	1,980	50	37	34
16	21	80	160	147	213	183	231	241	2,000	51	36	34
17	22	77	135	425	178	191	235	211	2,260	52	35	34
18	24	75	120	584	160	174	194	194	2,000	51	33	34
19	22	74	112	519	159	168	181	196	1,830	59	33	34
20	26	72	110	424	135	174	184	200	1,960	58	34	35
21	25	71	108	328	128	179	171	197	1,730	57	34	37
22	29	70	96	251	123	179	157	169	1,010	57	33	35
23	32	70	92	213	120	375	150	182	1,130	56	33	36
24	36	76	90	186	114	414	153	200	1,100	55	33	36
25	28	617	90	167	112	659	146	196	897	52	33	37
26	25	469	91	156	105	1,840	145	196	2,570	52	32	38
27	24	192	98	156	104	649	142	171	3,030	52	32	40
28	23	260	120	160	103	432	150	149	1,390	51	32	41
29	23	392	160	162	-----	361	160	135	671	51	32	42
30	26	302	138	176	-----	340	172	156	516	52	32	52
31	27	-----	128	182	-----	289	-----	151	-----	51	34	-----
TOTAL	754	4,635	5,483	6,065	4,409	8,941	6,144	6,973	31,299	3,300	1,161	1,071
MEAN	24.3	155	177	196	157	288	205	225	1,043	106	37.5	35.7
MAX	36	617	466	584	257	1,840	317	427	3,030	531	48	52
MIN	21	28	90	99	103	93	142	135	125	49	32	33
AC-FT	1,500	9,190	10,880	12,030	8,750	17,730	12,190	13,830	62,080	6,550	2,300	2,120

CAL YR 1970 TOTAL 80,734 MEAN 221 MAX 8,400 MIN 21 AC-FT 160,100  
WTR YR 1971 TOTAL 80,235 MEAN 220 MAX 3,030 MIN 21 AC-FT 159,100

## 11417100 POORMAN CREEK NEAR WASHINGTON, CALIF.

LOCATION.--Lat 39°21'36", long 120°48'24", in SW¼ sec.1, T.17 N., R.10 E., Nevada County, Tahoe National Forest, on left bank just downstream from U.S. Forest Service road bridge, 0.4 mile west of Washington, and 1.4 miles downstream from Deadman Creek.

DRAINAGE AREA.--23.1 sq mi.

PERIOD OF RECORD.--July 1961 to September 1971 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Altitude of gage is 2,600 ft (from topographic map).

AVERAGE DISCHARGE.--10 years, 67.0 cfs (48,540 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,060 cfs Mar. 26 (gage height, 6.69 ft); minimum daily, 7.0 cfs Oct. 2.

Period of record: Maximum discharge, 6,090 cfs Dec. 22, 1964 (gage height, 12.52 ft in gage well, 13.5 ft, from floodmarks), from rating curve extended above 1,700 cfs on basis of slope-area measurement at gage height 10.95 ft; minimum, 5.9 cfs Oct. 4, 1961.

REMARKS.--Records good. No known diversion or storage above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	9.7	151	52	94	48	133	114	101	44	15	12
2	7.0	9.6	215	48	94	47	127	117	96	41	14	12
3	7.2	9.4	106	43	86	46	124	117	93	38	14	12
4	7.3	14	171	41	78	45	124	129	91	37	14	12
5	7.4	67	146	38	72	44	127	119	96	35	14	12
6	7.4	71	120	36	69	42	131	123	105	33	13	12
7	7.9	42	112	34	66	41	127	125	115	32	13	12
8	8.5	22	127	34	64	41	114	156	118	31	13	12
9	8.5	35	132	37	62	41	113	148	115	30	14	11
10	8.5	36	94	55	65	41	140	171	114	29	13	11
11	8.4	31	78	86	78	46	118	174	108	28	13	11
12	8.5	59	69	75	89	210	113	176	104	27	13	11
13	8.5	26	62	63	90	136	114	180	97	27	13	11
14	8.4	18	56	61	88	90	117	185	91	26	13	11
15	8.4	15	54	57	89	80	130	180	85	25	13	11
16	8.4	14	72	73	86	75	132	170	81	24	12	11
17	8.4	13	62	218	77	73	130	156	76	23	12	11
18	8.6	12	56	264	71	68	112	150	70	24	12	11
19	8.9	12	51	226	70	66	105	151	64	22	12	11
20	12	12	50	190	63	67	106	156	60	21	12	11
21	12	12	50	156	59	68	97	151	56	20	12	10
22	13	11	44	133	58	67	91	141	52	20	12	10
23	18	11	41	114	57	134	88	148	48	19	13	10
24	18	21	40	101	56	146	85	156	45	19	13	10
25	11	204	40	93	54	249	83	163	42	17	12	11
26	10	148	39	88	52	712	80	167	95	17	12	11
27	10	73	41	88	52	330	78	151	74	16	12	12
28	9.9	95	45	88	52	233	83	134	56	16	12	11
29	9.7	136	71	89	-----	190	93	121	50	16	12	13
30	9.7	123	62	93	-----	168	103	124	46	15	12	15
31	9.7	-----	55	95	-----	150	-----	109	-----	15	13	-----
TOTAL	296.3	1,361.7	2,512	2,869	1,991	3,794	3,318	4,562	2,444	787	397	341
MEAN	9.56	45.4	81.0	92.5	71.1	122	111	147	81.5	25.4	12.8	11.4
MAX	18	204	215	264	94	712	140	185	118	44	15	15
MIN	7.0	9.4	39	34	52	41	78	109	42	15	12	10
AC-FT	588	2,700	4,980	5,690	3,950	7,530	6,580	9,050	4,850	1,560	787	676

CAL YR 1970 TOTAL 26,773.3 MEAN 73.4 MAX 1,520 MIN 7.0 AC-FT 53,100  
WTR YR 1971 TOTAL 24,673.0 MEAN 67.6 MAX 712 MIN 7.0 AC-FT 48,940

PEAK DISCHARGE (BASE, 500 CFS).--Mar. 12 (1700) 511 cfs (5.26 ft); Mar. 26 (0700) 1,060 cfs (6.69 ft).

## SACRAMENTO RIVER BASIN

## 11417500 SOUTH YUBA RIVER AT JONES BAR, NEAR GRASS VALLEY, CALIF.

LOCATION.--Lat 39°17'32", long 121°06'13", near center of sec.32, T.17 N., R.8 E., Nevada County, on left bank at Jones Bar, 100 ft upstream from Rush Creek, 0.9 mile downstream from bridge on State Highway 49, and 5 miles northwest of Grass Valley.

**DRAINAGE AREA.**--308 sq mi.

PERIOD OF RECORD.--October 1940 to September 1948, April 1959 to current year. Published as South Fork Yuba River at Jones Bar 1940-48 and as South Yuba River at Jones Bar 1959-63.

GAGE.--Water-stage recorder. Altitude of gage is 1,060 ft (from river-profile map). Oct. 1, 1940, to Sept. 30, 1948, at site 150 ft upstream at datum 2.00 ft higher.

**AVERAGE DISCHARGE,--**20 years, 487 cfs (352,800 acre-ft per year).

**EXTREMES.**--Current year: Maximum discharge, 9,100 cfs June 26 (gage height, 13.10 ft); minimum daily, 40 cfs Oct. 15-17.

Period of record: Maximum discharge, 53,600 cfs Dec. 22, 1964 (gage height, 25.0 ft, from floodmarks), from rating curve extended above 23,000 cfs on basis of slope-area measurement of maximum flow; minimum, 1.0 cfs Sept. 10-13, 1944.

Flood of Dec. 23, 1955, reached a stage of 30.7 ft, from floodmarks, present datum, at site 100 ft upstream.

REMARKS.--Records good. Flow regulated by Lake Spaulding (see sta 11414040), Fordyce Lake (capacity, 46,700 acre-ft), Bowman Lake (see sta 11415500), and many smaller reservoirs. Diversions into and out of basin for several powerhouses and for irrigation of about 20,000 acres by the Nevada Irrigation District. Records of water temperatures and suspended-sediment discharges for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	60	1,340	372	510	266	630	437	362	684	82	63
2	45	61	2,160	358	507	252	600	458	340	642	79	63
3	45	61	1,140	300	482	248	580	458	320	528	75	62
4	45	79	2,720	272	449	248	580	514	304	392	72	62
5	45	305	1,170	254	419	246	600	488	302	293	71	60
6	44	544	793	238	402	234	620	473	322	265	70	59
7	46	497	653	225	388	226	620	464	340	197	70	58
8	42	234	669	219	378	226	602	641	352	164	69	58
9	42	176	797	219	368	230	566	560	332	146	68	59
10	43	256	528	255	365	240	774	563	322	136	69	58
11	44	176	416	742	422	300	637	757	350	131	67	57
12	42	324	365	617	452	1,100	584	725	609	126	66	58
13	42	242	322	507	455	700	566	761	1,040	121	64	56
14	42	161	290	602	458	480	549	613	1,960	116	63	55
15	40	132	271	518	458	420	588	591	2,180	115	63	54
16	40	117	654	625	455	410	594	560	1,960	108	62	55
17	40	107	540	1,180	443	400	625	500	2,310	104	61	54
18	42	101	402	1,520	405	415	552	464	2,080	105	59	53
19	48	95	340	1,360	413	400	504	458	1,870	102	59	53
20	53	92	322	1,160	375	390	500	461	1,970	99	60	55
21	67	90	408	972	348	400	485	473	1,880	97	60	56
22	64	88	335	801	335	415	449	413	1,320	94	61	58
23	95	87	294	689	325	860	416	422	1,160	91	61	57
24	120	102	266	617	304	1,000	413	449	1,200	90	61	58
25	83	935	250	560	296	1,500	402	458	1,120	88	59	59
26	65	1,080	248	514	284	5,500	392	473	2,050	86	58	63
27	58	462	278	504	276	1,700	380	440	4,230	84	58	65
28	54	867	354	500	276	800	382	408	1,810	83	58	64
29	53	1,160	799	494	-----	760	388	370	970	83	57	66
30	53	1,030	557	500	-----	710	402	400	663	83	56	126
31	58	-----	419	510	-----	660	-----	392	-----	82	58	-----
TOTAL	1,647	9,721	20,100	18,204	11,048	21,736	15,980	15,644	36,028	5,535	1,996	1,824
MEAN	53.1	324	648	587	395	701	533	505	1,201	179	64.4	60.8
MAX	120	1,160	2,720	1,520	510	5,500	774	761	4,230	684	82	126
MIN	40	60	248	219	276	226	380	370	302	82	56	53
AC-FT	3,270	19,280	39,870	36,110	21,910	43,110	31,700	31,030	71,460	10,980	3,960	3,620
CAL YR 1970	TOTAL	179,606	MEAN	492	MAX	15,600	MIN	40	AC-FT	356,200		
WTR YR 1971	TOTAL	159,463	MEAN	437	MAX	5,500	MIN	40	AC-FT	316,300		



LOCATION.--Lat 39°14'07", long 121°16'23", in NW<sup>1</sup><sub>4</sub> NW<sup>1</sup><sub>4</sub> sec.23, T.16 N., R.6 E., Yuba County, on right bank 2,000 ft downstream from Englebright Dam, 0.5 mile upstream from Deer Creek, and 2.3 miles northeast of Smartville.

PERIOD OF RECORD.--October 1941 to current year. Prior to October 1953, published as "at Narrows Dam." October 1953 to Sept. 30, 1969, published as "at Englebright Dam." If records for Deer Creek near Smartville (sta 11418500) since 1941 are added to records at this station, records equivalent to those published from 1903 to 1941 as Yuba River at Smartville (sta 11419000) can be obtained.

GAGE.--Water-stage recorder. Datum of gage is 278.68 ft above mean sea level (levels by International Engineering Co.). Prior to Sept. 19, 1958, at site 2,000 ft upstream at datum 248.31 ft higher and Sept. 19, 1958, to Sept. 30, 1969, at datum 278.68 ft lower. Supplementary gage 2,000 ft upstream since Oct. 1, 1969, at Anglebright Dam at datum 278.68 ft lower.

EXTREMES.--Current year: Maximum discharge, 15,000 cfs Mar. 26 (gage height, 15.30 ft); minimum daily, 595 cfs Mar. 11.

Period of record: Maximum discharge, 171,000 cfs Dec. 22, 1964 (gage height, 546.14 ft, site and datum then in use), no flow through powerplant, from rating curve extended above 25,000 cfs on basis of computation of peak flow over spillway of dam at gage heights 544.72 and 546.14 ft; no flow at times in 1942, 1949, 1956, 1958-61, 1968, 1969.

REMARKS.--Records good. Diversions out of basin for power and irrigation above station up to 1,800 cfs (see sta 11413250, 11414190, 11414200). Flow regulated by Lake Spaulding beginning in 1912 (see sta 11414140), Jackson Meadows Reservoir (see sta 11407800) since November 1964, New Bullards Bar Reservoir (see sta 11413515) since January 1969, Englebright Reservoir beginning in 1941 (capacity, 70,000 acre-ft), Bowman Lake (see sta 11415500), Fordyce Lake beginning in 1926 (capacity, 46,700 acre-ft), and many smaller reservoirs. See schematic diagram of Yuba River basin.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,320	2,630	3,860	3,830	4,080	1,350	1,550	2,130	3,960	3,790	2,850	2,900
2	2,070	2,660	3,970	3,820	4,030	1,130	935	1,950	4,280	3,500	2,830	2,890
3	2,280	2,630	4,170	3,810	4,050	1,130	685	1,950	3,820	3,510	2,840	2,890
4	2,280	2,640	4,920	3,780	4,050	1,110	685	1,960	3,560	3,240	2,850	2,890
5	2,280	2,650	4,690	3,780	4,050	1,100	1,230	1,970	3,560	2,980	2,850	2,850
6	2,280	2,960	4,620	3,770	4,050	1,100	1,970	1,980	3,560	2,960	2,850	2,850
7	2,270	3,650	4,490	3,760	4,040	1,100	2,400	1,950	3,560	2,920	2,840	2,890
8	2,280	3,770	4,410	3,750	4,030	1,030	2,920	1,940	3,560	2,900	2,840	2,900
9	2,280	3,770	4,400	3,740	4,020	778	2,910	1,960	3,560	2,910	2,830	2,890
10	2,280	3,480	4,370	3,730	4,000	596	2,910	2,280	3,560	2,910	2,830	2,590
11	2,280	3,270	4,340	3,800	3,990	555	2,560	2,460	3,820	2,910	2,840	1,920
12	2,320	3,050	4,290	3,630	3,980	612	1,940	2,470	4,270	2,910	2,840	2,010
13	2,340	3,310	4,250	3,080	3,980	1,210	1,020	2,400	4,270	2,920	2,840	3,160
14	2,340	3,300	4,190	3,450	3,980	1,750	931	2,370	4,310	2,930	2,840	3,410
15	2,350	3,290	4,150	3,460	3,980	1,530	1,980	2,320	4,350	2,930	2,840	3,400
16	2,310	3,290	3,960	3,420	3,900	1,530	2,000	2,360	4,340	2,930	2,820	3,060
17	2,300	3,300	4,160	3,430	3,370	1,360	2,000	2,340	4,230	2,920	2,820	2,410
18	2,290	3,290	4,140	3,460	2,940	1,280	1,990	2,340	5,750	2,920	2,830	1,910
19	2,290	3,290	4,100	3,540	2,930	971	2,160	2,100	5,160	2,930	2,840	1,900
20	2,330	2,580	4,060	3,620	2,930	601	2,440	1,960	5,650	2,930	2,840	1,940
21	2,320	3,180	4,040	3,670	2,930	600	2,490	1,690	5,770	2,970	2,830	1,950
22	2,370	3,270	4,090	4,370	2,550	600	2,390	1,530	5,110	3,230	2,830	1,960
23	2,410	3,280	3,960	4,570	2,120	858	2,380	1,520	4,550	2,890	2,860	1,930
24	2,420	3,280	3,910	4,230	1,960	1,310	2,380	1,540	4,950	1,300	2,870	1,930
25	2,500	3,300	3,860	4,050	1,660	1,400	2,370	1,550	4,640	2,890	2,880	1,920
26	2,610	3,360	3,820	4,120	1,540	9,210	2,370	1,820	4,300	2,880	2,890	1,930
27	2,620	3,330	3,770	4,120	1,540	6,180	2,380	2,190	8,800	2,900	2,900	1,940
28	2,650	3,320	3,740	4,100	1,540	4,240	2,390	2,920	6,070	2,880	2,890	1,930
29	2,540	3,370	3,770	4,060	-----	3,860	2,390	3,670	5,010	2,850	2,880	2,050
30	2,670	3,550	3,820	4,060	-----	3,220	2,390	3,660	4,100	2,790	2,870	1,470
31	2,650	-----	3,820	4,080	-----	2,270	-----	3,640	-----	2,850	2,890	-----
TOTAL	73											

## SACRAMENTO RIVER BASIN

11418500 DEER CREEK NEAR SMARTVILLE, CALIF.

LOCATION.--Lat 39°13'28", long 121°16'03", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.23, T.16 N., R.6 E., Nevada County, on left bank 400 ft upstream from county road bridge, 0.9 mile upstream from mouth, and 2 miles northeast of Smartville.

DRAINAGE AREA.--84.6 sq mi.

PERIOD OF RECORD.--June 1935 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 630 ft (from river-profile map). June 21, 1935, to Nov. 30, 1938, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--36 years, 133 cfs (96,360 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,520 cfs Mar. 26 (gage height, 9.20 ft); minimum daily, 2.4 cfs Oct. 2, June 23.

Period of record: Maximum discharge, 11,600 cfs Oct. 13, 1962 (gage height, 13.77 ft), from rating curve extended above 5,200 cfs; minimum daily, 0.1 cfs Aug. 4-6, 15, 1940.

Flood of March 1928 reached a stage of 14.5 ft, from floodmarks (discharge, 14,000 cfs).

REMARKS.--Records good. Natural flow of stream is affected by Scotts Flat Reservoir beginning in 1949 (usable capacity, 26,300 acre-ft, increased to 49,000 acre-ft in July 1964), Deer Creek Reservoir (capacity, 1,400 acre-ft), Lake Wildwood (capacity, 3,840 acre-ft) beginning in 1970, power developments, and diversion for irrigation. At times water from South Yuba River is diverted to Deer Creek and water from Deer Creek is diverted to Bear River. See schematic diagram of Yuba River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	12	456	129	158	95	285	31	27	5.0	13	7.0
2	2.4	12	654	153	179	91	248	31	23	3.8	15	7.1
3	3.4	9.8	362	106	176	82	214	38	17	2.5	12	6.9
4	7.0	17	1,930	94	153	78	193	53	15	3.3	7.6	5.9
5	7.3	69	428	87	145	75	175	44	13	3.6	7.8	6.5
6	7.9	119	192	82	140	71	155	37	9.6	3.2	7.7	6.8
7	8.5	109	132	77	135	69	157	34	6.7	3.0	7.8	6.8
8	8.0	47	145	74	130	67	141	63	8.5	3.4	8.0	7.5
9	8.5	31	143	69	123	65	129	51	5.7	3.5	7.4	7.8
10	9.5	27	97	81	118	63	205	41	5.8	3.6	8.0	8.6
11	9.3	21	82	751	116	74	163	33	5.8	3.7	7.6	8.3
12	8.9	25	72	403	123	733	132	49	5.6	3.7	7.4	8.8
13	9.5	18	62	332	121	628	111	48	5.0	3.2	6.7	9.0
14	9.4	17	57	403	125	334	96	31	3.6	3.7	6.7	9.2
15	10	18	69	254	132	263	87	26	3.8	11	6.8	8.6
16	8.0	15	511	252	135	211	88	22	3.8	11	6.6	8.3
17	4.5	16	433	319	135	186	120	19	3.6	11	6.2	8.4
18	4.6	17	197	211	140	162	92	18	3.0	11	6.1	8.5
19	4.6	15	138	164	169	147	77	12	2.8	11	6.5	8.6
20	6.6	14	121	140	160	138	83	12	3.0	11	7.1	9.0
21	6.4	15	404	125	129	130	78	8.5	3.0	11	7.6	8.4
22	7.5	16	225	112	118	126	63	5.6	2.8	11	7.9	7.2
23	22	15	129	104	115	283	61	6.5	2.4	11	7.8	7.4
24	34	15	104	98	105	262	57	6.7	2.6	11	7.8	7.4
25	19	219	91	92	97	961	51	7.1	4.3	11	6.3	7.0
26	12	255	89	87	91	2,630	47	6.3	18	12	5.8	7.5
27	9.4	98	134	82	90	916	43	5.9	33	12	5.9	8.1
28	9.0	362	181	78	94	587	42	14	21	12	5.8	8.6
29	8.7	475	596	74	-----	446	37	25	15	12	6.8	9.6
30	9.6	240	254	72	-----	365	35	33	6.9	12	7.6	16
31	9.7	-----	155	86	-----	317	-----	38	-----	12	7.1	-----
TOTAL	288.4	2,338.8	8,643	5,191	3,652	10,655	3,465	849.6	280.3	242.2	238.4	244.8
MEAN	9.30	78.0	279	167	130	344	116	27.4	9.34	7.81	7.69	8.16
MAX	34	475	1,930	751	179	2,630	285	63	33	12	15	16
MIN	2.4	9.8	57	69	90	63	35	5.6	2.4	2.5	5.8	5.9
AC-FT	572	4,640	17,140	10,300	7,240	21,130	6,870	1,690	556	480	473	486
(a)	28,046	31,534	40,271	48,909	48,925	48,634	48,402	47,533	44,260	39,673	35,001	31,114

CAL YR 1970 TOTAL 56,675.7 MEAN 155 MAX 3,760 MIN 2.4 AC-FT 112,400  
WTR YR 1971 TOTAL 36,088.5 MEAN 98.9 MAX 2,630 MIN 2.4 AC-FT 71,580

a Contents, in acre-feet, at end of month for Scotts Flat Reservoir, furnished by Nevada Irrigation District.

## 11420700 DRY CREEK NEAR BROWNS VALLEY, CALIF.

LOCATION.--Lat 39°15'23", long 121°20'34", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.7, T.16 N., R.6 E., Yuba County, on left bank 500 ft upstream from diversion dam, and 3.6 miles east of Browns Valley.

DRAINAGE AREA.--87.1 sq mi.

PERIOD OF RECORD.--July 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 265 ft (from topographic map).

AVERAGE DISCHARGE (unadjusted).--7 years, 84.1 cfs (60,930 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,540 cfs Mar. 26 (gage height, 9.47 ft); minimum daily, 1.5 cfs Nov. 23, 24.

Period of record: Maximum discharge, 5,950 cfs Jan. 21 1969 (gage height, 10.38 ft); minimum daily, 1.2 cfs Dec. 12-15, 1964.

REMARKS.--Records good except those for the summer months, which are fair. Flow regulated by Lake Mildred (capacity, 1,500 acre-ft) and Merle Collins Reservoir since 1963 (capacity, 57,000 acre-ft), 6.5 miles upstream. Some diversion above station for irrigation.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	2.4	159	203	99	54	140	2.6	12	5.7	6.0	8.2
2	5.5	2.2	536	231	95	43	125	2.5	13	7.2	5.5	8.4
3	4.9	2.1	86	176	94	43	110	11	12	11	7.0	8.5
4	5.9	5.0	444	139	90	45	98	13	7.7	14	7.3	8.1
5	6.6	7.7	109	120	90	46	94	12	7.4	13	7.4	7.4
6	6.6	16	50	108	88	44	84	13	11	13	7.7	5.4
7	5.1	8.0	37	98	88	43	88	12	9.2	12	7.5	5.7
8	4.3	3.8	44	92	88	41	86	13	5.2	13	7.4	5.7
9	5.1	3.0	40	88	88	41	78	12	5.4	13	7.6	6.4
10	3.6	2.7	28	94	88	40	148	13	5.2	11	8.1	6.0
11	3.2	4.1	22	962	61	47	148	12	5.0	10	8.5	5.2
12	3.5	5.4	17	852	10	585	99	12	6.2	11	8.0	5.6
13	4.6	3.2	15	622	9.4	876	82	12	7.4	9.7	7.2	6.1
14	4.5	2.6	13	607	11	294	52	12	7.0	9.8	7.4	6.8
15	3.5	2.4	12	547	39	198	24	12	6.7	8.6	7.9	5.9
16	3.2	2.2	60	458	54	145	16	11	6.5	8.3	7.6	6.1
17	3.2	2.0	53	611	56	122	58	9.7	6.2	7.7	7.2	5.9
18	4.1	1.9	38	466	56	96	66	10	5.8	6.8	7.4	6.0
19	4.5	1.8	29	347	69	83	48	9.4	6.2	9.8	6.7	6.6
20	6.9	1.7	26	281	63	77	48	9.2	5.7	9.0	5.9	6.5
21	8.9	1.7	79	234	55	71	68	9.4	5.2	9.0	6.0	6.7
22	8.2	1.7	53	202	54	66	64	10	5.1	8.8	6.5	6.6
23	7.5	1.5	37	179	56	224	57	9.7	5.7	8.3	6.6	7.3
24	5.2	1.5	28	163	51	414	55	10	5.0	7.0	6.7	7.2
25	4.0	3.9	23	150	53	779	33	10	4.3	6.0	7.8	6.5
26	3.4	5.6	21	139	44	3,240	29	10	5.7	5.6	7.6	7.2
27	2.6	3.6	31	130	42	946	31	10	5.4	5.7	7.2	7.2
28	2.8	39	30	144	45	418	23	12	4.8	5.4	6.8	6.8
29	2.1	147	46	143	-----	275	13	11	5.6	5.2	6.9	7.7
30	2.1	62	43	118	-----	208	5.4	13	6.1	5.8	8.4	8.5
31	2.5	-----	177	105	-----	165	-----	12	-----	5.8	8.5	-----
TOTAL	145.2	347.7	2,386	8,809	1,736.4	9,769	2,070.4	330.5	203.7	276.2	224.3	202.2
MEAN	4.68	11.6	77.0	284	62.0	315	69.0	10.7	6.79	8.91	7.24	6.74
MAX	8.9	147	536	962	99	3,240	148	13	13	14	8.5	8.5
MIN	2.1	1.5	12	88	9.4	40	5.4	2.5	4.3	5.2	5.5	5.2
AC-FT	288	690	4,730	17,470	3,440	19,380	4,110	656	404	548	445	401
CAL YR 1970	TOTAL 45,828.1		MEAN 126	MAX 3,690	MIN 1.5	AC-FT 90,900						
WTR YR 1971	TOTAL 26,500.6		MEAN 72.6	MAX 3,240	MIN 1.5	AC-FT 52,560						

## SACRAMENTO RIVER BASIN

## 11421000 YUBA RIVER NEAR MARYSVILLE, CALIF.

LOCATION.--Lat 39°10'33", long 121°31'26", in New Helvetia Grant, Yuba County, on left bank 4.2 miles northeast of Marysville and 5 miles downstream from Dry Creek.

DRAINAGE AREA.--1,339 sq mi.

PERIOD OF RECORD.--Water years 1940-43, 1945 (low-water periods only), October 1940 to current year.

Published as "at Marysville" October 1940 to September 1957. Records published for two sites August 1954 to September 1955. Yearly discharge for the 1945 water year published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 2.95 ft below mean sea level. Prior to August 1954 and Oct. 1, 1956, to Sept. 30, 1957, at Simpson Lane Bridge in Marysville 4.2 miles downstream at same datum. Sept. 3, 1963, to Sept. 23, 1968, auxiliary water-stage recorder at Simpson Lane Bridge in Marysville 4.2 miles downstream at same datum.

AVERAGE DISCHARGE.--28 years (1943-71), 2,583 cfs (1,871,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 18,800 cfs Mar. 26 (gage height, 69.89 ft); minimum daily, 668 cfs Mar. 10.

Period of record: Maximum discharge (1943 to current year), 180,000 cfs Dec. 22, 1964 (gage height, 90.15 ft, from floodmarks), from rating curve extended above 91,000 cfs on basis of Corps of Engineers flood routing study; minimum recorded, 10 cfs July 2, 1959.

REMARKS.--Records good. Flow regulated by several reservoirs above station. Many diversions above station for power. Diversions for irrigation of about 13,000 acres between stations at Englebright Dam and near Marysville.

REVISIONS (WATER YEARS).--WRD Calif. 1965: 1960.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,030	2,330	4,230	4,290	4,300	1,630	2,280	1,700	3,350	3,380	2,380	2,540
2	1,850	2,310	5,850	4,380	4,310	1,300	1,670	1,490	3,700	3,010	2,360	2,540
3	2,040	2,300	4,010	4,230	4,320	1,270	1,210	1,510	3,500	2,980	2,380	2,520
4	2,050	2,340	7,690	4,130	4,270	1,250	1,140	1,560	3,300	2,860	2,390	2,530
5	2,060	2,390	5,030	4,100	4,290	1,230	1,310	1,570	3,200	2,540	2,400	2,480
6	2,070	2,620	4,390	4,040	4,240	1,220	2,180	1,580	3,190	2,490	2,400	2,510
7	2,040	3,180	4,170	4,010	4,240	1,210	2,400	1,550	3,180	2,450	2,400	2,590
8	2,050	3,230	4,140	4,000	4,210	1,170	3,010	1,580	3,200	2,400	2,420	2,630
9	2,060	3,200	4,130	3,980	4,210	972	2,990	1,630	3,170	2,400	2,400	2,640
10	2,060	3,080	4,040	3,980	4,190	668	3,100	1,820	3,170	2,400	2,420	2,540
11	2,050	2,900	3,990	5,370	4,170	679	3,010	2,060	3,280	2,400	2,410	1,780
12	2,080	2,710	3,960	5,420	4,100	1,240	2,210	2,070	3,770	2,390	2,410	1,730
13	2,110	2,900	3,930	4,340	4,120	2,760	1,580	2,080	3,790	2,390	2,410	2,620
14	2,080	2,890	3,910	4,670	4,110	2,550	873	2,050	3,820	2,390	2,410	3,090
15	2,080	2,870	3,920	4,190	4,140	2,020	1,860	1,990	3,830	2,410	2,430	3,110
16	2,040	2,850	4,300	4,000	4,140	1,910	1,870	1,980	3,830	2,410	2,410	2,920
17	2,030	2,850	4,530	4,130	3,730	1,750	1,930	1,980	3,680	2,410	2,400	2,420
18	2,020	2,840	4,210	3,990	3,230	1,570	1,910	1,980	4,810	2,420	2,410	1,780
19	2,010	2,840	4,090	3,900	3,230	1,410	1,940	1,810	4,780	2,430	2,430	1,770
20	2,070	2,640	4,040	3,860	3,230	844	2,160	1,590	4,860	2,440	2,420	1,770
21	2,080	2,330	4,530	3,880	3,190	799	2,230	1,410	5,230	2,440	2,420	1,790
22	2,140	2,790	4,320	4,500	2,880	785	2,120	1,200	4,670	2,760	2,430	1,800
23	2,210	2,790	4,110	4,700	2,430	1,100	2,080	1,180	3,990	2,430	2,450	1,780
24	2,230	2,730	4,050	4,450	2,170	2,010	2,060	1,180	4,450	1,310	2,470	1,760
25	2,270	2,940	4,000	4,100	2,000	2,770	2,030	1,180	4,120	2,080	2,480	1,760
26	2,340	3,090	3,990	4,080	1,720	12,800	1,960	1,350	3,640	2,370	2,480	1,760
27	2,360	2,950	4,050	4,100	1,700	8,510	1,930	1,690	7,750	2,390	2,490	1,770
28	2,360	3,230	4,090	4,070	1,700	5,360	1,880	2,250	5,690	2,380	2,500	1,760
29	2,290	4,010	4,590	3,990	-----	4,630	1,870	3,110	4,760	2,360	2,490	1,800
30	2,370	3,450	4,320	4,000	-----	3,850	1,870	3,150	3,640	2,320	2,490	1,410
31	2,360	-----	4,300	4,080	-----	2,970	-----	3,160	-----	2,360	2,510	-----
TOTAL	65,890	85,580	134,910	130,960	98,570	74,237	60,663	56,440	121,350	76,200	75,300	65,900
MEAN	2,125	2,853	4,352	4,225	3,520	2,395	2,022	1,821	4,045	2,458	2,429	2,197
MAX	2,370	4,010	7,690	5,420	4,320	12,800	3,100	3,160	7,750	3,380	2,510	3,110
MIN	1,850	2,300	3,910	3,860	1,700	668	873	1,180	3,170	1,310	2,360	1,410
AC-FT	130,700	169,700	267,600	259,800	195,500	147,200	120,300	111,900	240,700	151,100	149,400	130,700

CAL YR 1970 TOTAL 1,307,031 MEAN 3,581 MAX 90,200 MIN 166 AC-FT 2,592,000  
WTR YR 1971 TOTAL 1,046,000 MEAN 2,866 MAX 12,800 MIN 668 AC-FT 2,075,000

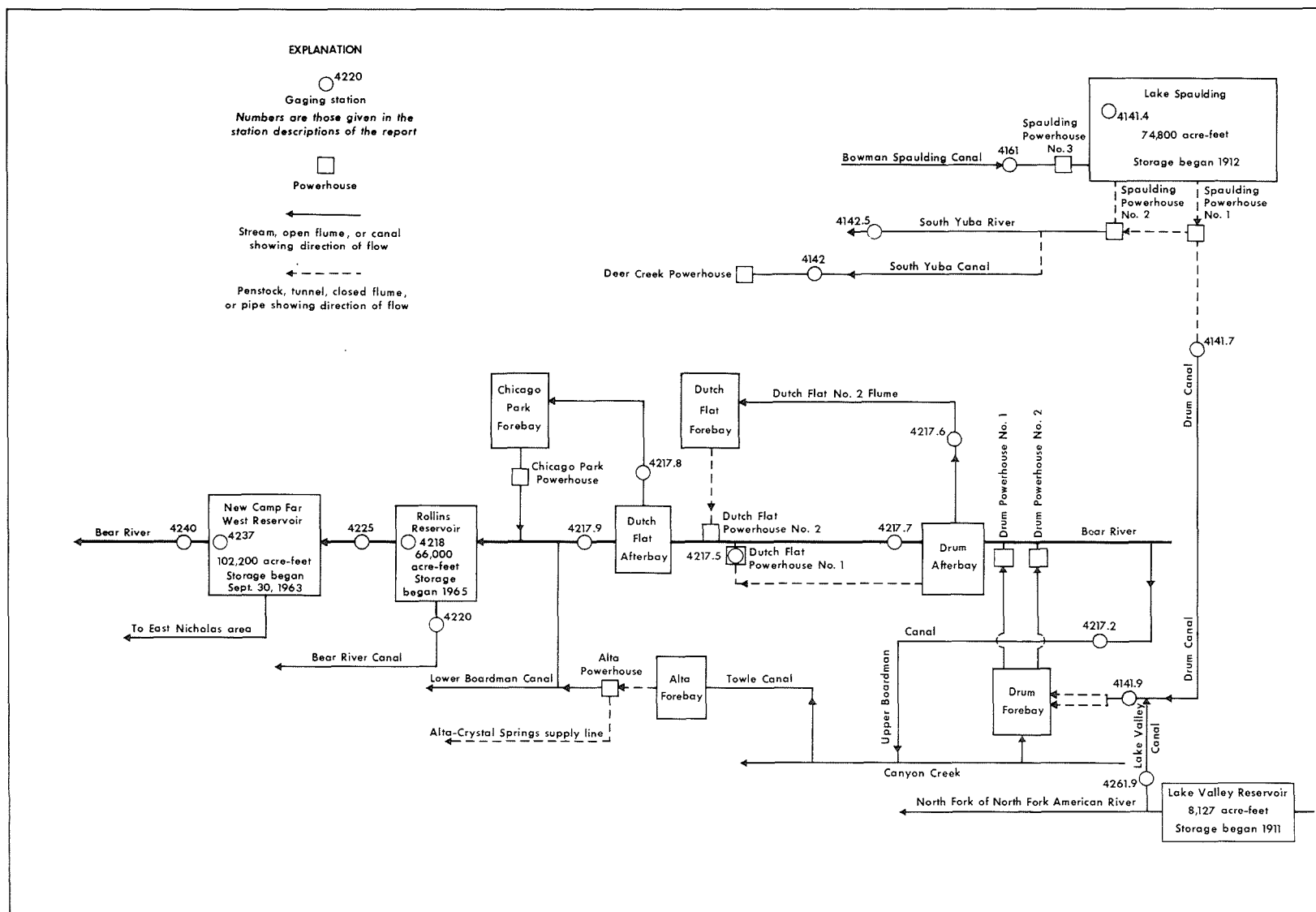


FIGURE 15.--Schematic diagram showing diversion and storage in Bear River basin.

## SACRAMENTO RIVER BASIN

11421700 FEATHER RIVER BELOW SHANGHAI BEND, NEAR OLIVEHURST, CALIF.

LOCATION.--Lat 39°04'44", long 121°36'08", in New Helvetia Grant, Sutter County, on right bank 1.5 miles downstream from Shanghai Bend, 3.0 miles southeast of Olivehurst, and 3.4 miles south of Yuba City.

DRAINAGE AREA.--5,334 sq mi.

PERIOD OF RECORD.--June 1944 to September 1969 in reports of California Department of Water Resources,  
October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3.01 ft below mean sea level (levels by California Department of Water Resources).

EXTREMES.--Current year: Maximum discharge, 31,700 cfs Mar. 26 (gage height, 48.95 ft); minimum daily, 3,570 cfs Mar. 7.

REMARKS.--Flow regulated by many reservoirs and powerplants. See schematic diagrams of South Fork Feather River, North Fork Feather River, and Yuba River basins and Feather River at Lake Oroville.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,780	5,930	9,550	11,600	7,870	3,900	21,200	8,430	13,000	8,770	6,780	10,200
2	5,690	5,980	11,700	11,800	7,540	3,650	19,200	8,230	13,400	8,280	6,750	10,200
3	5,700	6,050	11,500	12,000	7,280	3,630	17,300	8,280	13,400	8,230	6,750	10,200
4	5,730	5,990	14,900	11,700	6,990	3,640	12,800	8,390	13,100	8,210	6,750	10,200
5	5,740	6,540	16,300	11,200	6,860	3,610	11,000	8,420	13,000	7,850	6,780	10,100
6	5,760	6,440	13,600	10,500	6,800	3,580	11,600	8,320	12,900	7,800	6,790	10,100
7	5,740	6,910	12,300	10,100	6,730	3,570	11,900	8,250	12,800	7,650	6,820	10,300
8	5,740	6,910	12,500	9,860	6,650	3,680	13,100	8,290	12,100	7,130	6,870	10,300
9	5,750	6,850	12,900	9,360	6,600	4,360	13,100	8,330	11,400	6,790	6,870	10,400
10	5,750	6,790	12,400	9,290	6,540	5,330	13,200	8,670	10,800	6,790	7,040	10,400
11	5,710	6,540	12,800	9,980	6,480	6,310	13,200	9,280	10,600	6,780	7,950	9,680
12	5,710	6,430	12,900	12,200	6,370	7,490	12,400	9,280	10,500	6,730	8,990	9,530
13	5,750	6,320	12,800	12,600	6,320	11,600	12,600	9,290	10,300	6,750	9,700	10,100
14	5,740	6,430	12,800	13,200	6,270	14,500	11,900	9,290	10,400	6,750	9,900	11,400
15	5,720	6,390	12,800	13,500	6,250	15,200	12,600	9,150	10,400	6,760	9,890	12,300
16	5,720	6,350	13,200	15,600	6,220	15,200	12,800	9,120	10,300	6,770	9,920	12,900
17	5,700	6,360	13,900	16,700	5,950	15,200	12,800	9,150	10,100	6,740	9,970	12,000
18	5,680	6,340	13,500	16,600	5,370	15,100	12,800	9,210	10,300	6,760	8,920	10,400
19	5,680	6,340	12,500	17,300	5,290	15,000	12,700	8,280	9,750	6,730	9,330	9,570
20	5,800	6,350	11,300	19,700	5,250	14,400	13,000	7,400	8,700	6,730	9,980	9,410
21	5,830	5,780	11,000	20,100	5,180	14,200	12,400	6,930	8,330	6,740	10,000	9,470
22	5,860	6,270	11,100	19,500	5,010	14,100	11,500	6,400	8,340	7,030	10,000	9,430
23	5,910	6,300	12,200	19,200	4,620	13,700	10,600	6,270	8,180	6,740	10,100	8,980
24	5,960	6,130	11,800	16,200	4,370	14,500	9,780	6,210	8,630	6,000	10,100	8,460
25	5,950	6,050	10,900	15,000	4,230	15,400	9,520	6,190	8,450	6,180	10,100	8,020
26	5,960	6,240	10,700	13,900	3,960	25,800	9,410	6,310	8,110	6,740	10,100	7,520
27	5,990	6,210	10,800	12,800	3,980	30,700	9,330	7,150	11,300	6,780	10,100	7,000
28	5,980	6,540	11,000	11,800	3,960	29,000	9,310	8,670	10,100	6,760	10,100	6,590
29	5,980	8,330	11,600	10,800	-----	28,300	8,980	11,600	9,400	6,760	10,100	6,170
30	5,880	9,650	11,900	9,710	-----	27,500	8,550	12,700	8,980	6,710	10,600	5,510
31	5,950	-----	11,600	8,660	-----	25,200	-----	12,900	-----	6,730	10,200	-----
TOTAL	179,840	195,740	380,750	412,460	164,940	407,350	370,580	264,390	317,070	218,170	273,650	286,840
MEAN	5,801	6,525	12,280	13,310	5,891	13,140	12,350	8,529	10,570	7,038	8,827	9,561
MAX	5,990	9,650	16,300	20,100	7,870	30,700	21,200	12,900	13,400	8,770	10,200	12,900
MIN	5,680	5,780	9,550	8,660	3,960	3,570	8,550	6,190	8,110	6,000	6,750	5,510
AC-FT	356,700	388,300	755,200	818,100	327,200	808,000	735,000	524,400	628,900	432,700	542,800	568,900
CAL YR 1970	TOTAL 4,105,050		MEAN 11,250		MAX 126,000		MIN 2,030		AC-FT 8,142,000			
WTR YR 1971	TOTAL 3,471,780		MEAN 9,512		MAX 30,700		MIN 3,570		AC-FT 6,886,000			

LOCATION.--Lat 39°17'49", long 120°42'08", in SE¼NE¼ sec.35, T.17 N., R.11 E., Placer County, on right bank 0.4 mile downstream from Boardman diversion dam, and 1.8 miles west of Emigrant Gap.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 5,020 ft (from topographic map). Prior to June 14, 1967, water-stage recorder 0.2 mile downstream at different datum.

EXTREMES.--Period of record: Maximum daily discharge, 43 cfs Dec. 21, 1964; no flow for several days in most years.

REMARKS.--Water is diverted from Bear River to be used for power development and irrigation in the Bear River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	22	22	19	20	19	16	15	25	29	32	33
2	24	22	22	18	20	19	16	15	25	29	33	33
3	24	23	22	13	20	19	16	15	25	28	34	33
4	11	26	19	22	20	19	16	15	25	28	34	34
5	.45	20	16	24	20	19	16	15	25	28	34	34
6	.39	16	15	24	20	18	16	15	25	28	34	32
7	.39	17	15	25	20	18	15	15	26	30	34	32
8	.39	15	14	27	20	18	15	15	27	31	34	32
9	.33	18	13	27	20	19	18	15	26	30	34	32
10	.33	20	13	27	20	19	19	15	26	29	33	32
11	.33	19	13	28	20	19	16	16	25	30	33	32
12	.27	19	13	28	20	19	16	16	25	30	33	32
13	.27	19	12	28	20	18	17	16	24	31	33	32
14	.27	18	13	28	19	18	16	16	24	32	33	29
15	.22	18	19	27	19	18	17	16	24	32	33	31
16	15	20	22	27	19	18	17	16	26	32	33	35
17	27	23	22	28	19	18	16	16	27	32	33	35
18	27	22	22	28	19	18	16	16	28	32	34	35
19	30	22	22	28	19	18	16	22	28	32	35	34
20	32	22	22	28	19	18	16	24	28	34	35	33
21	32	23	22	27	19	18	16	24	29	34	35	35
22	29	24	22	28	19	16	16	24	29	34	35	35
23	25	24	22	27	19	16	18	24	29	33	34	33
24	25	25	21	26	19	15	18	24	29	33	31	33
25	25	26	19	26	19	18	18	24	29	33	31	33
26	24	23	19	26	19	18	16	25	29	33	32	34
27	24	23	19	26	19	16	16	26	29	32	32	34
28	24	23	19	23	20	16	16	26	29	32	32	29
29	23	25	19	20	-----	17	16	25	29	32	32	27
30	22	23	19	20	-----	16	15	25	29	32	32	27
31	22	-----	19	20	-----	17	-----	25	-----	32	33	-----
TOTAL	492.64	640	571	773	546	552	491	596	804	967	1,030	975
MEAN	15.9	21.3	18.4	24.9	19.5	17.8	16.4	19.2	26.8	31.2	33.2	32.5
MAX	32	26	22	28	20	19	19	26	29	34	35	35
MIN	.22	15	12	13	19	15	15	15	24	28	31	27
AC-FT	977	1,270	1,130	1,530	1,080	1,090	974	1,180	1,590	1,920	2,040	1,930
CAL YR 1970	TOTAL	8,238.35	MEAN	22.6	MAX	37	MIN	.22	AC-FT	16,340		
WTR YR 1971	TOTAL	8,437.64	MEAN	23.1	MAX	35	MIN	.22	AC-FT	16,740		

## SACRAMENTO RIVER BASIN

## 11421750 DUTCH FLAT NO. 1 POWERPLANT NEAR DUTCH FLAT, CALIF.

LOCATION.--Lat 39°13'02", long 120°50'04", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.27, T.16 N., R.10 E., Placer County, at powerplant 0.8 mile north of Dutch Flat.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Recorded powerplant output.

EXTREMES.--Period of record: Maximum daily discharge, 548 cfs for several days in January, February, April 1965; no flow for many days in each year.

REMARKS.--Water is diverted from Drum afterbay through a tunnel to Dutch Flat No. 1 powerplant and returned to Dutch Flat afterbay. See schematic diagram showing diversion and storage in Bear River basin.

COOPERATION.--Records furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	226	321	0	335	0	384	397	397	414	299	300
2	0	218	337	67	318	58	444	371	368	391	317	351
3	201	246	340	57	338	220	444	381	371	380	324	374
4	195	222	340	0	269	199	404	390	441	386	292	336
5	199	244	358	0	329	181	426	395	380	386	364	343
6	206	209	340	104	297	187	407	396	462	401	312	312
7	211	208	298	48	313	191	372	391	379	420	308	340
8	201	189	298	45	300	198	358	407	401	411	352	357
9	195	212	447	78	284	254	356	389	421	350	312	315
10	221	197	417	78	271	172	373	425	421	351	325	315
11	221	234	336	115	345	142	376	352	411	330	314	347
12	241	224	382	190	329	264	354	381	408	321	314	346
13	226	237	349	183	269	299	358	319	413	278	278	377
14	210	231	362	101	322	282	525	319	416	341	321	328
15	243	218	412	172	298	273	465	482	436	318	296	321
16	222	131	362	92	339	198	442	352	436	317	309	345
17	211	0	368	84	339	183	469	415	422	323	256	348
18	219	0	347	308	228	217	435	404	422	323	408	344
19	244	0	317	80	295	121	469	364	381	326	315	340
20	243	0	371	367	86	249	387	408	398	322	323	143
21	233	296	291	310	163	214	387	399	379	322	320	0
22	242	292	326	369	259	300	460	360	399	331	293	0
23	242	279	285	361	154	300	428	394	438	322	330	0
24	241	351	237	385	174	454	389	404	418	331	330	0
25	243	319	0	327	177	382	445	384	394	340	338	0
26	242	373	0	327	127	532	429	409	474	348	319	0
27	224	373	0	326	100	407	429	332	313	0	307	0
28	230	246	221	362	113	362	438	332	401	92	317	0
29	243	246	221	373	-----	308	438	496	399	0	325	0
30	246	501	306	351	-----	349	397	371	411	276	334	0
31	195	-----	169	323	-----	343	-----	405	-----	282	311	-----
TOTAL	6,490	6,722	9,158	5,983	7,171	7,839	12,488	12,024	12,210	9,733	9,863	6,582
MEAN	209	224	295	193	256	253	416	388	407	314	318	219
MAX	246	501	447	385	345	532	525	496	474	420	408	377
MIN	0	0	0	0	86	0	354	319	313	0	256	0
AC-FT	12,870	13,330	18,160	11,870	14,220	15,550	24,770	23,850	24,220	19,310	19,560	13,060
CAL YR 1970	TOTAL	94,510.00	MEAN	259	MAX	544	MIN	0	AC-FT	187,500		
WTR YR 1971	TOTAL	106,263.00	MEAN	291	MAX	532	MIN	0	AC-FT	210,800		



## 11421760 DUTCH FLAT NO. 2 FLUME NEAR BLUE CANYON, CALIF.

LOCATION.--Lat 39°15'16", long 120°46'28", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.18, T.16 N., R.11 E., Placer County, on left bank 600 ft downstream from Drum Afterbay, and 3.6 miles west of Blue Canyon.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,348.09 ft above mean sea level (levels by Nevada Irrigation District).

AVERAGE DISCHARGE.--5 years, 419 cfs (303,600 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 610 cfs Mar. 1, 1968; no flow for many days in each year.

REMARKS.--Records good. Water is diverted from Drum Afterbay through the flume to Dutch Flat No. 2 powerplant and thence to Dutch Flat Afterbay. See schematic diagram of Bear River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	475	560	468	190	445	256	469	548	516	488	408	434
2	535	555	516	218	452	304	517	548	526	526	406	412
3	515	560	503	161	443	356	533	533	482	525	407	407
4	560	560	489	225	469	319	558	542	546	524	390	388
5	558	560	515	244	451	351	517	524	466	523	407	418
6	535	559	511	253	428	333	495	465	537	507	403	417
7	524	558	488	261	431	323	491	530	513	492	400	424
8	509	554	493	253	429	348	477	516	484	485	402	410
9	515	559	539	155	417	326	538	539	485	424	404	408
10	545	555	473	176	423	390	521	528	483	403	399	426
11	546	558	519	266	330	389	530	469	493	411	428	412
12	561	554	510	288	481	386	500	441	503	415	418	380
13	559	559	513	362	473	515	502	441	508	428	425	399
14	530	560	378	342	481	472	556	522	493	406	420	411
15	556	560	531	303	476	463	556	526	498	404	416	416
16	559	51	291	230	488	395	542	528	490	403	416	419
17	559	0	558	288	480	404	547	527	486	401	419	425
18	560	0	464	559	474	403	544	533	494	399	412	409
19	559	0	478	503	412	421	554	534	491	402	415	411
20	560	237	499	499	425	424	555	535	504	409	411	0
21	560	500	486	487	421	413	553	514	511	406	410	0
22	559	475	474	441	380	372	523	502	488	406	420	0
23	560	515	462	445	407	429	552	515	475	404	407	0
24	558	479	427	514	345	458	551	510	491	399	422	0
25	558	494	130	491	235	477	551	530	518	263	405	0
26	559	539	330	444	265	552	527	534	532	459	411	0
27	559	490	370	516	119	521	529	526	530	520	416	0
28	558	477	398	455	236	555	530	500	459	521	414	0
29	559	505	470	453	-----	557	525	494	502	432	412	0
30	558	500	415	452	-----	503	514	524	498	359	421	0
31	559	-----	351	439	-----	511	-----	516	-----	414	409	-----
TOTAL	16,967	13,633	14,049	10,913	11,316	12,926	15,857	15,994	15,002	13,558	12,753	7,826
MEAN	547	454	453	352	404	417	529	516	500	437	411	261
MAX	561	560	558	559	488	557	558	548	546	526	428	434
MIN	475	0	130	155	119	256	469	441	459	263	390	0
AC-FT	33,650	27,040	27,870	21,650	22,450	25,640	31,450	31,720	29,760	26,890	25,300	15,520

CAL YR 1970 TOTAL 159,349.00 MEAN 437 MAX 563 MIN 0 AC-FT 316,100

WTR YR 1971 TOTAL 160,794.00 MEAN 441 MAX 561 MIN 0 AC-FT 318,900

## SACRAMENTO RIVER BASIN

## 11421770 BEAR RIVER BELOW DRUM AFTERBAY, NEAR BLUE CANYON, CALIF.

LOCATION.--Lat 39°15'16", long 120°46'26", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.17, T.16 N., R.11 E., Placer County, on left bank 60 ft below Drum Afterbay Dam and 3.5 miles west of Blue Canyon.

DRAINAGE AREA.--12.3 sq mi.

PERIOD OF RECORD.--April 1966 to current year, low flows only April to September 1966.

GAGE.--Water-stage recorder and 4-ft steel Cipolletti weir set in a concrete broad-crested weir. Altitude of gage is 3,300 ft (from topographic map). April 1966 to May 25, 1967, water-stage recorder at present site at different datum, May 26, 1967, to Feb. 11, 1968, water-stage recorder at site 1,000 ft downstream at different datum.

AVERAGE DISCHARGE.--5 years, 16.9 cfs (12,240 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 206 cfs Mar. 26; minimum daily, 5.2 cfs for several days November to February.

Period of record: Maximum discharge, 2,880 cfs Jan. 21, 1970 (gage height, 3.68 ft), from rating curve extended above 900 cfs; minimum daily, 1.0 cfs Dec. 9, 1967.

REMARKS.--Water for Dutch Flat No. 1 powerplant (see sta 11421750) and Dutch Flat No. 2 flume (see sta 11421760) is diverted from Drum Afterbay just upstream from station. See schematic diagram showing diversion and storage in Bear River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co. under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	6.0	5.5	5.4	5.4	9.5	11	11	10	12	11	11
2	5.8	6.0	5.8	5.4	5.5	11	11	11	10	12	11	11
3	5.8	5.8	5.5	5.5	5.4	11	16	11	11	12	11	11
4	6.0	6.0	5.5	5.5	5.4	11	11	11	11	12	11	11
5	5.8	6.0	5.4	5.7	5.4	11	12	11	12	12	11	11
6	5.7	5.8	5.4	5.7	5.5	11	13	11	11	11	11	11
7	5.7	5.5	5.5	5.8	5.4	11	13	11	11	11	11	11
8	6.0	5.7	5.7	5.8	5.4	11	13	11	11	11	11	11
9	6.3	5.8	5.7	6.0	5.4	11	13	11	11	11	11	11
10	6.3	5.5	5.4	6.0	5.5	11	13	10	11	11	11	11
11	6.1	5.7	5.4	6.1	5.7	10	13	11	11	11	11	11
12	5.8	5.8	5.5	5.4	5.5	11	13	11	11	11	11	11
13	6.0	6.0	5.4	5.2	5.7	11	15	11	11	11	11	11
14	6.3	5.5	5.7	5.2	5.4	11	16	11	11	11	11	11
15	6.1	5.4	5.2	5.4	5.5	11	16	11	11	11	10	11
16	5.7	5.2	5.8	5.4	5.4	11	16	11	11	11	10	11
17	6.1	5.5	5.2	5.7	5.4	11	16	11	11	11	10	11
18	6.0	5.7	5.5	5.4	5.2	11	16	11	11	11	10	11
19	6.0	5.7	5.5	5.4	5.4	11	14	11	11	11	10	11
20	6.0	6.0	5.2	5.4	5.4	11	11	11	11	11	10	12
21	5.8	6.0	5.5	5.4	5.4	11	11	10	11	11	10	12
22	5.8	6.0	5.2	5.8	5.4	11	11	11	11	11	11	12
23	5.8	6.0	5.4	5.8	5.5	11	11	11	11	11	11	11
24	6.0	5.8	5.5	5.4	5.4	11	12	10	11	11	11	11
25	5.8	5.7	5.7	5.4	5.8	64	23	11	11	11	11	11
26	5.7	5.4	6.0	5.8	5.8	206	13	10	11	12	11	11
27	5.8	5.4	5.2	5.5	5.7	11	11	11	11	12	11	11
28	6.1	5.4	5.2	5.7	5.8	11	11	11	11	11	11	11
29	5.8	5.7	5.2	5.5	-----	11	11	11	11	12	11	11
30	6.3	5.2	5.4	5.4	-----	11	11	11	12	11	11	11
31	5.8	-----	5.5	5.5	-----	11	-----	11	-----	11	11	-----
TOTAL	185.6	171.2	169.6	172.6	153.7	586.5	397	337	330	349	334	333
MEAN	5.99	5.71	5.47	5.57	5.49	18.9	13.2	10.9	11.0	11.3	10.8	11.1
MAX	7.4	6.0	6.0	6.1	5.8	206	23	11	12	12	11	12
MIN	5.7	5.2	5.2	5.2	5.2	9.5	11	10	10	11	10	11
AC-FT	368	340	336	342	305	1,160	787	668	655	692	662	661

CAL YR 1970 TOTAL 6,345.5 MEAN 17.4 MAX 834 MIN 5.2 AC-FT 12,590  
 WTR YR 1971 TOTAL 3,519.2 MEAN 9.64 MAX 206 MIN 5.2 AC-FT 6,980

## 11421780 CHICAGO PARK FLUME NEAR DUTCH FLAT, CALIF.

LOCATION.--Lat 39°12'55", long 120°50'23", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.34, T.16 N., R.10 E., Nevada County, on left bank 670 ft downstream from Dutch Flat Afterbay, and 0.6 mile north of Dutch Flat.

PERIOD OF RECORD.--November 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,600 ft (from topographic map). Prior to Sept. 8, 1968, at site 420 ft upstream at same datum.

AVERAGE DISCHARGE.--5 years, 642 cfs (465,100 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 1,050 cfs many days in 1971; no flow for several days in each year.

