

Water Resources Data California Water Year 1987

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



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-87-3
Prepared in cooperation with the California Department of
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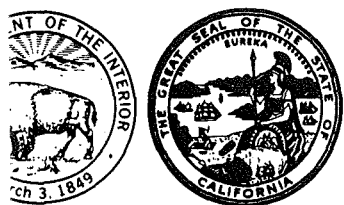
CALENDAR FOR WATER YEAR 1987

1986

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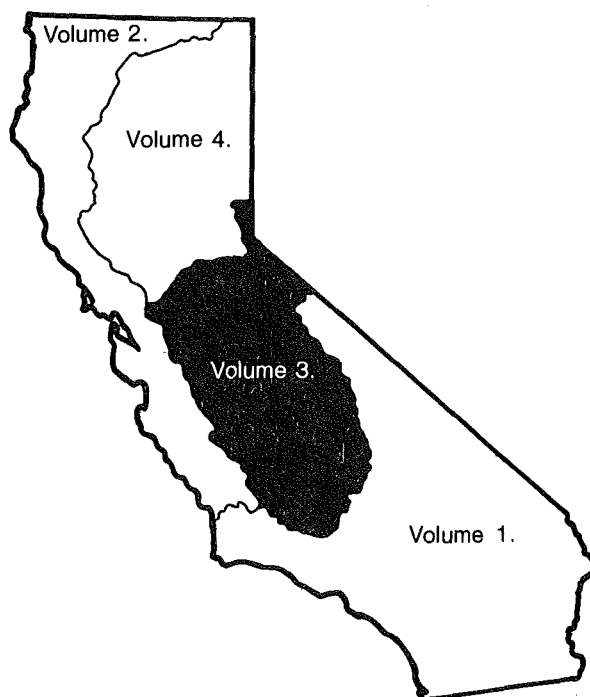


Water Resources Data California

Water Year 1987

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

by T.C. Hunter, J.R. Mullen and R.G. Simpson



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-87-3
Prepared in cooperation with the California Department of
Water Resources and with other agencies

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1988

PREFACE

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

- Volume 1. Southern Great Basin from Mexican Border to Mono Lake Basin, and Pacific Slope Basins from Tijuana River to Santa Maria River
- Volume 2. Pacific Slope Basins from Arroyo Grande to Oregon State Line except Central Valley
- Volume 3. Southern Central Valley Basins and The Great Basin from Walker River to Truckee River
- Volume 4. Northern Central Valley Basins and The Great Basin from Honey Lake Basin to Oregon State Line
- Volume 5. Ground-water data for California

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

This report was prepared in cooperation with the California Department of Water Resources and with other agencies, under the general supervision of John M. Klein, District Chief, California.

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16. Abstract (Limit: 200 words)

Water resources data for the 1987 water year for California consist of records of stage, discharge, and water quality of streams; stage and contents in lakes and reservoirs; and water levels and water quality in wells. Volume 3 contains discharge records for 177 gaging stations; stage and contents for 46 lakes and reservoirs; and water quality for 29 stations. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in California.

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SURFACE-WATER AND WATER-QUALITY STATIONS
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[Letters after station name designate type of data: (d), discharge;
(l), lake contents; (c), chemical; (b), biological; (p), precipitation;
(t), water temperature; and (s), sediment]

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WATER RESOURCES DATA -- CALIFORNIA, WATER YEAR 1987

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

FROM WALKER RIVER TO TRUCKEE RIVER

By T.C. Hunter, J.R. Mullen, and R.G. Simpson

INTRODUCTION

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

This volume of the report includes records on surface water in the State. Specifically, it contains (1) Discharge records for 177 streamflow-gaging stations and 11 crest-stage partial-record streamflow stations; (2) stage and contents records for 46 lakes and reservoirs; and (3) water-quality records for 29 streamflow-gaging stations. Records included for stream stages are only a small fraction of those obtained during the water year.

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

Prior to introduction of this series and for several water years concurrent with it, water-resources data for California were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 10 and 11." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." These Water-Supply Papers may be consulted in public libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Building 810, Box 25425, Denver, CO 80225.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. Each report has an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report CA-87-3." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

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

COOPERATION

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

California Department of Water Resources, David N. Kennedy, Director.
 California State Water Resources Control Board, Michael Campos, Executive Director.
 East Bay Municipal Utility District, Jerome B. Gilbert, General Manager.
 El Dorado County Water Agency, Robert E. Dorr, Chairman, Board of Supervisors.
 Fresno County Metropolitan Flood Control District, Doug Harrison, General Manager-Secretary.
 Kings River Conservation District, Jeff L. Taylor, General Manager-Chief Engineer.
 Madera Irrigation District, Robert L. Stanfield, General Manager-Chief Engineer.
 Merced, City of, Stevan M. Stroud, Director of Public Works.
 Merced Irrigation District, Tom Reta, Chief Engineer-Manager.
 San Francisco, City and County, Hetch-Hetchy Water and Power, R.W. Coffee, General Manager of Public Utilities.
 Tahoe Regional Planning Agency, David S. Ziegler, Senior Planner.
 Terra Bella Irrigation District, John E. Boudreau, Engineer-Manager.
 Tulare County Flood Control District, Herb Knierem, Flood Control Engineer.
 Turlock Irrigation District, Paul S. Brown, Controller.
 University of California (Davis), Division of Environmental Studies.
 Woodbridge Irrigation District, Mabel Hall, Manager-Secretary.

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

The following organizations aided in collecting records: Pacific Gas & Electric Co.; Southern California Edison Co.; Merced, Nevada, and Oakdale-South San Joaquin Irrigation Districts.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

As is common in California, streamflow varied greatly in the 1987 water year--month by month and regionally. The variations were related to differences in precipitation, temperature, topography, and geology. Runoff during the 1987 water year in the area covered by this volume was 40 percent of the 1951-80 median (based on five representative streamflow records). Total runoff, in percent of median, at selected sites in California is shown in figure 1. Runoff ranged from 71 percent of median at Kern River at Kernville to 6 percent at Orestimba Creek near Newman. Monthly mean runoff during the 1987 water year at four index stations is compared to the 1951-80 maximum, minimum, and median monthly mean runoff in figure 2.

There was only one significant storm, which occurred in February. Few streams exceeded the peak discharge bases, and none had peaks of record. Precipitation in the area covered by this volume (based on nine representative rain gages) was 65 percent of the long-term average. The average April 1 water content of the Sierra Nevada snowpack was 51 percent of average and ranged from a high of 58 percent in the Mokelumne River basin to a low of 30 percent in the Tule River basin; the April-July snowmelt runoff reflected this condition. San Joaquin Valley rivers averaged 38 percent of normal snowmelt runoff, ranging from 28 percent in the Tule River basin to 44 percent in the Kings River basin. Warm temperatures in April and early May caused rapid melting, and the snowmelt peak occurred about a month early.

In late August, as a result of very warm, moist, and unstable subtropical air moving over the State, intense and extensive thunderstorms occurred. These storms produced very little precipitation, but lightning started about 1,000 wildfires in critically dry forests. The Tuolumne River basin was devastated, with more than 147,095 acres of valuable watershed burned off.

In anticipation of a second less than normal water year in 1988, many water agencies limited reservoir releases to maximize storage. The water year began with reservoir levels at or above average for October 1, as a result of the large 1986 snowmelt and runoff from the February 1986 storm. By the end of the water year, storage in major reservoirs was about 75 percent of the 10-year average. Many small to moderate-sized reservoirs were less than 50 percent of capacity.

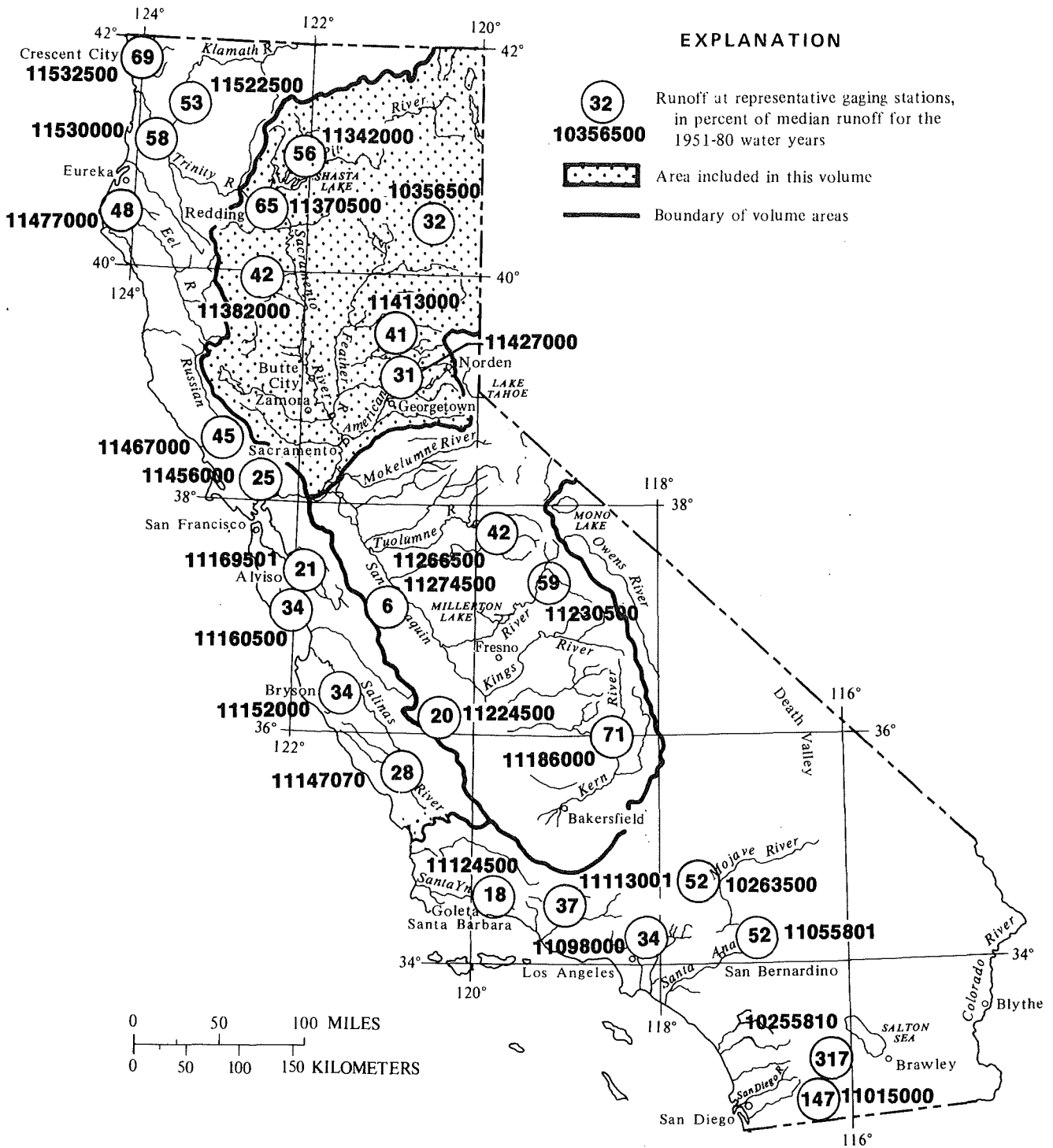


FIGURE 1.--Runoff, in percent of median, for the 1987 water year.

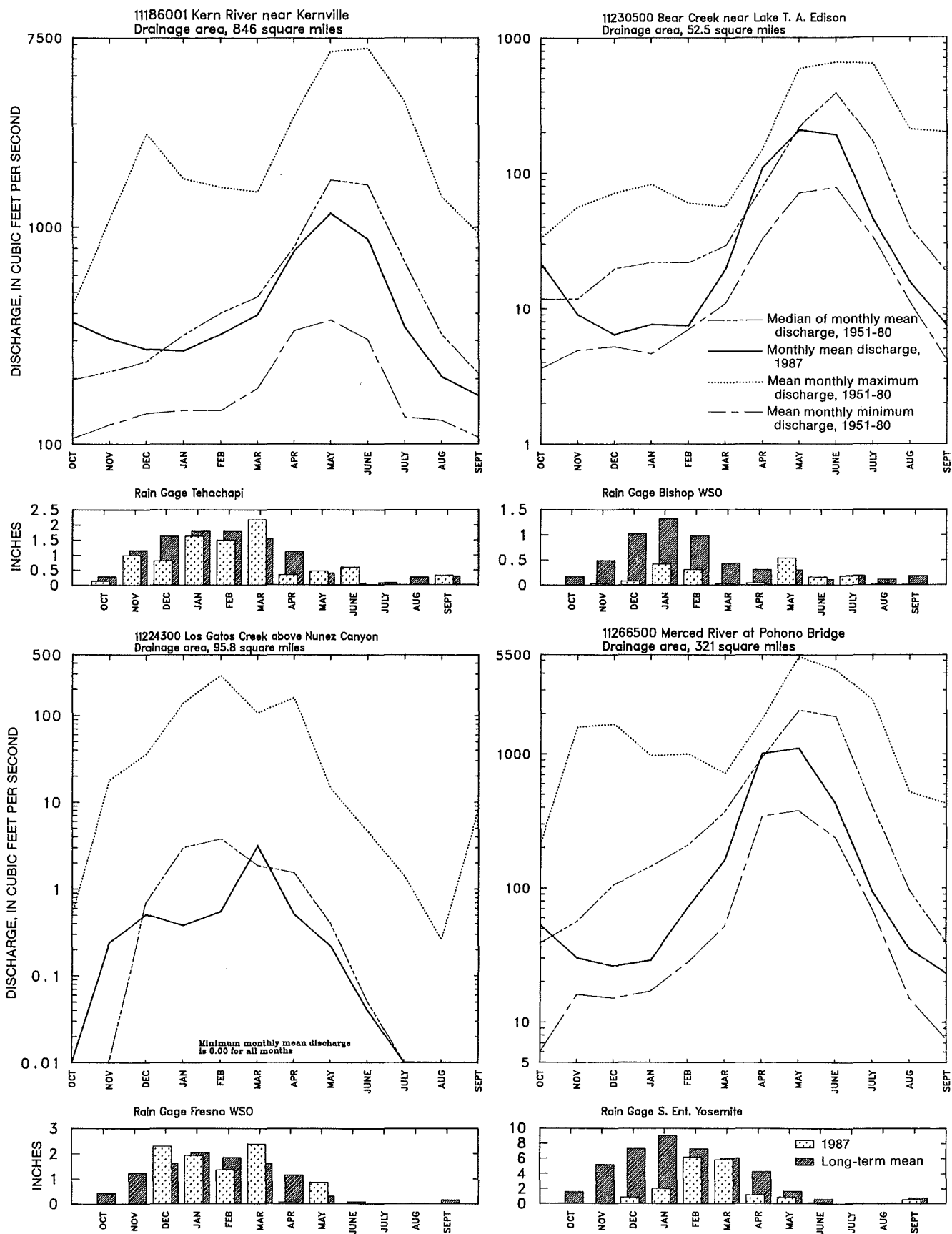


FIGURE 2.--Comparison of discharge during water year 1987 with long-term discharge statistics and rainfall of four representative gaging stations.

Water Quality

Water samples collected at four NASQAN and two Hydrologic Benchmark stations reported in this volume were analyzed for water-quality constituents. Median dissolved-solids concentrations of samples collected from these stations were slightly higher when compared to the 1986 values. The monthly dissolved-solids concentrations during water year 1987 are compared with long-term mean dissolved-solids concentrations at two selected stations in figure 3. At two NASQAN and one Hydrologic Benchmark stations, bacterial densities increased from the previous year. The largest fecal-coliform and fecal-streptococci bacterial densities occurred in water samples collected from the San Joaquin River near Vernalis (greater than 2,400 and 1,600 colonies per 100 milliliters, respectively).

Surface water-quality data are being collected at 11 stations located in the lower San Joaquin River drainage basin as part of the Western San Joaquin Valley Study. Data collection began in June 1985 and is continuing. Physical measurements are made onsite at each station and water samples are collected for chemical, biological, and sediment analyses. The results of these measurements and analyses will be published in separate Open-File Reports published by the U.S. Geological Survey.

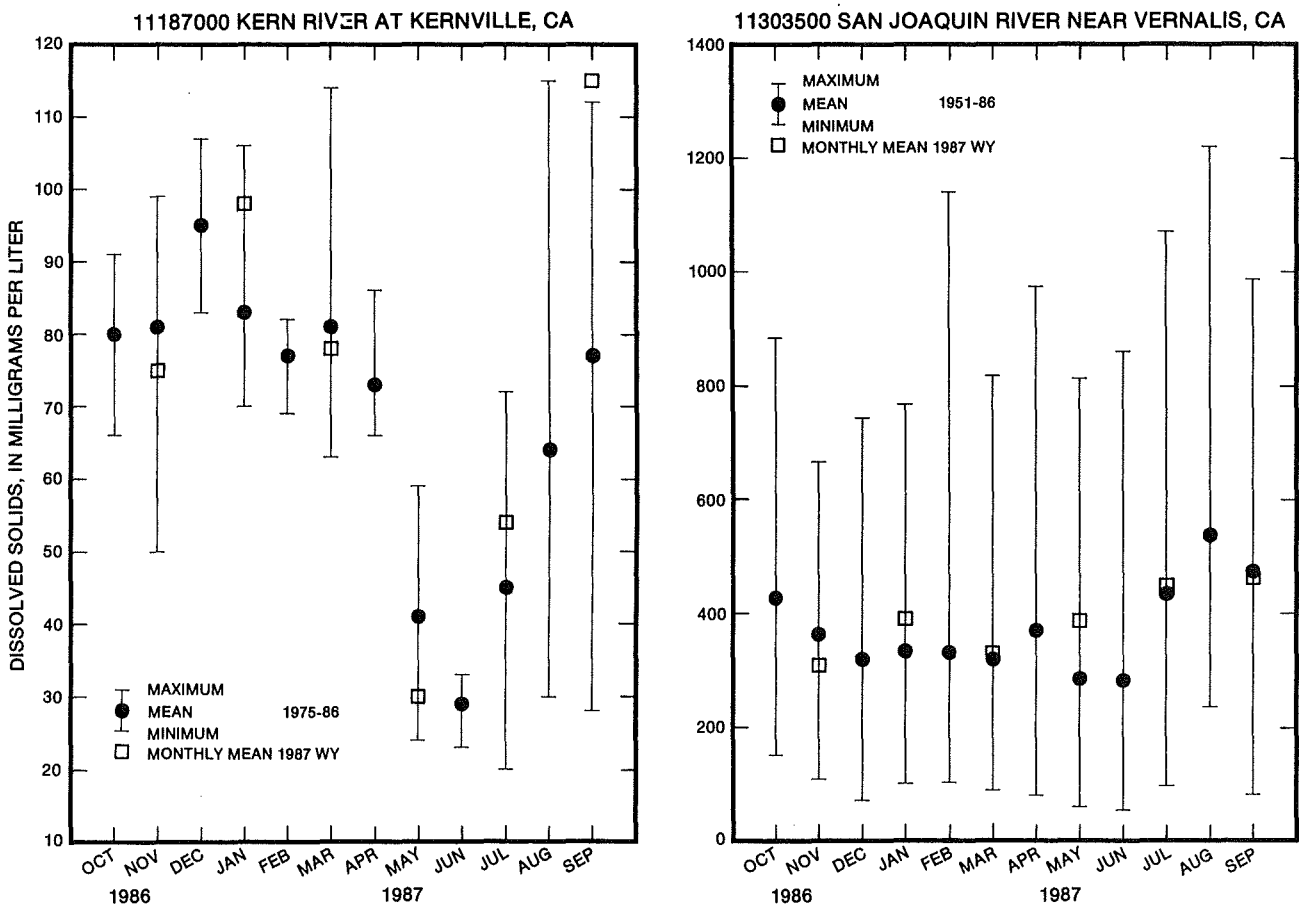


Figure 3. - Comparison of monthly mean dissolved-solids concentrations during water year 1987 with long-term dissolved-solids concentrations of two selected stations.

Sediment

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

During the 1987 water year, sediment discharge at four stations on the west side of Lake Tahoe ranged from 3 to 16 percent of the mean sediment discharge for the 1981-86 water years. Sediment discharge at the San Joaquin River near Vernalis was 50 percent of the long-term mean (1957-86).

Sediment discharge for the daily stations ranged from 1.7 tons per year for Logan House Creek near Glenbrook, to 169,000 tons per year for the San Joaquin River near Vernalis. Annual sediment discharge per square mile of drainage area ranged from a minimum of 0.81 ton per square mile for Logan House Creek to a maximum of 16 tons per square mile for Blackwood Creek near Tahoe City.

The majority of sediment transport in the Tahoe basin was the result of snowmelt runoff in April and May. Monthly suspended-sediment discharges for streams in the Lake Tahoe basin are shown in figure 4. Sediment discharge at the San Joaquin River station was more evenly distributed during the year because of flow regulation.

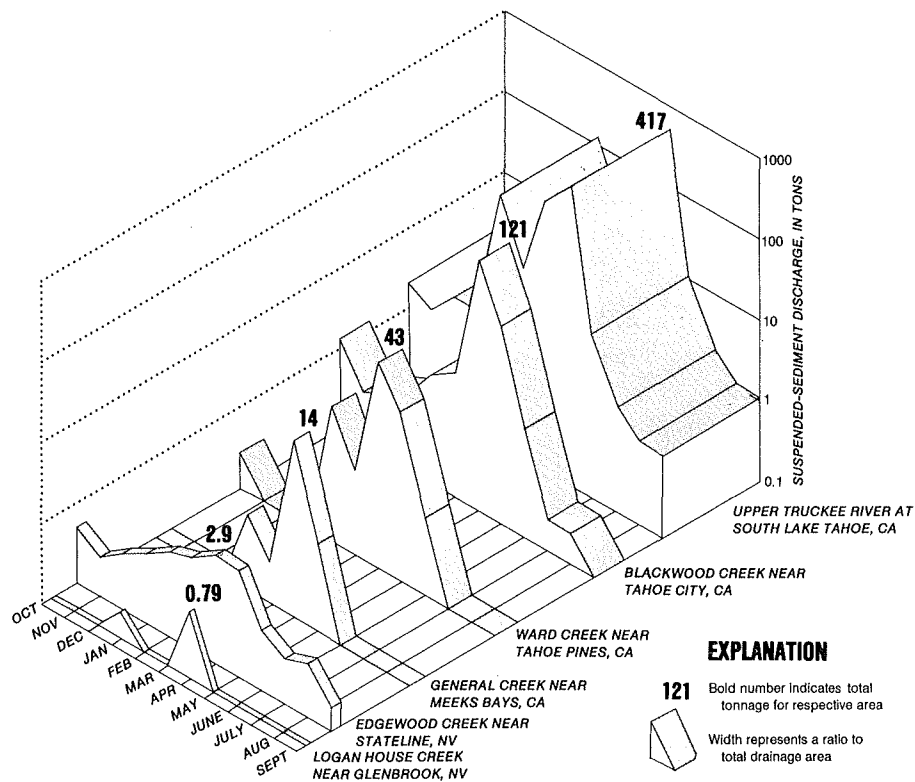


Figure 4. - Monthly suspended-sediment discharge for streams in the Lake Tahoe basin.

SPECIAL NETWORKS AND PROGRAMS

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

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

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1987 water year that began October 1, 1986, and ended September 30, 1987. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and contents data for lakes and reservoirs, and water-quality data for surface water. The locations of the stations where the data were collected are shown in figures 6 through 26. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order System

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station such as 11465350, which appears just to the left of the station name, includes the two-digit part number "11" plus the six-digit downstream-order number "465350." The part number designates the major river basin; for example, part "11" is the Pacific Slope Basins in California.

Latitude-Longitude System

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

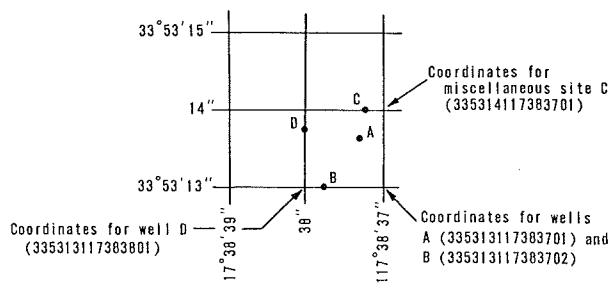


Figure 5.--System for numbering miscellaneous sites (latitude and longitude).

Records of Stage and Water Discharge

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

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Location of all complete-record and crest-stage partial-record stations for which data are given in this report are shown, by county, in figures 6 through 26.

Data Collection and Computation

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

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

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

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

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

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

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

Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location, period of record, average discharge, historical extremes, record accuracy, and other remarks pertinent to station operation and regulation.

The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

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

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

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

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

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see Definition of Terms), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

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

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

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

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

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

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

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

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

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

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

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

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

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

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

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

Other Records Available

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

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

Records of Surface-Water Quality

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

Classification of Records

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

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 6 through 26.

Arrangement of Records

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

Onsite Measurements and Sample Collection

In obtaining water-quality data, a major concern is the assurance that the data obtained represent the in-situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, are made onsite when samples are taken. To assure that measurements made in the laboratory also represent the in-situ water, carefully prescribed procedures are followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in Techniques of Water-Resources Investigations, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. All these references are listed on page 22 of this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the California District office.

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

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

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

Water Temperature

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

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

Sediment

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

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

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

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

Cross-Sectional Data

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

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the U.S. Geological Survey's National Water-Quality Laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in Techniques of Water-Resources Investigations, Book 5, Chapter C1; methods used by the laboratory are given in Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4.

Data Presentation

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

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

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

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

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

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

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

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

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

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

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

Remark Codes

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

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptable range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant
*	Instantaneous streamflow at the time of cross-sectional measurement
1	Laboratory value

ACCESS TO WATSTORE DATA

The National Water Data STorage and Retrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's District offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, VA 22092

DEFINITION OF TERMS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Bottom material: See Bed material.

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

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

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

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

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

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

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

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

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

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

Cubic foot per second (ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

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

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

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

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

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

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

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

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

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

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

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

Gage datum is the elevation of the zero point of the reference gage from which gage height is determined as compared to the National Geodetic Vertical Datum of 1929. This elevation is established by a system of levels from known bench marks or by approximation from topographic maps.

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap that is required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO₃).

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

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

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

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

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

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

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

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

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

Micrograms per gram (UG/G, ug/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Bedload is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bedload is considered to consist of particles in transit within 0.25 ft (0.076 m) of the streambed.

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

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

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

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

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

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

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

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

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

Solute is any substance that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

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

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

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

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

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

```
Kingdom.....Animal
Phylum.....Arthropoda
Class.....Insecta
Order.....Ephemeroptera
Family.....Ephemeridae
Genus.....Hexagenia
Species.....Hexagenia limbata
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Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the presence of a thermograph or a digital mechanism that records water temperature in a digital format on punched paper tape.

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

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

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

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

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

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

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

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1987, is called the "1987 water year."

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

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

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Building 810, Denver, CO 80225. Prepayment is required. Remittance should be sent by check or money order payable to U.S. Geological Survey, Department of the Interior. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. Water temperature--influential factors, field measurement, and data presentation, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. Guidelines for collection and field analysis of ground-water samples for selected unstable constituents, by W.W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. Application of surface geophysics to ground-water investigations, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. Application of borehole geophysics to water-resources investigations, by W.S. Keys, and L.M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. General field and office procedures for indirect discharge measurements, by M.A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. Measurement of peak discharge by slope-area method, by Tate Dalrymple and M.A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. Measurement of peak discharge at culverts by indirect methods, by G.L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. Measurement of peak discharge at width contractions by indirect methods, by H.F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. Measurement of peak discharge at dams by indirect methods, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. General procedure for gaging streams, by R.W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. Stage measurements at gaging stations, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. Discharge measurements at gaging stations, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. Measurement of time of travel and dispersion in streams by dye tracing, by E.F. Hubbard, F.A. Kilpatrick, L.A. Martens, and J.F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
- 3-A10. Discharge ratings at gaging stations, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. Measurement of discharge by moving-boat method, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A13. Computation of continuous records of streamflow, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. Use of flumes in measuring discharge, by F.A. Kilpatrick and V.R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. Computation of water-surface profiles in open channels, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.

- 3-B1. Aquifer-test design, observation, and data analysis, by R.W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. Introduction to ground-water hydraulics, a programmed text for self-instruction, by G.D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. Type curves for selected problems of flow to wells in confined aquifers, by J.E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-C1. Fluvial sediment concepts, by H.P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. Field methods for measurement of fluvial sediment, by H.P. Guy and V.W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. Computation of fluvial sediment discharge, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. Some statistical tools in hydrology, by H.C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. Frequency curves, by H.C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. Low-flow investigations by H.C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. Storage analyses for water supply, by H.C. Riggs and C.H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. Regional analyses of streamflow characteristics, by H.C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. Computation of rate and volume of stream depletion by wells, by C.T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. Methods for determination of inorganic substances in water and fluvial sediments, edited by M.W. Skougstad and others: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. Determination of minor elements in water by emission spectroscopy, by P.R. Barnett and E.C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. Methods for analysis of organic substances in water, by D.F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, edited by P.E. Greeson, T.A. Ehlke, G.A. Irwin, B.W. Lium, and K.V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 322 pages.
- 5-A5. Methods for determination of radioactive substances in water and fluvial sediments, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L.C. Friedman, and D.E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
- 5-C1. Laboratory theory and methods for sediment analysis, by H.P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 7-C1. Finite difference model for aquifer simulation in two dimensions with results of numerical experiments, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. Computer model of two-dimensional solute transport and dispersion in ground water, by L.F. Konikow and J.D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. A model for simulation of flow in singular and interconnected channels by R.W. Shaffranek, R.A. Baltzer, and D.E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. Methods of measuring water levels in deep wells, by M.S. Garber and F.C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. Installation and service manual for U.S. Geological Survey manometers, by J.D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. Calibration and maintenance of vertical-axis type current meters, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

DISCONTINUED GAGING STATIONS

The following continuous-record streamflow stations reported in this volume have been discontinued as of the 1987 water year. Daily streamflow or stage records were collected and published for the period of record shown for each station.

Station No.	Station name	Drainage area (mi ²)	Period of record
10336759	Edgewood Creek near Stateline, NV	3.20	1983-87
11201200	Deer Creek diversion near Terra Bella, CA	--	1971-87
11217000	Dinkey Creek at Dinkey Meadow, near Shaver Lake, CA	50.7	1911-15, 1922-35, 1977-87
11316000	Bear River near Salt Springs Dam, CA	48.0	1952-87
11329500	Dry Creek near Galt, CA	324	1922-33, 1944-87
11333500	North Fork Cosummes River near El Dorado, CA	205	1912-41, 1948-87
11336580	Morrison Creek near Sacramento, CA	53.4	1960-87

DISCONTINUED WATER-QUALITY STATIONS

The following water-quality station reported in this volume has been discontinued as of the 1987 water year. Continuous daily records of water temperature and sediment were collected and published for the period of record shown.

Station No.	Station name	Drainage area (mi ²)	Type of record	Period of record
10336759	Edgewood Creek near Stateline, NV	3.20	T,S	1983-87

Type of record: T (water temperature); S (sediment).

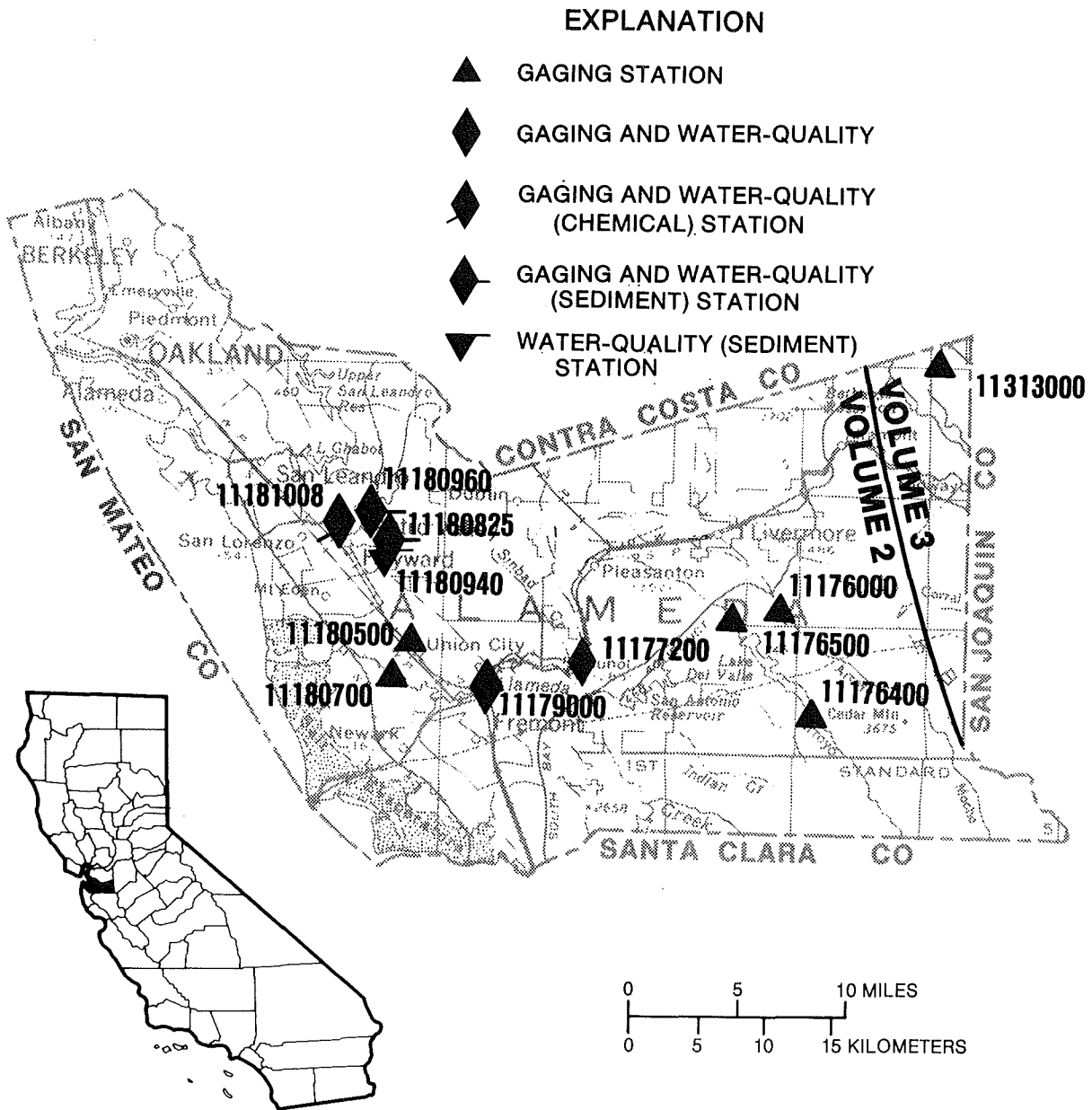


Figure 6. - Location of discharge and water-quality stations in Alameda County.

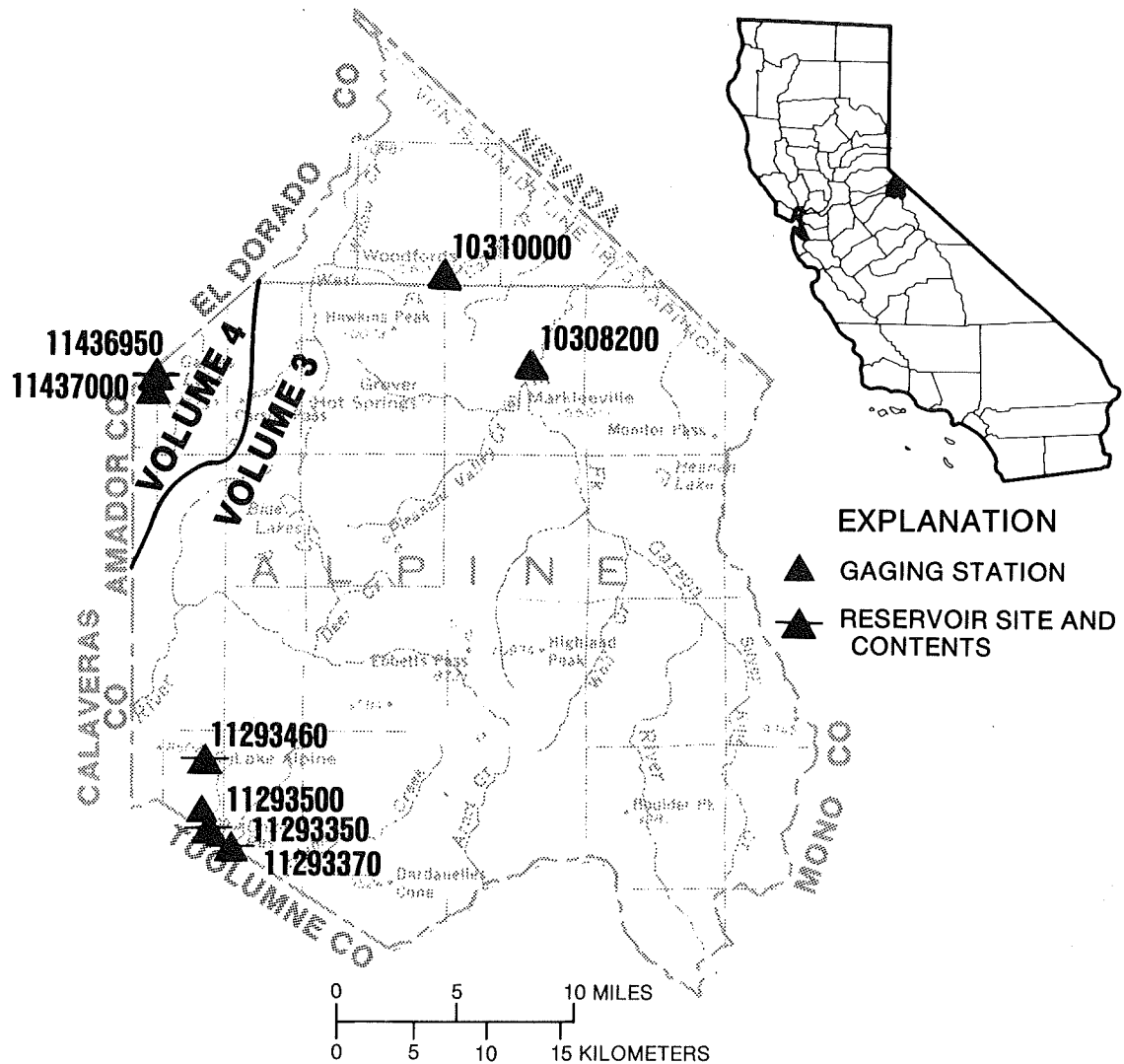


Figure 7. - Location of discharge stations in Alpine County.

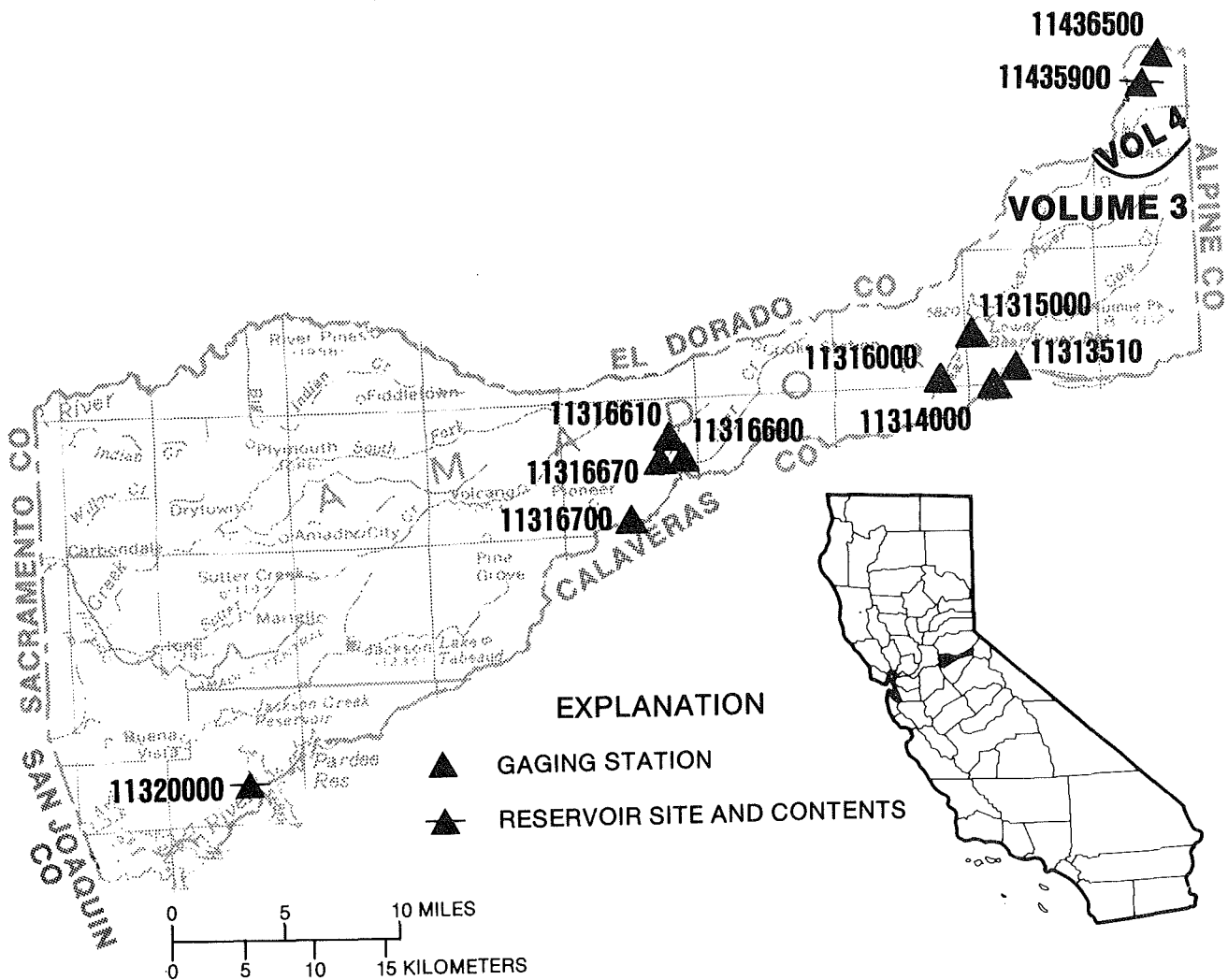


Figure 8. - Location of discharge stations in Amador County.

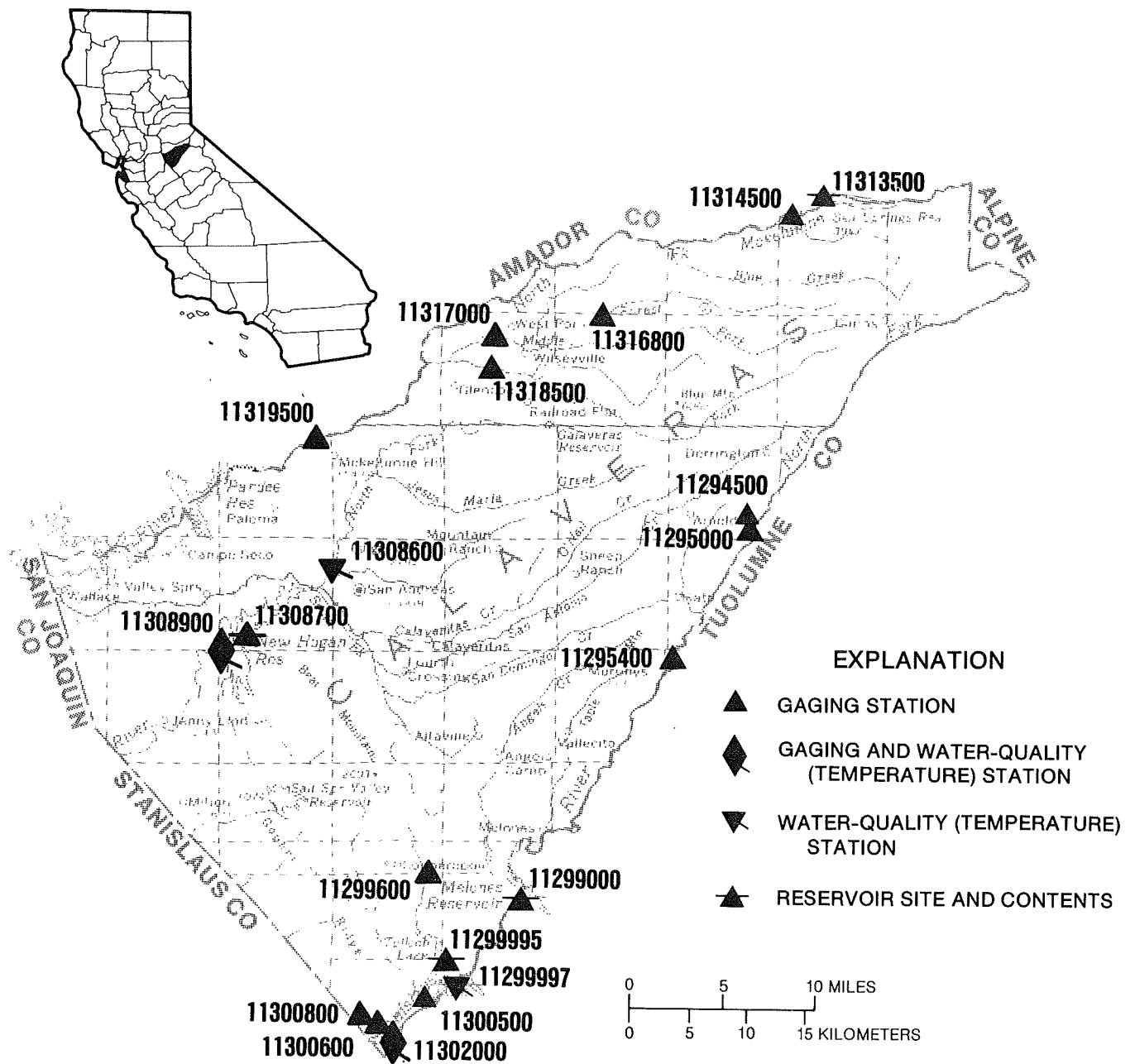


Figure 9. - Location of discharge and water-quality stations in Calaveras County.

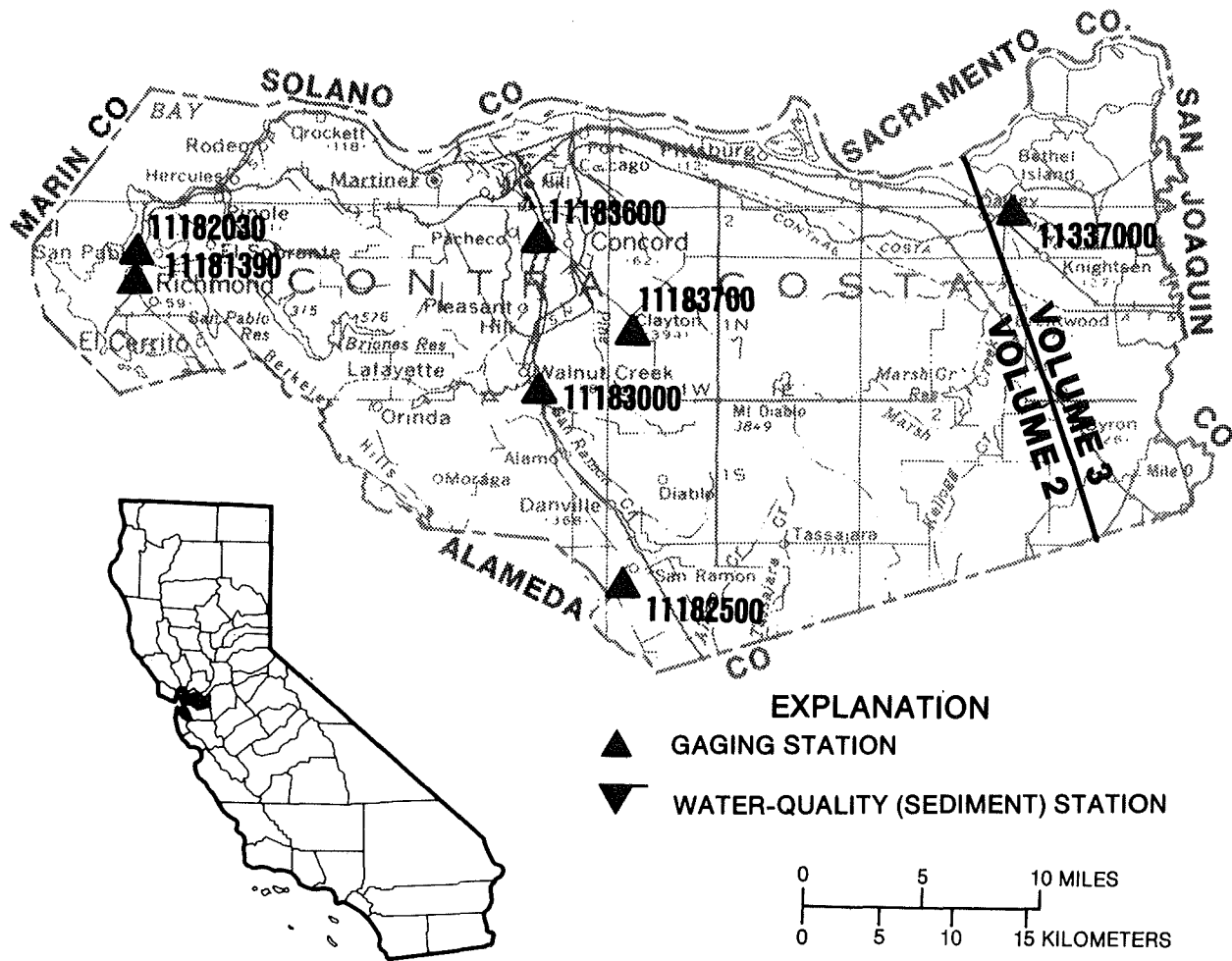
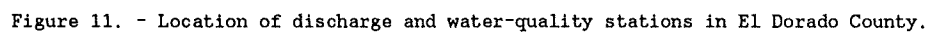


Figure 10. - Location of discharge stations in Contra Costa County.



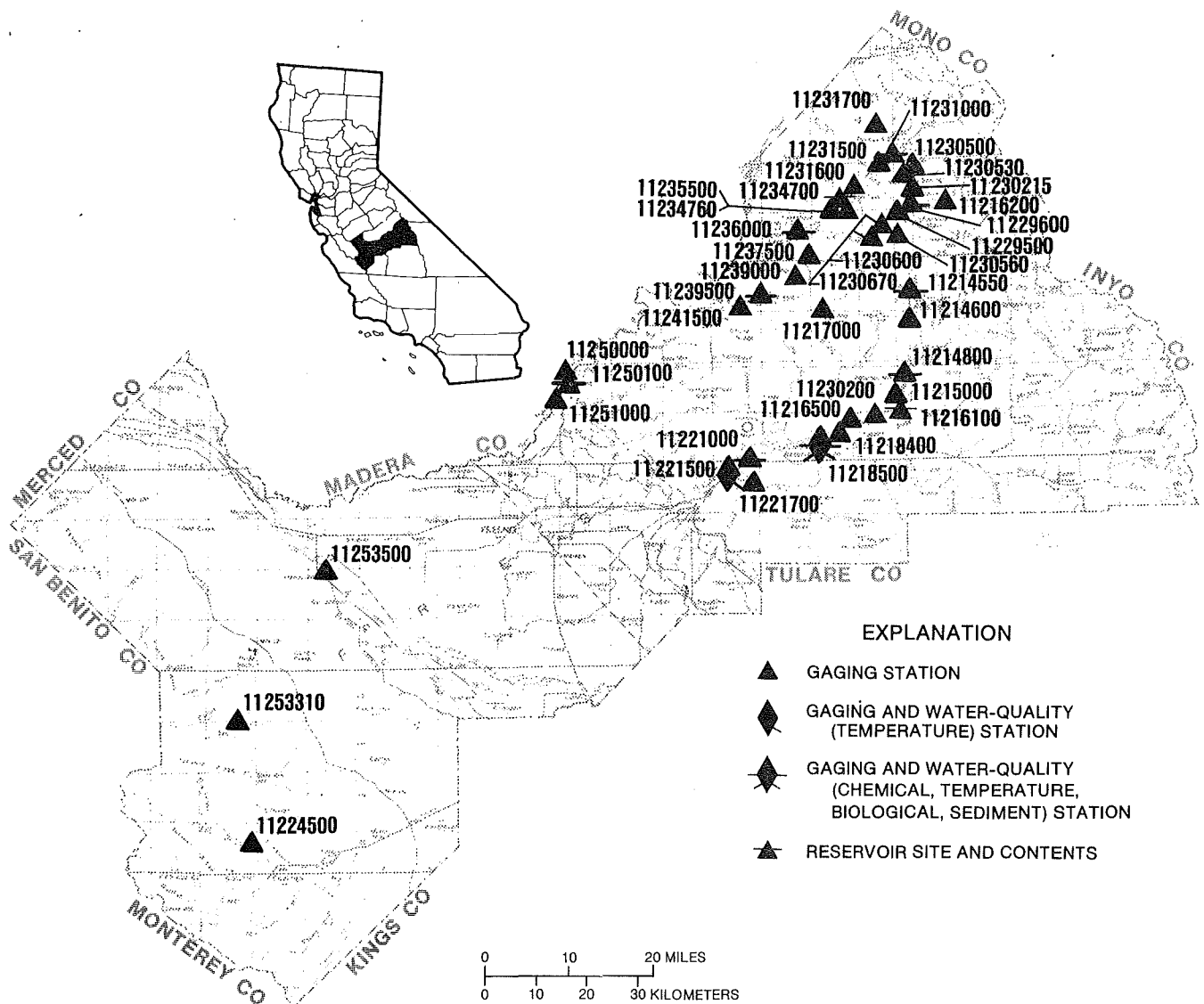


Figure 12. - Location of discharge and water-quality stations in Fresno County.

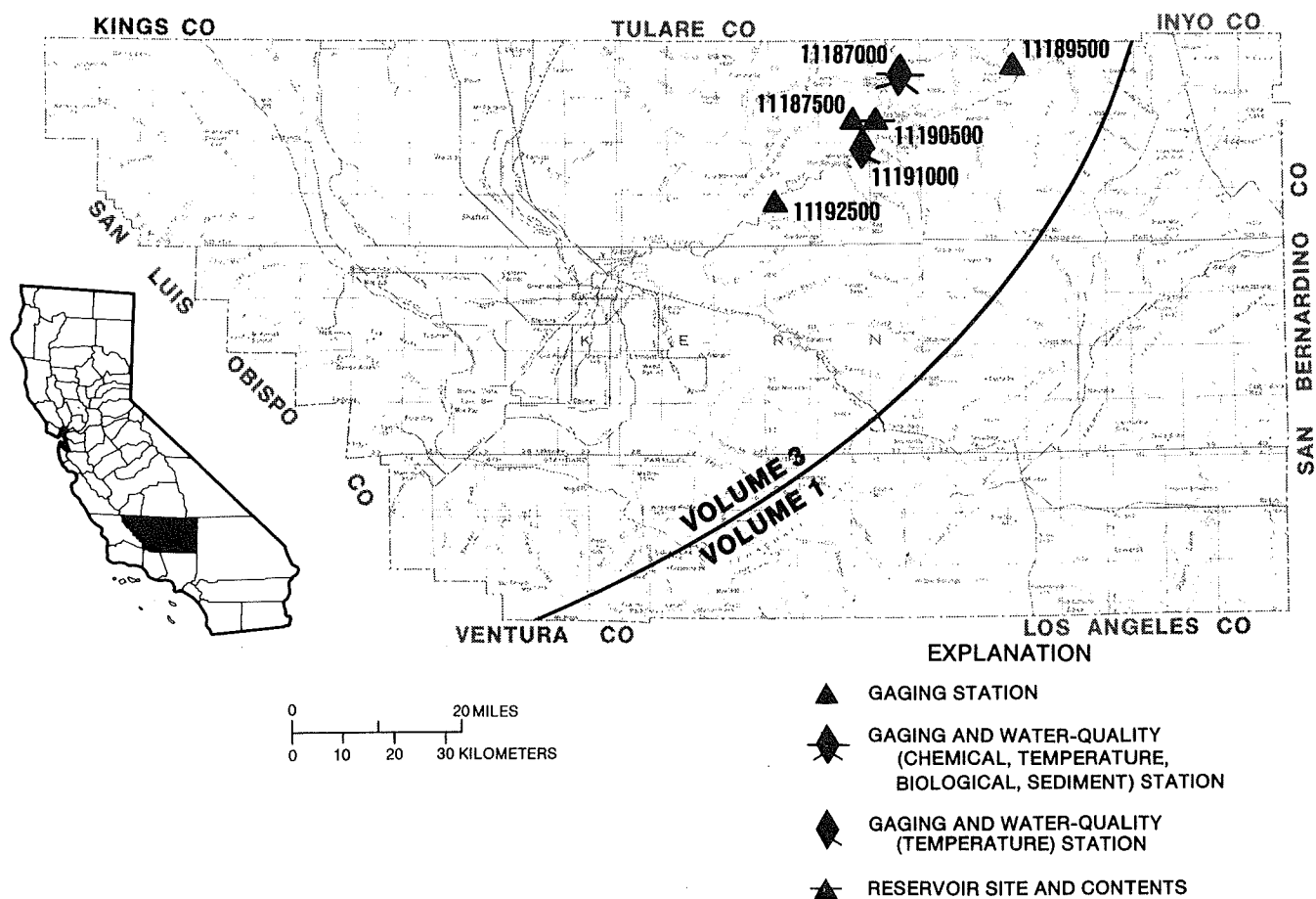


Figure 13. - Location of discharge and water-quality stations in Kern County.

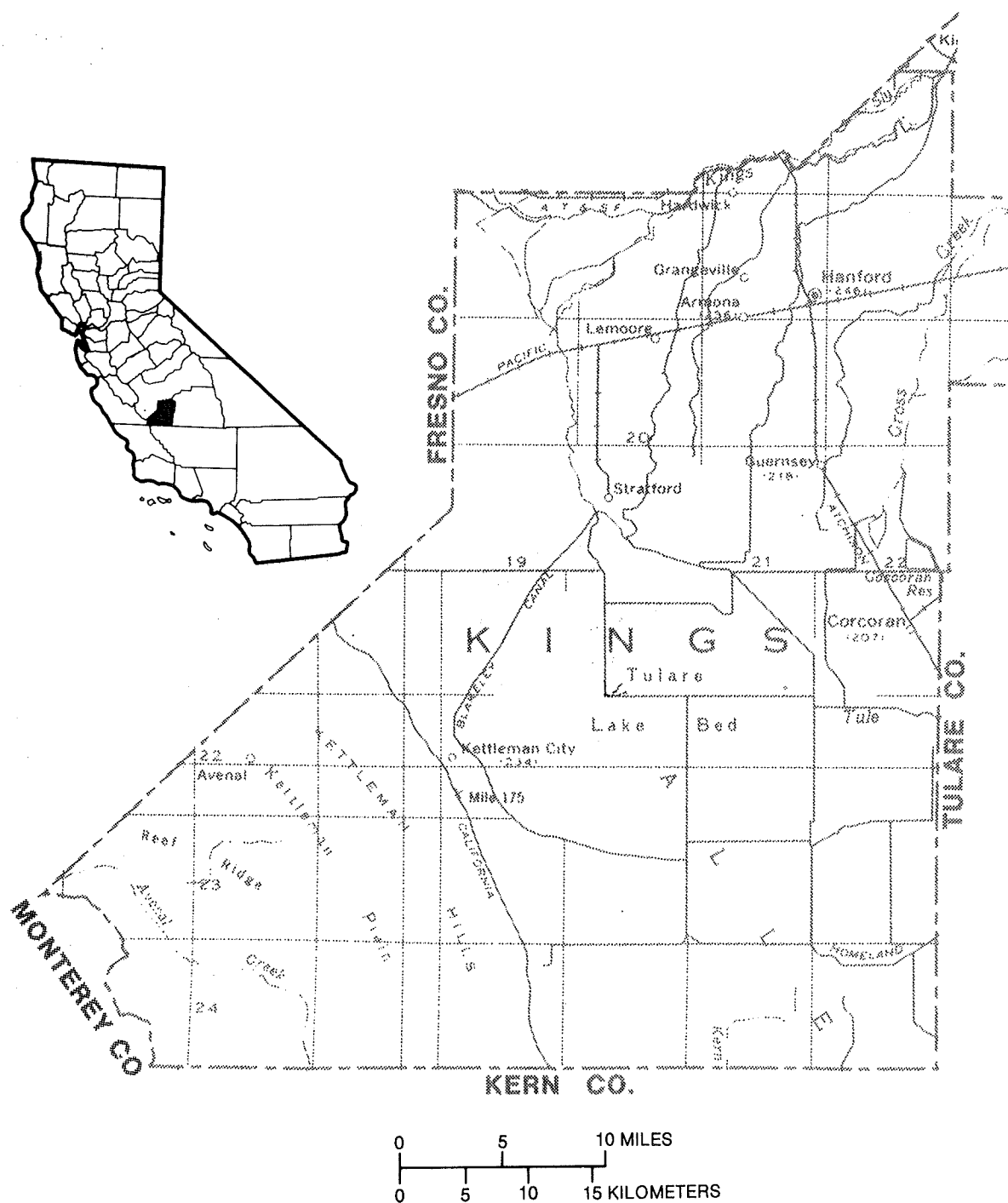


Figure 14. - Location of discharge stations in Kings County.

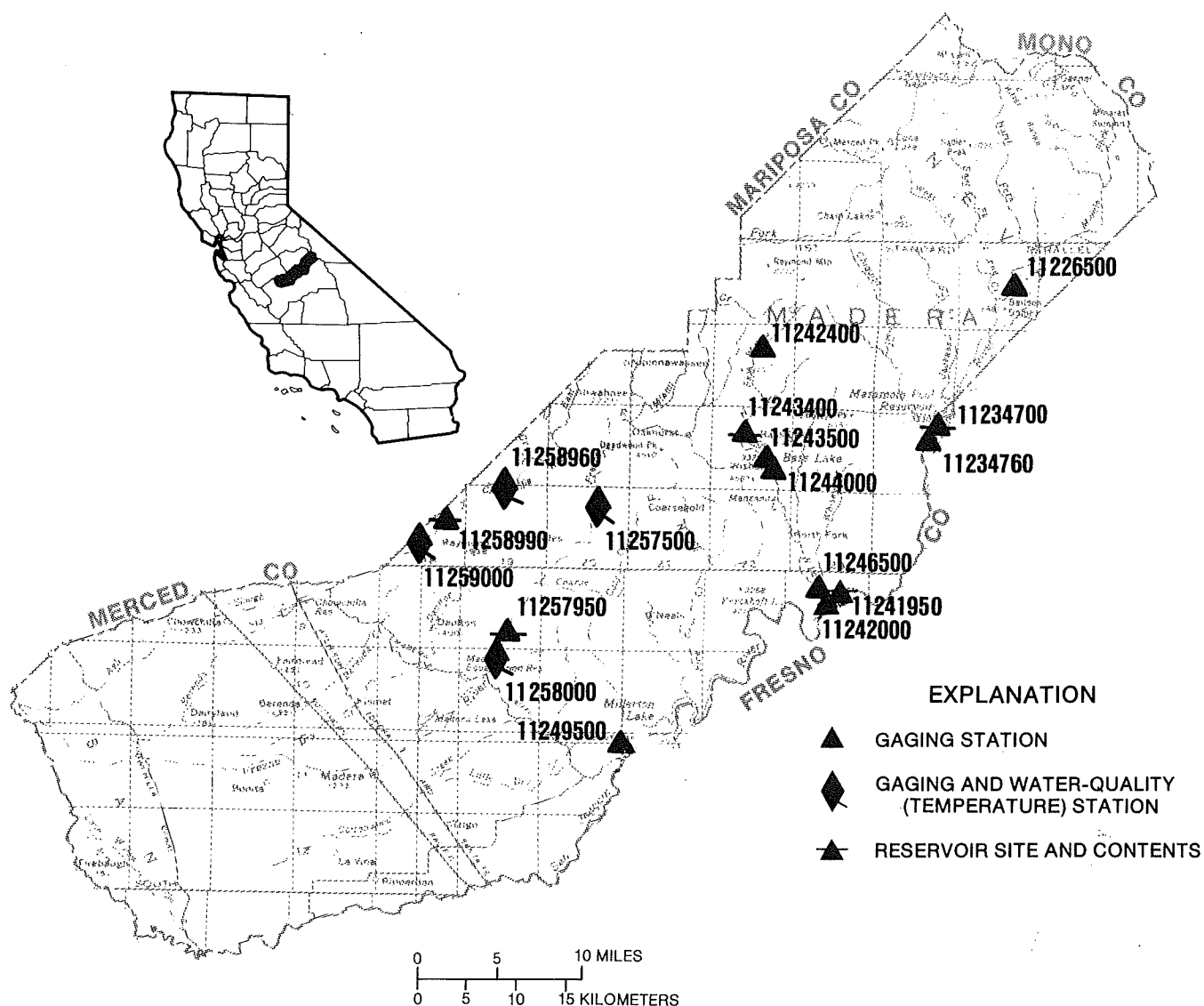


Figure 15. - Location of discharge and water-quality stations in Madera County.

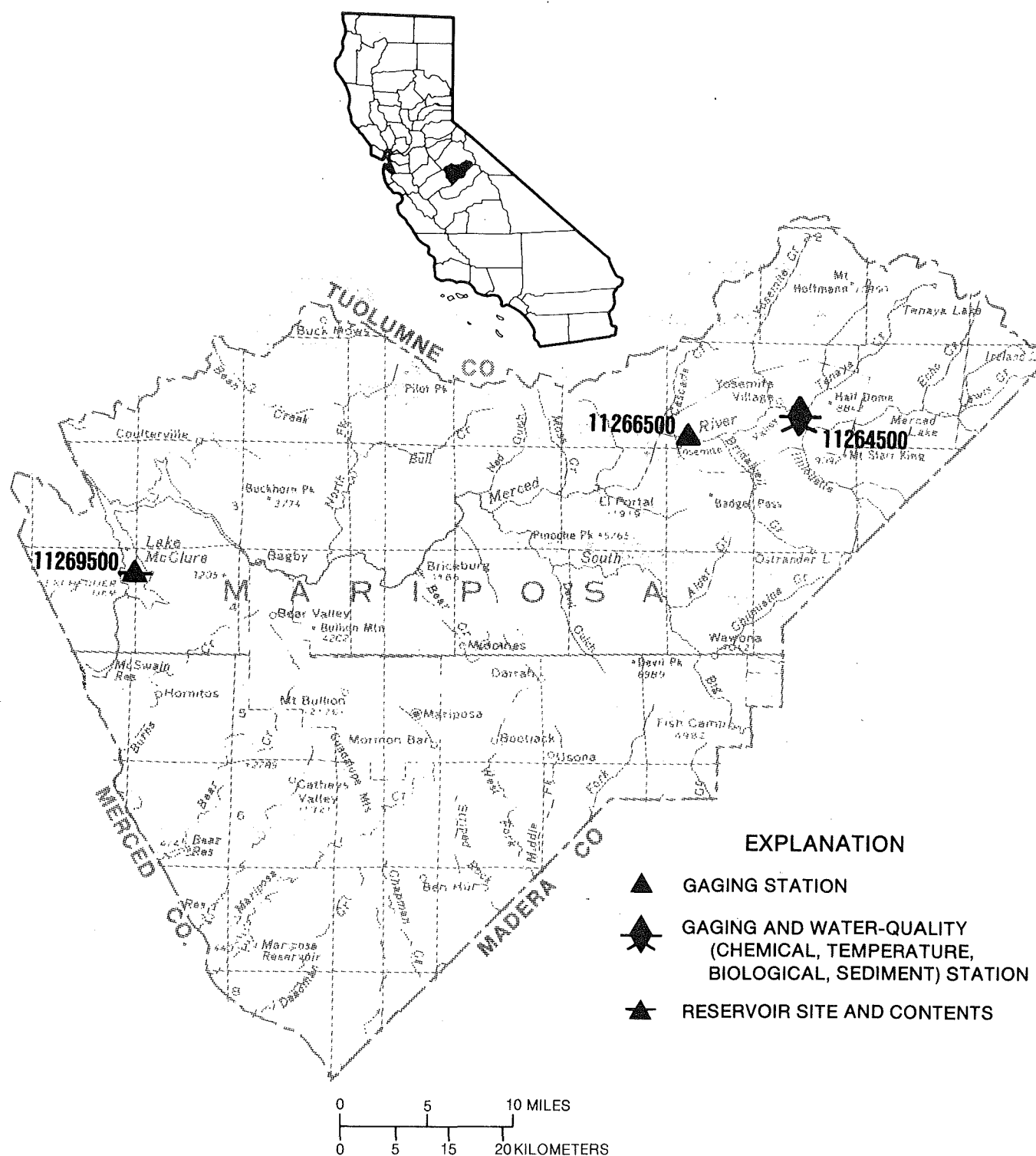


Figure 16. - Location of discharge and water-quality stations in Mariposa County.

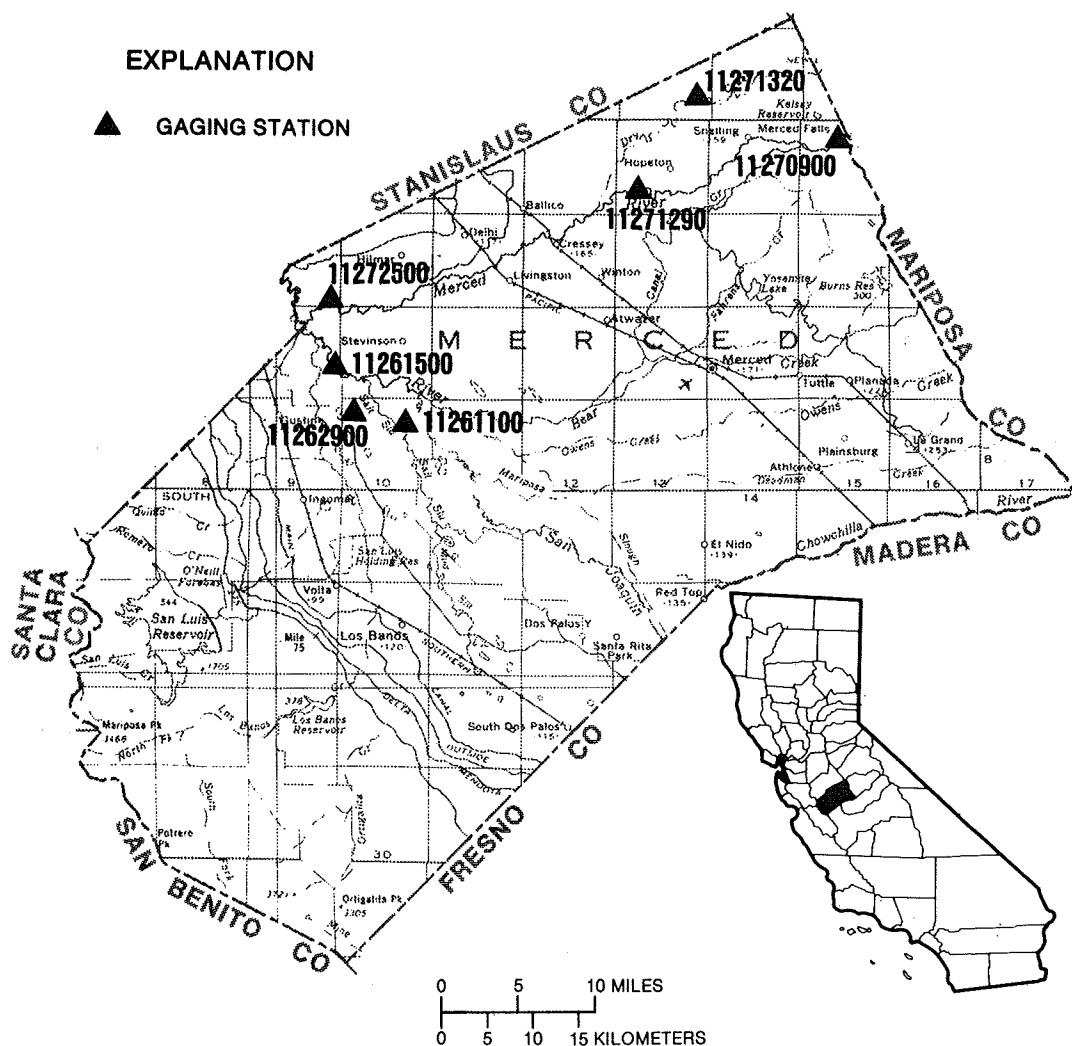
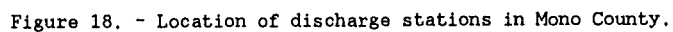


Figure 17. - Location of discharge stations in Merced County.



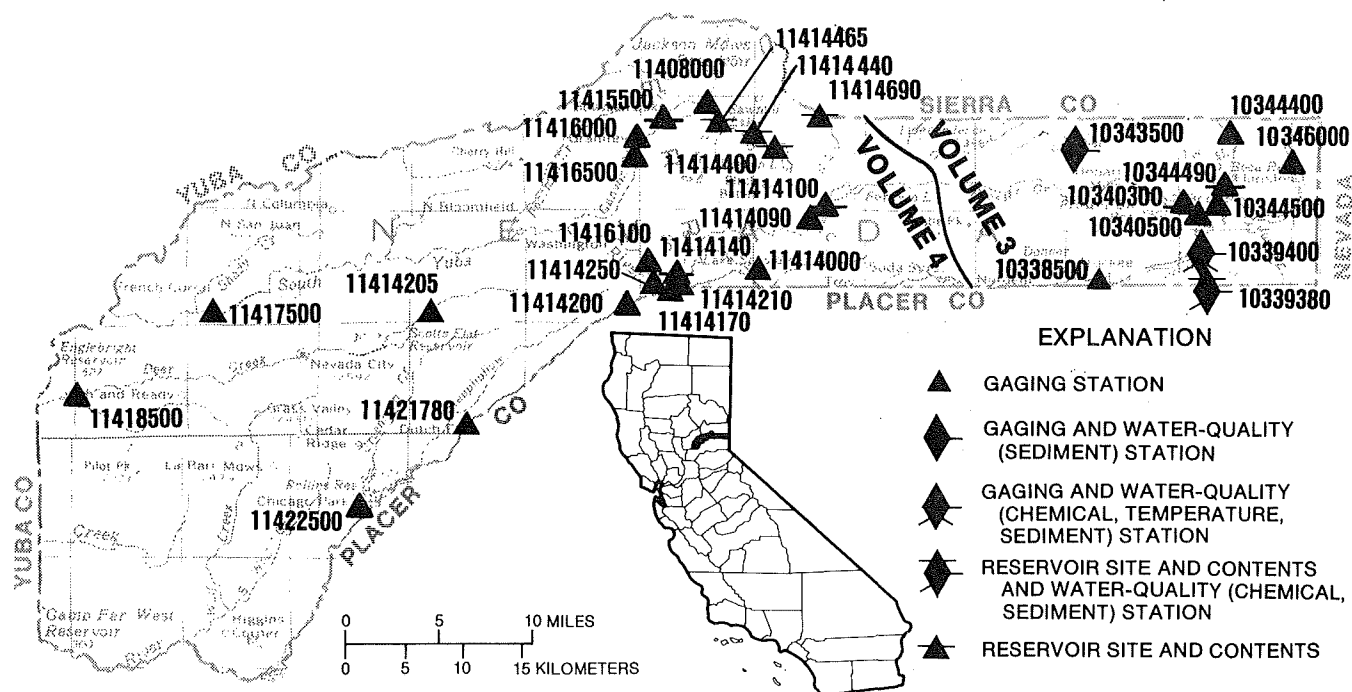
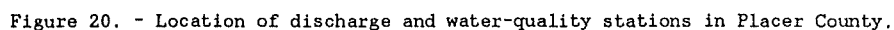


Figure 19. - Location of discharge and water-quality stations in Nevada County.



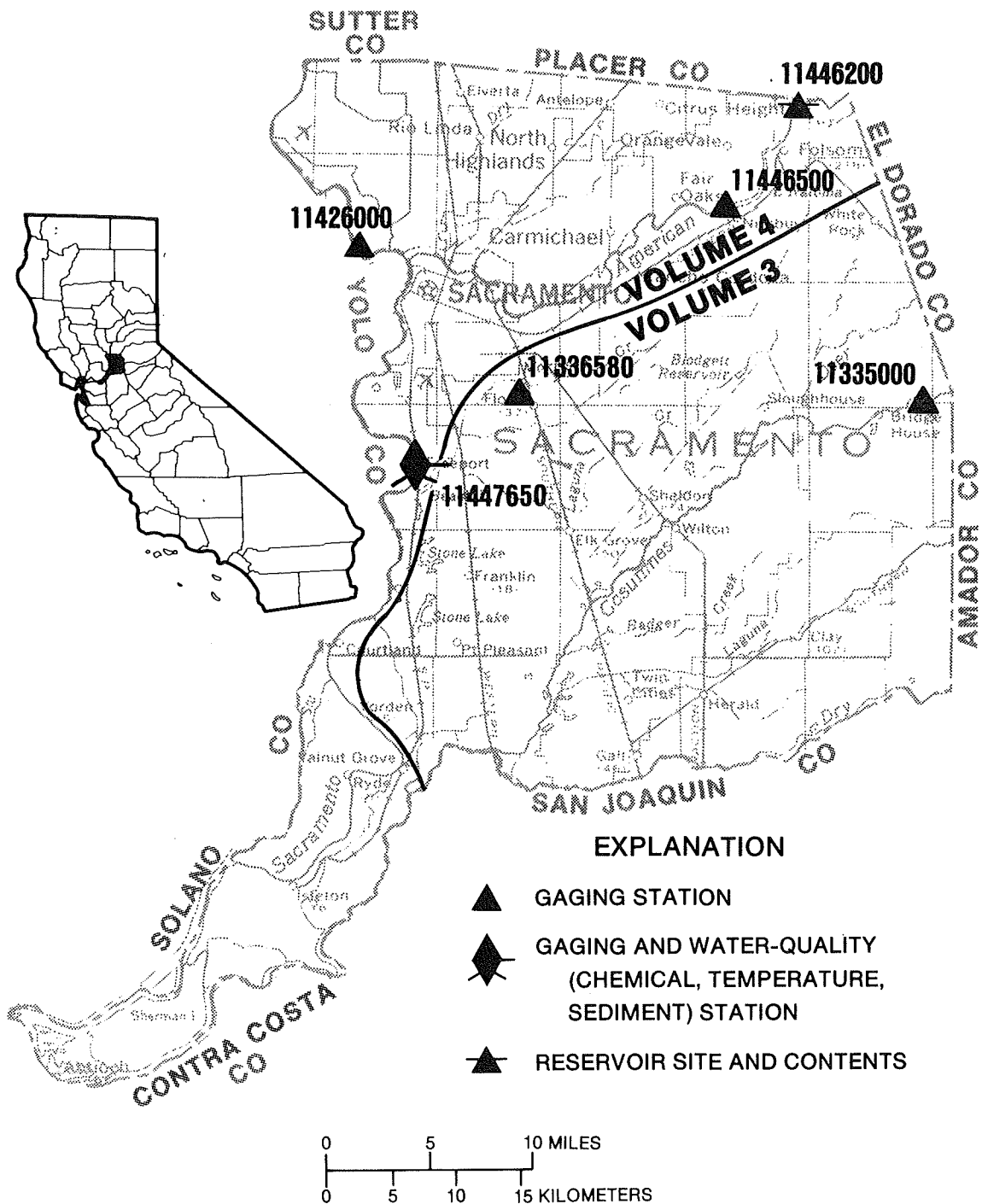


Figure 21. - Location of discharge and water-quality stations in Sacramento County.

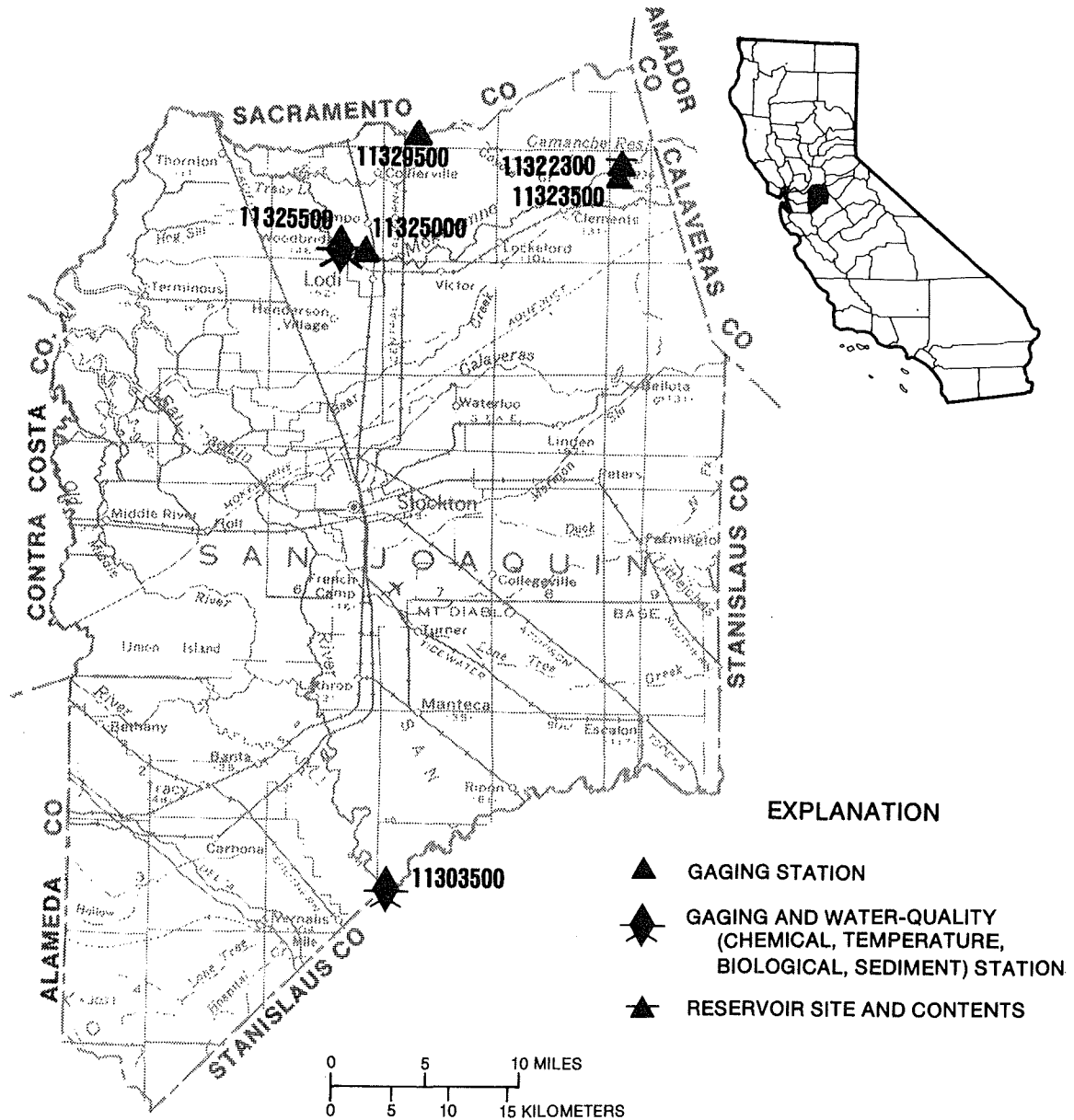


Figure 22. - Location of discharge and water-quality stations in San Joaquin County.

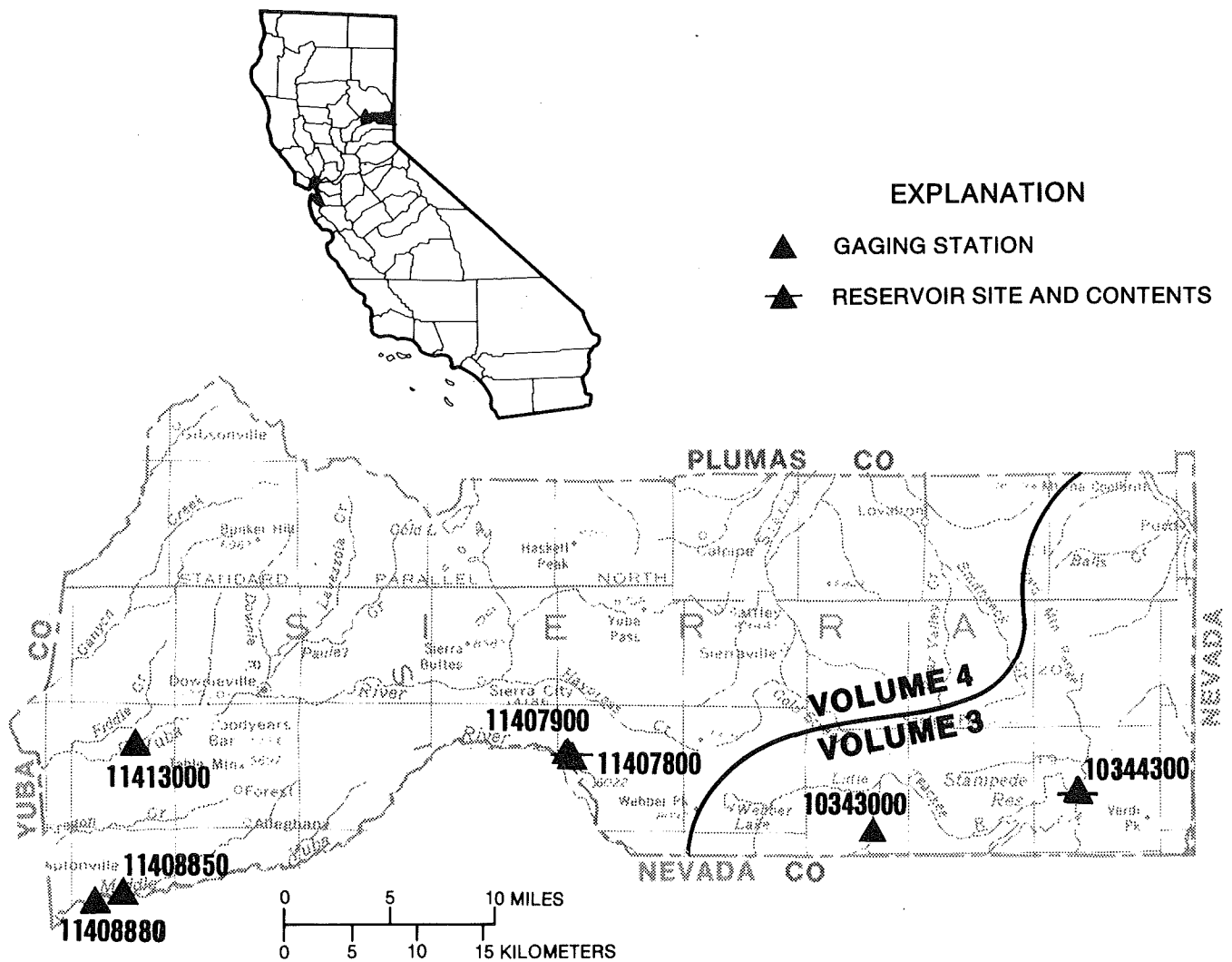


Figure 23. - Location of discharge stations in Sierra County.

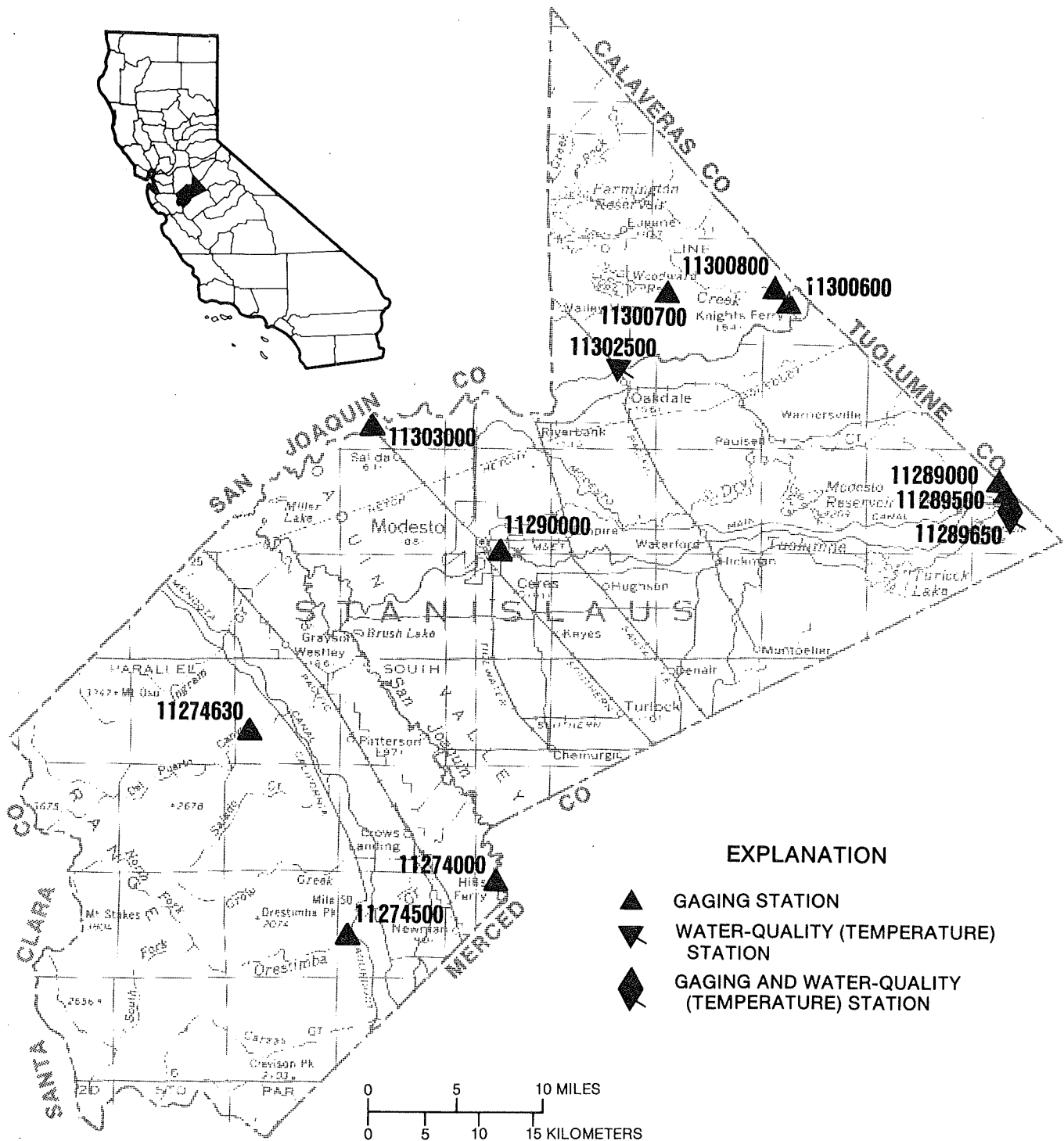


Figure 24. - Location of discharge stations in Stanislaus County.

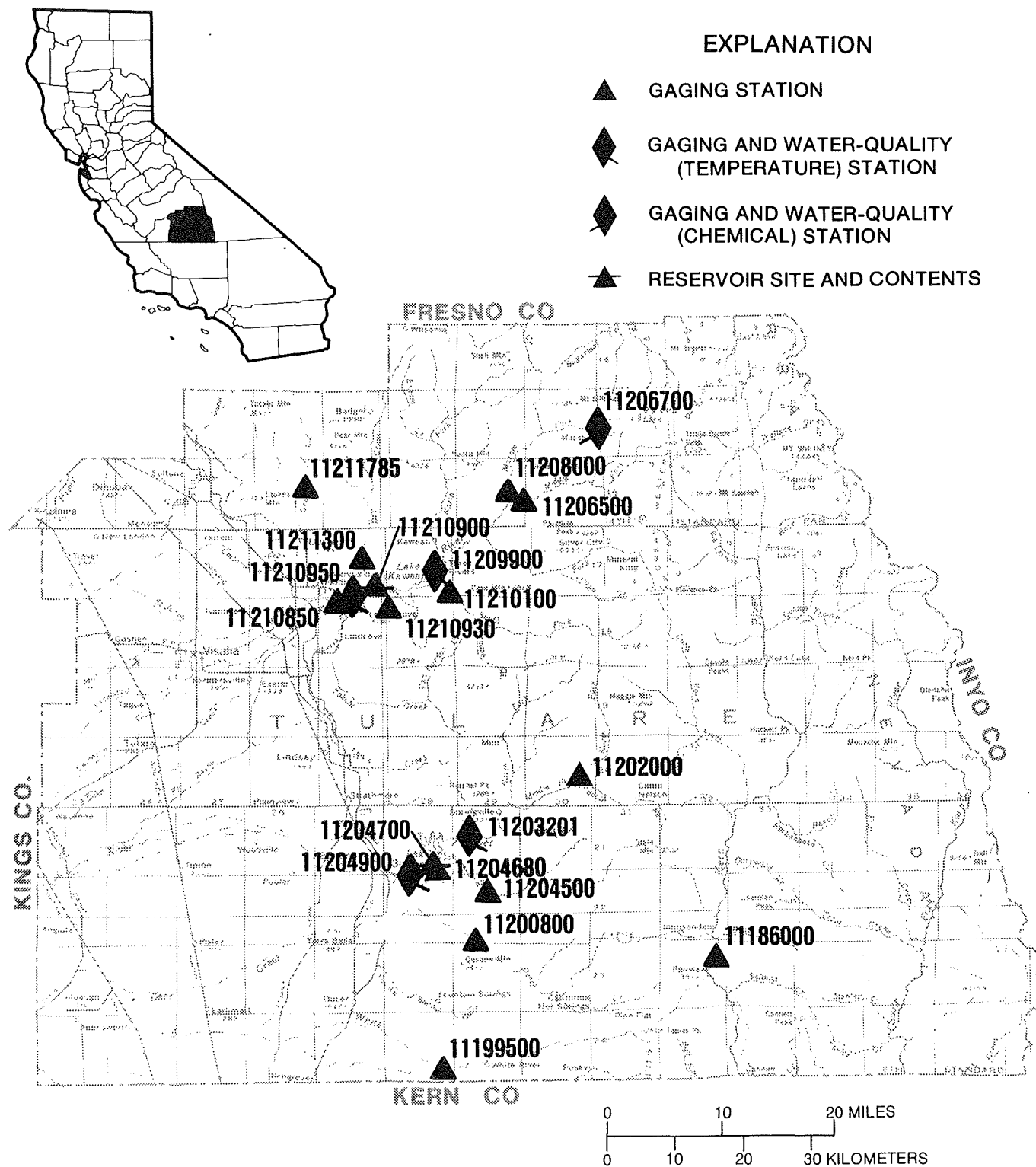


Figure 25. - Location of discharge and water-quality stations in Tulare County.

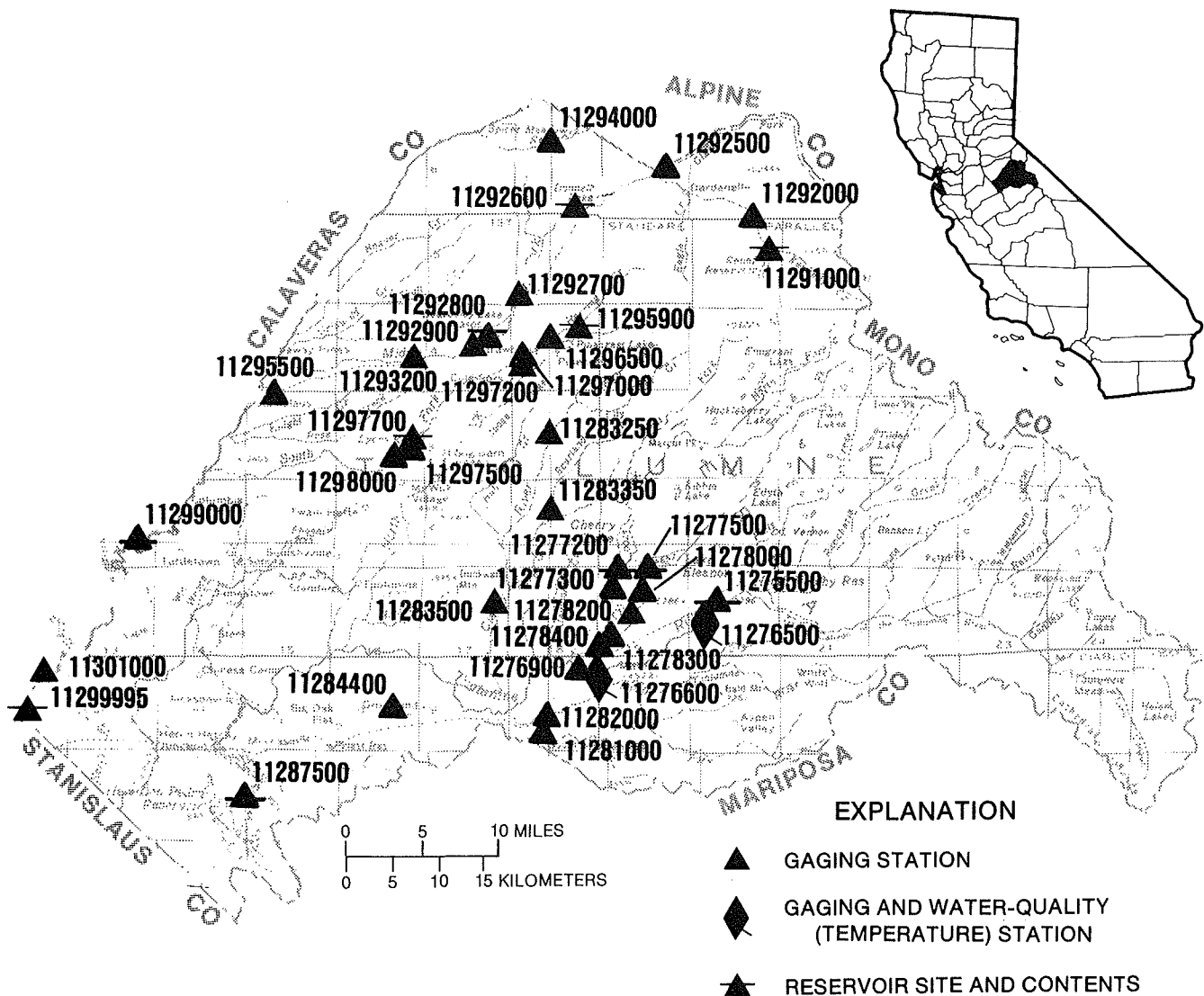


Figure 26. - Location of discharge and water-quality stations in Tuolumne County.

WALKER LAKE BASIN

10290300 UPPER TWIN LAKE NEAR BRIDGEPORT, CA

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

DRAINAGE AREA.--29.5 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 7,212.86 ft, National Geodetic Vertical Datum of 1929 (project datum of U.S. Indian Irrigation Service).

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 2,990 acre-ft, July 7, 1983, elevation, 7,209.85 ft; minimum observed, 62 acre-ft, Oct. 31, Nov. 1, 1964, elevation, 7,200.22 ft.

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

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,980 acre-ft, June 2, elevation, 7,209.82 ft; minimum, 552 acre-ft, Oct. 31, elevation, 7,201.97 ft, but may have been lower between Oct. 21-31.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	7,202.04	571	--
Oct. 31.	7,201.97	552	-19
Nov. 30.	7,205.18	1,500	+948
Dec. 31.	7,207.32	2,170	+670
CAL YR 1985.	--	--	-10
Jan. 31.	7,207.25	2,150	-20
Feb. 28.	--	2,240	+90
Mar. 31.	--	2,340	+100
Apr. 30.	7,208.33	2,500	+160
May 31.	7,209.67	2,930	+430
June 30.	7,208.89	2,670	-260
July 31.	7,208.28	2,480	-190
Aug. 31.	7,207.77	2,320	-160
Sept. 30.	--	2,220	-100
WTR YR 1985-86	--	--	-1,649

WALKER LAKE BASIN

10290400 LOWER TWIN LAKE NEAR BRIDGEPORT, CA

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

DRAINAGE AREA.--38.9 mi².

PERIOD OF RECORD.--December 1961 to current year. Data for 1987 water year not available at time of publication.

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

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

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

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 5,410 acre-ft, June 3, elevation, 7,203.22 ft; minimum observed, 712 acre-ft, Nov. 4, elevation, 7,191.78 ft, but may have been lower during period of no gage-height record, Oct. 1 to Nov. 25.

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	--	g1,080	--
Oct. 31.	--	g 754	-326
Nov. 30.	--	g 985	+231
Dec. 31.	7,194.17	1,670	+685
CAL YR 1985.	--	--	-790
Jan. 31.	7,197.48	2,990	+1,320
Feb. 28.	--	g3,690	+700
Mar. 31.	--	g4,450	+760
Apr. 30.	--	g4,620	+170
May 31.	7,202.97	5,290	+670
June 30.	--	g5,020	-270
July 31.	7,201.14	4,490	-530
Aug. 31.	--	g3,140	-1,350
Sept. 30.	--	g2,230	-910
WTR YR 1985-86	--	--	+1,150

g Interpolated.

WALKER LAKE BASIN

10292500 BRIDGEPORT RESERVOIR NEAR BRIDGEPORT, CA

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

DRAINAGE AREA.--358 mi².

PERIOD OF RECORD.--March 1926 to current year. Monthend contents only for some periods, published in WSP 1314. Data for 1987 water year not available at time of publication.

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

GAGE.--Water-stage recorder. Datum of gage is 6,466.44 ft, National Geodetic Vertical Datum of 1929 (project datum).

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,880 acre-ft, June 16, 1974, elevation, 6,460.78 ft; no contents during fall of 1929, 1930, 1960, and 1977.

EXTREMES FOR CURRENT YEAR.--Maximum recorded contents, 40,330 acre-ft, July 7, elevation, 6,459.27 ft; minimum, 6,730 acre-ft, Oct. 8, elevation, 6,440.56 ft.

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

6,440	6,240	6,455	29,160
6,445	11,380	6,459	39,540
6,450	18,780	6,460	42,460

RESERVOIR STORAGE (AC-FT) WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANT VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7380	8480	13180	18870	24180	34770	32560	31400	37430	38260	38490	24430
2	7270	8620	13820	19060	24300	35010	32640	31600	37590	38570	38180	23980
3	7200	8760	14390	19240	24390	35220	32720	31770	37560	39010	37810	23560
4	7090	8880	14700	19500	24530	35470	32640	31870	37620	39320	37480	23140
5	6980	8980	14960	19770	24530	35170	32510	32030	37350	39830	37070	22810
6	6880	9110	15170	19980	24730	34140	32490	32080	37240	40060	36580	22420
7	6820	9240	15380	20160	24810	33430	32380	32160	36930	40090	36230	22030
8	6730	9340	15550	20310	24920	34980	32330	32160	36630	39860	35750	21560
9	6770	9440	15690	20480	25010	34980	32210	32110	36450	39800	35200	21090
10	6840	9520	15820	20600	25170	34720	32180	31920	36450	39830	34770	20760
11	6880	9580	15920	20780	25360	34060	32160	31850	36420	39800	34380	20440
12	6900	9700	16050	20930	25630	33580	31980	31820	36420	39800	33860	20140
13	6920	9820	16170	21090	26220	33170	31950	31800	36420	39770	33350	19770
14	6900	9950	16310	21310	27160	32940	31900	31820	36420	39770	32740	19430
15	6930	10120	16420	21420	28170	32890	31720	31820	36550	39660	32280	19130
16	6990	10300	16530	21620	28630	32820	31570	31820	36760	39540	31650	18870
17	7050	10420	16660	21780	30360	32690	31380	32000	36820	39480	31140	18590
18	7140	10510	16790	21950	33550	32620	31210	32230	36900	39480	30560	18370
19	7240	10630	16900	22150	35440	32490	31070	32560	36900	39400	29980	18090
20	7330	10780	17030	22290	34670	32380	30970	33090	36790	39320	29590	17900
21	7420	10950	17160	22420	34590	32260	30970	33450	36760	39290	29210	17750
22	7570	11070	17280	22660	34820	32180	30950	33890	36760	39200	28720	17600
23	7730	11240	17400	22710	34800	32110	30920	34270	36710	39400	28260	17440
24	7890	11500	17540	22810	34640	31900	30990	34640	36630	39340	27780	17260
25	8000	11760	17680	23000	34540	31900	30870	35060	36870	39370	27340	17180
26	8090	12030	17780	23140	34380	31850	30900	35570	37120	39460	26930	17040
27	8190	12250	17900	23310	34380	31850	30900	36180	37180	39400	26530	16870
28	8260	12530	18070	23450	34510	31870	30950	36530	37290	39200	26200	16720
29	8280	12770	18230	23640	---	32000	31110	36660	37540	39120	25760	16580
30	8280	12930	18490	23850	---	32160	31280	36600	37700	38930	25390	16480
31	8340	---	18700	24020	---	32430	---	36790	---	38710	24920	---
MAX	8340	12930	18700	24020	35440	35470	32720	36790	37700	40090	38490	24430
MIN	6730	8480	13180	18870	24180	31850	30870	31400	36420	38260	24920	16480
CAL YR 1985	MAX	42600	MIN	6730	b	-12340						
WTR YR 1986	MAX	40090	MIN	6730	b	-2010						

a 6442.25 6446.22 6449.95 6452.69 6457.15 6456.34 6455.88 6458.01 6458.34 6458.70 6453.12 6448.64
b +870 +4590 +5770 +5320 +10490 -2080 -1150 -5510 +910 +1010 -13790 -8440

a Elevation, in feet NGVD, at end of month.

b Range in contents, in acre-feet.

WALKER LAKE BASIN

10293000 EAST WALKER RIVER NEAR BRIDGEPORT, CA

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

DRAINAGE AREA.--359 mi².

PERIOD OF RECORD.--July 1911 to September 1914 (gage heights only), October 1921 to current year. Data for water year 1987 not available at time of publication.