REMARKS.--Records fair. Flow regulated by Dutch Flat Afterbay. See schematic diagram of Bear River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	499	805	855	303	839	371	912	983	973	1,000	764	787
2	583	879	1,030	314	814	495	1,040	998	895	840	760	764
3	749	739	1,030	204	806	539	1,040	1,050	955	1,000	766	781
4	716	780	943	303	764	496	1,040	1,010	1,020	1,010	745	740
5	738	795	1,010	376	812	596	1,040	970	947	848	745	883
6	753	754	929	337	773	480	983	949	1,020	1,000	775	764
7	737	868	831	349	798	492	944	1,040	1,020	1,000	764	800
8	725	717	864	341	790	690	929	1,040	876	938	771	773
9	676	676	987	286	727	487	1,040	894	958	853	780	763
10	735	710	939	300	734	604	1,040	1,040	928	691	654	785
11	739	797	919	454	758	575	1,040	870	905	758	837	782
12	798	783	877	666	897	721	815	910	1,010	806	741	785
13	780	830	814	557	792	1,030	867	816	1,010	763	748	790
14	745	786	858	549	878	800	1,050	963	873	792	736	881
15	807	832	937	427	861	759	1,040	931	1,010	741	786	735
16	741	193	740	410	878	639	1,050	1,030	910	695	757	771
17	752	0	903	446	854	643	1,050	991	1,010	834	772	776
18	775	0	855	1,030	805	686	1,050	961	855	740	763	967
19	798	26	821	1,030	671	627	1,050	955	1,010	767	759	751
20	791	348	836	896	576	703	1,050	967	906	734	760	128
21	774	591	794	885	604	678	1,050	953	982	762	750	0
22	797	859	832	835	641	765	1,050	963	923	777	761	0
23	780	734	818	880	652	782	1,050	984	1,000	768	750	0
24	794	734	480	1,020	495	1,040	1,050	916	1,010	867	777	0
25	782	953	130	840	358	953	1,050	898	855	507	773	0
26	798	934	388	723	399	1,050	1,050	1,030	978	811	805	0
27	746	797	482	948	221	1,040	942	971	927	526	740	0
28	773	797	638	906	376	1,040	1,050	895	915	593	739	0
29	794	1,030	777	824	-----	1,040	1,040	923	1,000	483	757	0
30	788	966	747	818	-----	944	1,050	925	897	622	821	0
31	738	-----	462	812	-----	962	-----	1,020	-----	756	794	-----
TOTAL	23,201	20,713	24,526	19,069	19,573	22,727	30,452	29,846	28,578	24,282	23,650	15,206
MEAN	748	690	791	615	699	733	1,015	963	953	783	763	507
MAX	807	1,030	1,030	1,030	897	1,050	1,050	1,050	1,020	1,010	837	967
MIN	499	0	130	204	221	371	815	816	855	483	654	0
AC-FT	46,020	41,080	48,650	37,820	38,820	45,080	60,400	59,200	56,680	48,160	46,910	30,160
CAL YR 1970	TOTAL 263,669.00		MEAN 722		MAX 1,040		MIN 0		AC-FT 523,000			
WTR YR 1971	TOTAL 281,823.00		MEAN 772		MAX 1,050		MIN 0		AC-FT 559,000			

## SACRAMENTO RIVER BASIN

11421790 BEAR RIVER BELOW DUTCH FLAT AFTERBAY, NEAR DUTCH FLAT, CALIF.

LOCATION.--Lat 39°12'55", long 120°50'23", in NE¼NW¼ sec.34, T.16 N., R.10 E., Placer County, at the left bank downstream end of spillway on Dutch Flat Afterbay Dam, 0.6 mile north of Dutch Flat.

DRAINAGE AREA.--21.5 sq mi.

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 2,600 ft (from topographic map).

AVERAGE DISCHARGE.--5 years, 43.1 cfs (31,200 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 693 cfs Mar. 26; minimum daily, 4.9 cfs Apr. 10-12, 23-26.

Period of record: Maximum daily discharge, 1,500 cfs Jan. 20, 1969; minimum daily, 0.08 cfs Mar. 8-19, 1968.

REMARKS.--Records good. Water is imported from South Yuba River basin via South Yuba Canal (see sta 11414200) and Drum Canal above forebay (see sta 11414190). Chicago Park flume (see sta 11421780) diverts above station to Chicago Park powerplant. Records include spill over Dutch Flat Afterbay Dam. This station measures flow from Dutch Flat Afterbay in connection with a Federal Power Commission project. See schematic diagram of Bear River basin.

COOPERATION.--Records of elevations for Dutch Flat Afterbay furnished by Nevada Irrigation District.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1966.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	6.1	6.1	6.1	5.8	5.8	5.1	9.1	6.1	6.4	6.4	6.4
2	9.8	6.1	6.1	6.1	5.8	5.8	5.1	9.1	5.5	6.8	6.4	6.4
3	9.8	6.1	5.8	6.1	5.8	5.8	5.1	9.1	5.8	6.8	6.4	6.4
4	9.8	6.1	30	6.1	5.8	5.8	5.1	9.1	6.8	6.8	6.8	6.4
5	9.8	6.1	11	6.1	5.8	5.8	5.1	8.8	7.1	6.8	6.8	6.4
6	10	6.1	5.8	6.1	5.8	5.8	5.1	8.4	7.4	6.8	6.8	6.4
7	10	6.1	5.8	6.1	5.8	5.8	5.1	8.4	7.1	6.8	6.8	6.4
8	9.8	6.1	5.8	6.4	5.8	5.5	5.1	8.4	7.1	6.8	6.8	6.4
9	9.8	6.1	5.8	6.4	5.5	5.5	5.1	8.4	7.4	6.8	6.8	6.4
10	9.8	6.1	5.8	6.4	5.5	5.5	4.9	8.4	7.4	6.8	6.4	6.4
11	9.8	6.1	6.1	6.4	5.5	5.3	4.9	8.4	7.1	6.8	6.4	6.4
12	9.8	6.1	6.1	6.4	5.5	53	4.9	8.4	6.8	6.8	6.4	6.4
13	9.8	6.1	6.1	6.1	5.5	5.1	55	8.4	6.8	6.4	6.4	6.4
14	9.8	6.1	6.1	6.1	5.5	5.1	125	8.4	6.8	6.4	6.4	6.4
15	9.8	6.1	6.1	6.1	5.5	5.1	71	8.8	6.8	6.4	6.4	6.4
16	9.8	5.8	6.1	6.1	5.5	5.1	35	8.4	6.8	6.8	6.4	6.4
17	9.8	5.8	6.1	6.1	5.8	5.1	72	8.4	6.8	6.8	6.4	6.4
18	9.8	5.8	6.1	6.1	5.8	5.1	38	8.1	6.8	6.8	6.4	6.1
19	9.8	5.8	6.1	6.1	5.8	5.1	54	7.8	6.8	6.4	6.4	5.8
20	9.8	5.8	6.1	6.1	5.8	5.1	16	7.4	6.4	6.4	6.4	5.8
21	9.8	6.1	6.1	6.1	5.8	5.1	26	7.1	6.4	6.4	6.4	5.8
22	9.8	6.1	6.1	6.1	5.8	5.1	14	7.1	6.4	6.4	6.4	11
23	10	6.1	6.1	6.1	5.8	5.1	4.9	7.1	6.4	6.4	6.4	18
24	10	6.1	6.1	6.1	5.8	12	4.9	7.4	6.4	6.4	6.4	18
25	10	6.1	6.1	6.1	5.8	33	4.9	7.4	6.4	6.4	6.4	18
26	10	6.1	6.1	6.1	5.8	693	4.9	6.4	6.4	6.4	6.4	18
27	10	6.1	6.1	6.1	5.8	57	71	8.1	6.4	6.4	6.4	18
28	10	6.1	6.1	6.1	5.8	5.1	8.7	8.4	6.4	6.4	6.4	18
29	10	6.1	6.1	5.8	-----	5.1	5.3	8.4	6.4	6.4	6.4	18
30	10	6.1	6.1	5.8	-----	5.1	7.6	8.4	6.4	6.4	6.4	18
31	8.0	-----	6.1	5.8	-----	5.1	-----	8.4	-----	6.4	6.4	-----
TOTAL	304.0	181.5	216.1	189.7	160.0	986.9	678.8	253.9	199.6	204.0	200.8	287.3
MEAN	9.81	6.05	6.97	6.12	5.71	31.8	22.6	8.19	6.65	6.58	6.48	9.58
MAX	10	6.1	30	6.4	5.8	693	125	9.1	7.4	6.8	6.8	18
MIN	8.0	5.8	5.8	5.8	5.5	5.1	4.9	6.4	5.5	6.4	6.4	5.8
AC-FT	603	360	429	376	317	1,960	1,350	504	396	405	398	570

CAL YR 1970 TOTAL 10,209.2 MEAN 28.0 MAX 1,330 MIN 4.7 AC-FT 20,250  
WTR YR 1971 TOTAL 3,862.6 MEAN 10.6 MAX 693 MIN 4.9 AC-FT 7,660

## 11421800 ROLLINS RESERVOIR NEAR COLFAX, CALIF.

LOCATION.--Lat 39°08'05", long 120°56'54", in NE¼SE¼ sec.22, T.15 N., R.9 E., Placer County, on left bank just upstream from Rollins Dam on Bear River, 2.3 miles north of Colfax.

DRAINAGE AREA.--104 sq mi.

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Nevada Irrigation District).

EXTREMES.--Current year: Maximum contents, 67,800 acre-ft Mar. 26 (elevation, 2,173.2 ft); minimum, 51,300 acre-ft Oct. 1, 2 (elevation, 2,151.6 ft).

Period of record: Maximum contents, 70,100 acre-ft Jan. 21, 1970 (elevation, 2,175.8 ft); minimum since reservoir first filled, 28,100 acre-ft Mar. 7, 1965 (elevation, 2,110.0 ft).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 15, 1964. Usable capacity, 65,720 acre-ft between elevations 1,970.0 ft (invert of outlet tunnel) and 2,171.0 ft (spillway crest) above mean sea level. Dead storage, 270 acre-ft. Several diversions into and out of basin upstream for power development and irrigation. Stored water is released into Bear River, part of which is diverted to Pacific Gas and Electric's Bear River Canal for power development. Water is later used for irrigation. Records, including extremes, represent total contents at 2400 hours.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

2,050	8,940	2,140	43,800
2,060	11,200	2,160	57,300
2,080	16,800	2,176	70,200
2,120	32,700		

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51,300	65,700	67,400	66,500	66,800	66,100	66,900	66,700	66,700	66,800	66,600	66,600
2	51,300	66,300	67,200	66,400	66,800	66,200	66,900	66,800	66,700	66,700	66,600	66,600
3	51,800	66,600	67,300	66,200	66,800	66,400	66,900	66,800	66,700	66,800	66,700	66,600
4	52,200	66,700	67,500	66,200	66,700	66,500	66,900	66,800	66,800	66,800	66,700	66,500
5	52,600	66,800	67,100	66,300	66,800	66,700	66,900	66,800	66,700	66,700	66,700	66,600
6	53,100	66,900	66,900	66,300	66,800	66,600	66,800	66,800	66,800	66,800	66,700	66,500
7	53,400	66,700	66,800	66,300	66,700	66,600	66,700	66,800	66,800	66,800	66,600	66,600
8	53,900	66,700	66,800	66,200	66,800	67,100	66,700	66,800	66,700	66,700	66,600	66,600
9	54,200	66,600	66,800	66,100	66,700	66,800	66,800	66,800	66,700	66,700	66,700	66,600
10	54,600	66,700	66,700	66,200	66,700	67,000	66,900	66,900	66,700	66,700	66,600	66,600
11	55,000	66,700	66,700	66,700	66,800	67,000	66,800	66,800	66,700	66,700	66,700	66,600
12	55,600	66,700	66,700	66,900	66,800	67,600	66,800	66,800	66,800	66,700	66,600	66,600
13	56,000	66,700	66,700	66,700	66,800	67,200	66,800	66,800	66,800	66,700	66,600	66,600
14	56,500	66,700	66,700	66,800	66,900	67,100	67,000	66,800	66,700	66,700	66,600	66,600
15	57,000	66,700	66,800	66,700	66,900	67,100	66,900	66,800	66,800	66,700	66,600	66,600
16	57,500	65,900	66,800	66,800	66,900	67,100	66,900	66,800	66,800	66,600	66,600	66,600
17	57,800	65,000	66,800	67,200	66,900	67,000	66,900	66,800	66,800	66,700	66,600	66,600
18	58,400	64,100	66,800	67,200	66,900	67,000	66,800	66,800	66,700	66,700	66,600	66,600
19	58,900	63,100	66,700	67,200	66,700	66,800	66,900	66,800	66,800	66,700	66,600	66,400
20	59,400	62,900	66,800	67,100	66,700	66,800	66,800	66,800	66,800	66,700	66,600	65,700
21	59,900	63,200	66,700	67,000	66,700	66,800	66,800	66,800	66,800	66,700	66,600	64,600
22	60,400	64,100	66,700	67,000	66,700	66,900	66,800	66,800	66,800	66,700	66,600	63,500
23	61,200	64,800	66,700	66,900	66,700	66,900	66,800	66,800	66,800	66,700	66,600	62,400
24	61,800	65,700	66,300	66,900	66,600	66,900	66,800	66,800	66,800	66,700	66,600	61,300
25	62,300	67,100	65,900	66,800	66,300	67,400	66,800	66,700	66,700	66,200	66,600	60,200
26	62,800	66,900	65,900	66,800	66,300	67,800	66,800	66,800	66,800	66,600	66,600	59,100
27	63,200	66,700	66,300	66,900	66,100	67,200	66,800	66,800	66,800	66,400	66,600	58,100
28	63,800	67,200	66,700	66,900	66,100	67,100	66,800	66,700	66,800	66,400	66,500	57,000
29	64,300	67,100	67,100	66,800	-----	67,000	66,800	66,700	66,800	66,200	66,500	56,000
30	64,800	67,300	66,800	66,800	-----	67,000	66,800	66,700	66,800	66,300	66,600	55,000
31	65,100	-----	66,600	66,800	-----	66,900	-----	66,800	-----	66,500	66,600	-----
MAX	65,100	67,300	67,500	67,200	66,900	67,800	67,000	66,900	66,800	66,800	66,700	66,600
MIN	51,300	62,900	65,900	66,100	66,100	66,100	66,700	66,700	66,700	66,200	66,500	55,000
(a)	2,169.9	2,172.6	2,171.7	2,172.0	2,171.1	2,172.1	2,172.0	2,172.0	2,172.0	2,171.6	2,171.7	2,156.8
(b)	+14,100	+2,200	-700	+200	-700	+800	-100	0	0	-300	+100	-11,600
CAL YR 1970	b	-100										
WTR YR 1971	b	+4,000										

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## SACRAMENTO RIVER BASIN

## 11422000 BEAR RIVER CANAL INTAKE NEAR COLFAX, CALIF.

LOCATION.--Lat 39°07'58", long 120°57'12", in SW<sup>1</sup>SE<sup>4</sup> sec.22, T.15 N., R.9 E., Placer County, on right bank 600 ft downstream from canal inlet, 0.2 mile below Rollins Dam, and 2.2 miles north of Colfax.

PERIOD OF RECORD.--January 1912 to September 1953, October 1964 to current year. Monthly discharge only for some periods published in WSP 1315-A. Prior to 1913, published as Pacific Gas and Electric Co.'s Canal near Colfax.

GAGE.--Water-stage recorder. Altitude of gage is 1,980 ft (from topographic map). Prior to Mar. 25, 1946, water-stage recorder at site 1.5 miles downstream at different datum.

**AVERAGE DISCHARGE.**--48 years (1912-53, 1964-71), 278 cfs (201,400 acre-ft per year).

**EXTREMES.**--Period of record: Maximum daily discharge, 499 cfs Apr. 20-22, 1966, Aug. 1-3, 1967; no flow at times in most years.

REMARKS.--Records good. Canal diverts from left bank of Bear River. Water is first used to develop power at Halsey and Wise powerhouse, part of it is then distributed for irrigation and part is eventually spilled into North Fork American River. See schematic diagram showing diversion and storage in Bear River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co. under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	457	466	396	439	445	450	450	448	460	471	474	470
2	458	466	398	439	452	459	449	449	459	471	473	470
3	458	466	394	439	452	460	448	450	459	471	472	470
4	458	452	374	439	452	453	448	461	459	472	472	470
5	458	439	397	439	452	456	445	462	459	472	472	470
6	457	439	439	440	452	457	442	462	459	472	472	470
7	458	439	448	440	452	418	447	462	459	472	472	470
8	458	438	449	444	451	0	449	462	459	472	469	470
9	458	444	449	450	451	0	449	463	459	473	469	470
10	458	449	449	450	451	0	449	463	459	473	469	470
11	458	449	449	446	451	0	449	464	459	472	469	470
12	458	449	449	432	451	1.5	449	463	459	473	469	470
13	458	449	449	431	451	.13	449	462	460	440	469	470
14	461	449	449	431	451	0	449	462	460	417	469	470
15	467	449	450	431	451	0	450	463	460	473	469	470
16	467	449	451	431	451	0	451	463	460	473	469	470
17	467	446	452	434	451	0	451	462	460	474	469	470
18	467	446	451	440	451	0	450	462	460	474	468	470
19	467	449	450	440	451	92	451	461	460	474	468	470
20	466	449	450	439	450	147	451	462	460	474	468	470
21	466	450	451	439	450	147	451	461	467	474	468	470
22	466	451	451	440	451	140	451	462	470	474	468	470
23	461	451	451	440	450	341	452	462	470	474	468	470
24	457	443	451	440	450	352	451	462	470	474	469	470
25	456	369	450	440	450	352	452	462	470	474	469	470
26	456	418	451	440	449	352	452	462	470	474	469	470
27	456	451	452	440	449	351	452	462	470	475	469	470
28	462	436	452	440	450	351	452	462	470	475	471	470
29	467	422	454	440	-----	351	452	462	470	474	471	470
30	466	433	453	440	-----	351	449	462	470	474	471	470
31	466	-----	445	440	-----	415	-----	462	-----	474	470	-----
TOTAL	14,293	13,306	13,654	13,613	12,618	6,896.63	13,490	14,287	13,886	14,579	14,564	14,100
MEAN	461	444	440	439	451	222	450	461	463	470	470	470
MAX	467	466	454	450	452	460	452	464	470	475	474	470
MIN	456	369	374	431	445	0	442	448	459	417	468	470
AC-FT	28,350	26,390	27,080	27,000	25,030	13,680	26,760	28,340	27,540	28,920	28,890	27,970
CAL YR 1970	TOTAL	155,689.00	MEAN	427	MAX	474	MIN	0	AC-FT	308,800		
WTR YR 1971	TOTAL	159,286.63	MEAN	436	MAX	475	MIN	0	AC-FT	315,900		

## 11422500 BEAR RIVER BELOW ROLLINS DAM, NEAR COLFAX, CALIF.

LOCATION.--Lat 39°07'53", long 120°57'29", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.22, T.15 N., R.9 E., Nevada County, on right bank 65 ft downstream from highway bridge, 0.5 mile downstream from Rollins Dam, and 2.2 miles north of Colfax.

DRAINAGE AREA.--105 sq mi.

PERIOD OF RECORD.--January 1912 to September 1913, October 1913 to July 1915 (gage heights and discharge measurements only), August 1915 to June 1917, November 1949 to September 1953, August 1964 to current year. Prior to August 1964, published as Bear River near Colfax. Monthly discharge only for some periods, published in WSP 1315-A. Records for November and December 1911 include diversion to Bear River Canal and are not equivalent.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,927.41 ft above mean sea level. Prior to Aug. 8, 1915, nonrecording gages at several sites above diversion dam 0.3 mile upstream at different datums. Aug. 8, 1915, to June 30, 1917, nonrecording gage 0.7 mile downstream at different datum. Nov. 1, 1949, to Sept. 30, 1953, at site 0.2 mile downstream at different datum.

AVERAGE DISCHARGE (unadjusted).--12 years (1912-13, 1915-16, 1950-53, 1964-71), 387 cfs (280,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,800 cfs Mar. 26 (gage height, 7.41 ft); minimum daily, 26 cfs Nov. 19.

Period of record: Maximum discharge, 9,620 cfs Nov. 20, 1950 (gage height, 21.40 ft, site and datum then in use), from rating curve extended above 3,600 cfs on basis of slope-area measurement of maximum flow; no flow at times in 1912, 1952. Maximum discharge since construction of Rollins Dam in 1964, 12,700 cfs Jan. 21, 1970 (gage height, 11.72 ft), from rating curve extended above 6,000 cfs; minimum daily, 0.5 cfs Nov. 17, 1964.

REMARKS.--Records good. Flow regulated by Rollins Reservoir (see sta 11421800) beginning Dec. 15, 1964. Bear River Canal (see sta 11422000) diverts above station. See schematic diagram of Bear River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	41	1,630	256	658	27	811	626	581	560	280	292
2	78	33	2,390	225	624	28	901	636	494	446	282	279
3	80	165	1,500	123	601	75	882	714	544	553	296	278
4	80	324	3,060	69	578	127	859	704	598	578	290	267
5	81	515	1,700	74	528	176	842	622	554	451	283	361
6	81	605	1,070	100	518	166	776	590	594	546	302	278
7	83	701	811	78	530	148	737	661	608	564	308	296
8	83	436	808	65	523	517	681	755	493	519	302	275
9	81	324	927	43	460	685	774	587	536	433	300	272
10	80	347	843	27	441	646	868	666	528	326	235	281
11	81	420	708	316	430	667	799	554	504	308	338	284
12	80	466	658	659	615	1,200	558	532	581	334	273	277
13	80	486	579	669	473	1,870	595	482	602	357	270	283
14	85	396	601	500	576	1,150	817	566	497	399	277	359
15	83	437	671	498	574	1,100	816	560	576	313	295	263
16	80	218	821	450	616	900	797	641	516	292	287	265
17	80	27	915	740	549	901	862	608	573	333	288	268
18	80	30	798	1,510	538	880	803	573	473	321	292	420
19	80	26	686	1,400	496	793	763	559	562	313	283	320
20	81	28	671	1,110	315	754	783	566	511	308	297	137
21	81	28	681	1,000	286	709	745	561	539	293	280	74
22	80	28	676	877	358	804	744	559	505	319	275	74
23	81	28	644	855	306	745	708	579	555	320	276	75
24	81	40	443	954	260	1,000	704	518	574	397	295	78
25	81	593	77	749	172	1,240	691	508	469	297	294	78
26	83	1,150	31	619	99	3,760	688	600	574	199	316	77
27	83	653	57	769	39	2,270	629	571	554	192	268	76
28	83	905	288	754	28	1,480	709	512	519	127	256	75
29	83	1,440	1,110	682	-----	1,270	682	520	567	114	264	80
30	83	1,300	950	650	-----	1,080	689	528	499	92	306	80
31	85	-----	559	646	-----	959	-----	614	-----	202	310	-----
TOTAL	2,521	12,190	27,363	17,467	12,191	28,127	22,713	18,272	16,280	10,806	8,918	6,522
MEAN	81.3	406	883	563	435	907	757	589	543	349	288	217
MAX	85	1,440	3,060	1,510	658	3,760	901	755	608	578	338	420
MIN	78	26	31	27	28	27	558	482	469	92	235	74
AC-FT	5,000	24,180	54,270	34,650	24,180	55,790	45,050	36,240	32,290	21,430	17,690	12,940
CAL YR 1970	TOTAL 201,074		MEAN 551		MAX 7,210		MIN 26		AC-FT 398,800			
WTR YR 1971	TOTAL 183,370		MEAN 502		MAX 3,760		MIN 26		AC-FT 363,700			

## SACRAMENTO RIVER BASIN

## 11423700 NEW CAMP FAR WEST RESERVOIR NEAR WHEATLAND, CALIF.

LOCATION.--Lat 39°03'01", long 121°18'53", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.21, T.14 N., R.6 E., on Yuba, Placer county line, in center of New Camp Far West Dam on the Bear River, 6.4 miles east of Wheatland, and 11.8 miles northeast of Sheridan.

DRAINAGE AREA.--283 sq mi.

PERIOD OF RECORD.--October 1966 to current year. October 1963 to September 1966 in reports of California Department of Water Resources.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by South Sutter Water District).

EXTREMES.--Current year: Maximum contents, 112,900 acre-ft Dec. 4 (elevation, 303.93 ft); minimum, 36,700 acre-ft Oct. 12 to Nov. 2 (elevation, 252.5 ft).

Period of record: Maximum contents, 120,200 acre-ft Jan. 21, 1970 (elevation, 307.3 ft); minimum, 2,200 acre-ft Oct. 11, 1968 (elevation, 175.0 ft), may have been lower during period of no record Oct. 12-16, 1968.

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Sept. 30, 1963. Usable capacity, 102,200 acre-ft between elevations 175.0 ft (bottom of lowest river outlet) and 300.0 ft (crest of spillway). Dead storage, 2,200 acre-ft. Records, including extremes, represent total contents at 2400 hours. See schematic diagram showing diversion and storage in Bear River basin.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

170	1,400	250	34,200
180	3,000	260	44,000
190	4,800	270	55,500
200	7,000	280	69,500
210	9,800	290	85,600
220	14,000	300	104,400
230	19,400	320	151,000
240	25,800		

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38,900	36,700	93,000	106,400	106,600	105,100	107,000	106,400	106,100	105,700	93,700	81,100
2	38,600	36,700	104,400	106,100	106,400	105,100	107,000	106,400	105,900	105,500	93,100	80,900
3	38,300	36,900	108,700	105,900	106,400	105,100	107,000	106,400	105,900	105,500	92,600	80,600
4	37,900	37,000	112,900	105,700	106,400	105,100	107,000	106,400	105,900	105,700	92,000	80,600
5	37,700	37,700	109,200	105,500	106,100	105,100	106,800	106,400	105,900	105,700	91,600	80,300
6	37,500	38,800	107,700	105,500	106,100	105,300	106,800	106,400	105,900	105,700	91,100	80,100
7	37,400	40,600	106,600	105,500	106,100	105,300	106,800	106,100	105,900	105,700	90,900	80,000
8	37,300	42,700	106,400	105,300	106,100	105,300	106,600	106,600	105,900	105,700	90,300	79,800
9	37,100	44,700	104,400	105,300	106,100	106,100	106,600	106,400	105,700	105,700	89,900	79,600
10	37,000	46,000	106,800	105,300	105,900	106,100	107,000	106,400	105,700	105,300	89,500	79,600
11	36,900	47,300	106,600	106,600	105,900	106,100	107,000	106,100	105,700	104,800	89,000	79,500
12	36,700	48,400	106,400	107,200	106,100	107,900	106,600	106,100	105,700	104,400	88,600	79,500
13	36,700	49,500	106,400	107,400	106,100	108,300	106,400	106,100	105,900	104,000	88,000	79,500
14	36,700	50,400	106,100	107,400	106,100	107,700	106,400	105,900	105,900	103,600	87,500	79,500
15	36,700	51,200	106,400	107,000	106,100	107,400	106,600	106,100	105,700	103,300	87,100	79,800
16	36,700	52,200	107,400	106,800	106,100	107,000	106,600	106,100	105,700	102,900	86,700	80,300
17	36,700	52,400	107,700	107,000	106,100	106,800	106,800	106,100	105,700	102,300	86,400	80,600
18	36,700	52,500	107,200	107,700	106,100	106,800	106,600	106,100	105,700	102,000	86,000	80,800
19	36,700	52,600	106,800	107,900	106,100	106,800	106,600	106,100	105,700	101,600	85,400	81,400
20	36,700	52,700	106,800	107,400	105,900	106,800	106,600	105,900	105,700	101,000	85,100	81,600
21	36,700	52,700	107,400	107,200	105,700	106,800	106,600	106,100	105,700	100,600	84,800	81,600
22	36,700	52,900	107,000	107,000	105,700	106,800	106,600	106,100	105,700	100,100	84,500	81,400
23	36,700	53,000	106,800	107,000	105,700	107,000	106,600	105,900	105,700	99,700	84,200	81,300
24	36,700	53,100	106,600	107,000	105,700	107,200	106,600	105,900	105,500	99,300	83,700	81,100
25	36,700	55,600	105,900	106,800	105,700	109,400	106,600	105,900	105,500	99,100	83,500	81,100
26	36,700	59,600	105,700	106,600	105,500	112,600	105,900	105,900	105,300	98,400	83,200	80,900
27	36,700	62,500	105,700	106,600	105,300	109,600	105,500	105,900	105,500	97,600	82,900	80,800
28	36,700	64,200	105,900	106,600	105,300	108,300	106,100	105,900	105,300	96,900	82,500	80,800
29	36,700	67,500	107,900	106,600	-----	107,900	106,100	105,900	105,500	96,100	82,100	80,600
30	36,700	83,000	107,400	106,600	-----	107,400	106,400	105,900	105,700	95,400	81,700	80,600
31	36,700	-----	106,800	106,600	-----	107,200	-----	105,900	-----	94,200	81,400	-----
MAX	38,900	83,000	112,900	107,900	106,600	112,600	107,000	106,600	106,100	105,700	93,700	81,600
MIN	36,700	36,700	93,000	105,300	105,300	105,100	105,500	105,900	105,300	94,200	81,400	79,500
(a)	252.5	--	301.14	300.96	300.4	301.31	300.86	300.74	300.56	294.63	287.43	286.88
(b)	-2,400	+46,300	+23,800	-200	-1,300	+1,900	-800	-500	-200	-11,500	-12,800	-800

CAL YR 1970 b +900  
WTR YR 1971 b +41,500

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



## 11424000 BEAR RIVER NEAR WHEATLAND, CALIF.

LOCATION.--Lat 39°00'01", long 121°24'21", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.3, T.13 N., R.5 E., Yuba County, on right bank 100 ft downstream from bridge on U.S. Highway 99E, 1 mile southeast of Wheatland, and 6.5 miles downstream from Rock Creek.

DRAINAGE AREA.--292 sq mi.

PERIOD OF RECORD.--October 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 71.92 ft above mean sea level. Prior to July 17, 1929, nonrecording gage at about same site at datum 9.58 ft higher. July 17, 1929, to Oct. 22, 1943, water-stage recorder at several sites within 300 ft of present site at datum 9.58 ft higher. Oct. 23, 1943, to June 23, 1964, at site 100 ft upstream at datum 7.00 ft higher. June 23, 1964, to May 28, 1970, at present site at datum 5.00 ft higher.

AVERAGE DISCHARGE (adjusted for change in storage and diversions from New Camp Far West Reservoir since 1966).--42 years, 446 cfs (323,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,400 cfs Dec. 4 (gage height, 15.35 ft); minimum daily, 6.6 cfs Oct. 8.

Period of record: Maximum discharge, 33,000 cfs Dec. 22, 1955 (gage height, 19.30 ft, site and datum then in use); maximum gage height, 20.83 ft Nov. 21, 1950, site and datum then in use; no flow at times.

REMARKS.--Records good. Natural flow of stream affected by inflow from Yuba River and American River basins. Flow regulated by Lake Combie (usable capacity, 7,840 acre-ft), Rollins Reservoir since December 1964 (see sta 11421800) and New Camp Far West Reservoir since October 1963 (see sta 11423700). Many diversions for irrigation and power. Records of chemical analyses for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	35	77	1,090	846	170	1,500	330	386	31	24	83
2	10	34	101	912	852	138	1,380	304	394	45	20	18
3	11	33	12,100	690	828	128	1,220	326	326	25	21	24
4	11	32	8,980	520	822	142	1,110	435	307	26	21	22
5	10	31	5,630	398	768	170	1,030	480	342	48	19	25
6	9.0	36	2,820	334	738	223	960	410	318	36	20	27
7	9.0	34	1,870	304	732	271	910	370	289	50	24	25
8	6.6	33	1,480	286	732	235	880	475	250	62	24	19
9	7.8	32	1,250	262	726	418	850	570	150	41	19	18
10	7.8	32	1,220	250	690	615	820	435	131	21	16	15
11	7.8	31	1,150	505	654	684	800	445	122	39	17	14
12	9.0	30	1,010	1,280	642	852	770	358	111	21	20	15
13	9.6	30	926	1,580	732	2,800	750	295	142	18	20	18
14	9.6	30	846	1,610	702	2,500	750	256	172	20	21	19
15	11	30	852	1,460	732	1,600	720	283	119	20	21	38
16	11	30	1,210	1,290	738	1,430	660	274	131	18	22	59
17	10	30	1,900	1,260	762	1,290	770	314	99	18	23	35
18	10	31	1,690	1,510	738	1,190	760	326	105	19	23	58
19	11	31	1,410	1,830	744	1,130	732	307	53	19	23	48
20	11	31	1,130	1,700	696	1,090	702	289	74	19	21	46
21	9.0	31	1,380	1,490	565	1,040	738	265	62	21	24	45
22	9.6	31	1,550	1,340	480	900	696	277	48	20	27	46
23	9.6	31	1,290	1,210	495	1,060	630	286	40	21	28	46
24	9.6	33	1,100	1,170	475	1,200	575	280	74	21	26	46
25	7.8	35	834	1,170	440	1,590	555	247	57	24	25	45
26	7.2	34	570	1,040	374	6,000	723	217	53	23	23	46
27	56	35	465	912	274	6,200	580	277	115	23	23	48
28	55	50	515	975	217	4,000	200	298	93	22	23	51
29	44	119	1,230	968	-----	2,300	256	286	24	23	23	53
30	39	59	1,960	912	-----	1,850	318	286	25	24	19	54
31	37	-----	1,510	884	-----	1,700	-----	326	-----	33	20	-----
TOTAL	473.2	1,094	60,056	31,142	18,194	44,916	23,345	10,327	4,612	851	680	1,106
MEAN	15.3	36.5	1,937	1,005	650	1,449	778	333	154	27.5	21.9	36.9
MAX	56	119	12,100	1,830	852	6,200	1,500	570	394	62	28	83
MIN	6.6	30	77	250	217	128	200	217	24	18	16	14
AC-FT	939	2,170	119,100	61,770	36,090	89,090	46,300	20,480	9,150	1,690	1,350	2,190
(a)	2,836	0	0	0	0	872	8,932	21,089	23,283	27,452	24,587	9,693
MEAN b	22.4	815	2,324	1,001	626	1,494	915	668	542	287	214	186
AC-FT b	1,380	48,470	142,900	61,570	34,790	91,860	54,430	41,070	32,230	17,640	13,140	11,080
CAL YR 1970	TOTAL 253,677.0	MEAN 695	MAX 14,600	MIN 6.0	AC-FT 503,200	MEAN b 843	AC-FT b 610,700					
WTR YR 1971	TOTAL 196,796.2	MEAN 539	MAX 12,100	MIN 6.6	AC-FT 390,300	MEAN b 760	AC-FT b 550,500					

a Adjusted for diversions from and change in contents in New Camp Far West Reservoir.

b Diversion, in acre-feet, to Camp Far West North and South Canals and South Sutter conveyance canal; furnished by South Sutter Water District.

## SACRAMENTO RIVER BASIN

11424600 WELLMAN CREEK NEAR SMARTVILLE, CALIF.

LOCATION.--Lat 39°11'37", long 121°20'23", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.31, T.16 N., R.6 E., Yuba County, on right bank 4 ft upstream from culvert on Smartville-Hammonton Road, 2.3 miles southwest of Smartville.

DRAINAGE AREA.--0.59 sq mi.

PERIOD OF RECORD.--Water years 1960-67 (annual maximum), October 1967 to current year.

GAGE.--Water-stage recorder with tipping-bucket rain gage, crest-stage gages, and culvert control. Altitude of gage is 495 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 348 cfs Dec. 1 (gage height, 15.31 ft), from rating curve extended above 44 cfs on basis of computation of flow through culverts and over roadway at gage height 14.46 ft; no flow for several months.

Period of record: Maximum discharge, 467 cfs Jan. 20, 1964 (gage height, 15.66 ft), from rating curve extended above 40 cfs on basis of computation of flow through culverts and over roadway at gage heights 12.39, 12.65, 13.94, 14.46, and 15.66 ft; no flow for several months in each year.

REMARKS.--Records good. No regulation or diversion above station. Small ditch diverts some flow into basin at gage during heavy storms.

REVISIONS (WATER YEARS).--WRD Calif. 1969: 1968(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	21	.86	.05	.01	.12	.08	.02			
2		0	16	.89	.05	.01	.12	.10	.01			
3		0	7.5	.21	.04	.02	.10	.12	0			
4		0	21	.14	.04	.02	.10	.12	0			
5		0	1.6	.12	.04	.01	.10	.12	0			
6		0	.33	.10	.04	.01	.10	.10	0			
7		0	.59	.10	.03	.01	.14	.08	0			
8		0	1.6	.08	.03	.01	.12	.12	0			
9		0	.37	.07	.03	.01	.10	.10	0			
10		0	.14	.14	.03	.01	.12	.08	0			
11		0	.08	5.5	.03	.02	.10	.07	0			
12		0	.07	.90	.03	.78	.10	.06	0			
13		0	.08	.64	.03	.03	.12	.05	0			
14		0	.06	.30	.03	.03	.12	.03	0			
15		0	.77	.18	.03	.03	.12	.03	0			
16		0	6.5	.95	.03	.02	.12	.02	0			
17		0	.82	.64	.03	.02	.16	.02	0			
18		0	.94	.27	.03	.01	.12	.01	0			
19		0	.27	.16	.03	.01	.10	.01	0			
20		0	2.4	.12	.02	.01	.14	.01	0			
21		0	5.9	.10	.02	.01	.12	0	0			
22		0	.76	.08	.02	.01	.12	0	0			
23		0	.33	.07	.02	.43	.12	0	0			
24		0	.21	.07	.02	.04	.12	0	0			
25		0	.14	.07	.02	9.4	.12	0	0			
26		0	.41	.06	.02	7.9	.10	0	0			
27		0	2.6	.05	.02	.37	.10	0	0			
28		1.1	1.4	.05	.02	.18	.08	.02	0			
29		9.2	2.5	.05	-----	.12	.08	.02	0			
30		3.2	.45	.05	-----	.12	.08	.02	0			
31		-----	.27	.05	-----	.12	-----	.02	-----			-----
TOTAL	0	13.5	97.09	13.07	.83	19.78	3.36	1.41	.03	0	0	0
MEAN	0	.45	3.13	.42	.030	.64	.11	.046	.001	0	0	0
MAX	0	9.2	21	5.5	.05	9.4	.16	.12	.02	0	0	0
MIN	0	0	.06	.05	.02	.01	.08	0	0	0	0	0
AC-FT	0	27	193	26	1.7	39	6.7	2.8	.06	0	0	0
(a)	1.3	7.6	8.8	1.9	.1	4.7	.9	.9	.3	0	0	0

CAL YR 1970 TOTAL 269.95 MEAN .74 MAX 33 MIN 0 AC-FT 535  
WTR YR 1971 TOTAL 149.07 MEAN .41 MAX 21 MIN 0 AC-FT 296

a Precipitation, in inches.

## 11425000 FEATHER RIVER AT NICOLAUS, CALIF.

LOCATION.--Lat 38°54'01", long 121°35'00", T.12 N., R.3 E., Sutter County, on left bank at highway bridge at Nicolaus, 2.9 miles downstream from Bear River, and at mile 9.4.

DRAINAGE AREA.--5,920 sq mi.

PERIOD OF RECORD.--June 1921 to December 1942 (low-water periods only), April 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3.30 ft below mean sea level. Prior to November 1931, on middle fender pier of bridge 0.3 mile upstream at same datum. Since June 1960, auxiliary water-stage recorder at various sites near highway bridge for low-water periods.

AVERAGE DISCHARGE.--28 years, 8,190 cfs (5,934,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 44,900 cfs Mar. 27 (gage height, 38.87 ft); minimum daily, 3,690 cfs Mar. 3.

Period of record: Maximum discharge (1943 to current year), 357,000 cfs Dec. 23, 1955; maximum gage height, 51.60 ft Dec. 23, 1955; no flow Aug. 2-18, 1924, July 11-22, 24, 26, Aug. 1, 1931.

REMARKS.--Records good except those for Nov. 27 to Apr. 10, which are fair. Flow partly regulated by many reservoirs (total capacity, 6,868,000 acre-ft), the largest of which are Lake Oroville (see sta 11406800) completed in 1968, Lake Almanor (see sta 11399000) completed in 1913, and New Bullards Bar Reservoir (see sta 11413515) completed in 1969. Diversions for irrigation of about 87,000 acres between stations at Oroville and at Nicolaus.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,490	5,730	10,900	12,800	9,060	4,040	24,800	8,500	13,900	9,130	7,220	10,200
2	5,570	5,740	14,000	12,300	8,380	3,790	21,300	8,290	14,400	8,630	7,240	10,300
3	5,420	5,860	15,700	13,300	7,860	3,690	19,700	8,280	14,500	8,480	7,190	10,300
4	5,510	5,860	21,000	12,700	7,730	3,730	14,700	8,410	14,000	8,560	7,190	10,300
5	5,510	6,200	28,300	12,200	7,630	3,730	11,500	8,600	13,900	8,280	7,170	10,300
6	5,520	6,320	20,000	11,200	7,680	3,720	12,100	8,600	13,700	8,120	7,190	10,200
7	5,530	6,690	16,700	10,900	7,640	3,740	12,600	8,500	13,600	8,070	7,200	10,200
8	5,500	6,760	16,100	10,600	7,350	3,770	14,000	8,500	13,000	7,650	7,200	10,300
9	5,510	6,700	15,800	10,100	6,900	4,420	14,600	8,720	12,000	7,200	7,240	10,400
10	5,520	6,670	14,800	9,980	6,810	5,490	14,900	8,920	11,100	7,150	7,240	10,500
11	5,520	6,410	15,200	10,500	6,730	6,680	15,300	9,740	10,800	7,150	7,440	9,980
12	5,520	6,410	14,800	14,100	6,660	7,940	14,500	9,850	10,800	7,170	7,950	9,640
13	5,530	6,120	14,100	15,100	6,800	13,000	14,300	9,800	10,400	7,150	8,620	9,800
14	5,540	6,250	14,200	15,900	6,810	16,900	13,500	9,780	10,400	7,150	9,170	11,300
15	5,520	6,220	14,400	15,800	6,940	17,900	13,900	9,690	10,500	7,170	9,550	12,300
16	5,530	6,180	14,300	17,100	7,120	17,700	14,500	9,620	10,500	7,190	9,800	13,300
17	5,530	6,210	15,700	18,800	6,930	17,500	14,500	9,690	10,300	7,200	9,940	12,700
18	5,500	6,190	15,600	18,300	6,270	17,100	14,400	9,760	10,200	7,190	9,890	11,100
19	5,500	6,180	14,700	17,300	6,050	16,800	14,100	9,130	10,300	7,240	8,670	9,960
20	5,520	6,210	13,100	20,000	6,010	16,200	14,200	8,140	8,880	7,220	10,100	9,690
21	5,610	5,700	12,500	20,900	5,800	15,800	13,800	7,560	8,560	7,240	10,200	9,730
22	5,620	6,180	13,000	20,900	5,640	15,600	12,700	7,020	8,360	7,490	10,200	9,790
23	5,650	6,230	13,900	20,000	5,190	15,400	11,500	6,750	8,360	7,410	10,200	9,530
24	5,710	6,100	14,000	17,200	4,820	16,100	10,400	6,580	8,510	6,930	10,200	9,000
25	5,730	5,940	13,100	16,100	4,710	17,200	9,820	6,460	8,630	6,130	10,200	8,630
26	5,760	6,050	12,000	14,900	4,300	27,900	9,740	6,420	8,360	7,310	10,200	8,200
27	5,770	5,730	11,500	14,000	4,160	43,800	9,690	7,020	10,400	7,290	10,200	7,780
28	5,780	5,780	11,800	13,300	4,120	40,100	9,350	8,360	11,200	7,290	10,300	7,350
29	5,780	7,740	12,400	12,500	-----	35,900	9,020	11,300	9,780	7,260	10,200	6,910
30	5,700	10,600	14,600	11,400	-----	33,500	8,550	13,200	9,370	7,260	10,200	6,550
31	5,760	-----	13,700	10,300	-----	30,700	-----	13,800	-----	7,190	10,200	-----
TOTAL	173,160	190,960	461,900	450,480	182,100	479,840	407,970	274,990	328,710	231,900	275,510	296,240
MEAN	5,586	6,365	14,900	14,530	6,504	15,480	13,600	8,871	10,960	7,481	8,887	9,875
MAX	5,780	10,600	28,300	20,900	9,060	43,800	24,800	13,800	14,500	9,130	10,300	13,300
MIN	5,420	5,700	10,900	9,980	4,120	3,690	8,550	6,420	8,360	6,130	7,170	6,550
AC-FT	343,500	378,800	916,200	893,500	361,200	951,800	809,200	545,400	652,000	460,000	546,500	587,600
CAL YR 1970	TOTAL 4,689,680	MEAN 12,850	MAX 138,000	MIN 1,920	AC-FT 9,302,000							
WTR YR 1971	TOTAL 3,753,760	MEAN 10,280	MAX 43,800	MIN 3,690	AC-FT 7,446,000							

NOTE.--Stage-discharge relation affected by backwater from the Sacramento River parts of November through April.

## SACRAMENTO RIVER BASIN

## 11425500 SACRAMENTO RIVER AT VERONA, CALIF.

LOCATION.--Lat 38°46'51", long 121°36'12", in SE¼ sec.23, T.11 N., R.3 E., Sutter County, on left bank 0.8 mile southeast of Verona, 1 mile downstream from Feather River, 6.2 miles east of Knights Landing, and at mile 19.6 upstream from Sacramento.

DRAINAGE AREA.--21,257 sq mi.

PERIOD OF RECORD.--May 1926 to September 1929 (low-water periods only), October 1929 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3.00 ft below mean sea level.

AVERAGE DISCHARGE.--42 years (1929-71), 18,600 cfs (13,480,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 63,200 cfs Dec. 5 (gage height, 34.00 ft); minimum daily, 12,900 cfs Oct. 18, 19.

Period of record: Maximum discharge, 79,200 cfs Mar. 1, 1940 (gage height, 41.20 ft); minimum daily, 304 cfs July 23, 24, 1931; maximum reverse flow, 16,800 cfs Dec. 4, 1950, backwater from American River.

Maximum combined discharge of Sacramento River at Verona and Fremont weir, about 322,000 cfs Dec. 25, 1964.

REMARKS.--Records excellent except those for period Nov. 2 to Jan. 20, which are good. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, return flow from irrigated areas, and bypassing for flood control. When discharge exceeds about 55,000 cfs, flow begins over Fremont weir (just upstream) into Yolo Bypass (see sta 11453000). Elevation of crest of Fremont weir is 33.5 ft. Record of chemical analyses for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13,300	13,600	47,400	43,100	43,500	15,500	54,700	19,500	31,100	20,700	17,100	23,800
2	13,700	13,500	57,900	43,200	40,600	15,000	51,900	20,100	31,400	20,100	17,600	24,000
3	13,500	13,800	60,500	42,200	38,800	14,400	49,200	21,200	31,500	19,500	17,800	23,900
4	13,600	13,800	60,500	41,300	37,100	14,100	46,200	22,400	30,900	19,200	17,800	23,600
5	13,500	14,400	63,000	39,700	35,800	14,000	42,500	23,500	30,100	18,900	17,600	22,900
6	13,400	15,300	62,400	37,900	34,500	13,900	39,900	24,400	29,400	18,600	17,600	22,200
7	13,300	16,700	62,300	35,700	33,200	13,800	38,200	25,200	28,900	18,200	17,700	22,000
8	13,100	18,800	61,800	34,200	31,700	13,700	37,800	25,800	28,000	17,500	17,600	22,000
9	13,100	19,100	61,500	32,900	30,800	13,900	37,400	26,600	26,600	16,800	17,600	22,100
10	13,200	18,700	61,500	31,400	29,800	14,600	36,200	27,400	25,200	16,300	17,500	22,400
11	13,200	20,400	61,700	30,900	28,900	15,500	35,300	28,400	24,400	16,400	18,000	22,400
12	13,200	22,400	61,700	32,200	28,500	16,600	34,700	28,900	24,000	16,600	18,900	22,500
13	13,300	20,300	61,100	35,100	27,700	21,100	34,400	28,800	23,500	16,700	19,800	22,300
14	13,400	19,100	59,600	35,800	27,000	31,100	33,900	28,700	23,400	16,600	20,400	23,200
15	13,300	18,100	58,000	35,500	26,100	35,700	33,500	28,800	23,100	16,500	20,700	24,300
16	13,200	17,300	57,100	35,500	25,200	35,000	33,600	28,900	22,700	16,500	20,900	25,000
17	13,000	16,800	56,600	39,500	24,500	34,400	33,300	28,900	22,300	16,500	21,000	25,000
18	12,900	17,500	56,300	45,300	23,700	32,900	32,400	28,700	21,800	16,500	20,900	23,900
19	12,900	19,200	56,000	54,900	23,000	31,100	31,000	28,000	21,800	16,800	19,600	22,300
20	13,100	20,500	55,200	62,400	22,200	29,400	30,000	26,600	20,700	16,700	20,800	21,600
21	13,600	21,000	54,600	63,000	21,000	27,900	29,200	25,700	19,900	16,500	21,100	21,600
22	13,900	21,300	54,600	62,400	19,900	26,900	28,200	25,100	19,400	16,300	21,300	21,500
23	14,300	21,600	54,400	61,700	18,900	26,300	26,500	24,500	19,300	16,500	21,700	21,600
24	14,600	21,600	53,400	60,500	18,100	26,500	24,800	23,400	19,300	16,100	21,900	21,100
25	14,600	21,700	51,100	59,400	17,200	29,400	23,300	22,400	19,600	15,400	22,000	20,600
26	14,700	22,600	47,900	58,300	16,600	37,000	22,400	22,000	19,400	16,400	22,300	20,100
27	14,400	25,400	44,600	57,000	16,200	49,700	21,600	22,300	20,100	16,600	22,400	19,500
28	14,200	27,000	41,800	55,700	15,800	56,500	21,000	23,800	22,900	16,400	22,600	19,100
29	14,000	33,200	40,700	54,000	-----	59,100	20,400	26,700	22,300	16,200	22,700	18,700
30	13,900	41,600	41,700	51,100	-----	58,700	19,600	29,600	21,400	16,400	22,900	18,200
31	13,600	-----	42,700	47,300	-----	57,100	-----	30,800	-----	16,700	23,300	-----
TOTAL	421,000	606,300	1,709,6M	1,419.1M	756,300	880,800	1,003.1M	797,100	724,400	531,100	621,100	663,400
MEAN	13,580	20,210	55,150	45,780	27,010	28,410	33,440	25,710	24,150	17,130	20,040	22,110
MAX	14,700	41,600	63,000	63,000	43,500	59,100	54,700	30,800	31,500	20,700	23,300	25,000
MIN	12,900	13,500	40,700	30,900	15,800	13,700	19,600	19,500	19,300	15,400	17,100	18,200
AC-FT	835,100	1,203M	3,391M	2,815M	1,500M	1,747M	1,990M	1,581M	1,437M	1,053M	1,232M	1,316M

CAL YR 1970 TOTAL 9,650,580 MEAN 26,440 MAX 77,300 MIN 7,600 AC-FT 19,140,000  
WTR YR 1971 TOTAL 10,133,300 MEAN 27,760 MAX 63,000 MIN 12,900 AC-FT 20,100,000

## 11426000 SACRAMENTO WEIR SPILL TO YOLO BYPASS, NEAR SACRAMENTO, CALIF.

LOCATION.--Lat 38°36'25", long 121°33'15", (unsurveyed), Sacramento County, on right bank 100 ft upstream and 100 ft downstream from weir, 3.2 miles upstream from American River, 4 miles northwest of Sacramento, and at mile 4.2 upstream from Sacramento.

PERIOD OF RECORD.--October 1939 to current year. Published as Sacramento weir near Sacramento 1939-61. Monthly discharge only for water years 1940-51, published in WSP 1735. Gage-height records collected at same site February 1926 to September 1934 and major flood flows only October 1934 to September 1939 are contained in reports of California Department of Water Resources.

GAGE.--Water-stage recorders and concrete weir crest. Datum of gage is 3.00 ft below mean sea level. October 1939 to September 1942, October 1959 to September 1963, water-stage recorder or nonrecording gage at downstream end of weir. October 1942 to September 1959, water-stage recorder on left bank at Sacramento River opposite center of weir. Since February 1963, water-stage recorders on right bank 100 ft upstream and 100 ft downstream from ends of weir.

AVERAGE DISCHARGE.--32 years, 237 cfs (171,700 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 232 cfs Dec. 5; no flow for several months. Period of record: Maximum discharge, 118,000 cfs Mar. 26, 1928; maximum gage height, 33.01 ft Dec. 23, 1955; no flow during all or most of each year.

REMARKS.--Crest of weir is at elevation 25.0 ft and top of moveable gates at 31.0 ft. Weir consists of 48 gates each 38.1 ft long. Flow over weir enters Yolo Bypass by way of Sacramento Bypass. Flow regulated by weir gates. Flow for the current year consisted of leakage through weir gates only. Since February 1963, stage is obtained by averaging the stage obtained at sites above and below the weir.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	0								
2			5.8	0								
3			80	0								
4			104	0								
5			232	0								
6			190	0								
7			172	0								
8			147	0								
9			117	0								
10			86	0								
11			103	0								
12			114	0								
13			81	0								
14			38	0								
15			2.7	0								
16			0	0								
17			0	0								
18			0	0								
19			0	0								
20			0	80								
21			0	152								
22			0	140								
23			0	107								
24			0	64								
25			0	23								
26			0	0								
27			0	0								
28			0	0								
29			0	0	-----							
30			0	0	-----							
31		-----	0	0	-----		-----		-----			-----
TOTAL	0	0	1,472.5	566	0	0	0	0	0	0	0	0
MEAN	0	0	47.5	18.3	0	0	0	0	0	0	0	0
MAX	0	0	232	152	0	0	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	2,920	1,120	0	0	0	0	0	0	0	0
CAL YR 1970	TOTAL	230,030.50	MEAN	630	MAX	25,200	MIN	0	AC-FT	456,300		
WTR YR 1971	TOTAL	2,038.50	MEAN	5.5	MAX	232	MIN	0	AC-FT	4,040		

## SACRAMENTO RIVER BASIN

11426150 ONION CREEK NEAR SODA SPRINGS, CALIF.

LOCATION.--Lat 39°16'02", long 120°21'50", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.11, T.16 N., R.14 E., Placer County, Tahoe National Forest, on right bank 0.3 mile upstream from unnamed tributary, 1 mile upstream from mouth, and 4.0 miles south of Soda Springs.

DRAINAGE AREA.--3.58 sq mi.

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5,900 ft (from topographic map).

AVERAGE DISCHARGE.--12 years, 9.80 cfs (7,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 87 cfs May 14 (gage height, 2.29 ft); maximum gage height, 2.54 ft Jan. 17 (backwater from debris); minimum daily discharge, 0.19 cfs Sept. 22-24.  
Period of record: Maximum discharge, 1,750 cfs Dec. 23, 1964 (gage height, 4.98 ft in gage well, 6.82 ft, from floodmarks), from rating curve extended above 40 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.1 cfs for several days in 1959, 1961.

REMARKS.--Records good. No regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.67	.98	1.7	8.9	5.5	18	41	27	12	1.2	.29
2	.25	.67	1.1	1.8	9.5	5.5	19	42	27	11	.86	.33
3	.25	.59	1.7	1.7	8.3	5.5	20	36	27	9.5	.86	.29
4	.25	.86	2.7	1.7	7.3	5.5	22	32	30	8.3	.76	.29
5	.25	14	4.2	1.7	6.8	4.8	27	31	34	7.8	1.1	.29
6	.25	2.5	4.2	1.5	6.3	4.8	26	32	45	6.8	.76	.25
7	.25	1.5	3.1	1.5	6.3	4.8	23	36	49	5.9	.76	.25
8	.25	2.1	2.9	1.5	6.8	5.1	22	38	53	5.5	.67	.25
9	.25	11	2.7	1.7	6.8	5.1	22	41	49	4.8	.51	.25
10	.25	4.8	2.5	1.8	9.5	4.8	21	57	46	4.5	.51	.25
11	.25	5.9	2.5	1.8	12	4.8	21	58	45	3.9	.51	.25
12	.25	3.9	2.5	1.7	15	5.1	24	56	46	3.9	.51	.25
13	.29	2.1	2.3	1.7	18	4.8	26	60	43	3.3	.44	.22
14	.29	1.8	2.3	1.5	16	4.8	32	63	42	3.1	.44	.22
15	.29	1.5	2.1	1.7	15	4.5	39	67	41	3.1	.51	.22
16	.29	1.5	2.1	2.3	13	4.8	41	63	39	3.1	.44	.22
17	.29	1.4	2.1	28	11	4.8	33	53	36	3.9	.44	.22
18	.29	1.2	2.1	21	9.5	4.8	25	49	32	3.1	.44	.22
19	.33	1.1	2.1	15	8.9	5.9	24	51	31	2.5	.38	.22
20	.38	1.1	2.1	11	8.3	7.8	23	56	27	2.7	.38	.22
21	.44	.98	1.8	8.9	7.8	8.3	20	48	24	2.1	.38	.22
22	.51	.98	1.8	7.3	7.3	7.8	20	45	22	2.7	.38	.19
23	.51	.98	1.8	6.8	6.8	8.3	18	56	20	2.7	.38	.19
24	.51	2.6	1.8	5.9	6.3	11	18	62	19	2.1	.38	.19
25	.51	24	1.8	5.9	6.3	13	17	63	16	2.1	.38	.22
26	.51	6.8	1.8	5.9	6.3	22	16	60	28	2.5	.44	.25
27	.44	3.9	1.8	6.3	6.3	17	16	53	19	2.3	.44	.29
28	.44	3.6	1.8	6.8	5.9	16	20	45	16	1.7	.38	.29
29	.59	3.1	1.8	7.3	-----	19	26	42	15	1.5	.33	.33
30	.59	2.1	1.7	8.3	-----	21	33	38	13	1.2	.33	.44
31	.67	-----	1.7	8.9	-----	19	-----	32	-----	1.2	.29	-----
TOTAL	11.14	109.23	67.88	180.6	256.2	265.9	712	1,506	961	130.8	16.59	7.61
MEAN	.36	3.64	2.19	5.83	9.15	8.58	23.7	48.6	32.0	4.22	.54	.25
MAX	.67	24	4.2	28	18	22	41	67	53	12	1.2	.44
MIN	.22	.59	.98	1.5	5.9	4.5	16	31	13	1.2	.29	.19
AC-FT	22	217	135	358	508	527	1,410	2,990	1,910	259	33	15

CAL YR 1970 TOTAL 4,223.53 MEAN 11.6 MAX 462 MIN .22 AC-FT 8,380  
WTR YR 1971 TOTAL 4,224.95 MEAN 11.6 MAX 67 MIN .19 AC-FT 8,380

## PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-15	1830	2.11	51	6-7	1800	2.21	69
5-1	1830	2.13	54	6-26	1500	2.21	69
5-14	1800	2.29	87				

LOCATION.--Lat 39°17'58", long 120°39'11", in NE¼NW¼ sec.32, T.17 N., R.12 E., Placer County, Tahoe National Forest, on right bank 0.2 mile upstream from inlet to Carpenter Flat Siphon, and 1 mile east of Emigrant Gap.