REVISED RECORDS.--WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,400 ft, from topographic map. Prior to Oct. 1, 1921, nonrecording gage at site 0.5 mi upstream at different datum. Oct. 1, 1921, to Feb. 21, 1924, water-stage recorder at site 1 mi downstream at different datum. Feb. 22, 1924, to Sept. 30, 1931, water-stage recorder, and Oct. 1, 1931, to May 25, 1939, nonrecording gage at present site at datum 2.34 ft lower.

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

AVERAGE DISCHARGE.--63 years (1922-24, 1925-86), 149 ft³/s, 108,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft³/s, June 19, 1963, gage height, 4.64 ft; maximum gage height, 4.95 ft, Jan. 22, 1943 (top of surge); minimum daily discharge, 0.2 ft³/s, Nov. 2-29, Dec. 1-22, 25-28, 1955, Jan. 17-25, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,370 ft³/s, June 3, gage height, 4.56 ft, from rating curve extended above 1,000 ft³/s; minimum daily, 14 ft³/s, Dec. 6 to Feb.16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	17	20	14	14	209	319	368	1200	302	346	381
2	119	18	20	14	14	206	319	367	1340	402	348	374
3	128	18	20	14	14	207	320	365	1340	382	349	347
4	146	18	20	14	14	206	319	368	1350	383	348	330
5	154	18	16	14	14	419	319	360	1310	384	348	328
6	154	18	14	14	14	798	318	349	1190	448	355	328
7	154	19	14	14	14	680	318	349	1140	536	386	326
8	148	19	14	14	14	789	331	352	1090	534	422	326
9	121	19	14	14	14	778	339	351	865	477	420	326
10	98	19	14	14	14	671	338	351	709	407	417	311
11	98	19	14	14	14	746	339	350	711	389	419	298
12	98	19	14	14	14	649	340	351	712	392	415	292
13	98	19	14	14	14	536	339	352	707	393	418	289
14	98	19	14	14	14	415	340	353	710	393	419	288
15	85	19	14	14	14	341	339	369	710	394	419	275
16	70	19	14	14	14	325	341	397	712	393	416	262
17	61	19	14	14	16	324	338	400	719	375	417	261
18	49	19	14	14	120	324	344	401	719	359	416	261
19	49	19	14	14	822	323	362	403	719	359	417	249
20	49	19	14	14	897	323	362	406	720	343	418	240
21	36	20	14	14	447	322	371	407	686	323	414	239
22	36	20	14	14	270	324	395	405	663	320	415	239
23	34	20	14	14	389	321	396	408	656	337	411	239
24	42	20	14	14	403	322	396	408	619	378	411	239
25	51	20	14	14	403	320	380	407	563	376	400	239
26	51	20	14	14	388	321	369	406	562	376	387	239
27	51	20	14	14	321	321	367	463	560	378	385	238
28	68	20	14	14	248	320	367	641	563	367	385	238
29	85	20	14	14	---	321	369	943	567	347	384	237
30	85	20	14	14	---	318	368	1080	543	348	383	216
31	68	---	14	14	---	319	---	1070	---	346	382	---
TOTAL	2703	573	460	434	4948	12798	10462	14000	24655	11941	12270	8455
MEAN	87.2	19.1	14.8	14.0	177	413	349	452	822	385	396	282
MAX	154	20	20	14	897	798	396	1080	1350	536	422	381
MIN	34	17	14	14	14	206	318	349	543	302	346	216
AC-FT	5360	1140	912	861	9810	25380	20750	27770	48900	23680	24340	16770
CAL YR 1985	TOTAL	51782	MEAN 142	MAX 307	MIN 14	AC-FT 102700						
WTR YR 1986	TOTAL	103699	MEAN 284	MAX 1350	MIN 14	AC-FT 205700						

WALKER LAKE BASIN

10295500 LITTLE WALKER RIVER NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°21'39", long 119°26'38", in NW 1/4 NW 1/4 sec.22, T.6 N., R.23 E., Mono County, Hydrologic Unit 16050302, in Toiyabe National Forest, on right bank 0.8 mi north of Sonora Junction, 1.5 mi upstream from mouth, and 14 mi northwest of Bridgeport.

DRAINAGE AREA.--63.1 mi².

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. Data for 1987 water year not available at time of publication.

REVISED RECORDS.--WDR-82-1: Drainage area.

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

REMARKS.--Records good except those for periods with ice effect, which are poor. Small diversions above station.

AVERAGE DISCHARGE.--42 years (1945-86), 53.6 ft³/s, 38,830 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,510 ft³/s, Jan. 31, 1963, gage height, 3.22 ft, from curve extended above 350 ft³/s on basis of slope-area measurement at gage height 2.80 ft; maximum gage height recorded, 3.63 ft, Jan. 3, 1945 (backwater from ice); minimum discharge, 1.4 ft³/s, Nov. 20, 1977.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 19	0300	499	2.29	May 19	2200	277	1.86
Mar. 8	0700	*1,030	*2.87	May 30	2100	532	2.34

Minimum daily, 12 ft³/s, Nov. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	20	26	21	22	79	116	142	462	214	63	32
2	17	20	43	23	19	76	99	150	439	225	61	31
3	17	20	34	20	21	79	88	151	441	229	58	30
4	17	20	32	24	20	81	84	140	445	219	57	31
5	17	20	26	30	26	83	81	124	406	196	55	36
6	21	20	27	24	23	81	84	116	367	180	56	34
7	26	20	23	25	e23	105	84	110	334	168	54	32
8	24	19	25	23	e24	410	85	102	300	155	51	31
9	23	16	26	23	e23	136	82	101	280	143	50	30
10	25	e12	e26	23	e23	95	86	106	273	135	50	30
11	25	e13	e23	22	e22	83	92	107	279	135	49	30
12	24	e15	e20	22	22	72	90	114	303	140	46	29
13	23	e19	e18	21	45	61	78	126	314	141	48	29
14	21	e21	e17	21	82	54	76	135	332	131	47	29
15	21	e23	e17	20	43	48	76	144	321	121	50	29
16	21	e23	e17	26	26	49	72	155	315	113	44	29
17	21	e23	e18	31	81	46	67	165	314	103	42	31
18	21	e22	e18	27	175	43	66	189	308	96	40	32
19	21	e21	e18	28	252	43	71	221	270	93	41	30
20	20	e21	e18	25	100	46	83	241	242	88	47	29
21	20	e20	e19	24	83	51	103	215	234	88	42	29
22	24	e20	e19	24	71	57	129	195	235	94	40	29
23	26	20	e19	23	69	60	138	191	240	93	37	28
24	26	22	e18	23	66	62	126	191	260	92	34	30
25	25	24	e18	25	70	66	118	226	266	95	34	32
26	23	24	e19	24	71	74	108	278	262	87	34	31
27	23	20	e19	24	72	86	117	337	265	78	38	29
28	22	22	e20	24	74	92	140	383	244	73	37	29
29	21	21	20	24	---	104	136	436	221	69	33	28
30	21	e22	26	29	---	113	134	458	209	66	32	28
31	19	---	23	25	---	122	---	475	---	65	32	---
TOTAL	672	603	692	748	1648	2657	2909	6224	9181	3925	1402	907
MEAN	21.7	20.1	22.3	24.1	58.9	85.7	97.0	201	306	127	45.2	30.2
MAX	26	24	43	31	252	410	140	475	462	229	63	36
MIN	17	12	17	20	19	43	66	101	209	65	32	28
AC-FT	1330	1200	1370	1480	3270	5270	5770	12350	18210	7790	2780	1800

CAL YR 1985 TOTAL 13494 MEAN 37.0 MAX 141 MIN 12 AC-FT 26770
WTR YR 1986 TOTAL 31568 MEAN 86.5 MAX 475 MIN 12 AC-FT 62620

e Estimated.

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

LOCATION.--Lat 38°22'47", long 119°26'57", in NE 1/4 SE 1/4 sec.9, T.6 N., R.23 E., Mono County, Hydrologic Unit 16050302, in Toiyabe National Forest, on right bank 150 ft downstream from Little Walker River, 60 ft upstream from bridge on U.S. Highway 395, and 13 mi southeast of Coleville.

DRAINAGE AREA.--180 mi², revised.

PERIOD OF RECORD.--April 1938 to current year. Prior to October 1958, published as "below East Fork." Data for 1987 water year not available at time of publication.

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

GAGE.--Water-stage recorder. Datum of gage is 6,591.39 ft above National Geodetic Vertical Datum of 1929, supplementary adjustment of 1958. 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.

REMARKS.--Estimated daily discharges: Nov. 11-15, 17, 19-21, and Dec. 12-28. Records good except those for periods of ice effect, which are fair. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poor Lake Reservoir (capacity unknown) 7 mi upstream.

AVERAGE DISCHARGE.--48 years, 268 ft³/s, 194,200 acre-ft/yr.

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

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 19	0400	1,290	3.85	May 20	0200	1,740	4.36
Mar. 8	0900	2,230	4.82	June 1	0300	*3,090	*5.50
Minimum daily, 34 ft ³ /s. Nov. 10.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	73	80	87	83	305	660	829	2680	938	282	114
2	45	72	114	80	80	306	571	885	2440	1060	277	111
3	45	70	95	77	78	309	486	939	2600	1110	258	108
4	44	69	85	84	82	326	447	758	2420	1050	247	108
5	43	67	81	107	73	346	426	635	1980	883	237	123
6	49	65	73	97	79	354	420	559	1730	758	237	112
7	91	63	75	86	66	394	402	505	1550	715	238	107
8	102	61	68	88	76	1260	394	478	1340	661	222	104
9	93	48	69	83	65	646	381	498	1290	616	210	101
10	95	34	66	80	75	477	419	566	1290	573	208	100
11	100	e40	59	81	74	395	469	597	1330	597	207	98
12	102	e55	e55	77	77	342	502	655	1470	684	194	95
13	99	e65	e60	77	138	294	439	757	1590	708	189	93
14	89	e70	e62	79	242	259	402	841	1650	648	178	92
15	86	e73	e62	75	198	237	393	890	1570	546	185	91
16	85	75	e62	88	132	231	371	978	1440	501	173	86
17	86	e73	e62	106	288	213	341	1020	1460	437	158	85
18	86	69	e63	96	543	200	331	1180	1480	398	146	91
19	84	e68	e58	97	816	195	344	1380	1250	388	140	89
20	80	e67	e61	94	422	200	413	1520	1060	391	152	86
21	79	e65	e61	85	319	214	562	1220	1030	384	151	85
22	81	63	e62	88	282	232	746	986	1100	379	143	84
23	94	61	e62	86	259	249	838	961	1160	415	142	83
24	104	69	e64	76	249	260	711	967	1230	398	131	84
25	113	73	e63	78	265	278	654	1260	1280	410	127	90
26	103	70	e64	80	275	313	602	1580	1230	371	123	91
27	96	70	e66	81	279	376	612	1850	1270	343	129	89
28	91	72	e64	83	287	447	798	2070	1180	327	130	89
29	87	66	73	84	---	522	840	2410	1010	313	121	88
30	82	75	91	93	---	603	799	2450	903	288	118	89
31	74	---	86	88	---	667	---	2700	---	283	115	---
TOTAL	2555	1961	2166	2661	5902	11450	15773	34924	45013	17573	5568	2866
MEAN	82.4	65.4	69.9	85.8	211	369	526	1127	1500	567	180	95.5
MAX	113	75	114	107	816	1260	840	2700	2680	1110	282	123
MIN	43	34	55	75	65	195	331	478	903	283	115	83
AC-FT	5070	3890	4300	5280	11710	22710	31290	69270	89280	34860	11040	5680
CAL YR 1985	TOTAL	71541	MEAN	196	MAX	992	MIN	34	AC-FT	141900		
WTR YR 1986	TOTAL	148412	MEAN	407	MAX	2700	MIN	34	AC-FT	294400		
e	Estimated.											

WALKER LAKE BASIN

10296500 WEST WALKER RIVER NEAR COLEVILLE, CA

LOCATION.--Lat 38°30'55", long 119°27'15", in NW 1/4 NE 1/4 sec.28, T.8 N., R.23 E., Mono County, Hydrologic Unit 16060302, in Toiyabe National Forest, on left bank 0.2 mi downstream from Rock Creek and 5 mi southeast of Coleville.

DRAINAGE AREA.--271 mi², revised.

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. Data for 1987 water year not available at time of publication.

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

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

REMARKS.--Records good except those for estimated daily discharges, which are fair. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poor Lake Reservoir (capacity, unknown) 17 mi upstream.

AVERAGE DISCHARGE.--57 years (1902-7, 1909-10, 1915-37, 1957-86), 283 ft³/s, 205,000 acre-ft/yr.

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 19	0500	1,380	3.32	May 20	0400	1,830	3.73
Mar. 8	1000	2,240	4.12	June 1	--	*3,300	*Unknown
May 3	0400	1,210	2.96				

Minimum daily, 42 ft³/s, Nov. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e62	84	89	95	92	324	707	973	e2750	995	e330	137
2	60	83	131	90	92	326	613	1030	e2510	1110	e320	134
3	59	81	118	92	86	326	500	1110	e2430	1160	e300	130
4	57	79	100	89	91	338	455	888	e2400	1100	e290	127
5	57	78	94	117	84	355	435	731	e2000	945	e280	144
6	58	75	88	116	90	368	426	641	e1760	805	e278	134
7	95	74	89	97	73	e410	414	565	e1620	763	e279	127
8	116	73	81	101	88	1360	407	530	1380	711	e260	122
9	107	60	85	92	73	734	393	549	1340	671	e242	119
10	109	45	79	91	89	510	423	638	1340	626	e240	117
11	117	e42	e72	91	86	422	467	679	1380	642	e238	115
12	118	e60	e68	88	87	375	509	746	1500	717	e230	111
13	116	e70	e70	89	e145	331	444	872	1590	745	e220	109
14	103	e76	e72	89	e206	298	412	980	1660	697	e210	107
15	98	e80	e74	85	238	281	405	1030	1630	593	e215	105
16	95	85	e76	92	163	272	387	1140	1490	545	e200	97
17	94	76	78	118	e310	257	361	1180	1500	477	e185	e95
18	94	72	75	111	e580	241	349	1350	1550	440	e170	101
19	92	e71	74	110	887	236	359	1550	1350	428	e165	102
20	88	e70	72	111	436	240	411	1730	1160	431	e185	e97
21	92	73	e72	97	334	252	562	1470	1090	429	e183	e95
22	88	73	e74	100	297	267	817	1180	1160	425	e165	e93
23	108	76	e73	95	283	282	994	1150	1210	458	e160	e92
24	119	82	75	85	277	291	838	1130	1270	442	e150	e94
25	127	88	e73	89	293	306	761	1480	1340	453	e145	101
26	120	83	73	89	304	337	697	1760	1280	421	149	101
27	113	85	e74	89	304	e400	694	1960	1320	394	154	96
28	104	85	76	90	310	e470	929	2190	1240	374	157	96
29	96	84	81	92	---	e545	1000	e2480	1080	361	146	e96
30	91	e78	99	103	---	621	944	e2520	966	334	142	97
31	83	---	99	99	---	709	---	e2780	---	324	139	---
TOTAL	2936	2241	2554	2992	6398	12484	17113	39012	46296	19016	6527	3291
MEAN	94.7	74.7	82.4	96.5	228	403	570	1258	1543	613	211	110
MAX	127	88	131	118	887	1360	1000	2780	2750	1160	330	144
MIN	57	42	68	85	73	236	349	530	966	324	139	92
AC-FT	5820	4450	5070	5930	12690	24760	33940	77380	91830	37720	12950	6530

CAL YR 1985 TOTAL 75742 MEAN 208 MAX 1020 MIN 42 AC-FT 150200
WTR YR 1986 TOTAL 160860 MEAN 441 MAX 2780 MIN 42 AC-FT 319100
e Estimated.

WALKER LAKE BASIN

10297000 TOPAZ LAKE NEAR TOPAZ, CA

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

PERIOD OF RECORD.--December 1921 to September 1931 (monthly contents only published in WSP 1734), October 1931 to current year. Data for 1987 water year not available at time of publication.

GAGE.--Float and nonrecording gages read once daily. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1978, at datum 4.62 ft higher.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 60,680 acre-ft, July 3, 1980, elevation, 5,000.92 ft, present datum; no contents Oct. 31, 1924, Sept. 22, Sept. 24-30, Oct. 1-15, 1960, and Aug. 19 to Dec. 23, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 60,270 acre-ft, July 3, elevation, 5,000.74 ft; minimum contents observed, 6,400 acre-ft, Oct. 8, elevation, 4,971.80 ft.

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

4,971	5,150	4,980	19,760	4,990	37,360	4,996	49,680
4,975	11,520	4,985	28,310	4,995	47,540	5,001	60,870

RESERVOIR STORAGE (AC-FT) WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8020	8400	14130	20560	27870	48990	51350	48730	52580	60040	51720	29600
2	7800	8590	14380	20810	28130	49380	51350	48840	53060	60130	51150	29220
3	7560	8750	14840	20980	28410	49720	51420	48990	53460	60130	50570	28640
4	7290	8910	15100	21240	28620	50110	51440	48950	53910	60270	50070	27960
5	7100	9090	15360	21490	28830	50520	51390	48770	54130	60270	49440	27630
6	6880	9250	15650	21830	29040	49850	51310	48430	54060	60200	48670	27090
7	6530	9420	15890	22080	29230	48620	51130	48000	54130	59990	47830	26660
8	6400	e9790	16160	22370	29440	48030	51000	47540	54020	59810	47050	26220
9	6530	e9950	16400	22610	29640	49810	51920	46980	53840	59620	46860	25640
10	6560	e10030	16550	22850	29830	50260	50200	46580	53910	59420	45130	25160
11	6630	10110	16700	23090	30010	50260	49920	46200	54020	59190	44160	24610
12	6720	10320	16850	23310	30340	50020	49680	45870	54130	58910	43450	24230
13	6830	10500	17030	23550	30590	49920	49420	45700	54400	58640	42630	23730
14	6880	10680	17230	23790	30920	49920	49180	45700	54780	58500	41740	23200
15	7040	10840	17400	24010	32160	50070	48900	45700	54890	58200	40910	22760
16	7190	11010	17580	24230	33240	50090	48520	45700	54930	57770	40070	22320
17	7350	11160	17760	24490	34420	50110	48300	45800	54910	57320	39250	21910
18	7510	11290	17930	24740	36650	50110	48090	46140	55090	56770	38500	21580
19	7670	11450	18100	25000	39850	50090	47830	46620	55270	56100	37820	21270
20	7730	11610	18280	25260	42040	50070	47660	46980	55490	55420	36960	20970
21	7800	11740	18470	25520	43430	50020	47540	48450	55720	54820	36200	20680
22	7860	11900	18630	25740	44760	49960	47540	48710	55990	54220	35500	20440
23	8120	12130	18800	25970	45700	49960	47730	48800	55940	53680	34980	20240
24	8210	12490	18970	26190	46370	49980	47810	48770	56910	53420	34400	19990
25	8310	12780	19130	26410	47180	50000	48220	48880	58000	53200	33810	19890
26	8390	13010	19300	26620	48000	50050	48200	49310	58890	53090	33220	19750
27	8470	13150	19470	26830	48430	50200	48130	49740	59550	52980	32660	19690
28	8560	13400	19650	27040	48730	50310	48110	50610	59970	52820	32140	19640
29	8560	13640	19840	27250	---	50520	48370	50980	59970	52580	31440	19600
30	8500	13890	20060	27450	---	50810	48540	51630	60010	52320	30920	19540
31	8450	---	20310	27660	---	51240	---	52070	---	52070	30290	---
MAX	8560	13900	20300	27700	48700	51200	51900	52100	60000	60300	51700	29600
MIN	6400	8400	14100	20600	27900	48000	47500	45700	52600	52100	30300	19500
a	4973.09	4976.46	4980.33	4984.63	4995.56	4996.72	4995.47	4997.10	5000.63	4997.10	4986.13	4979.87
b	+110	+5440	+6420	+7350	+21070	+2510	-2700	+3530	+7940	-7940	-21780	-10750

CAL YR 1985 MAX 48090 MIN 6400 b 6540
WTR YR 1986 MAX 60130 MIN 6400 b 11200

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

CARSON RIVER BASIN

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

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

DRAINAGE AREA.--276 mi².

PERIOD OF RECORD.--August 1960 to current year. Data for 1987 water year not available at time of publication.

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

REMARKS.--Records good except those for periods of ice effect, which are poor. A few small diversions for irrigation above station. Flow slightly regulated by several small reservoirs, total capacity, about 5,000 acre-ft.

AVERAGE DISCHARGE.--26 years, 384 ft³/s, 278,200 acre-ft/yr.

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 19	0200	8,210	8.23	May 2	2200	1,810	4.67
Mar. 8	0800	*9,520	*8.67	June 1	0100	3,630	6.10
Mar. 30	2300	1,300	4.14				

Minimum discharge, 30 ft³/s, Nov. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	84	103	161	170	866	1220	1420	2840	716	201	132
2	58	86	357	137	167	842	1090	1540	2590	731	193	128
3	57	84	222	137	161	867	902	1570	2650	713	186	124
4	56	83	155	162	165	914	844	1240	2380	684	176	125
5	55	83	138	314	149	921	838	1030	2060	629	171	132
6	57	79	125	247	e132	912	786	900	1840	577	163	108
7	99	78	130	189	130	1090	762	807	1660	548	169	104
8	98	76	121	178	e130	5120	699	779	1440	517	168	104
9	99	65	115	157	133	1940	680	836	1370	482	168	121
10	100	54	111	150	146	1410	766	974	1330	456	163	130
11	116	40	103	147	138	1140	874	1000	1350	439	161	126
12	112	64	93	142	170	965	947	1090	1370	452	157	121
13	101	e59	e94	139	484	828	777	1210	1440	448	158	117
14	88	e56	e98	139	836	730	715	1310	1510	428	157	110
15	86	e58	e99	136	906	664	708	1400	1390	386	157	107
16	85	e74	e99	169	841	616	661	1450	1310	362	156	107
17	83	e68	e105	416	5020	567	603	1510	1300	335	153	117
18	81	e74	e110	289	3980	520	584	1740	1280	314	156	143
19	78	e68	e105	269	3870	502	632	1960	1130	301	154	111
20	76	e87	e102	252	1350	514	781	1970	999	291	153	100
21	94	95	e103	217	909	538	1080	1650	955	278	156	100
22	84	99	e105	211	772	556	1420	1440	973	282	144	98
23	110	89	e105	199	725	578	1470	1410	982	320	139	95
24	125	113	e107	174	751	574	1250	1460	1010	317	134	106
25	129	157	e108	173	834	584	1150	1860	976	330	128	123
26	113	111	e107	171	858	649	1030	2140	939	376	135	122
27	107	100	e107	173	855	768	1060	2340	914	309	148	121
28	102	107	e106	175	881	889	1400	2530	873	287	150	120
29	97	113	119	172	---	993	1460	2710	786	244	139	118
30	93	98	205	189	---	1190	1350	2710	730	224	134	124
31	86	---	200	181	---	1220	---	2920	---	214	133	---
TOTAL	2785	2502	3957	5965	25663	30467	28539	48906	42377	12970	4860	3494
MEAN	89.8	83.4	128	192	917	983	951	1578	1413	418	157	116
MAX	129	157	357	416	5020	5120	1470	2920	2840	731	201	143
MIN	55	40	93	136	130	502	584	779	730	214	128	95
AC-FT	5520	4960	7850	11830	50900	60430	56610	97010	84050	25730	9640	6930

CAL YR 1985 TOTAL 93832 MEAN 257 MAX 1330 MIN 40 AC-FT 186100
WTR YR 1986 TOTAL 212485 MEAN 582 MAX 5120 MIN 40 AC-FT 421500

e Estimated.

CARSON RIVER BASIN

10310000 WEST FORK CARSON RIVER AT WOODFORDS, CA

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

DRAINAGE AREA.--65.4 mi².

PERIOD OF RECORD.--October 1900 to May 1907, 1910-11 (fragmentary), October 1938 to current year. January 1890 to March 1892, June 1907 to September 1920 (except parts of 1910-11), at site 0.7 mi downstream; records not equivalent due to diversions for irrigation. Monthly discharge only for some periods, published in WSP 1314. Data for 1987 water year not available at time of publication.

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

GAGE.--Water-stage recorder. Datum of gage is 5,754.5 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1938, nonrecording gage at about the same site at different datum. Oct. 1, 1938, to Nov. 11, 1958, water-stage recorder at same site at datum 1.02 ft lower. Nov. 13, 1958, to Jan. 30, 1963, water-stage recorder at site 150 ft downstream at datum 3.06 ft lower.

REMARKS.--Records good. One small diversion above station for irrigation. Flow slightly regulated by several small reservoirs, total capacity, about 1,500 acre-ft.

AVERAGE DISCHARGE.--55 years (1900-7, 1938-86,) 115 ft³/s, 83,320 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,890 ft³/s, Feb. 1, 1963, gage height, 9.0 ft, on basis of slope-area measurement of peak flow; minimum, about 5 ft³/s, Dec. 23, 1961.

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 19	0100	551	3.04	May 20	0100	738	3.41
Mar. 8	1100	*1,620	*4.63	May 31	0200	865	3.62
Apr. 22	2100	827	3.54				

Minimum daily, 14 ft³/s, Nov. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	22	29	43	50	241	425	514	741	185	84	35
2	20	22	39	41	40	228	366	552	657	196	81	34
3	19	22	34	39	45	242	304	602	669	190	60	34
4	19	22	33	43	50	263	308	454	588	177	58	34
5	19	21	34	59	49	267	316	352	483	168	57	33
6	20	21	33	64	47	269	296	320	433	154	56	32
7	25	21	34	54	46	316	285	288	393	148	61	31
8	24	21	31	49	46	1230	276	286	339	141	61	57
9	25	21	33	45	45	687	290	310	328	133	57	76
10	25	14	32	43	44	390	354	358	320	127	50	64
11	27	16	31	43	44	286	405	353	323	120	66	59
12	25	23	31	41	46	241	390	389	327	124	84	58
13	24	24	31	41	55	207	304	391	344	126	77	37
14	22	25	30	41	95	178	297	416	365	124	77	32
15	22	25	30	36	138	163	309	447	344	111	77	32
16	21	29	30	50	99	154	281	468	319	104	61	32
17	21	27	31	108	202	141	255	477	314	95	46	32
18	21	26	31	102	407	129	267	536	313	89	43	34
19	20	25	31	86	469	128	312	597	290	86	42	34
20	20	25	31	78	368	137	392	614	253	84	43	34
21	23	25	30	62	321	151	498	479	238	83	44	33
22	25	24	30	59	276	163	616	397	246	97	41	34
23	32	26	31	51	235	179	624	387	247	122	39	62
24	31	28	31	50	215	177	515	393	261	117	39	65
25	29	29	30	49	220	192	471	472	254	104	47	69
26	27	27	31	49	227	223	422	569	246	102	80	66
27	25	28	31	48	239	271	444	627	241	85	71	45
28	24	30	31	47	246	315	578	658	223	80	68	38
29	23	27	34	47	---	360	579	722	201	93	65	37
30	22	28	39	54	---	425	518	742	186	89	46	36
31	22	---	43	56	---	430	---	782	---	86	37	---
TOTAL	722	724	1000	1678	4364	8783	11697	14952	10486	3740	1818	1299
MEAN	23.3	24.1	32.3	54.1	156	283	390	482	350	121	58.6	43.3
MAX	32	30	43	108	469	1230	624	782	741	196	84	76
MIN	19	14	29	36	40	128	255	286	186	80	37	31
AC-FT	1430	1440	1980	3330	8660	17420	23200	29660	20800	7420	3610	2580

CAL YR 1985 TOTAL 28996 MEAN 79.4 MAX 523 MIN 14 AC-FT 57510
WTR YR 1986 TOTAL 61263 MEAN 168 MAX 1230 MIN 14 AC-FT 121500

PYRAMID AND WINNEMUCCA LAKES BASIN

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA

LOCATION.--Lat 38°55'22", long 119°59'23", in NW 1/4 SE 1/4 sec.4, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, near center of bridge span on downstream side of U.S. Highway 50 bridge, 1.0 mi northeast of South Lake Tahoe Post Office, and 1.4 mi upstream from Lake Tahoe.

DRAINAGE AREA.--54.9 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 6,229.04 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 26, 1984, at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Dec. 21, 25, 30, 31, Jan. 1, 2, 4-15, 17-31, Feb. 1, 5, 6, 8, 22, 24-28, Mar. 1, 18-21, July 29 to Sept. 30. Records fair except those for estimated periods, which are poor. Two small dams may cause slight regulation at times. Some small diversions for domestic use upstream from station.

AVERAGE DISCHARGE.--10 years, (water years 1972-74, 1981-87), 118 ft³/s, 85,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,740 ft³/s, Mar. 8, 1986, gage height, 9.08 ft; maximum gage height, 10.12 ft, present datum, Feb. 16, 1982; minimum daily, 1.7 ft³/s, on many days during September 1981.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0130	*533	*5.42				

Minimum daily, 1.9 ft³/s, Aug. 30 to Sept. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	13	13	14	18	24	49	189	63	11	3.4	1.9
2	23	12	14	13	18	23	59	151	64	9.9	3.4	1.9
3	20	12	14	11	18	23	70	133	61	9.3	3.3	1.9
4	17	12	14	11	18	27	59	135	53	8.6	3.3	2.0
5	16	12	15	12	18	44	57	129	57	8.3	3.3	2.3
6	20	13	15	12	18	55	60	131	57	7.9	3.3	2.3
7	22	13	15	13	18	50	73	119	67	7.4	3.2	2.3
8	22	13	14	16	18	48	85	125	59	6.9	3.1	2.3
9	22	13	13	18	18	45	96	163	51	5.9	3.1	2.3
10	22	13	13	19	21	40	115	161	45	5.6	3.1	2.3
11	18	14	14	20	31	39	136	159	41	5.0	3.1	2.3
12	13	14	14	21	40	43	138	161	38	4.9	3.1	2.4
13	13	14	14	20	154	66	128	141	36	4.8	3.0	2.4
14	14	14	14	19	108	53	151	124	36	4.5	3.0	2.5
15	15	13	13	19	61	53	156	143	32	3.6	3.0	2.6
16	15	12	13	18	56	46	159	300	30	2.6	2.9	2.6
17	15	13	13	18	44	45	170	258	27	2.1	2.7	2.6
18	12	13	14	18	37	44	167	154	24	2.7	2.5	2.6
19	12	14	14	18	34	42	134	128	22	3.4	2.3	2.6
20	13	14	14	18	29	40	108	122	21	3.3	2.3	2.7
21	14	15	14	18	26	39	110	126	20	3.7	2.4	2.7
22	15	15	14	18	26	37	138	117	20	3.9	2.3	2.8
23	15	14	14	18	26	37	149	104	20	4.0	2.2	2.9
24	16	14	13	19	25	37	156	97	18	3.7	2.1	2.9
25	15	14	13	20	25	36	186	87	17	3.4	2.2	2.9
26	14	13	13	19	24	38	206	82	17	4.2	2.2	2.9
27	14	14	13	18	24	38	216	76	16	3.8	2.1	2.9
28	14	14	12	18	24	37	229	66	16	3.5	2.1	2.8
29	14	14	13	18	---	36	248	67	15	3.4	2.1	2.8
30	13	13	13	18	---	37	241	67	12	3.4	1.9	2.7
31	13	---	13	18	---	41	---	66	---	3.4	1.9	---
TOTAL	504	401	422	530	977	1263	4049	4081	1055	158.1	83.9	75.1
MEAN	16.3	13.4	13.6	17.1	34.9	40.7	135	132	35.2	5.10	2.71	2.50
MAX	23	15	15	21	154	66	248	300	67	11	3.4	2.9
MIN	12	12	12	11	18	23	49	66	12	2.1	1.9	1.9
AC-FT	1000	795	837	1050	1940	2510	8030	8090	2090	314	166	149

CAL YR 1986	TOTAL	54946.9	MEAN	151	MAX	1870	MIN	6.7	AC-FT	109000
WTR YR 1987	TOTAL	13599.1	MEAN	37.3	MAX	300	MIN	1.9	AC-FT	26970

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

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1981 to September 1983.

WATER TEMPERATURE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to current year.

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

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 312 mg/L, Dec. 29, 1973; minimum daily mean, 0 mg/L, several days during most years.

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

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 180 mg/L, May 16; minimum daily mean, 1 mg/L, several days.

SEDIMENT LOAD: Maximum daily, 162 tons, May 16; minimum daily, 0.01 ton, Aug. 24-28.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1.0	---	---	---	---	---	---	18.0	---	---
2	---	---	2.0	---	---	---	---	9.0	---	---	---	---
3	---	---	---	---	2.0	---	4.5	---	---	---	---	14.5
4	---	6.5	---	---	---	7.5	---	10.0	12.0	---	---	---
5	---	---	---	---	---	---	---	---	---	---	15.0	---
6	10.0	---	---	---	---	---	---	7.5	---	---	---	---
7	---	---	---	---	---	---	---	9.0	---	---	---	---
8	---	---	---	---	2.0	---	4.5	---	---	---	---	---
9	11.0	---	---	---	---	---	---	8.5	---	---	---	---
10	---	---	1.0	---	1.0	6.0	9.5	5.5	---	---	---	---
11	---	5.0	0.0	---	---	7.0	---	---	---	---	---	---
12	---	---	---	0.0	3.0	---	9.0	---	---	---	15.0	---
13	---	4.5	---	0.0	0.5	---	---	10.0	---	---	---	---
14	---	---	---	---	---	---	---	11.5	---	---	---	---
15	10.5	---	---	---	---	---	10.0	---	16.0	---	16.0	14.0
16	---	---	0.5	---	---	---	---	6.5	---	10.5	---	---
17	---	---	---	---	---	---	4.5	6.0	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	8.0	---	---	2.5	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	9.0	---	---	---	---
21	7.0	---	---	---	---	---	---	---	---	---	---	---
22	---	---	0.5	0.0	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	10.5	---	---	---	---	12.0
24	---	---	---	---	1.0	6.0	---	---	---	---	---	---
25	---	---	---	---	---	---	6.5	8.0	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	3.0	---	---	---	13.0	---
28	9.0	---	---	---	---	---	4.0	---	---	23.0	---	---
29	---	---	---	---	---	---	---	---	---	21.5	---	---
30	---	---	---	---	---	10.5	6.5	9.0	16.5	---	---	---
31	---	---	---	2.0	---	---	---	---	---	---	---	---

PYRAMID AND WINNEMUCCA LAKES BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER				NOVEMBER			DECEMBER		
1	23	3	.19	13	2	.07	13	3	.11
2	23	3	.19	12	2	.06	14	3	.11
3	20	3	.16	12	2	.06	14	3	.11
4	17	3	.14	12	2	.06	14	3	.11
5	16	3	.13	12	2	.06	15	3	.12
6	20	3	.16	13	2	.07	15	3	.12
7	22	3	.18	13	2	.07	15	3	.12
8	22	3	.18	13	1	.04	14	3	.11
9	22	2	.12	13	1	.04	13	3	.11
10	22	2	.12	13	1	.04	13	3	.11
11	18	2	.10	14	1	.04	14	3	.11
12	13	2	.07	14	2	.08	14	3	.11
13	13	3	.11	14	4	.15	14	4	.11
14	14	3	.11	14	4	.15	14	4	.11
15	15	3	.12	13	4	.14	13	5	.18
16	15	3	.12	12	3	.10	13	5	.18
17	15	3	.12	13	3	.11	13	5	.18
18	12	3	.10	13	2	.07	14	5	.19
19	12	2	.06	14	1	.04	14	5	.19
20	13	2	.07	14	1	.04	14	6	.23
21	14	2	.08	15	1	.04	14	6	.23
22	15	2	.08	15	1	.04	14	6	.23
23	15	2	.08	14	2	.08	14	6	.23
24	16	2	.09	14	2	.08	13	6	.21
25	15	1	.04	14	2	.08	13	6	.21
26	14	1	.04	13	2	.07	13	5	.18
27	14	1	.04	14	2	.08	13	5	.18
28	14	1	.04	14	2	.08	12	5	.16
29	14	1	.04	14	3	.11	13	5	.18
30	13	1	.04	13	3	.11	13	5	.18
31	13	1	.04	---	---	---	13	5	.18
TOTAL	504	---	3.16	401	---	2.26	422	---	4.89
JANUARY				FEBRUARY			MARCH		
1	14	5	.19	18	3	.15	24	9	.58
2	13	4	.14	18	3	.15	23	3	.19
3	11	4	.12	18	5	.24	23	3	.19
4	11	4	.12	18	7	.34	27	5	.36
5	12	4	.13	18	9	.44	44	10	1.2
6	12	4	.13	18	10	.49	55	9	1.3
7	13	4	.14	18	12	.58	50	6	.81
8	16	4	.17	18	13	.63	48	5	.65
9	18	4	.19	18	8	.39	45	4	.49
10	19	4	.21	21	5	.28	40	4	.43
11	20	4	.22	31	30	2.5	39	4	.42
12	21	4	.23	40	48	5.2	43	2	.23
13	20	4	.22	154	154	70	66	7	1.2
14	19	4	.21	108	64	22	53	3	.43
15	19	3	.15	61	7	1.2	53	3	.43
16	18	3	.15	56	5	.76	46	2	.25
17	18	3	.15	44	4	.48	45	2	.24
18	18	2	.10	37	4	.40	44	2	.24
19	18	2	.10	34	4	.37	42	2	.23
20	18	2	.05	29	6	.47	40	2	.22
21	18	1	.05	26	8	.56	39	2	.21
22	18	1	.05	26	10	.70	37	2	.20
23	18	1	.05	26	10	.70	37	2	.20
24	19	5	.26	25	10	.68	37	2	.20
25	20	10	.54	25	10	.68	36	3	.29
26	19	5	.26	24	10	.65	38	3	.31
27	18	3	.15	24	10	.65	38	3	.31
28	18	2	.10	24	9	.58	37	3	.30
29	18	2	.10	---	---	---	36	3	.29
30	18	2	.10	---	---	---	37	3	.30
31	18	3	.15	---	---	---	41	3	.33
TOTAL	530	---	4.93	977	---	112.27	1263	---	13.03

PYRAMID AND WINNEMUCCA LAKES BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	49	3	.40	189	16	8.2	63	5	.85
2	59	3	.48	151	16	6.5	64	4	.69
3	70	7	1.3	133	15	5.4	61	3	.49
4	59	3	.48	135	13	4.7	53	3	.43
5	57	3	.46	129	13	4.5	57	3	.46
6	60	4	.65	131	20	7.1	57	3	.46
7	73	7	1.4	119	14	4.5	67	3	.54
8	85	14	3.2	125	12	4.1	59	3	.48
9	96	20	5.2	163	18	8.7	51	3	.41
10	115	28	8.7	161	20	9.3	45	3	.36
11	136	30	11	159	13	5.9	41	3	.33
12	138	26	9.7	161	14	6.6	38	3	.31
13	128	18	6.2	141	13	4.9	36	3	.29
14	151	27	11	124	13	4.4	36	4	.39
15	156	33	14	143	40	30	32	4	.35
16	159	29	12	300	180	162	30	4	.32
17	170	33	15	258	109	93	27	4	.29
18	167	27	12	154	44	18	24	4	.26
19	134	19	6.9	128	27	9.3	22	4	.24
20	108	11	3.2	122	12	4.0	21	4	.23
21	110	8	2.4	126	9	3.1	20	4	.22
22	138	9	3.4	117	6	1.9	20	4	.22
23	149	12	4.8	104	6	1.7	20	4	.22
24	156	12	5.1	97	6	1.6	18	4	.19
25	186	19	9.5	87	6	1.4	17	4	.18
26	206	22	12	82	6	1.3	17	4	.18
27	216	23	14	76	6	1.2	16	4	.17
28	229	42	26	66	6	1.1	16	4	.17
29	248	44	30	67	5	.90	15	4	.16
30	241	30	20	67	5	.90	12	4	.13
31	---	---	---	66	6	1.1	---	---	---
TOTAL	4049	---	250.47	4081	---	417.30	1055	---	10.02
JULY			AUGUST			SEPTEMBER			
1	11	3	.09	3.4	7	.06	1.9	3	.02
2	9.9	3	.08	3.4	6	.06	1.9	4	.02
3	9.3	4	.10	3.3	6	.05	1.9	4	.02
4	8.6	4	.09	3.3	6	.05	2.0	4	.02
5	8.3	5	.11	3.3	6	.05	2.3	4	.02
6	7.9	5	.11	3.3	6	.05	2.3	4	.02
7	7.4	6	.12	3.2	6	.05	2.3	5	.03
8	6.9	6	.11	3.1	6	.05	2.3	5	.03
9	5.9	7	.11	3.1	7	.06	2.3	5	.03
10	5.6	7	.11	3.1	7	.06	2.3	5	.03
11	5.0	8	.11	3.1	7	.06	2.3	5	.03
12	4.9	8	.11	3.1	7	.06	2.4	6	.04
13	4.8	9	.12	3.0	6	.05	2.4	6	.04
14	4.5	9	.11	3.0	5	.04	2.5	6	.04
15	3.6	10	.10	3.0	4	.03	2.6	6	.04
16	2.6	10	.07	2.9	4	.03	2.6	6	.04
17	2.1	10	.06	2.7	4	.03	2.6	6	.04
18	2.7	10	.07	2.5	4	.03	2.6	6	.04
19	3.4	10	.09	2.3	4	.02	2.6	6	.04
20	3.3	9	.08	2.3	3	.02	2.7	6	.04
21	3.7	9	.09	2.4	3	.02	2.7	7	.05
22	3.9	9	.09	2.3	3	.02	2.8	6	.05
23	4.0	9	.10	2.2	3	.02	2.9	6	.05
24	3.7	8	.08	2.1	2	.01	2.9	6	.05
25	3.4	8	.07	2.2	2	.01	2.9	6	.05
26	4.2	8	.09	2.2	2	.01	2.9	6	.05
27	3.8	7	.07	2.1	2	.01	2.9	6	.05
28	3.5	7	.07	2.1	2	.01	2.8	6	.05
29	3.4	7	.06	2.1	3	.02	2.8	6	.05
30	3.4	7	.06	1.9	3	.02	2.7	6	.04
31	3.4	7	.06	1.9	3	.02	---	---	---
TOTAL	158.1	---	2.79	83.9	---	1.08	75.1	---	1.12
YEAR	13599.1		823.32						

PYRAMID AND WINNEMUCCA LAKES BASIN

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
(NOT PREVIOUSLY PUBLISHED)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
JAN										
05...	0730	120	2.0	75	24	65	--	--	--	--
16...	2250	212	2.5	449	257	62	--	--	--	--
17...	1000	291	2.0	213	167	42	--	--	--	--
17...	1245	274	2.0	110	81	42	--	--	--	--
17...	1335	264	2.0	96	68	48	--	--	--	--
24...	1100	86	1.0	53	12	70	--	--	--	--
FEB										
13...	0535	254	0.5	189	130	48	--	--	--	--
14...	1745	339	3.0	608	557	43	--	--	--	--
15...	0040	457	1.0	174	215	51	--	--	--	--
17...	1040	923	1.0	130	324	25	--	--	--	--
17...	1725	1720	0.5	30	139	76	--	--	--	--
18...	1440	1520	0.5	54	222	44	--	--	--	--
19...	1445	1260	0.0	31	105	53	56	68	81	100
20...	1050	609	0.0	42	69	57	--	--	--	--
20...	1600	786	1.0	188	399	44	--	--	--	--
21...	1630	310	4.0	82	69	38	--	--	--	--
MAR										
07...	0715	218	3.0	29	17	22	--	--	--	--
07...	1410	346	4.0	148	138	45	--	--	--	--
07...	1840	504	4.0	198	269	50	--	--	--	--
07...	2250	899	--	88	214	62	--	--	--	--
08...	0815	2620	1.5	130	920	69	--	--	--	--
28...	1220	220	6.0	21	12	39	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
APR										
28...	0910	228	4.0	43	26	45	68	91	98	100
MAY										
13...	1015	141	10.0	10	3.8	68	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM
JUL												
29...	1340	21.5	1	3.4	1	5	6	11	26	61	92	100
	1345		1		2	7	10	15	28	69	96	100
	1350		1		1	3	13	27	49	77	97	100
	1355		1		1	5	22	39	58	81	96	100
	1400		1		4	12	48	74	93	100	--	---

PYRAMID AND WINNEMUCCA LAKES BASIN

10336625 FALLEN LEAF LAKE NEAR CAMP RICHARDSON, CA

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