**EXTREMES.**--Period of record: Maximum daily discharge, 38 cfs Nov. 18, 1965; no flow for several months in each year.

REMARKS.--Canal diverts from right bank of the North Fork of North Fork American River 2.7 miles downstream from Lake Valley Reservoir to the Drum Canal in the Bear River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co. under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	22							0	33	33	33
2	31	22							16	33	33	33
3	31	22							30	34	33	33
4	30	24							32	34	33	33
5	30	25							33	34	33	33
6	30	24							33	34	33	33
7	30	24							37	33	33	33
8	30	23							36	33	33	32
9	30	24							35	33	33	32
10	30	24							34	33	33	32
11	30	25							34	33	33	32
12	29	28							34	34	33	32
13	25	30							34	33	34	33
14	24	28							33	33	34	33
15	24	28							33	32	34	33
16	25	28							33	32	34	33
17	25	19							33	32	34	33
18	25	0							33	32	34	33
19	24	0							33	31	34	20
20	25	0							33	31	34	0
21	24	0							33	32	34	0
22	25	0							33	33	34	0
23	25	0							30	32	34	0
24	24	0							26	32	34	0
25	24	0							31	32	34	0
26	23	0							35	32	34	0
27	23	0							35	31	33	0
28	23	0							33	31	33	0
29	23	0			-----				32	32	33	0
30	22	0			-----				33	33	33	0
31	22	-----			-----		-----		-----	33	33	-----
TOTAL	817	420	0	0	0	0	0	0	940	1,010	1,037	609
MEAN	26.4	14.0	0	0	0	0	0	0	31.3	32.6	33.5	20.3
MAX	31	30	0	0	0	0	0	0	37	34	34	33
MIN	22	0	0	0	0	0	0	0	0	31	33	0
AC-FT	1,620	833	0	0	0	0	0	0	1,860	2,000	2,060	1,210
CAL YR 1970	TOTAL 4,767.00		MEAN 13.1	MAX 37	MIN 0	AC-FT 9,460						
WTR YR 1971	TOTAL 4,833.00		MEAN 13.2	MAX 37	MIN 0	AC-FT 9,590						

## SACRAMENTO RIVER BASIN

11426200 NORTH FORK FORBES CREEK NEAR DUTCH FLAT, CALIF.

LOCATION.--Lat 39°08'37", long 120°45'30", in SE $\frac{1}{4}$  sec.17, T.15 N., R.11 E., Placer County, Tahoe National Forest, on right bank 0.2 mile downstream from Big Reservoir and 6.0 miles southeast of Dutch Flat.

DRAINAGE AREA.--1.68 sq mi.

PERIOD OF RECORD.--July 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,980 ft (from topographic map).

AVERAGE DISCHARGE.--15 years, 4.67 cfs (3,380 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 21 cfs Nov. 12 (gage height, 2.47 ft); minimum daily, 0.30 cfs Mar. 9-11.

Period of record: Maximum discharge, 377 cfs Jan. 22, 1970 (gage height, 4.76 ft); no flow many days in 1964-66.

Maximum stage known, 6.40 ft probably Dec. 23, 1955, from floodmarks (discharge unknown).

REMARKS.--Flow regulated by Big Reservoir (capacity, 2,200 acre-ft). Some diversion above the station for mining.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	.70	13	9.1	9.3	9.6	.90	3.4	2.2	.80	.60	.60
2	.40	.70	13	8.9	9.5	9.3	.90	3.3	2.0	.70	.60	.60
3	.40	.60	13	8.6	9.5	9.3	1.0	3.5	1.8	.70	.60	.60
4	.40	.70	14	8.5	9.5	9.2	1.0	4.0	1.7	.70	.60	.50
5	.40	8.5	13	8.5	9.5	9.1	1.0	3.6	1.5	.70	.60	.50
6	.40	15	13	8.4	9.5	9.0	1.1	3.4	1.4	.70	.60	.50
7	.40	14	13	8.2	9.5	9.1	1.2	3.3	1.4	.70	.60	.50
8	.40	13	13	7.9	9.5	4.6	2.7	4.1	1.3	.70	.60	.50
9	.40	12	13	7.4	9.5	.30	3.3	3.8	1.2	.70	.60	.50
10	.40	16	13	7.2	9.2	.30	7.2	3.5	1.1	.70	.50	.50
11	.40	19	13	7.2	8.7	.30	8.3	3.2	1.1	.60	.60	.50
12	.40	20	13	7.2	8.7	1.3	7.4	3.1	1.0	.60	.60	.50
13	.40	18	13	7.1	8.7	.80	5.8	3.0	1.0	.60	.50	.50
14	.40	17	13	6.9	8.7	.50	5.1	2.9	.90	.60	.50	.50
15	.40	16	13	6.7	9.2	.50	5.2	2.7	.90	.60	.50	.50
16	.40	15	13	6.6	9.4	.50	4.2	2.5	.80	.60	.50	.50
17	.40	14	12	6.9	9.6	.50	4.2	2.3	.80	.60	.50	.50
18	.50	14	12	7.3	9.9	.50	4.3	2.1	.80	.70	.50	.50
19	.50	14	12	7.5	11	.50	4.4	2.0	.80	.70	.50	.40
20	.70	13	12	7.8	10	.50	4.3	2.0	.80	.70	.50	.40
21	.60	13	12	8.2	10	.50	4.3	2.0	.80	.70	.50	.40
22	.70	13	12	8.4	10	.50	4.3	1.9	.80	.70	.60	.40
23	.70	13	11	8.5	10	.70	4.1	1.9	.80	.70	.60	.40
24	.70	13	11	8.4	10	.60	11	1.9	.80	.70	.60	.50
25	.70	13	11	8.5	10	1.2	8.4	1.8	.80	.70	.60	.50
26	.70	13	11	8.5	10	2.8	6.4	1.9	.90	.70	.60	.60
27	.70	13	10	8.5	10	1.2	5.0	1.8	.90	.70	.60	.60
28	.70	13	10	8.6	9.9	1.0	4.2	1.9	.80	.60	.60	.70
29	.70	13	10	8.9	-----	.90	3.8	1.9	.80	.60	.60	.70
30	.70	13	9.5	9.1	-----	.90	3.7	1.9	.80	.60	.60	.70
31	.70	-----	9.2	9.2	-----	.90	-----	2.1	-----	.60	.60	-----
TOTAL	16.10	371.20	373.7	248.7	268.3	86.90	128.70	82.7	32.70	20.70	17.60	15.60
MEAN	.52	12.4	12.1	8.02	9.58	2.80	4.29	2.67	1.09	.67	.57	.52
MAX	.70	20	14	9.2	11	9.6	11	4.1	2.2	.80	.60	.70
MIN	.40	.60	9.2	6.6	8.7	.30	.90	1.8	.80	.60	.50	.40
AC-FT	32	736	741	493	532	172	255	164	65	41	35	31

CAL YR 1970 TOTAL 2,751.30 MEAN 7.54 MAX 317 MIN .30 AC-FT 5,460  
WTR YR 1971 TOTAL 1,662.90 MEAN 4.56 MAX 20 MIN .30 AC-FT 3,300



## 11426400 NORTH SHIRTTAIL CREEK NEAR DUTCH FLAT, CALIF.

LOCATION.--Lat 39°07'49", long 120°47'44", in SE $\frac{1}{4}$  sec.24, T.15 N., R.10 E., Placer County, Tahoe National Forest, on right bank 200 ft downstream from Forbes Creek and 7.0 miles southeast of Dutch Flat.

DRAINAGE AREA.--9.10 sq mi.

PERIOD OF RECORD.--July 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,500 ft (from topographic map).

AVERAGE DISCHARGE.--15 years, 21.0 cfs (15,210 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 441 cfs Mar. 26 (gage height, 4.12 ft); minimum daily, 0.10 cfs Oct. 1-19.

Period of record: Maximum discharge, 1,780 cfs Dec. 22, 1964 (gage height, 7.56 ft), from rating curve extended above 590 cfs on basis of slope-area measurement at gage height 6.36 ft; minimum daily, 0.10 cfs many days in 1970.

Flood of Dec. 23, 1955, reached a stage of 7.30 ft, from floodmarks (discharge, 1,650 cfs).

REMARKS.--Flow slightly regulated by Big Reservoir (capacity, 2,200 acre-ft).

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.30	101	28	46	31	66	18	9.7	2.2	.50	.40
2	.10	.30	113	27	45	31	61	18	8.7	2.1	.50	.40
3	.10	.30	60	25	44	31	54	19	7.7	2.0	.50	.40
4	.10	1.0	155	24	42	30	48	20	6.9	1.9	.50	.40
5	.10	14	86	23	41	29	45	19	6.4	1.8	.50	.30
6	.10	24	62	22	41	28	42	18	4.6	1.8	.50	.30
7	.10	18	57	21	40	28	41	18	4.4	1.8	.50	.30
8	.10	13	60	21	40	25	37	21	4.0	1.7	.40	.30
9	.10	11	63	21	39	21	35	19	3.9	1.6	.40	.30
10	.10	15	52	23	39	21	47	18	3.8	1.6	.40	.30
11	.10	20	44	35	42	24	40	17	3.6	1.6	.40	.20
12	.10	25	39	34	46	101	36	16	3.5	1.5	.40	.20
13	.10	20	35	29	49	97	32	16	3.4	1.4	.40	.20
14	.10	19	32	27	51	69	30	15	3.2	1.3	.40	.20
15	.10	18	32	25	55	59	28	14	3.0	1.3	.40	.20
16	.10	17	44	27	55	54	26	14	2.7	1.2	.40	.20
17	.10	17	36	52	54	55	32	13	2.7	1.2	.30	.20
18	.10	16	32	70	51	50	28	12	2.6	1.2	.30	.20
19	.10	16	31	71	54	48	26	12	2.6	1.1	.30	.20
20	.70	15	29	68	48	47	26	11	2.5	1.0	.30	.20
21	.30	15	28	65	45	46	26	11	2.4	.90	.20	.20
22	.40	15	26	60	43	45	24	11	2.3	.80	.30	.20
23	1.4	15	25	55	41	65	23	9.8	2.3	.70	.30	.20
24	.90	17	24	51	38	66	26	9.3	2.3	.70	.30	.20
25	.40	49	23	48	38	107	25	8.9	2.2	.70	.30	.20
26	.30	56	23	46	36	293	23	9.3	5.2	.60	.30	.40
27	.30	27	24	45	35	156	22	9.1	4.3	.60	.30	.50
28	.30	55	24	45	33	113	21	9.6	3.0	.60	.30	.40
29	.30	92	42	45	-----	96	20	9.4	2.6	.60	.30	.90
30	.30	75	36	45	-----	84	19	9.5	2.3	.50	.30	1.7
31	.30	-----	31	45	-----	74	-----	9.8	-----	.50	.40	-----
TOTAL	7.80	695.90	1,469	1,223	1,231	2,024	1,009	434.7	118.8	38.50	11.60	10.30
MEAN	.25	23.2	47.4	39.5	44.0	65.3	33.6	14.0	3.96	1.24	.37	.34
MAX	1.4	92	155	71	55	293	66	21	9.7	2.2	.50	1.7
MIN	.10	.30	23	21	33	21	19	8.9	2.2	.50	.20	.20
AC-FT	15	1,380	2,910	2,430	2,440	4,010	2,000	862	236	76	23	20

CAL YR 1970 TOTAL 10,464.00 MEAN 28.7 MAX 647 MIN .10 AC-FT 20,760  
WTR YR 1971 TOTAL 8,273.60 MEAN 22.7 MAX 293 MIN .10 AC-FT 16,410

## 11427000 NORTH FORK AMERICAN RIVER AT NORTH FORK DAM, CALIF.

LOCATION.--Lat 38°56'10", long 121°01'22", in SW¼NW¼ sec.31, T.13 N., R.9 E., Placer County, on left bank 50 ft upstream from spillway of North Fork Dam, 2 miles upstream from Middle Fork, and 4 miles northeast of Auburn.

DRAINAGE AREA.--342 sq mi.

PERIOD OF RECORD.--October 1941 to current year.

GAGE.--Water-stage recorder. Datum of gage is 715.0 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--30 years, 831 cfs (602,100 acre-ft per year); median of yearly mean discharges, 740 cfs (536,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 14,100 cfs Mar. 26 (gage height, 5.70 ft); minimum daily, 46 cfs Oct. 1, 2, 18, 19.

Period of record: Maximum discharge, 65,400 cfs Dec. 23, 1964 (gage height, 11.87 ft), from rating curve extended above 24,000 cfs on basis of computed flow over spillway of dam at gage height 10.22 ft; no flow Aug. 27-30, Sept. 2-11, 1944, Oct. 5, 6, 1963, Nov. 7-10, 1965, caused by operation of valve in North Fork Dam.

REMARKS.--Records good. Minor regulation by Lake Clementine (usable capacity, 12,800 acre-ft) formed by North Fork Dam. Storage in Big Reservoir and Lake Valley Reservoir (combined capacity, 10,300 acre-ft) above station. Lake Valley Canal (see sta 11426190) diverts from North Fork of North Fork American River into Bear River basin for power development in powerhouses of Pacific Gas and Electric Co. Combined storage and diversion have small effect on natural flow. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	61	2,550	915	1,130	611	1,910	1,700	1,150	665	121	61
2	46	61	3,550	830	1,130	575	1,810	1,800	992	629	116	61
3	49	61	2,000	703	1,080	584	1,710	1,720	948	575	111	61
4	52	81	5,370	647	992	584	1,710	1,700	1,020	530	106	58
5	55	339	2,650	611	926	557	1,770	1,510	1,160	485	106	58
6	55	896	1,800	575	882	521	1,920	1,520	1,480	451	101	55
7	52	728	1,480	539	840	512	1,850	1,500	1,820	417	97	55
8	52	348	1,370	521	820	503	1,610	1,940	1,940	400	93	55
9	52	250	1,720	521	820	494	1,500	1,740	1,940	370	93	55
10	49	599	1,270	557	820	503	1,870	2,020	1,800	348	93	55
11	52	370	1,040	904	970	539	1,610	2,450	1,760	325	89	55
12	52	611	904	1,340	1,210	1,280	1,510	2,400	1,780	297	85	55
13	49	485	800	1,310	1,320	2,230	1,610	2,600	1,850	284	81	55
14	49	297	722	1,460	1,320	1,340	1,610	2,560	1,660	270	77	55
15	49	231	656	1,340	1,300	1,130	1,780	2,680	1,600	270	77	55
16	49	194	1,270	1,180	1,300	1,040	1,940	2,530	1,700	263	73	55
17	49	170	1,570	1,920	1,150	1,050	1,950	2,060	1,670	250	73	52
18	46	160	1,180	3,430	1,040	970	1,560	1,810	1,520	250	73	52
19	46	150	948	3,080	1,060	926	1,330	1,830	1,420	244	73	49
20	61	141	840	2,580	915	937	1,360	1,940	1,400	225	69	52
21	73	136	1,020	2,160	840	981	1,300	2,110	1,270	213	65	52
22	73	136	1,000	1,800	800	1,000	1,150	1,500	1,150	200	65	52
23	93	136	830	1,540	770	1,280	1,060	1,730	1,060	182	65	52
24	131	145	722	1,370	722	1,980	1,040	2,070	992	170	65	52
25	111	2,210	647	1,270	694	2,450	992	2,360	882	165	65	52
26	81	2,730	620	1,130	656	9,550	948	2,500	1,120	160	65	52
27	69	1,080	656	1,100	638	5,380	926	2,000	2,070	150	61	55
28	65	1,290	741	1,090	638	3,450	959	1,710	1,070	145	61	58
29	65	2,080	1,480	1,150	-----	2,700	1,120	1,440	810	141	61	65
30	65	1,850	1,440	1,090	-----	2,560	1,360	1,420	703	136	61	85
31	61	-----	1,080	1,120	-----	2,220	-----	1,270	-----	131	61	-----
TOTAL	1,897	18,026	43,926	39,733	26,783	50,437	44,775	60,120	41,737	9,341	2,502	1,684
MEAN	61.2	601	1,417	1,282	957	1,627	1,493	1,939	1,391	301	80.7	56.1
MAX	131	2,730	5,370	3,430	1,320	9,550	1,950	2,680	2,070	665	121	85
MIN	46	61	670	521	638	494	926	1,270	703	131	61	49
AC-FT	3,760	35,750	87,130	78,810	53,120	100,000	88,810	119,200	82,790	18,530	4,960	3,340

CAL YR 1970 TOTAL 370,866 MEAN 1,016 MAX 21,100 MIN 40 AC-FT 735,600  
WTR YR 1971 TOTAL 340,961 MEAN 934 MAX 9,550 MIN 46 AC-FT 676,300

## PEAK DISCHARGE (BASE, 4,300 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	2030	3.75	5,110	12- 4	0900	4.38	7,500
12- 2	0800	3.69	4,910	3-26	1200	5.70	14,100

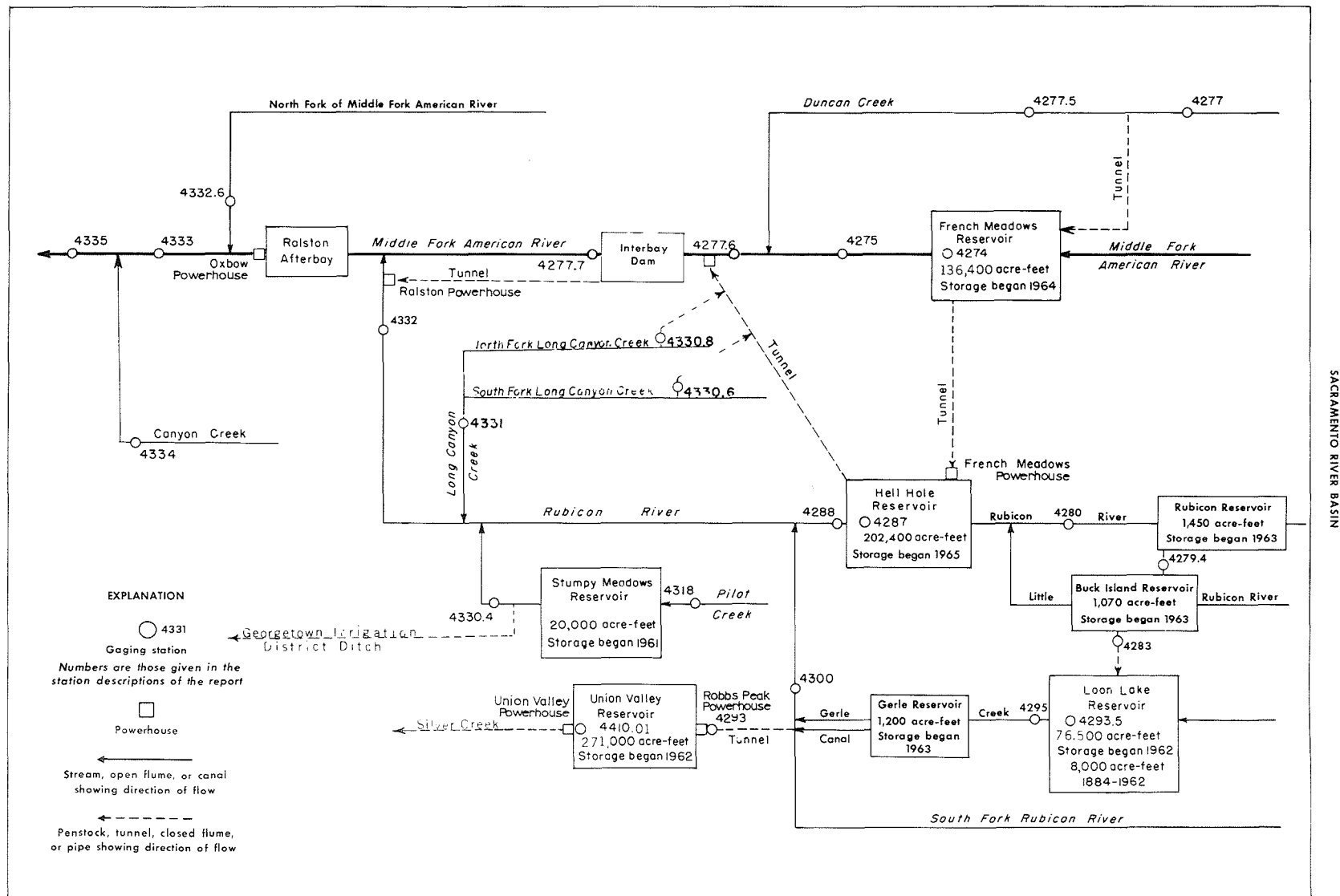


FIGURE 16.--Schematic diagram showing diversions and storage in Middle Fork American and Rubicon river basins.

## SACRAMENTO RIVER BASIN

## 11427400 FRENCH MEADOWS RESERVOIR NEAR FORESTHILL, CALIF.

LOCATION.--Lat 39°06'32", long 120°25'49", in SW¼NE¼ sec.32, T.15 N., R.14 E., Placer County, Tahoe National Forest, on left bank 2.2 miles upstream from dam on Middle Fork American River, 6.9 miles upstream from Chipmunk Creek, and 21 miles northeast of Foresthill.

DRAINAGE AREA.--47.0 sq mi.

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Placer County Water Agency).

EXTREMES.--Current year: Maximum contents, 133,700 acre-ft July 5, 6 (elevation, 5,261.1 ft); minimum, 43,600 acre-ft Mar. 1 (elevation, 5,178.5 ft).

Period of record: Maximum contents, 137,000 acre-ft May 19, 1966 (elevation, 5,263.9 ft); minimum since reservoir first filled, 43,600 acre-ft Mar. 1, 1971 (elevation, 5,178.5 ft).

REMARKS.--Reservoir is formed by rockfill dam with earth core. Storage began Dec. 21, 1964. Usable capacity, 125,600 acre-ft between elevations 5,125 ft (minimum operating level) and 5,263 ft (top of radial gates). Dead storage, 10,800 acre-ft. Reservoir is used to store water for hydroelectric power. Up to 400 cfs is diverted in reservoir through tunnel from Duncan Creek. Water is released through tunnel to French Meadows powerplant and then into Hell Hole Reservoir on Rubicon River; releases began Dec. 13, 1965. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Middle Fork American and Rubicon River basins.

REVISIONS (WATER YEARS).--WRD Calif. 1966: 1965.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

5,125	10,800	5,200	62,400
5,130	13,100	5,230	94,100
5,150	23,700	5,270	146,500
5,170	37,100		

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73,600	56,100	59,600	50,200	46,800	43,600	55,900	75,100	109,800	133,000	120,000	99,500
2	72,900	55,800	59,900	50,000	46,600	43,700	56,400	75,900	110,100	133,300	119,300	98,800
3	72,300	55,500	59,800	49,800	46,500	43,800	57,000	76,700	110,500	133,400	118,700	98,200
4	71,600	55,300	59,300	49,600	46,200	43,900	57,700	77,500	111,000	133,600	118,000	97,500
5	71,000	55,600	58,800	49,300	46,000	43,900	58,500	78,100	111,600	133,700	117,400	96,800
6	70,300	55,600	58,300	49,100	45,700	44,000	59,300	78,800	112,600	133,700	116,700	96,100
7	69,600	55,400	57,900	49,000	45,500	44,100	60,200	79,500	113,900	133,400	116,100	95,400
8	68,900	55,500	57,500	48,800	45,200	44,100	60,700	80,500	115,200	133,200	115,400	94,700
9	68,200	55,800	57,100	48,600	45,000	44,200	61,400	81,300	116,300	132,800	114,700	94,000
10	67,600	56,000	56,700	48,500	44,800	44,300	62,300	82,700	117,500	132,200	114,000	93,300
11	66,900	56,300	56,100	48,500	44,700	44,400	62,800	84,300	118,700	131,800	113,300	92,600
12	66,200	56,600	55,600	48,400	44,700	44,800	63,600	85,800	119,900	131,400	112,600	91,900
13	65,500	56,700	55,100	48,300	44,700	45,000	64,400	87,300	121,000	130,900	112,000	91,200
14	64,800	56,800	54,500	48,200	44,700	45,100	65,200	88,900	122,100	130,400	111,400	90,500
15	64,200	56,900	54,100	48,000	44,700	45,300	66,300	90,600	123,200	130,000	110,600	89,800
16	63,500	56,900	53,700	47,900	45,100	45,400	67,400	92,100	124,300	129,400	110,000	89,200
17	62,700	56,900	53,200	48,000	45,600	45,600	68,400	93,400	125,900	129,000	109,300	88,500
18	62,100	57,000	52,600	48,600	45,800	45,700	69,100	94,500	125,700	128,500	108,600	87,800
19	61,400	56,800	52,100	49,000	45,700	45,800	69,700	95,700	126,400	127,900	108,000	87,100
20	60,700	56,500	51,500	49,400	45,500	46,000	70,300	97,000	127,000	127,500	107,400	86,500
21	60,000	56,500	51,300	49,300	45,300	46,300	70,800	98,100	127,500	127,000	106,600	86,000
22	59,500	56,500	51,300	49,200	45,100	46,500	71,200	99,000	127,900	126,400	106,000	85,400
23	59,000	56,300	51,200	48,800	44,700	47,000	71,500	100,200	128,500	125,600	105,400	84,700
24	58,300	56,400	51,000	48,400	44,500	47,500	72,000	101,600	128,900	125,100	104,900	83,900
25	57,700	58,000	50,800	48,000	44,300	48,500	72,400	103,300	129,300	124,400	104,200	83,200
26	57,000	58,600	50,700	47,800	43,900	51,000	72,700	104,900	131,100	123,800	103,600	82,500
27	57,000	58,900	50,500	47,500	44,000	52,100	72,900	106,000	131,800	123,200	102,800	81,900
28	56,600	59,300	50,400	47,400	43,800	52,900	73,200	106,700	132,200	122,500	102,200	81,100
29	56,300	59,500	50,500	47,200	-----	53,600	73,600	107,600	132,500	122,000	101,500	80,600
30	56,100	59,500	50,500	47,000	-----	54,500	74,200	108,300	132,800	121,300	100,800	79,900
31	56,100	-----	50,300	47,000	-----	55,200	-----	109,100	-----	120,700	100,200	-----
MAX	73,600	59,500	59,900	50,200	46,800	55,200	74,200	109,100	132,800	133,700	120,000	99,500
MIN	56,100	55,300	50,300	47,000	43,800	43,600	55,900	75,100	109,800	120,700	100,200	79,900
(a)	5,193.1	5,196.9	5,186.6	5,182.6	5,178.7	5,192.2	5,211.9	5,242.5	5,260.4	5,251.5	5,235.2	5,217.3
(b)	-18,300	+3,400	-9,200	-3,300	-3,200	+11,400	-19,000	+34,900	-23,700	-12,100	-20,500	-20,300
CAL YR 1970	b -11,700											
WTR YR 1971	b +5,500											

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11427500 MIDDLE FORK AMERICAN RIVER AT FRENCH MEADOWS, CALIF.

LOCATION.--Lat 39°06'35", long 120°28'49", in W $\frac{1}{2}$ NW $\frac{1}{4}$  sec.36, T.15 N., R.13 E., Placer County, Tahoe National Forest, on left bank 0.6 mile downstream from French Meadows Dam, 4.1 miles upstream from Chipmunk Creek, and 14 miles south of Cisco.

DRAINAGE AREA.--47.9 sq mi.

PERIOD OF RECORD.--October 1951 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,920 ft (from topographic map). Prior to Oct. 1, 1962, at site 0.8 mile upstream at different datum.

AVERAGE DISCHARGE.--13 years (1951-64, prior to regulation by French Meadows Reservoir), 149 cfs (107,900 acre-ft per year); 7 years (1964-71), 31.9 cfs (23,110 acre-ft per year), unadjusted.

EXTREMES.--Current year: Maximum discharge, 69 cfs Mar. 26 (gage height, 4.92 ft); minimum daily, 7.1 cfs Sept. 17-30.

Period of record: Maximum discharge, 21,500 cfs Jan. 31, 1963 (gage height, 14.20 ft), from rating curve extended above 1,100 cfs on basis of maximum flow at former site; minimum, 0.3 cfs Oct. 4, 5, 21-25, 1960, Oct. 5, 6, 1961. Maximum discharge since construction of French Meadows Dam in 1964, 1,310 cfs Apr. 30, 1965 (gage height, 7.68 ft); minimum daily, 0.8 cfs Oct. 22, 25, 1964.

REMARKS.--Records good. Flow regulated by French Meadows Reservoir 0.6 mile upstream beginning in December 1964 (see sta 11427400). Diversions from Duncan Creek to French Meadows Reservoir since December 1964 and from French Meadows Reservoir to Hell Hole Reservoir since December 1965. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	7.9	10	9.0	11	10	14	16	12	11	10	10
2	8.7	7.9	9.7	9.0	11	10	14	15	11	11	10	10
3	8.4	7.9	9.7	9.0	11	10	14	16	11	11	10	10
4	8.1	8.1	9.7	9.3	11	10	14	16	11	10	10	10
5	8.1	10	10	9.3	11	10	15	15	11	10	10	10
6	8.1	9.0	10	9.3	11	10	15	15	11	10	10	10
7	8.1	9.0	10	9.0	11	10	15	15	11	10	10	10
8	8.1	8.4	13	9.0	11	10	15	16	11	10	10	8.7
9	8.1	9.0	13	9.0	11	9.7	15	16	13	10	10	7.9
10	8.1	8.7	11	9.3	11	9.3	17	16	12	10	10	7.9
11	8.1	9.0	10	9.3	12	9.7	15	16	12	10	10	7.9
12	8.1	9.3	10	9.0	13	15	16	15	12	10	10	7.9
13	8.1	8.7	10	9.3	13	13	16	15	11	10	10	7.6
14	8.1	8.4	9.7	8.7	13	11	16	15	11	13	10	7.6
15	8.1	8.4	9.3	9.0	13	11	17	14	10	10	10	7.6
16	8.1	8.4	9.7	9.3	13	11	17	14	10	10	10	7.3
17	8.1	8.1	9.7	11	13	11	16	13	10	10	10	7.1
18	8.1	8.4	9.3	11	12	11	15	13	10	10	10	7.1
19	8.1	8.4	9.3	11	12	11	14	13	10	10	10	7.1
20	8.4	8.4	9.3	11	11	12	14	13	10	10	10	7.1
21	8.1	8.4	9.3	11	11	12	13	13	10	10	10	7.1
22	8.1	8.4	9.3	11	11	12	13	13	10	10	10	7.1
23	8.7	8.4	9.3	11	11	17	13	13	10	10	10	7.1
24	8.4	9.3	9.3	11	11	17	13	13	10	10	10	7.1
25	8.1	16	9.3	11	10	25	12	13	10	10	10	7.1
26	8.1	13	9.3	11	10	47	12	13	12	10	10	7.1
27	8.1	9.7	9.3	11	10	21	13	13	11	10	10	7.1
28	7.9	9.7	9.3	11	10	17	14	12	11	10	10	7.1
29	7.9	11	9.0	11	-----	16	15	12	11	10	10	7.1
30	7.9	10	9.0	10	-----	16	15	12	11	10	10	7.1
31	7.9	-----	9.0	10	-----	15	-----	12	-----	10	9.7	-----
TOTAL	253.3	275.3	303.8	308.8	319	429.7	437	436	326	313	309.7	239.8
MEAN	8.17	9.18	9.80	9.96	11.4	13.9	14.6	14.1	10.9	10.1	9.99	7.99
MAX	9.0	16	13	11	13	47	17	16	13	11	10	10
MIN	7.9	7.9	9.0	8.7	10	9.3	12	12	10	9.7	7.1	7.1
AC-FT	502	546	603	613	633	852	867	865	647	621	614	476
(a)	17,950	2,530	14,070	10,010	11,460	1,570	1,860	6,860	8,240	18,530	20,700	20,020

CAL YR 1970 TOTAL 4,293.9 MEAN 11.8 MAX 101 MIN 7.9 AC-FT 8,520  
WTR YR 1971 TOTAL 3,951.4 MEAN 10.8 MAX 47 MIN 7.1 AC-FT 7,840

a Diversion, in acre-feet, from French Meadows Reservoir to Hell Hole Reservoir through French Meadows powerplant.

## SACRAMENTO RIVER BASIN

## 11427700 DUNCAN CREEK NEAR FRENCH MEADOWS, CALIF.

LOCATION.--Lat 39°08'09", long 120°28'39", in NE¼NW¼ sec.24, T.15 N., R.13 E., Placer County, Tahoe National Forest, on left bank 0.2 mile upstream from diversion dam, 0.5 mile downstream from Little Duncan Creek, 2 miles northwest of French Meadows, and 20 miles northeast of Foresthill.

DRAINAGE AREA.--9.94 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 5,270 ft (from topographic map). Prior to Sept. 3, 1965, at site 150 ft upstream at datum 9.56 ft higher.

AVERAGE DISCHARGE.--11 years, 36.5 cfs (26,440 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 268 cfs Nov. 25 (gage height, 7.21 ft); minimum daily, 0.39 cfs Oct. 1-6.

Period of record: Maximum discharge, 3,650 cfs Dec. 22, 1964 (gage height, 10.6 ft, from floodmarks), from rating curve extended above 400 cfs on basis of computation of flow over diversion dam; minimum daily, 0.2 cfs Sept. 23-25, 1964.

REMARKS.--Records good. No storage or diversion above station. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by the Placer County Water Agency under general supervision of Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WRD Calif. 1965: 1963.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	2.2	20	15	36	21	74	89	82	36	2.9	1.3
2	.39	2.0	16	14	38	21	71	91	74	31	2.7	1.3
3	.39	1.9	14	15	36	21	71	92	74	27	2.5	1.3
4	.39	7.3	20	15	33	21	75	89	81	24	2.5	1.3
5	.39	46	24	14	31	19	86	85	97	22	2.5	1.1
6	.39	15	29	14	30	19	86	83	126	19	2.4	1.1
7	.44	9.9	25	14	29	19	79	89	151	17	2.4	1.1
8	.50	9.5	34	14	29	19	70	107	164	16	2.2	1.0
9	.50	31	39	14	28	19	71	108	162	14	2.0	1.0
10	.50	22	32	15	31	19	75	142	157	14	2.0	.95
11	.50	29	30	16	39	19	69	153	153	12	1.7	.95
12	.50	27	28	16	46	26	75	162	157	12	1.7	.95
13	.50	12	26	16	48	24	79	166	146	10	1.6	.86
14	.50	9.5	24	16	48	21	89	176	138	9.5	1.6	.78
15	.50	7.6	23	17	49	20	103	185	140	8.8	1.5	.63
16	.50	6.4	21	18	48	21	107	178	140	8.4	1.5	.63
17	.50	5.4	19	69	43	23	95	166	130	7.7	1.4	.63
18	.50	4.9	19	72	39	24	78	142	114	7.7	1.4	.70
19	.56	4.4	19	61	37	26	71	144	103	6.7	1.4	.70
20	2.0	3.7	19	58	34	30	69	155	94	6.1	1.4	.70
21	2.2	3.5	20	52	32	32	60	144	86	5.8	1.3	.70
22	4.7	3.3	18	43	30	32	54	130	76	5.8	1.3	.70
23	4.4	3.3	18	40	28	39	49	146	67	5.2	1.3	.70
24	4.7	11	18	37	27	51	46	173	58	4.7	1.3	.70
25	2.9	164	18	34	26	74	43	196	50	4.4	1.1	.70
26	2.5	69	17	33	24	190	40	196	123	3.9	1.1	.95
27	2.0	37	15	33	23	117	41	162	88	3.7	1.3	1.5
28	1.9	30	15	33	22	97	46	134	61	3.5	1.3	1.1
29	2.2	29	15	33	-----	91	59	121	48	3.5	1.3	1.1
30	2.0	26	15	35	-----	91	75	112	41	3.3	1.3	2.7
31	2.0	-----	15	36	-----	81	-----	97	-----	3.1	1.3	-----
TOTAL	42.34	632.8	665	912	964	1,327	2,106	4,213	3,181	355.8	53.2	29.83
MEAN	1.37	21.1	21.5	29.4	34.4	42.8	70.2	136	106	11.5	1.72	.99
MAX	4.7	164	39	72	49	190	107	196	164	36	2.9	2.7
MIN	.39	1.9	14	14	22	19	40	83	41	3.1	1.1	.63
AC-FT	84	1,260	1,320	1,810	1,910	2,630	4,180	8,360	6,310	706	106	59

CAL YR 1970 TOTAL 14,140.93 MEAN 38.7 MAX 1,210 MIN .39 AC-FT 28,050  
WTR YR 1971 TOTAL 14,481.97 MEAN 39.7 MAX 196 MIN .39 AC-FT 28,720

PEAK DISCHARGE (BASE, 250 CFS).--Nov. 25 (1415) 268 cfs (7.21 ft); June 26 (1500) 265 cfs (7.20 ft).

## 11427750 DUNCAN CREEK BELOW DIVERSION DAM, NEAR FRENCH MEADOWS, CALIF.

LOCATION.--Lat 39°07'59", long 120°28'58", in NE¼SE¼ sec.23, T.15 N., R.13 E., Placer County, Tahoe National Forest, on right bank 800 ft downstream from unnamed right bank tributary, 1,000 ft downstream from Duncan Creek diversion dam, and 20 miles northeast of Foresthill.

DRAINAGE AREA.--10.5 sq mi.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,210 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 16.9 cfs (12,240 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 225 cfs Mar. 26 (gage height, 3.32 ft); minimum daily, 0.44 cfs Oct. 1-6.

Period of record: Maximum discharge, 3,640 cfs Dec. 22, 1964 (gage height, 8.74 ft, in gage well, 10.0 ft, from floodmarks), from rating curve extended above 400 cfs on basis of computation of flow over diversion dam of maximum flow; no flow at times in 1965, 1966.

REMARKS.--Records good. Flow is diverted above station through Duncan Creek diversion tunnel to French Meadows Reservoir (see sta 11427400). Maximum design flow of tunnel is 400 cfs. See schematic diagram of Middle Fork American and Rubicon River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	1.2	3.8	3.6	8.1	5.4	15	18	9.9	6.6	1.8	.89
2	.44	1.2	3.8	3.6	8.1	5.4	15	16	9.9	5.0	1.7	.83
3	.44	1.1	3.8	3.6	7.3	5.4	15	15	9.6	3.9	1.7	.83
4	.44	3.9	3.9	3.4	6.6	5.4	16	15	9.6	3.4	1.7	.77
5	.44	16	4.2	3.4	5.9	5.2	17	14	9.9	3.4	1.6	.77
6	.44	8.4	4.3	3.4	5.7	5.0	16	13	9.9	3.1	1.6	.72
7	.48	5.4	4.3	3.4	5.9	5.2	15	13	9.9	2.9	1.6	.77
8	.52	3.3	5.9	3.6	5.9	5.2	14	14	9.9	2.5	1.6	.72
9	.52	10	6.6	3.9	6.1	5.4	14	14	9.9	2.2	1.6	.66
10	.52	9.3	5.4	3.9	7.6	5.2	15	15	9.9	2.2	1.6	.66
11	.52	18	5.2	3.9	11	5.0	14	15	9.6	2.1	1.6	.66
12	.52	12	5.2	3.8	14	7.1	15	15	9.6	2.0	1.5	.61
13	.52	6.1	5.0	3.8	15	6.1	15	15	9.6	2.0	2.5	.61
14	.52	5.7	4.8	3.9	17	5.7	18	15	9.6	2.1	1.8	.57
15	.48	3.9	4.6	4.1	17	5.4	25	14	9.6	2.0	1.8	.57
16	.48	2.9	5.0	4.5	15	5.7	27	14	9.9	2.0	1.7	.57
17	.48	2.2	4.8	12	13	5.9	18	13	11	1.9	1.6	.57
18	.52	1.5	4.5	21	11	6.1	14	13	10	1.9	1.6	.57
19	.61	.89	4.3	19	9.6	6.6	13	13	9.9	1.9	1.5	.66
20	1.5	.83	4.3	16	8.7	7.6	13	12	9.9	1.9	1.4	.66
21	1.5	.77	4.3	13	8.1	8.4	13	12	9.9	1.9	1.4	.66
22	3.4	.77	3.9	10	7.6	8.4	12	12	9.9	1.9	1.3	.66
23	3.0	.77	3.9	9.3	7.1	10	12	12	9.6	1.9	1.3	.66
24	3.8	1.2	3.8	7.6	6.3	12	12	12	9.6	1.9	1.3	.66
25	2.1	49	3.8	7.1	6.1	16	12	15	8.4	1.9	1.3	.72
26	1.8	34	3.8	6.8	5.9	123	12	12	15	1.8	1.2	.89
27	1.3	7.0	3.8	7.3	5.7	39	12	11	8.4	1.8	1.0	1.2
28	1.2	4.3	3.6	7.3	5.9	19	13	11	8.4	1.8	.96	1.0
29	1.3	4.3	3.9	7.8	-----	19	13	11	8.1	1.8	.96	1.1
30	1.2	3.9	3.8	8.1	-----	18	15	10	7.8	1.8	.89	2.2
31	1.3	-----	3.8	8.4	-----	16	-----	10	-----	1.8	.96	-----
TOTAL	32.73	221.83	136.1	220.5	251.2	402.8	450	414	292.2	75.3	46.07	23.42
MEAN	1.06	7.39	4.39	7.11	8.97	13.0	15.0	13.4	9.74	2.43	1.49	.78
MAX	3.8	49	6.6	21	17	123	27	18	15	6.6	2.5	2.2
MIN	.44	.77	3.6	3.4	5.7	5.0	12	10	7.8	1.8	.89	.57
AC-FT	65	440	270	437	498	799	893	821	580	149	91	46

CAL YR 1970 TOTAL 6,956.03 MEAN 19.1 MAX 989 MIN .40 AC-FT 13,800  
WTR YR 1971 TOTAL 2,566.15 MEAN 7.03 MAX 123 MIN .44 AC-FT 5,090





## 11427770 MIDDLE FORK AMERICAN RIVER BELOW INTERBAY DAM, NEAR FORESTHILL, CALIF.

LOCATION.--Lat 39°01'35", long 120°36'09", in SW¼SE¼ sec.26, T.14 N., R.12 E., Placer County, Tahoe National Forest, on right bank 500 ft downstream from Interbay Dam, 3.3 miles upstream from Big Mosquito Creek, and 10.6 miles east of Foresthill.

DRAINAGE AREA.--89.1 sq mi.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 2,470 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 66.0 cfs (47,820 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,100 cfs Mar. 31 (gage height, 4.24 ft); minimum daily, 13 cfs Sept. 24.

Period of record: Maximum discharge, 3,770 cfs Jan. 21, 1970 (gage height, 4.24 ft); minimum daily, 1.0 cfs Oct. 25-30, 1966, Jan. 19, 1967.

REMARKS.--Flow regulated by French Meadows Reservoir (see sta 11427400) and after Aug. 22, 1966, by Interbay Reservoir (capacity, 130 acre-ft between normal operating limits of 2,502.0 and 2,526.0 ft). Water is diverted from Hell Hole Reservoir through tunnel to Middle Fork powerplant and re-diverted to Ralston powerplant. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	19	19	21	22	21	25	28	26	23	24	23
2	20	19	19	20	22	21	25	28	25	23	24	23
3	20	19	19	20	22	21	25	28	26	23	24	23
4	20	18	19	20	22	21	25	28	26	23	24	23
5	20	18	19	20	22	21	218	27	26	23	24	23
6	20	18	19	21	22	21	332	27	26	23	24	23
7	20	19	19	21	22	21	321	27	26	24	24	23
8	20	19	18	21	22	21	203	27	26	23	24	23
9	20	19	18	22	22	21	26	27	26	23	24	23
10	20	18	19	22	22	21	26	27	26	23	24	23
11	20	18	19	22	22	21	26	27	26	23	24	23
12	20	18	19	22	22	21	26	27	26	23	24	23
13	20	18	19	22	22	21	26	28	26	23	24	23
14	20	18	19	22	22	21	26	28	26	23	24	23
15	20	18	19	22	22	21	35	27	25	23	24	24
16	20	18	20	22	22	21	28	28	26	23	24	24
17	20	18	20	22	22	22	28	27	26	23	24	24
18	20	18	20	22	22	20	27	27	26	23	24	24
19	20	18	20	22	22	21	27	27	26	23	24	24
20	20	18	20	22	22	21	27	27	26	23	24	24
21	20	18	20	22	22	21	27	27	26	23	23	24
22	20	18	20	22	22	21	27	27	26	24	23	24
23	20	18	20	22	21	21	27	27	26	24	23	14
24	20	17	20	22	21	21	27	27	26	24	23	13
25	20	18	20	22	21	21	27	27	26	24	23	22
26	19	18	20	22	21	375	27	27	26	24	23	22
27	19	17	20	22	21	55	27	26	27	24	23	22
28	19	17	20	22	21	26	27	26	39	24	23	23
29	19	17	20	22	-----	26	28	26	24	26	23	23
30	19	17	21	22	-----	26	28	26	24	24	23	23
31	20	-----	21	22	-----	39	-----	26	-----	24	23	-----
TOTAL	615	541	605	670	610	1,072	1,774	839	788	726	733	676
MEAN	19.8	18.0	19.5	21.6	21.8	34.6	59.1	27.1	26.3	23.4	23.6	22.5
MAX	20	19	21	22	22	375	332	28	39	26	24	24
MIN	19	17	18	20	21	20	25	26	24	23	23	13
AC-FT	1,220	1,070	1,200	1,330	1,210	2,130	3,520	1,660	1,560	1,440	1,450	1,340
(a)	49,010	30,220	53,050	34,680	40,000	16,300	10,350	11,970	26,080	44,110	53,090	51,940

CAL YR 1970 TOTAL 17,900.2 MEAN 49.0 MAX 2,150 MIN 7.4 AC-FT 35,510  
WTR YR 1971 TOTAL 9,649.0 MEAN 26.4 MAX 375 MIN 13 AC-FT 19,140

a Diversion, in acre-feet, to Ralston powerplant.

## 11427940 RUBICON-ROCKBOUND TUNNEL NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 38°59'20", long 120°13'31", in SE $\frac{1}{4}$  sec.8, T.13 N., R.16 E., El Dorado County, Eldorado National Forest, on right bank at tunnel intake 100 ft upstream from diversion dam on Rubicon River, 2.5 miles upstream from Rubicon Springs, and 6.5 miles southwest of Meeks Bay.

PERIOD OF RECORD.--December 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,533.23 ft above mean sea level (levels by Sacramento Municipal Utility District). Auxiliary water-stage recorder since Aug. 26, 1966, 300 ft downstream from tunnel outlet at different datum.

AVERAGE DISCHARGE.--8 years, 109 cfs (78,970 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 1,120 cfs Dec. 23, 1964; no flow at times in most years.

REMARKS.--Records good. Tunnel diverts water from Rubicon River to Rockbound Lake. See schematic diagram of Middle Fork American and Rubicon River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.20	36	22	45	26	65	273	141	309	35	1.1
2	.16	.20	41	22	43	25	65	292	129	324	31	1.1
3	.16	.20	43	20	39	24	69	240	163	290	27	1.1
4	.16	.42	42	18	36	23	85	165	200	256	24	.95
5	.16	156	44	17	34	23	111	132	268	244	22	.95
6	.12	133	42	17	32	21	140	161	433	234	20	.95
7	.16	50	38	17	30	21	117	154	612	227	18	.95
8	.16	41	39	17	30	21	81	212	688	212	15	.85
9	.16	96	42	17	31	23	82	215	648	192	13	.85
10	.16	132	39	19	34	22	98	379	540	176	11	.85
11	.16	85	33	19	52	23	77	492	565	159	9.8	.85
12	.16	167	31	19	69	26	98	424	620	140	9.0	.85
13	.16	66	30	20	81	27	143	478	680	138	7.7	.85
14	.16	35	29	23	77	25	147	509	644	140	6.3	.85
15	.16	26	28	24	73	22	185	576	644	154	5.1	.75
16	.16	19	30	23	61	22	228	526	668	152	3.2	.75
17	.16	16	31	113	49	23	185	367	652	156	2.4	.75
18	.16	14	34	397	39	22	117	309	604	158	2.0	50
19	.20	14	30	344	38	24	84	365	676	140	1.8	47
20	.24	12	28	229	35	32	94	430	672	83	1.7	14
21	.20	10	28	138	31	41	82	409	600	5.4	1.7	6.3
22	.24	9.0	27	95	30	43	64	242	540	41	1.6	3.4
23	.30	8.5	25	71	28	45	54	348	520	67	1.6	2.2
24	.24	23	24	58	27	45	55	548	495	62	1.6	1.6
25	.24	835	23	49	28	62	52	676	481	58	1.4	.95
26	.20	444	23	45	26	147	49	660	733	54	1.4	.75
27	.20	133	24	45	25	89	51	403	760	50	1.4	.75
28	.20	68	24	44	26	63	75	254	418	50	1.4	.75
29	.20	50	24	44	-----	140	129	202	311	50	1.2	.75
30	.20	44	25	44	-----	106	194	212	299	45	1.2	1.8
31	.20	-----	24	45	-----	91	-----	176	-----	40	1.1	-----
TOTAL	5.70	2,687.52	981	2,075	1,149	1,347	3,076	10,829	15,404	4,406.4	280.6	145.55
MEAN	.18	89.6	31.6	66.9	41.0	43.5	103	349	513	142	9.05	4.85
MAX	.30	835	44	397	81	147	228	676	760	324	35	50
MIN	.12	.20	23	17	25	21	49	132	129	5.4	1.1	.75
AC-FT	11	5,330	1,950	4,120	2,280	2,670	6,100	21,480	30,550	8,740	557	289

CAL YR 1970 TOTAL 39,975.90 MEAN 110 MAX 969 MIN .12 AC-FT 79,290  
WTR YR 1971 TOTAL 42,386.77 MEAN 116 MAX 835 MIN .12 AC-FT 84,070

## 11428000 RUBICON RIVER AT RUBICON SPRINGS, NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°01'10", long 120°14'46", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.31, T.14 N., R.16 E., El Dorado County, El Dorado National Forest, on right bank 200 ft downstream from Rubicon Springs, 0.7 mile upstream from Miller Creek, and 7 miles west of Meeks Bay.

DRAINAGE AREA.--31.4 sq mi.

PERIOD OF RECORD.--February 1910 to March 1914 (published as "at Rubicon Springs"), October 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,052.97 ft above mean sea level. Feb. 1, 1910, to Mar. 31, 1914, nonrecording gage or water-stage recorder at site 0.4 mile downstream at different datum.

AVERAGE DISCHARGE (adjusted for diversion into Rubicon-Rockbound tunnel).--18 years (1910-13, 1956-71), 122 cfs (88,390 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,850 cfs June 26 (gage height, 9.08 ft), from rating curve extended as explained below; minimum daily, 0.72 cfs Oct. 19.

Period of record: Maximum discharge, 11,500 cfs Feb. 1, 1963 (gage height, 14.28 ft), from rating curve extended above 1,200 cfs on basis of slope-conveyance computation of maximum flow; no flow at times in some years.

Flood of December 1955 reached a stage of 13.0 ft, from floodmarks, present site and datum (discharge, 9,270 cfs).

REMARKS.--Records good. Low summer flow, beginning in 1950, augmented by release from streamflow maintenance dams on Lakes Clyde, Lois, Middle Velma, and Schmidell (total controlled capacity, 555 acre-ft). Flow below 1,200 cfs controlled by Rubicon diversion dam 5.5 miles upstream. Diversion to Rubicon-Rockbound tunnel began Dec. 26, 1963. (See sta 11427940). See schematic diagram of Middle Fork American and Rubicon River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	2.3	12	7.6	17	11	30	79	40	8.0	5.8	2.7
2	4.5	2.0	12	7.6	17	11	35	72	42	7.2	5.8	2.7
3	4.5	2.0	11	7.5	16	11	38	61	44	6.6	5.8	2.6
4	4.3	5.0	11	7.5	15	11	45	43	42	6.1	5.7	2.2
5	4.3	4.2	11	7.4	14	10	55	44	49	5.7	5.6	2.1
6	4.3	8.0	10	7.3	14	10	58	45	58	5.3	5.4	2.1
7	4.3	9.6	10	7.5	14	10	46	56	58	5.5	5.2	2.1
8	4.1	9.0	10	7.8	14	10	33	57	53	6.9	5.4	2.0
9	4.1	14	11	8.2	15	11	43	64	48	6.7	5.3	2.2
10	3.5	11	11	9.1	19	11	49	100	44	6.4	5.3	2.2
11	3.3	11	10	9.3	30	11	36	85	43	6.2	5.1	2.1
12	3.0	19	9.6	9.0	35	14	48	83	41	6.0	5.1	2.1
13	2.7	6.6	9.0	8.5	36	13	57	84	38	5.9	5.1	2.0
14	1.7	5.3	8.5	8.4	33	12	65	93	33	5.8	5.1	2.0
15	1.1	4.5	8.2	8.7	36	11	79	89	31	6.1	5.1	2.0
16	.84	4.0	9.0	8.7	28	12	69	71	29	5.9	5.1	2.0
17	.78	3.7	10	6.9	20	13	52	54	25	6.1	5.1	2.0
18	.78	3.5	9.5	8.0	17	13	30	54	22	6.0	5.1	1.9
19	.72	3.3	9.3	5.3	15	13	27	62	21	5.6	5.1	2.0
20	1.1	3.3	9.0	4.1	14	18	36	71	19	5.4	5.1	1.9
21	1.7	3.2	8.6	2.7	13	22	26	55	16	5.5	5.3	2.2
22	2.9	3.2	8.2	2.0	13	23	21	40	14	5.8	5.5	2.7
23	3.5	3.0	7.8	1.7	12	31	20	58	13	6.0	5.3	2.7
24	5.8	14	7.4	1.5	12	34	23	73	12	5.9	5.5	2.7
25	4.5	42.2	7.2	1.4	13	57	19	76	11	5.9	6.5	2.7
26	3.5	4.3	6.8	1.4	12	107	19	63	889	5.9	3.7	2.8
27	3.0	1.5	7.0	1.5	11	47	26	58	149	5.8	3.0	2.9
28	3.0	1.2	7.4	1.6	11	38	4.5	46	16	5.8	2.9	2.7
29	3.0	1.2	8.0	1.6	-----	42	61	38	11	5.8	2.8	2.8
30	2.9	1.2	7.8	1.7	-----	52	73	35	9.3	5.8	2.7	4.2
31	2.9	-----	7.7	1.7	-----	39	-----	41	-----	5.8	2.7	-----
TOTAL	95.12	708.5	285.0	561.1	516	728	1,264	1,950	1,920.3	187.4	152.2	71.3
MEAN	3.07	23.6	9.19	18.1	18.4	23.5	42.1	62.9	64.0	6.05	4.91	2.38
MAX	5.8	42.2	12	8.0	36	107	79	100	889	8.0	6.5	4.2
MIN	.72	2.0	6.8	7.3	11	10	19	35	9.3	5.3	2.7	1.9
AC-FT	189	1,410	565	1,110	1,020	1,440	2,510	3,870	3,810	372	302	141
MEAN a	3.25	113	41.0	85.1	59.4	66.8	145	412	577	148	14.0	7.23
AC-FT a	200	6,740	2,520	5,230	3,300	4,110	8,610	25,350	34,360	9,110	859	430

CAL YR 1970 TOTAL 9,734.12 MEAN 26.7 MAX 1,610 MIN .72 AC-FT 19,310 MEAN a 136 AC-FT a 98,610  
WTR YR 1971 TOTAL 8,438.92 MEAN 23.1 MAX 889 MIN .72 AC-FT 16,740 MEAN a 139 AC-FT a 100,820

a Adjusted for diversion to Rubicon-Rockbound tunnel.

## SACRAMENTO RIVER BASIN

## 11428300 BUCK-LOON TUNNEL NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°00'15", long 120°15'20", in NW $\frac{1}{4}$  sec.6, T.13 N., R.16 E., El Dorado County, Eldorado National Forest, on right bank at tunnel intake near left abutment of diversion dam, 7.6 miles southwest of Meeks Bay.

PERIOD OF RECORD.--November 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,425.0 ft above mean sea level (levels by Sacramento Municipal Utility District).

AVERAGE DISCHARGE.--8 years, 139 cfs (100,700 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 1,240 cfs Dec. 23, 1964; no flow many days in each year.