DRAINAGE AREA.--16.7 mi².

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

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

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

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 5.85 ft, Jan. 13, 1980; minimum, 1.49 ft, Jan. 23, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 4.44 ft, June 13, 14; minimum, 1.49 ft, Jan. 23.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.26	2.52	1.84	1.60	1.54	1.94	2.51	3.80	4.10	4.37	3.79	3.24
2	3.23	2.48	1.84	1.59	1.55	1.92	2.57	3.61	4.13	4.36	3.78	3.23
3	3.21	2.46	1.83	1.73	1.55	1.91	2.62	3.47	4.17	4.35	3.77	3.22
4	3.18	2.43	1.80	1.73	1.54	1.90	2.66	3.41	4.20	4.34	3.76	3.20
5	3.16	2.40	1.81	1.73	1.54	1.95	2.70	3.45	4.23	4.32	3.74	3.19
6	3.15	2.36	1.80	1.72	1.53	1.98	2.73	3.53	4.29	4.31	3.73	3.17
7	3.15	2.34	1.79	1.71	1.53	1.99	2.79	3.58	4.33	4.30	3.71	3.15
8	3.14	2.32	1.77	1.70	1.53	2.02	2.86	3.65	4.36	4.29	3.69	3.14
9	3.13	2.30	1.75	1.70	1.54	2.02	2.94	3.74	4.38	4.28	3.68	3.12
10	3.13	2.28	1.74	1.69	1.55	2.05	3.08	3.84	4.39	4.27	3.65	3.11
11	3.12	2.26	1.74	1.68	1.59	2.06	3.18	3.88	4.39	4.26	3.63	3.09
12	3.11	2.23	1.74	1.65	1.73	2.13	3.28	4.00	4.40	4.25	3.62	3.08
13	3.10	2.18	1.72	1.64	2.02	2.16	3.37	4.07	4.44	4.24	3.58	3.06
14	3.09	2.14	1.71	1.63	2.02	2.23	3.48	4.09	4.44	4.23	3.54	3.04
15	3.06	2.13	1.70	1.60	2.07	2.24	3.58	4.10	4.43	4.22	3.52	3.02
16	3.02	2.09	1.69	1.58	2.04	2.24	3.65	4.11	4.41	4.16	3.51	3.01
17	2.98	2.07	1.68	1.56	2.02	2.27	3.75	4.11	4.40	4.12	3.49	2.99
18	2.95	2.04	1.67	1.56	1.99	2.37	3.80	4.08	4.40	4.09	3.48	2.98
19	2.92	2.02	1.67	1.54	1.98	2.39	3.77	4.07	4.40	4.07	3.46	2.96
20	2.90	1.99	1.66	1.52	1.97	2.40	3.74	4.10	4.39	4.05	3.43	2.95
21	2.87	1.99	1.65	1.52	1.94	2.41	3.72	4.10	4.38	4.02	3.41	2.93
22	2.85	1.96	1.64	1.50	1.93	2.41	3.75	4.09	4.38	4.00	3.37	2.91
23	2.82	1.95	1.63	1.50	1.99	2.43	3.77	4.07	4.38	3.98	3.35	2.90
24	2.79	1.92	1.63	1.56	1.99	2.45	3.80	4.04	4.38	3.96	3.34	2.88
25	2.76	1.92	1.62	1.55	1.98	2.45	3.85	4.02	4.38	3.94	3.32	2.85
26	2.72	1.90	1.60	1.54	1.97	2.46	3.95	4.02	4.38	3.92	3.31	2.84
27	2.68	1.86	1.59	1.55	1.96	2.47	4.03	4.02	4.38	3.88	3.29	2.83
28	2.66	1.84	1.58	1.60	1.95	2.47	4.04	4.02	4.39	3.87	3.28	2.82
29	2.62	1.85	1.56	1.60	---	2.47	4.04	4.04	4.38	3.85	3.27	2.81
30	2.59	1.85	1.55	1.58	---	2.48	3.99	4.05	4.38	3.83	3.26	2.79
31	2.56	---	1.54	1.57	---	2.49	---	4.07	---	3.81	3.24	---
MEAN	2.96	2.14	1.69	1.61	1.80	2.23	3.40	3.91	4.35	4.13	3.52	3.02
MAX	3.26	2.52	1.84	1.73	2.07	2.49	4.04	4.11	4.44	4.37	3.79	3.24
MIN	2.56	1.84	1.54	1.50	1.53	1.90	2.51	3.41	4.10	3.81	3.24	2.79

CAL YR 1986 MAX 4.61 MIN 1.54
WTR YR 1987 MAX 4.44 MIN 1.50

PYRAMID AND WINNEMUCCA LAKES BASIN

10336626 TAYLOR CREEK NEAR CAMP RICHARDSON, CA

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

DRAINAGE AREA.--16.7 mi².

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

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

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Fallen Leaf Lake Dam (station 10336625).

AVERAGE DISCHARGE (unadjusted).--19 years, 47.7 ft³/s, 34,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,530 ft³/s, Jan. 14, 1980, gage height, 6.33 ft; minimum daily, 0.20 ft³/s, Oct. 4-7, 1970, Sept. 4-6, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 267 ft³/s, Apr. 30, gage height, 4.55 ft; minimum daily, 1.5 ft³/s, Sept. 15, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	20	5.2	6.1	7.3	13	8.6	230	6.4	2.9	2.1	3.0
2	11	20	5.4	5.9	8.2	13	8.6	192	3.6	3.1	3.5	3.0
3	15	19	6.0	7.0	6.9	12	8.6	163	3.2	2.5	4.2	3.3
4	16	18	5.4	9.3	6.7	12	8.6	122	3.9	1.9	3.8	3.8
5	16	18	5.7	9.2	6.6	12	8.6	70	4.4	2.8	3.6	3.9
6	16	18	6.7	8.9	6.3	13	8.6	59	5.0	3.2	3.8	3.6
7	16	16	6.6	8.7	6.3	13	8.7	64	4.3	2.9	3.8	3.2
8	19	15	6.2	8.4	6.3	13	8.9	55	4.3	3.3	3.4	2.8
9	19	15	6.0	8.0	6.3	11	8.9	50	8.4	3.7	3.1	2.9
10	13	15	6.5	7.7	6.7	8.3	8.9	57	11	3.6	2.6	2.5
11	12	14	6.3	7.5	6.4	7.9	8.9	66	11	3.5	2.7	2.1
12	12	15	5.7	7.4	8.0	7.9	9.9	76	11	3.4	3.1	1.8
13	12	16	5.5	7.5	20	7.9	12	82	11	3.4	2.9	1.9
14	19	16	5.2	7.9	27	8.0	28	85	15	3.4	3.2	1.6
15	23	13	4.6	7.5	29	8.6	41	87	17	3.4	2.9	1.5
16	22	11	5.1	8.6	30	8.6	56	89	14	3.9	2.3	1.5
17	22	11	6.3	8.3	29	8.4	66	90	8.9	4.2	2.9	1.7
18	20	14	7.7	7.4	20	8.3	71	80	4.5	4.0	2.4	3.4
19	18	14	10	6.8	12	8.6	71	57	2.6	3.8	3.0	3.0
20	18	14	8.7	6.3	12	8.6	70	46	2.1	3.8	3.3	2.4
21	18	14	8.1	6.3	12	8.6	70	48	2.0	3.9	3.3	3.4
22	18	13	7.9	5.8	12	8.6	70	47	2.9	4.0	3.4	3.8
23	18	12	7.5	5.4	12	8.6	83	46	2.8	4.0	3.0	2.4
24	18	11	7.5	6.4	12	8.9	93	45	2.5	4.0	3.3	2.3
25	18	4.7	7.2	6.8	13	8.9	96	37	2.6	3.9	3.2	4.0
26	18	7.3	7.2	6.5	13	8.8	102	25	2.4	3.9	2.9	2.0
27	18	6.5	7.2	7.1	13	8.6	133	19	2.3	3.5	3.4	1.7
28	18	6.8	7.0	8.2	13	8.6	185	19	2.6	3.1	3.4	1.7
29	18	5.9	6.9	8.1	---	8.6	200	11	2.6	3.1	2.8	2.3
30	20	5.4	6.9	7.8	---	8.6	240	7.8	2.3	3.3	2.8	2.4
31	20	---	6.6	7.3	---	8.6	---	8.3	---	3.0	2.9	---
TOTAL	529.0	398.6	204.8	230.1	361.0	298.5	1792.8	2133.1	176.6	106.4	97.0	78.9
MEAN	17.1	13.3	6.61	7.42	12.9	9.63	59.8	68.8	5.89	3.43	3.13	2.63
MAX	23	20	10	9.3	30	13	240	230	17	4.2	4.2	4.0
MIN	8.0	4.7	4.6	5.4	6.3	7.9	8.6	7.8	2.0	1.9	2.1	1.5
AC-FT	1050	791	406	456	716	592	3560	4230	350	211	192	156
CAL YR 1986	TOTAL	23939.5	MEAN	65.6	MAX	613	MIN	2.4	AC-FT	47480		
WTR YR 1987	TOTAL	6406.8	MEAN	17.6	MAX	240	MIN	1.5	AC-FT	12710		

PYRAMID AND WINNEMUCCA LAKES BASIN

10336645 GENERAL CREEK NEAR MEEKS BAY, CA

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

DRAINAGE AREA.--7.44 mi².

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Estimated daily discharges: Dec. 1, 9-12, 15-17, 21, 22, 24, 25, 28-30, Jan. 1-5, 8-31, Feb. 1-9, 16, 17, 19-21, 23, 24, 26-28, Mar. 18-20, 22. Records good except those for estimated periods, which are fair. No known diversion or regulation upstream from station.

AVERAGE DISCHARGE.--7 years, 20.6 ft³/s, 14,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 765 ft³/s, Dec. 20, 1981, gage height, 5.43 ft, from rating curve extended above 180 ft³/s on basis of computation of flow through culvert; minimum daily, 0.50 ft³/s, Aug. 29, 1987.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 27	2230	*103	*2.01				

Minimum daily, 0.50 ft³/s, Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1.3	1.7	1.9	1.8	3.0	9.4	38	4.4	1.2	.88	.81
2	2.0	1.3	1.7	1.8	1.8	2.9	12	27	3.9	1.0	.90	.86
3	1.8	1.3	1.7	1.8	1.8	3.0	15	28	3.7	1.1	.97	.81
4	1.6	1.3	1.7	1.9	1.8	3.4	12	35	3.7	1.1	.89	.83
5	1.6	1.3	1.8	1.9	1.9	5.5	12	38	3.4	1.0	.87	.80
6	1.5	1.3	1.8	1.9	1.8	8.0	14	37	3.1	1.1	.88	.78
7	1.5	1.3	1.9	1.9	1.8	8.0	17	33	3.1	.97	.94	.75
8	1.5	1.3	1.8	1.9	1.8	7.2	21	29	3.0	.97	.88	.79
9	1.5	1.3	1.8	1.9	2.0	6.7	25	28	2.8	.95	.82	.90
10	1.5	1.3	1.8	1.9	2.7	6.5	30	26	2.5	.93	.79	.87
11	1.5	1.3	1.8	1.8	3.5	6.2	37	30	2.3	.93	.81	.88
12	1.5	1.3	1.8	1.8	4.1	6.7	36	25	2.1	.90	.80	.88
13	1.5	1.4	1.8	1.8	15	8.7	32	20	3.1	.88	.81	.92
14	1.5	1.3	1.8	1.8	10	7.2	42	17	3.4	.87	.75	1.1
15	1.5	1.3	1.8	1.8	6.9	6.7	48	14	2.5	.86	.77	.87
16	1.5	1.3	1.8	1.8	6.0	5.9	50	13	2.5	.81	.76	.89
17	1.5	1.3	1.8	1.8	5.3	5.9	53	12	2.1	.85	.71	.93
18	1.5	1.4	1.8	1.8	4.8	5.9	47	10	1.8	1.0	.68	.93
19	1.5	1.6	1.8	1.8	4.6	5.9	27	9.0	1.6	1.1	.61	.93
20	1.5	1.5	1.8	1.8	4.4	6.0	23	10	1.5	1.0	.59	.86
21	1.5	1.8	1.8	1.8	4.3	6.0	29	12	1.4	.96	.61	.81
22	1.5	1.5	1.8	1.8	4.1	5.7	43	11	1.3	1.0	.64	.81
23	1.5	1.5	1.8	1.8	3.8	5.4	48	8.6	1.3	.98	.62	.81
24	1.5	1.5	1.8	1.9	3.6	5.4	51	7.5	1.2	.92	.55	.91
25	1.5	1.5	1.8	1.9	3.3	5.2	55	6.8	1.1	.89	.55	.96
26	1.3	1.5	1.8	1.9	3.2	5.2	65	6.6	1.1	.87	.55	.96
27	1.3	1.5	1.8	1.9	3.1	5.5	74	6.9	1.1	.85	.56	.93
28	1.3	1.7	1.8	1.8	3.0	5.7	67	6.3	1.1	1.0	.57	.98
29	1.3	1.7	1.8	1.8	---	5.7	67	5.9	1.0	1.0	.50	.99
30	1.3	1.7	1.8	1.8	---	5.9	60	5.3	1.2	.93	.55	.98
31	1.3	---	1.8	1.8	---	7.4	---	4.8	---	.92	.69	---
TOTAL	46.8	42.6	55.5	57.0	112.2	182.4	1121.4	560.7	68.3	29.84	22.50	26.53
MEAN	1.51	1.42	1.79	1.84	4.01	5.88	37.4	18.1	2.28	.96	.73	.88
MAX	2.0	1.8	1.9	1.9	15	8.7	74	38	4.4	1.2	.97	1.1
MIN	1.3	1.3	1.7	1.8	1.8	2.9	9.4	4.8	1.0	.81	.50	.75
AC-FT	93	84	110	113	223	362	2220	1110	135	59	45	53
CAL YR 1986	TOTAL	9265.42	MEAN	25.4	MAX	400	MIN	.98	AC-FT	18380		
WTR YR 1987	TOTAL	2325.77	MEAN	6.37	MAX	74	MIN	.50	AC-FT	4610		

10336645 GENERAL CREEK NEAR MEEKS BAY, CA--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

WATER TEMPERATURE: October 1980 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1980 to current year.

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

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

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

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

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 11 mg/L, Feb. 13; minimum daily mean, 0 mg/L, many days.

SEDIMENT LOAD: Maximum daily, 1.6 tons, Apr. 27; minimum daily, 0 ton, many days.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

[illegible]

PYRAMID AND WINNEMUCCA LAKES BASIN

10336645 GENERAL CREEK NEAR MEEKS BAY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	2.0	0	.00	1.3	0	.00	1.7	0	.00
2	2.0	0	.00	1.3	0	.00	1.7	0	.00
3	1.8	0	.00	1.3	0	.00	1.7	0	.00
4	1.6	1	.00	1.3	0	.00	1.7	0	.00
5	1.6	1	.00	1.3	0	.00	1.8	0	.00
6	1.5	1	.00	1.3	0	.00	1.8	0	.00
7	1.5	1	.00	1.3	0	.00	1.9	0	.00
8	1.5	1	.00	1.3	0	.00	1.8	1	.00
9	1.5	1	.00	1.3	0	.00	1.8	1	.00
10	1.5	1	.00	1.3	0	.00	1.8	1	.00
11	1.5	1	.00	1.3	0	.00	1.8	1	.00
12	1.5	0	.00	1.3	0	.00	1.8	1	.00
13	1.5	0	.00	1.4	0	.00	1.8	1	.00
14	1.5	0	.00	1.3	0	.00	1.8	1	.00
15	1.5	0	.00	1.3	1	.00	1.8	1	.00
16	1.5	0	.00	1.3	1	.00	1.8	1	.00
17	1.5	0	.00	1.3	1	.00	1.8	1	.00
18	1.5	0	.00	1.4	2	.01	1.8	1	.00
19	1.5	0	.00	1.6	2	.01	1.8	1	.00
20	1.5	0	.00	1.5	2	.01	1.8	1	.00
21	1.5	0	.00	1.8	2	.01	1.8	1	.00
22	1.5	0	.00	1.5	1	.00	1.8	1	.00
23	1.5	0	.00	1.5	1	.00	1.8	1	.00
24	1.5	0	.00	1.5	1	.00	1.8	1	.00
25	1.5	0	.00	1.5	1	.00	1.8	1	.00
26	1.3	0	.00	1.5	1	.00	1.8	1	.00
27	1.3	0	.00	1.5	1	.00	1.8	1	.00
28	1.3	0	.00	1.7	1	.00	1.8	1	.00
29	1.3	0	.00	1.7	0	.00	1.8	1	.00
30	1.3	0	.00	1.7	0	.00	1.8	1	.00
31	1.3	0	.00	---	---	---	1.8	1	.00
TOTAL	46.8	---	0.00	42.6	---	0.04	55.5	---	0.00
DAY	JANUARY			FEBRUARY			MARCH		
1	1.9	1	.01	1.8	2	.01	3.0	0	.00
2	1.8	1	.00	1.8	2	.01	2.9	0	.00
3	1.8	1	.00	1.8	1	.00	3.0	0	.00
4	1.9	1	.01	1.8	1	.00	3.4	1	.01
5	1.9	1	.01	1.9	1	.01	5.5	1	.01
6	1.9	1	.01	1.8	1	.00	8.0	1	.02
7	1.9	1	.01	1.8	1	.00	8.0	1	.02
8	1.9	1	.01	1.8	2	.01	7.2	0	.00
9	1.9	1	.01	2.0	2	.01	6.7	0	.00
10	1.9	1	.01	2.7	3	.02	6.5	0	.00
11	1.8	1	.00	3.5	3	.03	6.2	0	.00
12	1.8	1	.00	4.1	4	.04	6.7	0	.00
13	1.8	1	.00	15	11	.40	8.7	0	.00
14	1.8	1	.00	10	7	.19	7.2	1	.02
15	1.8	1	.00	6.9	1	.02	6.7	1	.02
16	1.8	1	.00	6.0	0	.00	5.9	1	.02
17	1.8	1	.00	5.3	0	.00	5.9	1	.02
18	1.8	1	.00	4.8	1	.01	5.9	2	.03
19	1.8	1	.00	4.6	2	.02	5.9	2	.03
20	1.8	1	.00	4.4	2	.02	6.0	2	.03
21	1.8	1	.00	4.3	2	.02	6.0	2	.03
22	1.8	1	.00	4.1	2	.02	5.7	2	.03
23	1.8	1	.00	3.8	2	.02	5.4	2	.03
24	1.9	1	.01	3.6	1	.01	5.4	2	.03
25	1.9	1	.01	3.3	1	.01	5.2	1	.01
26	1.9	2	.01	3.2	1	.01	5.2	1	.01
27	1.9	2	.01	3.1	1	.01	5.5	1	.01
28	1.8	2	.01	3.0	1	.01	5.7	1	.02
29	1.8	2	.01	---	---	---	5.7	1	.02
30	1.8	2	.01	---	---	---	5.9	1	.02
31	1.8	2	.01	---	---	---	7.4	1	.02
TOTAL	57.0	---	0.16	112.2	---	0.91	182.4	---	0.46

PYRAMID AND WINNEMUCCA LAKES BASIN

10336645 GENERAL CREEK NEAR MEEKS BAY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL				MAY			JUNE		
1	9.4	1	.03	38	2	.21	4.4	0	.00
2	12	1	.03	27	2	.15	3.9	0	.00
3	15	1	.04	28	2	.15	3.7	0	.00
4	12	2	.06	35	2	.19	3.7	0	.00
5	12	2	.06	38	2	.21	3.4	0	.00
6	14	3	.11	37	2	.20	3.1	0	.00
7	17	3	.14	33	1	.09	3.1	1	.01
8	21	3	.17	29	1	.08	3.0	1	.01
9	25	4	.27	28	1	.08	2.8	1	.01
10	30	4	.32	26	1	.07	2.5	1	.01
11	37	4	.40	30	1	.08	2.3	1	.01
12	36	4	.39	25	1	.07	2.1	1	.01
13	32	5	.43	20	1	.05	3.1	2	.02
14	42	7	.79	17	1	.05	3.4	1	.01
15	48	9	1.2	14	1	.04	2.5	1	.01
16	50	10	1.4	13	1	.04	2.5	1	.01
17	53	8	1.1	12	1	.03	2.1	1	.01
18	47	3	.38	10	1	.03	1.8	1	.00
19	27	2	.14	9.0	1	.02	1.6	1	.00
20	23	2	.12	10	1	.03	1.5	1	.00
21	29	4	.31	12	1	.03	1.4	1	.00
22	43	4	.46	11	1	.03	1.3	1	.00
23	48	4	.52	8.6	1	.02	1.3	1	.00
24	51	4	.55	7.5	1	.02	1.2	1	.00
25	55	3	.45	6.8	1	.02	1.1	1	.00
26	65	5	.88	6.6	1	.02	1.1	1	.00
27	74	8	1.6	6.9	1	.02	1.1	1	.00
28	67	5	.90	6.3	0	.00	1.1	1	.00
29	67	4	.72	5.9	0	.00	1.0	1	.00
30	60	3	.49	5.3	0	.00	1.2	1	.00
31	---	---	---	4.8	0	.00	---	---	---
TOTAL	1121.4	---	14.46	560.7	---	2.03	68.3	---	0.12
JULY				AUGUST			SEPTEMBER		
1	1.2	1	.00	.88	1	.00	.81	1	.00
2	1.0	1	.00	.90	1	.00	.86	1	.00
3	1.1	1	.00	.97	1	.00	.81	1	.00
4	1.1	1	.00	.89	1	.00	.83	0	.00
5	1.0	1	.00	.87	1	.00	.80	0	.00
6	1.1	1	.00	.88	1	.00	.78	0	.00
7	.97	1	.00	.94	1	.00	.75	0	.00
8	.97	1	.00	.88	1	.00	.79	0	.00
9	.95	0	.00	.82	1	.00	.90	0	.00
10	.93	0	.00	.79	1	.00	.87	0	.00
11	.93	0	.00	.81	1	.00	.88	1	.00
12	.90	0	.00	.80	1	.00	.88	1	.00
13	.88	0	.00	.81	1	.00	.92	1	.00
14	.87	0	.00	.75	1	.00	1.1	1	.00
15	.86	0	.00	.77	1	.00	.87	2	.00
16	.81	0	.00	.76	1	.00	.89	2	.00
17	.85	0	.00	.71	1	.00	.93	2	.01
18	1.0	0	.00	.68	1	.00	.93	1	.00
19	1.1	0	.00	.61	0	.00	.93	1	.00
20	1.0	1	.00	.59	0	.00	.86	1	.00
21	.96	1	.00	.61	0	.00	.81	1	.00
22	1.0	1	.00	.64	0	.00	.81	1	.00
23	.98	1	.00	.62	0	.00	.81	1	.00
24	.92	1	.00	.55	0	.00	.91	1	.00
25	.89	1	.00	.55	0	.00	.96	1	.00
26	.87	2	.00	.55	0	.00	.96	1	.00
27	.85	3	.01	.56	0	.00	.93	1	.00
28	1.0	3	.01	.57	1	.00	.98	1	.00
29	1.0	2	.01	.50	1	.00	.99	1	.00
30	.93	2	.01	.55	1	.00	.98	1	.00
31	.92	2	.00	.69	1	.00	---	---	---
TOTAL	29.84	---	0.04	22.50	---	0.00	26.53	---	0.01
YEAR	2325.77		18.23						

PYRAMID AND WINNEMUCCA LAKES BASIN

10336645 GENERAL CREEK NEAR MEEKS BAY, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
APR 23...	2015	45	5.5	5	0.61	32

PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA

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

DRAINAGE AREA.--11.2 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 6,240 ft above National Geodetic Vertical Datum of 1929, from topographic map. Oct. 1, 1960, to Sept. 30, 1964, at datum 10.25 ft lower and Oct. 1, 1964, to Aug. 27, 1970, at datum 12 ft lower, at site 400 ft downstream.

REMARKS.--Estimated daily discharges: Oct. 29, Nov. 29, 30, Dec. 1, 9-11, 15-17, 19-21, 24, 25, 27, 28, 30, Jan. 1-5, 8-12, 14, 16-19, 21, 27-29, 31, Feb. 2-8, 16, 17, 21-27, Mar. 18-20, Aug. 29, Sept. 2, 3. Records good except those for estimated periods, which are poor. No known diversion or regulation upstream from station.

AVERAGE DISCHARGE.--27 years, 38.6 ft³/s, 27,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft³/s, Dec. 22 or 24, 1964, on basis of computation of flow through culvert; maximum gage height, 9.90 ft, site and datum then in use, Dec. 22, 1964; minimum discharge, 0.30 ft³/s, Sept. 19, 1968.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 27	2100	*170	*2.26				
Minimum daily, 1.3 ft ³ /s, Sept. 28-30.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	5.2	3.7	4.2	4.0	6.7	21	78	23	4.3	2.3	1.7
2	7.6	5.0	3.6	4.1	4.0	7.0	26	64	22	4.0	2.3	1.7
3	7.9	4.8	3.6	4.0	4.0	7.4	30	66	21	3.8	2.3	1.7
4	7.8	4.7	3.6	4.1	4.0	8.1	25	72	20	3.6	2.2	1.8
5	11	4.6	3.8	4.1	4.0	15	26	80	20	3.4	2.2	1.8
6	13	4.6	3.9	4.1	4.0	19	30	84	19	3.4	2.2	1.8
7	12	4.5	3.8	4.2	4.0	18	36	80	18	3.2	2.1	1.9
8	12	4.4	3.9	4.0	4.0	18	43	82	17	3.2	2.2	1.9
9	12	4.2	3.8	3.9	4.0	17	50	99	15	3.3	2.2	1.9
10	12	4.2	3.8	3.9	4.4	17	58	104	14	3.2	2.2	1.8
11	11	4.1	3.7	3.9	5.9	16	68	105	13	3.1	2.1	1.8
12	9.1	4.0	3.6	3.9	7.5	18	63	96	12	3.1	2.2	1.7
13	7.9	4.1	3.6	4.0	27	20	62	82	13	3.3	2.1	1.8
14	7.4	4.1	3.6	4.0	19	18	73	77	13	3.2	2.1	1.7
15	6.9	4.1	3.6	3.8	15	17	84	71	12	3.2	2.1	1.8
16	6.2	4.2	3.6	3.8	12	15	85	63	11	3.1	2.1	1.6
17	6.4	3.9	3.7	3.8	10	15	89	56	9.8	2.9	2.0	1.7
18	6.6	3.9	3.7	3.8	9.3	15	79	49	8.9	3.0	2.0	1.5
19	6.6	4.0	3.7	3.8	9.2	15	56	44	8.3	3.2	2.0	1.6
20	6.4	4.0	3.7	3.8	9.1	14	52	42	7.9	3.1	2.0	1.7
21	6.1	4.6	3.8	3.9	8.8	14	59	38	7.3	3.1	2.0	1.6
22	5.8	4.3	3.8	3.9	8.5	14	70	34	6.9	3.0	2.0	1.6
23	5.5	4.3	3.8	3.9	8.1	13	77	32	6.2	2.9	1.9	1.6
24	5.6	4.2	3.8	4.1	7.8	13	83	31	5.6	2.9	1.9	1.4
25	5.5	4.1	3.8	4.3	7.5	13	88	29	5.2	2.7	1.9	1.4
26	5.5	4.1	3.8	4.1	7.3	12	102	28	5.0	2.6	1.9	1.5
27	5.4	4.1	3.8	4.1	7.0	16	122	26	4.9	2.6	1.9	1.4
28	6.0	3.9	3.8	4.1	7.0	14	123	25	4.7	2.5	1.9	1.3
29	7.0	3.9	3.6	4.1	---	14	121	24	4.4	2.5	1.8	1.3
30	7.2	3.8	3.6	4.1	---	14	109	24	4.9	2.5	1.7	1.3
31	5.8	---	3.6	4.1	---	17	---	24	---	2.4	1.6	---
TOTAL	244.4	127.9	115.2	123.9	226.4	450.2	2010	1809	353.0	96.3	63.4	49.3
MEAN	7.88	4.26	3.72	4.00	8.09	14.5	67.0	58.4	11.8	3.11	2.05	1.64
MAX	13	5.2	3.9	4.3	27	20	123	105	23	4.3	2.3	1.9
MIN	5.4	3.8	3.6	3.8	4.0	6.7	21	24	4.4	2.4	1.6	1.3
AC-FT	485	254	228	246	449	893	3990	3590	700	191	126	98

CAL YR 1986	TOTAL	20634.3	MEAN 56.5	MAX 920	MIN 2.5	AC-FT 40930
WTR YR 1987	TOTAL	5669.0	MEAN 15.5	MAX 123	MIN 1.3	AC-FT 11240

PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1980 to September 1983.

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

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

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