REMARKS.--Records good except those for period of indefinite stage discharge relation, which are fair. Tunnel diverts from Buck Island Lake and discharges into Loon Lake. Stop logs are normally installed in the tunnel entrance in the summer and removed each fall to raise the level of Buck Island Lake for recreation purposes.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	78	32	55	34	100	341	206	391	33	.24
2		0	79	33	53	31	84	405	166	410	27	.24
3		0	71	29	49	30	86	368	193	391	21	.24
4		0	76	29	45	29	98	264	257	346	18	.24
5		86	69	27	42	29	125	194	335	267	16	.24
6		251	64	25	40	26	165	217	514	303	14	.24
7		129	61	25	38	25	171	218	745	295	12	.24
8		70	63	25	37	24	129	277	893	279	10	.24
9		103	72	25	37	25	105	290	903	254	8.6	.24
10		214	64	27	38	26	126	455	755	228	7.4	.24
11		142	54	31	52	26	116	665	738	209	6.8	.24
12		236	48	38	75	34	109	590	787	184	6.8	.24
13		156	44	40	94	36	156	620	876	168	5.6	.24
14		79	42	41	102	32	196	658	869	168	4.7	.24
15		50	40	38	99	29	229	749	823	183	3.5	.24
16		37	53	37	88	26	298	742	860	186	2.3	.24
17		28	57	64	72	27	281	546	848	188	1.5	.24
18		22	52	375	58	26	192	424	794	194	1.0	.23
19		18	48	502	54	26	128	461	816	182	.40	30
20		16	44	336	47	32	116	547	876	153	.24	20
21		13	44	216	41	42	118	599	802	42	.24	16
22		11	40	146	38	50	93	437	701	.24	.24	5.9
23		9.8	36	106	36	58	75	414	665	.24	.24	3.1
24		12	34	81	33	63	70	630	626	14	.24	1.9
25		836	32	68	34	71	68	851	606	51	.24	1.4
26		812	31	60	32	192	65	934	796	54	.24	.97
27		295	33	57	31	163	63	630	1,080	51	.24	.90
28		144	34	55	34	101	79	417	670	46	.24	.64
29		98	38	54	-----	82	138	300	436	45	.24	.53
30		80	36	54	-----	115	234	297	387	44	.24	.83
31		-----	34	54	-----	130	-----	266	-----	39	.24	-----
TOTAL	0	3,947.8	1,571	2,730	1,454	1,640	4,013	14,806	20,023	5,365.48	202.48	109.25
MEAN	0	132	50.7	88.1	51.9	52.9	134	478	667	173	6.53	3.64
MAX	0	836	79	502	102	192	298	934	1,080	410	33	30
MIN	0	0	31	25	31	24	63	194	166	.24	.24	.24
AC-FT	0	7,830	3,120	5,410	2,880	3,250	7,960	29,370	39,720	10,640	402	217

CAL YR 1970 TOTAL 53,557.06 MEAN 147 MAX 1,190 MIN 0 AC-FT 106,200  
WTR YR 1971 TOTAL 55,862.01 MEAN 153 MAX 1,080 MIN 0 AC-FT 110,800

NOTE.--Indefinite stage-discharge relation July 21 to Sept. 20.

## 11428700 HELL HOLE RESERVOIR NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°03'54", long 120°24'50", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.16, T.14 N., R.14 E., Placer County, Eldorado National Forest, on right bank 0.3 mile upstream from Hell Hole Dam on Rubicon River, and 15.6 miles west of Meeks Bay.

DRAINAGE AREA.--114 sq mi.

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Placer County Water Agency).

EXTREMES.--Current year: Maximum contents, 205,800 acre-ft July 12 (elevation, 4,628.6 ft); minimum, 43,100 acre-ft Feb. 11 (elevation, 4,438.6 ft).

Period of record: Maximum contents, 209,500 acre-ft June 17, 1967 (elevation, 4,631.5 ft); minimum since reservoir first filled, 43,100 acre-ft Feb. 11, 1971 (elevation, 4,438.6 ft).

REMARKS.--Reservoir is formed by rockfill dam with earth core. Storage began Dec. 6, 1965. Usable capacity, 202,400 acre-ft between elevations 4,340.0 ft (minimum operating level) and 4,630.0 ft (crest of ogee spillway) above mean sea level. Dead storage, 248 acre-ft. Records represent total contents. See schematic diagram of Middle Fork American and Rubicon River basins.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,340	5,220	4,500	83,000
4,360	9,840	4,550	127,700
4,380	16,200	4,600	171,900
4,400	24,200	4,650	233,400
4,450	49,600		

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122,500	90,500	77,300	53,900	50,000	44,000	63,600	98,900	163,800	205,100	185,600	151,100
2	121,800	89,700	77,000	54,300	49,300	44,300	64,600	100,800	165,000	205,200	184,500	149,800
3	120,700	88,900	76,400	54,800	48,700	44,500	65,700	102,700	166,400	205,300	183,400	148,600
4	119,400	88,200	76,400	54,600	48,200	44,700	66,800	104,200	167,900	205,100	182,200	147,300
5	118,100	88,400	76,200	54,100	47,500	44,900	68,100	105,600	169,700	205,500	181,100	146,100
6	116,900	87,300	75,900	53,700	46,700	45,100	69,600	107,000	172,200	205,500	180,300	144,100
7	115,600	86,000	75,600	53,200	45,900	45,300	70,900	108,600	174,800	205,500	179,700	143,600
8	114,500	84,400	75,500	52,700	45,200	45,300	71,800	110,600	177,500	205,100	178,600	142,400
9	113,200	83,100	75,300	53,200	44,500	45,400	72,900	112,500	180,100	204,700	177,400	141,100
10	112,000	82,700	74,800	53,700	43,700	45,500	74,200	115,200	181,700	205,100	176,400	139,900
11	110,800	81,900	74,200	53,700	43,100	45,700	75,400	117,900	182,900	205,700	175,400	138,800
12	109,500	81,500	73,500	53,300	43,400	45,900	76,500	120,300	185,500	205,800	174,400	137,800
13	108,300	80,700	72,700	52,900	45,000	46,500	77,900	122,900	188,100	204,800	173,200	137,000
14	107,000	79,800	71,900	52,400	46,300	47,000	79,300	125,700	189,500	204,100	172,800	135,800
15	105,800	78,800	71,200	51,800	47,700	47,200	81,000	128,400	191,200	203,400	171,300	134,500
16	104,500	77,600	70,500	52,300	47,700	47,400	82,900	130,700	192,800	202,500	170,300	133,200
17	103,300	76,600	69,800	54,100	46,700	47,700	84,400	133,000	194,200	201,500	169,200	132,000
18	102,100	75,800	69,300	55,100	45,900	47,600	85,500	135,100	194,800	200,600	167,900	130,700
19	101,000	74,700	68,700	55,600	45,300	47,800	86,400	137,400	195,500	199,800	166,600	129,500
20	99,900	74,200	68,000	55,600	44,500	48,400	87,600	140,000	196,000	198,800	165,400	128,200
21	98,700	73,300	66,800	55,400	43,800	49,000	88,500	142,200	196,400	197,800	164,200	127,300
22	98,200	72,200	65,300	55,300	43,500	49,400	89,200	144,000	196,800	196,700	162,900	126,300
23	97,400	71,400	64,000	55,300	43,500	50,200	90,000	146,300	197,700	195,600	161,700	125,000
24	97,100	70,600	62,600	54,900	43,400	51,000	90,800	149,300	198,700	194,500	160,600	123,800
25	96,900	75,100	61,200	54,400	43,300	52,800	91,500	152,200	199,300	193,500	160,000	122,600
26	96,300	76,500	60,000	53,800	43,200	56,600	92,100	155,100	202,700	192,400	158,300	121,500
27	95,200	77,000	58,700	53,000	43,200	58,000	92,900	156,500	204,600	191,200	157,100	120,500
28	94,200	77,600	57,300	52,300	43,700	59,000	94,000	157,700	204,500	190,100	155,900	119,800
29	93,200	78,200	55,800	51,600	-----	60,100	95,400	159,400	204,400	188,900	154,700	118,700
30	92,300	78,100	54,500	51,000	-----	61,500	97,000	161,100	204,700	187,800	153,400	117,500
31	91,400	-----	53,500	50,500	-----	62,600	-----	162,600	-----	186,800	152,300	-----
MAX	122,500	90,500	77,300	55,600	50,000	62,600	97,000	162,600	204,700	205,800	185,600	151,100
MIN	91,400	70,600	53,500	50,500	43,100	44,000	63,600	98,900	163,800	186,800	152,300	117,500
(a)	4,511.2	4,493.2	4,456.4	4,451.5	4,439.7	4,470.8	4,518.5	4,591.6	4,627.7	4,612.9	4,581.8	4,543.8
(b)	-32,300	-13,300	-24,600	-3,000	-6,800	+18,900	+34,400	+65,600	+42,100	-17,900	-34,500	-34,800

CAL YR 1970 b -22,800

WTR YR 1971 b -6,200

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## SACRAMENTO RIVER BASIN

## 11428800 RUBICON RIVER BELOW HELL HOLE DAM, NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°03'24", long 120°24'25", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.21, T.14 N., R.14 E., Placer County, Eldorado National Forest, on right bank 600 ft downstream from outlet of dam and 15.3 miles west of Meeks Bay.

DRAINAGE AREA.--120 sq mi.

PERIOD OF RECORD.--November 1965 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 4,231.52 ft above mean sea level (levels by Placer County Water Agency).

AVERAGE DISCHARGE.--5 years, 35.1 cfs (25,430 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 50 cfs Mar. 26 (gage height, 4.48 ft); minimum daily, 6.2 cfs Sept. 11, 12.

Period of record: Maximum discharge, 2,290 cfs June 18, 1967, including flow over spillway; minimum, no flow Aug. 25 to Sept. 11, 1966.

REMARKS.--Records excellent. Flow regulated by Hell Hole Reservoir beginning December 1965 (see sta 11428700). Water is diverted out of the basin above the station through Buck-Loon tunnel (see sta 11428300). Water is diverted from Middle Fork American River basin by tunnel from French Meadows Reservoir (see sta 11427400) to Hell Hole Reservoir. Water is diverted from Hell Hole Reservoir through a tunnel to Middle Fork powerplant. Diversion began Sept. 8, 1966. See schematic diagram of Middle Fork American and Rubicon River basins. During years when Hell Hole Dam spills, records include flow which bypass the station.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	7.8	14	11	18	18	20	24	27	26	15	7.1
2	9.7	7.8	15	11	18	18	23	25	26	26	15	7.1
3	9.3	7.8	13	11	17	18	23	25	26	26	15	6.8
4	9.3	7.8	13	11	18	18	23	25	26	26	15	6.8
5	9.3	11	15	11	19	18	23	25	27	26	12	6.8
6	8.9	14	14	11	19	17	24	25	28	26	8.5	6.8
7	9.3	13	14	11	18	17	24	25	28	26	8.5	6.5
8	9.3	13	19	11	18	17	24	26	28	26	8.5	6.5
9	8.9	13	15	12	18	17	23	26	27	26	8.5	6.5
10	8.9	12	14	12	19	18	24	27	27	26	8.5	6.5
11	8.9	13	13	12	20	18	24	29	27	26	8.5	6.2
12	8.9	13	13	12	20	23	24	29	27	26	8.5	6.2
13	8.9	12	13	12	20	20	24	29	27	26	8.5	7.5
14	8.5	12	12	12	20	19	24	29	27	26	8.2	9.3
15	8.5	12	12	11	20	19	24	29	27	26	8.2	9.3
16	8.5	12	12	12	20	19	24	29	27	26	8.2	9.3
17	8.5	12	12	19	19	19	25	28	27	26	8.2	9.3
18	8.5	12	12	19	19	19	24	28	26	26	8.2	8.9
19	8.2	12	12	17	19	18	24	28	26	26	8.2	8.5
20	8.2	12	12	16	19	19	24	29	26	26	8.2	8.5
21	8.2	12	12	15	18	19	24	28	26	26	8.2	9.3
22	8.2	12	12	14	18	19	24	28	26	26	7.8	11
23	8.2	11	12	13	18	21	24	29	26	26	7.8	11
24	8.2	12	12	13	18	21	24	29	26	26	7.5	10
25	8.2	19	12	13	18	26	24	29	26	25	7.5	10
26	8.2	15	12	13	18	38	24	29	27	20	7.5	10
27	8.2	13	11	13	18	25	24	28	27	15	7.1	9.7
28	8.2	14	11	16	18	23	24	28	26	15	7.1	9.7
29	8.2	15	12	18	-----	22	24	27	26	15	7.1	9.7
30	7.8	13	12	18	-----	23	24	27	26	15	7.1	9.7
31	7.8	-----	12	18	-----	23	-----	27	-----	15	7.1	-----
TOTAL	267.6	365.2	399	418	522	629	712	849	799	744	279.6	250.5
MEAN	8.63	12.2	12.9	13.5	18.6	20.3	23.7	27.4	26.6	24.0	9.02	8.35
MAX	9.7	19	19	19	20	38	25	29	28	26	15	11
MIN	7.8	7.8	11	11	17	17	20	24	26	15	7.1	6.2
AC-FT	531	724	791	829	1,040	1,250	1,410	1,680	1,580	1,480	555	497
(a)	47,880	27,910	47,980	29,210	32,980	4,940	12	3,130	23,920	45,480	55,020	53,210

CAL YR 1970 TOTAL 6,185.6 MEAN 16.9 MAX 88 MIN 7.8 AC-FT 12,270

WTR YR 1971 TOTAL 6,234.9 MEAN 17.1 MAX 38 MIN 6.2 AC-FT 12,370

a Diversion, in acre-feet, from Hell Hole Reservoir to Middle Fork powerplant.

## 11429300 ROBBS PEAK POWERPLANT NEAR KYBURZ, CALIF.

LOCATION.--Lat 38°53'46", long 120°22'40", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.11, T.12 N., R.14 E., El Dorado County, Eldorado National Forest, in powerhouse on shore of Union Valley Reservoir, 9.5 miles northwest of Kyburz.

PERIOD OF RECORD.--October 1962 to current year. Prior to October 1965, published as Robbs Peak tunnel near Riverton.

GAGE.--Discharge computed from powerplant output. Altitude of gage is 4,880 ft (from topographic map). Prior to October 1965, water-stage recorder and concrete control in abandoned section of canal 0.5 mile upstream at different datum.

AVERAGE DISCHARGE.--9 years, 236 cfs (171,000 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 1,440 cfs Dec. 22-24, 1964; no flow many days during 1965-71.

REMARKS.--Tunnel diverts at South Fork Rubicon River diversion dam in NE $\frac{1}{4}$  sec.27, T.13 N., R.14 E., and discharges into Union Valley Reservoir (see sta 11441001). Water is imported from Rubicon River basin via Rubicon-Rockbound tunnel and Buck-Loon tunnel to Loon Lake, thence via Gerle Creek and Robbs Peak tunnel and powerplant to South Fork American River basin for power development. See schematic diagrams of Middle Fork American and Rubicon River basins and South Fork American River basin.

COOPERATION.--Records furnished by Sacramento Municipal Utility District, rounded to Geological Survey standards.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	273	61	109	76	310	410	425	454	55	11
2		0	356	58	150	77	313	423	461	411	0	160
3		0	356	41	147	91	342	316	502	428	39	199
4		0	153	66	141	80	366	345	478	395	21	260
5		0	184	53	103	82	420	307	466	358	0	26
6		0	203	31	100	70	406	295	531	360	47	0
7		50	203	55	105	63	367	317	588	322	0	544
8		272	196	59	106	78	273	404	586	300	0	445
9		261	213	52	104	67	280	374	554	301	32	598
10		81	163	53	125	91	384	634	524	294	0	628
11		255	156	60	242	88	296	546	517	246	0	637
12		258	74	43	269	141	353	516	548	204	0	125
13		247	132	43	269	144	406	489	544	192	0	549
14		145	139	51	251	110	438	517	448	228	0	659
15		67	52	63	251	101	483	527	540	206	0	639
16		65	81	58	251	122	493	483	494	135	0	611
17		60	146	214	157	132	419	376	597	141	0	648
18		34	139	356	93	129	264	334	805	216	0	621
19		8.1	42	362	121	110	251	370	931	192	0	258
20		5.0	139	310	127	147	288	416	909	172	0	513
21		5.0	54	246	133	97	252	472	906	214	0	695
22		0	109	168	119	178	154	495	844	78	0	558
23		0	4.5	150	113	259	175	622	780	0	0	622
24		0	75	70	91	317	215	662	699	0	0	601
25		243	0	156	98	430	175	696	636	67	0	82
26		216	77	88	100	802	163	704	624	0	0	0
27		414	3.0	149	81	624	175	548	480	42	105	545
28		407	75	104	79	415	252	529	609	37	0	616
29		417	52	62	-----	316	252	494	734	33	0	574
30		395	0	148	-----	453	412	468	448	57	120	477
31		-----	55	147	-----	400	-----	446	-----	0	312	-----
TOTAL	0	3,905.1	3,904.5	3,577	4,035	6,290	9,377	14,535	18,208	6,083	731	12,901
MEAN	0	130	126	115	144	203	313	469	607	196	23.6	430
MAX	0	417	356	362	269	802	493	704	931	454	312	695
MIN	0	0	0	31	79	63	154	295	425	0	0	0
AC-FT	0	7,750	7,740	7,090	8,000	12,480	18,600	28,830	36,120	12,070	1,450	25,590
CAL YR 1970	TOTAL	89,474.60	MEAN	245	MAX	802	MIN	0	AC-FT	177,500		
WTR YR 1971	TOTAL	83,546.60	MEAN	229	MAX	931	MIN	0	AC-FT	165,700		

## SACRAMENTO RIVER BASIN

## 11429350 LOON LAKE NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°00'17", long 120°18'30", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.4, T.13 N., R.15 E., El Dorado County, Eldorado National Forest, on right bank at Loon Lake Dam on Gerle Creek, 2.3 miles upstream from Jerrett Creek, and 11 miles southwest of town of Meeks Bay.

DRAINAGE AREA.--7.94 sq mi.

PERIOD OF RECORD.--December 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Sacramento Municipal Utility District).

EXTREMES.--Current year: Maximum contents, 77,600 acre-ft June 26 (elevation, 6,411.0 ft); minimum, 3,690 acre-ft Nov. 3 (elevation, 6,330.3 ft).

Period of record: Maximum contents, 77,700 acre-ft June 6, 1969 (elevation, 6,411.1 ft); minimum since reservoir first filled, 3,690 acre-ft Nov. 3, 1970 (elevation, 6,330.3 ft).

REMARKS.--Reservoir is formed by an earthfill dam completed Dec. 27, 1963. Storage began Dec. 5, 1963. Usable capacity, 74,100 acre-ft between elevations 6,325 ft (invert of fishwater release valve) and 6,410 ft (crest of spillway) above mean sea level. Dead storage, 2,360 acre-ft. Prior to September 1962, reservoir was formed by granite-block dam built in 1884, capacity, 8,000 acre-ft. Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (see sta 11427940 and 11428300). See schematic diagram of Middle Fork American and Rubicon River basins.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

6,330	3,600
6,340	7,200
6,350	12,500
6,360	19,600
6,370	28,500
6,390	50,000
6,412	79,000

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,470	3,750	5,310	6,360	14,300	18,200	23,800	37,100	65,700	77,300	76,300	74,000
2	4,440	3,720	4,770	6,440	14,400	18,300	24,200	38,100	65,600	77,300	76,300	73,500
3	4,410	3,690	4,470	6,530	14,500	18,400	24,500	39,000	65,400	77,200	76,300	73,100
4	4,410	3,720	4,500	6,610	14,600	18,500	24,700	39,700	65,600	77,200	76,300	72,600
5	4,380	3,930	4,440	6,700	14,700	18,500	25,200	40,200	65,700	77,200	76,300	72,400
6	4,350	4,620	4,380	6,780	14,800	18,600	25,700	40,900	66,300	77,200	76,100	72,300
7	4,290	4,740	4,320	6,860	14,900	18,600	26,200	41,500	67,400	77,000	76,100	71,000
8	4,260	4,260	4,350	6,950	15,000	18,700	26,600	42,200	68,600	77,000	76,200	70,000
9	4,260	4,020	4,470	7,030	15,100	18,800	26,900	43,000	69,600	76,900	76,200	68,800
10	4,230	4,380	4,560	7,070	15,300	18,900	27,300	44,200	70,600	76,900	76,200	67,500
11	4,200	4,230	4,620	7,200	15,600	19,000	27,700	45,900	71,600	76,900	76,200	66,200
12	4,170	4,200	4,650	7,430	15,900	19,300	28,200	47,500	72,600	76,900	76,100	66,100
13	4,140	4,020	4,650	7,570	16,200	19,400	28,800	49,000	73,700	76,900	76,100	64,800
14	4,110	3,900	4,680	7,660	16,500	19,400	29,600	50,800	74,800	76,800	75,900	63,500
15	4,080	3,900	4,680	7,840	16,700	19,500	30,300	52,500	75,800	76,900	75,900	62,200
16	4,050	3,840	4,800	8,030	16,900	19,500	31,100	54,200	76,800	76,900	75,900	60,900
17	4,020	3,780	4,890	8,440	17,100	19,600	31,900	55,400	77,300	76,800	75,900	59,400
18	3,990	3,750	4,920	9,620	17,200	19,700	32,200	56,600	77,500	76,900	75,900	58,100
19	3,960	3,810	4,920	11,100	17,300	19,800	32,500	57,700	77,500	76,900	75,800	58,000
20	3,960	3,840	4,950	11,900	17,400	19,800	32,900	58,900	77,500	76,800	75,600	56,700
21	3,960	3,870	5,010	12,400	17,500	19,900	33,300	59,900	77,500	76,600	75,600	55,400
22	3,930	3,900	5,140	12,900	17,600	20,000	33,600	60,100	77,300	76,600	75,500	54,200
23	3,930	3,900	5,270	13,200	17,700	20,200	33,800	60,700	77,200	76,500	75,500	52,900
24	3,930	3,990	5,390	13,300	17,800	20,400	34,000	61,500	77,200	76,400	75,500	51,600
25	3,900	6,070	5,480	13,500	17,900	20,900	34,300	63,200	77,200	76,500	75,500	51,500
26	3,870	7,480	5,600	13,600	18,000	21,700	34,500	64,000	77,600	76,500	75,400	51,400
27	3,870	7,480	5,730	13,700	18,000	22,200	34,700	64,900	77,500	76,500	75,200	50,000
28	3,840	7,030	5,900	13,800	18,100	22,500	35,000	65,200	77,400	76,500	75,200	48,700
29	3,810	6,490	6,020	13,900	-----	22,800	35,400	65,400	77,300	76,400	75,200	47,500
30	3,780	5,940	6,150	14,100	-----	23,100	36,200	65,600	77,300	76,400	74,800	46,500
31	3,780	-----	6,280	14,300	-----	23,500	-----	65,700	-----	76,300	74,200	-----
MAX	4,470	7,480	6,280	14,300	18,100	23,500	36,200	65,700	77,600	77,300	76,300	74,000
MIN	3,780	3,690	4,320	6,360	14,300	18,200	23,800	37,100	65,400	76,300	74,200	46,500
(a)	6,330.6	6,337.0	6,337.8	6,353.0	--	6,364.7	6,377.7	6,402.3	6,410.8	6,410.1	6,408.6	6,387.1
(b)	-720	+2,160	+340	+8,020	+3,800	+5,400	+12,700	+29,500	+11,600	-1,000	-2,100	-27,700

CAL YR 1970 b -12,020

WTR YR 1971 b +42,000

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

NOTE.--No gage-height record June 26-29.



## 11429500 GERLE CREEK BELOW LOON LAKE DAM, NEAR MEEKS BAY, CALIF.

LOCATION.--Lat 39°00'20", long 120°18'52", in NE¼ sec.5, T.13 N., R.15 E., El Dorado County, Eldorado National Forest, on right bank 0.3 mile downstream from Loon Lake Dam and 11 miles southwest of Meeks Bay.

DRAINAGE AREA.--8.01 sq mi.

PERIOD OF RECORD.--July 1910 to April 1914 (fragmentary), August 1962 to current year. Prior to August 1962, published as "near Rubicon Springs."

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 6,250 ft (from topographic map). Prior to August 1962, nonrecording gage at site about 1,400 ft upstream at different datum.

AVERAGE DISCHARGE.--10 years (1911, 1962-71), 127 cfs (92,010 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 980 cfs June 27 (gage height, 8.78 ft); minimum daily, 6.5 cfs Aug. 25, Sept. 8-21.

Period of record: Maximum discharge, 3,240 cfs (unregulated) Feb. 1, 1963 (gage height, 12.65 ft), from rating curve extended above 600 cfs on basis of slope-area measurement of maximum flow; no flow Oct. 15, 1913. Maximum discharge since construction of Loon Lake Dam in 1963, 1,050 cfs June 5, 1969 (gage height, 6.45 ft); minimum daily, 6.0 cfs Dec. 2, 3, 1969.

REMARKS.--Records excellent. Beginning in 1884, flow regulated by Loon Lake (see sta 11429350). Original dam was dismantled during September and October 1962 to permit construction of a new earthfill dam which was completed Dec. 27, 1963. Storage began Dec. 5, 1963. Loon Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (see sta 11427940 and 11428300). See schematic diagram of Middle Fork American and Rubicon River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	8.2	338	9.3	11	9.3	8.5	11	304	410	40	6.7
2	7.7	8.2	332	9.4	11	9.3	8.5	10	304	405	36	6.7
3	7.7	8.2	227	9.5	10	9.3	8.5	10	304	396	34	6.7
4	7.7	9.0	106	9.5	10	9.3	8.7	9.5	303	360	22	6.7
5	7.7	9.8	106	9.5	10	9.3	9.0	9.8	303	336	17	6.7
6	7.7	9.0	105	9.3	10	9.3	9.0	10	303	315	16	6.7
7	7.7	148	105	9.5	11	9.3	8.7	11	303	303	13	6.7
8	7.9	280	83	9.5	11	9.3	8.5	11	304	286	11	6.5
9	8.2	193	56	9.3	11	9.3	8.7	11	304	276	9.3	6.5
10	8.2	96	56	9.3	11	9.3	9.0	12	306	250	7.9	6.5
11	8.5	237	56	9.3	11	9.3	8.7	11	308	222	7.4	6.5
12	8.5	258	56	9.3	11	9.5	9.0	11	308	199	7.7	6.5
13	8.5	246	56	9.3	11	9.5	9.3	10	309	175	7.4	6.5
14	8.5	143	56	9.5	11	9.5	10	10	309	166	6.7	6.5
15	8.5	64	56	9.8	11	9.5	10	10	310	166	7.0	6.5
16	8.2	60	56	9.8	11	9.5	10	9.5	326	170	7.0	6.5
17	8.2	61	56	11	11	9.5	9.5	9.3	513	173	6.7	6.5
18	8.5	33	56	11	11	9.5	9.3	9.3	768	182	6.7	6.5
19	8.5	7.7	57	11	11	9.3	9.0	9.8	830	181	6.7	6.5
20	8.5	7.7	57	11	11	9.3	9.3	62	852	166	6.7	6.5
21	8.5	7.7	41	11	11	9.3	9.3	185	835	122	7.0	6.5
22	8.5	7.7	9.3	11	11	9.5	9.0	294	764	66	7.0	6.7
23	8.5	7.7	9.3	11	11	9.8	9.0	296	711	36	7.0	6.7
24	8.5	8.2	9.3	11	11	10	9.0	297	674	24	6.7	6.7
25	8.5	172	9.3	11	11	11	9.0	298	524	28	6.5	6.7
26	8.5	351	9.3	11	10	12	9.0	302	618	37	6.7	6.7
27	8.2	357	9.3	11	9.3	11	9.3	302	935	44	6.7	6.7
28	8.2	354	9.3	11	9.3	10	9.8	304	835	46	6.7	6.7
29	8.2	350	9.3	11	-----	10	11	304	592	46	6.7	6.7
30	8.2	344	9.3	11	-----	9.8	11	304	463	44	6.7	6.7
31	8.2	-----	9.3	11	-----	8.5	-----	304	-----	44	6.7	-----
TOTAL	254.6	3,846.1	2,210.0	316.1	299.6	298.3	276.6	3,447.2	14,822	5,674	350.6	198.2
MEAN	8.21	128	71.3	10.2	10.7	9.62	9.22	111	494	183	11.3	6.61
MAX	8.5	357	338	11	11	12	11	304	935	410	40	6.7
MIN	7.7	7.7	9.3	9.3	9.3	8.5	8.5	9.3	303	24	6.5	6.5
AC-FT	505	7,630	4,380	627	594	592	549	6,840	29,400	11,250	695	393

CAL YR 1970 TOTAL 66,891.9 MEAN 183 MAX 461 MIN 7.7 AC-FT 132,700  
WTR YR 1971 TOTAL 31,993.3 MEAN 87.7 MAX 935 MIN 6.5 AC-FT 63,460

## SACRAMENTO RIVER BASIN

## 11430000 SOUTH FORK RUBICON RIVER BELOW GERLE CREEK, NEAR GEORGETOWN, CALIF.

LOCATION.--Lat 38°57'17", long 120°24'02", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.22, T.13 N., R.14 E., El Dorado County, Eldorado National Forest, on left bank 600 ft downstream from Gerle Creek and 18 miles east of Georgetown.

DRAINAGE AREA.--47.9 sq mi (revised).

PERIOD OF RECORD.--February 1910 to June 1914 (published as Little South Fork Rubicon River below Gerle Creek near Quintette), August 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,970 ft (from topographic map). Feb. 1, 1910, to June 21, 1914, nonrecording gage at site about 700 ft downstream at different datum.

AVERAGE DISCHARGE (unadjusted).--9 years (1962-71), 26.1 cfs (18,910 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,310 cfs Mar. 26 (gage height, 6.44 ft); minimum daily, 3.3 cfs Mar. 7.

Period of record: Maximum discharge, 11,500 cfs Jan. 31, 1963 (gage height, 12.32 ft), from rating curve extended above 2,500 cfs on basis of slope-area measurement of maximum flow; minimum, 0.8 cfs Sept. 21, 1962.

REMARKS.--Records good. Beginning in 1884, flow regulated by Loon Lake (see sta 11429350). Original dam was dismantled during September and October 1962 to permit construction of a new earthfill dam which was completed Dec. 27, 1963. Loon Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (see sta 11427940 and 11428300). Prior to Dec. 3, 1961, water was diverted out of the basin in Georgetown Divide ditch. Robbs Peak tunnel 1.2 miles upstream (see sta 11429800) began diversion of up to 1,320 cfs to Silver Creek basin October 1962. See schematic diagram of Middle Fork American and Rubicon River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	10	6.2	5.6	5.8	6.0	10	19	14	13	12	10
2	11	9.4	7.0	5.6	5.8	6.0	10	18	16	12	11	10
3	11	4.4	6.2	5.6	5.8	5.2	10	19	16	12	12	10
4	11	5.7	6.8	5.6	5.8	3.6	10	19	17	12	12	10
5	11	7.4	6.6	5.8	5.8	3.6	11	18	18	12	12	10
6	11	6.4	6.4	5.6	5.8	3.6	11	17	19	12	12	10
7	10	6.3	6.0	5.8	6.0	3.3	17	17	15	12	12	10
8	10	5.8	8.6	6.0	6.0	3.4	22	16	13	12	11	10
9	10	5.9	8.6	6.2	6.0	3.8	23	15	13	12	11	10
10	10	5.7	7.2	6.4	6.4	4.6	26	15	13	12	11	10
11	10	5.8	6.4	6.4	7.0	4.8	23	15	13	12	11	10
12	10	6.2	6.2	6.2	7.4	8.9	22	14	13	12	11	10
13	10	5.6	6.0	8.4	7.4	7.6	22	14	13	12	11	10
14	10	5.4	5.8	8.6	7.4	6.2	21	14	13	12	11	10
15	10	5.2	5.6	7.0	8.0	6.0	21	14	13	12	11	10
16	10	5.2	6.8	6.6	7.8	6.2	21	14	13	12	11	10
17	10	5.2	6.2	6.6	7.6	6.4	21	14	13	12	11	10
18	10	5.3	5.6	6.6	7.2	6.2	19	14	13	13	11	10
19	10	5.4	5.6	6.6	7.4	6.6	19	14	13	13	11	10
20	11	5.2	5.4	6.6	7.2	7.0	19	14	13	14	12	10
21	11	5.2	5.4	6.6	7.2	13	19	14	13	14	12	10
22	11	5.2	5.6	6.4	7.2	8.0	18	14	13	13	12	12
23	12	5.2	5.4	6.4	7.0	11	18	14	13	12	12	10
24	13	5.8	5.2	6.4	7.0	11	18	13	13	11	12	10
25	11	138	5.2	6.4	7.2	18	18	13	13	11	12	11
26	11	413	5.2	6.6	6.8	544	18	13	32	11	12	11
27	11	6.8	5.4	6.8	5.8	47	18	13	528	12	12	11
28	11	6.6	5.4	6.8	5.8	13	18	13	399	13	11	11
29	11	7.2	5.4	6.4	-----	13	18	13	14	12	11	12
30	11	6.6	5.4	5.8	-----	12	18	13	13	13	11	12
31	11	-----	5.6	5.8	-----	11	-----	14	-----	13	11	-----
TOTAL	331	721.1	188.4	198.2	187.6	810.0	539	461	1,335	380	355	310
MEAN	10.7	24.0	6.08	6.39	6.70	26.1	18.0	14.9	44.5	12.3	11.5	10.3
MAX	13	413	8.6	8.6	8.0	544	26	19	528	14	12	12
MIN	10	4.4	5.2	5.6	5.8	3.3	10	13	13	11	11	10
AC-FT	657	1,430	374	393	372	1,610	1,070	914	2,650	754	704	615

CAL YR 1970 TOTAL 15,683.2 MEAN 43.0 MAX 3,480 MIN 4.4 AC-FT 31,110  
WTR YR 1971 TOTAL 5,816.3 MEAN 15.9 MAX 544 MIN 3.3 AC-FT 11,540

## 11431800 PILOT CREEK ABOVE STUMPY MEADOWS RESERVOIR, CALIF.

LOCATION.--Lat 38°53'41", long 120°34'02", in NE¼NW¼ sec.18, T.12 N., R.13 E., El Dorado County, on right bank 2.1 miles upstream from Stumpy Meadows Dam, and 12.5 miles east of Georgetown.

DRAINAGE AREA.--11.7 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 4,280 ft (from topographic map).

AVERAGE DISCHARGE.--11 years, 25.6 cfs (18,550 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 575 cfs Mar. 26 (gage height, 3.75 ft), from rating curve extended as explained below; minimum daily 3.0 cfs Oct. 2.

Period of record: Maximum discharge, 2,380 cfs Dec. 23, 1964 (gage height, 5.92 ft, in gage well, 6.6 ft, from floodmarks), from rating curve extended above 170 cfs on basis of slope-area measurement of maximum flow; maximum gage height, 8.05 ft Jan. 31, 1963; minimum daily discharge, 1.9 cfs Aug. 20-26, Sept. 4-7, 10, 1966.

REMARKS.--Records good. No regulation or diversion above station. See schematic diagram of Middle Fork American and Rubicon River basins.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	4.5	26	13	18	20	91	51	30	13	6.4	4.7
2	3.0	4.5	39	12	18	20	86	52	29	13	6.2	4.5
3	3.1	4.5	25	12	18	19	79	54	29	12	6.1	4.5
4	3.1	8.9	41	12	18	19	77	56	26	12	5.9	4.3
5	3.2	25	38	12	18	18	78	52	25	12	5.8	4.3
6	3.2	19	29	12	18	18	80	50	23	12	5.8	4.3
7	3.5	17	24	11	18	18	81	50	22	11	5.7	4.3
8	3.5	12	36	11	18	18	73	52	21	11	5.5	4.2
9	3.6	11	48	11	17	18	71	50	20	11	5.2	4.1
10	3.6	10	34	12	18	18	84	52	20	11	5.0	4.0
11	3.5	10	28	12	20	18	75	53	20	11	4.9	3.9
12	3.5	15	24	12	24	41	73	52	19	11	4.9	3.9
13	3.3	11	22	17	25	42	73	51	18	11	4.9	3.8
14	3.3	8.8	20	23	27	34	73	51	18	10	4.7	3.6
15	3.2	8.0	20	18	30	32	75	48	17	10	4.7	3.6
16	3.2	7.6	22	13	31	33	75	45	17	9.9	4.6	3.6
17	3.2	7.0	24	19	30	33	73	41	16	9.4	4.3	3.6
18	3.4	6.7	18	20	29	33	65	38	16	9.8	4.3	3.5
19	3.7	6.4	16	20	29	33	60	37	15	9.2	4.4	3.6
20	8.3	6.4	16	21	27	36	58	36	15	9.0	4.4	3.7
21	6.3	6.2	16	21	26	37	54	35	15	8.7	4.5	3.7
22	8.1	6.0	15	20	24	38	50	32	14	8.5	4.7	3.6
23	9.5	6.0	14	20	24	60	48	31	14	8.2	4.6	3.5
24	11	7.3	14	19	23	72	47	30	14	8.0	4.7	3.5
25	6.3	42	16	18	22	115	44	29	14	7.9	4.6	3.8
26	5.4	42	13	18	22	397	43	29	20	7.8	4.6	4.4
27	5.0	22	14	17	21	233	43	29	18	7.5	4.5	4.7
28	4.8	22	13	17	22	158	44	29	15	7.5	4.5	4.6
29	4.7	33	16	17	-----	127	46	28	14	7.2	4.5	5.4
30	4.7	26	14	17	-----	114	48	27	14	7.1	4.5	11
31	4.9	-----	14	18	-----	102	-----	31	-----	6.8	4.5	-----
TOTAL	142.2	415.8	709	495	635	1,974	1,967	1,301	568	303.5	153.9	128.2
MEAN	4.59	13.9	22.9	16.0	22.7	63.7	65.6	42.0	18.9	9.79	4.96	4.27
MAX	11	42	48	23	31	397	91	56	30	13	6.4	11
MIN	3.0	4.5	13	11	17	18	43	27	14	6.8	4.3	3.5
AC-FT	282	825	1,410	982	1,260	3,920	3,900	2,580	1,130	602	305	254

CAL YR 1970 TOTAL 11,472.8 MEAN 31.4 MAX 591 MIN 3.0 AC-FT 22,760  
WTR YR 1971 TOTAL 8,792.6 MEAN 24.1 MAX 397 MIN 3.0 AC-FT 17,440

PEAK DISCHARGE (BASE, 100 CFS).--Mar. 26 (1100) 575 cfs (3.75 ft).



## 11433060 SOUTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CALIF.

LOCATION.--Lat 39°03'04", long 120°28'14", in SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.24, T.14 N., R.13 E., Placer County, Eldorado National Forest, on right bank at diversion dam, 3.3 miles upstream from confluence with North and South Forks Long Canyon Creek, and 17.2 miles east of Volcanoville.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 4,630 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 9.06 cfs (6,560 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 166 cfs Apr. 18, 1969; no flow for part of each year.

REMARKS.--Records good. Tunnel completed in September 1965; diversion began in February 1966. Flow is diverted from South Fork Long Canyon Creek to a tunnel from Hell Hole Reservoir to Middle Fork powerplant on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Recorder chart and six discharge measurement furnished by Placer County Water Agency.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	3.6	0	17	8.5	49	38	24	3.0		
2		0	3.6	0	17	7.6	47	36	22	2.3		
3		0	2.1	1.8	15	6.8	47	39	20	1.3		
4		0	3.6	0	12	6.8	50	39	18	.80		
5		3.0	6.8	0	8.8	6.2	53	36	18	.50		
6		2.5	7.2	0	10	6.2	52	35	19	.10		
7		2.1	6.5	0	9.9	5.8	50	37	20	0		
8		1.6	13	0	9.2	5.8	44	44	22	0		
9		10	16	0	9.2	6.2	44	42	23	0		
10		3.5	11	1.1	11	6.2	50	47	23	0		
11		1.2	8.5	1.9	18	7.6	45	49	23	0		
12		6.0	7.2	1.3	23	22	46	48	24	0		
13		2.0	5.8	.46	24	20	46	50	23	0		
14		.50	4.6	1.7	24	15	47	52	22	0		
15		.20	4.0	1.5	26	14	50	52	20	0		
16		0	4.0	1.5	22	15	50	50	20	0		
17		0	3.3	20	18	16	47	45	18	0		
18		0	2.1	24	15	15	41	41	16	0		
19		0	1.7	25	14	16	38	40	15	0		
20		0	1.5	23	13	18	37	41	13	0		
21		0	1.3	19	11	19	35	39	12	0		
22		0	.26	16	11	20	32	35	10	0		
23		0	0	13	9.9	33	30	35	8.5	0		
24		3.0	0	12	9.6	40	30	38	7.2	0		
25		35	0	9.6	9.6	67	28	39	5.8	0		
26		18	0	8.8	9.2	58	28	40	14	0		
27		5.2	0	10	8.8	30	28	37	12	0		
28		5.0	0	11	8.8	30	29	33	7.9	0		
29		8.8	0	13	-----	29	32	31	5.2	0		
30		5.8	.63	15	-----	43	35	29	3.8	0		
31		-----	0	16	-----	53	-----	28	-----	0		-----
TOTAL	0	113.40	118.29	246.66	394.0	646.7	1,240	1,245	489.4	8.00	0	0
MEAN	0	3.78	3.82	7.96	14.1	20.9	41.3	40.2	16.3	.26	0	0
MAX	0	35	16	25	26	67	53	52	24	3.0	0	0
MIN	0	0	0	0	8.8	5.8	28	28	3.8	0	0	0
AC-FT	0	225	235	489	782	1,280	2,460	2,470	971	16	0	0
CAL YR 1970	TOTAL	1,963.24	MEAN	5.38	MAX	55	MIN	0	AC-FT	3,890		
WTR YR 1971	TOTAL	4,501.45	MEAN	12.3	MAX	67	MIN	0	AC-FT	8,930		

## SACRAMENTO RIVER BASIN

11433080 NORTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CALIF.

LOCATION.--Lat 39°02'57", long 120°28'56", in SW $\frac{1}{4}$  NW $\frac{1}{4}$  sec.24, T.14 N., R.13 E., Placer County, Eldorado National Forest, on left bank at diversion dam, 3.2 miles upstream from confluence of North and South Forks Long Canyon Creek, and 16.9 miles east of Volcanoville.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 4,700 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 3.58 cfs (2,590 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 54 cfs May 27, 1967; no flow for part of each year.

REMARKS.--Records good. No regulation or diversion above station. Tunnel completed in September 1965 and diversions began in February 1966. Flow is diverted from North Fork Long Canyon Creek to a tunnel from Hell Hole Reservoir to Middle Fork powerplant on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Gage-height record and seven discharge measurements furnished by Placer County Water Agency.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	1.1	.52	8.3	1.3	21	16	6.4	.05		
2		0	.68	.45	8.3	1.1	21	15	5.5	.05		
3		0	.52	.45	6.8	1.1	20	16	4.5	.05		
4		0	.60	.32	5.4	1.1	22	17	3.9	.05		
5		1.8	1.5	.26	5.2	.77	24	16	3.6	.05		
6		1.3	2.5	.26	4.7	.68	22	14	3.8	.05		
7		1.2	2.4	.26	4.7	.60	20	17	3.5	.01		
8		.86	2.3	.32	4.7	.77	17	20	3.1	0		
9		7.1	2.4	.45	4.7	.77	18	20	2.4	0		
10		1.9	2.3	.45	5.4	.68	19	23	2.3	0		
11		.52	2.4	.45	11	.96	17	22	2.2	0		
12		3.9	2.3	.45	16	8.0	18	21	1.8	0		
13		.60	2.0	.45	15	5.5	19	21	1.4	0		
14		.08	1.6	.45	14	3.2	19	22	.68	0		
15		.05	1.2	.45	14	3.2	22	21	.26	0		
16		.02	1.1	.45	12	4.4	22	19	.08	0		
17		.02	1.4	10	8.5	5.2	19	16	.08	0		
18		.02	1.2	18	6.8	5.2	16	15	.08	0		
19		.02	.86	15	6.0	5.9	14	14	.05	0		
20		.02	.86	14	4.5	7.5	14	15	.05	0		
21		.02	.77	10	3.8	8.5	12	13	.05	0		
22		.02	.68	7.5	3.2	8.5	10	12	.05	0		
23		.02	.52	5.5	2.6	17	9.1	13	.05	0		
24		.57	.52	4.2	2.4	20	8.3	13	.05	0		
25		21	.45	3.2	2.2	16	7.9	13	.05	0		
26		11	.52	3.3	1.7	4.2	7.0	12	2.8	0		
27		2.8	.52	3.9	1.6	2.2	7.2	11	.45	0		
28		2.0	.52	4.7	1.7	2.0	9.7	10	.08	0		
29		4.7	.52	5.7	-----	2.0	12	9.1	.08	0		
30		2.3	.45	7.2	-----	22	15	8.1	.05	0		
31		-----	.52	7.9	-----	23	-----	7.9	-----	0		-----
TOTAL	0	63.84	37.21	126.54	185.2	183.33	482.2	482.1	49.39	.31	0	0
MEAN	0	2.13	1.20	4.08	6.61	5.91	16.1	15.6	1.65	.010	0	0
MAX	0	21	2.5	18	16	23	24	23	6.4	.05	0	0
MIN	0	0	.45	.26	1.6	.60	7.0	7.9	.05	0	0	0
AC-FT	0	127	74	251	367	364	956	956	98	.6	0	0
CAL YR 1970	TOTAL	480.30	MEAN	1.32	MAX	21	MIN	0	AC-FT	953		
WTR YR 1971	TOTAL	1,610.12	MEAN	4.41	MAX	24	MIN	0	AC-FT	3,190		

## 11433100 LONG CANYON CREEK NEAR FRENCH MEADOWS, CALIF.

LOCATION.--Lat 39°01'16", long 120°30'53", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.34, T.14 N., R.13 E., Placer County, Eldorado National Forest, on right bank 75 ft downstream from North Fork Long Canyon, 6.5 miles south of French Meadows, and 18 miles east of Foresthill.

DRAINAGE AREA.--18.0 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 4,100 ft (from topographic map).

AVERAGE DISCHARGE (since diversion to Middle Fork American River powerplant).--5 years (1967-71), 35.1 cfs (25,430 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 985 cfs Mar. 26 (gage height, 7.24 ft), from rating curve extended as explained below; minimum daily, 0.54 cfs Oct. 10-17.

Period of record: Maximum discharge, 4,690 cfs Dec. 23, 1964 (gage height, 11.20 ft), from rating curve extended above 300 cfs on basis of slope-area measurements at gage heights 6.62 and 10.27 ft; minimum daily, 0.08 cfs Sept. 27, 28, 1968.

REMARKS.--Water is diverted above this station to a diversion tunnel from Hell Hole Reservoir to Middle Fork American River powerplant via South Fork and North Fork Long Canyon diversion tunnels (see sta 11433060 and 11433080); diversions began in February 1966. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency under general supervision of Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	1.1	26	15	52	25	84	41	29	13	4.2	2.0
2	.65	1.1	41	14	51	23	79	41	27	13	4.0	2.0
3	.59	1.1	24	14	48	23	72	43	27	11	3.8	2.0
4	.59	2.0	36	13	43	23	71	44	24	11	3.6	1.8
5	.59	18	39	13	40	21	71	42	24	11	3.4	1.8
6	.59	14	33	13	38	20	70	41	24	10	3.2	1.8
7	.59	14	31	12	36	20	70	41	24	10	3.4	1.0
8	.59	7.1	41	11	35	20	62	44	24	10	3.4	1.0
9	.59	7.8	48	13	34	23	60	42	23	10	3.2	1.0
10	.54	11	35	16	36	23	72	41	23	10	3.0	1.0
11	.54	8.5	30	17	46	28	64	44	22	9.9	3.0	1.0
12	.54	16	26	17	56	66	59	41	21	9.6	2.8	1.0
13	.54	8.8	24	17	61	66	57	39	20	8.9	2.6	1.0
14	.54	5.6	22	19	62	53	55	38	21	8.5	2.6	1.0
15	.54	4.1	21	18	65	49	55	36	20	8.5	2.6	1.0
16	.54	3.4	21	17	61	49	55	35	19	8.2	2.4	.92
17	.54	2.9	19	35	55	52	55	33	18	7.9	2.4	.92
18	.65	2.7	18	53	51	50	50	33	18	7.9	2.4	.92
19	.76	2.7	18	66	49	51	47	32	18	7.6	2.3	.92
20	1.4	2.5	18	61	44	53	48	31	17	7.0	2.3	.92
21	1.2	2.5	17	54	41	54	46	30	17	6.5	2.3	.92
22	1.3	2.4	16	47	38	54	44	30	16	6.2	2.3	.92
23	2.7	2.3	15	42	35	87	44	29	15	5.7	2.3	.92
24	2.8	3.2	14	38	33	93	42	29	14	5.7	2.3	.92
25	1.7	66	14	36	33	182	41	29	14	5.5	2.3	1.0
26	1.4	41	14	35	30	670	41	28	19	5.0	2.3	2.0
27	1.3	19	15	36	29	412	41	29	17	5.0	2.1	2.4
28	1.2	23	14	40	28	272	41	29	15	4.8	2.1	2.1
29	1.1	36	16	43	-----	233	41	28	14	4.6	2.0	2.4
30	1.1	27	14	46	-----	180	41	28	13	4.4	2.0	4.2
31	1.2	-----	15	49	-----	102	-----	30	-----	4.4	2.0	-----
TOTAL	29.50	356.8	735	920	1,230	3,077	1,678	1,101	597	250.8	84.6	42.78
MEAN	.95	11.9	23.7	29.7	43.9	99.3	55.9	35.5	19.9	8.09	2.73	1.43
MAX	2.8	66	48	66	65	670	84	44	29	13	4.2	4.2
MIN	.54	1.1	14	11	28	20	41	28	13	4.4	2.0	.92
AC-FT	59	708	1,460	1,820	2,440	6,100	3,330	2,180	1,180	497	168	85

CAL YR 1970 TOTAL 14,398.95 MEAN 39.4 MAX 1,470 MIN .54 AC-FT 28,560  
WTR YR 1971 TOTAL 10,102.48 MEAN 27.7 MAX 670 MIN .54 AC-FT 20,040

## 11433200 RUBICON RIVER NEAR FORESTHILL, CALIF.

LOCATION.--Lat 38°59'33", long 120°43'14", in SE¼NW¼ sec.11, T.13 N., R.11 E., Placer County, Eldorado National Forest, on right bank 0.6 mile upstream from Ralston powerhouse, 1.2 miles upstream from confluence of Rubicon River and Middle Fork American River, and 5.6 miles southeast of Foresthill.

DRAINAGE AREA.--315 sq mi.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,200 ft (from topographic map). October 1958 to May 17, 1963, at site 2.0 miles upstream, 150 ft downstream from Ralston Bridge, and May 17, 1963, to Mar. 30, 1965, at site 2.1 miles upstream, 100 ft upstream from Ralston Bridge at datum 1,362.20 ft above mean sea level.

AVERAGE DISCHARGE (since construction of Hell Hole Dam).--6 years (1966-71), 319 cfs (231,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,490 cfs Mar. 26 (gage height, 11.70 ft); minimum daily, 40 cfs Oct. 17-19.

Period of record: Maximum discharge, unknown Dec. 23, 1964 (gage height, 55.4 ft, from floodmarks), result of failure of the partly constructed Hell Hole Dam; next highest peak discharge, 83,000 cfs Feb. 1, 1963 (gage height, 35.0 ft, former site and datum); minimum daily, 10 cfs Sept. 20-27, 1962. Maximum discharge since construction of Hell Hole Dam in 1965, 15,100 cfs Jan. 21, 1970 (gage height, 14.60 ft); minimum daily, 24 cfs Sept. 12, 1966.

Floods of December 1937, November 1950, and December 1955, had approximate discharges of 44,000, 56,000, and 73,000 cfs respectively, on basis of 1958-64 stage-discharge relation and U.S. Forest Service flood-marks.

REMARKS.--Records good. Flow regulated by Hell Hole Reservoir (see sta 11428700), Loon Lake (see sta 11429350), and Stumpy Meadows Reservoir (capacity, 20,000 acre-ft). Water is imported from French Meadows Reservoir on Middle Fork American River through tunnel to French Meadows powerplant on shore of Hell Hole Reservoir. Water is diverted from Hell Hole Reservoir through tunnel to Middle Fork powerplant on Middle Fork American River. Robbs Peak tunnel and powerplant (see sta 11429800) divert water to South Fork American River basin. See schematic diagram of Middle Fork American and Rubicon River basins.

REVISIONS (WATER YEARS).--WRD Calif. 1968: 1967(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	72	709	250	339	230	895	432	283	123	71	51
2	43	72	992	245	345	209	827	443	261	123	71	51
3	43	72	631	202	339	211	770	476	248	120	68	51
4	43	78	966	189	313	216	738	493	245	117	68	49
5	43	177	847	181	288	221	731	460	227	111	68	49
6	43	165	541	169	282	211	731	443	219	114	68	49
7	43	207	399	169	275	211	738	438	215	111	66	49
8	43	125	352	169	257	207	677	493	199	111	61	49
9	43	103	593	169	257	207	637	460	191	104	58	47
10	43	103	440	169	251	207	762	454	187	104	61	47
11	43	100	319	240	275	221	685	471	179	104	58	47
12	43	131	257	326	345	533	648	476	176	101	58	47
13	43	119	225	282	385	686	637	460	164	101	56	47
14	43	100	202	313	399	468	626	443	157	98	56	47
15	43	94	194	288	412	419	620	438	154	98	56	49
16	43	91	372	282	426	419	626	411	154	95	56	49
17	40	85	339	519	399	426	663	385	150	95	54	49
18	40	85	257	790	372	433	592	355	147	95	54	49
19	40	72	221	798	385	433	548	340	150	95	54	49
20	52	69	207	717	345	454	548	335	130	93	54	49
21	66	69	235	631	313	475	542	330	123	90	54	49
22	72	69	211	533	294	490	504	306	120	87	54	49
23	82	69	194	447	288	654	476	292	126	87	54	51
24	103	69	181	399	263	806	465	279	123	84	54	56
25	82	419	165	345	263	1,070	438	279	123	84	54	54
26	69	1,180	165	319	245	3,790	427	274	157	84	54	54
27	66	475	189	319	235	2,500	416	265	570	81	54	58
28	63	216	202	313	235	1,660	406	265	708	76	54	58
29	58	526	406	313	-----	1,360	411	257	157	73	54	61
30	60	454	359	326	-----	1,220	422	252	130	71	51	87
31	69	-----	288	332	-----	1,010	-----	321	-----	71	51	-----
TOTAL	1,650	5,666	11,658	10,744	8,825	21,657	18,206	11,826	6,173	3,001	1,804	1,551
MEAN	53.2	189	376	347	315	699	607	381	206	96.8	58.2	51.7
MAX	103	1,180	992	798	426	3,790	895	493	708	123	71	87
MIN	40	69	165	169	235	207	406	252	120	71	51	47
AC-FT	3,270	11,240	23,120	21,310	17,500	42,960	36,110	23,460	12,240	5,950	3,580	3,080
CAL YR 1970	TOTAL 138,978		MEAN 381	MAX 8,570	MIN 37	AC-FT 275,700						
WTR YR 1971	TOTAL 102,761		MEAN 282	MAX 3,790	MIN 40	AC-FT 203,800						



## 11433260 NORTH FORK OF MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL, CALIF.

LOCATION.--Lat 39°01'27", long 120°43'03", in NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.35, T.14 N., R.11 E., Placer County, Tahoe National Forest, on right bank 1.0 mile downstream from El Dorado Canyon and 4.8 miles east of Foresthill.

DRAINAGE AREA.--88.9 sq mi.

PERIOD OF RECORD.--July 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,300 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 264 cfs (191,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,190 cfs Mar. 26 (gage height, 9.57 ft); minimum daily, 24 cfs Oct. 3-7, 13-18.

Period of record: Maximum discharge, 13,600 cfs Jan. 21, 1970 (gage height, 12.80 ft, 13.5 ft, from floodmarks); minimum daily, 17 cfs Oct. 23 to Nov. 5, 1966.

REMARKS.--No storage or diversion above station. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	28	479	222	410	244	764	485	244	90	49	37
2	25	28	669	215	421	229	692	497	226	86	47	37
3	24	28	404	192	421	226	654	497	222	80	47	37
4	24	31	862	176	383	222	646	503	219	79	46	36
5	24	158	589	155	348	215	676	485	222	75	45	34
6	24	150	426	144	338	205	700	473	233	72	45	31
7	24	153	378	139	334	205	669	467	244	69	44	32
8	25	88	438	137	329	205	575	497	244	65	44	32
9	25	70	535	137	320	208	548	479	237	65	43	31
10	25	100	410	158	334	215	692	503	226	64	42	30
11	25	73	329	244	443	233	575	528	212	62	41	30
12	25	182	297	260	509	561	561	522	208	62	40	30
13	24	106	272	244	542	582	555	528	195	61	39	29
14	24	73	244	244	548	426	555	516	182	59	39	28
15	24	61	233	226	561	388	575	509	176	59	39	28
16	24	54	302	302	542	368	589	497	170	57	39	27
17	24	49	280	449	485	383	596	461	158	55	38	26
18	24	46	241	1,040	449	373	528	426	150	58	38	26
19	25	43	222	948	421	383	509	404	139	57	37	26
20	30	42	215	882	388	404	503	404	134	55	37	27
21	38	40	229	781	368	415	473	410	127	55	38	27
22	39	40	201	654	348	421	438	353	119	52	38	27
23	45	38	185	589	324	661	415	358	113	52	38	26
24	70	43	170	528	311	789	399	378	110	51	38	26
25	40	509	164	473	297	1,300	383	388	106	50	37	28
26	32	692	161	438	280	4,460	373	383	170	51	37	31
27	30	306	176	426	264	2,120	363	348	170	50	36	36
28	30	320	192	421	256	1,390	368	311	115	50	36	34
29	29	461	306	438	-----	1,140	388	293	104	50	35	34
30	28	421	272	399	-----	1,040	438	272	96	49	35	57
31	28	-----	237	410	-----	882	-----	264	-----	50	36	-----
TOTAL	903	4,433	10,118	12,071	10,974	20,893	16,200	13,439	5,271	1,890	1,243	940
MEAN	29.1	148	326	389	392	674	540	434	176	61.0	40.1	31.3
MAX	70	692	862	1,040	561	4,460	764	528	244	90	49	57
MIN	24	28	161	137	256	205	363	264	96	49	35	26
AC-FT	1,790	8,790	20,070	23,940	21,770	41,440	32,130	26,660	10,460	3,750	2,470	1,860
CAL YR 1970	TOTAL	104,006	MEAN	285	MAX	7,070	MIN	22	AC-FT	206,300		
WTR YR 1971	TOTAL	98,375	MEAN	270	MAX	4,460	MIN	24	AC-FT	195,100		

NOTE.--No gage-height record Jan. 15 to Mar. 2.

## SACRAMENTO RIVER BASIN

## 11433300 MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL, CALIF.

LOCATION.--Lat 39°00'23", long 120°45'40", in NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.4, T.13 N., R.11 E., Placer County, Tahoe National Forest, on right bank 1.7 miles downstream from Oxbow powerhouse and 3.2 miles east of Foresthill.

DRAINAGE AREA.--524 sq mi.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,060 ft (from topographic map). Prior to Oct. 22, 1965, at site 3.2 miles downstream at different datum.

AVERAGE DISCHARGE.--13 years, 1,106 cfs (801,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 16,400 cfs Mar. 26 (gage height, 14.12 ft); minimum daily, 305 cfs Oct. 2.

Period of record: Maximum discharge, 310,000 cfs Dec. 23, 1964 (gage height, 69.0 ft, from floodmarks, site and datum then in use), caused by overtopping the partly constructed Hell Hole Dam on the Rubicon River, from rating curve extended above 28,000 cfs on basis of slope-area measurement at gage height 38.0 ft, and slope-conveyance study at gage height 69.0 ft at site and datum then in use; next highest peak, 113,000 cfs Feb. 1, 1963 (gage height, 38.00 ft, site and datum then in use); minimum, 35 cfs Oct. 19, 20, 1961.

REMARKS.--Records good. Flow regulated by French Meadows Reservoir (see sta 11427400), Hell Hole Reservoir (see sta 11428700), Loon Lake (see sta 11429350), Stumpy Meadows Reservoir (usable capacity, 20,000 acre-ft), and Ralston and Oxbow powerplants. Robbs Peak tunnel (see sta 11429800) and Georgetown Divide ditch (capacity, about 25 cfs) divert water out of basin above station. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records collected by Placer County Water Agency, under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,080	647	2,230	610	1,810	724	2,050	1,080	663	663	1,100	1,080
2	305	680	2,410	584	1,820	605	1,900	1,130	621	724	1,100	1,090
3	1,020	642	1,900	507	1,770	626	1,780	1,160	600	763	1,100	1,100
4	1,080	702	2,790	589	1,700	642	1,740	1,230	579	769	1,100	1,100
5	1,090	1,010	2,200	909	1,670	637	1,720	1,130	563	543	1,100	1,110
6	1,080	1,290	1,830	883	1,640	600	1,780	1,100	563	733	1,150	1,110
7	1,090	1,340	1,580	864	1,630	574	1,750	1,060	569	839	769	1,120
8	1,090	1,220	1,800	839	1,590	674	1,620	1,200	528	976	936	1,120
9	1,090	1,130	2,120	373	1,600	674	1,490	1,120	548	963	1,090	1,130
10	1,100	763	1,740	464	1,620	691	1,730	1,160	890	503	1,040	1,130
11	1,090	774	1,590	909	1,720	680	1,600	1,250	1,170	426	1,020	1,130
12	1,080	970	1,520	1,190	1,830	1,620	1,490	1,360	516	653	1,050	970
13	1,080	780	1,460	1,140	1,170	1,560	1,480	1,320	452	1,120	1,070	820
14	1,080	735	1,410	1,190	1,180	1,050	1,460	1,290	883	1,100	658	1,080
15	1,080	774	1,390	1,180	1,280	1,040	1,500	1,300	820	1,030	1,080	1,130
16	1,090	809	1,680	713	1,600	1,050	1,540	1,390	845	1,080	1,050	1,120
17	1,070	658	1,650	1,190	1,880	1,050	1,590	1,040	1,010	1,110	1,050	1,110
18	1,070	791	1,290	2,430	1,780	1,190	1,360	929	1,270	1,080	1,080	1,100
19	1,040	696	1,240	2,530	1,800	1,050	1,250	890	1,230	1,060	1,080	1,100
20	1,070	605	1,440	2,530	1,690	970	1,250	883	1,230	1,080	1,220	1,100
21	1,090	579	1,490	2,280	1,660	997	1,190	883	1,230	1,070	558	809
22	696	774	1,410	1,990	1,380	1,130	1,100	803	1,180	1,120	1,050	916
23	936	718	1,380	1,780	1,200	1,570	1,040	791	718	1,140	1,050	1,080
24	724	637	1,360	1,800	1,160	1,980	1,010	797	637	1,100	943	1,070
25	589	1,280	1,340	1,740	1,150	2,630	970	791	713	1,100	916	1,080
26	669	2,060	1,310	1,700	1,090	9,440	943	791	943	1,100	1,050	956
27	763	702	1,390	1,690	877	5,350	909	1,100	1,420	1,120	1,060	1,010
28	718	814	1,400	1,710	791	3,570	916	1,070	1,970	1,110	1,070	871
29	746	1,160	1,700	1,720	-----	2,950	949	680	1,080	1,100	1,070	1,090
30	696	1,540	1,570	1,760	-----	2,720	1,010	658	797	1,100	1,080	1,140
31	637	-----	1,390	1,790	-----	2,330	-----	724	-----	1,110	1,020	-----
TOTAL	29,039	27,280	51,010	41,584	42,088	52,374	42,117	32,110	26,238	29,385	31,710	31,772
MEAN	937	909	1,645	1,341	1,503	1,689	1,404	1,036	875	948	1,023	1,059
MAX	1,100	2,060	2,790	2,530	1,880	9,440	2,050	1,390	1,970	1,140	1,220	1,140
MIN	305	579	1,240	373	791	574	909	658	452	426	558	809
AC-FT	57,600	54,110	101,200	82,480	83,480	103,900	83,540	63,690	52,040	58,290	62,900	63,020

CAL YR 1970 TOTAL 509,111 MEAN 1,395 MAX 19,100 MIN 118 AC-FT 1,010,000  
WTR YR 1971 TOTAL 436,707 MEAN 1,196 MAX 9,440 MIN 305 AC-FT 866,200

## 11433400 CANYON CREEK NEAR GEORGETOWN, CALIF.

LOCATION.--Lat 38°56'03", long 120°52'21", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.33, T.13 N., R.10 E., El Dorado County, Eldorado National Forest, on right bank 0.7 mile downstream from West Canyon, and 2.6 miles northwest of Georgetown.

DRAINAGE AREA.--12.5 sq mi.

PERIOD OF RECORD.--July 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,995 ft (from topographic map).

AVERAGE DISCHARGE.--5 years, 22.2 cfs (16,080 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 649 cfs Dec. 4 (gage height, 9.53 ft); minimum daily, 2.7 cfs Oct. 6, Aug. 20, 26-28.

Period of record: Maximum discharge, 1,300 cfs Jan. 21, 1970 (gage height, 11.01 ft); minimum daily, 1.8 cfs Oct. 1, 4-12, 1966.

REMARKS.--Records good. Small diversions above station for irrigation and domestic purposes. See schematic diagram of Middle Fork American and Rubicon River basins. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	3.2	113	35	19	12	30	15	14	7.5	3.9	3.1
2	3.2	3.3	185	33	17	12	28	18	13	7.4	3.9	3.1
3	4.1	3.4	117	26	16	12	25	20	12	7.4	4.0	3.1
4	3.9	5.5	370	24	16	12	20	22	11	7.3	3.9	3.3
5	2.9	16	83	23	16	12	19	15	11	7.4	3.8	3.3
6	2.7	12	40	21	15	11	19	14	10	7.3	3.8	3.2
7	2.8	11	26	19	15	11	19	14	9.5	7.1	3.7	3.3
8	2.9	6.0	27	18	14	11	17	16	8.2	7.0	3.7	3.2
9	2.9	5.1	25	17	14	11	16	13	8.0	7.2	3.6	3.2
10	2.9	4.9	18	17	13	11	27	12	8.3	7.0	3.6	3.1
11	3.5	5.8	14	35	13	12	19	16	7.9	6.9	3.3	3.1
12	3.8	8.0	12	57	13	45	16	17	7.8	6.9	3.3	3.1
13	4.0	5.8	11	44	13	46	16	17	7.3	7.2	3.2	3.1
14	4.2	4.9	9.7	70	13	28	15	16	6.6	7.0	3.1	3.0
15	3.4	4.5	9.2	58	13	22	14	14	6.5	6.5	2.9	2.8
16	3.9	4.3	76	56	13	19	14	13	6.1	6.4	2.8	2.8
17	4.6	4.1	83	87	12	18	19	13	5.8	6.3	3.6	2.8
18	4.8	4.1	47	74	12	16	14	13	6.2	6.3	3.2	2.9
19	4.9	3.9	32	58	14	16	13	13	7.0	6.1	2.8	2.8
20	6.8	3.9	28	46	12	16	15	12	8.9	5.9	2.7	2.9
21	6.4	3.9	53	39	12	16	14	13	9.0	5.2	2.8	3.0
22	5.4	3.9	45	35	12	16	13	13	8.8	4.9	2.8	3.0
23	7.3	3.9	31	32	12	26	13	12	8.8	4.5	2.8	3.1
24	6.2	5.5	22	30	12	22	13	11	8.8	4.3	2.9	3.0
25	3.8	46	18	28	12	77	12	11	8.6	4.5	2.8	3.3
26	3.4	54	16	26	12	309	22	11	12	4.5	2.7	3.7
27	3.2	14	28	24	12	116	15	11	8.7	4.4	2.7	4.5
28	3.2	79	40	20	12	70	21	12	7.3	4.3	2.7	4.8
29	3.2	95	114	19	-----	56	15	12	7.2	4.2	2.8	5.9
30	3.3	68	65	19	-----	44	15	13	7.7	4.2	2.8	7.3
31	3.3	-----	42	18	-----	38	-----	20	-----	4.1	3.0	-----
TOTAL	123.7	492.9	1,799.9	1,108	379	1,143	528	442	262.0	187.2	99.6	102.8
MEAN	3.99	16.4	58.1	35.7	13.5	36.9	17.6	14.3	8.73	6.04	3.21	3.43
MAX	7.3	95	370	87	19	309	30	22	14	7.5	4.0	7.3
MIN	2.7	3.2	9.2	17	12	11	12	11	5.8	4.1	2.7	2.8
AC-FT	245	978	3,570	2,200	752	2,270	1,050	877	520	371	198	204
CAL YR 1970	TOTAL 10,100.5	MEAN 27.7	MAX 665	MIN 2.7	AC-FT 20,030							
WTR YR 1971	TOTAL 6,668.1	MEAN 18.3	MAX 370	MIN 2.7	AC-FT 13,230							

PEAK DISCHARGE (BASE, 250 CFS, REVISED)							
DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
12- 2	0600	8.41	362	3-26	0900	9.21	553
12- 4	0800	9.53	649				



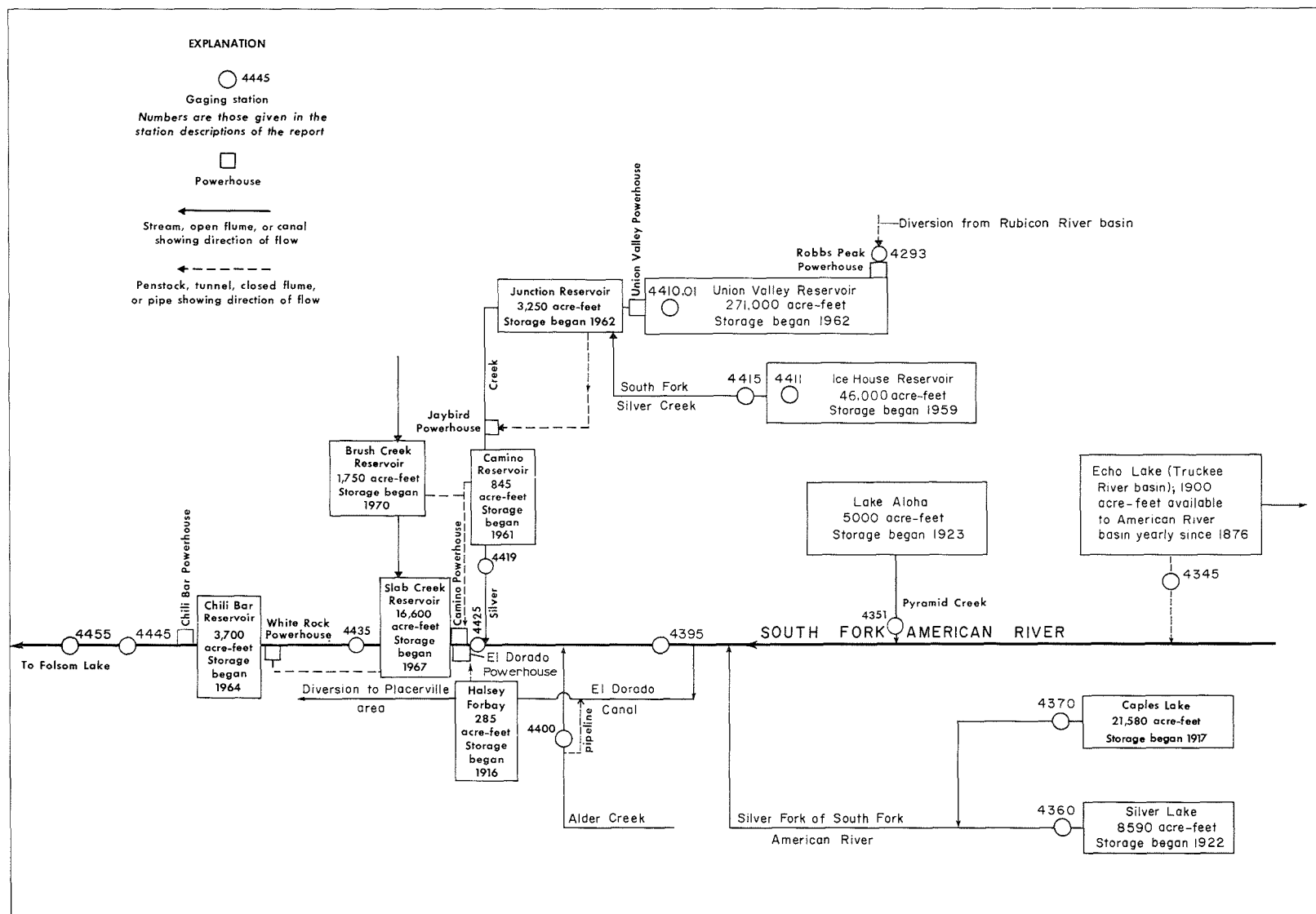


FIGURE 17.--Schematic diagram showing diversions and storage in South Fork American River basin.

## SACRAMENTO RIVER BASIN

## 11434500 ECHO LAKE CONDUIT NEAR PHILLIPS, CALIF.

LOCATION.--Lat 38°49'52", long 120°02'12", in NW¼ sec.6, T.11 N., R.18 E., El Dorado County, Eldorado National Forest, on right bank in Berkeley Municipal Camp, 0.5 mile downstream from intake, and 2.4 miles northeast of Phillips.

PERIOD OF RECORD.--August 1923 to current year (diversion seasons only). Monthly discharge only for July 1933 published in WSP 1315-A. Published as Echo Lake flume near Vade prior to 1943 and as Echo Lake conduit near Vade for seasons 1944-53.

GAGE.--Water-stage recorder. Altitude of gage is 7,420 ft (from topographic map). Prior to July 16, 1929, nonrecording gage at site 0.4 mile upstream at different datum.

EXTREMES.--Period of record: Maximum daily discharge, 31 cfs Sept. 10, 1963, Sept. 13-15, 1971; no flow for most of each year.

REMARKS.--No flow except during diversion season for which discharge is published. Conduit diverts from Echo Lake (capacity, 1,900 acre-ft) in Truckee River basin into basin of South Fork American River for power and irrigation. See schematic diagram of South Fork American River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, SEPTEMBER TO DECEMBER 1971

DAY	SEP	OCT	NOV	DEC
1	0	0	4.8	
2	0	0	3.6	
3	0	0	2.3	
4	0	3.3	1.6	
5	0	15	1.1	
6	0	27	.82	
7	0	27	.69	
8	0	26	.15	
9	0	26	0	
10	18	26	0	
11	27	25	0	
12	30	24	0	
13	31	23	0	
14	31	22	0	
15	31	21	0	
16	26	19	0	
17	30	18	0	
18	29	17	0	
19	22	16	0	
20	7.5	14	0	
21	0	13	0	
22	0	12	0	
23	0	12	0	
24	0	9.8	0	
25	0	9.4	0	
26	0	8.6	0	
27	0	7.3	0	
28	0	5.8	0	
29	0	6.1	0	
30	0	6.4	0	
31	-----	5.7	-----	
TOTAL	282.5	445.4	15.06	0
MEAN	9.42	14.4	.50	0
MAX	31	27	4.8	0
MIN	0	0	0	0
AC-FT	560	883	30	0

## 11435100 PYRAMID CREEK AT TWIN BRIDGES, CALIF.

LOCATION.--Lat 38°48'57", long 120°06'58", in NW¼SW¼ sec.9, T.11 N., R.17 E., El Dorado County, Eldorado National Forest, on right bank 0.5 mile northeast of Twin Bridges, and 2.2 miles west of Phillips.

DRAINAGE AREA.--8.76 sq mi.

PERIOD OF RECORD.--October 1970 to September 1971.

GAGE.--Water-stage recorder. Altitude of gage is 6,320 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 858 cfs June 26 (gage height, 4.62 ft), from rating curve extended above 150 cfs; minimum daily, 2.1 cfs Sept. 18, 19, 25, 26.

REMARKS.--Flow regulated by Lake Aloha (capacity, 5,000 acre-ft); 151 acre-ft Sept. 30, 1970, and no contents Sept. 30, 1971. Lake of the Woods, Ropi Lake, and Toem Lakes (unknown capacities) are also regulated at times. See schematic diagram of South Fork American River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	7.9	18	12	19	10	22	125	72	66	40	63
2	5.7	11	17	11	18	11	23	112	68	72	36	62
3	5.7	58	15	9.0	16	10	25	101	75	68	42	60
4	5.7	68	15	8.0	15	10	28	89	90	67	49	58
5	5.7	127	16	6.5	15	9.8	34	87	110	65	72	55
6	5.5	86	17	6.3	14	9.5	32	90	150	64	80	52
7	5.5	74	18	6.1	14	9.0	25	97	172	62	79	47
8	5.5	69	19	6.1	14	9.0	22	90	179	59	79	44
9	5.5	93	19	6.0	14	9.0	25	99	164	54	81	41
10	5.5	78	16	6.5	18	8.5	25	130	154	47	88	33
11	5.5	71	15	7.0	22	8.0	25	130	168	41	89	21
12	5.5	65	15	7.0	24	9.0	33	130	184	36	87	13
13	5.5	44	14	6.8	25	9.0	34	142	195	33	86	9.6
14	5.5	35	14	9.0	24	9.4	38	145	183	35	84	7.1
15	5.5	29	13	11	24	9.8	47	150	191	37	83	4.3
16	5.5	24	12	16	20	10	46	138	197	37	82	3.0
17	5.5	21	11	123	17	11	35	114	191	35	81	2.5
18	5.3	19	10	104	15	11	26	114	181	38	79	2.1
19	5.3	17	9.0	54	16	12	25	123	178	31	79	2.1
20	5.5	15	10	43	14	13	25	131	164	35	78	2.2
21	5.7	12	9.0	31	14	14	22	114	140	39	77	2.2
22	5.9	8.4	8.7	24	13	15	19	103	150	42	81	2.2
23	5.9	7.3	8.4	20	13	14	18	128	142	41	76	2.2
24	6.1	18	8.2	18	13	17	18	150	138	38	74	2.2
25	5.5	207	8.0	17	13	23	17	161	119	36	73	2.1
26	5.7	63	8.0	18	12	24	18	138	343	36	74	2.1
27	5.9	32	8.0	19	11	21	20	115	139	42	72	2.5
28	6.2	24	9.0	19	10	21	33	103	94	45	71	2.3
29	6.5	22	10	19	-----	30	111	100	80	44	69	2.6
30	6.9	19	12	20	-----	32	131	94	78	49	65	3.7
31	7.5	-----	12	20	-----	25	-----	82	-----	44	64	-----
TOTAL	178.4	1,424.6	394.3	683.3	457	434.0	1,002	3,625	4,489	1,438	2,270	606.0
MEAN	5.75	47.5	12.7	22.0	16.3	14.0	33.4	117	150	46.4	73.2	20.2
MAX	7.5	207	19	123	25	32	131	161	343	72	89	63
MIN	5.3	7.3	8.0	6.0	10	8.0	17	82	68	31	36	2.1
AC-FT	354	2,830	782	1,360	906	861	1,990	7,190	8,900	2,850	4,500	1,200

WTR YR 1971 TOTAL 17,001.6 MEAN 46.6 MAX 343 MIN 2.1 AC-FT 33,720

## SACRAMENTO RIVER BASIN

## 11436000 SILVER LAKE OUTLET NEAR KIRKWOOD, CALIF.

LOCATION.--Lat 38°40'17", long 120°07'18", in SW $\frac{1}{4}$  sec.32, T.10 N., R.17 E., Amador County, Eldorado National Forest, on right bank 1,000 ft downstream from Silver Lake Dam and 3.5 miles southwest of Kirkwood.

DRAINAGE AREA.--15.2 sq mi.

PERIOD OF RECORD.--September 1922 to current year. Records for water year 1923 incomplete, yearly estimate published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 7,199.5 ft above mean sea level, unadjusted.

AVERAGE DISCHARGE.--49 years. 34.4 cfs (24,920 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 297 cfs May 16 (gage height, 3.65 ft); minimum daily, 1.8 cfs Jan. 13.

Period of record: Maximum discharge, 676 cfs Nov. 21, 1950 (gage height, 6.03 ft), from rating curve extended above 290 cfs; no flow for many days in February, March 1948, Jan. 13, 14, 1954, Nov. 3, 1959 to Feb. 5, 1960.

REMARKS.--Flow regulated by Silver Lake 1,000 ft upstream (capacity, 3,840 acre-ft at spillway level and 8,590 acre-ft with 11 ft of flashboards); contents in Silver Lake, 4,970 acre-ft Sept. 30, 1970, and 3,990 acre-ft Sept. 30, 1971. Some water, in addition to that released through dam and over spillway, escapes from Silver Lake through porous rock formation. See schematic diagram of South Fork American River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	64	48	24	2.4	3.0	44	92	92	61	2.8	3.1
2	3.3	63	47	20	2.4	3.1	37	113	80	40	3.1	3.1
3	2.0	62	46	14	2.4	3.1	35	109	41	25	3.1	3.3
4	2.2	61	45	26	2.4	3.1	37	92	6.6	11	2.8	3.6
5	3.1	61	44	26	2.4	3.1	44	75	7.4	18	2.6	3.3
6	3.3	61	43	26	2.4	3.1	55	70	7.7	26	2.6	3.3
7	3.1	60	43	25	2.4	3.1	53	80	9.8	31	2.8	44
8	20	58	42	12	2.4	3.1	43	86	11	30	2.6	73
9	49	57	41	2.2	2.4	3.1	40	85	12	28	2.8	73
10	48	32	41	2.2	2.6	3.1	45	120	13	26	2.8	73
11	19	4.1	40	2.4	2.6	3.1	46	180	13	25	2.8	73
12	3.3	4.1	39	2.0	2.6	3.0	55	204	16	13	2.8	71
13	3.1	17	39	1.8	2.6	3.2	70	222	48	3.6	2.8	69
14	2.8	30	38	2.2	2.6	3.1	73	234	115	3.6	3.1	69
15	3.1	30	37	2.8	2.8	3.1	84	258	191	3.1	2.6	68
16	3.1	43	37	3.4	2.8	3.1	98	278	213	3.1	2.8	66
17	3.1	51	37	4.0	2.8	3.1	101	238	207	2.8	3.3	65
18	3.1	49	36	4.4	2.8	3.1	83	209	191	2.8	2.8	64
19	2.8	48	35	3.3	2.8	3.1	66	210	181	2.8	3.1	62
20	2.6	47	34	3.1	2.8	3.1	57	228	180	2.8	3.1	61
21	2.6	46	34	3.1	2.8	3.1	50	233	161	2.8	2.6	60
22	11	44	34	3.1	2.8	3.1	41	181	147	3.1	2.4	26
23	29	43	33	3.1	3.1	3.3	35	181	155	3.6	2.4	2.4
24	28	42	32	3.1	2.8	3.3	33	230	134	3.6	2.8	3.1
25	28	48	32	3.1	2.8	3.6	31	273	110	4.7	2.8	3.1
26	28	51	32	2.8	2.8	4.1	30	280	166	6.6	2.8	2.8
27	27	50	32	2.6	2.8	4.4	28	233	267	3.6	2.6	2.6
28	26	49	32	2.4	2.8	9.8	28	181	231	3.3	3.3	3.3
29	48	48	28	2.4	-----	45	36	147	141	3.1	3.3	3.6
30	64	48	28	2.4	-----	35	61	128	82	3.1	3.3	3.1
31	66	-----	26	2.4	-----	50	-----	110	-----	3.1	3.1	-----
TOTAL	540.9	1,371.2	1,155	237.3	74.1	226.6	1,539	5,360	3,229.5	399.2	88.6	1,060.7
MEAN	17.4	45.7	37.3	7.65	2.65	7.31	51.3	173	108	12.9	2.86	35.4
MAX	66	64	48	26	3.1	50	101	280	267	61	3.3	73
MIN	2.0	4.1	26	1.8	2.4	3.0	28	70	6.6	2.8	2.4	2.4
AC-FT	1,070	2,720	2,290	471	147	449	3,050	10,630	6,410	792	176	2,100
CAL YR 1970	TOTAL	15,618.5	MEAN	42.8	MAX	283	MIN	1.6	AC-FT	30,980		
WTR YR 1971	TOTAL	15,282.1	MEAN	41.9	MAX	280	MIN	1.8	AC-FT	30,310		



## 11437000 CAPLES LAKE OUTLET NEAR KIRKWOOD, CALIF.

LOCATION.--Lat 38°42'29", long 120°03'00", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.18, T.10 N., R.18 E., Alpine County, Eldorado National Forest, on right bank 500 ft downstream from main dam and outlet gate of Caples Lake, and 1.3 miles east of Kirkwood.

DRAINAGE AREA.--13.5 sq mi.

PERIOD OF RECORD.--September 1922 to current year. Records for water year 1945 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1969, published as Twin Lakes Outlet near Kirkwood.

GAGE.--Water-stage recorder and concrete control for outlet, and water-stage recorder for spillway. Altitude of gage is 7,700 ft (from topographic map).

AVERAGE DISCHARGE (including flow over Caples Lake spillway).--49 years, 36.8 cfs (26,660 acre-ft per year).

EXTREMES.--Current year: Maximum combined daily discharge for outlet and spillway, 322 cfs June 27; minimum daily, 2.4 cfs Oct. 25, Sept. 20-23.

Period of record: Maximum combined daily discharge for outlet and spillway, 669 cfs June 3, 1969; minimum daily, 0.1 cfs Mar. 25-31, 1944, Nov. 27, 28, 1956.

REMARKS.--Flow regulated by Caples Lake 500 ft upstream (capacity, 19,750 acre-ft spillway level, 21,580 acre-ft with 3 ft of flashboards), contents of which were 9,180 acre-ft on Sept. 30, 1970, and 17,600 acre-ft on Sept. 30, 1971. Flow over Caples Lake spillway occurred June 26-30, July 13-18 and is included in table below. No diversion above station. See schematic diagram of South Fork American River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS.--WSP 1931: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	48	63	24	4.4	3.3	3.0	4.4	4.1	177	37	63
2	3.0	35	63	23	4.4	3.0	3.4	4.4	4.1	175	45	66
3	3.0	16	63	23	4.4	3.0	3.4	4.1	4.1	175	44	68
4	3.0	9.1	63	23	4.4	3.0	3.7	4.1	4.4	173	29	68
5	3.0	3.4	63	22	4.4	3.0	4.1	4.1	4.4	173	10	71
6	3.0	3.0	62	22	4.4	3.0	4.1	4.4	4.4	127	6.3	75
7	3.0	3.0	62	22	4.4	3.0	3.7	4.8	4.8	50	5.5	44
8	3.0	3.0	41	15	4.4	3.0	4.1	5.1	4.8	22	15	11
9	3.0	3.0	24	4.4	5.1	3.0	4.1	4.8	5.1	14	21	20
10	3.0	3.0	24	4.4	4.8	3.0	4.4	4.4	7.9	6.7	20	13
11	3.0	3.0	24	4.4	3.4	3.0	3.4	4.4	9.6	8.3	19	3.0
12	3.0	3.0	24	4.4	3.0	3.0	3.4	4.4	14	15	17	15
13	3.0	3.0	24	4.4	3.0	3.0	3.7	4.4	22	47	26	28
14	3.0	3.0	24	4.4	3.0	2.7	3.7	4.8	155	58	31	33
15	3.0	3.0	24	4.4	3.0	2.7	3.7	4.8	251	68	30	37
16	3.0	12	24	4.4	3.0	2.7	3.7	4.4	266	74	33	43
17	3.0	33	24	4.4	3.0	2.7	3.7	4.4	278	78	35	57
18	3.0	39	24	4.4	3.0	2.7	3.7	4.8	278	96	35	63
19	3.0	39	24	4.4	3.0	2.7	3.7	4.8	278	85	40	43
20	3.0	45	24	4.4	3.0	3.0	3.7	5.1	278	58	44	2.4
21	2.7	50	24	4.4	3.3	3.0	3.7	4.8	278	39	43	2.4
22	2.7	50	24	4.4	3.0	3.0	3.7	4.8	276	40	42	2.4
23	2.7	58	24	4.4	3.0	3.4	3.7	5.5	254	39	47	2.4
24	2.7	65	24	4.4	3.0	4.1	3.7	5.9	221	33	51	3.0
25	2.4	66	24	4.4	3.0	4.4	3.7	6.3	208	33	51	3.7
26	2.7	65	24	4.4	3.0	3.0	3.4	6.3	226	22	51	3.7
27	2.7	64	24	4.4	3.0	3.0	3.4	6.7	322	24	50	3.7
28	2.7	64	24	4.4	3.0	3.0	3.4	6.7	255	23	49	3.4
29	2.7	64	24	4.4	-----	3.0	3.7	5.9	195	17	48	3.4
30	25	63	24	4.4	-----	3.0	4.1	4.1	177	19	56	3.7
31	48	-----	24	4.4	-----	3.0	-----	4.1	-----	22	62	-----
TOTAL	157.0	918.5	1,032	275.2	99.8	94.4	110.9	152.0	4,289.7	1,991.0	1,092.8	855.2
MEAN	5.06	30.6	33.3	8.88	3.56	3.05	3.70	4.90	143	64.2	35.3	28.5
MAX	48	66	63	24	5.1	4.4	4.4	6.7	322	177	62	75
MIN	2.4	3.0	24	4.4	3.0	2.7	3.0	4.1	4.1	6.7	5.5	2.4
AC-FT	311	1,820	2,050	546	198	187	220	301	8,510	3,950	2,170	1,700

CAL YR 1970 TOTAL 15,724.4 MEAN 43.1 MAX 415 MIN 2.4 AC-FT 31,190

WTR YR 1971 TOTAL 11,068.5 MEAN 30.3 MAX 322 MIN 2.4 AC-FT 21,950

## SACRAMENTO RIVER BASIN

11439500 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CALIF.

LOCATION.--Lat 38°45'49", long 120°19'39", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.29, T.11 N., R.15 E., El Dorado County, Eldorado National Forest, on right bank beside U.S. Highway 50, 0.8 mile downstream from Silver Fork of South Fork, and 1.9 miles southwest of Kyburz.

DRAINAGE AREA.--193 sq mi.

PERIOD OF RECORD.--August to December 1907, October 1922 to current year. Prior to October 1956, records for river and El Dorado Canal published separately; combined flow only, October 1956 to September 1960.

GAGE.--Water-stage recorder on river; water-stage recorder for canal diversion. Altitude of gage is 3,840 ft (from topographic map). Prior to Oct. 1, 1962, at datum 1.00 ft higher.

AVERAGE DISCHARGE (River only).--49 years (1922-71), 292 cfs (211,600 acre-ft per year).

(Combined river and diversion).--49 years (1922-71), 406 cfs (294,100 acre-ft per year).

EXTREMES (River only).--Current year: Maximum discharge, 4,730 cfs June 26 (gage height, 7.57 ft); minimum daily, 5.2 cfs Aug. 1.

Period of record: Maximum discharge, 17,400 cfs Dec. 23, 1964 (gage height, 10.92 ft), from rating curve extended above 6,300 cfs on basis of contracted-opening measurement at gage height 10.40 ft; minimum daily, 0.3 cfs Nov. 9-11, 1928.

(Combined flow).--Current year: Maximum discharge, 4,890 cfs June 26; minimum daily, 26 cfs Sept. 25.

Period of record: Maximum discharge, 17,500 cfs Dec. 23, 1964; minimum daily, 10 cfs Oct. 17, 19, 1929.

REMARKS.--Flow at low and medium stages greatly regulated by four reservoirs since beginning of record (total usable capacity, 37,100 acre-ft). See schematic diagram of South Fork American River basin. For records of combined discharge of river and canal, see following page. Record of water temperatures for the current year is published in Part 2 of this report.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1445: 1923(M), 1925(M), 1927(M), 1928(river only), 1935-37(M). WSP 1515: 1928(combined). WSP 1931: Drainage area.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	6.4	113	16	98	58	497	997	727	738	5.2	7.6
2	28	6.4	110	12	95	66	502	1,020	665	691	5.4	7.6
3	27	9.5	108	11	87	51	506	882	691	625	5.6	7.6
4	26	32	126	40	78	46	554	755	717	563	5.6	7.6
5	26	304.	119	72	70	38	660	685	882	532	5.6	7.6
6	27	123	113	118	66	33	711	733	1,120	489	5.4	7.6
7	26	69	108	144	62	35	615	888	1,300	395	5.4	18
8	27	42	133	141	63	31	514	925	1,380	298	5.4	9.8
9	35	81	118	111	63	30	536	894	1,320	258	5.4	7.6
10	10	113	81	102	79	31	615	1,240	1,230	201	15	7.9
11	9.5	11	65	107	156	33	591	1,490	1,280	174	10	7.4
12	19	59	55	99	234	35	670	1,560	1,380	146	9.2	7.4
13	26	8.9	49	107	264	35	788	1,620	1,420	124	7.9	7.4
14	25	6.2	42	93	249	40	766	1,700	1,470	154	9.8	7.6
15	25	5.8	40	30	258	47	876	1,790	1,700	148	7.6	7.6
16	25	5.8	37	5.6	225	57	957	1,680	1,760	139	7.6	7.6
17	25	5.8	37	323	174	69	888	1,410	1,700	142	8.1	7.9
18	25	7.6	37	582	137	69	653	1,320	1,610	176	8.1	18
19	27	6.0	37	380	131	84	554	1,380	1,570	150	8.1	17
20	33	5.8	32	304	107	114	554	1,470	1,520	99	8.7	7.6
21	35	5.8	33	219	97	141	485	1,380	1,430	79	8.1	6.0
22	24	5.8	30	161	91	159	425	1,070	1,340	55	9.8	30
23	18	6.0	32	128	82	214	391	1,260	1,260	57	8.4	32
24	32	12	33	105	74	231	395	1,520	1,160	35	8.7	27
25	23	1,210	35	89	74	388	356	1,710	1,040	28	8.1	26
26	12	476	37	84	55	1,110	342	1,660	2,200	25	11	27
27	6.7	190	29	89	50	691	353	1,410	1,720	6.4	18	30
28	6.7	146	23	89	54	550	421	1,180	1,250	17	8.1	29
29	7.4	163	24	87	-----	541	587	1,040	977	5.6	8.1	30
30	7.1	135	18	94	-----	665	828	983	805	5.8	7.9	40
31	8.1	-----	17	99	-----	591	-----	846	-----	5.6	7.6	-----
TOTAL	680.5	3,257.8	1,871	4,041.6	3,273	6,283	17,590	38,498	38,624	6,561.4	252.9	461.4
MEAN	22.0	109	60.4	130	117	203	586	1,242	1,287	212	8.16	15.4
MAX	35	1,210	133	582	264	1,110	957	1,790	2,200	738	18	40
MIN	6.7	5.8	17	5.6	50	30	342	685	665	5.6	5.2	6.0
AC-FT	1,350	6,460	3,710	8,020	6,490	12,460	34,890	76,360	76,610	13,010	502	915

CAL YR 1970 TOTAL 123,814.4 MEAN 339 MAX 4,030 MIN 5.2 AC-FT 245,600  
WTR YR 1971 TOTAL 121,394.6 MEAN 333 MAX 2,200 MIN 5.2 AC-FT 240,800

## PEAK DISCHARGE (BASE, 2,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-25	1845	5.78	2,010	6-15	2130	5.94	2,180
5-14	2145	6.00	2,250	6-26	1830	7.57	4,730
5-25	2200	6.04	2,300				

## 11439500 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CALIF.--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SOUTH FORK AMERICAN RIVER  
AND EL DORADO CANAL NEAR KYBURZ, CALIF., WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	168	249	151	240	203	632	1,140	868	874	150	168
2	31	167	245	147	237	210	637	1,160	806	847	164	169
3	31	167	245	147	229	196	641	1,020	832	781	163	169
4	29	195	270	175	220	190	689	896	858	719	163	167
5	29	464	262	208	212	182	795	826	1,020	688	166	163
6	31	283	257	170	208	178	846	874	1,260	645	163	168
7	30	229	252	163	204	180	750	1,030	1,440	551	157	176
8	31	200	277	149	205	180	649	1,070	1,520	457	153	171
9	62	240	262	118	205	183	671	1,040	1,460	420	161	162
10	65	272	215	109	221	184	750	1,380	1,370	363	177	169
11	62	163	209	114	298	186	726	1,630	1,420	336	172	159
12	27	219	199	111	376	186	805	1,700	1,520	308	170	146
13	29	150	194	134	406	180	923	1,760	1,560	286	164	160
14	28	145	186	142	391	185	901	1,840	1,620	316	172	167
15	28	137	184	125	400	192	1,010	1,930	1,860	310	170	167
16	28	127	181	124	366	202	1,090	1,820	1,920	301	165	166
17	28	147	164	458	315	214	1,020	1,550	1,860	304	168	167
18	28	168	179	717	279	214	788	1,460	1,770	338	168	181
19	30	162	181	515	273	229	692	1,520	1,730	312	164	180
20	36	158	176	439	249	259	694	1,610	1,680	261	171	129
21	38	164	176	354	239	286	626	1,520	1,590	241	169	102
22	41	158	173	296	233	304	565	1,210	1,500	215	170	80
23	72	155	175	263	223	359	531	1,400	1,420	219	164	32
24	103	172	177	240	215	375	535	1,660	1,320	197	172	27
25	93	1,360	177	224	218	529	496	1,850	1,200	190	169	26
26	90	625	176	219	202	1,240	483	1,800	2,360	187	173	27
27	87	344	164	224	194	825	494	1,550	1,880	164	181	30
28	86	300	158	228	198	684	562	1,320	1,410	179	167	29
29	87	312	159	229	-----	676	728	1,180	1,130	163	163	30
30	120	278	153	236	-----	800	969	1,120	961	159	158	40
31	164	-----	152	241	-----	726	-----	987	-----	158	170	-----
TOTAL	1,676	7,829	6,227	7,170	7,256	10,737	21,698	42,853	43,145	11,509	5,157	3,727
MEAN	54.1	261	201	231	259	346	723	1,382	1,438	371	166	124
MAX	164	1,360	277	717	406	1,240	1,090	1,930	2,360	894	181	181
MIN	27	127	152	109	194	178	483	826	806	158	150	26
AC-FT	3,320	15,530	12,350	14,220	14,390	21,300	43,040	85,000	85,580	22,830	10,230	7,390
CAL YR 1970	TOTAL	173,561	MEAN	476	MAX	4,170	MIN	27	AC-FT	344,300		
WTR YR 1971	TOTAL	168,984	MEAN	463	MAX	2,360	MIN	26	AC-FT	335,200		

## SACRAMENTO RIVER BASIN

11440000 ALDER CREEK NEAR WHITE HALL, CALIF.

LOCATION.--Lat 38°45'19", long 120°22'17", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.35, T.11 N., R.14 E., El Dorado County, Eldorado National Forest, on right bank 0.9 mile upstream from mouth, and 2.2 miles southeast of White Hall.

DRAINAGE AREA.--22.1 sq mi.

PERIOD OF RECORD.--October 1922 to current year (includes diversions by pipeline).

GAGE.--Water-stage recorder. Broad-crested weir with V-notch since Aug. 28, 1964. Altitude of gage is 3,840 ft (from topographic map). Prior to July 23, 1924, nonrecording gage at same site and datum.

AVERAGE DISCHARGE (including diversions by pipeline).--49 years, 37.8 cfs (27,390 acre-ft per year).

EXTREMES (Creek only).--Current year: Maximum discharge, 610 cfs Mar. 26 (gage height, 4.36 ft); minimum daily, 0.03 cfs Nov. 10, 15-23.

Period of record: Maximum discharge 5,500 cfs Dec. 23, 1955 (gage height, 8.40 ft, from floodmarks), from rating curve extended above 600 cfs; no flow at times in several years.

REMARKS.--Records include computed flow in feeder pipeline that was diverted 1,300 ft above station into El Dorado Canal from Oct. 26 to June 14.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

REVISIONS (WATER YEARS).--WSP 1215: 1928(M). WSP 1445: 1925(M), 1929, 1935-36(M), 1938(M), 1940-43(M), 1945(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	1.0	24	10	41	33	169	111	68	14	2.2	1.1
2	.34	1.0	24	10	41	32	158	115	63	13	1.9	1.1
3	.36	1.0	20	11	40	28	149	115	59	12	1.9	1.1
4	.36	1.5	27	11	37	26	151	115	56	11	1.7	1.1
5	.38	8.5	30	12	36	25	158	111	55	10	1.7	1.0
6	.38	11	26	12	35	25	158	111	56	9.9	1.7	.98
7	.38	9.2	24	12	34	25	151	122	57	9.4	1.5	.98
8	.36	8.0	35	12	34	25	138	128	57	8.9	1.5	.98
9	.36	5.1	52	12	34	25	136	128	55	8.5	1.5	.94
10	.38	6.6	35	12	36	26	147	140	52	8.0	1.5	.90
11	.36	5.1	30	12	47	27	138	158	47	8.0	1.4	.86
12	.38	13	26	12	60	28	140	165	44	7.6	1.4	.82
13	.38	8.8	24	13	69	30	145	162	40	6.7	1.4	.79
14	.36	8.6	23	14	74	35	149	162	37	5.9	1.4	.75
15	.36	7.9	20	15	81	38	153	158	33	5.9	1.2	.72
16	.36	5.1	19	15	84	42	156	147	30	5.2	1.2	.68
17	.36	5.1	18	32	78	44	149	128	28	4.5	1.2	.68
18	.38	3.5	17	48	69	47	128	115	25	5.2	1.2	.65
19	.46	3.5	17	51	65	52	116	107	21	4.5	1.2	.65
20	.82	3.4	16	55	59	59	113	105	19	4.5	1.2	.65
21	1.1	3.4	16	51	53	65	102	100	17	4.5	1.2	.68
22	1.7	3.4	13	45	49	71	93	89	16	3.4	1.2	.68
23	2.2	3.4	11	43	45	92	89	85	15	3.0	1.2	.68
24	3.9	3.4	8.3	36	43	107	85	89	13	3.0	1.2	.68
25	1.7	47	8.2	33	41	174	81	92	13	3.0	1.2	.72
26	1.2	45	7.9	32	37	466	78	97	32	2.7	1.2	.82
27	.95	24	14	32	34	332	76	98	30	2.7	1.1	1.1
28	.94	23	14	33	36	255	81	90	15	2.4	1.1	1.1
29	.94	26	12	35	-----	226	90	82	17	2.4	1.1	1.2
30	1.0	25	12	37	-----	218	100	79	15	2.2	1.1	2.2
31	1.0	-----	12	40	-----	194	-----	76	-----	2.2	1.1	-----
TOTAL	24.51	320.5	635.4	798	1,392	2,872	3,777	3,580	1,085	194.2	42.6	27.29
MEAN	.79	10.7	20.5	25.7	49.7	92.6	126	115	36.2	6.26	1.37	.91
MAX	3.9	47	52	55	84	466	169	165	68	14	2.2	2.2
MIN	.34	1.0	7.9	10	34	25	76	76	13	2.2	1.1	.65
AC-FT	49	636	1,260	1,580	2,760	5,700	7,490	7,100	2,150	385	85	54

CAL YR 1970 TOTAL 17,837.80 MEAN 48.9 MAX 1,360 MIN .34 AC-FT 35,380  
WTR YR 1971 TOTAL 14,748.50 MEAN 40.4 MAX 466 MIN .34 AC-FT 29,250

PEAK DISCHARGE (BASE, 170 CFS, CREEK ONLY).--Mar. 26 (0930) 610 cfs (4.36 ft); May 11 (2015) 177 cfs (3.19 ft).

## 11441001 UNION VALLEY RESERVOIR NEAR RIVERTON, CALIF.

LOCATION.--Lat 38°51'52", long 120°26'19", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.20, T.12 N., R.14 E., El Dorado County, Eldorado National Forest, in valve control house near left bank at Union Valley Dam on Silver Creek, 0.6 mile upstream from Little Silver Creek, and 6.6 miles north of Riverton.

DRAINAGE AREA.--83.6 sq mi.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Sacramento Municipal Utility District).

EXTREMES.--Current year: Maximum contents, 271,000 acre-ft June 26 (elevation, 4,870.0 ft); minimum, 120,100 acre-ft Feb. 27 (elevation, 4,801.7 ft).

Period of record: Maximum contents, 271,000 acre-ft June 26, 1971 (elevation, 4,870.0 ft); minimum since reservoir first filled, 90,900 acre-ft Jan. 27, 1967 (elevation, 4,782.1 ft).

REMARKS.--Reservoir is formed by earthfill dam completed in December 1962. Storage began in May 1962. Usable capacity, 264,000 acre-ft between elevations 4,645.0 ft (minimum operating level) and 4,870.0 ft (top of radial spillway gates) above mean sea level. Dead storage, 7,000 acre-ft. Reservoir receives water from the South Fork Rubicon River via Robbs Peak powerplant (see sta 11429800). Water is used for power development in the South Fork American River basin. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Middle Fork American and Rubicon River basins and South Fork American River basin.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,700	25,000	4,800	117,000
4,720	35,000	4,820	153,000
4,740	48,000	4,840	196,000
4,760	65,000	4,870	271,000
4,780	88,000		

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	219,000	205,500	196,900	163,500	121,500	120,600	150,300	198,200	248,600	268,300	239,800	186,500
2	219,000	204,600	197,100	162,000	122,000	120,600	151,700	200,200	249,400	267,500	237,800	185,400
3	219,000	203,500	197,100	161,800	122,600	120,600	153,400	201,300	250,200	267,000	235,900	184,600
4	219,000	202,800	197,800	160,400	123,300	121,100	155,100	201,900	250,800	267,500	233,900	183,700
5	219,000	202,400	197,500	158,700	123,700	121,500	157,400	202,200	252,600	268,000	231,800	183,500
6	218,800	201,900	198,000	156,600	124,200	121,900	159,700	202,800	255,300	267,500	229,700	183,000
7	218,800	201,300	196,900	154,300	124,700	122,400	161,400	203,500	257,200	267,000	227,400	183,900
8	218,800	201,500	196,200	152,100	125,100	122,000	162,900	204,800	258,800	266,400	226,800	184,800
9	218,800	201,300	194,700	150,100	124,700	122,000	164,300	206,600	260,200	265,600	224,800	186,100
10	218,800	200,600	193,100	149,000	124,400	122,000	166,200	207,900	261,600	265,100	222,700	187,200
11	218,800	201,100	191,400	147,400	124,600	122,200	167,700	209,900	262,600	265,100	220,300	188,300
12	218,500	200,800	189,600	145,600	125,100	123,100	169,400	211,200	263,400	264,000	218,000	188,700
13	218,300	200,400	189,000	144,000	125,600	123,800	171,500	212,900	263,700	262,900	216,200	189,600
14	218,000	199,700	187,600	141,800	126,700	124,400	173,600	214,900	264,000	261,800	214,500	190,500
15	217,600	199,500	185,900	140,000	127,400	124,400	176,200	217,100	264,000	260,700	214,000	191,600
16	217,100	198,400	185,000	138,100	127,100	124,900	178,600	220,100	264,000	259,400	212,100	192,700
17	217,100	197,500	183,700	137,500	126,400	125,600	180,800	221,400	264,200	258,300	210,100	194,000
18	217,100	196,400	181,900	137,200	125,600	126,200	182,100	222,700	265,300	258,600	207,900	195,100
19	216,900	195,800	180,400	137,200	124,900	126,900	183,500	224,000	266,700	257,800	205,900	195,100
20	216,700	194,500	180,200	136,400	124,000	127,600	185,000	225,800	267,800	256,700	204,100	195,100
21	215,400	193,100	178,800	135,500	124,600	128,500	186,300	227,400	268,600	255,300	202,200	195,600
22	214,500	192,700	177,300	134,100	123,800	129,200	187,200	229,700	268,800	253,700	201,700	195,600
23	213,600	191,600	175,300	132,500	122,900	130,700	188,100	232,600	269,400	252,100	199,500	195,600
24	213,200	190,700	173,400	132,100	122,200	131,800	189,200	234,600	269,100	251,600	197,500	195,100
25	213,200	193,800	173,200	130,300	121,500	134,100	190,100	237,000	268,800	250,800	196,000	195,800
26	212,100	195,100	171,500	128,500	120,600	139,100	190,900	238,800	271,000	249,100	194,200	195,300
27	210,500	194,900	171,100	126,700	120,100	141,700	192,000	240,400	270,700	247,800	192,700	195,300
28	209,200	195,300	169,800	124,900	120,600	143,500	193,100	241,400	269,900	245,900	191,200	195,800
29	207,900	196,400	167,700	123,100	-----	145,300	194,500	241,400	269,600	243,700	190,300	195,100
30	206,300	196,700	165,600	121,300	-----	147,200	196,400	245,900	268,800	241,700	189,000	194,700
31	205,700	-----	163,700	120,800	-----	148,900	-----	248,000	-----	240,100	187,900	-----
MAX	219,000	205,500	198,000	163,500	127,400	148,900	196,400	248,000	271,000	268,300	239,800	195,800
MIN	205,700	190,700	163,700	120,800	120,100	120,600	150,300	198,200	248,600	240,100	187,900	183,000
(a)	4,844.4	4,840.3	4,825.1	4,802.1	4,802.0	4,817.7	4,840.2	4,861.5	4,869.2	4,858.5	4,836.3	4,839.4
(b)	-13,300	-9,000	-33,000	-42,900	-200	+28,300	+47,500	+51,600	+20,800	-28,700	-52,200	+6,800

CAL YR 1970 b -31,400

WTR YR 1971 b -24,300

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## SACRAMENTO RIVER BASIN

## 11441100 ICE HOUSE RESERVOIR NEAR KYBURZ, CALIF.

LOCATION.--Lat 38°49'26", long 120°21'34", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.1, T.11 N., R.14 E., El Dorado County, Eldorado National Forest, on left bank at Ice House Dam on South Fork Silver Creek, 0.5 mile upstream from Peavine Creek, and 4.8 miles northwest of Kyburz.

DRAINAGE AREA.--27.2 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Sacramento Municipal Utility District).

EXTREMES.--Current year: Maximum contents, 46,400 acre-ft June 27 (elevation, 5,450.6 ft); minimum, 18,500 acre-ft Feb. 27-Mar. 1 (elevation, 5,401.9 ft).

Period of record: Maximum contents, 46,400 acre-ft June 27, 1971 (elevation, 5,450.6 ft); minimum since reservoir first filled, 1,740 acre-ft Oct. 5-9, 1962 (elevation, 5,349.85 ft).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 15, 1959. Usable capacity, 45,800 acre-ft between elevations 5,327.5 ft (centerline of fishwater outlet) and 5,450.0 ft (top of spillway gates). Dead storage, 160 acre-ft. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of South Fork American River basin. Reservoir is used to store water for power development.

REVISIONS (WATER YEARS).--WRD Calif. 1967: 1960. WRD Calif. 1970: 1969.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

5,349	1,600	5,400	17,600
5,350	1,760	5,420	27,400
5,360	3,840	5,450	46,000
5,380	9,600		

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35,700	32,000	33,700	31,300	32,300	18,500	22,600	29,900	39,800	45,700	43,900	43,200
2	35,700	31,700	33,800	31,200	31,500	18,600	22,800	30,300	39,600	45,400	43,900	43,200
3	35,700	31,500	33,800	31,200	31,000	18,700	23,100	30,500	39,500	45,300	43,800	43,200
4	35,600	31,300	33,700	31,200	30,400	18,700	23,400	30,800	39,400	45,100	43,800	43,200
5	35,600	31,200	33,900	31,100	29,700	18,800	23,600	31,100	39,400	44,900	43,800	43,100
6	35,500	31,000	33,900	31,100	29,100	18,900	23,900	31,300	39,700	44,700	43,800	42,800
7	35,500	31,100	34,000	31,200	28,300	19,000	24,100	31,600	39,900	44,400	43,800	41,900
8	35,500	31,200	34,100	31,100	27,400	19,000	24,400	31,900	40,600	44,200	43,800	41,000
9	35,500	31,200	34,200	31,000	26,600	19,100	24,600	32,400	41,000	44,000	43,800	40,100
10	35,500	31,400	34,200	31,000	25,800	19,100	24,800	33,100	41,500	44,000	43,800	39,200
11	35,400	31,400	34,300	31,000	25,000	19,200	25,000	33,800	42,000	44,000	43,800	38,400
12	35,400	31,500	34,300	31,000	24,200	19,300	25,300	34,500	42,600	44,000	43,800	37,500
13	35,400	31,600	34,300	31,100	23,400	19,400	25,600	35,200	43,200	44,000	43,700	36,500
14	35,400	31,600	34,400	31,100	22,500	19,400	25,900	36,100	43,800	43,900	43,700	35,500
15	35,400	31,600	34,300	31,100	22,000	19,500	26,300	36,900	44,400	43,900	43,700	34,500
16	35,300	31,700	34,000	31,200	21,800	19,600	26,600	37,600	45,000	44,000	43,600	33,500
17	35,300	31,700	33,700	31,300	21,400	19,600	27,000	37,800	45,300	43,900	43,600	32,500
18	35,200	31,700	33,400	31,500	21,300	19,800	27,200	38,000	45,200	43,900	43,500	31,600
19	35,000	31,700	33,100	31,900	21,100	19,800	27,500	38,200	45,400	44,000	43,500	31,000
20	34,800	31,700	32,700	32,100	21,000	20,000	27,600	38,400	45,500	44,000	43,500	31,000
21	34,600	31,800	32,400	32,200	21,000	20,000	27,900	38,500	45,500	44,000	43,400	31,000
22	34,300	31,800	32,100	32,400	20,800	20,200	28,000	38,600	45,400	44,000	43,400	31,000
23	34,100	31,800	31,900	32,500	20,400	20,200	28,200	38,900	45,400	43,900	43,400	31,000
24	33,900	31,900	31,800	32,600	19,900	20,400	28,400	39,200	45,300	43,900	43,400	31,000
25	33,700	32,700	31,600	32,700	19,400	20,700	28,500	39,700	45,500	43,900	43,400	30,900
26	33,400	33,000	31,500	32,800	19,000	21,200	28,700	40,000	46,300	43,900	43,300	30,900
27	33,100	33,100	31,400	32,900	18,580	21,400	28,800	40,000	46,400	43,800	43,300	30,900
28	32,900	33,300	31,400	33,000	18,500	21,700	29,000	40,000	45,700	43,900	43,300	30,900
29	32,700	33,400	31,400	33,100	-----	22,000	29,300	40,000	45,700	43,900	43,300	30,900
30	32,400	33,500	31,400	33,100	-----	22,200	29,600	40,000	45,700	43,900	43,200	30,900
31	32,200	-----	31,400	33,200	-----	22,400	-----	39,900	-----	43,900	43,200	-----
MAX	35,700	33,500	34,400	33,200	32,300	22,400	29,600	40,000	46,400	45,700	43,900	43,200
MIN	32,200	31,000	31,400	31,000	18,500	18,500	22,600	29,900	39,400	43,800	43,200	30,900
(a)	5,428.8	5,431.0	5,427.4	5,430.5	5,401.9	5,410.1	5,424.2	5,441.0	5,449.6	5,447.1	5,446.1	5,426.6
(b)	-3,500	+1,300	-2,100	+1,800	-14,700	+3,900	+7,200	+10,300	+5,800	-1,800	-700	-12,300

CAL YR 1970 b +2,200  
WTR YR 1971 b -4,800

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

## 11441500 SOUTH FORK SILVER CREEK NEAR ICE HOUSE, CALIF.

LOCATION.--Lat 38°49'08", long 120°21'51", in NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.12, T.11 N., R.14 E., El Dorado County, Eldorado National Forest, on right bank 300 ft upstream from Peavine Creek, 0.4 mile downstream from Ice House Dam, and 4.8 miles northwest of Kyburz.

DRAINAGE AREA.--27.5 sq mi.

PERIOD OF RECORD.--October 1924 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5,290 ft (from topographic map). Prior to Oct. 1, 1959, at site 0.3 mile downstream at different datum.

AVERAGE DISCHARGE (adjusted for change in contents in Ice House Reservoir).--47 years, 75.1 cfs (54,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 890 cfs June 27 (gage height, 4.96 ft); minimum daily, 5.4 cfs on several days in March and April.