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

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

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

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 61 mg/L, Apr. 27; minimum daily mean, 1 mg/L, many days.

SEDIMENT LOAD: Maximum daily, 22 tons, Apr. 27; minimum daily, 0 ton, Sept. 10-30.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

[illegible]

PYRAMID AND WINNEMUCCA LAKES BASIN

10336600 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER				NOVEMBER			DECEMBER		
1	9.2	3	.07	5.2	1	.01	3.7	2	.02
2	7.6	3	.06	5.0	1	.01	3.6	2	.02
3	7.9	3	.06	4.8	1	.01	3.6	2	.02
4	7.8	3	.06	4.7	1	.01	3.6	2	.02
5	11	7	.21	4.6	1	.01	3.8	2	.02
6	13	10	.35	4.6	1	.01	3.9	3	.03
7	12	3	.10	4.5	1	.01	3.8	3	.03
8	12	3	.10	4.4	1	.01	3.9	3	.03
9	12	2	.06	4.2	1	.01	3.8	4	.04
10	12	3	.10	4.2	2	.02	3.8	4	.04
11	11	2	.06	4.1	2	.02	3.7	5	.05
12	9.1	2	.05	4.0	2	.02	3.6	5	.05
13	7.9	2	.04	4.1	2	.02	3.6	4	.04
14	7.4	2	.04	4.1	2	.02	3.6	2	.02
15	6.9	2	.04	4.1	2	.02	3.6	1	.01
16	6.2	1	.02	4.2	2	.02	3.6	1	.01
17	6.4	1	.02	3.9	2	.02	3.7	1	.01
18	6.6	1	.02	3.9	2	.02	3.7	1	.01
19	6.6	1	.02	4.0	2	.02	3.7	1	.01
20	6.4	1	.02	4.0	2	.02	3.7	1	.01
21	6.1	1	.02	4.6	2	.02	3.8	1	.01
22	5.8	1	.02	4.3	2	.02	3.8	1	.01
23	5.5	1	.01	4.3	2	.02	3.8	1	.01
24	5.6	1	.02	4.2	2	.02	3.8	1	.01
25	5.5	1	.01	4.1	2	.02	3.8	1	.01
26	5.5	1	.01	4.1	2	.02	3.8	1	.01
27	5.4	1	.01	4.1	2	.02	3.8	1	.01
28	6.0	1	.02	3.9	2	.02	3.8	1	.01
29	7.0	2	.04	3.9	2	.02	3.6	1	.01
30	7.2	1	.02	3.8	2	.02	3.6	1	.01
31	5.8	1	.02	---	---	---	3.6	1	.01
TOTAL	244.4	---	1.70	127.9	---	0.51	115.2	---	0.60
JANUARY				FEBRUARY			MARCH		
1	4.2	1	.01	4.0	2	.02	6.7	2	.04
2	4.1	1	.01	4.0	2	.02	7.0	1	.02
3	4.0	1	.01	4.0	2	.02	7.4	2	.04
4	4.1	1	.01	4.0	2	.02	8.1	2	.04
5	4.1	2	.02	4.0	2	.02	15	7	.28
6	4.1	3	.03	4.0	2	.02	19	4	.21
7	4.2	4	.05	4.0	2	.02	18	3	.15
8	4.0	5	.05	4.0	2	.02	18	3	.15
9	3.9	6	.06	4.0	2	.02	17	2	.09
10	3.9	5	.05	4.4	2	.02	17	2	.09
11	3.9	5	.05	5.9	2	.03	16	2	.09
12	3.9	5	.05	7.5	3	.06	18	7	.34
13	4.0	3	.03	27	22	1.5	20	3	.16
14	4.0	2	.02	19	4	.21	18	3	.15
15	3.8	2	.02	15	3	.12	17	3	.14
16	3.8	2	.02	12	3	.10	15	3	.12
17	3.8	2	.02	10	3	.08	15	3	.12
18	3.8	2	.02	9.3	3	.08	15	3	.12
19	3.8	2	.02	9.2	2	.05	15	3	.12
20	3.8	2	.02	9.1	2	.05	14	3	.11
21	3.9	2	.02	8.8	2	.05	14	3	.11
22	3.9	2	.02	8.5	2	.05	14	2	.08
23	3.9	2	.02	8.1	2	.04	13	2	.07
24	4.1	2	.02	7.8	2	.04	13	2	.07
25	4.3	2	.02	7.5	2	.04	13	1	.04
26	4.1	2	.02	7.3	2	.04	12	1	.03
27	4.1	2	.02	7.0	2	.04	16	5	.22
28	4.1	2	.02	7.0	2	.04	14	2	.08
29	4.1	2	.02	---	---	---	14	2	.08
30	4.1	2	.02	---	---	---	14	2	.08
31	4.1	2	.02	---	---	---	17	2	.09
TOTAL	123.9	---	0.79	226.4	---	2.82	450.2	---	3.53

PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	21	3	.17	78	7	1.5	23	2	.12
2	26	5	.35	64	6	1.0	22	2	.12
3	30	9	.73	66	6	1.1	21	2	.11
4	25	3	.20	72	5	.97	20	2	.11
5	26	3	.21	80	6	1.3	20	2	.11
6	30	8	.65	84	8	1.8	19	2	.10
7	36	7	.68	80	4	.86	18	2	.10
8	43	19	2.2	82	7	1.5	17	2	.09
9	50	22	3.0	99	39	14	15	2	.08
10	58	24	3.8	104	19	5.3	14	2	.08
11	68	21	3.9	105	14	4.0	13	2	.07
12	63	17	2.9	96	8	2.1	12	2	.06
13	62	20	3.3	82	6	1.3	13	5	.18
14	73	23	4.5	77	6	1.2	13	2	.07
15	84	25	5.7	71	5	.96	12	2	.06
16	85	21	4.8	63	4	.68	11	2	.06
17	89	20	4.8	56	3	.45	9.8	2	.05
18	79	12	2.6	49	3	.40	8.9	2	.05
19	56	4	.60	44	3	.36	8.3	2	.04
20	52	4	.56	42	2	.23	7.9	2	.04
21	59	11	1.8	38	2	.21	7.3	2	.04
22	70	15	2.8	34	2	.18	6.9	1	.02
23	77	14	2.9	32	2	.17	6.2	1	.02
24	83	16	3.6	31	2	.17	5.6	1	.02
25	88	18	4.3	29	2	.16	5.2	1	.01
26	102	50	14	28	2	.15	5.0	1	.01
27	122	61	22	26	2	.14	4.9	1	.01
28	123	32	11	25	2	.14	4.7	1	.01
29	121	27	9.3	24	2	.13	4.4	1	.01
30	109	13	3.8	24	2	.13	4.9	19	.25
31	---	---	---	24	2	.13	---	---	---
TOTAL	2010	---	121.15	1809	---	42.72	353.0	---	2.10
JULY			AUGUST			SEPTEMBER			
1	4.3	1	.01	2.3	1	.01	1.7	2	.01
2	4.0	1	.01	2.3	1	.01	1.7	2	.01
3	3.8	1	.01	2.3	1	.01	1.7	2	.01
4	3.6	1	.01	2.2	1	.01	1.8	2	.01
5	3.4	1	.01	2.2	1	.01	1.8	2	.01
6	3.4	1	.01	2.2	1	.01	1.8	2	.01
7	3.2	1	.01	2.1	1	.01	1.9	2	.01
8	3.2	1	.01	2.2	1	.01	1.9	1	.01
9	3.3	1	.01	2.2	1	.01	1.9	1	.01
10	3.2	1	.01	2.2	1	.01	1.8	1	.00
11	3.1	1	.01	2.1	1	.01	1.8	1	.00
12	3.1	1	.01	2.2	1	.01	1.7	1	.00
13	3.3	2	.02	2.1	1	.01	1.8	1	.00
14	3.2	3	.03	2.1	1	.01	1.7	1	.00
15	3.2	3	.03	2.1	1	.01	1.8	1	.00
16	3.1	2	.02	2.1	1	.01	1.6	1	.00
17	2.9	1	.01	2.0	1	.01	1.7	1	.00
18	3.0	1	.01	2.0	1	.01	1.5	1	.00
19	3.2	1	.01	2.0	1	.01	1.6	1	.00
20	3.1	1	.01	2.0	1	.01	1.7	1	.00
21	3.1	1	.01	2.0	1	.01	1.6	1	.00
22	3.0	1	.01	2.0	1	.01	1.6	1	.00
23	2.9	1	.01	1.9	1	.01	1.6	1	.00
24	2.9	1	.01	1.9	1	.01	1.4	1	.00
25	2.7	1	.01	1.9	1	.01	1.4	1	.00
26	2.6	1	.01	1.9	1	.01	1.5	1	.00
27	2.6	4	.03	1.9	1	.01	1.4	1	.00
28	2.5	1	.01	1.9	1	.01	1.3	1	.00
29	2.5	1	.01	1.8	2	.01	1.3	1	.00
30	2.5	1	.01	1.7	2	.01	1.3	1	.00
31	2.4	1	.01	1.6	2	.01	---	---	---
TOTAL	96.3	---	0.39	63.4	---	0.31	49.3	---	0.09
YEAR	5669.0		176.71						

PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
APR						
16...	1935	101	6.0	47	13	53
28...	1910	134	5.5	44	16	42
29...	2035	139	5.0	42	16	41

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
APR							
16...	2010	6.0	1	102	1	4	13

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
APR							
16...	19	23	30	42	63	89	100

PYRAMID AND WINNEMUCCA LAKES BASIN

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

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

DRAINAGE AREA.--9.70 mi².

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Estimated daily discharges: Nov. 30, Dec. 1, 8-11, 15-18, 21, 24-26, 28, 30, Jan. 1-5, 11-13, 16-20, 22-31, Feb. 1-9, 13-19, 21, 23-25, 27, Mar. 1, 2, 5-7, 18-20, 22, Aug. 31, Sept. 1, 2. Records fair except those for flows below 1 ft³/s and estimated periods, which are poor. Minor diversion for local water supply upstream from station.

AVERAGE DISCHARGE.--15 years, 28.5 ft³/s, 20,650 acre-ft/yr.

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1015	(a)	*5.90	Apr. 28	1845	*113	5.13

a Backwater from ice.

Minimum daily, 0.06 ft³/s, Sept. 4.DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	3.1	2.1	2.5	2.4	4.9	18	60	17	2.6	.33	.10
2	3.9	3.0	2.1	2.4	2.4	4.9	23	50	17	2.3	.31	.10
3	4.4	2.9	2.1	2.3	2.4	4.9	24	52	16	2.1	.29	.07
4	5.2	2.9	2.1	2.3	2.4	5.3	19	56	16	2.0	.25	.06
5	7.3	2.8	2.2	2.4	2.4	10	20	61	15	1.9	.22	.09
6	7.6	2.6	2.2	2.4	2.4	14	26	64	15	1.7	.21	.09
7	6.5	2.4	2.1	2.4	2.4	13	33	62	15	1.7	.17	.10
8	6.2	2.5	2.1	2.4	2.5	12	36	65	14	1.6	.16	.11
9	6.1	2.3	2.1	2.4	2.5	11	42	72	12	1.5	.15	.15
10	5.9	2.3	2.0	2.4	3.1	12	46	76	11	1.4	.15	.18
11	5.6	2.3	2.0	2.4	4.6	11	54	79	11	1.3	.14	.20
12	4.6	2.3	2.0	2.4	5.1	12	49	72	9.5	1.2	.14	.23
13	4.1	2.3	2.0	2.4	28	14	50	63	9.6	1.2	.13	.24
14	3.9	2.3	2.0	2.4	17	12	61	61	9.5	1.0	.13	.23
15	3.7	2.2	2.0	2.4	14	11	65	57	9.0	.99	.14	.25
16	3.6	2.2	2.1	2.4	9.6	10	68	53	8.1	.87	.15	.33
17	3.6	2.3	2.1	2.3	8.0	10	71	47	7.0	.84	.14	.35
18	3.6	2.3	2.1	2.3	6.9	10	56	41	6.4	1.1	.12	.35
19	3.5	2.4	2.2	2.3	6.4	10	40	37	5.8	1.2	.11	.31
20	3.4	2.5	2.2	2.3	6.4	10	39	36	5.4	1.1	.11	.21
21	3.3	3.1	2.2	2.3	6.0	9.8	47	33	5.2	.96	.11	.24
22	3.1	2.5	2.2	2.3	5.7	9.6	57	30	4.6	.96	.11	.31
23	3.1	2.4	2.2	2.3	5.5	9.0	62	27	4.3	.91	.11	.34
24	3.1	2.2	2.2	2.3	5.4	8.6	66	25	3.9	.81	.11	.35
25	3.0	2.1	2.2	2.5	5.4	8.4	69	24	3.6	.68	.12	.36
26	3.0	2.4	2.1	2.4	5.4	8.6	79	23	3.3	.63	.11	.39
27	3.0	2.2	2.1	2.4	5.2	9.3	91	21	3.2	.53	.10	.42
28	3.3	2.1	2.2	2.4	5.1	9.3	92	20	3.1	.48	.10	.43
29	3.3	2.1	2.3	2.4	---	9.2	93	19	2.8	.43	.10	.40
30	3.7	2.1	2.3	2.4	---	11	84	18	3.1	.41	.10	.40
31	3.3	---	2.3	2.4	---	13	---	18	---	.39	.10	---
TOTAL	132.7	73.1	66.1	73.6	174.6	307.8	1580	1422	266.4	36.79	4.72	7.39
MEAN	4.28	2.44	2.13	2.37	6.24	9.93	52.7	45.9	8.88	1.19	.15	.25
MAX	7.6	3.1	2.3	2.5	28	14	93	79	17	2.6	.33	.43
MIN	3.0	2.1	2.0	2.3	2.4	4.9	18	18	2.8	.39	.10	.06
AC-FT	263	145	131	146	346	611	3130	2820	528	73	9.4	15

CAL YR 1986	TOTAL	13256.17	MEAN	36.3	MAX	504	MIN	.98	AC-FT	26290
WTR YR 1987	TOTAL	4145.20	MEAN	11.4	MAX	93	MIN	.06	AC-FT	8220

WATER-QUALITY RECORDS

[illegible]

PYRAMID AND WINNEMUCCA LAKES BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	4.8	2	.03	3.1	0	.00	2.1	0	.00
2	3.9	2	.02	3.0	0	.00	2.1	0	.00
3	4.4	3	.04	2.9	0	.00	2.1	0	.00
4	5.2	3	.04	2.9	0	.00	2.1	0	.00
5	7.3	3	.06	2.8	0	.00	2.2	0	.00
6	7.6	3	.06	2.6	0	.00	2.2	0	.00
7	6.5	2	.04	2.4	0	.00	2.1	0	.00
8	6.2	1	.02	2.5	0	.00	2.1	0	.00
9	6.1	1	.02	2.3	0	.00	2.1	0	.00
10	5.9	1	.02	2.3	0	.00	2.0	0	.00
11	5.6	1	.02	2.3	0	.00	2.0	0	.00
12	4.6	0	.00	2.3	0	.00	2.0	0	.00
13	4.1	0	.00	2.3	0	.00	2.0	0	.00
14	3.9	0	.00	2.3	1	.01	2.0	1	.01
15	3.7	0	.00	2.2	1	.01	2.0	1	.01
16	3.6	0	.00	2.2	1	.01	2.1	1	.01
17	3.6	0	.00	2.3	1	.01	2.1	1	.01
18	3.6	0	.00	2.3	1	.01	2.1	1	.01
19	3.5	0	.00	2.4	1	.01	2.2	1	.01
20	3.4	0	.00	2.5	1	.01	2.2	0	.00
21	3.3	0	.00	3.1	1	.01	2.2	0	.00
22	3.1	0	.00	2.5	0	.00	2.2	0	.00
23	3.1	0	.00	2.4	0	.00	2.2	0	.00
24	3.1	0	.00	2.2	0	.00	2.2	0	.00
25	3.0	0	.00	2.1	0	.00	2.2	0	.00
26	3.0	0	.00	2.4	0	.00	2.1	0	.00
27	3.0	0	.00	2.2	0	.00	2.1	0	.00
28	3.3	0	.00	2.1	0	.00	2.2	0	.00
29	3.3	0	.00	2.1	0	.00	2.3	0	.00
30	3.7	0	.00	2.1	0	.00	2.3	2	.00
31	3.3	0	.00	---	---	---	2.3	0	.00
TOTAL	132.7	---	0.37	73.1	---	0.08	66.1	---	0.06
JANUARY			FEBRUARY			MARCH			
1	2.5	0	.00	2.4	0	.00	4.9	2	.03
2	2.4	0	.00	2.4	0	.00	4.9	2	.03
3	2.3	2	.01	2.4	1	.01	4.9	2	.03
4	2.3	4	.02	2.4	1	.01	5.3	2	.03
5	2.4	1	.01	2.4	1	.01	10	8	.22
6	2.4	1	.01	2.4	1	.01	14	5	.19
7	2.4	1	.01	2.4	1	.01	13	0	.00
8	2.4	0	.00	2.5	1	.01	12	0	.00
9	2.4	0	.00	2.5	1	.01	11	0	.00
10	2.4	0	.00	3.1	1	.01	12	0	.00
11	2.4	0	.00	4.6	1	.01	11	0	.00
12	2.4	1	.01	5.1	3	.04	12	2	.06
13	2.4	1	.01	28	65	4.9	14	3	.11
14	2.4	1	.01	17	6	.28	12	1	.03
15	2.4	1	.01	14	1	.04	11	1	.03
16	2.4	1	.01	9.6	1	.03	10	1	.03
17	2.3	1	.01	8.0	1	.02	10	1	.03
18	2.3	0	.00	6.9	1	.02	10	1	.03
19	2.3	0	.00	6.4	1	.02	10	3	.08
20	2.3	0	.00	6.4	1	.02	10	5	.14
21	2.3	0	.00	6.0	1	.02	9.8	3	.08
22	2.3	0	.00	5.7	1	.02	9.6	0	.00
23	2.3	0	.00	5.5	1	.01	9.0	0	.00
24	2.3	0	.00	5.4	1	.01	8.6	0	.00
25	2.5	0	.00	5.4	1	.01	8.4	0	.00
26	2.4	0	.00	5.4	2	.03	8.6	0	.00
27	2.4	0	.00	5.2	2	.03	9.3	0	.00
28	2.4	0	.00	5.1	2	.03	9.3	0	.00
29	2.4	0	.00	---	---	---	9.2	0	.00
30	2.4	0	.00	---	---	---	11	0	.00
31	2.4	0	.00	---	---	---	13	1	.04
TOTAL	73.6	---	0.12	174.6	---	5.62	307.8	---	1.19

PYRAMID AND WINNEMUCCA LAKES BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	18	4	.19	60	0	.00	17	1	.05
2	23	4	.25	50	0	.00	17	1	.05
3	24	3	.19	52	2	.28	16	1	.04
4	19	2	.10	56	3	.45	16	1	.04
5	20	2	.11	61	4	.66	15	1	.04
6	26	5	.35	64	4	.69	15	1	.04
7	33	8	.71	62	2	.33	15	0	.00
8	36	8	.78	65	4	.70	14	0	.00
9	42	11	1.5	72	12	2.8	12	0	.00
10	46	12	1.6	76	8	1.6	11	0	.00
11	54	12	2.0	79	9	1.9	11	0	.00
12	49	8	1.1	72	7	1.4	9.5	0	.00
13	50	5	.68	63	5	.85	9.6	6	.16
14	61	7	1.2	61	4	.66	9.5	1	.03
15	65	8	1.4	57	3	.46	9.0	1	.02
16	68	11	2.3	53	2	.29	8.1	1	.02
17	71	12	2.7	47	2	.25	7.0	2	.04
18	56	3	.45	41	2	.22	6.4	2	.03
19	40	1	.11	37	2	.20	5.8	2	.03
20	39	3	.32	36	3	.29	5.4	2	.03
21	47	3	.38	33	2	.18	5.2	4	.06
22	57	6	.92	30	1	.08	4.6	2	.02
23	62	5	.84	27	1	.07	4.3	4	.05
24	66	9	1.8	25	1	.07	3.9	2	.02
25	69	9	1.9	24	1	.06	3.6	2	.02
26	79	17	4.5	23	1	.06	3.3	2	.02
27	91	21	5.6	21	1	.06	3.2	4	.03
28	92	16	4.3	20	1	.05	3.1	2	.02
29	93	14	3.7	19	1	.05	2.8	1	.01
30	84	3	.68	18	1	.05	3.1	23	.28
31	---	---	---	18	1	.05	---	---	---
TOTAL	1580	---	42.66	1422	---	14.81	266.4	---	1.15
JULY			AUGUST			SEPTEMBER			
1	2.6	1	.01	.33	1	.00	.10	2	.00
2	2.3	1	.01	.31	1	.00	.10	2	.00
3	2.1	1	.01	.29	1	.00	.07	1	.00
4	2.0	1	.01	.25	1	.00	.06	1	.00
5	1.9	1	.01	.22	1	.00	.09	1	.00
6	1.7	1	.00	.21	1	.00	.09	1	.00
7	1.7	1	.00	.17	1	.00	.10	0	.00
8	1.6	2	.01	.16	1	.00	.11	0	.00
9	1.5	2	.01	.15	1	.00	.15	0	.00
10	1.4	2	.01	.15	1	.00	.18	0	.00
11	1.3	2	.01	.14	1	.00	.20	0	.00
12	1.2	2	.01	.14	1	.00	.23	0	.00
13	1.2	2	.01	.13	1	.00	.24	0	.00
14	1.0	2	.01	.13	1	.00	.23	1	.00
15	.99	2	.01	.14	1	.00	.25	1	.00
16	.87	2	.00	.15	1	.00	.33	1	.00
17	.84	2	.00	.14	1	.00	.35	1	.00
18	1.1	2	.01	.12	1	.00	.35	1	.00
19	1.2	2	.01	.11	1	.00	.31	1	.00
20	1.1	1	.00	.11	2	.00	.21	1	.00
21	.96	1	.00	.11	2	.00	.24	1	.00
22	.96	1	.00	.11	2	.00	.31	1	.00
23	.91	1	.00	.11	2	.00	.34	1	.00
24	.81	1	.00	.11	2	.00	.35	1	.00
25	.68	1	.00	.12	2	.00	.36	1	.00
26	.63	1	.00	.11	2	.00	.39	1	.00
27	.53	2	.00	.10	2	.00	.42	1	.00
28	.48	1	.00	.10	2	.00	.43	1	.00
29	.43	1	.00	.10	2	.00	.40	1	.00
30	.41	1	.00	.10	2	.00	.40	2	.00
31	.39	1	.00	.10	2	.00	---	---	---
TOTAL	36.79	---	0.15	4.72	---	0.00	7.39	---	0.00
YEAR	4145.20		66.21						

PYRAMID AND WINNEMUCCA LAKES BASIN

10336740 LOGAN HOUSE CREEK NEAR GLENBROOK, NV

LOCATION.--Lat 39°04'00", long 119°56'04", in NW 1/4 NW 1/4 sec.23, T.14 N., R.18 E., Douglas County, Hydrologic Unit 16050101, Toiyabe National Forest, on right bank 0.1 mi downstream from unnamed tributary, 0.3 mi upstream from U.S. Highway 50, and 1.6 mi south of Glenbrook.

DRAINAGE AREA.--2.08 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 6,640 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 19, 20, 23, 24, 26-30, Dec. 1-6, 8-16, 22-27, 31, Jan. 1, 3, 4, 8, 16-18, 22-24, 27-30, Feb. 18-21. Records good except those for estimated periods, which are fair. One small diversion 50 ft upstream from station for domestic use.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6.4 ft³/s, Apr. 22, 1986; gage height, 4.60 ft; minimum daily, 0.06 ft³/s, Aug. 19, 29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 15	2130	*2.7	*4.38				
Minimum daily, 0.06 ft ³ /s, Aug. 19, 29.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	.54	.53	.60	.46	.48	.76	.66	.27	.14	.11	.09
2	.65	.54	.53	.59	.46	.48	.76	.58	.26	.12	.10	.09
3	.58	.53	.52	.59	.46	.50	.74	.54	.25	.12	.10	.08
4	.57	.53	.52	.59	.46	.55	.66	.50	.25	.12	.10	.09
5	.57	.53	.52	.57	.48	.59	.66	.47	.25	.10	.10	.10
6	.57	.54	.51	.57	.48	.61	.80	.44	.29	.11	.10	.09
7	.57	.54	.51	.57	.47	.60	.99	.43	.31	.10	.10	.09
8	.58	.59	.50	.56	.48	.60	1.1	.43	.25	.11	.09	.10
9	.55	.58	.50	.56	.49	.59	1.3	.44	.23	.12	.09	.10
10	.56	.59	.49	.54	.51	.57	1.3	.43	.23	.12	.09	.10
11	.55	.59	.49	.58	.51	.58	1.3	.42	.21	.11	.09	.10
12	.58	.59	.49	.60	.53	.65	1.0	.39	.19	.10	.09	.11
13	.58	.60	.48	.65	.68	.65	1.2	.36	.21	.10	.09	.14
14	.58	.60	.48	.64	.55	.59	1.2	.36	.24	.08	.09	.12
15	.61	.61	.47	.64	.51	.57	1.4	.35	.23	.09	.09	.10
16	.58	.61	.48	.64	.48	.55	1.5	.36	.21	.10	.09	.11
17	.60	.61	.48	.64	.47	.58	1.5	.35	.19	.11	.08	.11
18	.62	.60	.51	.64	.47	.57	1.1	.33	.18	.15	.07	.11
19	.63	.59	.60	.64	.47	.54	.82	.35	.17	.16	.06	.12
20	.61	.58	.67	.61	.47	.53	.83	.41	.16	.15	.07	.12
21	.60	.57	.65	.61	.47	.50	.98	.43	.15	.15	.09	.09
22	.63	.56	.62	.59	.47	.50	1.1	.38	.15	.14	.09	.10
23	.61	.54	.62	.57	.47	.51	.99	.36	.15	.14	.09	.11
24	.61	.52	.62	.56	.46	.49	1.0	.36	.13	.13	.10	.12
25	.63	.50	.62	.55	.46	.50	1.0	.35	.12	.11	.09	.12
26	.59	.50	.62	.52	.44	.53	.99	.43	.12	.10	.08	.13
27	.59	.51	.62	.50	.44	.52	.96	.43	.13	.10	.08	.13
28	.59	.51	.62	.49	.47	.51	.91	.35	.15	.11	.07	.12
29	.57	.52	.62	.48	---	.49	.90	.32	.13	.11	.06	.13
30	.57	.52	.61	.47	---	.56	.81	.31	.13	.13	.08	.14
31	.57	---	.60	.46	---	.65	---	.29	---	.12	.08	---
TOTAL	18.34	16.74	17.10	17.82	13.57	17.14	30.56	12.61	5.94	3.65	2.71	3.26
MEAN	.59	.56	.55	.57	.48	.55	1.02	.41	.20	.12	.087	.11
MAX	.65	.61	.67	.65	.68	.65	1.5	.66	.31	.16	.11	.14
MIN	.55	.50	.47	.46	.44	.48	.66	.29	.12	.08	.06	.08
AC-FT	36	33	34	35	27	34	61	25	12	7.2	5.4	6.5
CAL YR 1986	TOTAL 354.07	MEAN .97	MAX 4.6	MIN .32	AC-FT 702							
WTR YR 1987	TOTAL 159.44	MEAN .44	MAX 1.5	MIN .06	AC-FT 316							

PYRAMID AND WINNEMUCCA LAKES BASIN

10336740 LOGAN HOUSE CREEK NEAR GLENBROOK, NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1984 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1983 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1983 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 51 mg/L, Mar. 8, 1986; minimum daily mean, 0 mg/L, Nov. 5-9, 1983.

SEDIMENT LOAD: Maximum daily, 0.48 ton, Mar. 8, 1986; minimum daily, 0 ton, many days during each year.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 24 mg/L, Feb. 13; minimum daily mean, 1 mg/L, many days.

SEDIMENT LOAD: Maximum daily, 0.06 ton, Apr. 15-17; minimum daily, 0 ton, many days.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2.0	---	---	0.5	0.5	---	---	---	9.0	10.0	---
2	---	---	0.5	---	---	---	---	---	9.0	11.0	---	---
3	2.5	---	---	---	---	---	2.5	5.0	---	---	---	11.0
4	---	2.0	---	---	0.5	---	3.0	---	10.0	9.0	---	---
5	---	---	---	---	---	2.0	---	---	---	---	---	9.0
6	---	---	1.0	---	---	---	---	8.0	8.0	---	12.0	---
7	---	---	---	---	1.0	2.0	---	7.0	---	---	---	---
8	5.0	5.0	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	1.5	2.0	2.0	8.0	10.0	12.0	---	---
10	---	---	0.0	---	---	---	---	---	---	---	---	---
11	4.0	0.5	---	---	---	2.0	---	---	10.0	11.0	---	---
12	---	---	---	0.0	---	---	2.0	8.0	---	---	---	8.0
13	---	1.5	---	---	1.0	---	3.5	---	9.0	---	---	---
14	---	---	---	---	1.0	---	3.5	10.0	---	---	---	---