Period of record: Maximum discharge, 3,940 cfs Dec. 23, 1955 (gage height, 6.71 ft, site and datum then in use), from rating curve extended above 540 cfs on basis of slope-area measurement at gage height 6.69 ft; no flow Oct. 31 to Nov. 9, 1958. Maximum discharge since construction of Ice House Dam in 1959, 1,800 cfs Jan. 22, 1970 (gage height, 5.66 ft), from rating curve extended above 620 cfs on basis of computation of flow over dam at gage height, 5.66 ft; minimum daily, 1.2 cfs Mar. 17-19, 1960.

REMARKS.--Records excellent. Flow regulated by Ice House Reservoir beginning in December 1959 (see sta 11441100). See schematic diagram of South Fork American River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	124	7.1	40	494	5.7	7.1	11	240	121	13	12
2	11	124	7.1	40	399	5.7	6.8	11	240	161	13	12
3	11	124	54	40	316	5.7	6.8	11	240	174	13	12
4	11	124	128	40	375	5.7	7.1	12	240	174	13	12
5	11	124	7.1	40	375	5.7	6.8	12	240	174	12	12
6	11	73	6.8	40	370	5.7	6.8	12	240	174	12	139
7	11	11	6.5	40	429	5.7	6.5	12	240	174	12	424
8	11	11	8.1	40	528	5.7	6.8	12	180	174	12	470
9	11	8.8	8.1	40	520	5.7	6.5	12	141	137	12	429
10	11	6.0	6.8	41	513	5.4	7.4	12	141	75	12	424
11	11	6.2	6.8	41	506	5.7	6.8	11	106	75	12	424
12	11	6.5	6.8	41	499	6.0	6.5	11	79	75	12	424
13	11	6.0	6.8	41	499	6.0	6.2	11	79	75	12	440
14	11	6.0	6.8	41	492	5.7	6.2	11	79	75	12	446
15	11	6.0	99	23	271	5.7	6.2	11	79	58	12	440
16	11	6.0	191	6.5	204	5.7	6.0	81	75	47	12	434
17	11	6.0	191	7.1	182	5.7	6.2	222	188	52	12	434
18	11	6.0	191	7.1	151	5.7	6.0	236	288	52	12	429
19	77	6.0	191	6.8	151	5.7	6.0	236	236	42	12	322
20	124	6.0	191	6.8	103	6.0	6.0	236	236	38	13	14
21	124	6.0	191	6.8	6.0	6.0	6.0	236	236	40	13	14
22	124	6.0	161	6.8	170	6.0	5.7	236	236	40	13	13
23	124	6.0	111	6.8	250	7.1	5.7	236	236	40	13	13
24	124	7.1	97	6.8	246	6.5	5.4	236	186	40	12	13
25	124	11	97	6.8	243	7.8	5.4	236	85	40	13	13
26	124	8.1	97	6.8	240	12	5.7	236	153	40	13	13
27	124	6.8	97	6.8	240	7.8	5.7	236	533	29	13	14
28	124	7.1	66	6.8	84	7.1	5.4	236	479	13	13	14
29	124	8.1	41	6.8	-----	7.4	5.4	236	182	13	13	14
30	124	7.1	41	7.1	-----	7.4	8.1	240	136	13	12	15
31	124	-----	40	7.1	-----	7.1	-----	240	-----	13	12	-----
TOTAL	1,763	863.8	2,359.8	697.7	8,856.0	196.8	189.2	3,787	6,049	2,448	385	5,889
MEAN	56.9	28.8	76.1	22.5	316	6.35	6.31	122	202	79.0	12.4	196
MAX	124	124	191	41	528	12	8.1	240	533	174	13	470
MIN	11	6.0	6.5	6.5	6.0	5.4	5.4	11	75	13	12	12
AC-FT	3,500	1,710	4,680	1,380	17,570	390	375	7,510	12,000	4,860	764	11,680

CAL YR 1970 TOTAL 32,745.3 MEAN 89.7 MAX 1,560 MIN 5.0 AC-FT 64,950 MEAN a 92.7 AC-FT a 67,150  
WTR YR 1971 TOTAL 33,484.3 MEAN 91.7 MAX 533 MIN 5.4 AC-FT 66,420 MEAN a 85.1 AC-FT a 61,620

a Adjusted for change in contents in Ice House Reservoir.

## SACRAMENTO RIVER BASIN

## 11441900 SILVER CREEK BELOW CAMINO DIVERSION DAM, CALIF.

LOCATION.--Lat 38°49'26", long 120°32'18", on line between secs.4 and 5, T.11 N., R.13 E., El Dorado County, Eldorado National Forest, on right bank 300 ft downstream from Round Tent Canyon, 0.4 mile downstream from diversion dam, and 5 miles northeast of Pollock Pines.

DRAINAGE AREA.--171 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 2,754.06 ft above mean sea level (Sacramento Municipal Utility District bench mark).

AVERAGE DISCHARGE (unadjusted), --11 years, 120 cfs (86,940 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,770 cfs Mar. 26 (gage height, 6.33 ft); minimum daily, 11 cfs Oct. 31 to Nov. 23.

Period of record: Maximum discharge, 19,300 cfs Jan. 31, 1963 (gage heights, 11.28 ft in gage well, 11.9 ft, from floodmarks), from rating curve extended above 1,500 cfs on basis of slope-area measurement of maximum flow; minimum daily, 4.6 cfs July 1, 1964.

REMARKS.--Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin. Records not adjusted for diversions or changes in storage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	11	29	18	25	13	31	23	23	46	22	22
2	41	11	38	18	25	12	27	24	23	20	21	22
3	41	11	25	17	25	12	25	25	22	22	21	23
4	40	11	48	16	23	12	24	25	22	21	22	22
5	40	11	38	16	23	12	23	25	21	20	21	22
6	39	11	28	16	23	12	22	25	21	20	21	23
7	38	11	25	15	23	12	22	25	21	20	21	22
8	36	11	34	16	22	12	20	27	20	20	22	22
9	33	11	38	15	21	12	19	26	21	21	21	22
10	32	11	29	16	21	12	22	25	20	21	21	22
11	31	11	24	17	23	13	22	25	22	21	22	22
12	31	11	22	18	25	20	20	24	21	20	22	22
13	31	11	21	17	27	22	19	24	21	20	21	22
14	32	11	20	17	29	20	18	24	21	20	21	22
15	33	11	19	17	30	20	17	24	21	21	22	22
16	32	11	21	18	28	19	16	23	21	21	21	22
17	31	11	19	24	25	20	17	24	21	19	21	22
18	31	11	18	31	23	20	16	23	22	20	22	22
19	33	11	17	36	22	20	15	20	20	20	22	22
20	36	11	16	35	19	20	15	20	21	19	22	23
21	38	11	16	35	18	20	14	20	20	20	21	22
22	34	11	16	31	16	21	14	20	22	21	21	22
23	31	11	15	28	14	28	15	18	21	22	20	23
24	31	12	15	27	13	31	14	21	21	22	21	23
25	31	26	15	25	13	48	13	23	23	23	21	23
26	35	23	15	24	13	822	13	22	24	21	21	23
27	32	16	16	23	14	301	13	22	209	22	23	24
28	31	18	16	23	14	69	12	21	914	22	22	23
29	31	24	19	23	-----	52	12	22	242	22	23	23
30	20	22	19	24	-----	43	16	21	140	22	22	23
31	11	-----	18	25	-----	37	-----	22	-----	21	23	-----
TOTAL	1,029	394	709	681	597	1,787	546	713	2,061	670	667	672
MEAN	33.2	13.1	22.9	22.0	21.3	57.6	18.2	23.0	68.7	21.6	21.5	22.4
MAX	43	26	48	36	30	822	31	27	914	46	23	24
MIN	11	11	15	15	13	12	12	18	20	19	20	22
AC-FT	2,040	782	1,410	1,350	1,180	3,540	1,080	1,410	4,090	1,330	1,320	1,330
CAL YR 1970	TOTAL	38,837	MEAN	106	MAX	5,090	MIN	10	AC-FT	77,030		
WTR YR 1971	TOTAL	10,526	MEAN	28.8	MAX	914	MIN	11	AC-FT	20,880		



## 11442500 SOUTH FORK AMERICAN RIVER BELOW SILVER CREEK, NEAR POLLOCK PINES, CALIF.

LOCATION.--Lat 38°47'37", long 120°37'02", in NE¼NE¼ sec.22, T.11 N., R.12 E., El Dorado County, Eldorado National Forest, on right bank 350 ft upstream from El Dorado powerhouse, 2.4 miles downstream from Silver Creek, and 2.8 miles northwest of Pollock Pines.

DRAINAGE AREA.--449 sq mi.

PERIOD OF RECORD.--August to December 1923, November 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,862.79 ft above mean sea level. Aug. 11 to Dec. 16, 1923, nonrecording gage at same site at different datum.

EXTREMES.--Current year: Maximum discharge, 5,150 cfs Mar. 26 (gage height, 10.85 ft); minimum daily, 27 cfs Nov. 17.

Period of record: Maximum discharge, 22,200 cfs Jan. 21, 1970 (gage height, 15.22 ft); minimum daily, 25 cfs Nov. 24, 1969.

REMARKS.--Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	47	402	123	280	163	949	1,180	961	912	41	42
2	90	46	545	119	276	166	911	1,290	867	840	40	41
3	88	44	276	91	259	160	880	1,160	893	782	39	41
4	86	35	626	110	234	142	908	1,050	869	716	40	41
5	85	242	442	147	217	125	994	951	970	678	40	40
6	85	312	322	172	205	110	1,060	972	1,180	645	40	40
7	84	168	276	217	193	114	979	1,070	1,400	545	40	40
8	80	99	338	220	184	110	853	1,240	1,520	436	38	46
9	78	81	485	211	184	104	840	1,080	1,510	384	39	46
10	89	176	290	181	190	106	955	1,360	1,370	340	38	39
11	55	100	227	227	269	112	912	1,720	1,370	302	46	40
12	82	97	178	248	397	217	948	1,830	1,460	264	45	39
13	64	83	155	227	456	302	1,090	1,860	1,540	232	43	39
14	73	38	134	234	456	231	1,040	1,880	1,550	241	41	38
15	73	30	119	255	460	202	1,130	2,030	1,780	254	42	38
16	75	28	211	262	451	220	1,240	1,990	1,880	244	42	39
17	78	27	187	588	388	241	1,220	1,660	1,840	232	39	39
18	106	28	187	1,090	330	234	961	1,500	1,730	278	41	38
19	102	31	144	838	330	241	836	1,540	1,680	264	41	48
20	117	31	125	706	266	276	833	1,620	1,630	217	40	97
21	122	29	132	566	245	314	766	1,650	1,570	175	41	166
22	134	29	119	456	231	338	690	1,240	1,450	172	40	148
23	136	29	112	375	208	433	633	1,330	1,390	122	40	112
24	124	32	114	326	184	520	639	1,640	1,290	115	42	67
25	112	1,100	119	280	184	682	591	1,820	1,190	88	41	61
26	104	850	166	259	147	3,310	570	1,930	1,850	78	41	61
27	85	322	155	259	152	2,070	555	1,610	2,220	71	43	67
28	43	273	116	262	181	1,330	628	1,380	2,260	47	53	67
29	43	375	175	262	-----	1,120	747	1,240	1,380	58	41	67
30	42	326	166	266	-----	1,210	992	1,200	1,080	45	41	101
31	44	-----	134	276	-----	1,100	-----	1,100	-----	41	41	-----
TOTAL	2,675	5,108	7,177	9,853	7,557	16,003	26,350	45,123	43,680	9,818	1,279	1,788
MEAN	86.3	170	232	318	270	516	878	1,456	1,456	317	41.3	59.6
MAX	136	1,100	626	1,090	460	3,310	1,240	2,030	2,260	912	53	166
MIN	42	27	112	91	147	104	555	951	867	41	38	38
AC-FT	5,310	10,130	14,240	19,540	14,990	31,740	52,270	89,500	86,640	19,470	2,540	3,550
(a)	15,450	43,920	68,960	70,490	53,400	31,750	29,980	47,990	74,290	46,620	62,950	32,300

CAL YR 1970 TOTAL 229,771 MEAN 630 MAX 13,100 MIN 27 AC-FT 455,800  
WTR YR 1971 TOTAL 176,411 MEAN 483 MAX 3,310 MIN 27 AC-FT 349,900

a Diversion, in acre-feet, to Camino powerplant, furnished by Sacramento Municipal Utility District, and El Dorado powerplant furnished by Pacific Gas and Electric Co.

## SACRAMENTO RIVER BASIN

11443500 SOUTH FORK AMERICAN RIVER NEAR CAMINO, CALIF.

LOCATION.--Lat 38°46'23", long 120°42'02", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.25, T.11 N., R.11 E., El Dorado County, on right bank 500 ft upstream from Iowa Canyon Creek and 2.8 miles northwest of Camino.

DRAINAGE AREA.--493 sq mi.

PERIOD OF RECORD.--October 1922 to current year. Monthly discharge only for October 1922, published in WSP 1315-A. Records for the river and the American River flume published separately October 1922 to September 1956, October 1962 to December 1964 when flume was destroyed. Records of river and flume combined October 1956 to September 1962.

GAGE.--Water-stage recorder. Altitude of gage is 1,620 ft (from topographic map). Nov. 1, 1950, to Dec. 5, 1951, nonrecording gage, Dec. 6, 1951, to May 27, 1964, water-stage recorder at site 100 ft downstream at different datum. May 28, 1964, to Oct. 11, 1966, at site 1,000 ft downstream at datum 11.37 ft lower.

AVERAGE DISCHARGE.--37 years (1922-59, prior to extensive regulation and transbasin diversion in South Fork American River basin), 961 cfs (695,700 acre-ft per year), combined flow of South Fork American River and American River flume.

EXTREMES.--Current year: Maximum discharge, 5,100 cfs Mar. 26 (gage height, 14.14 ft); minimum daily, 19 cfs Mar. 10, 19.

Period of record: Maximum discharge, 49,800 cfs Dec. 23, 1955 (gage height, 32.6 ft, from floodmarks, site and datum then in use), from rating curve extended above 24,000 cfs on basis of computation of maximum flow over dam; minimum daily, 1.3 cfs Aug. 24, 1931.

REMARKS.--Records good. Flow regulated principally by six reservoirs (total usable capacity, 347,000 acre-ft). Echo Lake conduit (see sta 11434500) imports up to 1,900 acre-ft each year from Truckee River basin. Variable amounts of El Dorado Canal water (up to 40 cfs, May to October, and about 7 cfs remainder of the year) diverted for irrigation and domestic use between Pollock Pines and Placerville. Water from Jenkinson Lake in North Fork Consumnes River basin diverted to Camino and substituted for flow from El Dorado Canal in some years. Since October 1962 water is imported from the Upper Rubicon River basin by way of Robbs Peak tunnel (see sta 11429800). See schematic diagram of South Fork American River basin.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	34	25	22	22	29	1,800	1,630	48	649	28	42
2	46	34	25	22	22	29	1,750	1,560	135	532	28	41
3	46	34	25	23	22	29	1,490	1,970	261	461	28	41
4	46	31	25	22	22	29	1,280	2,020	239	90	37	41
5	46	31	23	22	25	28	1,590	1,880	78	76	43	41
6	46	31	22	22	28	28	1,690	1,890	77	59	43	41
7	46	31	21	22	28	28	1,590	1,970	85	39	43	41
8	46	30	21	22	28	28	1,530	1,520	923	31	43	41
9	45	30	21	21	28	23	1,460	1,470	973	26	43	41
10	45	29	21	22	27	19	1,500	2,130	670	28	43	41
11	45	29	21	22	25	20	1,230	2,510	767	28	43	40
12	45	29	21	22	25	21	1,520	2,590	1,170	28	43	40
13	45	27	21	22	25	20	1,720	2,600	1,120	28	43	40
14	44	23	22	22	25	20	1,670	2,670	1,220	28	43	40
15	44	23	22	22	25	20	1,720	2,400	1,590	28	43	39
16	44	23	23	22	26	20	1,730	2,160	1,720	28	43	37
17	44	23	22	22	27	20	1,750	2,640	1,670	28	43	35
18	44	23	22	22	27	20	1,300	2,450	1,360	28	42	35
19	43	23	22	23	27	19	1,410	2,420	1,520	28	42	35
20	43	23	21	23	27	20	1,520	2,440	1,250	28	42	35
21	43	23	21	23	27	20	1,370	2,550	1,390	28	42	35
22	43	23	22	22	26	20	1,090	1,850	1,030	28	42	35
23	43	23	22	22	28	20	1,090	1,530	1,200	28	42	35
24	41	23	22	22	29	20	930	2,270	1,140	28	42	35
25	41	24	22	22	30	955	737	1,370	727	28	42	34
26	41	25	22	22	30	3,660	1,010	1,450	1,320	28	42	34
27	41	24	22	22	29	3,340	972	1,060	1,820	28	42	34
28	41	25	22	22	29	2,140	1,030	860	2,090	28	42	33
29	37	25	22	22	-----	2,070	1,150	362	1,230	28	42	33
30	34	25	22	22	-----	1,920	1,420	30	832	28	43	33
31	34	-----	22	22	-----	1,840	-----	20	-----	28	42	-----
TOTAL	1,338	801	687	685	739	16,475	42,049	56,272	29,655	2,579	1,269	1,128
MEAN	43.2	26.7	22.2	22.1	26.4	531	1,402	1,815	989	83.2	40.9	37.6
MAX	46	34	25	23	30	3,660	1,800	2,670	2,090	649	43	42
MIN	34	23	21	21	22	19	737	20	48	26	28	33
AC-FT	2,650	1,590	1,360	1,360	1,470	32,680	83,400	111,600	58,820	5,120	2,520	2,240

CAL YR 1970 TOTAL 75,871.5 MEAN 208 MAX 11,700 MIN 2.4 AC-FT 150,500  
WTR YR 1971 TOTAL 153,677.0 MEAN 421 MAX 3,660 MIN 19 AC-FT 304,800

## 11444500 SOUTH FORK AMERICAN RIVER NEAR PLACERVILLE, CALIF.

LOCATION.--Lat 38°46'16", long 120°48'55", in SW $\frac{1}{4}$  sec.25, T.11 N., R.10 E., El Dorado County, on right bank 700 ft downstream from Chili Bar Dam, 0.5 mile upstream from Big Canyon, and 2.5 miles north of Placerville.

DRAINAGE AREA.--598 sq mi.

PERIOD OF RECORD.--August 1911 to July 1920, July 1964 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 931.05 ft above mean sea level (levels by Pacific Gas and Electric Co.). Aug. 11, 1911, to July 31, 1920, nonrecording gage 0.6 mile downstream at different datum.

AVERAGE DISCHARGE (prior to extensive regulation and transbasin diversion).--9 years (1911-20), 1,132 cfs (820,100 acre-ft per year); 7 years (1964-71), 1,619 cfs (1,173,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 10,100 cfs Mar. 26 (gage height, 10.00 ft); minimum daily, 110 cfs Oct. 3-19.

Period of record: Maximum discharge, 47,300 cfs Dec. 23, 1964 (gage height, 17.4 ft, from floodmarks), from rating curve extended above 18,000 cfs on basis of computations of flow over dam of maximum flow; minimum daily, 0.2 cfs Nov. 12, 1964.

REMARKS.--Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

COOPERATION.--Records collected by the Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	370	626	2,270	1,170	734	772	2,000	1,590	1,800	2,530	723	1,200
2	318	805	2,680	1,280	921	828	1,940	1,680	1,800	2,370	1,140	1,100
3	110	940	2,120	983	1,120	995	1,800	1,760	1,920	2,280	1,300	989
4	110	1,030	4,270	1,360	1,600	828	1,690	2,140	2,050	1,960	1,470	915
5	110	1,460	4,080	1,690	1,610	856	1,670	2,030	1,990	1,880	1,210	367
6	110	1,520	2,660	1,680	1,220	367	1,680	2,010	1,880	1,840	1,350	367
7	110	1,600	1,750	1,690	390	355	1,690	2,100	1,900	1,810	1,460	874
8	110	1,100	2,070	1,690	1,560	497	1,690	1,830	2,640	1,810	592	1,030
9	110	1,560	1,940	1,680	1,770	851	1,680	1,730	2,870	1,680	1,340	707
10	110	1,470	1,950	1,480	1,790	822	1,670	1,870	2,520	1,130	1,490	729
11	110	1,000	1,950	1,410	1,780	839	1,460	2,840	2,550	845	1,300	772
12	110	960	1,880	1,760	1,760	1,120	1,570	2,970	3,020	1,190	1,400	378
13	110	1,080	928	1,820	1,770	1,510	1,430	3,000	3,000	1,340	1,160	1,070
14	110	990	1,240	1,930	946	734	1,810	3,110	3,100	1,410	1,390	970
15	110	610	1,870	1,920	909	729	1,820	2,680	3,450	1,590	1,050	940
16	110	870	2,190	1,820	1,210	921	1,880	2,460	3,630	915	915	839
17	110	1,140	2,360	1,840	1,210	1,150	1,850	3,000	3,580	1,140	1,400	355
18	110	851	2,140	1,970	1,810	1,160	1,760	2,810	3,240	868	1,310	336
19	110	868	2,110	2,550	1,790	886	1,540	2,750	3,400	1,110	1,630	330
20	450	828	1,550	2,410	1,620	370	1,310	2,750	3,110	1,360	1,280	400
21	570	892	1,510	2,240	989	355	1,530	2,950	3,290	1,690	1,310	550
22	810	355	1,750	2,360	1,610	794	1,310	2,050	2,900	1,400	355	860
23	1,120	626	1,710	2,280	1,430	964	1,090	1,830	3,070	1,120	1,530	690
24	1,170	909	1,350	1,960	1,460	363	1,070	2,750	3,000	1,020	1,470	540
25	921	1,350	989	1,900	1,460	636	915	3,070	2,610	851	1,340	1,020
26	541	2,380	1,310	1,880	1,470	6,180	1,050	3,290	3,120	856	1,460	520
27	1,090	1,760	1,120	1,760	1,340	5,150	940	2,860	3,940	1,100	1,190	680
28	1,070	1,300	1,530	1,730	597	2,740	1,190	2,630	4,110	1,170	983	660
29	1,090	1,470	2,000	1,760	-----	2,400	1,090	2,150	3,150	1,060	363	590
30	1,180	1,290	2,160	1,810	-----	2,280	1,360	1,910	2,720	1,120	1,050	840
31	729	-----	1,790	1,750	-----	2,020	-----	1,800	-----	1,120	1,240	-----
TOTAL	13,299	33,640	61,227	55,563	37,876	40,472	45,485	74,400	85,360	43,565	37,201	21,618
MEAN	429	1,121	1,975	1,792	1,353	1,306	1,516	2,400	2,845	1,405	1,200	721
MAX	1,180	2,380	4,270	2,550	1,810	6,180	2,000	3,290	4,110	2,530	1,630	1,200
MIN	110	355	928	983	390	355	915	1,590	1,800	845	355	330
AC-FT	26,380	66,720	121,400	110,200	75,130	80,280	90,220	147,600	169,300	86,410	73,790	42,880

CAL YR 1970 TOTAL 627,374 MEAN 1,719 MAX 15,100 MIN 77 AC-FT 1,244,000  
WTR YR 1971 TOTAL 549,706 MEAN 1,506 MAX 6,180 MIN 110 AC-FT 1,090,000

## SACRAMENTO RIVER BASIN

## 11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CALIF.

LOCATION.--Lat 38°49'07", long 120°56'45", in SW $\frac{1}{4}$  sec.11, T.11 N., R.9 E., El Dorado County, on left bank 0.4 mile downstream from Greenwood Creek, 2.4 miles northwest of Lotus, and 3.3 miles northwest of Coloma.

DRAINAGE AREA.--673 sq mi.

PERIOD OF RECORD.--May 1951 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 635 ft (from topographic map).

AVERAGE DISCHARGE.--11 years (1952-62, prior to extensive regulation and transbasin diversion), 1,109 cfs (802,900 acre-ft per year); 9 years (1963-71), 1,533 cfs (1,111,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 11,100 cfs Mar. 26 (gage height, 10.83 ft); minimum daily, 108 cfs Oct. 6.

Period of record: Maximum discharge, 71,800 cfs Dec. 23, 1955 (gage height, 21.37 ft); minimum daily, 50 cfs Oct. 21, 22, 1964.

Maximum stage known since 1862 and prior to beginning of record, 20.4 ft, from floodmarks, Nov. 21, 1950 (discharge, 64,500 cfs).

REMARKS.--Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	352	639	2,880	1,320	799	782	2,110	1,610	1,830	2,510	833	1,160
2	306	681	3,830	1,480	928	836	2,060	1,780	1,830	2,340	985	1,160
3	116	828	2,730	1,110	1,150	1,000	1,990	1,790	1,880	2,260	1,200	1,010
4	110	924	6,760	1,390	1,650	847	1,820	2,220	2,040	2,030	1,660	938
5	109	1,180	4,600	1,800	1,660	820	1,780	2,130	2,040	1,860	1,070	349
6	108	1,580	3,130	1,780	1,250	445	1,790	2,070	1,920	1,840	1,270	329
7	109	1,540	1,950	1,780	427	352	1,820	2,140	1,900	1,800	1,650	789
8	110	984	2,190	1,770	1,590	364	1,800	2,010	2,450	1,800	623	950
9	110	1,540	2,090	1,760	1,820	877	1,790	1,810	2,820	1,790	1,050	650
10	109	1,680	2,030	1,560	1,830	830	1,810	1,830	2,490	1,270	1,660	683
11	109	831	2,010	1,510	1,820	857	1,590	2,760	2,520	884	1,090	693
12	109	971	1,940	1,970	1,800	1,220	1,690	2,980	2,940	1,160	1,610	460
13	109	1,100	1,270	2,190	1,810	1,330	1,480	2,990	2,920	1,120	1,060	891
14	110	1,020	1,040	2,260	964	1,020	1,900	3,060	3,020	1,400	1,270	1,010
15	110	542	1,890	2,160	917	692	1,900	2,760	3,290	1,610	1,130	781
16	110	875	2,330	2,000	1,240	822	1,970	2,570	3,480	1,080	764	718
17	110	1,120	2,750	1,940	1,230	1,020	1,960	2,810	3,450	1,110	1,610	793
18	110	914	2,350	2,180	1,850	1,120	1,900	2,840	3,150	935	1,110	455
19	110	865	2,250	2,690	1,850	974	1,750	2,740	3,290	1,050	1,620	330
20	380	814	1,960	2,480	1,640	466	1,320	2,740	3,030	1,160	1,100	320
21	529	876	1,520	2,300	1,030	361	1,660	2,900	3,190	1,680	1,580	477
22	949	539	2,000	2,400	1,670	644	1,500	2,190	2,840	1,610	349	756
23	1,010	419	1,880	2,330	1,470	987	1,170	1,910	3,000	1,070	1,170	570
24	1,030	918	1,600	2,020	1,490	427	1,160	2,450	2,910	1,040	1,680	459
25	841	1,560	1,050	1,960	1,490	686	1,090	3,050	2,620	830	1,080	1,030
26	424	2,780	1,270	1,940	1,510	7,590	1,010	3,210	2,720	637	1,670	419
27	1,080	1,920	1,550	1,820	1,350	5,890	1,090	2,840	3,790	1,260	1,040	603
28	1,060	1,880	1,370	1,800	619	3,110	1,140	2,640	3,890	1,120	991	585
29	1,070	2,540	2,360	1,820	-----	2,540	1,250	2,210	3,140	1,120	491	503
30	1,130	1,690	2,380	1,870	-----	2,480	1,340	2,040	2,700	1,050	881	761
31	712	-----	2,020	1,800	-----	2,160	-----	1,840	-----	1,080	1,130	-----
TOTAL	12,741	35,750	70,980	59,190	38,854	43,549	48,640	74,920	83,090	43,506	36,427	20,632
MEAN	411	1,192	2,290	1,909	1,388	1,405	1,621	2,417	2,770	1,403	1,175	688
MAX	1,130	2,780	6,760	2,690	1,850	7,590	2,110	3,210	3,890	2,510	1,680	1,160
MIN	108	419	1,040	1,110	427	352	1,010	1,610	1,830	637	349	320
AC-FT	25,270	70,910	140,800	117,400	77,070	86,380	96,480	148,600	164,800	86,290	72,250	40,920
CAL YR 1970	TOTAL 654,875		MEAN 1,794		MAX 19,500		MIN 108		AC-FT 1,299,000			
WTR YR 1971	TOTAL 568,279		MEAN 1,557		MAX 7,590		MIN 108		AC-FT 1,127,000			

## 11446200 FOLSOM LAKE NEAR FOLSOM, CALIF.

LOCATION.--Lat 38°42'29", long 121°09'22", in NW¼NE¼ sec.24, T.10 N., R.7 E., Sacramento County, near center of dam on American River, 0.7 mile downstream from South Fork American River, and 2.3 miles northeast of Folsom.

DRAINAGE AREA.--1,861 sq mi.

PERIOD OF RECORD.--February 1955 to current year. Prior to October 1959, published as Folsom Reservoir near Folsom.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Current year: Maximum contents, 986,400 acre-ft June 29 (elevation, 463.90 ft); minimum, 517,100 acre-ft Feb. 3 (elevation, 416.29 ft).

Period of record: Maximum contents, 1,024,400 acre-ft June 15, 1963 (elevation, 467.23 ft); minimum since storage pool first filled, 261,500 acre-ft Jan. 7, 1960 (elevation, 378.23 ft).

REMARKS.--Reservoir is formed by concrete gravity-type dam with rolled-earth wing dams, auxiliary dams, and dikes, completed May 14, 1956; storage began Feb. 25, 1955. Total capacity, 1,010,300 acre-ft between elevations 205.5 ft (invert of lower tier of river outlets) and 466.0 ft (gross pool elevation), all of which is available for release. Spillway design flood pool elevation, 475.4 ft (capacity, 1,120,200 acre-ft). Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of South Fork American River basin.

COOPERATION.--Records furnished by Bureau of Reclamation.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

370	222,300	420	548,300
380	270,700	440	732,900
390	327,800	460	942,600
400	393,300	480	1,176,000

## CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	544,400	528,900	602,300	550,700	518,900	569,000	798,200	819,400	926,700	984,100	869,700	781,700
2	539,700	528,400	618,900	542,200	517,800	569,000	800,000	821,400	926,500	982,500	870,000	778,000
3	534,900	528,600	620,900	532,800	517,100	570,200	801,800	822,700	926,400	980,100	871,300	773,800
4	531,000	530,200	652,700	528,200	518,100	570,700	803,400	825,800	926,600	977,500	873,700	769,500
5	528,400	533,200	662,600	528,600	520,300	571,600	804,900	828,300	926,800	974,300	873,100	764,100
6	526,900	534,500	664,100	528,900	522,300	571,800	807,200	830,100	927,600	970,800	870,600	758,700
7	525,800	545,100	661,200	528,700	522,800	571,200	809,400	831,500	929,200	967,700	868,900	754,100
8	525,700	547,700	658,400	528,000	523,300	570,100	810,300	835,200	932,000	964,500	864,100	749,900
9	525,500	551,000	656,900	527,100	525,600	570,500	810,800	838,000	935,700	961,100	859,600	745,200
10	525,200	554,800	655,500	525,100	527,700	571,700	812,600	840,000	938,700	956,500	857,000	742,000
11	524,700	555,600	650,800	524,800	530,500	573,300	812,900	846,600	942,900	950,900	853,000	737,500
12	524,300	557,000	645,400	528,400	533,700	578,300	812,900	853,700	947,100	945,300	850,200	732,400
13	523,800	558,600	638,600	533,400	536,400	588,300	812,700	859,400	950,600	940,800	845,800	728,700
14	523,200	559,300	630,200	538,700	537,300	593,100	813,200	865,400	953,800	937,000	841,900	726,600
15	522,700	558,200	623,500	541,100	537,400	596,300	814,100	871,100	958,100	933,700	837,700	725,600
16	522,300	556,400	621,600	535,200	534,400	599,700	818,000	877,300	963,200	928,700	833,000	725,100
17	521,900	554,900	622,300	530,700	541,200	603,300	822,400	882,400	968,000	923,900	830,100	721,900
18	521,500	553,700	620,000	531,300	545,600	607,300	825,700	884,600	972,800	919,200	826,100	717,800
19	521,100	551,900	615,700	533,700	550,100	610,600	828,100	887,500	975,400	914,200	823,300	713,100
20	521,700	549,500	610,800	535,500	553,400	613,000	829,000	890,500	977,000	909,800	819,700	708,600
21	522,200	547,200	607,000	535,900	554,900	614,700	828,100	894,400	978,400	906,300	818,500	704,200
22	523,700	545,100	603,700	534,900	557,700	617,100	828,100	896,600	978,000	902,500	816,500	700,200
23	525,300	541,900	599,300	532,800	560,300	622,300	827,600	898,700	977,100	897,900	816,100	696,400
24	526,400	540,400	594,200	529,400	562,800	629,200	826,500	901,900	976,600	893,200	815,400	692,100
25	526,500	546,100	586,600	525,300	564,800	640,100	826,000	907,000	974,200	887,900	811,000	689,200
26	525,700	559,600	579,300	523,100	566,800	639,500	825,100	912,900	974,200	881,800	807,800	686,200
27	526,200	563,400	573,200	523,100	568,600	737,400	823,300	917,600	980,100	877,500	803,600	684,200
28	527,100	571,600	566,300	522,600	568,500	758,300	819,600	921,700	984,700	873,900	799,400	684,200
29	527,800	587,600	565,000	521,800	-----	774,100	818,800	924,100	986,400	871,000	794,200	684,400
30	528,600	592,700	562,800	521,100	-----	788,700	818,900	925,800	985,300	869,500	789,700	685,500
31	529,200	-----	558,200	520,600	-----	794,500	-----	926,400	-----	869,100	785,900	-----
MAX	544,400	592,700	664,100	550,700	568,600	794,500	829,000	926,400	986,400	984,100	873,700	781,700
MIN	521,100	528,400	558,200	520,600	517,100	569,000	798,200	819,400	926,400	869,100	785,900	684,200
(a)	417.74	425.09	421.16	416.71	422.35	446.12	448.49	458.53	463.80	453.25	445.28	435.12
(b)	-20,000	+63,500	-34,600	-37,600	+47,900	+226,000	+24,400	+107,500	+58,900	-116,200	-83,200	-100,400
(c)	2,670	1,020	290	570	980	1,850	3,380	4,010	6,200	7,960	6,760	4,690
CAL YR 1970	b	-67,000										
WTR YR 1971	b	+136,300										

a Elevation, in feet, at end month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

## SACRAMENTO RIVER BASIN

11446500 AMERICAN RIVER AT FAIR OAKS, CALIF.

LOCATION.--Lat 38°38'08", long 121°13'36", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.17, T.9 N., R.7 E., Sacramento County, on right bank 2,100 ft downstream from Nimbus Dam, 2.4 miles east of Fair Oaks, 8.1 miles downstream from South Fork, and at mile 22.2.

DRAINAGE AREA.--1,888 sq mi.

PERIOD OF RECORD.--November 1904 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 71.53 ft above mean sea level. Prior to Nov. 7, 1930, nonrecording gages or water-stage recorders at several sites 2.2 miles downstream, all at datum 5.74 ft lower. Nov. 7, 1930, to Dec. 31, 1957, at site 2.2 miles downstream at datum 6.74 ft lower. Dec. 31, 1957, to July 15, 1970, at datum 6.00 ft higher.

AVERAGE DISCHARGE (adjusted for change in contents, diversions, and evaporation from Folsom Lake since 1955).--67 years, 3,785 cfs (2,742,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,270 cfs Jan. 15 (gage height, 9.73 ft); minimum daily, 1,290 cfs Oct. 8.

Period of record: Maximum discharge, 180,000 cfs Nov. 21, 1950 (gage height, 31.85 ft, site and datum then in use); minimum, 3.6 cfs Aug. 16, 1924. Maximum discharge since construction of Folsom Dam in 1953, 115,000 cfs Dec. 23-25, 1964 (gage height, 21.65 ft); minimum, 86 cfs Apr. 7, 1955.

REMARKS.--Records excellent. Flow regulated by Folsom Lake beginning Feb. 25, 1955 (see sta 11446200). Some minor regulation of high flows by temporary pondage during period of construction January 1953 to February 1955. Diurnal fluctuations from Folsom powerplant re-regulated by Nimbus Reservoir (capacity, 2,800 acre-ft between normal operating elevations 118.5 and 125.0 ft) and powerplant. Many diversions above station for irrigation, municipal, and domestic water supply. Diversions of San Juan Suburban Water District, Cordova Water Service, city of Folsom, and State of California are made at Folsom Dam. Some inflow from Bear and Yuba River basins. Records of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,680	1,740	6,150	8,180	5,640	2,350	5,130	4,170	3,660	4,750	1,880	4,130
2	3,680	1,760	6,630	8,240	4,830	2,310	5,160	4,210	3,680	4,730	1,570	4,130
3	3,660	1,760	7,800	8,120	4,830	2,090	5,220	4,250	3,660	4,730	1,570	4,170
4	3,140	1,760	7,800	5,880	4,660	2,090	5,160	4,290	3,660	4,750	1,660	4,170
5	2,640	1,760	7,800	4,250	3,800	2,100	5,160	4,230	3,740	4,750	2,610	4,170
6	2,060	1,760	7,820	4,250	3,680	2,100	5,180	4,190	3,630	4,790	3,550	4,170
7	1,450	1,760	7,750	4,290	3,680	2,090	5,110	4,230	3,630	4,690	3,610	4,170
8	1,290	1,780	7,650	4,290	3,660	2,060	5,220	4,270	3,650	4,710	3,680	4,170
9	1,330	1,760	7,700	4,310	3,680	1,740	5,220	4,230	3,630	4,710	4,130	4,170
10	1,470	1,790	6,980	4,290	3,680	1,470	5,240	4,210	3,610	4,730	4,150	4,130
11	1,480	2,080	7,850	4,310	3,680	1,460	5,240	4,250	3,590	4,690	4,110	4,170
12	1,490	2,090	7,900	4,330	3,700	1,480	5,220	4,150	3,590	4,660	4,110	4,150
13	1,490	2,080	7,850	4,310	3,720	1,520	5,160	4,190	3,550	4,710	4,110	3,630
14	1,490	2,130	7,820	4,310	3,720	1,500	5,180	4,290	3,590	4,710	4,110	3,090
15	1,490	2,530	7,680	5,770	3,720	1,460	5,160	4,290	3,630	4,810	4,110	2,600
16	1,510	2,640	7,850	8,240	3,720	1,450	4,230	4,210	3,650	4,790	4,130	1,980
17	1,500	3,040	7,680	8,240	3,680	1,460	4,150	4,150	3,650	4,790	4,190	3,500
18	1,510	3,090	7,550	8,210	3,170	1,470	4,110	4,270	3,700	4,810	4,210	3,590
19	1,510	3,080	7,480	8,210	3,160	1,520	4,130	4,270	4,830	4,790	4,210	3,610
20	1,520	3,110	7,550	7,750	3,160	1,530	4,230	4,290	5,160	4,810	4,110	3,630
21	1,520	3,110	7,480	7,500	3,140	1,520	4,250	4,190	5,180	4,620	3,520	3,630
22	1,520	3,110	7,420	7,550	3,140	1,440	4,270	3,720	5,220	4,660	2,960	3,570
23	1,540	3,090	7,450	7,550	2,680	1,440	4,250	3,760	5,240	4,690	1,400	3,590
24	1,780	3,110	7,650	7,580	2,600	1,440	4,270	3,760	5,240	4,690	3,040	3,610
25	1,750	3,110	7,650	7,520	2,620	1,440	4,230	3,760	5,180	4,730	4,030	3,570
26	1,760	3,110	7,680	6,490	2,620	1,490	4,150	3,760	4,730	4,730	4,150	3,110
27	1,800	3,090	7,720	5,750	2,620	1,520	4,250	3,740	4,730	4,690	4,170	2,560
28	1,840	3,110	7,950	5,620	2,560	1,510	4,210	3,660	4,750	4,090	4,150	1,680
29	1,840	3,190	8,180	5,620	-----	1,440	4,270	3,680	4,750	3,570	4,150	1,540
30	1,800	4,540	8,180	5,620	-----	1,720	4,170	3,680	4,750	3,000	4,190	1,520
31	1,740	-----	8,180	5,640	-----	4,900	-----	3,680	-----	2,470	4,150	-----
TOTAL	58,280	76,070	236,830	192,220	99,550	55,110	140,930	126,030	125,260	140,850	109,720	103,910
MEAN	1,880	2,536	7,640	6,201	3,555	1,778	4,698	4,065	4,175	4,544	3,539	3,464
MAX	3,680	4,540	8,180	8,240	5,640	4,900	5,240	4,290	5,240	4,810	4,210	4,170
MIN	1,290	1,740	6,150	4,250	2,560	1,440	4,110	3,660	3,550	2,470	1,400	1,520
AC-FT	115,600	150,900	469,800	381,300	197,500	109,300	279,500	250,000	248,500	279,400	217,600	206,100
MEAN a	1,688	3,677	7,131	5,645	4,483	5,544	5,228	5,957	5,388	2,919	2,426	1,971
AC-FTa	103,800	218,800	438,500	347,100	249,000	340,900	311,100	366,300	320,600	179,500	149,200	117,300
(b)	5,480	3,369	2,928	2,850	2,663	3,718	3,846	4,765	6,980	8,330	8,035	6,925

CAL YR 1970 TOTAL 1,810,580 MEAN 4,960 MAX 52,200 MIN 1,060 AC-FT 3,591,000 MEAN a 5,004 AC-FT a 3,625,000  
WTR YR 1971 TOTAL 1,464,760 MEAN 4,013 MAX 8,240 MIN 1,290 AC-FT 2,905,000 MEAN a 4,337 AC-FT a 3,142,000

a Adjusted for change in contents, diversions, and evaporation from Folsom Lake.

b Diversion, in acre-feet, to Cordova Water Service, city of Folsom, San Juan Suburban Water District, and to State of California; furnished by Bureau of Reclamation.

## 11447360 ARCADE CREEK NEAR DEL PASO HEIGHTS, CALIF.

LOCATION.--Lat 38°38'28", long 121°22'38", in Del Paso Grant, Sacramento County, on right bank 1,200 ft upstream from bridge on Interstate Highway 80, and 1.6 miles east of city limits of Del Paso Heights.

DRAINAGE AREA.--31.5 sq mi.

PERIOD OF RECORD.--July 1963 to current year.

GAGE.--Water-stage recorder and concrete low-water control. Datum of gage is 47.98 ft above mean sea level (levels by County of Sacramento).

AVERAGE DISCHARGE.--8 years, 16.9 cfs (12,240 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,630 cfs Nov. 29 (gage height, 13.26 ft); no flow Nov. 21-23.  
Period of record: Maximum discharge, 2,000 cfs Jan. 21, 1967 (gage height, 14.42 ft); no flow for several days in 1963-66, 1971.

REMARKS.--Records fair. Low summer flow sustained by residential and industrial waste water.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	.56	126	10	.60	.56	1.0	2.8	2.1	5.1	3.4	3.2
2	3.5	.44	329	57	.64	.56	1.1	21	1.5	5.2	4.0	2.7
3	4.0	.44	35	11	.74	.60	1.3	17	2.5	4.6	4.3	2.1
4	3.8	70	579	4.4	.92	.64	1.6	12	2.7	4.4	5.2	1.9
5	3.5	108	71	3.1	.80	.64	2.4	3.5	3.8	3.5	5.6	2.2
6	2.5	83	19	2.7	.56	.64	2.8	1.4	4.6	4.3	5.2	2.1
7	2.5	50	22	2.3	.60	.92	14	.69	4.8	4.1	5.2	1.9
8	2.3	7.3	16	2.1	.60	.98	3.0	27	4.8	3.8	5.4	2.8
9	2.4	2.7	13	2.0	.52	1.1	1.3	5.9	3.5	4.4	5.4	3.1
10	2.2	1.7	6.1	1.8	.48	.98	.92	1.9	3.0	4.0	5.7	2.7
11	2.4	1.0	3.7	21	.48	1.0	1.0	1.4	3.8	4.1	6.6	2.3
12	2.7	.74	2.5	36	.48	68	1.3	1.3	4.1	4.0	6.2	2.7
13	2.5	1.3	2.4	85	.44	27	1.4	1.2	3.8	4.8	5.7	2.4
14	2.1	.48	2.8	17	.44	4.4	2.5	2.5	4.6	5.1	5.1	2.5
15	1.7	.32	3.2	6.4	.56	2.3	2.1	2.2	4.9	5.2	4.6	3.1
16	1.5	.34	70	4.9	.86	1.6	1.6	2.3	5.1	5.6	3.5	4.0
17	1.6	1.2	48	4.4	.69	1.5	12	1.9	4.8	5.6	4.4	4.4
18	1.8	.24	27	2.8	.96	1.2	2.7	1.8	4.8	4.6	4.3	4.1
19	1.9	.34	15	2.4	9.2	1.3	1.8	3.4	3.8	4.8	4.9	3.0
20	21	.01	11	2.0	1.8	1.4	8.6	3.7	3.7	5.9	3.8	3.0
21	13	0	134	1.6	.64	1.8	5.1	2.7	3.7	6.1	4.0	2.8
22	27	0	28	1.4	.44	2.2	1.5	2.8	4.4	7.3	3.5	3.0
23	31	0	8.6	1.1	.32	41	.60	4.8	3.8	8.4	3.2	2.4
24	20	1.9	4.8	1.0	.37	10	1.0	4.8	4.6	7.5	3.7	3.1
25	3.4	55	3.1	.92	.56	73	1.5	4.4	4.4	6.4	3.7	1.5
26	1.4	123	13	.80	.44	136	1.8	3.2	5.2	4.9	3.8	1.3
27	.86	13	27	.69	.44	17	1.6	3.5	5.1	5.2	3.1	1.2
28	.52	371	23	.60	.56	4.3	2.3	4.6	3.0	5.4	3.0	1.3
29	.40	1,090	71	.60	-----	2.3	2.0	5.1	3.7	4.8	2.4	1.2
30	.40	152	22	.56	-----	2.1	2.1	2.1	4.4	4.8	2.4	1.2
31	.40	-----	7.5	.56	-----	1.4	-----	1.7	-----	4.1	2.8	-----
TOTAL	167.28	2,136.01	1,743.7	288.13	26.14	408.42	83.92	154.59	119.0	158.0	134.1	75.2
MEAN	5.40	71.2	56.2	9.29	.93	13.2	2.80	4.99	3.97	5.10	4.33	2.51
MAX	31	1,090	579	85	9.2	136	14	27	5.2	8.4	6.6	4.4
MIN	.40	0	2.4	.56	.32	.56	.60	.69	1.5	3.5	2.4	1.2
AC-FT	332	4,240	3,460	572	52	810	166	307	236	313	266	149

CAL YR 1970 TOTAL 8,500.59 MEAN 23.3 MAX 1,090 MIN 0 AC-FT 16,860

WTR YR 1971 TOTAL 5,494.49 MEAN 15.1 MAX 1,090 MIN 0 AC-FT 10,900

## PEAK DISCHARGE (BASE, 250 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-26	0600	8.02	282	12- 2	0700	10.01	542
11-29	1000	13.26	1,630	12- 4	1200	12.06	1,070
11-30	2200	8.26	306				

## SACRAMENTO RIVER BASIN

11447500 SACRAMENTO RIVER AT SACRAMENTO, CALIF.  
(International Hydrological Decade Station)

LOCATION.--Lat 38°35'12", long 121°30'16", Sacramento County, on left bank 1,000 ft upstream from I Street Bridge, in city of Sacramento, and 0.5 mile downstream from American River.

DRAINAGE AREA.--23,508 sq mi.

PERIOD OF RECORD.--January 1904 to July 1905 (gage heights only), June to November 1921, October 1948 to current year. Gage heights collected in this vicinity November 1879 to May 1888, December 1890 to September 1963 are contained in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Oct. 15, 1912, nonrecording gage in vicinity of I Street Bridge. Oct. 15, 1912, to Nov. 16, 1956, water-stage recorder at various sites in vicinity of I Street Bridge. Prior to Nov. 16, 1956, datum of gages at low-water mark of Oct. 23, 1856, 0.12 ft above mean sea level. Auxiliary water-stage recorder on right bank 10.8 miles downstream near Freeport.

AVERAGE DISCHARGE.--23 years (1948-71), 23,940 cfs (17,340,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 73,700 cfs Dec. 5 (elevation, 21.79 ft); minimum daily, 14,200 cfs Oct. 19.  
1948 to current year: Maximum discharge, 104,000 cfs Nov. 21, 1950 (elevation, 30.14 ft, site and datum then in use); minimum daily, 5,590 cfs July 20, 1949.

Maximum discharge known prior to Nov. 21, 1950, 103,000 cfs Jan. 17, 1909 (elevation, 29.6 ft, present datum), from reports of California Department of Water Resources.

REVISIONS.--The maximum discharge for the water year 1966 has been revised to 53,700 cfs Jan. 10, 1966 (gage height, 16.81 ft), superseding figure published in WRD Calif. 1966.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas. A portion of the flow bypasses station during flood periods through Yolo Bypass (see sta 11426000, 11453000). Records of chemical analyses, water temperatures, and suspended-sediment discharge at or near this gaging station for the current year are published in Part 2 of this report.

COOPERATION.--Records collected and prepared in cooperation with the California Department of Water Resources.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16,300	15,100	53,700	51,400	50,600	19,000	62,600	23,600	34,000	25,100	18,500	26,400
2	16,700	15,000	65,900	51,300	46,900	18,500	59,500	24,200	34,200	24,500	18,500	26,300
3	16,500	15,300	70,500	50,900	44,500	17,800	56,400	25,200	34,400	23,700	18,700	26,400
4	16,400	16,000	71,000	48,600	42,700	17,000	53,500	26,400	33,400	23,400	18,700	26,400
5	15,900	16,100	73,200	45,000	40,800	17,000	49,500	27,300	32,500	23,000	19,100	25,700
6	15,400	17,300	72,300	42,400	39,400	16,700	46,000	28,000	32,100	22,600	19,900	25,100
7	14,900	18,400	71,800	40,200	38,100	16,400	44,100	28,800	31,400	22,100	20,200	24,900
8	14,400	20,300	71,100	38,400	36,400	16,400	43,100	29,500	30,600	21,500	20,200	24,900
9	14,300	20,800	70,500	36,800	34,700	16,300	42,700	30,200	29,000	20,900	20,500	24,800
10	14,600	19,900	69,700	35,500	33,400	16,700	41,500	30,800	28,000	20,400	20,500	25,100
11	14,500	21,300	70,300	34,600	32,500	17,500	40,300	31,600	27,200	20,300	20,800	25,400
12	14,400	22,800	70,400	35,600	32,000	18,500	39,500	32,200	26,900	20,500	22,000	25,400
13	14,400	22,100	69,600	38,700	31,400	22,000	38,800	32,100	26,500	20,600	22,800	25,000
14	14,500	21,000	68,500	40,100	30,500	30,600	38,300	32,000	26,400	20,600	23,400	25,200
15	14,600	20,200	67,200	40,100	29,800	36,400	37,800	32,100	26,200	20,700	23,700	25,700
16	14,400	19,600	66,000	43,200	29,000	36,200	37,400	32,300	25,800	20,500	23,900	25,800
17	14,300	19,600	65,400	46,500	28,200	35,400	36,700	32,200	25,300	20,600	24,000	26,700
18	14,300	20,000	65,200	52,100	27,600	34,400	36,200	32,000	25,000	20,600	23,900	26,200
19	14,200	21,600	64,700	61,100	26,600	32,600	34,700	31,800	25,700	20,600	22,600	24,700
20	14,600	23,000	63,900	70,500	26,100	30,900	33,500	30,400	25,300	20,500	23,500	23,200
21	15,100	23,700	63,400	71,700	24,800	29,500	32,900	29,200	24,200	20,300	23,600	23,900
22	15,400	23,900	63,100	71,400	23,600	28,400	31,900	28,400	23,600	20,100	23,200	24,000
23	15,700	24,300	62,700	70,500	22,500	28,000	30,400	27,700	23,700	20,300	22,600	24,100
24	16,200	24,300	62,200	69,200	21,500	27,800	28,800	27,000	23,600	20,000	23,100	23,800
25	16,200	24,500	60,100	68,100	20,800	30,100	27,100	26,000	24,000	19,400	24,500	23,300
26	16,300	25,100	56,800	66,400	20,200	36,100	26,200	25,600	23,800	20,100	25,200	22,500
27	16,200	27,900	53,300	64,400	19,700	49,700	25,300	25,800	23,900	20,500	25,400	21,500
28	15,900	30,400	50,400	62,800	19,300	58,700	24,900	27,000	27,000	20,100	25,600	20,400
29	15,600	38,100	49,000	61,300	-----	62,700	24,700	29,800	26,900	19,400	25,700	19,700
30	15,500	47,000	50,000	58,400	-----	63,300	23,800	32,100	25,900	18,900	25,900	19,300
31	15,400	-----	51,200	54,800	-----	64,300	-----	33,600	-----	18,600	26,200	-----
TOTAL	473,100	675,600	1,983.1M	1,622.0M	873,500	944,900	1,148.1M	904,900	826,500	650,400	696,400	731,800
MEAN	15,260	22,520	63,970	52,320	31,200	30,480	38,270	29,190	27,550	20,980	22,460	24,390
MAX	16,700	47,000	73,200	71,700	50,600	64,300	62,600	33,600	34,400	25,100	26,200	26,700
MIN	14,200	15,000	49,000	34,600	19,300	16,300	23,800	23,600	23,600	18,600	18,500	19,300
AC-FT	938,400	1,340M	3,933M	3,217M	1,733M	1,874M	2,277M	1,795M	1,639M	1,290M	1,381M	1,452M

CAL YR 1970 TOTAL 11,192,500 MEAN 30,660 MAX 93,800 MIN 10,100 AC-FT 22,200,000  
WTR YR 1971 TOTAL 11,530,300 MEAN 31,590 MAX 73,200 MIN 14,200 AC-FT 22,870,000



## 11448500 ADOBE CREEK NEAR KELSEYVILLE, CALIF.

LOCATION.--Lat 38°55'37", long 122°52'47", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.32, T.13 N., R.9 W., Lake County, on left bank 2.3 miles upstream from Highland Creek and 4.2 miles southwest of Kelseyville.

DRAINAGE AREA.--6.36 sq mi.

PERIOD OF RECORD.--October 1954 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,476.06 ft above mean sea level.

AVERAGE DISCHARGE.--17 years, 12.5 cfs (9,060 acre-ft per year); median of yearly mean discharges, 11 cfs (8,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 878 cfs Dec. 3 (gage height, 7.55 ft); no flow for several months.

Period of record: Maximum discharge, 1,500 cfs Dec. 22, 1964, Jan. 23, 1970; maximum gage height, 9.22 ft Jan. 31, 1963; no flow at times in each year.

REMARKS.--Records good. Some regulation and diversions above station for irrigation of about 200 acres.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.64	61	21	4.5	1.4	11	2.4	1.1	.04		
2	0	.64	167	19	4.1	1.4	9.5	3.0	.90	.02		
3	0	1.0	487	14	3.7	1.4	8.3	2.7	.69	.02		
4	0	3.9	268	11	3.3	1.4	7.3	2.3	.61	.02		
5	0	16	62	10	3.3	1.2	6.7	2.2	.53	.01		
6	0	3.2	29	8.8	3.0	1.2	6.2	2.2	.48	.01		
7	0	1.7	26	7.7	3.0	1.2	5.7	2.0	.41	0		
8	0	1.1	28	7.1	2.7	1.2	5.2	2.0	.28	0		
9	0	1.2	22	6.4	2.4	1.2	12	1.8	.20	0		
10	0	1.6	15	7.6	2.4	1.2	12	1.7	.28	0		
11	0	1.3	11	12	2.4	1.8	7.2	1.6	.20	0		
12	0	1.4	8.8	18	2.1	202	6.2	1.5	.14	0		
13	0	.90	7.1	35	2.1	51	6.9	1.5	.14	0		
14	0	.70	5.7	95	2.1	47	8.6	1.4	.14	0		
15	0	.53	33	129	2.1	29	6.5	1.3	.14	0		
16	0	.50	61	203	2.1	21	6.5	1.3	.06	0		
17	0	.50	39	97	1.8	17	7.0	1.3	.02	0		
18	0	.39	31	49	1.8	12	5.3	1.4	.01	0		
19	0	.38	21	31	1.8	10	4.9	1.3	0	0		
20	0	.38	73	22	1.6	7.8	4.9	1.3	0	0		
21	0	.38	55	17	1.6	7.1	4.5	1.2	0	0		
22	0	.38	32	14	1.6	6.6	4.5	1.2	0	0		
23	.14	.38	22	12	1.6	8.2	4.1	1.1	0	0		
24	.34	.58	16	10	1.6	6.6	4.1	.98	0	0		
25	.23	2.8	13	8.8	1.4	80	3.7	1.0	0	0		
26	.20	2.7	11	7.7	1.4	150	3.3	1.2	.02	0		
27	.20	122	9.8	7.0	1.6	48	3.3	1.3	.06	0		
28	.21	131	57	6.4	1.6	28	3.3	1.5	.06	0		
29	.22	55	84	5.9	-----	21	2.7	1.3	.04	0		
30	.31	59	37	5.5	-----	16	2.4	1.1	.04	0		
31	.51	-----	25	4.9	-----	13	-----	1.1	-----	0		
TOTAL	2.36	412.18	1,817.4	902.8	64.7	795.9	183.8	49.18	6.55	.12	0	0
MEAN	.076	13.7	58.6	29.1	2.31	25.7	6.13	1.59	.22	.004	0	0
MAX	.51	131	487	203	4.5	202	12	3.0	1.1	.04	0	0
MIN	0	.38	5.7	4.9	1.4	1.2	2.4	.98	0	0	0	0
AC-FT	4.7	818	3,600	1,790	128	1,580	365	98	13	.2	0	0

CAL YR 1970 TOTAL 7,141.85 MEAN 19.6 MAX 627 MIN 0 AC-FT 14,170

WTR YR 1971 TOTAL 4,234.99 MEAN 11.6 MAX 487 MIN 0 AC-FT 8,400

## PEAK DISCHARGE (BASE, 400 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-27	2000	6.42	456	3-12	1100	6.95	638
12- 3	1745	7.55	878	3-25	2200	6.62	522

## 11448900 HIGHLAND CREEK ABOVE HIGHLAND CREEK DAM, CALIF.

LOCATION.--Lat 38°55'48", long 122°55'11", in NW¼SE¼ sec.36, T.13 N., R.10 W., Lake County, on left bank 100 ft downstream from Pipeline Creek, 1.7 miles upstream from Highland Creek Dam, and 5.7 miles southwest of Kelseyville.