15	---	0.5	0.5	---	---	1.0	4.0	---	---	11.0	8.0	---
16	2.0	---	---	---	---	---	4.0	10.0	---	---	---	---
17	---	---	---	---	---	---	3.5	---	9.0	---	---	---
18	2.0	---	0.5	---	---	1.0	1.0	9.0	7.0	8.0	---	---
19	---	---	---	---	0.0	---	---	---	---	---	---	6.0
20	---	2.0	---	---	---	---	---	---	10.0	---	---	---
21	---	---	---	---	0.5	---	---	5.0	---	---	---	---
22	3.0	2.0	0.5	---	---	1.0	4.5	---	---	---	9.0	---
23	---	---	---	---	---	---	---	7.0	10.0	7.0	---	10.0
24	4.5	---	---	---	---	---	---	---	---	---	---	---
25	---	1.0	---	---	---	---	6.0	---	---	---	---	---
26	---	---	0.5	---	0.5	1.5	---	5.0	12.0	10.0	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	4.0	---	---	---	---	1.0	---	8.0	---	8.0	---	---
29	---	1.0	---	---	---	---	7.0	---	---	---	---	---
30	---	---	---	---	---	---	---	---	11.0	10.0	9.0	8.0
31	---	---	---	---	---	---	---	11.0	---	---	---	---

PYRAMID AND WINNEMUCCA LAKES BASIN

10336740 LOGAN HOUSE CREEK NEAR GLENBROOK, NV--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER				NOVEMBER				DECEMBER	
1	.64	2	.00	.54	2	.00	.53	2	.00
2	.65	2	.00	.54	1	.00	.53	1	.00
3	.58	3	.00	.53	1	.00	.52	1	.00
4	.57	4	.01	.53	1	.00	.52	2	.00
5	.57	4	.01	.53	2	.00	.52	2	.00
6	.57	5	.01	.54	3	.00	.51	2	.00
7	.57	5	.01	.54	3	.00	.51	2	.00
8	.58	5	.01	.59	4	.01	.50	2	.00
9	.55	5	.01	.58	3	.00	.50	2	.00
10	.56	5	.01	.59	2	.00	.49	2	.00
11	.55	5	.01	.59	1	.00	.49	2	.00
12	.58	4	.01	.59	2	.00	.49	2	.00
13	.58	4	.01	.60	4	.01	.48	1	.00
14	.58	3	.00	.60	3	.00	.48	1	.00
15	.61	2	.00	.61	2	.00	.47	1	.00
16	.58	2	.00	.61	2	.00	.48	1	.00
17	.60	2	.00	.61	2	.00	.48	2	.00
18	.62	2	.00	.60	1	.00	.51	2	.00
19	.63	2	.00	.59	1	.00	.60	2	.00
20	.61	2	.00	.58	2	.00	.67	2	.00
21	.60	2	.00	.57	4	.01	.65	2	.00
22	.63	2	.00	.56	3	.00	.62	2	.00
23	.61	2	.00	.54	2	.00	.62	2	.00
24	.61	2	.00	.52	2	.00	.62	3	.01
25	.63	2	.00	.50	1	.00	.62	3	.01
26	.59	2	.00	.50	2	.00	.62	4	.01
27	.59	3	.00	.51	4	.01	.62	4	.01
28	.59	3	.00	.51	4	.01	.62	4	.01
29	.57	3	.00	.52	4	.01	.62	4	.01
30	.57	2	.00	.52	3	.00	.61	4	.01
31	.57	2	.00	---	---	---	.60	4	.01
TOTAL	18.34	---	0.10	16.74	---	0.06	17.10	---	0.08
JANUARY				FEBRUARY				MARCH	
1	.60	4	.01	.46	5	.01	.48	2	.00
2	.59	4	.01	.46	4	.00	.48	2	.00
3	.59	4	.01	.46	4	.00	.50	3	.00
4	.59	4	.01	.46	3	.00	.55	3	.00
5	.57	4	.01	.48	3	.00	.59	4	.01
6	.57	4	.01	.48	3	.00	.61	4	.01
7	.57	4	.01	.47	3	.00	.60	3	.00
8	.56	4	.01	.48	3	.00	.60	3	.00
9	.56	3	.00	.49	2	.00	.59	3	.00
10	.54	3	.00	.51	2	.00	.57	3	.00
11	.58	3	.00	.51	2	.00	.58	3	.00
12	.60	3	.00	.53	2	.00	.65	6	.01
13	.65	3	.01	.68	24	.04	.65	4	.01
14	.64	3	.01	.55	6	.01	.59	3	.00
15	.64	4	.01	.51	2	.00	.57	2	.00
16	.64	4	.01	.48	2	.00	.55	2	.00
17	.64	4	.01	.47	2	.00	.58	4	.01
18	.64	4	.01	.47	2	.00	.57	2	.00
19	.64	4	.01	.47	2	.00	.54	2	.00
20	.61	4	.01	.47	3	.00	.53	6	.01
21	.61	4	.01	.47	4	.01	.50	4	.01
22	.59	4	.01	.47	4	.01	.50	2	.00
23	.57	4	.01	.47	4	.01	.51	3	.00
24	.56	5	.01	.46	4	.00	.49	3	.00
25	.55	5	.01	.46	4	.00	.50	3	.00
26	.52	5	.01	.44	4	.00	.53	4	.01
27	.50	5	.01	.44	3	.00	.52	5	.01
28	.49	5	.01	.47	3	.00	.51	6	.01
29	.48	5	.01	---	---	---	.49	7	.01
30	.47	5	.01	---	---	---	.56	8	.01
31	.46	5	.01	---	---	---	.65	10	.02
TOTAL	17.82	---	0.27	13.57	---	0.09	17.14	---	0.14

PYRAMID AND WINNEMUCCA LAKES BASIN

10336740 LOGAN HOUSE CREEK NEAR GLENBROOK, NV--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	.76	12	.02	.66	5	.01	.27	5	.00
2	.76	10	.02	.58	5	.01	.26	5	.00
3	.74	7	.01	.54	4	.01	.25	4	.00
4	.66	5	.01	.50	5	.01	.25	4	.00
5	.66	8	.01	.47	6	.01	.25	4	.00
6	.80	8	.02	.44	7	.01	.29	5	.00
7	.99	9	.02	.43	3	.00	.31	4	.00
8	1.1	9	.03	.43	3	.00	.25	4	.00
9	1.3	10	.04	.44	3	.00	.23	4	.00
10	1.3	11	.04	.43	4	.00	.23	4	.00
11	1.3	12	.04	.42	5	.01	.21	5	.00
12	1.0	11	.03	.39	6	.01	.19	4	.00
13	1.2	14	.05	.36	5	.00	.21	4	.00
14	1.2	16	.05	.36	4	.00	.24	4	.00
15	1.4	16	.06	.35	6	.01	.23	3	.00
16	1.5	15	.06	.36	7	.01	.21	3	.00
17	1.5	14	.06	.35	7	.01	.19	3	.00
18	1.1	6	.02	.33	6	.01	.18	2	.00
19	.82	6	.01	.35	5	.00	.17	2	.00
20	.83	7	.02	.41	5	.01	.16	2	.00
21	.98	10	.03	.43	4	.00	.15	2	.00
22	1.1	9	.03	.38	4	.00	.15	2	.00
23	.99	5	.01	.36	4	.00	.15	2	.00
24	1.0	5	.01	.36	4	.00	.13	2	.00
25	1.0	6	.02	.35	3	.00	.12	2	.00
26	.99	6	.02	.43	3	.00	.12	3	.00
27	.96	6	.02	.43	4	.00	.13	3	.00
28	.91	6	.01	.35	6	.01	.15	4	.00
29	.90	6	.01	.32	6	.01	.13	5	.00
30	.81	6	.01	.31	5	.00	.13	6	.00
31	---	---	---	.29	5	.00	---	---	---
TOTAL	30.56	---	0.79	12.61	---	0.15	5.94	---	0.00
JULY			AUGUST			SEPTEMBER			
1	.14	8	.00	.11	2	.00	.09	2	.00
2	.12	3	.00	.10	2	.00	.09	2	.00
3	.12	2	.00	.10	2	.00	.08	2	.00
4	.12	3	.00	.10	1	.00	.09	2	.00
5	.10	3	.00	.10	1	.00	.10	3	.00
6	.11	3	.00	.10	1	.00	.09	4	.00
7	.10	3	.00	.10	1	.00	.09	5	.00
8	.11	3	.00	.09	2	.00	.10	5	.00
9	.12	3	.00	.09	2	.00	.10	6	.00
10	.12	2	.00	.09	2	.00	.10	7	.00
11	.11	1	.00	.09	2	.00	.10	7	.00
12	.10	1	.00	.09	2	.00	.11	8	.00
13	.10	2	.00	.09	3	.00	.14	7	.00
14	.08	2	.00	.09	3	.00	.12	7	.00
15	.09	3	.00	.09	3	.00	.10	6	.00
16	.10	2	.00	.09	3	.00	.11	5	.00
17	.11	2	.00	.08	3	.00	.11	4	.00
18	.15	2	.00	.07	4	.00	.11	4	.00
19	.16	2	.00	.06	4	.00	.12	3	.00
20	.15	2	.00	.07	4	.00	.12	3	.00
21	.15	2	.00	.09	4	.00	.09	3	.00
22	.14	2	.00	.09	4	.00	.10	3	.00
23	.14	2	.00	.09	4	.00	.11	4	.00
24	.13	2	.00	.10	4	.00	.12	4	.00
25	.11	2	.00	.09	4	.00	.12	4	.00
26	.10	1	.00	.08	4	.00	.13	4	.00
27	.10	2	.00	.08	4	.00	.13	4	.00
28	.11	3	.00	.07	4	.00	.12	3	.00
29	.11	2	.00	.06	4	.00	.13	3	.00
30	.13	1	.00	.08	4	.00	.14	3	.00
31	.12	1	.00	.08	3	.00	---	---	---
TOTAL	3.65	---	0.00	2.71	---	0.00	3.26	---	0.00
YEAR	159.44		1.68						

PYRAMID AND WINNEMUCCA LAKES BASIN

10336740 LOGAN HOUSE CREEK NEAR GLENBROOK, NV--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
APR 13...	1705	1.5	3.5	38	0.15	68

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM
JUL 28...	1010	8.0	3	0.18	1	2	7

DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM
JUL 28...	18	39	70	93	99	100

PYRAMID AND WINNEMUCCA LAKES BASIN

10336759 EDGEWOOD CREEK NEAR STATELINE, NV

LOCATION.--Lat 38°57'50", long 119°55'24", in SW 1/4 NE 1/4 sec.26, T.13 N., R.18 E., Douglas County, Hydrologic Unit 16050101, on right bank 0.1 mi upstream from unnamed tributary, 0.9 mi upstream from U.S. Highway 50, and 1.1 mi northeast of Stateline.

DRAINAGE AREA.--3.20 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 6,420 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--5 years, 2.94 ft³/s, 2130 acre-feet/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24 ft³/s, May 27, 1983, gage height, 2.41 ft; minimum daily, 0.73 ft³/s, July 27, Aug. 6, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 10	1745	*4.3	*1.30				
Minimum daily, 0.73 ft ³ /s, July 27, Aug. 6.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1.9	1.9	1.9	1.9	2.1	3.0	2.3	1.4	.96	.81	.90
2	2.1	1.9	1.9	1.9	1.9	2.2	3.1	2.2	1.3	.91	.78	.91
3	1.9	1.9	1.9	1.7	1.9	2.3	2.9	2.1	1.3	.91	.74	.88
4	2.0	1.9	1.9	1.8	1.9	2.5	2.8	2.0	1.3	.90	.74	.90
5	2.0	1.9	1.9	1.9	1.9	2.8	2.9	2.0	1.3	.88	.74	.90
6	2.0	1.9	1.9	1.9	2.0	2.7	3.1	2.0	1.5	.87	.73	.90
7	1.9	1.9	2.0	1.8	2.0	2.6	3.3	1.9	1.5	.85	.75	.91
8	1.9	2.0	1.9	1.8	2.0	2.6	3.3	1.8	1.3	.86	.77	.90
9	1.9	2.0	2.0	1.8	2.0	2.5	3.4	1.8	1.3	.83	.78	.89
10	1.9	2.0	1.9	1.7	2.1	2.5	3.4	2.2	1.3	.82	.77	.90
11	1.9	2.0	1.9	1.8	2.1	2.5	3.5	2.1	1.2	.82	.79	.91
12	1.9	2.0	1.9	1.8	2.2	2.6	3.2	1.8	1.2	.81	.80	.92
13	1.9	1.9	1.9	1.8	3.2	2.7	3.2	1.7	1.3	.78	.79	.93
14	1.9	1.9	1.9	1.7	2.5	2.4	3.3	1.8	1.3	.77	.82	.93
15	1.9	2.0	1.8	1.7	2.3	2.4	3.3	1.8	1.3	.79	.84	.93
16	2.3	1.9	1.8	1.7	2.2	2.4	3.2	1.8	1.2	.77	.82	.94
17	2.0	1.9	1.8	1.8	2.2	2.5	3.1	1.8	1.2	.83	.80	.94
18	2.0	1.9	2.2	1.8	2.2	2.4	2.8	1.7	1.2	.86	.78	.93
19	2.0	1.9	2.0	1.8	2.1	2.3	2.6	1.7	1.2	.83	.81	.92
20	2.0	1.9	1.9	1.8	2.1	2.4	2.5	2.2	1.1	.83	.84	.86
21	2.0	2.0	1.8	1.8	2.1	2.3	2.6	2.1	1.1	.83	.86	.85
22	2.0	1.9	1.8	1.8	2.1	2.3	2.7	2.3	1.1	.83	.87	.85
23	1.9	1.9	1.8	1.8	2.1	2.4	2.6	2.0	1.1	.81	.85	.86
24	1.9	1.9	1.8	1.8	2.0	2.3	2.6	1.8	1.0	.80	.87	.87
25	1.9	1.9	1.8	1.8	2.0	2.3	2.5	1.7	1.0	.78	.85	.89
26	1.9	1.9	1.8	1.9	2.0	2.4	2.6	1.9	1.0	.76	.84	.91
27	1.9	1.8	1.9	1.9	2.0	2.4	2.8	1.7	1.0	.73	.90	.89
28	1.9	1.8	1.9	1.9	2.1	2.4	2.7	1.6	1.0	.78	.86	.91
29	1.9	1.9	1.8	1.9	---	2.5	2.7	1.5	.93	.85	.86	.93
30	1.9	1.9	1.8	1.9	---	2.6	2.5	1.5	.95	.83	.86	.94
31	1.9	---	1.9	1.8	---	2.8	---	1.4	---	.82	.88	---
TOTAL	60.5	57.5	58.4	56.2	59.1	76.1	88.2	58.2	35.88	25.70	25.20	27.10
MEAN	1.95	1.92	1.88	1.81	2.11	2.45	2.94	1.88	1.20	.83	.81	.90
MAX	2.3	2.0	2.2	1.9	3.2	2.8	3.5	2.3	1.5	.96	.90	.94
MIN	1.9	1.8	1.8	1.7	1.9	2.1	2.5	1.4	.93	.73	.73	.85
AC-FT	120	114	116	111	117	151	175	115	71	51	50	54

CAL YR 1986	TOTAL	1090.80	MEAN 2.99	MAX 17	MIN 1.3	AC-FT 2160
WTR YR 1987	TOTAL	628.08	MEAN 1.72	MAX 3.5	MIN .73	AC-FT 1250

10336759 EDGEWOOD CREEK NEAR STATELINE, NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983 to September 1987 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1982 to September 1987 (discontinued).

SUSPENDED-SEDIMENT DISCHARGE: October 1982 to September 1987 (discontinued).

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 403 mg/L, May 21, 1983; minimum daily mean, 2 mg/L, Dec. 13-19, 1983, and many days in 1987 water year.

SEDIMENT LOAD: Maximum daily, 22 tons, May 21, 1983; minimum daily, 0 ton, July 28, Sept. 19-28, 1987.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 30 mg/L, Feb. 13; minimum daily mean, 2 mg/L, many days.

SEDIMENT LOAD: Maximum daily, 0.27 ton, Feb. 13; minimum daily, 0 ton, July 28, Sept. 19-28.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	9.0	---	---
2	---	---	---	---	---	---	---	7.5	10.0	---	---	---
3	4.0	---	---	---	3.0	---	4.0	---	---	---	---	---
4	---	---	---	---	---	---	---	9.0	---	---	---	---
5	---	---	4.0	---	---	---	---	---	---	---	9.0	---
6	---	---	---	---	---	---	---	10.0	---	---	---	---
7	---	---	---	---	---	---	4.5	7.0	---	---	9.5	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	6.5	---	---	---	3.0	3.5	---	10.0	---	---	9.5	---
10	---	---	0.5	---	---	---	---	---	---	---	---	---
11	---	2.5	---	---	---	---	---	---	---	---	---	---
12	---	---	3.0	1.0	---	---	7.0	11.5	---	---	---	---
13	---	4.5	---	4.0	1.5	---	---	---	---	---	---	---
14	4.5	---	---	---	---	---	---	---	---	---	---	7.0
15	---	---	---	---	---	---	7.0	---	9.0	---	---	---
16	---	---	---	---	---	---	---	---	---	7.0	10.0	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	7.5	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	5.5	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	5.0	---	2.5	---	---	---	8.0	---	---	---	---	---
23	---	---	---	---	---	---	7.5	---	---	7.0	---	---
24	---	---	---	---	---	3.0	---	---	---	---	---	---
25	---	---	---	3.0	---	---	8.5	---	---	---	---	---
26	---	3.5	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	8.0	---
28	5.5	---	---	---	3.0	---	8.5	8.0	---	8.5	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	5.0	---	---	---	---	---	---
31	---	---	---	2.5	---	---	---	---	---	---	9.5	---

PYRAMID AND WINNEMUCCA LAKES BASIN

10336759 EDGEWOOD CREEK NEAR STATELINE, NV--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	2.0	6	.03	1.9	2	.01	1.9	4	.02
2	2.1	5	.03	1.9	2	.01	1.9	4	.02
3	1.9	4	.02	1.9	2	.01	1.9	4	.02
4	2.0	4	.02	1.9	2	.01	1.9	4	.02
5	2.0	4	.02	1.9	2	.01	1.9	4	.02
6	2.0	4	.02	1.9	2	.01	1.9	4	.02
7	1.9	3	.02	1.9	2	.01	2.0	4	.02
8	1.9	3	.02	2.0	2	.01	1.9	4	.02
9	1.9	3	.02	2.0	2	.01	2.0	4	.02
10	1.9	4	.02	2.0	2	.01	1.9	4	.02
11	1.9	5	.03	2.0	2	.01	1.9	4	.02
12	1.9	6	.03	2.0	2	.01	1.9	5	.03
13	1.9	7	.04	1.9	2	.01	1.9	5	.03
14	1.9	8	.04	1.9	2	.01	1.9	5	.03
15	1.9	7	.04	2.0	2	.01	1.8	5	.02
16	2.3	6	.04	1.9	2	.01	1.8	4	.02
17	2.0	6	.03	1.9	2	.01	1.8	4	.02
18	2.0	5	.03	1.9	2	.01	2.2	4	.02
19	2.0	4	.02	1.9	2	.01	2.0	4	.02
20	2.0	4	.02	1.9	2	.01	1.9	3	.02
21	2.0	3	.02	2.0	2	.01	1.8	3	.01
22	2.0	2	.01	1.9	2	.01	1.8	3	.01
23	1.9	2	.01	1.9	2	.01	1.8	3	.01
24	1.9	2	.01	1.9	3	.02	1.8	3	.01
25	1.9	2	.01	1.9	3	.02	1.8	3	.01
26	1.9	2	.01	1.9	3	.02	1.8	3	.01
27	1.9	2	.01	1.8	3	.01	1.9	3	.02
28	1.9	2	.01	1.8	3	.01	1.9	3	.02
29	1.9	2	.01	1.9	3	.02	1.8	3	.01
30	1.9	2	.01	1.9	3	.02	1.8	3	.01
31	1.9	2	.01	---	---	---	1.9	3	.02
TOTAL	60.5	---	0.66	57.5	---	0.35	58.4	---	0.57
JANUARY			FEBRUARY			MARCH			
1	1.9	3	.02	1.9	5	.03	2.1	7	.04
2	1.9	4	.02	1.9	6	.03	2.2	4	.02
3	1.7	4	.02	1.9	7	.04	2.3	7	.04
4	1.8	4	.02	1.9	8	.04	2.5	8	.05
5	1.9	4	.02	1.9	8	.04	2.8	11	.08
6	1.9	4	.02	2.0	8	.04	2.7	10	.07
7	1.8	4	.02	2.0	8	.04	2.6	6	.04
8	1.8	4	.02	2.0	9	.05	2.6	8	.06
9	1.8	4	.02	2.0	9	.05	2.5	8	.05
10	1.7	4	.02	2.1	7	.04	2.5	5	.03
11	1.8	4	.02	2.1	5	.03	2.5	7	.05
12	1.8	4	.02	2.2	7	.04	2.6	8	.06
13	1.8	4	.02	3.2	30	.27	2.7	6	.04
14	1.7	4	.02	2.5	5	.03	2.4	4	.03
15	1.7	4	.02	2.3	4	.02	2.4	4	.03
16	1.7	4	.02	2.2	4	.02	2.4	4	.03
17	1.8	4	.02	2.2	4	.02	2.5	7	.05
18	1.8	4	.02	2.2	4	.02	2.4	4	.03
19	1.8	4	.02	2.1	4	.02	2.3	4	.02
20	1.8	4	.02	2.1	4	.02	2.4	6	.04
21	1.8	4	.02	2.1	4	.02	2.3	4	.02
22	1.8	4	.02	2.1	4	.02	2.3	4	.02
23	1.8	4	.02	2.1	4	.02	2.4	4	.03
24	1.8	4	.02	2.0	4	.02	2.3	4	.02
25	1.8	7	.03	2.0	4	.02	2.3	6	.04
26	1.9	7	.04	2.0	6	.03	2.4	7	.05
27	1.9	7	.04	2.0	7	.04	2.4	4	.03
28	1.9	7	.04	2.1	7	.04	2.4	4	.03
29	1.9	5	.03	---	---	---	2.5	4	.03
30	1.9	5	.03	---	---	---	2.6	9	.06
31	1.8	5	.02	---	---	---	2.8	9	.07
TOTAL	56.2	---	0.71	59.1	---	1.10	76.1	---	1.26

PYRAMID AND WINNEMUCCA LAKES BASIN

10336759 EDGEWOOD CREEK NEAR STATELINE, NV--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	3.0	11	.09	2.3	17	.11	1.4	11	.04
2	3.1	10	.08	2.2	16	.10	1.3	11	.04
3	2.9	5	.04	2.1	15	.09	1.3	11	.04
4	2.8	9	.07	2.0	13	.07	1.3	10	.04
5	2.9	10	.08	2.0	10	.05	1.3	10	.04
6	3.1	11	.09	2.0	6	.04	1.5	12	.05
7	3.3	14	.12	1.9	4	.02	1.5	11	.04
8	3.3	16	.14	1.8	7	.03	1.3	9	.03
9	3.4	12	.11	1.8	10	.05	1.3	9	.03
10	3.4	11	.10	2.2	14	.08	1.3	9	.03
11	3.5	11	.10	2.1	16	.09	1.2	8	.03
12	3.2	10	.09	1.8	15	.07	1.2	8	.03
13	3.2	10	.09	1.7	15	.07	1.3	8	.03
14	3.3	11	.10	1.8	15	.07	1.3	8	.03
15	3.3	12	.11	1.8	15	.07	1.3	8	.03
16	3.2	12	.10	1.8	15	.07	1.2	6	.02
17	3.1	11	.09	1.8	14	.07	1.2	4	.01
18	2.8	10	.08	1.7	14	.06	1.2	2	.01
19	2.6	10	.07	1.7	14	.06	1.2	2	.01
20	2.5	10	.07	2.2	14	.08	1.1	2	.01
21	2.6	11	.08	2.1	13	.07	1.1	3	.01
22	2.7	12	.09	2.3	13	.08	1.1	3	.01
23	2.6	13	.09	2.0	13	.07	1.1	3	.01
24	2.6	13	.09	1.8	13	.06	1.0	3	.01
25	2.5	13	.09	1.7	12	.06	1.0	3	.01
26	2.6	14	.10	1.9	12	.06	1.0	3	.01
27	2.8	16	.12	1.7	12	.06	1.0	3	.01
28	2.7	19	.14	1.6	11	.05	1.0	3	.01
29	2.7	18	.13	1.5	11	.04	.93	3	.01
30	2.5	17	.11	1.5	11	.04	.95	3	.01
31	---	---	---	1.4	11	.04	---	---	---
TOTAL	88.2	---	2.86	58.2	---	1.98	35.88	---	0.69
JULY			AUGUST			SEPTEMBER			
1	.96	3	.01	.81	7	.02	.90	3	.01
2	.91	4	.01	.78	8	.02	.91	3	.01
3	.91	4	.01	.74	9	.02	.88	3	.01
4	.90	5	.01	.74	10	.02	.90	3	.01
5	.88	5	.01	.74	11	.02	.90	3	.01
6	.87	6	.01	.73	12	.02	.90	3	.01
7	.85	6	.01	.75	13	.03	.91	3	.01
8	.86	7	.02	.77	14	.03	.90	3	.01
9	.83	7	.02	.78	16	.03	.89	3	.01
10	.82	7	.02	.77	15	.03	.90	3	.01
11	.82	7	.02	.79	14	.03	.91	3	.01
12	.81	8	.02	.80	13	.03	.92	3	.01
13	.78	8	.02	.79	11	.02	.93	3	.01
14	.77	8	.02	.82	10	.02	.93	3	.01
15	.79	8	.02	.84	9	.02	.93	3	.01
16	.77	8	.02	.82	7	.02	.94	2	.01
17	.83	8	.02	.80	7	.02	.94	2	.01
18	.86	8	.02	.78	7	.01	.93	2	.01
19	.83	7	.02	.81	7	.02	.92	2	.00
20	.83	7	.02	.84	7	.02	.86	2	.00
21	.83	6	.01	.86	6	.01	.85	2	.00
22	.83	6	.01	.87	6	.01	.85	2	.00
23	.81	5	.01	.85	6	.01	.86	2	.00
24	.80	4	.01	.87	5	.01	.87	2	.00
25	.78	4	.01	.85	5	.01	.89	2	.00
26	.76	3	.01	.84	4	.01	.91	2	.00
27	.73	3	.01	.90	4	.01	.89	2	.00
28	.78	2	.00	.86	4	.01	.91	2	.00
29	.85	3	.01	.86	4	.01	.93	2	.01
30	.83	4	.01	.86	4	.01	.94	2	.01
31	.82	5	.01	.88	3	.01	---	---	---
TOTAL	25.70	---	0.43	25.20	---	0.56	27.10	---	0.20
YEAR	628.08		11.37						

PYRAMID AND WINNEMUCCA LAKES BASIN

10336759 EDGEWOOD CREEK NEAR STATELINE, NV--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
APR 22...	2000	2.9	8.0	14	0.11	73

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM
FEB 13...	1330	1.5	1	3.7	1	3	9
JUL 28...	1230	8.5	1	0.87	1	3	12
28...	1235	8.5	1	0.87	1	3	10

DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
FEB 13...	23	38	55	70	91	99	100
JUL 28...	30	47	69	97	100	--	--
28...	16	27	44	70	84	98	100

PYRAMID AND WINNEMUCCA LAKES BASIN

10336759 EDGEWOOD CREEK NEAR STATELINE, NV-Continued

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
(NOT PREVIOUSLY PUBLISHED)

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	STREAM WIDTH (FT)	SEDI- MENT DIS- CHARGE, BEDLOAD (TONS/ DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .125 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM
JAN								
17...	1100	2.5	8	3.4	4.50	1.5	--	2
FEB								
18...	1135	1.0	3	7.8	4.50	1.0	1	3
20...	1415	1.0	3	4.6	4.50	1.6	--	4
26...	1200	2.5	8	3.4	4.50	0.69	--	2
MAR								
08...	1315	1.0	3	19	4.50	2.5	--	1
17...	1455	3.0	8	3.8	4.60	1.4	--	4
28...	1345	5.5	8	5.6	4.50	0.28	--	4
APR								
07...	1250	3.0	8	7.6	4.60	1.8	--	2
28...	1150	5.0	8	6.2	4.60	0.58	--	5
MAY								
20...	2010	9.0	8	4.5	4.50	0.48	--	9

DATE	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 32.0 MM