DRAINAGE AREA.--11.9 sq mi.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,490.07 ft above mean sea level.

AVERAGE DISCHARGE.--9 years, 21.4 cfs (15,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,230 cfs Dec. 3 (gage height, 7.55 ft); no flow for many days.  
Period of record: Maximum discharge, 3,080 cfs Dec. 22, 1964 (gage height, 12.15 ft); no flow at times in each year.

REMARKS.--Records good. No regulation or diversion above station.

REVISIONS (WATER YEARS).--WRD Calif. 1969: 1968(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.39	51	37	9.4	3.3	20	4.1	2.4	.53	0	.05
2	0	.39	316	35	8.4	3.0	17	5.6	2.4	.48	0	.04
3	0	1.1	732	25	8.0	3.3	15	4.8	2.2	.48	0	.02
4	0	6.5	412	21	7.6	3.3	14	4.1	2.1	.44	0	.01
5	0	30	86	19	7.2	3.0	12	4.1	2.1	.40	0	0
6	0	5.7	41	17	6.8	2.8	11	4.1	1.9	.40	0	0
7	0	4.3	38	15	6.4	2.8	11	3.8	1.8	.37	0	0
8	0	2.5	49	14	6.0	2.8	9.4	3.8	1.8	.37	0	0
9	0	2.3	36	12	5.6	2.8	15	3.8	1.8	.44	0	0
10	0	1.8	22	14	5.6	2.8	14	3.5	1.8	.44	0	0
11	0	1.6	15	20	5.2	3.8	9.9	3.3	1.6	.40	0	0
12	0	1.4	11	34	4.8	230	8.4	3.0	1.5	.34	0	0
13	0	1.3	9.2	53	4.8	62	9.9	3.0	1.4	.29	0	0
14	0	1.1	6.9	186	4.8	44	11	3.0	1.4	.25	0	0
15	0	.86	48	243	4.5	30	8.4	2.8	1.3	.23	0	0
16	0	.86	119	356	4.5	23	8.9	2.6	1.1	.21	0	0
17	0	.86	74	180	4.5	20	9.4	2.6	1.0	.17	0	0
18	.11	.86	54	98	4.1	15	8.0	2.6	.96	.11	0	0
19	.11	.86	36	65	4.5	14	7.2	2.4	.96	.10	0	0
20	.46	.86	111	45	4.1	11	7.2	2.4	.89	.07	0	0
21	.46	.74	98	36	3.8	9.4	6.8	2.4	.82	.03	0	0
22	.48	.74	57	29	3.8	8.0	6.4	2.4	.75	.02	0	0
23	.54	.86	39	24	3.5	12	6.0	2.2	.75	.01	0	0
24	.46	1.3	30	21	3.5	8.9	5.6	2.2	.75	.01	0	0
25	.33	4.0	23	18	3.3	130	5.6	2.2	.69	.01	0	.06
26	.28	4.7	22	16	3.3	240	5.2	2.6	.89	.01	0	.17
27	.28	209	19	14	3.8	86	4.8	2.8	.89	0	0	.23
28	.28	148	51	13	3.5	52	4.5	3.0	.75	0	0	.21
29	.28	75	119	12	-----	38	4.5	2.6	.69	0	0	.29
30	.33	64	60	11	-----	30	4.1	2.4	.69	0	0	.34
31	.39	-----	42	9.9	-----	23	-----	2.2	-----	0	.06	-----
TOTAL	4.79	573.88	2,827.1	1,692.9	145.3	1,120.0	280.2	96.4	40.08	6.61	.06	1.42
MEAN	.15	19.1	91.2	54.6	5.19	36.1	9.34	3.11	1.34	.21	.002	.047
MAX	.54	209	732	356	9.4	240	20	5.6	2.4	.53	.06	.34
MIN	0	.39	6.9	9.9	3.3	2.8	4.1	2.2	.69	0	0	0
AC-FT	9.5	1,140	5,610	3,360	288	2,220	556	191	80	13	.1	2.8

CAL YR 1970 TOTAL 11,957.44 MEAN 32.8 MAX 1,070 MIN 0 AC-FT 23,720

WTR YR 1971 TOTAL 6,788.74 MEAN 18.6 MAX 732 MIN 0 AC-FT 13,470

PEAK DISCHARGE (BASE, 1,200 CFS).--Dec. 3 (1715) 1,230 cfs (7.55 ft).

## 11449010 HIGHLAND CREEK BELOW HIGHLAND CREEK DAM, NEAR KELSEYVILLE, CALIF.

LOCATION.--Lat 38°56'54", long 122°54'03", in NE¼ sec.30, T.13 N., R.9 W., Lake County, on left bank 500 ft downstream from Highland Creek Dam and 4.0 miles southwest of Kelseyville.

DRAINAGE AREA.--14.2 sq mi.

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,416.52 ft above mean sea level.

AVERAGE DISCHARGE (unadjusted).--5 years (1966-71), 27.6 cfs (20,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 765 cfs Dec. 3 (gage height, 4.78 ft); no flow for many days.  
Period of record: Maximum discharge, 765 cfs Dec. 3, 1970 (gage height, 4.78 ft); maximum gage height, 4.99 ft Jan. 4, 1966; no flow many days in each year.

REMARKS.--Records good. Flow completely regulated by Highland Creek Dam 500 ft upstream (capacity, 3,500 acre-ft). No diversion above station. Records of chemical analyses, water temperatures, and suspended-sediment discharge for the current year are published in Part 2 of this report.

REVISIONS.--Corrected figure of mean discharge, in cubic feet per second, for December 1966 superseding figure published in WRD Calif, 1966 is given herewith: December mean, 36.8 cfs.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	80	38	13	4.3	18	.68	0	0	.23	1.2
2		0	330	40	11	3.8	15	.68	0	0	.33	1.1
3		0	496	29	11	3.8	13	.44	0	0	.44	1.1
4		0	754	22	9.8	3.8	12	.33	0	0	.59	.95
5		0	446	20	9.0	4.1	11	.33	0	0	.68	.95
6		0	58	16	8.4	3.8	11	.33	0	0	.68	.95
7		0	48	15	7.8	3.8	11	.33	0	0	.68	.95
8		0	60	14	7.2	3.8	11	.33	0	0	.68	.95
9		0	52	12	6.8	3.8	11	.33	0	0	.68	.95
10		0	37	12	6.4	3.8	20	.33	0	0	.68	.86
11		0	27	15	6.0	4.3	13	.28	0	0	.68	.86
12		0	21	36	6.0	269	11	.28	0	0	.68	.86
13		0	18	55	6.0	102	9.8	.28	0	0	.59	.86
14		0	13	200	5.7	53	11	.23	0	0	.59	1.1
15		0	36	268	5.7	41	11	.28	0	0	.59	.86
16		0	146	517	5.4	32	7.8	.28	0	0	.59	.86
17		0	87	305	5.4	29	9.8	.33	.01	0	.59	1.5
18		0	63	126	5.1	21	8.4	.33	.02	0	.59	1.7
19		0	46	82	5.1	18	7.2	.33	.03	0	.68	1.7
20		0	105	60	5.1	14	6.4	.33	.03	0	.86	1.7
21		0	141	48	4.8	11	6.0	.23	.05	.01	.86	1.7
22		0	66	40	4.8	9.8	5.7	0	.05	.03	.95	1.7
23		0	45	33	4.6	12	5.7	0	.03	.05	1.1	1.8
24		0	34	29	4.3	13	5.4	0	.03	.05	1.1	2.1
25		0	25	25	4.1	77	5.7	0	.03	.07	1.4	2.1
26		0	21	23	3.8	369	5.1	0	.03	.07	1.4	2.1
27		95	18	21	4.1	92	4.8	0	.03	.15	1.4	2.0
28		246	36	20	4.3	52	4.6	0	.02	.33	1.4	1.8
29		108	143	18	-----	40	4.3	0	.02	.33	1.4	1.7
30		82	66	15	-----	29	2.0	0	.01	.33	1.2	2.0
31		-----	45	14	-----	22	-----	0	-----	.28	1.2	-----
TOTAL	0	531	3,563	2,168	180.7	1,348.9	277.7	7.29	.39	1.70	25.52	40.96
MEAN	0	17.7	115	69.9	6.45	43.5	9.26	.24	.013	.055	.82	1.37
MAX	0	246	754	517	13	369	20	.68	.05	.33	1.4	2.1
MIN	0	0	13	12	3.8	3.8	2.0	0	0	0	.23	.86
AC-FT	0	1,050	7,070	4,300	358	2,680	551	14	.8	3.4	51	81
CAL YR 1970	TOTAL	14,253.17	MEAN	39.0	MAX	754	MIN	0	AC-FT	28,270		
WTR YR 1971	TOTAL	8,145.16	MEAN	22.3	MAX	754	MIN	0	AC-FT	16,160		

## SACRAMENTO RIVER BASIN

11449100 SCOTTS CREEK NEAR LAKEPORT, CALIF.

LOCATION.--Lat 39°05'44", long 122°57'38", in NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.3, T.14 N., R.10 W., Lake County, on left bank at upstream side of Eickhoff Road bridge, 0.9 mile downstream from small right-bank tributary, and 4.2 miles northwest of Lakeport.

DRAINAGE AREA.--55.2 sq mi.

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

GAGE--Water-stage recorder. Altitude of gage is 1,400 ft (from topographic map). Prior to Oct. 1, 1968, at site 3.0 miles upstream at different datum.

AVERAGE DISCHARGE.--11 years, 81.6 cfs (59,120 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,940 cfs Jan. 16 (gage height, 12.90 ft); no flow for several months.

Period of record: Maximum discharge, 11,000 cfs (includes about 7,500 cfs bypassing gage) Jan. 23, 1970 (gage height, 12.10 ft); maximum gage height, 17.88 ft Dec. 22, 1964, site and datum then in use; no flow for several months in each year.

REMARKS.--Small diversions above station for irrigation.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	228	138	56	16	87	23	4.7	.30		
2		0	1,100	123	51	15	76	25	4.3	0		
3		0	1,870	93	47	15	67	34	4.7	0		
4		0	2,010	78	44	16	61	26	4.3	0		
5		0	500	66	42	15	56	24	4.2	0		
6		0	301	53	40	14	51	22	4.0	0		
7		0	258	46	38	14	50	21	3.6	0		
8		0	284	42	35	14	45	20	3.2	0		
9		0	247	38	33	14	54	19	2.9	0		
10		0	179	43	32	13	76	18	2.7	0		
11		0	130	65	30	15	49	17	2.5	0		
12		0	98	94	29	714	45	16	2.4	0		
13		0	87	105	28	257	45	16	2.3	0		
14		0	71	368	27	177	66	15	2.1	0		
15		0	110	934	26	140	48	14	2.0	0		
16		0	350	2,940	25	109	45	13	1.9	0		
17		0	309	1,580	24	102	51	13	1.8	0		
18		0	237	623	22	80	44	12	1.7	0		
19		0	179	383	23	65	40	12	1.5	0		
20		0	177	282	21	55	39	11	1.5	0		
21		0	220	219	20	47	36	9.8	1.4	0		
22		0	196	178	19	42	34	9.8	1.4	0		
23		0	156	149	18	80	34	9.7	1.4	0		
24		0	126	125	17	64	32	8.6	1.2	0		
25		0	101	107	16	300	31	4.4	.80	0		
26		0	93	96	15	1,360	29	3.0	1.4	0		
27		124	85	87	16	430	28	3.1	1.3	0		
28		526	137	80	17	234	26	5.0	.80	0		
29		152	433	73	-----	165	25	6.4	.90	0		
30		273	240	66	-----	126	24	6.5	.60	0		
31		-----	170	61	-----	101	-----	5.7	-----	0		-----
TOTAL	0	1,075	10,682	9,335	811	4,809	1,394	443.0	69.50	.30	0	0
MEAN	0	35.8	345	301	29.0	155	46.5	14.3	2.32	.010	0	0
MAX	0	526	2,010	2,940	56	1,360	87	34	4.7	.30	0	0
MIN	0	0	71	38	15	13	24	3.0	.60	0	0	0
AC-FT	0	2,130	21,190	18,520	1,610	9,540	2,770	879	138	.6	0	0
CAL YR 1970	TOTAL	49,925.60	MEAN	137	MAX	3,980	MIN	0	AC-FT	99,030		
WTR YR 1971	TOTAL	28,618.80	MEAN	78.4	MAX	2,940	MIN	0	AC-FT	56,770		

## 11449460 SEIGLER CREEK AT LOWER LAKE, CALIF.

LOCATION.--Lat 38°54'34", long 122°36'48", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.10, T.12 N., R.7 W., Lake County, on left bank 400 ft upstream from highway bridge and 0.2 mile southwest of Lower Lake.

DRAINAGE AREA.--12.5 sq mi.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,364.75 ft above mean sea level.

AVERAGE DISCHARGE.--6 years, 12.2 cfs (8,840 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 437 cfs Dec. 3 (gage height, 5.69 ft); no flow for many days.  
Period of record: Maximum discharge, 1,420 cfs Jan. 26, 1969 (gage height, 7.64 ft), from rating curve extended above 430 cfs; no flow for many days in each year.

REMARKS.--Records good. No regulation or diversion above station.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.94	32	18	6.1	3.1	5.7	2.4	1.5	.18		
2	.15	.90	153	22	5.9	2.9	5.3	2.8	1.6	.14		
3	.25	1.2	223	12	5.5	2.9	4.8	3.1	1.5	.13		
4	.31	9.4	149	9.7	5.3	2.9	4.6	2.7	1.3	.11		
5	.33	14	31	8.5	5.2	2.9	4.2	2.6	1.3	.10		
6	.25	3.4	17	8.0	5.0	2.8	4.1	2.5	1.2	.08		
7	.30	2.1	14	7.3	4.8	2.8	4.1	2.4	1.1	.08		
8	.35	1.5	24	7.1	4.6	2.8	3.9	2.4	1.1	.07		
9	.47	1.3	15	6.6	4.6	2.8	4.1	2.4	.90	.07		
10	.37	1.3	10	6.3	4.2	2.8	5.3	2.1	.90	.06		
11	.30	1.3	7.8	8.0	4.2	2.9	4.1	2.0	.86	.06		
12	.27	1.5	6.3	11	4.1	66	3.8	1.9	.71	.05		
13	.28	1.5	5.9	24	3.9	16	3.8	1.8	.65	.04		
14	.28	1.5	5.3	65	3.9	9.1	5.3	1.7	.47	.04		
15	.37	1.5	27	68	3.9	7.1	3.8	1.6	.35	.04		
16	.41	1.5	69	117	3.8	5.7	3.5	1.5	.43	.03		
17	.50	1.5	32	55	3.8	5.3	3.8	1.5	.35	.03		
18	.65	1.5	31	31	3.6	4.4	3.4	1.5	.22	.02		
19	.74	1.5	25	24	3.8	4.1	3.2	1.4	.28	.02		
20	1.1	1.5	77	19	3.6	3.8	3.1	1.3	.35	.02		
21	.94	1.5	51	15	3.5	3.6	3.1	1.2	.33	.01		
22	1.1	1.5	27	13	3.5	3.5	2.9	1.2	.24	.01		
23	.98	1.5	20	12	3.4	4.6	2.8	1.2	.21	0		
24	1.0	1.5	16	11	3.4	4.2	2.7	1.1	.21	0		
25	.90	2.0	13	9.4	3.1	11	2.7	.98	.21	0		
26	.82	2.4	12	8.8	3.1	68	2.6	1.2	.30	0		
27	.82	57	13	8.0	3.2	16	2.6	1.6	.39	0		
28	.82	173	26	7.5	3.2	10	2.5	2.5	.24	0		
29	.82	97	40	7.1	-----	8.3	2.5	2.1	.28	0		
30	.86	45	19	6.8	-----	7.1	2.4	1.8	.22	0		
31	.94	-----	14	6.3	-----	6.3	-----	1.5	-----	0		
TOTAL	17.90	433.24	1,205.3	632.4	116.2	295.7	110.7	57.98	19.70	1.39	0	0
MEAN	.58	14.4	38.9	20.4	4.15	9.54	3.69	1.87	.66	.045	0	0
MAX	1.1	173	223	117	6.1	68	5.7	3.1	1.6	.18	0	0
MIN	.15	.90	5.3	6.3	3.1	2.8	2.4	.98	.21	0	0	0
AC-FT	36	859	2,390	1,250	230	587	220	115	39	2.8	0	0

CAL YR 1970 TOTAL 6,534.15 MEAN 17.9 MAX 507 MIN 0 AC-FT 12,960  
WTR YR 1971 TOTAL 2,890.51 MEAN 7.92 MAX 223 MIN 0 AC-FT 5,730

PEAK DISCHARGE (BASE, 500 CFS).--No peak above base.

## 11449500 KELSEY CREEK NEAR KELSEYVILLE, CALIF.

LOCATION.--Lat 38°55'39", long 122°50'33", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.34, T.13 N., R.9 W., Lake County, on left bank 1.6 miles downstream from Widow Creek and 3.5 miles south of Kelseyville.

DRAINAGE AREA.--36.6 sq mi.

PERIOD OF RECORD.--October 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,475.44 ft above mean sea level. Prior to July 16, 1955, at site 600 ft upstream at different datum.

AVERAGE DISCHARGE.--25 years, 74.7 cfs (54,100 acre-ft per year); median of yearly mean discharges, 64 cfs (46,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,840 cfs Dec. 3 (gage height, 10.17 ft); minimum daily, 2.5 cfs Sept. 18, 19.

Period of record: Maximum discharge, 8,800 cfs Dec. 21, 1955 (gage height, 12.80 ft); maximum gage height, 13.48 ft Jan. 5, 1965; minimum discharge, 0.5 cfs Sept. 1, 1950, but may have been less during August 1950.

REMARKS.--Records good. No regulation or diversion above station.

REVISIONS (WATER YEARS).--WSP 1285: 1947-48(M), 1950-52(P).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	6.9	338	136	57	23	95	29	18	7.6	3.4	4.7
2	3.7	6.8	785	129	54	22	86	31	17	7.4	3.4	4.5
3	4.1	7.6	1,950	105	52	22	78	30	16	7.1	3.5	4.0
4	3.9	42	1,400	93	50	22	70	28	15	6.7	3.6	3.4
5	4.0	104	412	84	48	21	65	27	15	6.7	3.6	3.0
6	4.2	38	217	77	46	20	60	26	14	6.7	3.6	3.4
7	4.3	26	198	72	44	19	56	26	14	6.4	3.4	4.0
8	4.5	18	190	67	43	19	53	25	13	6.5	3.4	3.6
9	4.6	20	158	64	41	19	72	24	13	6.7	3.6	3.4
10	4.5	20	128	70	39	20	72	23	13	6.7	3.4	3.4
11	4.2	17	110	95	37	23	68	22	12	6.4	3.7	3.1
12	4.2	18	94	118	36	830	55	21	12	6.5	3.3	3.0
13	4.6	15	84	130	35	240	52	21	12	6.3	3.4	3.0
14	4.5	13	75	414	34	196	60	20	12	5.8	3.3	2.9
15	4.4	12	142	600	33	138	51	19	11	5.4	3.2	2.8
16	4.4	11	308	852	33	111	48	19	10	5.3	3.1	2.8
17	4.4	11	209	450	32	100	55	19	10	4.7	3.1	2.8
18	5.5	11	169	300	31	90	47	20	9.8	4.7	3.4	2.5
19	5.8	10	136	210	32	75	44	19	9.8	4.7	3.6	2.5
20	9.0	10	243	175	30	68	43	19	9.5	4.6	3.4	2.9
21	8.7	10	214	145	29	62	41	18	9.0	4.5	3.3	3.1
22	13	10	153	125	28	58	40	18	8.9	4.3	3.4	3.0
23	9.2	10	126	110	28	65	40	17	8.8	4.3	3.4	2.9
24	10	11	108	97	27	58	37	16	8.8	4.0	3.5	3.1
25	7.9	22	94	90	26	340	36	16	8.6	4.0	3.3	3.1
26	7.3	30	86	82	25	850	34	18	8.7	4.1	3.2	3.6
27	7.1	697	81	77	26	400	33	20	9.5	4.0	3.5	4.7
28	6.9	880	180	71	26	200	32	22	8.8	4.0	3.1	4.5
29	6.8	422	377	66	-----	150	31	20	8.3	4.0	3.3	4.9
30	6.8	359	191	63	-----	130	30	18	7.8	4.0	3.9	10
31	7.0	-----	150	60	-----	110	-----	18	-----	3.6	4.7	-----
TOTAL	183.5	2,868.3	9,106	5,227	1,022	4,501	1,584	669	343.3	167.7	107.0	108.6
MEAN	5.92	95.6	294	169	36.5	145	52.8	21.6	11.4	5.41	3.45	3.62
MAX	13	880	1,950	852	57	850	95	31	18	7.6	4.7	10
MIN	3.7	6.8	75	60	25	19	30	16	7.8	3.6	3.1	2.5
AC-FT	364	5,690	18,060	10,370	2,030	8,930	3,140	1,330	681	333	212	215

CAL YR 1970 TOTAL 43,951.1 MEAN 120 MAX 3,490 MIN 3.5 AC-FT 87,180  
WTR YR 1971 TOTAL 25,887.4 MEAN 70.9 MAX 1,950 MIN 2.5 AC-FT 51,350

## PEAK DISCHARGE (BASE, 2,400 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-27	2015	9.44	2,930	3-12	1215	9.36	2,830
12- 3	1830	10.17	3,840	3-25	unknown	-	2,500

## 11450000 CLEAR LAKE AT LAKEPORT, CALIF.

LOCATION.--Lat 39°02'21", long 122°54'44", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.25, T.14 N., R.10 W., Lake County, on private pier at 410 Esplanada Street in Lakeport.

DRAINAGE AREA.--528 sq mi.

PERIOD OF RECORD.--1874-1900 (incomplete), January 1913 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,318.65 ft above mean sea level. Prior to July 8, 1947, non-recording gage and July 8, 1947, to Mar. 17, 1949, at municipal wharf at foot of Third Street in Lakeport at datum 0.06 ft lower. Mar. 18, 1949, to Sept. 30, 1967, at private pier at foot of Fourth Street at datum 0.06 ft lower.

EXTREMES.--Current year: Maximum daily mean gage height, 7.86 ft Mar. 28; minimum, 1.36 ft Oct. 31, Nov. 1. Period of record: Maximum gage height observed, 11.12 ft Jan. 28, 1914; minimum observed, -3.50 ft Sept. 24-27, 1920.

REMARKS.--This natural lake is regulated by gates on a dam at outlet, completed in 1915. Capacity between gage heights 0.00 and 7.56 ft (limits stipulated by court decree of 1920), about 319,000 acre-ft. Water is released down natural channel of Cache Creek from which it is diverted for irrigation (see sta 11451000).

COOPERATION.--Daily mean gage-height record Oct. 1 to Nov. 9 furnished by Yolo County Flood Control and Water Conservation District.

## MEAN GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.84	1.36	2.37	5.63	6.46	6.56	7.63	7.47	6.87	5.70	4.27	2.89
2	1.83	1.40	2.62	5.66	6.43	6.56	7.55	7.49	6.86	5.66	4.22	2.86
3	1.79	1.42	2.99	5.62	6.43	6.57	7.47	7.48	6.83	5.62	4.17	2.84
4	1.76	1.44	3.74	5.59	6.43	6.54	7.45	7.48	6.80	5.58	4.11	2.80
5	1.73	1.46	4.12	5.56	6.44	6.57	7.46	7.47	6.77	5.53	4.07	2.76
6	1.69	1.48	4.30	5.54	6.46	6.58	7.46	7.47	6.74	5.50	4.03	2.70
7	1.66	1.50	4.41	5.55	6.48	6.58	7.45	7.46	6.72	5.44	3.98	2.69
8	1.64	1.52	4.49	5.58	6.48	6.58	7.48	7.46	6.68	5.38	3.93	2.66
9	1.61	1.55	4.58	5.60	6.50	6.58	7.49	7.45	6.62	5.34	3.89	2.63
10	1.59	1.56	4.63	5.61	6.51	6.59	7.52	7.44	6.60	5.28	3.86	2.58
11	1.58	1.56	4.68	5.65	6.52	6.61	7.53	7.44	6.58	5.25	3.83	2.56
12	1.56	1.56	4.71	5.71	6.54	6.72	7.55	7.42	6.54	5.21	3.79	2.55
13	1.55	1.57	4.75	5.80	6.54	6.90	7.57	7.40	6.49	5.18	3.74	2.53
14	1.54	1.58	4.77	5.92	6.53	7.01	7.60	7.38	6.46	5.14	3.70	2.51
15	1.53	1.55	4.81	6.08	6.55	7.08	7.61	7.33	6.43	5.10	3.64	2.48
16	1.52	1.55	4.96	6.45	6.53	7.12	7.59	7.32	6.38	5.06	3.59	2.45
17	1.51	1.55	5.09	6.91	6.56	7.16	7.58	7.31	6.34	5.01	3.56	2.42
18	1.49	1.55	5.20	7.13	6.57	7.19	7.60	7.28	6.28	4.97	3.52	2.39
19	1.48	1.54	5.25	7.20	6.57	7.21	7.60	7.25	6.25	4.92	3.46	2.34
20	1.46	1.54	5.35	7.20	6.58	7.22	7.56	7.17	6.21	4.87	3.41	2.32
21	1.45	1.54	5.48	7.15	6.58	7.24	7.59	7.17	6.17	4.77	3.36	2.29
22	1.44	1.54	5.56	7.09	6.56	7.25	7.58	7.15	6.11	4.76	3.32	2.26
23	1.43	1.54	5.61	7.01	6.58	7.30	7.56	7.12	6.07	4.71	3.29	2.23
24	1.41	1.54	5.61	6.94	6.54	7.34	7.55	7.09	6.01	4.66	3.24	2.17
25	1.40	1.57	5.60	6.86	6.54	7.44	7.55	7.04	5.96	4.61	3.20	2.14
26	1.38	1.56	5.58	6.78	6.56	7.68	7.55	7.02	5.92	4.56	3.17	2.09
27	1.38	1.62	5.55	6.68	6.54	7.82	7.52	7.01	5.87	4.51	3.13	2.08
28	1.37	1.94	5.52	6.60	6.52	7.86	7.51	7.00	5.82	4.46	3.08	2.04
29	1.37	2.13	5.58	6.51	-----	7.84	7.50	6.97	5.79	4.41	3.03	1.99
30	1.37	2.22	5.62	6.48	-----	7.74	7.49	6.90	5.75	4.36	2.98	1.99
31	1.36	-----	5.62	6.47	-----	7.71	-----	6.89	-----	4.31	2.93	-----
MEAN	1.54	1.58	4.81	6.28	6.52	7.07	7.54	7.27	6.36	5.03	3.60	2.44
MAX	1.84	2.22	5.62	7.20	6.58	7.86	7.63	7.49	6.87	5.70	4.27	2.89
MIN	1.36	1.36	2.37	5.54	6.43	6.54	7.45	6.89	5.75	4.31	2.93	1.99

WTR:YR 1971 MEAN 5.00 MAX 7.86 MIN 1.36





## 11451500 NORTH FORK CACHE CREEK NEAR LOWER LAKE, CALIF.

LOCATION.--Lat 39°01'09", long 122°34'04", in NE $\frac{1}{4}$  sec.31, T.14 N., R.6 W. (unsurveyed), Lake County, on right bank 500 ft upstream from Sweet Hollow Creek, 5 miles upstream from mouth, and 7 miles northeast of Lower Lake.

DRAINAGE AREA.--197 sq mi.

PERIOD OF RECORD.--July 1930 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,035.60 ft above mean sea level. Prior to June 15, 1939, at datum 1.00 ft higher.

AVERAGE DISCHARGE.--41 years, 196 cfs (142,000 acre-ft per year); median of yearly mean discharges, 150 cfs (109,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,970 cfs Dec. 3 (gage height, 9.28 ft); minimum daily, 1.2 cfs Oct. 3, 5, 13.

Period of record: Maximum discharge, 20,300 cfs Dec. 11, 1937 (gage height, 13.98 ft, present datum, from floodmarks), from rating curve extended above 7,600 cfs on basis of slope-area measurement at gage height 13.9 ft for peak of Feb. 28, 1940; no flow at times in 1930-36, 1949-50, 1956-57.

REMARKS.--Records fair. No regulation; several small diversions for irrigation of about 150 acres above station.

REVISIONS (WATER YEARS).--WSP 831: 1932(M). WSP 1315-A: 1935(M), 1937-38(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	3.1	750	516	225	106	311	103	55	14	5.1	3.0
2	1.3	3.1	1,250	480	213	105	289	112	54	15	4.8	3.0
3	1.2	3.9	1,940	384	198	105	268	124	50	14	4.7	2.8
4	1.3	9.2	4,800	333	193	105	246	110	49	13	4.6	2.6
5	1.2	21	1,480	303	180	103	227	101	46	12	4.5	2.5
6	1.6	43	1,000	279	178	102	215	101	44	11	4.4	2.5
7	1.8	33	806	260	166	100	210	96	43	11	4.3	2.6
8	1.6	25	806	243	160	99	203	90	42	10	4.1	2.6
9	1.6	21	695	235	158	97	200	89	40	9.6	3.9	2.7
10	1.5	35	575	250	154	97	253	87	39	9.2	3.7	2.6
11	1.3	30	460	354	145	102	208	81	38	9.6	3.5	2.6
12	1.3	32	380	354	141	1,040	193	84	37	9.6	3.4	2.6
13	1.2	34	342	376	139	795	191	75	35	8.8	3.3	2.5
14	2.4	26	306	585	134	492	208	73	34	8.4	3.4	2.5
15	7.7	22	297	1,150	130	388	186	73	31	8.0	3.3	2.1
16	4.6	20	690	4,430	129	315	174	72	28	7.6	3.2	2.2
17	3.1	19	590	3,600	129	297	186	69	26	6.8	3.2	2.1
18	3.6	18	590	2,110	126	273	174	69	24	6.8	3.1	1.9
19	3.0	17	500	1,310	127	255	161	68	21	6.5	2.9	2.0
20	3.9	17	492	1,020	122	238	152	63	21	6.3	2.8	2.1
21	3.2	16	535	800	119	220	145	62	20	6.3	2.8	2.0
22	4.8	16	472	670	118	208	141	60	19	6.1	2.8	2.0
23	3.4	16	404	560	118	248	137	58	17	6.1	2.7	1.9
24	3.1	16	364	480	116	250	132	55	16	6.1	2.7	1.8
25	6.2	18	324	432	113	343	132	52	16	5.9	2.6	1.9
26	5.1	35	309	372	111	2,040	130	52	16	5.9	2.3	1.9
27	3.9	300	297	330	111	1,010	126	58	16	5.8	2.3	1.9
28	3.7	1,400	321	297	110	710	122	68	16	5.9	2.3	2.0
29	3.7	1,200	1,130	270	-----	554	114	62	15	5.7	2.3	5.2
30	3.6	850	725	248	-----	432	108	60	14	5.7	2.6	6.2
31	3.6	-----	585	238	-----	361	-----	56	-----	5.3	3.1	-----
TOTAL	91.0	4,299.3	24,215	23,269	4,063	11,590	5,542	2,383	922	262.0	104.7	76.3
MEAN	2.94	143	781	751	145	374	185	76.9	30.7	8.45	3.38	2.54
MAX	7.7	1,400	4,800	4,430	225	2,040	311	124	55	15	5.1	6.2
MIN	1.2	3.1	297	235	110	97	108	52	14	5.3	2.3	1.8
AC-FT	181	8,530	48,030	46,150	8,060	22,990	10,990	4,730	1,830	520	208	151

CAL YR 1970 TOTAL 132,731.99 MEAN 364 MAX 8,320 MIN .93 AC-FT 263,300  
WTR YR 1971 TOTAL 76,817.30 MEAN 210 MAX 4,800 MIN 1.2 AC-FT 152,400

PEAK DISCHARGE (BASE, 3,500 CFS).--Dec. 3 (2130) 8,970 cfs (9.28 ft); Jan. 16 (1745) 6,480 cfs (8.42 ft).

## SACRAMENTO RIVER BASIN

11451720 BEAR CREEK NEAR RUMSEY, CALIF.

LOCATION.--Lat 38°56'42", long 122°20'42", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.30, T.13 N., R.4 W., Colusa County, on left bank  
0.3 mile downstream from Brophy Canyon, 1.4 miles upstream from mouth, and 7.3 miles northwest of Rumsey.

DRAINAGE AREA.--100 sq mi.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 750 ft (from topographic map).

AVERAGE DISCHARGE.--13 years, 45.9 cfs (33,250 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,740 cfs Dec. 4 (gage height, 8.01 ft); minimum daily, 0.20 cfs

Aug. 11-18, Sept. 19, 20.

Period of record: Maximum discharge, 9,720 cfs Jan. 5, 1965 (gage height, 11.93 ft); no flow July 25, 26,  
Aug. 20, 1960.

Maximum stage known since 1955, 12.33 ft Feb. 24, 1958 (discharge, 9,350 cfs).

REMARKS.--No regulation or diversion above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

REVISIONS (WATER YEARS).--WRD Calif. 1963: 1962(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.7	181	63	52	23	31	12	8.1	2.7	.60	1.0
2	.90	1.6	774	109	49	22	30	13	8.2	2.6	.50	1.0
3	.90	2.0	704	57	45	22	28	16	7.9	2.5	.50	.90
4	1.0	4.9	1,590	49	44	23	27	14	7.7	2.3	.40	.80
5	1.0	6.3	216	46	44	22	27	14	7.2	2.2	.40	.60
6	1.0	6.8	111	44	43	20	25	14	6.6	2.1	.40	.60
7	.90	5.0	78	42	40	19	25	12	5.9	2.1	.40	.60
8	.90	3.5	96	41	39	19	25	12	5.7	1.9	.40	.60
9	.80	3.0	73	40	38	19	25	13	5.5	1.8	.40	.50
10	1.1	2.8	52	42	37	18	27	13	5.2	1.9	.30	.60
11	1.1	2.6	43	60	36	19	24	12	5.5	1.9	.20	.60
12	1.1	2.4	37	61	35	237	22	11	5.4	1.9	.20	.60
13	1.1	2.1	34	173	34	161	22	10	5.5	1.8	.20	.60
14	1.1	2.1	33	333	34	54	33	10	4.9	1.7	.20	.50
15	1.1	2.2	108	299	33	51	24	9.5	4.9	1.7	.20	.40
16	1.1	2.2	306	1,240	33	39	21	9.0	4.7	1.6	.20	.40
17	1.2	2.2	98	580	33	33	21	9.2	4.3	1.5	.20	.30
18	1.8	2.3	163	241	30	28	20	9.4	4.1	1.5	.20	.30
19	2.3	2.3	136	171	30	26	18	9.2	4.0	1.4	.30	.20
20	2.5	2.4	196	138	28	25	18	8.4	4.2	1.2	.30	.20
21	2.4	2.5	231	113	27	24	17	7.7	3.8	1.1	.30	.40
22	2.6	2.6	106	99	28	23	17	7.7	3.5	.90	.40	.50
23	2.9	2.8	79	88	28	25	17	7.6	3.3	.80	.70	.60
24	2.3	2.8	67	81	26	25	16	7.4	3.5	.80	.70	.70
25	1.9	3.2	58	75	25	33	15	7.3	3.4	.90	.60	.70
26	1.7	3.6	57	71	23	496	15	7.4	3.3	1.0	.60	.90
27	1.6	30	54	66	24	95	14	8.8	3.4	.90	.50	1.0
28	1.4	641	50	63	24	54	13	10	3.1	.70	.50	1.0
29	1.5	875	162	59	-----	43	12	10	3.0	.70	.50	1.0
30	1.6	212	92	56	-----	37	12	9.7	2.9	.80	.70	1.3
31	1.7	-----	67	54	-----	33	-----	9.2	-----	.80	.90	-----
TOTAL	45.50	1,835.9	6,052	4,654	962	1,768	641	323.5	148.7	47.70	12.90	19.40
MEAN	1.47	61.2	195	150	34.4	57.0	21.4	10.4	4.96	1.54	.42	.65
MAX	2.9	875	1,590	1,240	52	496	33	16	8.2	2.7	.90	1.3
MIN	.80	1.6	33	40	23	18	12	7.3	2.9	.70	.20	.20
AC-FT	90	3,640	12,000	9,230	1,910	3,510	1,270	642	295	95	26	38

CAL YR 1970, TOTAL 38,649.40 MEAN 106 MAX 2,280 MIN .60 AC-FT 76,660  
WTR YR 1971 TOTAL 16,510.60 MEAN 45.2 MAX 1,590 MIN .20 AC-FT 32,750

## 11451760 CACHE CREEK ABOVE RUMSEY, CALIF.

LOCATION.--Lat 38°54'47", long 122°16'14", in SE $\frac{1}{4}$  sec.2, T.12 N., R.4 W., Yolo County, on right bank 0.4 mile downstream from highway bridge and 2.5 miles northwest of Rumsey.

DRAINAGE AREA.--955 sq mi.

PERIOD OF RECORD.--October 1960 to September 1962, June 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 480 ft (from topographic map).

AVERAGE DISCHARGE.--8 years (1961-62, 1966-71), 773 cfs (560,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 18,000 cfs Dec. 4 (gage height, 14.46 ft); minimum daily, 8.0 cfs Nov. 2.

Period of record: Maximum discharge, 43,400 cfs Jan. 24, 1970 (gage height, 19.59 ft), from rating curve extended above 14,000 cfs on basis of slope-area measurement at gage height 21.42 ft; minimum, 3.1 cfs Oct. 29, 1960.

Flood of Jan. 5, 1965, reached a stage of 21.42 ft, from floodmarks (discharge, 59,000 cfs, by slope-area measurement).

REMARKS.--Flow partly regulated by Clear Lake beginning in 1915 (see sta 11450000). Records of water temperatures and suspended-sediment discharge for the current year are published in Part 2 of this report.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	137	8.2	1,540	1,840	911	147	2,560	518	437	610	507	339
2	161	8.0	2,850	1,900	1,200	150	2,530	518	428	566	482	332
3	141	8.4	3,560	1,720	351	157	2,470	515	448	539	523	344
4	138	18	10,200	1,650	323	157	477	466	503	536	532	369
5	138	40	2,240	1,610	290	156	329	423	510	535	532	376
6	137	74	1,270	1,290	298	142	309	382	491	561	548	378
7	134	76	896	436	286	138	296	362	518	532	520	359
8	121	56	956	401	274	143	277	382	612	543	484	362
9	107	112	834	382	262	142	270	399	642	544	448	356
10	108	84	659	357	254	140	339	382	593	571	425	323
11	108	61	539	516	246	136	304	365	602	558	419	290
12	75	48	459	565	238	882	267	357	599	575	446	283
13	64	50	404	701	233	1,320	249	365	598	593	477	259
14	63	49	373	1,260	230	604	292	396	603	609	461	302
15	58	38	381	2,130	229	525	264	447	613	621	449	341
16	56	32	1,180	8,440	223	422	337	482	598	679	435	347
17	56	28	885	7,960	221	378	349	499	630	684	493	342
18	51	26	860	5,540	211	333	350	499	700	710	495	339
19	40	24	803	4,540	207	305	330	518	722	735	481	303
20	44	23	746	3,950	195	281	328	547	706	713	469	259
21	40	22	1,090	3,560	188	260	320	562	666	718	418	280
22	41	21	763	3,280	185	242	312	567	683	716	417	291
23	35	21	691	3,010	181	257	350	584	717	710	453	292
24	18	21	1,310	2,870	173	327	410	611	715	721	451	275
25	13	23	1,560	2,730	167	337	497	576	712	695	446	276
26	11	25	1,540	2,610	158	2,900	488	610	696	664	424	250
27	10	88	1,520	2,510	155	2,730	495	651	693	649	430	209
28	10	3,550	1,520	2,450	154	2,350	536	681	646	615	423	211
29	9.0	2,870	2,590	2,140	-----	2,390	553	563	643	572	406	210
30	8.7	1,370	2,180	993	-----	2,640	521	490	654	541	408	189
31	8.4	-----	1,950	947	-----	2,600	-----	423	-----	541	374	-----
TOTAL	2,141.1	8,874.6	48,349	74,288	8,043	23,691	17,409	15,140	18,378	19,156	14,276	9,086
MEAN	69.1	296	1,560	2,396	287	764	580	488	613	618	461	303
MAX	161	3,550	10,200	8,440	1,200	2,900	2,560	681	722	735	548	378
MIN	8.4	8.0	373	357	154	136	249	357	428	532	374	189
AC-FT	4,250	17,600	95,900	147,400	15,950	46,990	34,530	30,030	36,450	38,000	28,320	18,020
CAL YR 1970	TOTAL	491,080.7	MEAN	1,345	MAX	23,600	MIN	8.0	AC-FT	974,100		
WTR YR 1971	TOTAL	258,831.7	MEAN	709	MAX	10,200	MIN	8.0	AC-FT	513,400		

## SACRAMENTO RIVER BASIN

11452000 CACHE CREEK NEAR CAPAY, CALIF.

LOCATION.--Lat 38°43'44", long 122°06'15", in Canada de Capay Grant, Yolo County, on right bank 1.8 miles upstream from Clear Lake Water Co.'s diversion dam, 3.2 miles northwest of Capay, and 5.4 miles northwest of Esparto.

DRAINAGE AREA.--1,044 sq mi.

PERIOD OF RECORD.--May 1942 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 225 ft (from river-profile map).

AVERAGE DISCHARGE.--29 years, 660 cfs (478,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 16,800 cfs Dec. 4 (gage height, 13.96 ft); minimum daily, 11 cfs Nov. 1-3.

Period of record: Maximum discharge, 51,600 cfs Feb. 24, 1958 (gage height, 20.90 ft), from rating curve extended above 30,000 cfs; minimum, 2.2 cfs Sept. 11, 12, 16, 1947.

REMARKS.--Records good. Flow partially regulated by Clear Lake beginning in 1915 (see sta 11450000). About 3,700 acre-ft diverted annually between stations above Rumsey and near Capay for irrigation of approximately 900 acres, from data furnished by U.S. Soil Conservation Service. Records of chemical analyses for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	11	1,810	2,080	997	171	2,690	470	380	520	457	340
2	121	11	3,030	2,160	1,260	166	2,670	461	378	512	434	328
3	125	11	2,230	1,910	581	163	2,630	469	388	485	451	329
4	117	14	11,600	1,810	405	160	1,110	398	420	475	467	345
5	117	20	3,880	1,750	375	157	466	350	441	473	462	351
6	119	43	2,100	1,690	354	152	390	337	432	477	476	350
7	116	76	1,370	524	338	149	346	336	434	465	456	340
8	112	66	1,270	400	322	145	326	355	485	469	433	333
9	105	55	1,160	367	306	142	313	364	515	470	412	332
10	97	116	916	350	293	140	328	332	512	495	391	321
11	97	66	750	420	283	136	347	301	519	489	372	295
12	93	61	625	505	275	188	310	309	523	502	376	276
13	72	49	548	653	265	1,830	296	315	521	511	402	258
14	65	48	496	1,430	257	615	308	341	517	521	409	255
15	61	38	450	1,910	253	500	305	405	514	529	410	282
16	58	39	1,320	6,800	247	422	317	428	507	544	398	296
17	58	35	1,180	9,010	240	369	343	427	524	544	416	291
18	59	33	1,040	6,520	236	331	348	415	579	557	430	288
19	54	30	1,070	5,390	228	304	337	424	610	572	430	278
20	48	29	855	4,600	221	286	328	450	610	594	422	255
21	46	28	1,560	4,120	216	271	323	475	558	598	389	250
22	43	27	994	3,830	209	258	316	481	564	609	376	264
23	42	26	775	3,560	201	250	319	492	586	608	398	271
24	39	26	1,320	3,370	194	289	341	503	590	624	404	260
25	28	27	1,900	3,210	188	286	403	488	603	600	404	255
26	19	28	1,870	3,080	182	2,380	428	487	609	570	394	251
27	16	35	1,820	2,990	177	3,160	426	517	587	563	390	226
28	14	3,150	1,800	2,920	175	2,590	449	568	559	541	391	202
29	13	3,280	2,780	2,840	-----	2,440	473	510	544	516	373	195
30	12	1,760	2,590	1,230	-----	2,770	474	462	547	484	360	190
31	12	-----	2,230	1,050	-----	2,740	-----	404	-----	469	359	-----
TOTAL	2,109	9,238	57,339	82,479	9,278	23,960	18,460	13,074	15,556	16,386	12,742	8,507
MEAN	68.0	308	1,850	2,661	331	773	615	422	519	529	411	284
MAX	131	3,280	11,600	9,010	1,260	3,160	2,690	568	610	624	476	351
MIN	12	11	450	350	175	136	296	301	378	465	359	190
AC-FT	4,180	18,320	113,700	163,600	18,400	47,520	36,620	25,930	30,860	32,500	25,270	16,870
CAL YR 1970	TOTAL 508,461		MEAN 1,393	MAX 25,000	MIN 11	AC-FT 1,009,000						
WTR YR 1971	TOTAL 269,128		MEAN 737	MAX 11,600	MIN 11	AC-FT 533,800						

## 11452500 CACHE CREEK AT YOLO, CALIF.

LOCATION.--Lat 38°43'31", long 121°48'22", in Rio Jesus Maria Grant, Yolo County, on left bank 800 ft upstream from highway bridge, 0.5 mile south of Yolo, and 7.3 miles downstream from Moore Dam.

DRAINAGE AREA.--1,139 sq mi.

PERIOD OF RECORD.--January 1903 to current year. Records for water year 1903 incomplete, yearly estimate published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to summer of 1930, nonrecording gage at datum 58.21 ft higher. Summer of 1930 to June 11, 1954, water-stage recorder at datum 56.24 ft higher. June 11, 1954, to July 16, 1965, at datum 52.24 ft higher. July 17, 1965, to Apr. 24, 1969, at datum 50.24 ft higher.

AVERAGE DISCHARGE.--69 years, 524 cfs (379,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 18,200 cfs Dec. 4 (gage height, 72.27 ft); no flow for several months.  
Period of record: Maximum discharge, 41,400 cfs Feb. 25, 1958 (gage height, 85.35 ft, present datum); maximum stage observed, 88.44 ft (present datum) Mar. 10, 1904; no flow at times in each year.

REMARKS.--Records good. Flow regulated by Clear Lake beginning in 1915 (see sta 11450000). Diversions for irrigating up to about 30,000 acres between stations near Capay and at Yolo, from data furnished by Clear Lake Water Co.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	1,650	1,960	1,110	122	2,550	4.2	5.0	11	11	23
2		0	2,490	2,020	1,080	117	2,560	7.4	5.3	9.8	14	8.6
3		0	2,160	1,890	1,060	113	2,530	29	3.8	12	7.5	2.3
4		0	11,600	1,720	460	109	1,510	37	2.2	22	.92	0
5		0	4,060	1,640	405	105	394	22	5.6	20	0	.26
6		0	1,920	1,610	365	98	269	19	12	9.6	1.1	.61
7		0	1,330	883	333	98	155	16	11	.11	15	4.7
8		0	1,080	508	308	98	105	16	.86	0	18	14
9		0	1,070	439	284	67	67	22	0	.93	22	7.1
10		0	895	391	264	51	42	26	5.5	17	20	2.2
11		0	728	369	254	49	43	24	7.0	21	15	3.6
12		0	622	539	237	51	56	5.6	.29	17	2.7	.98
13		0	546	683	224	1,320	31	3.0	0	9.8	.42	1.8
14		0	486	1,170	214	762	21	.23	2.1	5.9	.58	2.3
15		0	444	1,660	205	515	20	.15	9.9	9.2	0	1.5
16		0	855	4,640	200	428	16	.10	14	15	0	2.0
17		0	1,260	9,310	189	346	49	11	8.0	13	.04	.02
18		0	960	6,250	180	273	54	24	.29	8.1	0	0
19		0	1,180	4,860	173	147	54	3.7	11	6.0	2.8	0
20		0	875	4,120	166	111	49	3.6	17	2.6	12	0
21		0	1,450	3,670	157	96	40	4.4	24	2.0	13	0
22		0	1,110	3,430	153	79	30	.12	14	6.7	6.1	0
23		0	835	3,210	152	65	20	0	8.8	19	3.7	0
24		0	1,020	3,080	147	50	45	0	2.3	25	9.7	0
25		0	1,600	2,970	139	53	66	0	5.8	27	19	0
26		0	1,610	2,870	133	1,180	74	2.6	.02	23	18	0
27		0	1,560	2,780	127	3,020	30	4.9	.02	14	17	0
28		1,620	1,540	2,690	124	2,580	9.0	4.7	5.3	12	13	0
29		3,170	2,100	2,620	-----	2,270	3.1	21	5.3	14	11	0
30		1,950	2,520	1,630	-----	2,560	5.4	23	12	11	17	0
31		-----	2,110	1,170	-----	2,570	-----	7.7	-----	13	17	-----
TOTAL	0	6,740	53,666	76,782	8,843	19,503	10,897.5	342.40	198.38	376.74	287.56	74.97
MEAN	0	225	1,731	2,477	316	629	363	11.0	6.61	12.2	9.28	2.50
MAX	0	3,170	11,600	9,310	1,110	3,020	2,560	37	24	27	22	23
MIN	0	0	444	369	124	49	3.1	0	0	0	0	0
AC-FT	0	13,370	106,400	152,300	17,540	38,680	21,620	679	393	747	570	149
CAL YR 1970	TOTAL	424,933.61	MEAN	1,164	MAX	25,800	MIN	0	AC-FT	842,900		
WTR YR 1971	TOTAL	177,711.55	MEAN	487	MAX	11,600	MIN	0	AC-FT	352,500		

## SACRAMENTO RIVER BASIN

11453000 YOLO BYPASS NEAR WOODLAND, CALIF.

LOCATION.--Lat 38°40'40", long 121°38'35", (unsurveyed), Yolo County, on left bank 300 ft upstream from Sacramento and Woodland railroad bridge, 6 miles upstream from Sacramento Bypass, 6 miles downstream from Fremont weir, and 7 miles east of Woodland.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 3.41 ft below mean sea level. Prior to Dec. 17, 1941, nonrecording gage, and Dec. 18-31, 1941, water-stage recorder, at datum 0.73 ft higher. A supplementary water-stage recorder 6 miles downstream at different datum is used for records of low flow.

AVERAGE DISCHARGE.--32 years, 3,965 cfs (2,873,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 33,300 cfs Dec. 5 (gage height, 25.64 ft); no flow for several days.

Period of record: Maximum discharge, 272,000 cfs Feb. 8, 1942 (gage height, 32.00 ft); no flow at times in recent years.

REMARKS.--Records fair except those for period January to March, which are good. Flow is from Cache Creek and Knights Landing Ridge Cut plus floodwater passing over Fremont weir; during the summer months, the flow consists largely of return water from irrigation. There is some diversion for irrigation between the main and supplementary gage which affects the low flow record.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	6.6	4,170	2,460	1,620	109	3,590	12	868	6.6	.15	0
2	25	6.1	5,310	2,410	1,540	95	2,960	23	860	6.1	.06	21
3	12	6.6	15,100	2,350	1,610	94	2,780	30	832	13	.06	72
4	6.6	11	21,700	2,220	1,160	102	2,650	39	788	26	.15	83
5	6.1	16	32,500	2,110	815	100	1,720	42	558	26	.30	92
6	6.6	20	30,100	2,040	670	94	1,150	46	342	13	.60	85
7	6.6	40	32,000	1,880	614	88	778	202	175	3.3	.30	90
8	3.3	50	28,800	1,290	572	90	502	568	88	1.2	.20	85
9	4.6	45	23,400	942	542	83	445	666	80	1.2	.20	79
10	5.6	31	21,500	758	518	69	455	815	74	.90	.20	72
11	5.6	13	22,500	710	498	57	361	973	54	.90	.20	63
12	6.6	9.6	21,600	735	500	63	287	1,080	52	.90	.20	40
13	29	7.8	16,800	825	508	138	222	1,130	51	.90	.15	19
14	32	7.8	11,100	942	500	824	169	1,130	45	.30	.10	13
15	18	5.1	6,160	1,560	488	728	122	1,120	1.5	.10	.10	11
16	12	4.1	3,840	2,400	470	580	77	1,130	.02	.03	.06	11
17	12	3.0	2,850	6,660	452	440	69	1,170	0	.03	.06	12
18	12	3.0	2,640	7,600	424	301	69	1,090	0	.20	.06	12
19	13	1.8	2,590	6,590	354	246	69	990	0	.30	.06	10
20	14	1.5	2,880	22,100	263	180	63	856	0	.60	.06	10
21	14	1.2	2,860	30,600	186	148	72	757	0	.60	.03	11
22	13	1.8	3,010	26,500	169	126	68	611	0	.60	.03	11
23	13	2.1	2,740	21,500	160	118	54	529	0	.60	.03	9.0
24	14	2.4	2,360	16,300	142	115	44	352	0	.20	.03	4.1
25	19	3.0	2,260	11,200	130	99	25	109	0	.15	.01	3.7
26	25	5.6	2,330	7,150	122	164	12	74	0	.10	0	12
27	25	5.6	2,280	4,990	109	1,830	5.6	56	0	.03	0	21
28	24	22	2,200	3,790	118	2,750	6.1	58	.01	.01	0	30
29	21	1,650	2,190	3,060	-----	3,990	11	80	9.6	.03	0	22
30	13	4,110	2,840	2,590	-----	6,180	9.6	466	16	.10	0	20
31	9.0	-----	2,700	1,840	-----	5,180	-----	822	-----	.15	0	-----
TOTAL	468.6	6,092.7	335,310	198,102	15,254	25,181	18,845.3	17,026	4,894.13	104.13	3.40	1,023.8
MEAN	15.1	203	10,820	6,390	545	812	628	549	163	3.36	.11	34.1
MAX	48	4,110	32,500	30,600	1,620	6,180	3,590	1,170	868	26	.60	92
MIN	3.3	1.2	2,190	710	109	57	5.6	12	0	.01	0	0
AC-FT	929	12,080	665,100	392,900	30,260	49,950	37,380	33,770	9,710	207	6.7	2,030
CAL YR 1970	TOTAL	3,929,282.29	MEAN	10,770	MAX	224,000	MIN	0	AC-FT	7,794,000		
WTR YR 1971	TOTAL	622,305.06	MEAN	1,705	MAX	32,500	MIN	0	AC-FT	1,234,000		

## 11453200 DRY CREEK NEAR MIDDLETOWN, CALIF.

LOCATION.--Lat 38°44'07", long 122°38'52", in NW¼ sec. 9, T.10 N., R.7 W., Lake County, on right bank 0.3 mile downstream from Kroll Creek, 2.1 miles southwest of Middletown, and 2.7 miles upstream from mouth.

DRAINAGE AREA.--8.35 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 1,172.15 ft above mean sea level.

AVERAGE DISCHARGE.--12 years, 29.4 cfs (21,300 acre-ft per year); median of yearly mean discharges, 28 cfs (20,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,100 cfs Dec. 3 (gage height, 8.63 ft); no flow for many days.  
Period of record: Maximum discharge, 3,470 cfs Feb. 8, 1960 (gage height, 9.90 ft); no flow for many days in each year.

REMARKS.--Records good. No regulation or diversion above station.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.80	155	52	14	5.5	26	9.4	3.2	1.0	.10	0
2	0	.80	380	46	13	5.3	23	10	3.1	.90	.10	0
3	0	3.1	919	37	12	5.5	21	9.7	2.9	.80	.10	0
4	0	21	718	31	11	5.5	19	9.4	2.7	.80	.10	0
5	0	104	239	28	11	5.2	18	9.1	2.6	.70	.10	0
6	0	63	113	24	11	5.0	16	8.8	2.3	.70	0	0
7	0	17	86	22	10	5.1	15	8.3	2.2	.60	0	0
8	0	9.6	99	21	9.6	5.0	14	8.1	2.0	.60	0	0
9	0	26	75	19	9.1	4.7	37	7.6	2.0	.60	0	0
10	0	19	54	72	8.7	4.8	35	7.3	1.8	.50	0	0
11	0	17	43	92	8.8	12	21	6.9	1.7	.50	0	0
12	0	13	36	98	8.2	522	19	6.7	1.7	.50	0	0
13	0	7.9	31	87	7.8	132	20	6.3	1.6	.40	0	0
14	0	5.6	27	190	7.5	93	23	6.0	1.5	.40	0	0
15	0	4.4	103	177	7.3	60	18	5.6	1.3	.30	0	0
16	0	3.7	164	341	7.3	41	18	5.5	1.2	.30	0	0
17	0	3.4	93	187	7.1	32	19	5.1	1.2	.30	0	0
18	0	3.0	71	104	7.0	26	16	4.9	1.1	.30	0	0
19	0	2.7	55	75	7.3	22	15	4.7	1.2	.20	0	0
20	0	2.5	105	60	6.5	20	14	4.4	1.1	.20	0	0
21	3.5	2.4	97	45	6.4	18	14	4.1	1.1	.20	0	0
22	5.6	2.2	66	37	6.2	16	13	3.9	1.1	.20	0	0
23	2.1	2.2	52	32	5.9	27	13	3.7	1.1	.10	0	0
24	2.7	16	44	28	5.6	21	12	3.6	1.0	.10	0	0
25	1.8	85	37	25	5.4	176	12	3.4	1.0	.10	0	0
26	1.3	37	34	22	5.5	314	12	3.6	1.2	.10	0	0
27	1.1	324	32	20	5.5	87	11	4.0	1.3	.10	0	0
28	1.0	396	196	19	5.5	55	11	4.1	1.1	.10	0	0
29	.90	204	235	17	-----	42	10	3.7	1.1	.10	0	0
30	.80	247	88	16	-----	35	9.8	3.5	1.0	.10	0	.40
31	.80	-----	62	15	-----	29	-----	3.3	-----	.10	0	-----
TOTAL	21.60	1,643.30	4,509	2,039	230.2	1,831.6	524.8	184.7	49.4	11.90	.50	.40
MEAN	.70	54.8	145	65.8	8.22	59.1	17.5	5.96	1.65	.38	.016	.013
MAX	5.6	396	919	341	14	522	37	10	3.2	1.0	.10	.40
MIN	0	.80	27	15	5.4	4.7	9.8	3.3	1.0	.10	0	0
AC-FT	43	3,260	8,940	4,040	457	3,630	1,040	366	98	24	1.0	.8

CAL YR 1970 TOTAL 18,304.19 MEAN 50.1 MAX 1,330 MIN 0 AC-FT 36,310  
WTR YR 1971 TOTAL 11,046.40 MEAN 30.3 MAX 919 MIN 0 AC-FT 21,910

## PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-27	2400	7.20	1,160	3-12	1100	7.64	1,410
12- 3	1930	8.63	2,100	3-25	2230	7.25	1,180

## SACRAMENTO RIVER BASIN

11453500 PUTAH CREEK NEAR GUENOC, CALIF.

LOCATION.--Lat 38°46'44", long 122°30'59", in Guenoc Grant, Lake County, on right bank just upstream from Coyote Valley damsite, 2.8 miles upstream from Soda Creek, 3.2 miles downstream from highway bridge at Guenoc.

DRAINAGE AREA.--113 sq mi.

PERIOD OF RECORD.--February 1904 to September 1906, July 1930 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 914.18 ft above mean sea level. February 1904 to September 1906, nonrecording gage 0.2 mile upstream at different datum.

AVERAGE DISCHARGE.--43 years, 211 cfs (152,900 acre-ft per year); median of yearly mean discharges, 180 cfs (130,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,200 cfs Dec. 3 (gage height, 14.94 ft); no flow Oct. 2.

Period of record: Maximum discharge, 32,000 cfs Dec. 11, 1937 (gage height, 22.7 ft), from rating curve extended above 13,000 cfs; no flow for many days in August and September 1964, Oct. 2, 1970.

REMARKS.--Records good. Some regulation by Hartmann Dam on Coyote Creek since 1969 (capacity, 3,000 acre-ft); diversions and ground-water withdrawals for irrigation of about 1,600 acres above station. Records of water temperatures and suspended-sediment discharge for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1285: 1937(M), 1938, 1940, 1943(M), 1951(M).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	1.3	1,110	477	158	60	227	66	27	6.7	4.6	2.4
2	0	1.3	2,400	457	151	58	204	69	27	7.0	3.8	1.6
3	.01	1.5	4,620	341	141	57	184	67	26	7.9	1.7	.77
4	.38	3.2	5,530	296	134	57	167	63	25	7.5	3.8	.77
5	.85	286	1,630	265	131	56	155	61	24	6.7	2.5	1.1
6	.44	293	905	235	126	54	144	60	23	5.3	1.6	.36
7	.97	133	665	214	120	54	134	56	22	5.0	3.5	.90
8	.48	66	677	198	115	53	126	55	22	5.8	2.7	1.1
9	.09	55	550	186	110	51	126	54	21	4.6	4.1	.44
10	.03	79	416	254	104	51	242	51	22	4.4	3.9	.48
11	.12	52	338	467	99	53	155	49	19	5.5	3.4	.48
12	.10	63	284	515	96	2,080	134	48	19	4.4	1.0	.48
13	.05	48	244	722	92	858	130	47	19	5.3	1.1	.33
14	.05	40	214	1,100	89	533	146	45	16	5.0	1.3	.28
15	.12	34	459	1,090	86	435	126	44	15	3.9	2.1	.25
16	.16	30	1,080	2,140	85	321	115	42	15	4.3	3.2	.25
17	.04	28	685	1,430	82	265	122	41	14	4.8	1.3	.25
18	.28	26	737	896	79	216	110	40	12	6.5	.97	.33
19	1.1	24	579	681	79	190	104	36	12	5.8	.90	.28
20	.61	23	958	547	75	171	99	34	12	4.6	1.0	.52
21	.36	22	984	444	72	155	96	33	11	4.6	1.4	.52
22	1.5	22	624	380	71	141	93	32	10	4.6	1.3	1.0
23	1.3	22	484	333	68	153	90	30	9.5	2.6	1.3	.71
24	1.3	22	400	294	66	167	88	31	8.2	4.3	.61	.61
25	1.3	85	341	265	63	228	85	29	8.2	4.8	2.4	.52
26	1.1	156	313	240	62	2,360	81	27	7.5	4.8	1.3	1.3
27	1.2	1,090	284	222	62	729	78	29	7.9	4.6	1.3	.71
28	1.2	3,040	771	204	61	484	75	27	8.2	4.3	1.3	.52
29	1.2	1,620	1,570	188	-----	371	72	30	7.9	4.1	2.4	.44
30	1.3	1,440	737	176	-----	308	69	30	6.7	4.1	2.6	.56
31	1.3	-----	543	167	-----	260	-----	28	-----	4.1	2.6	-----
TOTAL	18.96	8,806.3	31,132	15,424	2,677	11,029	3,777	1,354	477.1	157.9	66.98	20.26
MEAN	.61	294	1,004	498	95.6	356	126	43.7	15.9	5.09	2.16	.68
MAX	1.5	3,040	5,530	2,140	158	2,360	242	69	27	7.9	4.6	2.4
MIN	0	1.3	214	167	61	51	69	27	6.7	2.6	.61	.25
AC-FT	38	17,470	61,750	30,590	5,310	21,880	7,490	2,690	946	313	133	40
CAL YR 1970	TOTAL	140,288.19	MEAN	384	MAX	8,750	MIN	0	AC-FT	278,300		
WTR YR 1971	TOTAL	74,940.50	MEAN	205	MAX	5,530	MIN	0	AC-FT	148,600		

## PEAK DISCHARGE (BASE, 5,000 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-28	0100	11.86	7,090	3-12	1400	11.27	6,300
12- 3	2300	14.94	12,200	3-26	0230	10.33	5,140



11453550 HUNTING CREEK NEAR KNOXVILLE, CALIF.

LOCATION.--Lat 38°46'18", long 122°24'26", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.28, T.11 N., R.5 W., Lake County, on right bank 2,400 ft upstream from mouth, 5.3 miles southwest of Knoxville, and 11.2 miles east of Middletown.

DRAINAGE AREA.--37.8 sq mi.

PERIOD OF RECORD.--July 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 725 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 2,520 cfs Nov. 28 (gage height, 6.85 ft), from rating curve extended as explained below; minimum daily, 0.16 cfs Sept. 19.

Period of record: Maximum discharge, 4,500 cfs Jan. 23, 1970 (gage height, 8.30 ft), from rating curve extended above 260 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.16 cfs Sept. 19, 1971.

REMARKS.--Records good. No regulation or diversion above station. Records of chemical analyses and suspended-sediment discharge for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	.94	130	49	32	16	16	6.9	6.0	1.4	.58	.45
2	.73	.94	303	61	30	15	15	8.1	5.7	1.6	.45	.39
3	.73	1.0	567	40	28	14	14	12	5.4	1.4	.45	.39
4	.73	5.9	887	36	28	14	13	11	5.2	1.3	.34	.45
5	.73	5.1	135	34	28	14	13	9.2	4.7	1.4	.34	.39
6	.79	15	75	32	27	13	13	8.1	4.4	1.4	.34	.39
7	.79	7.5	55	33	26	13	13	7.8	4.0	1.4	.39	.34
8	.73	4.2	60	32	25	13	12	7.4	3.6	1.3	.39	.24
9	.73	3.1	49	31	25	13	12	7.4	3.4	1.2	.39	.29
10	.67	2.3	37	30	24	12	17	7.4	3.4	1.2	.34	.29
11	.67	3.1	31	44	23	12	12	7.2	3.0	1.2	.29	.24
12	.67	2.6	26	53	22	98	11	7.2	2.9	1.1	.24	.24
13	.67	2.4	24	84	20	43	11	6.9	2.9	1.1	.24	.29
14	.67	2.3	23	269	21	23	13	6.9	2.7	1.1	.29	.29
15	.67	2.1	50	110	21	22	11	6.9	2.7	1.1	.29	.29
16	.67	2.0	156	199	21	19	9.6	6.6	2.3	1.0	.29	.24
17	.67	2.0	75	131	20	16	9.2	6.3	2.3	.90	.29	.20
18	.94	1.9	97	89	19	14	9.2	6.3	2.0	.90	.29	.20
19	1.1	1.7	68	72	19	13	8.8	6.3	1.7	.80	.24	.16
20	1.3	1.7	142	61	19	12	8.5	6.3	1.8	.80	.24	.20
21	1.3	1.7	140	54	18	12	8.1	6.3	1.8	.72	.29	.20
22	1.2	1.7	72	49	18	12	7.8	6.3	1.6	.72	.34	.24
23	1.3	1.7	58	46	18	14	7.8	6.3	1.7	.58	.34	.24
24	1.3	1.9	50	44	17	14	7.8	6.6	1.7	.65	.34	.24
25	1.2	2.1	43	41	16	17	7.8	6.3	1.6	.80	.34	.29
26	1.0	3.1	43	39	16	150	7.4	6.0	1.7	.72	.34	.34
27	1.0	185	42	37	16	35	7.4	6.9	1.7	.72	.29	.34
28	.94	806	48	35	16	24	7.4	9.2	1.8	.65	.34	.34
29	.94	390	123	35	-----	20	7.2	8.8	1.8	.58	.34	.39
30	.94	241	56	33	-----	18	6.9	7.8	1.6	.58	.34	.65
31	.94	-----	45	32	-----	17	-----	7.2	-----	.58	.39	-----
TOTAL	27.51	1,701.98	3,710	1,935	613	742	316.9	229.9	87.1	30.90	10.40	9.24
MEAN	.89	56.7	120	62.4	21.9	23.9	10.6	7.42	2.90	1.00	.34	.31
MAX	1.3	806	887	269	32	150	17	12	6.0	1.6	.58	.65
MIN	.67	.94	23	30	16	12	6.9	6.0	1.6	.58	.24	.16
AC-FT	55	3,380	7,360	3,840	1,220	1,470	629	456	173	61	21	18

CAL YR 1970 TOTAL 19,903.42 MEAN 54.5 MAX 1,120 MIN .67 AC-FT 39,480  
 WTR YR 1971 TOTAL 9,413.93 MEAN 25.8 MAX 887 MIN .16 AC-FT 18,670

PEAK DISCHARGE (BASE, 1,000 CFS).--Nov. 28 (0100) 2,520 cfs (6.85 ft); Dec. 4 (0500) 2,200 cfs (6.58 ft).

## SACRAMENTO RIVER BASIN

11453570 ADAMS CREEK NEAR KNOXVILLE, CALIF.

LOCATION.--Lat 38°42'17", long 122°17'44", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.21, T.10 N., R.4 W., Napa County, on left bank 20 ft downstream from road ford, 0.2 mile upstream from mouth, 8.8 miles southeast of Knoxville, and 18 miles southeast of Middletown.

DRAINAGE AREA.--7.42 sq mi.

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 480 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 496 cfs Dec. 4 (gage height, 4.10 ft), from rating curve extended as explained below; no flow for many days.

Period of record: Maximum discharge, 745 cfs Jan. 23, 1970 (gage height, 4.85 ft), from rating curve extended above 38 cfs on basis of slope-area measurement of maximum flow; no flow for many days in each year.

REMARKS.--Records good. No storage or diversion above station. Records of chemical analyses and suspended-sediment discharge for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.10	12	8.2	5.2	3.2	2.2	1.4	1.1	.16	.01	
2	0	.10	56	8.8	5.2	3.2	2.2	1.8	.97	.13	.01	
3	0	.13	90	6.1	5.2	2.9	2.2	1.8	.85	.11	.01	
4	0	.97	117	5.6	4.7	2.9	2.2	1.8	.85	.11	.01	
5	0	.97	17	5.2	4.7	2.9	2.2	1.8	.75	.09	.01	
6	0	2.5	8.8	4.7	4.3	2.6	2.2	2.0	.75	.09	.01	
7	.01	.69	6.6	4.3	4.3	2.6	2.2	1.6	.65	.09	.01	
8	0	.40	6.1	4.3	4.3	2.4	1.8	1.4	.65	.09	.01	
9	0	.32	4.7	4.3	4.3	2.4	2.0	1.4	.56	.09	.01	
10	0	.25	4.3	4.7	4.3	2.4	2.2	1.3	.56	.09	.01	
11	.01	.25	3.9	5.2	4.3	2.4	1.8	1.3	.49	.08	.01	
12	.01	.25	3.5	10	4.3	8.7	1.8	1.3	.49	.07	.01	
13	.01	.32	3.5	19	4.3	3.9	1.8	1.3	.44	.07	0	
14	.01	.25	3.2	24	4.3	2.9	2.0	1.3	.44	.07	0	
15	.01	.25	6.9	11	4.3	2.6	1.6	1.3	.39	.07	0	
16	.01	.25	14	13	4.3	2.6	1.6	1.3	.31	.06	0	
17	.01	.25	7.6	11	4.3	2.4	1.6	1.3	.25	.05	0	
18	.01	.20	16	9.4	4.3	2.2	1.4	1.3	.25	.05	0	
19	.01	.19	7.6	8.8	4.3	2.2	1.4	1.1	.25	.05	0	
20	.02	.19	22	8.2	4.3	2.2	1.3	.97	.25	.05	0	
21	.01	.19	14	7.6	4.3	2.0	1.3	.97	.22	.04	0	
22	.01	.20	8.2	7.1	4.3	1.8	1.4	.97	.22	.04	0	
23	.02	.20	7.1	6.6	3.9	2.4	1.4	.85	.19	.03	0	
24	.02	.40	6.6	6.6	3.9	2.2	1.4	.85	.19	.03	0	
25	.02	.58	5.6	6.1	3.9	2.6	1.4	.85	.16	.02	0	
26	.03	.58	5.6	6.1	3.5	11	1.4	.85	.16	.02	0	
27	.03	18	5.6	6.1	3.5	2.9	1.6	1.1	.19	.02	0	
28	.05	78	7.6	6.1	3.2	2.4	1.6	1.6	.22	.02	0	
29	.07	31	18	5.6	-----	2.2	1.4	1.6	.19	.02	0	
30	.07	18	8.2	5.2	-----	2.2	1.4	1.3	.16	.01	0	
31	.07	-----	7.1	5.2	-----	2.2	-----	.97	-----	.01	0	-----
TOTAL	.52	155.98	504.3	244.1	120.0	93.5	52.0	40.68	13.15	1.93	.12	0
MEAN	.017	5.20	16.3	7.87	4.29	3.02	1.73	1.31	.44	.062	.004	0
MAX	.07	78	117	24	5.2	11	2.2	2.0	1.1	.16	.01	0
MIN	0	.10	3.2	4.3	3.2	1.8	1.3	.85	.16	.01	0	0
AC-FT	1.0	309	1,000	484	238	185	103	81	26	3.8	.2	0

CAL YR 1970 TOTAL 2,512.69 MEAN 6.88 MAX 129 MIN 0 AC-FT 4,980  
WTR YR 1971 TOTAL 1,226.28 MEAN 3.36 MAX 117 MIN 0 AC-FT 2,430

## PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-28	0100	4.08	490	12- 4	0600	4.10	496
12- 2	0400	2.63	113				

## 11453580 NEVADA CREEK NEAR KNOXVILLE, CALIF.

LOCATION.--Lat 38°42'42", long 122°17'31", in NW¼SW¼ sec.15, T.10 N., R.4 W., Napa County, on right bank 150 ft downstream from road ford, 0.6 mile upstream from Adams Creek, 8.4 miles southeast of Knoxville, and 18 miles southeast of Middletown.

DRAINAGE AREA.--7.06 sq mi.

PERIOD OF RECORD.--September 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 500 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 451 cfs Dec. 4 (gage height, 5.95 ft), from rating curve extended as explained below; no flow on many days.

Period of record: Maximum discharge, 841 cfs Jan. 23, 1970 (gage height, 7.75 ft), from rating curve extended above 34 cfs on basis of slope-area measurement of maximum flow; no flow many days.

REMARKS.--Records good. No regulation or diversion above station. Records of chemical analyses and suspended-sediment discharge for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	17	6.9	3.3	1.4	1.2	.64	.19	.06	.03	.03
2	0	0	65	9.0	3.1	1.4	1.1	.78	.19	.06	.02	.03
3	0	.01	92	5.0	2.9	1.5	1.1	1.1	.17	.06	.02	.02
4	0	.05	112	4.3	2.7	1.5	.95	.86	.17	.05	.02	.02
5	0	.06	19	4.3	2.7	1.5	.95	.78	.17	.05	.02	.02
6	0	.15	10	3.7	2.5	1.5	.95	.86	.17	.05	.01	.02
7	0	.03	6.9	3.5	2.4	1.5	.95	.57	.15	.05	.01	.02
8	0	.02	6.3	3.3	2.4	1.5	.95	.51	.15	.05	.01	.02
9	0	.01	5.0	3.1	2.4	1.4	1.1	.51	.15	.05	.01	.02
10	0	.01	3.7	3.3	2.2	1.4	1.2	.51	.14	.05	.02	.01
11	0	.01	3.3	4.3	2.2	1.5	1.1	.45	.13	.05	.02	.01
12	0	.01	2.9	8.8	2.0	7.4	.86	.45	.13	.05	.02	.01
13	0	0	2.7	27	2.0	2.9	1.1	.40	.12	.05	.02	.01
14	0	0	2.4	39	2.0	1.9	1.8	.36	.11	.05	.02	.01
15	0	0	5.8	14	1.9	1.8	.95	.32	.10	.04	.02	.01
16	0	0	20	17	1.9	1.6	.86	.28	.10	.04	.02	.01
17	0	0	8.5	14	1.8	1.5	.86	.28	.09	.04	.02	.01
18	.01	0	18	10	1.8	1.3	.78	.28	.09	.04	.02	.01
19	0	0	8.5	8.5	1.8	1.3	.78	.28	.09	.04	.02	.01
20	.02	0	27	7.3	1.8	1.3	.78	.25	.08	.04	.02	.01
21	.01	0	18	6.6	1.8	1.3	.78	.22	.08	.04	.02	.01
22	.02	0	9.4	5.9	1.8	1.3	.78	.22	.07	.03	.02	.01
23	.02	0	6.9	5.6	1.8	1.5	.78	.22	.07	.03	.02	.01
24	.02	0	5.9	5.3	1.6	1.5	.71	.19	.07	.03	.02	.01
25	.01	.02	5.0	5.0	1.5	2.0	.71	.17	.07	.03	.02	.01
26	0	.02	5.0	4.6	1.5	1.3	.64	.17	.07	.03	.03	.01
27	0	21	4.6	4.3	1.6	2.7	.64	.22	.07	.03	.03	.01
28	0	60	5.5	4.0	1.6	1.8	.64	.19	.07	.03	.03	.01
29	0	41	22	3.7	-----	1.4	.64	.19	.06	.03	.03	.01
30	0	23	7.7	3.5	-----	1.3	.64	.19	.06	.03	.03	.01
31	0	-----	5.6	3.3	-----	1.2	-----	.19	-----	.03	.03	-----
TOTAL	.11	145.40	531.6	248.1	59.0	66.1	27.28	12.64	3.38	1.31	.65	.41
MEAN	.004	4.85	17.1	8.00	2.11	2.13	.91	.41	.11	.042	.021	.014
MAX	.02	60	112	39	3.3	13	1.8	1.1	.19	.06	.03	.03
MIN	0	0	2.4	3.1	1.5	1.2	.64	.17	.06	.03	.01	.01
AC-FT	.2	288	1,050	492	117	131	54	25	6.7	2.6	1.3	.8

CAL YR 1970 TOTAL 2,595.57 MEAN 7.11 MAX 160 MIN 0 AC-FT 5,150  
WTR YR 1971 TOTAL 1,095.98 MEAN 3.00 MAX 112 MIN 0 AC-FT 2,170

## PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
11-28	0030	5.15	314	12- 4	0530	5.95	451
12- 2	0200	3.93	142	12-20	1900	3.60	106

## SACRAMENTO RIVER BASIN

11453600 POPE CREEK NEAR POPE VALLEY, CALIF.

LOCATION.--Lat 38°37'48", long 122°19'52", in SW¼ sec.17, T.9 N., R.4 W., Napa County, on left bank 0.2 mile upstream from Lake Berryessa, 0.7 mile downstream from Maxwell Creek, and 5.2 miles east of Pope Valley.

DRAINAGE AREA.--78.3 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 450 ft (from topographic map).

AVERAGE DISCHARGE.--10 years (1961-71), 96.2 cfs (69,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,850 cfs Dec. 3 (gage height, 13.25 ft); no flow for many days.  
Period of record: Maximum discharge, 18,000 cfs Jan. 31, 1963 (gage height, 19.79 ft), from rating curve extended above 7,700 cfs; no flow many days in 1960-68, 1971.

REMARKS.--No regulation or diversion above station.

COOPERATION.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.50	466	122	63	27	68	16	8.3	1.4	.20	0
2	.10	.50	1,400	181	60	27	61	18	8.2	1.4	.10	.10
3	.10	.70	2,180	93	56	27	56	19	7.9	1.4	.10	.10
4	.10	3.2	3,450	73	54	27	52	18	7.4	1.4	.10	0
5	.10	35	740	63	52	26	48	17	7.0	1.4	.10	0
6	.10	120	311	55	51	25	45	16	6.6	1.4	.10	0
7	.10	30	202	49	48	25	43	15	6.2	1.3	.10	0
8	.10	12	212	43	46	25	40	14	5.7	1.3	.10	0
9	.10	8.8	159	43	44	24	38	14	5.0	1.3	.10	0
10	.10	14	115	77	42	24	48	13	4.5	1.2	.10	0
11	.10	9.6	90	275	41	24	39	12	4.0	1.1	.10	0
12	.10	15	72	367	40	546	36	12	3.9	1.1	.10	0
13	.10	10	58	600	38	241	36	11	3.7	1.0	0	0
14	.10	7.6	50	893	37	145	45	11	3.6	.90	0	0
15	.10	6.5	93	587	36	133	36	10	3.4	.80	0	0
16	.10	5.6	511	730	35	88	32	9.9	3.5	.70	0	0
17	.10	5.2	276	648	34	72	33	9.4	2.5	.70	0	0
18	.10	4.7	308	417	32	58	29	8.9	2.2	.70	0	0
19	.10	4.1	204	300	33	51	27	7.0	2.1	.60	0	0
20	.20	3.7	445	236	31	45	26	8.7	2.0	.60	0	0
21	.40	3.5	587	191	30	41	25	8.6	1.9	.50	0	0
22	.50	3.3	239	157	30	38	24	8.1	1.9	.50	0	0
23	.50	3.1	144	134	29	44	23	7.9	1.9	.40	0	0
24	.60	3.4	105	114	29	64	22	7.9	1.9	.40	0	0
25	.60	27	87	100	28	84	22	7.8	1.7	.30	0	0
26	.50	39	79	92	27	1,060	21	7.7	1.7	.30	0	0
27	.40	399	73	85	28	257	19	8.2	1.7	.30	0	0
28	.40	1,680	149	79	28	155	19	9.6	1.7	.30	0	0
29	.40	888	574	74	-----	116	18	10	1.7	.20	0	.10
30	.40	455	223	69	-----	93	17	9.7	1.6	.20	0	.20
31	.50	-----	130	66	-----	77	-----	8.7	-----	.20	0	-----
TOTAL	7.40	3,798.00	13,732	7,013	1,102	3,689	1,048	354.1	115.4	25.30	1.30	.50
MEAN	.24	127	443	226	39.4	119	34.9	11.4	3.85	.82	.042	.017
MAX	.60	1,680	3,450	893	63	1,060	68	19	8.3	1.4	.20	.20
MIN	.10	.50	50	43	27	24	17	7.0	1.6	.20	0	0
AC-FT	15	7,530	27,240	13,910	2,190	7,320	2,080	702	229	50	2.6	1.0
CAL YR 1970	TOTAL	64,956.60	MEAN	178	MAX	5,120	MIN	.10	AC-FT	128,800		
WTR YR 1971	TOTAL	30,886.00	MEAN	84.6	MAX	3,450	MIN	0	AC-FT	61,260		

## 11453900 LAKE BERRYESSA NEAR WINTERS, CALIF.

LOCATION.--Lat 38°30'48", long 122°06'13", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.29, T.8 N., R.2 W., Napa County, near center of Monticello Dam on Putah Creek, 7.4 miles west of Winters.

DRAINAGE AREA.--566 sq mi.

PERIOD OF RECORD.--January 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Current year: Maximum contents, 1,626,000 acre-ft Mar. 27, 28 (elevation, 441.20 ft); minimum, 1,346,000 acre-ft Nov. 23, 24 (elevation, 426.27 ft).

Period of record: Maximum contents, 1,733,000 acre-ft Jan. 24, 1970 (elevation, 446.67 ft); minimum since irrigation pool first filled, 1,077,900 acre-ft Oct. 10, 11, 1962 (elevation, 410.60 ft).

REMARKS.--Reservoir is formed by concrete arch-gravity dam, completed November 1956. Usable capacity, 1,592,000 acre-ft between elevations 253.25 ft (invert of outlet valves) and 440 ft (crest of glory-hole spillway) above mean sea level. Dead storage, 10,340 acre-ft. Water is released down Putah Creek and is diverted into Putah South diversion canal for irrigation of about 46,000 acres in the lower Sacramento Valley. Total diverted during year was 216,170 acre-ft. Releases for irrigation began in May 1959. Records, including extremes, show total contents at 2400 hours.

COOPERATION.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey, rounded to Geological Survey standards.

## CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

400	911,202
410	1,068,000
420	1,236,000
430	1,414,000
450	1,800,000

## CONTENTS, IN THOUSANDS OF ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,382	1,351	1,401	1,565	1,616	1,608	1,622	1,603	1,573	1,530	1,478	1,434
2	1,381	1,350	1,416	1,567	1,616	1,608	1,621	1,603	1,572	1,529	1,476	1,432
3	1,380	1,350	1,441	1,567	1,616	1,608	1,620	1,603	1,571	1,528	1,475	1,431
4	1,378	1,351	1,478	1,569	1,615	1,608	1,619	1,602	1,570	1,526	1,473	1,430
5	1,377	1,351	1,487	1,569	1,615	1,608	1,618	1,602	1,568	1,524	1,471	1,428
6	1,376	1,352	1,490	1,570	1,615	1,608	1,617	1,601	1,567	1,523	1,470	1,427
7	1,374	1,351	1,493	1,571	1,614	1,607	1,617	1,600	1,566	1,521	1,468	1,426
8	1,373	1,350	1,497	1,572	1,614	1,607	1,616	1,600	1,565	1,519	1,467	1,425
9	1,371	1,350	1,499	1,572	1,614	1,607	1,615	1,600	1,563	1,517	1,465	1,424
10	1,370	1,350	1,500	1,574	1,614	1,607	1,615	1,599	1,562	1,516	1,464	1,422
11	1,369	1,350	1,501	1,576	1,613	1,607	1,615	1,598	1,561	1,514	1,462	1,421
12	1,368	1,350	1,502	1,579	1,613	1,615	1,614	1,598	1,560	1,513	1,460	1,420
13	1,367	1,349	1,504	1,584	1,613	1,617	1,614	1,597	1,558	1,511	1,459	1,418
14	1,366	1,349	1,504	1,590	1,613	1,618	1,614	1,596	1,557	1,509	1,458	1,417
15	1,365	1,349	1,507	1,595	1,612	1,618	1,614	1,595	1,556	1,508	1,456	1,416
16	1,364	1,348	1,513	1,603	1,612	1,618	1,613	1,594	1,554	1,506	1,454	1,415
17	1,363	1,348	1,516	1,608	1,612	1,618	1,613	1,592	1,552	1,504	1,453	1,413
18	1,362	1,348	1,521	1,612	1,612	1,617	1,612	1,591	1,551	1,502	1,452	1,412
19	1,361	1,348	1,524	1,614	1,611	1,616	1,612	1,590	1,549	1,501	1,451	1,410
20	1,360	1,347	1,530	1,615	1,611	1,616	1,611	1,589	1,548	1,499	1,449	1,409
21	1,360	1,347	1,536	1,616	1,610	1,616	1,610	1,587	1,546	1,497	1,448	1,407
22	1,359	1,347	1,539	1,617	1,610	1,615	1,610	1,586	1,545	1,496	1,447	1,406
23	1,359	1,346	1,541	1,617	1,610	1,615	1,609	1,585	1,543	1,494	1,446	1,405
24	1,358	1,346	1,543	1,617	1,610	1,615	1,608	1,583	1,541	1,492	1,444	1,403
25	1,357	1,347	1,544	1,618	1,610	1,616	1,608	1,582	1,539	1,490	1,443	1,402
26	1,356	1,347	1,546	1,617	1,609	1,625	1,608	1,580	1,537	1,488	1,442	1,400
27	1,355	1,354	1,546	1,617	1,609	1,626	1,607	1,580	1,535	1,487	1,440	1,399
28	1,354	1,377	1,549	1,617	1,608	1,626	1,606	1,578	1,534	1,485	1,439	1,397
29	1,353	1,388	1,557	1,617	-----	1,625	1,605	1,577	1,532	1,483	1,438	1,396
30	1,352	1,396	1,560	1,617	-----	1,623	1,604	1,576	1,531	1,481	1,436	1,394
31	1,352	-----	1,562	1,616	-----	1,623	-----	1,574	-----	1,480	1,435	-----
MAX	1,382	1,396	1,562	1,618	1,616	1,626	1,622	1,603	1,573	1,530	1,478	1,434
MIN	1,352	1,346	1,401	1,565	1,608	1,607	1,604	1,574	1,531	1,480	1,435	1,394
(a)	426.56	428.98	437.91	440.70	440.31	441.05	440.11	438.54	436.27	433.54	431.13	428.92
(b)	-31.1	+43.8	+166.7	+53.6	-7.5	+14.3	-18.2	-30.2	-43.2	-51.3	-44.8	-40.5
(c)	5,850	1,880	950	2,430	2,810	4,780	6,590	9,450	12,730	15,020	13,370	9,410
CAL YR 1970	b +44.6											
WTR YR 1971	b +11.6											

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

## SACRAMENTO RIVER BASIN

## 11454000 PUTAH CREEK NEAR WINTERS, CALIF.

LOCATION.--Lat 38°30'55", long 122°04'51", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.28, T.8 N., R.2 W., Yolo County, on left bank 1 mile downstream from Cold Canyon, 1.3 miles downstream from Monticello Dam, and 6 miles west of Winters.

DRAINAGE AREA.--574 sq mi.

PERIOD OF RECORD.--July 1930 to current year.

GAGE.--Water-stage recorder. Datum of gage is 160.75 ft above mean sea level (river-profile survey). June 28, 1930, to Feb. 29, 1940, at datum about 1 ft higher.

AVERAGE DISCHARGE (adjusted for change in contents and evaporation from Lake Berryessa).--41 years, 519 cfs (376,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,100 cfs Mar. 28 (gage height, 9.10 ft); minimum daily, 16 cfs Dec. 6.

Period of record: Maximum discharge, 81,000 cfs Feb. 27, 1940 (gage height, 30.5 ft, present datum), from rating curve extended above 30,000 cfs; no flow Sept. 6-15, 1950, July 26 to Sept. 1, Sept. 6-9, 1955. Maximum discharge since construction of Monticello Dam in 1957, 16,300 cfs Jan. 24, 1970 (gage height, 18.85 ft); minimum daily, 6.1 cfs Dec. 19, 1967.

Maximum stage known since at least 1905, that of Feb. 27, 1940, on basis of records for station at Winters.

REMARKS.--Records good. Flow regulated by Lake Berryessa beginning January 1957 (see sta 11453900). Record of water temperatures for the current year are published in Part 2 of this report.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	485	313	51	36	507	138	363	502	562	659	705	459
2	479	314	120	39	502	174	811	470	543	634	664	459
3	479	315	60	36	483	173	758	404	521	632	666	446
4	481	313	129	34	464	180	703	391	541	642	677	444
5	472	310	30	33	454	165	662	373	529	650	661	444
6	478	311	16	39	443	160	620	352	527	676	638	441
7	452	310	25	82	424	159	576	354	575	679	640	439
8	446	308	56	137	416	162	535	335	576	686	635	474
9	456	225	80	97	395	173	496	314	576	671	629	533
10	456	131	80	58	391	203	488	323	593	674	639	637
11	448	63	51	60	372	243	465	341	626	678	632	549
12	447	89	51	68	351	311	440	362	622	705	613	530
13	454	92	48	40	359	560	427	398	602	717	583	518
14	478	140	40	55	351	592	437	450	611	714	586	528
15	451	114	41	70	338	627	420	488	617	735	532	554
16	439	116	57	50	324	643	414	494	622	784	506	567
17	439	111	50	127	319	630	398	521	634	717	494	567
18	429	108	57	253	309	584	359	583	652	655	491	558
19	422	108	188	360	300	554	340	672	673	686	474	537
20	369	108	113	446	278	531	362	653	668	733	501	555
21	312	108	60	498	258	512	343	628	710	738	516	580
22	298	108	42	526	253	489	348	640	756	715	495	580
23	304	108	38	546	249	472	377	659	755	726	500	597
24	319	108	35	560	248	461	373	654	746	748	508	597
25	320	85	34	568	238	455	377	674	747	721	523	589
26	320	67	33	568	216	856	411	629	723	738	509	579
27	316	68	33	563	212	1,080	461	620	689	736	487	571
28	312	84	40	548	204	1,080	491	587	683	744	474	571
29	312	80	58	535	-----	1,050	495	534	682	750	437	585
30	309	53	44	529	-----	1,020	524	534	679	724	442	573
31	312	-----	35	518	-----	930	-----	534	-----	720	474	-----
TOTAL	12,494	4,768	1,795	8,079	9,662	15,417	14,774	15,473	19,040	21,787	17,331	16,061
MEAN	403	159	57.9	261	345	497	492	499	635	703	559	535
MAX	485	315	188	568	507	1,080	863	674	756	784	705	637
MIN	298	53	16	33	204	159	340	314	521	632	437	439
AC-FT	24,780	9,460	3,560	16,020	19,160	30,580	29,300	30,690	37,770	43,210	34,380	31,860

CAL YR 1970	TOTAL	360,652	MEAN	988	MAX	15,600	MIN	16	AC-FT	715,400	MEAN a	1,174	AC-FT a	850,800
WTR YR 1971	TOTAL	310,800	MEAN	429	MAX	1,080	MIN	16	AC-FT	310,800	MEAN a	563	AC-FT a	407,700

a Adjusted for change in contents and evaporation from Lake Berryessa.

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 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 partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations and the second is a table of annual maximum discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

#### Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same or practically the same site.

#### Discharge measurements made at low-flow partial-record stations during water year 1971

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
TULARE LAKE BASIN						
11208605	East Fork Kaweah River below Eagle Creek, near Hammond	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.15, T.17 S., R.31 E., Tulare County, 0.5 mile downstream from Eagle Creek and 15.5 miles east of Hammond.	9.92	1968-71	5-11-71	22
11208607	East Fork Kaweah River above Monarch Creek, near Hammond	SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.15, T.17 S., R.31 E., Tulare County, at bridge at Mineral King, 1,000 ft upstream from Monarch Creek, and 14.9 miles east of Hammond.	10.2	1968-71	5-11-71 6-23-71	23 68
11208615	East Fork Kaweah River below Monarch Creek, near Hammond	NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.15, T.17 S., R.31 E., Tulare County, 250 ft downstream from Monarch Creek, and 14.6 miles east of Hammond.	12.1	1968-71	5-11-71 6-24-71	40 85
11208630	Atwell Creek above Mineral King Highway, near Hammond	SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.17 S., R.30 E., Tulare County, 750 ft west of Atwell Mills Ranger Station, and 10.4 miles east of Hammond.	.66	1968-71	5-12-71 6-23-71 7-20-71 9-21-71	.91 .51 b .24 b .11
11208650	Redwood Creek above Mineral King Highway, near Hammond	NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.15, T.17 S., R.30 E., Tulare County, 50 ft upstream from Mineral King Highway and 8.9 miles east of Hammond.	1.38	1968-71	5-03-71 6-23-71 7-21-71 9-22-71	2.72 1.37 b .69 b .19
11208680	Squirrel Creek below Mineral King Highway, near Hammond	SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.13, T.17 S., R.29 E., Tulare County, at Sequoia National Park boundary, 300 ft above Mineral King Highway, and 5.4 miles east of Hammond.	5.80	1968-71	5-03-71 6-23-71 9-22-71	4.31 1.88 b .08
11208715	Crunigen Creek below Mineral King Highway, near Hammond	SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.13, T.17 S., R.29 E., Tulare County, 100 ft downstream from Mineral King Highway and 5.0 miles east of Hammond.	1.58	1968-71	5-03-71	.45

See footnotes at end of table.

## Low-flow partial-record stations--Continued

Discharge measurements made at low-flow partial-record stations during water year 1971--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
SAN JOAQUIN RIVER BASIN						
11264700	Porcupine Creek at Porcupine Flat Campgrounds, near Yosemite Village	NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.33, T.1 S., R.22 E., Mariposa County, at Porcupine Flat Campgrounds, 1,500 ft downstream from highway bridge, and 4.1 miles northeast of Yosemite Village.	3.60	1970-71	8-11-71 9-07-71 9-21-71	b 1.48 b .35 b .06
11265700	Yosemite Creek at Yosemite Creek Campgrounds, near Yosemite Village	SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.30, T.1 S., R.22 E., Mariposa County, at Yosemite Creek Campgrounds, 5.6 miles north of Yosemite Village.	18.5	1970-71	8-11-71 9-07-71 9-21-71	1.80 3.68 b .05
11266200	Sentinel Creek near Yosemite Village	Unsurveyed, T.2 S., R.22 E., Mariposa County, in Yosemite National Park, 200 ft downstream from Deer Meadows, 1.3 miles southeast of Glacier Point Hotel, and 2.3 miles south of Yosemite Village.	1.40	1971	8-12-71	a,b .015
11266600	Cascade Creek near El Portal	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.19, T.2 S., R.21 E., Mariposa County, in Yosemite National Park, 200 ft upstream from unnamed tributary, 6.2 miles northeast of El Portal, and 6.5 miles west of Yosemite Village.	10.3	1971	8-12-71 9-07-71 9-22-71	b .51 b .20 b .13
11266700	Tamarack Creek at Tamarack Flat Campground, near El Portal	NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.23, T.2 S., R.20 E., Mariposa County, at culvert on Big Oak Flat Road at Tamarack Flat Campground, 5.7 miles northeast of El Portal, and 8.2 miles west of Yosemite Village.	4.31	1970-71	10-06-70 10-15-70 8-12-71 9-07-71 9-22-71	b .16 b .15 b .75 b .41 b .21
11266800	Wildcat Creek near El Portal	SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.25, T.2 S., R.20 E., Mariposa County, in Yosemite National Park, upstream from highway bridge, and 4.9 miles northeast of El Portal.	1.24	1971	8-10-71 9-08-71 9-22-71	b .15 b .12 b .08
11266900	Crane Creek above diversion dam, near El Portal	SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.34, T.2 S., R.20 E., Mariposa County, in Yosemite National Park, 40 ft upstream from head of diversion ditch, and 2.8 miles northeast of El Portal.	8.10	1971	8-11-71 9-07-71 9-21-71	b 1.29 b .95 b .56
11267000	Little Crane Creek near El Portal	NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.32, T.2 S., R.20 E., Mariposa County, in Stanislaus National Forest, upstream from Little Nellie Falls, and 3.2 miles north of El Portal.	1.31	1971	8-10-71 9-07-71 9-21-71	b .19 b .22 b .15
11267100	Moss Creek near near El Portal	SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.25, T.2 S., R.19 E., Mariposa County, in Stanislaus National Forest, 120 ft downstream from road crossing, 300 ft downstream from unnamed tributary, and 4.7 miles northwest of El Portal.	4.45	1971	8-10-71 9-07-71 9-21-71	b .79 b .74 b .40
11279400	Smoky Jack Creek at Smoky Jack Campground, near Yosemite Village	NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.31, T.1 S., R.21 E., Tuolumne County, 12 ft downstream from culvert on Tioga Road, 8.5 miles northeast of Yosemite Village, and 10.6 miles northeast of El Portal.	4.15	1970-71	10-06-71 10-15-70 8-11-71 9-07-71 9-21-71	b .04 b .05 b .15 b .18 b .06

See footnotes at end of table.



## Low-flow partial-record stations--Continued

Discharge measurements made at low-flow partial-record stations during water year 1971--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
SACRAMENTO RIVER BASIN						
11341300	Sacramento River above Lake Siskiyou, near Mt Shasta	SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.25, T.40 N., R.4 W., Siskiyou County, 600 ft downstream from North Fork, and 3.8 miles southwest of town of Mt. Shasta.	47.8	1970-71	11-11-70 1-26-71 3-25-71 6-16-71 7-14-71 8-10-71 9-15-71	177 133 192 167 b 37.1 b 17.4 b 8.76
11341305	Deer Creek near Mt Shasta	SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.23, T.40 N., R.5 W., Siskiyou County, at culvert on county road 3.8 miles west of town of Mt Shasta.	5.00	1970-71	11-10-70 5-11-71 6-06-71 7-13-71 8-10-71 9-15-71	b 3.65 39.1 b 4.95 b 2.49 b 1.22 b .95
11341310	Scott Camp Creek at diversion dam, near Mt Shasta	SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.31, T.40 N., R.4 W., Siskiyou County, at diversion dam 0.5 mile upstream from Castle Lake Creek, and 3.3 miles southwest of town of Mt Shasta.	4.62	1970-71	11-12-70 1-27-71 3-26-71 5-12-71 6-16-71 7-15-71 8-10-71 9-15-71	10.9 8.50 110 77.2 13.8 b 4.01 b 2.13 b 1.55
11341315	Castle Lake Creek at road crossing, near Mt Shasta	NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.32, T.40 N., R.4 W., Siskiyou County, at diversion dam 0.5 mile upstream from Castle Lake Creek, and 3.3 miles southwest of town of Mt Shasta.	2.90	1970-71	11-12-70 1-27-71 3-26-71 5-12-71 6-17-71 7-15-71 8-11-71 9-15-71	11.9 8.40 97.1 59.9 b 6.51 b 1.42 b .34 b .22
11341325	Wagon Creek near Mt Shasta	SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.21, T.40 N., R.4 W., Siskiyou County, 1.0 mile upstream from mouth, and 1.6 miles southwest of town of Mt Shasta.	19.1	1971	11-10-70 1-26-71 3-24-71 5-11-71 6-16-71 7-13-71 8-10-71 9-14-71	43.0 71.7 87.4 73.2 48.8 b 24.9 b 20.1 b 19.2
11341341	Big Springs Creek above fish hatchery, near Mt Shasta	NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.17 T.40 N., R.4 W., Siskiyou County, upstream from fish hatchery, and 1.0 mile west of town of Mt Shasta.	-	1971	3-24-71 5-12-71 6-15-71 7-13-71	16.3 15.7 b 15.1 b 16.5
11341344	Cold Creek above Lake Siskiyou, near Mt Shasta	NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.28, T.40 N., R.4 W., Siskiyou County, 0.5 mile upstream from Big Springs Creek, and 1.6 miles southwest of town of Mt Shasta.	-	1970-71	10-01-70 11-10-70 1-27-71 3-24-71 5-11-71 6-16-71 7-13-71 8-11-71 9-15-71	20.3 26.5 29.0 23.8 19 16.3 b 13.5 b 10.3 b 13
11341440	Sacramento River at Shasta Retreat near Dunsmuir	NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.13, T.39 N., R.4 W., Siskiyou County, at bridge at Shasta Retreat, 0.4 mile upstream from Bear Creek, and 1.7 miles north of Dunsmuir.	160	1970-71	11-12-70 7-15-71 8-12-71 9-16-71	332 171 151 136
11341460	Sacramento River at Soda Creek Road, near Dunsmuir	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.11, T.38 N., R.4 W., Shasta County, at bridge on Soda Creek Road, 0.1 mile upstream from Soda Creek, and 3.7 miles southwest of Dunsmuir.	185	1970-71	10-02-70 11-13-70 1-28-71 3-23-71 5-13-71 6-17-71 7-15-71 8-12-71 9-16-71	126 329 362 566 1,280 410 184 161 147

See footnotes at end of table.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## Low-flow partial-record stations--Continued

Discharge measurements made at low-flow partial-record stations during water year 1971--Continued

Station-No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
SACRAMENTO RIVER BASIN--Continued						
11392200	Middle Fork Feather River at Delleker	SE $\frac{1}{4}$ sec.3, T.22 N., R.13 E., Plumas County, 0.5 mile downstream from unnamed tributary, and 1.7 miles southwest of Portola.	597	1970-71	9-29-71	b 23.6
11393300	Middle Fork Feather River below Long Valley Creek, at Sloat	SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.10, T.23 N., R.11 E., Plumas County, 0.1 mile downstream from Long Valley Creek at Sloat.	813	1970-71	10-20-70 11-24-70 12-29-70 2-10-71 3-02-71 4-28-71 5-26-71 6-29-71 7-28-71 8-17-71 9-29-71	116 146 314 426 396 1,340 2,090 728 176 96 97

a Estimated.

b Base flow.

## Crest-stage partial-record stations

As explained on page 536 the California district publishes annual maxima on small streams at 304 sites in a separate publication Floods From Small Drainage Areas. In addition, discharge measurements are generally made in times of drought or flood to give better coverage to those events. Those measurements, and others collected for some special reason, are called measurements at miscellaneous sites.

The following table contains annual maximum discharges for crest-stage stations not included in the above-mentioned report. 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 water year is given. Information on some lower floods may have been obtained but is not published herein. 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 1971

Station No.	Station name	Location	Drain- age area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
EAGLE LAKE BASIN							
11359250 (revised)	Pine Creek near Westwood	SE $\frac{1}{4}$ sec.5, T.31 N., R.8 E., Lassen County, 1 mile southwest of Bogard Guard Station, and 19 miles north of Westwood.	24.8	1950-61a 1966-71	3-26-71	3.73	118
TULARE LAKE BASIN							
11197370	Bitterwater Creek near Lost Hills	NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.21, T.27 S., R.18 E., Kern County, 0.2 mile downstream from Cedar Canyon, 21 miles west of Los Hills.	76.4	1961-71	5-11-71	3.80	1,730
11216800	Rock Creek at Dinkey Creek	NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.5, T.10 S., R.26 E., Fresno County, 0.5 mile upstream from mouth, 0.4 mile northwest of town of Dinkey Creek.	7.60	1960-70a 1971	3-26-71	4.56	174
SAN JOAQUIN RIVER BASIN							
11267300	South Fork Merced River at Wawona	SW $\frac{1}{4}$ sec.34, T.4 S., R.21 E., Mariposa County, 1,000 ft downstream from highway bridge at Wawona, and 1,200 ft upstream from Big Creek.	100	1958-68a 1970-71	5-16-71	5.43	1,760

See footnotes at end of table.

## Crest-stage partial-record stations--Continued

Annual maximum discharge at crest-stage partial-record stations during water year 1971--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
SAN JOAQUIN RIVER BASIN--Continued							
11305500	San Antonio Creek near San Andreas	NE $\frac{1}{4}$ sec.10, T.3 N., R.12 E., Calaveras County, 800 ft downstream from highway bridge, 1.9 miles upstream from mouth, and 5 miles southeast of San Andreas.	48.0	1950-59a 1961-71	3-26-71	3.90	1,030
11307000	Esperanza Creek near Mokelumne Hill	NW $\frac{1}{4}$ sec.6, T.5 N., R.13 E., Calaveras County, 600 ft upstream from mouth, 6 miles east of Mokelumne Hill.	16.6	1951-59a 1961-71	3-26-71	4.20	945
11307500	Jesus Maria Creek near Mokelumne Hill	SE $\frac{1}{4}$ sec.16, T.5 N., R.12 E., Calaveras County, 0.6 mile upstream from mouth, 3.2 miles southeast of Mokelumne Hill.	34.6	1950-59a 1961-71	3-26-71	3.70	550
11308500	Murray Creek near San Andreas	SW $\frac{1}{4}$ sec.8, T.4 N., R.12 E., Calaveras County, 1.5 miles upstream from mouth, and 1.1 miles north of San Andreas.	23.6	1950-59a 1961-67 1969-71	3-26-71	3.10	225
SACRAMENTO RIVER BASIN							
11365500	Squaw Creek above Shasta Lake	SW $\frac{1}{4}$ sec.29, T.35 N., R.2 W., Shasta County, 1.3 miles upstream from Salt Creek, 2 miles upstream from Shasta Lake, and 10 miles west of town of Montgomery Creek.	64.0	1944-66a 1969-71	3-26-71	18.86	11,100
11373200	Oak Run Creek near Oak Run	SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.25, T.33 N., R.2 W., Shasta County, 800 ft downstream from road bridge, and 1.1 miles northwest of town of Oak Run.	11.0	1957-66a 1969-71	3-26-71	6.12	1,060
11449350	Burns Valley Creek near Clearlake Highlands	Lat 38°58'33", long 122°36'42", in SE $\frac{1}{4}$ sec.15, T.13 N., R.7 W., Lake County, on right bank 500 ft downstream from small right-bank tributary, and 2.7 miles northeast of Clearlake Highlands.	4.37	1963-69a 1970-71	1-23-70 12-03-70	8.64 3.43	2,350 151

a Operated as a continuous-record gaging station.

## Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Discharge measurements made at miscellaneous sites during water year 1971

Stream	Tributary to	Location	Drainage area (sq mi)	Measured pre-viously (water year)	Measurements	
					Date	Discharge (cfs)
EAGLE LAKE BASIN						
Pine Creek	Eagle Lake	SE $\frac{1}{4}$ sec.5, T.31 N., R.8 E., Lassen County, 1 mile southwest of Bogard Guard Station, and 19 miles north of Westwood.	24.8	1950-61a 1964 1967-70	9-24-71	b 2.03
BUENA VISTA LAKE BASIN						
Golden Trout Creek	Kern River	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.10, T.18 S., R.34 E., Tulare County, 0.5 mile upstream from Tunnel Ranger Station, and 15 miles west of Cartago.	23.6	1956-67a 1969a	6-24-71 9-01-71	b 10.6 b 9.11
Little Kern River	Kern River	SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.20 S., R.33 E., Tulare County, 600 ft upstream from mouth, and 5 miles east of Quaking Aspen Camp.	132	1957-68a 1969a 1970	9-01-71	b 14.6
South Fork Kern River	Kern River	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.18, T.20 S., R.36 E., Inyo County, 2.0 miles downstream from Snake Creek, and 9.7 miles southwest of Olancha.	146	1956-67a 1969a 1970	9-01-71	b 4.57
Kelso Creek	South Fork Kern River	NW $\frac{1}{4}$ sec.20, T.27 S., R.35 E., Kern County, 0.5 mile upstream from Woolstaff Creek, and 7 miles southeast of Weldon.	101	1958-66a 1968-70	9-21-71	b 2.13
TULARE LAKE BASIN						
South Fork Kings River	Kings River	NW $\frac{1}{4}$ sec.8, T.13 S., R.30 E., Fresno County, 0.3 mile downstream from Grizzly Creek, and 4.5 miles west of Cedar Grove.	408	1950-57a 1959-60 1963-66 1968 1970	9-09-71	b 149
Copper Creek (c)	South Fork Kings River	S $\frac{1}{2}$ sec.11, T.13 S., R.31 E., Fresno County, 0.5 mile upstream from South Fork Kings River, and 5.9 miles northeast of Cedar Grove.	-	1965-68 1970	9-09-71	b 1.69
Sheep Creek	South Fork Kings River	SE $\frac{1}{4}$ sec.14, T.13 S., R.30 E., Fresno County, 0.7 mile upstream from South Fork Kings River, and 0.7 mile southwest of Cedar Grove.	-	1965-68 1970	9-09-71	b 1.19
Lewis Creek	South Fork Kings River	SW $\frac{1}{4}$ sec.11, T.13 S., R.30 E., Fresno County, 0.3 mile upstream from South Fork Kings River, and 1.5 miles northwest of Cedar Grove.	-	1965-68 1970	9-09-71	b 2.44
Rock Creek	Dinkey Creek	NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.5, T.10 S., R.26 E., Fresno County, 0.4 mile northwest of town of Dinkey Creek, and 0.5 mile upstream from mouth.	7.60	1961-70a	9-13-71	b .14
Dinkey Creek	North Fork Kings River	Sec.3, T.12 S., R.26 E., Fresno County, 0.5 mile upstream from mouth, and 0.5 mile northwest of Balch Camp.	132	1920-37a 1959 1961-68 1970	9-27-71	b 14.4

See footnotes at end of table.

## Measurements at miscellaneous sites--Continued

Discharge measurements made at miscellaneous sites during water year 1971--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water year)	Measurements	
					Date	Discharge (cfs)
SAN JOAQUIN RIVER BASIN						
East Fork Chowchilla River	Chowchilla River	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.8, T.7 S., R.20 E., Madera County, 1.1 miles upstream from mouth, and 5.5 miles west of Ahwanee.	57.8	1957-67a	9-09-71	b 0.06
Tenaya Creek	Merced River	Lat 37°44'32", long 119°33'25", Mariposa County, at bridge 0.7 mile upstream from mouth, and 1.7 miles east of Yosemite National Park headquarters.	46.9	1904-1909a 1912-58a 1961 1966-70	9-08-71	b 4.32
Yosemite Creek	Merced River	Lat 37°44'45", long 119°35'40", Mariposa County, 0.3 mile upstream from mouth, and 0.7 mile west of Yosemite National Park headquarters.	42.7	1904-1909a 1912-26a 1960 1966-69	9-08-71	b 1.04
South Fork Merced River	Merced River	SW $\frac{1}{4}$ sec.34, T.4 S., R.21 E., Mariposa County, in Yosemite National Park, 1,000 ft downstream from highway bridge at Wawona, and 1,200 ft upstream from Big Creek.	100	1958-68a 1969-70	9-08-71	b 4.53
Crane Creek	Merced River	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.34, T.2 S., R.20 E., Mariposa County, 100 ft upstream from diversion, and 3 miles northeast of El Portal.	-	1964-70	9-21-71	b .56
Hunter Creek	North Fork Tuolumne River	SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.19, T.1 N., R.20 E., Tuolumne County, at road ford, 5.5 miles southeast of Tuolumne.	-	1911-64 1967-70	8-16-71	b .96
San Antonio Creek	Calaveras River	NE $\frac{1}{4}$ sec.10, T.3 N., R.12 E., Calaveras County, 800 ft downstream from highway bridge, 1.9 miles upstream from mouth, and 5 miles southeast of San Andreas.	48.0	1950-59a 1967-70	9-13-71	b 1.17
Esperanza Creek	Calaveras River	NW $\frac{1}{4}$ sec.6, T.5 N., R.13 E., Calaveras County, 600 ft upstream from mouth, 6 miles east of Mokelumne Hill.	16.6	1951-59a 1967-70	9-13-71	b .63
Jesus Maria Creek	Calaveras River	SE $\frac{1}{4}$ sec.16, T.5 N., R.12 E., Calaveras County, 0.6 mile upstream from mouth, 3.2 miles southeast of Mokelumne Hill.	34.6	1950-59a 1967-70	9-13-71	b .36
Mokelumne River	San Joaquin River	Lat 38°14'13", long 121°25'06", Sacramento County, at New Hope Bridge, 0.8 mile north of Thornton, and 2.1 miles upstream from mouth.	-	1970	12-07-70	1,400
SACRAMENTO RIVER BASIN						
Horse Creek	Pit River	NE $\frac{1}{4}$ sec.15, T.35 N., R.7 E., Lassen County, 100 ft downstream from railroad bridge, 0.5 mile northeast of Little Valley, and 13 miles southeast of Pittville.	237	1929-31a 1960-67a 1968-70	8-19-71	b 4.70

See footnotes at end of table.

## Measurements at miscellaneous sites--Continued

Discharge measurements made at miscellaneous sites during water year 1971--Continued

Stream	Tributary to	Location	Drain- age area (sq mi)	Measured pre- viously (water year)	Measurements	
					Date	Discharge (cfs)
SACRAMENTO RIVER BASIN--Continued						
Fall River	Pit River	NE¼ sec.30, T.38 N., R.4 E., Shasta County, 0.7 mile southeast of Dana, and 1 mile downstream from large springs below Bear Creek.	-	1959-67a 1968-70	9-28-71	b 489
Squaw Creek	Pit River	SW¼ sec.29, T.35 N., R.2 W., Shasta County, 1.3 miles upstream from Salt Creek, 2 miles upstream from Shasta Lake, and 10 miles west of town of Montgomery Creek.	64.0	1945-67a 1968-70	9-10-71	b 15.9
Oak Run Creek	Cow Creek	SE¼NW¼ sec.25, T.33 N., R.2 W., Shasta County, 800 ft downstream from road bridge, 1.1 miles northwest of town of Oak Run, 3.2 miles upstream from Tracy Creek, and 12.2 miles northeast of Millville.	11.0	1957-66a 1967-70	8-25-71	b 3.98
Tells Creek	Silver Creek	SE¼NE¼ sec.11, T.12 N., R.14 E., El Dorado County, at Loon Lake road crossing, 10 miles northeast of Riverton.	-	1964-68 1969-70	9-02-71	b 1.01

a Operated as continuous recorder.

b Base flow.

c Published as Cooper Creek 1966-68.

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