JAN							
17...	16	40	72	95	100	--	--
FEB							
18...	20	34	58	84	98	100	--
20...	37	70	91	99	100	--	--
26...	20	43	67	89	100	--	--
MAR							
08...	10	24	46	77	97	100	--
17...	25	57	84	98	100	--	--
28...	13	37	66	92	100	--	--
APR							
07...	9	31	68	91	97	100	--
28...	28	51	70	86	95	99	100
MAY							
20...	23	47	70	89	96	100	--

PARTICLE SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	STREAM WIDTH (FT)	SEDI- MENT DIS- CHARGE, BEDLOAD (TONS/ DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .125 MM
FEB							
13...	1340	1.5	8	3.7	4.50	2.6	1
APR							
22...	1920	8.0	8	2.8	4.50	0.40	--
DATE	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM
FEB							
13...	4	31	64	90	98	99	100
APR							
22...	6	47	80	92	98	100	--

PYRAMID AND WINNEMUCCA LAKES BASIN

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA

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

DRAINAGE AREA.--36.7 mi².

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

SPECIFIC CONDUCTANCE: February 1981 to September 1983, daily.

WATER TEMPERATURE: October 1973 to September 1974, October 1977 to June 1978, March 1980 to September 1985.

SUSPENDED-SEDIMENT DISCHARGE: October 1973 to September 1974, October 1977 to June 1978, March 1980 to September 1985, daily.

GAGE.--Water-stage recorder and sharp-crested weir in culvert at bridge. Elevation of gage is 6,250 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 30, Dec. 1, 2, 9-11, 13-15, 26, 28, 30, Jan. 3-5, 8-11, 14-21, 28-31, Feb. 1-19, 21-28, Mar. 1, 19, 20. Records good except those for periods of estimated daily discharge, which are poor. Minor diversions for local water supply upstream from station.

AVERAGE DISCHARGE.--27 years, 38.8 ft³/s, 28,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 535 ft³/s, Feb. 1, 1963, gage height, 11.14 ft, from rating curve extended above 250 ft³/s on basis of computation of peak flow (weir formula); no flow for part of Sept. 11, 1966.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 19	0845	(a)	*7.32	Apr. 29	0045	*46	6.64

a Backwater from ice.

Minimum daily, 4.7 ft³/s, Aug. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	23	22	22	20	20	23	36	19	13	5.8	6.7
2	28	23	22	21	19	20	25	31	17	11	5.8	7.1
3	27	23	22	22	19	21	26	31	17	10	5.7	6.8
4	27	23	23	22	19	22	23	32	17	10	5.7	6.6
5	27	23	23	22	19	24	22	32	18	10	5.3	6.6
6	27	23	23	22	19	26	23	31	19	10	5.3	6.6
7	26	23	21	22	18	25	25	30	24	9.8	5.0	6.4
8	26	23	21	22	18	24	26	29	21	9.8	5.0	6.6
9	26	24	21	22	18	24	28	31	18	9.2	5.0	6.5
10	26	24	22	21	18	22	29	29	17	8.8	4.9	6.3
11	25	23	22	21	23	22	30	30	16	8.5	5.1	6.3
12	24	23	23	21	30	23	30	31	16	8.3	5.1	6.9
13	24	23	23	20	44	27	28	30	16	8.0	5.2	8.0
14	25	23	23	19	38	23	31	29	19	7.9	5.0	6.6
15	24	23	22	19	32	23	32	30	18	7.8	5.4	7.1
16	24	23	22	19	29	22	32	31	16	7.9	5.5	6.6
17	25	23	22	19	27	22	34	32	16	6.5	5.4	6.3
18	25	23	22	19	25	21	34	33	15	7.9	5.0	8.4
19	24	23	22	19	24	22	27	30	15	8.7	4.7	6.4
20	24	22	21	19	21	21	27	30	13	11	4.8	6.2
21	24	23	23	19	21	20	30	31	13	9.0	5.2	6.2
22	24	23	23	19	21	20	33	31	14	9.0	5.5	6.1
23	24	24	21	19	21	20	33	29	13	7.8	4.8	5.9
24	24	23	23	19	21	19	33	28	12	7.7	5.0	6.6
25	24	22	23	21	21	20	33	26	11	7.4	5.2	6.2
26	24	23	22	20	21	20	35	26	11	7.1	5.1	6.2
27	24	23	22	20	20	20	38	26	11	7.8	6.6	6.6
28	24	22	22	20	20	20	38	24	12	7.8	6.2	6.3
29	24	22	22	20	---	19	41	23	11	6.5	6.2	6.1
30	24	22	22	20	---	20	42	22	12	5.8	6.5	6.0
31	24	---	22	20	---	22	---	21	---	5.5	6.7	---
TOTAL	777	688	687	630	646	674	911	905	467	265.5	167.7	197.2
MEAN	25.1	22.9	22.2	20.3	23.1	21.7	30.4	29.2	15.6	8.56	5.41	6.57
MAX	29	24	23	22	44	27	42	36	24	13	6.7	8.4
MIN	24	22	21	19	18	19	22	21	11	5.5	4.7	5.9
AC-FT	1540	1360	1360	1250	1280	1340	1810	1800	926	527	333	391
CAL YR 1986	TOTAL	21571.0	MEAN	59.1	MAX	328	MIN	17	AC-FT	42790		
WTR YR 1987	TOTAL	7015.4	MEAN	19.2	MAX	44	MIN	4.7	AC-FT	13920		

PYRAMID AND WINNEMUCCA LAKES BASIN

10337000 LAKE TAHOE AT TAHOE CITY, CA

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

DRAINAGE AREA.--506 mi², at lake outlet.

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

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

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

GAGE.--Water-stage recorder. Datum of gage is 6,220.00 ft above U.S. Bureau of Reclamation datum, 6,218.86 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1957, nonrecording gages at several sites near outlet of lake at same datum. Oct. 1, 1957, to May 8, 1958, water-stage recorder on left wingwall of dam at outlet of lake at same datum. May 9, 1958, to Sept. 30, 1968, water-stage recorder on pier, 1,000 ft east of dam at lake outlet.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 6,231.26 ft, July 14, 15, 17, 18, 1907; minimum, 6,221.74 ft, Dec. 26, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 6,227.85 ft, Oct. 1; minimum, 6,225.55 ft, Sept. 30.

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

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

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.83	7.52	7.17	6.95	6.84	6.95	7.01	7.19	7.31	7.12	6.54	6.06
2	7.80	7.50	7.17	6.93	6.81	6.94	7.00	7.21	7.30	7.10	6.53	6.04
3	7.80	7.48	7.13	7.07	6.81	6.95	7.02	7.22	7.29	7.07	6.55	6.02
4	7.76	7.48	7.13	7.06	6.81	6.92	7.02	7.23	7.30	7.05	6.54	5.99
5	7.77	7.46	7.14	7.04	6.80	6.95	7.02	7.24	7.30	7.04	6.53	5.97
6	7.75	7.44	7.15	7.03	6.80	6.96	7.03	7.25	7.30	7.03	6.51	5.96
7	7.75	7.44	7.11	7.02	6.79	6.96	7.03	7.25	7.30	7.01	6.49	5.94
8	7.74	7.43	7.09	7.01	6.79	6.94	7.03	7.26	7.29	7.01	6.47	5.92
9	7.75	7.41	7.08	7.01	6.80	6.95	7.04	7.27	7.29	6.99	6.45	5.90
10	7.73	7.41	7.08	7.00	6.78	6.92	7.02	7.28	7.28	6.97	6.42	5.88
11	7.74	7.39	7.07	7.00	6.80	6.93	7.03	7.30	7.27	6.95	6.40	5.86
12	7.70	7.38	7.07	6.97	6.86	6.99	7.05	7.31	7.26	6.96	6.39	5.84
13	7.71	7.36	7.05	6.96	7.02	7.00	7.05	7.33	7.27	6.95	6.35	5.83
14	7.69	7.36	7.05	6.95	7.00	7.03	7.05	7.33	7.26	6.95	6.32	5.81
15	7.69	7.34	7.04	6.92	7.05	7.02	7.07	7.34	7.25	6.93	6.28	5.78
16	7.66	7.31	7.02	6.90	7.04	7.02	7.07	7.35	7.23	6.85	6.28	5.78
17	7.66	7.33	7.02	6.88	7.03	7.00	7.05	7.35	7.21	6.84	6.27	5.75
18	7.65	7.29	7.03	6.87	7.02	7.05	7.06	7.36	7.22	6.77	6.25	5.73
19	7.64	7.30	7.03	6.85	7.01	7.06	7.07	7.35	7.21	6.77	6.24	5.72
20	7.63	7.27	7.03	6.85	6.99	7.04	7.07	7.38	7.20	6.75	6.20	5.70
21	7.61	7.29	7.03	6.84	6.98	7.06	7.08	7.37	7.18	6.70	6.20	5.69
22	7.62	7.27	7.02	6.80	6.97	7.04	7.08	7.38	7.17	6.69	6.19	5.68
23	7.60	7.25	7.01	6.81	7.00	7.06	7.09	7.36	7.16	6.68	6.16	5.66
24	7.60	7.24	7.01	6.83	7.01	7.05	7.10	7.34	7.17	6.66	6.16	5.65
25	7.59	7.24	7.00	6.83	6.99	7.05	7.11	7.35	7.15	6.65	6.14	5.63
26	7.59	7.20	6.99	6.82	6.98	7.04	7.12	7.34	7.15	6.62	6.12	5.61
27	7.60	7.18	6.98	6.84	6.98	7.03	7.14	7.33	7.15	6.61	6.11	5.60
28	7.58	7.20	6.97	6.86	6.97	7.02	7.16	7.33	7.14	6.59	6.09	5.58
29	7.62	7.20	6.96	6.85	---	7.02	7.17	7.33	7.13	6.57	6.08	5.57
30	7.57	7.19	6.96	6.85	---	7.02	7.16	7.30	7.12	6.56	6.06	5.56
31	7.54	---	6.93	6.84	---	7.02	---	7.30	---	6.55	6.05	---
MEAN	7.68	7.34	7.05	6.92	6.92	7.00	7.07	7.31	7.23	6.84	6.30	5.79
MAX	7.83	7.52	7.17	7.07	7.05	7.06	7.17	7.38	7.31	7.12	6.55	6.06
MIN	7.54	7.18	6.93	6.80	6.78	6.92	7.00	7.19	7.12	6.55	6.05	5.56
a	552900	510100	478300	467300	483100	489200	506400	523600	501500	431900	370900	311200
b	-35600	-42800	-31800	-11000	+15800	+6100	+17200	+17200	-22100	-69600	-61000	-59700

CAL YR 1986 b +45200

WTR YR 1987 b -277300

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

b Change in contents, in acre-feet.

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

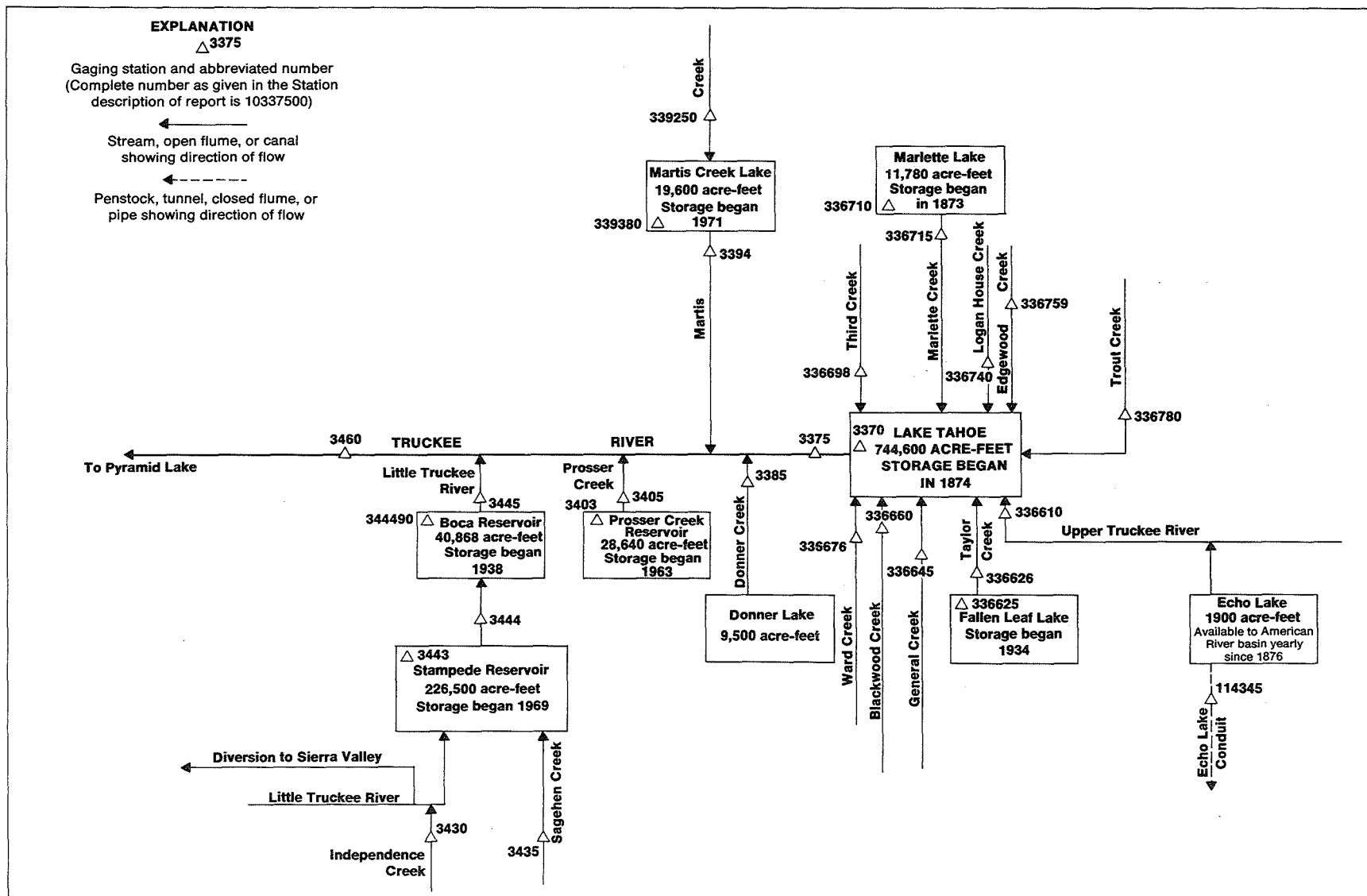


Figure 27. - Schematic diagram showing diversions and storage in Truckee River basin.

PYRAMID AND WINNEMUCCA LAKES BASIN

10337500 TRUCKEE RIVER AT TAHOE CITY, CA

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

DRAINAGE AREA.--507 mi².

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

CHEMICAL DATA: Water years 1978 to 1981, monthly.

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

GAGE.--Water-stage recorder. Datum of gage is 6,216.59 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 12, 1912, nonrecording gage at site 370 ft upstream at different datum. Nov. 12, 1912, to Sept. 30, 1937, nonrecording gage; Oct. 1, 1937, to Aug. 21, 1957, water-stage recorder at datum 2.26 ft higher; and Aug. 22, 1957, to July 10, 1960, at datum 2.42 ft higher; all at site 270 ft upstream.

REMARKS.--No estimated daily discharges. Records excellent, except those for October, which are good. Flow completely regulated by dam at outlet of Lake Tahoe (station 10337000), 510 ft upstream. There are several diversions for irrigation, power, and domestic water supply. In addition, sewer effluent is pumped from the Lake Tahoe basin.

AVERAGE DISCHARGE (unadjusted).--87 years (water years 1901-87), 261 ft³/s, 189,100 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 418 ft³/s, July 27, gage height, 4.18 ft; minimum daily, 28 ft³/s, Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	44	185	262	260	194	81	69	183	375	408	391
2	46	46	185	254	261	236	70	68	184	375	409	391
3	50	48	185	240	260	264	71	68	184	374	407	391
4	50	48	185	244	261	265	71	69	254	373	407	391
5	50	114	186	245	261	267	71	70	295	372	399	391
6	50	149	186	245	260	201	70	70	296	383	392	389
7	50	173	186	245	259	161	70	70	297	395	390	389
8	49	186	183	245	260	162	70	70	297	395	389	387
9	48	186	182	245	259	161	70	70	296	396	389	389
10	49	186	183	245	259	150	69	69	295	396	390	389
11	49	186	183	245	261	130	68	69	296	395	389	391
12	49	185	183	243	262	135	68	69	295	394	387	394
13	47	186	183	243	187	114	67	69	296	394	391	394
14	48	186	183	243	66	100	69	68	297	394	391	394
15	47	186	164	242	43	100	70	69	302	392	391	394
16	48	185	181	243	85	100	70	68	324	392	392	391
17	49	185	181	242	141	101	70	68	322	392	389	389
18	48	185	183	240	196	102	70	67	323	391	389	353
19	47	185	185	239	193	102	68	68	350	392	392	336
20	45	185	185	252	193	102	67	68	366	392	393	336
21	45	185	185	261	193	102	70	68	366	390	392	336
22	45	185	186	261	193	102	72	101	366	390	391	336
23	44	185	186	261	194	103	71	128	365	388	390	336
24	45	185	186	261	193	103	71	127	366	393	389	336
25	44	185	185	260	193	105	71	127	365	393	390	318
26	43	185	185	261	195	104	71	127	365	394	389	308
27	44	185	185	262	193	102	70	127	366	405	388	308
28	44	186	185	262	194	100	70	146	366	412	388	308
29	44	183	186	262	---	101	70	185	365	411	387	308
30	45	185	186	261	---	102	70	185	371	410	387	303
31	45	---	239	261	---	99	---	184	---	409	391	---
TOTAL	1435	4883	5751	7775	5775	4270	2106	2881	9413	12157	12166	10867
MEAN	46.3	163	186	251	206	138	70.2	92.9	314	392	392	362
MAX	50	186	239	262	262	267	81	185	371	412	409	394
MIN	28	44	164	239	43	99	67	67	183	372	387	303
AC-FT	2850	9690	11410	15420	11450	8470	4180	5710	18670	24110	24130	21550

CAL YR 1986 TOTAL 181336 MEAN 497 MAX 2410 MIN 26 AC-FT 359700
WTR YR 1987 TOTAL 79479 MEAN 218 MAX 412 MIN 28 AC-FT 157600

PYRAMID AND WINNEMUCCA LAKES BASIN

10338500 DONNER CREEK AT DONNER LAKE, NEAR TRUCKEE, CA

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

DRAINAGE AREA.--14.3 mi².

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

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

GAGE.--Water-stage recorder. Datum of gage is 5,924.40 ft above National Geodetic Vertical Datum of 1929. Nov. 1, 1909, to Aug. 31, 1910, nonrecording gage at different datum. January 1929 to December 1957, water-stage recorder at same site at unknown datum.

REMARKS.--No estimated daily discharges. Records excellent except flows below 1.0 ft³/s, which are fair. Flow completely regulated by dam at outlet of Donner Lake 0.2 mi upstream, usable capacity, 9,500 acre-ft.

AVERAGE DISCHARGE (unadjusted).--50 years (water years 1930-35, 1937, 1940-42, 1944-52, 1956-57, 1959-87), 35.4 ft³/s, 25,650 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 206 ft³/s, Oct. 3, gage height, 3.62 ft; minimum daily, 0.64 ft³/s, Mar. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	187	4.0	4.7	5.3	7.5	14	2.2	12	2.2	5.1	1.4	3.7
2	175	3.9	4.4	5.9	7.8	14	1.7	24	2.1	5.3	1.5	2.4
3	184	34	4.4	12	7.8	13	2.2	24	2.1	5.1	1.7	2.2
4	176	59	4.4	13	7.6	13	2.6	24	1.9	5.1	3.6	2.8
5	152	51	4.7	11	7.4	17	2.4	24	1.9	5.1	5.1	2.3
6	117	43	4.4	10	7.2	23	3.6	24	1.9	5.2	5.0	1.5
7	97	37	4.2	9.5	7.0	26	4.3	25	1.8	5.2	4.3	1.5
8	89	31	4.0	8.8	7.0	28	3.6	25	1.8	5.1	3.9	2.9
9	82	26	3.8	8.4	7.0	28	3.6	26	3.3	3.9	3.3	2.3
10	92	23	3.7	7.8	7.2	28	3.6	26	4.9	3.6	2.9	1.6
11	97	20	3.6	7.4	9.0	29	3.6	26	4.8	3.7	3.1	4.5
12	83	18	3.6	7.0	11	21	3.4	26	4.5	4.1	2.6	6.5
13	32	16	3.6	6.4	29	8.8	3.4	26	4.5	3.9	2.4	6.1
14	3.6	14	3.6	6.1	35	9.0	3.4	27	4.6	3.6	3.7	5.5
15	3.1	12	3.4	5.4	37	11	3.1	29	4.6	3.6	4.9	3.2
16	2.7	11	3.4	4.9	35	10	3.1	29	4.7	3.6	4.3	2.5
17	2.5	10	3.4	4.6	32	9.3	2.9	29	5.0	3.1	4.0	2.0
18	2.3	9.4	3.5	4.4	29	9.3	2.5	24	5.1	2.4	3.8	32
19	2.1	8.8	4.0	4.1	26	6.5	2.3	20	5.1	2.2	3.9	55
20	2.1	8.4	4.1	3.9	23	.96	3.9	12	5.2	2.2	2.8	55
21	2.0	8.6	4.0	3.9	21	.79	5.2	6.2	5.4	3.0	4.4	54
22	1.9	7.9	4.4	3.9	20	.64	5.0	3.7	5.4	3.2	5.0	53
23	1.9	7.4	4.5	3.9	19	1.9	3.6	2.0	5.1	2.7	4.6	52
24	1.8	7.1	4.3	4.8	19	3.9	3.2	1.9	4.9	2.6	4.1	51
25	1.8	6.4	4.1	5.2	18	3.7	3.1	1.8	4.9	2.4	4.7	62
26	1.7	6.0	4.1	4.9	17	3.5	3.4	2.4	5.3	2.2	6.1	70
27	1.6	6.0	4.0	5.9	16	3.2	4.0	3.1	5.4	1.9	6.1	68
28	3.3	5.1	3.9	10	15	3.1	4.7	2.9	5.6	1.7	5.9	67
29	5.4	5.1	3.8	8.7	---	2.9	5.3	2.6	5.4	1.6	5.5	68
30	5.1	4.8	3.6	8.2	---	2.7	5.1	2.6	5.1	1.1	5.1	67
31	4.7	---	3.8	7.7	---	2.6	---	2.4	---	1.1	5.0	---
TOTAL	1612.6	503.9	123.4	213.0	484.5	347.79	104.0	513.6	124.5	104.6	124.7	807.5
MEAN	52.0	16.8	3.98	6.87	17.3	11.2	3.47	16.6	4.15	3.37	4.02	26.9
MAX	187	59	4.7	13	37	29	5.3	29	5.6	5.3	6.1	70
MIN	1.6	3.9	3.4	3.9	7.0	.64	1.7	1.8	1.8	1.1	1.4	1.5
AC-FT	3200	999	245	422	961	690	206	1020	247	207	247	1600
CAL YR 1986	TOTAL	22339.87	MEAN	61.2	MAX	690	MIN	.52	AC-FT	44310		
WTR YR 1987	TOTAL	5064.09	MEAN	13.9	MAX	187	MIN	.64	AC-FT	10040		

PYRAMID AND WINNEMUCCA LAKES BASIN

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

LOCATION.--Lat 39°18'08", long 120°07'13", in SW 1/4 SW 1/4 sec.20, T.17 N., R.17 E., Placer County, Hydrologic Unit 16050102, 4.0 mi southeast of Truckee. Water-quality samples are collected 10 ft upstream from State Highway 267. Temperature records are obtained about 300 ft upstream from highway, off left bank immediately downstream from confluence of main stem and Middle Martis Creek.

DRAINAGE AREA.--25.8 mi².

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

CHEMICAL DATA: Water years 1975 to current year.

WATER TEMPERATURE: Water years 1975 to current year.

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October to November 1974, August 1975 to current year.

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

INSTRUMENTATION.--Digital water-temperature recorder October to November 1974, and August 1975 to current year.

REMARKS.--No temperature record Oct. 26 to Nov. 7.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 27.5 °C, July 30, Aug. 3, 1977; minimum recorded, -0.5 °C, Jan. 5, 10-16, 1979.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 22.0 °C, July 13; minimum recorded, 0.0 °C, on many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
OCT									
07...	1015	10	106	8.10	5.0	615	2.5	11.2	109
APR									
29...	0945	10	121	7.90	9.5	615	2.2	9.2	100
JUN									
03...	0930	5.3	131	7.30	9.5	620	3.2	9.1	98
AUG									
25...	1005	3.4	143	7.30	10.5	620	1.4	8.9	98
DATE	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT									
07...	64	<0.100	0.020	0.58	0.60	0.020	0.020	3	3
APR									
29...	40	<0.100	<0.010	--	0.50	0.030	0.020	3	2
JUN									
03...	70	<0.100	<0.010	--	0.80	0.050	0.030	7	3
AUG									
25...	62	<0.100	<0.010	--	0.50	0.040	0.030	4	1
DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT									
07...	300	160	<5	6	<4	30	17	180	12
APR									
29...	440	170	<5	<5	<4	30	23	<10	11
JUN									
03...	330	180	<5	<5	<10	30	30	40	<10
AUG									
25...	400	300	<5	<5	<4	30	31	<10	24

< Actual value is known to be less than the value shown.

PYRAMID AND WINNEMUCCA LAKES BASIN

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

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	5.5	---	---	1.0	0.0	1.5	0.5	3.5	0.0	5.5	0.0
2	10.5	5.5	---	---	1.5	0.0	1.5	0.0	2.0	0.0	5.5	1.0
3	10.0	3.0	---	---	3.5	0.0	0.5	0.0	3.5	0.5	7.5	1.0
4	10.5	3.0	---	---	3.0	0.5	0.0	0.0	3.5	0.0	7.0	1.0
5	11.5	4.0	---	---	3.0	1.0	0.5	0.0	3.0	0.0	5.0	2.0
6	12.0	4.5	---	---	3.0	1.0	0.0	0.0	3.5	0.0	7.5	2.0
7	11.5	4.5	---	---	4.0	0.5	0.5	0.0	4.5	0.0	7.0	1.5
8	11.5	4.5	3.5	0.0	1.0	0.0	0.5	0.0	3.5	0.0	8.0	2.0
9	12.0	4.5	3.5	0.0	1.0	0.0	0.0	0.0	4.5	1.5	8.0	1.0
10	12.0	5.0	4.0	0.0	1.0	0.0	0.0	0.0	5.0	1.5	7.0	1.0
11	10.5	4.5	4.5	0.0	1.0	0.0	0.0	0.0	5.0	1.5	9.0	2.0
12	9.0	2.0	4.0	0.0	1.0	0.0	0.0	0.0	4.5	0.5	8.5	1.0
13	9.0	1.5	4.5	0.0	2.0	0.0	0.5	0.0	1.0	0.0	6.0	0.0
14	9.0	1.5	6.0	2.0	3.5	0.0	0.0	0.0	2.5	0.0	3.0	0.5
15	9.5	2.5	5.5	0.5	0.5	0.0	0.0	0.0	3.0	0.0	4.0	0.5
16	8.0	2.5	5.0	0.0	0.5	0.0	0.0	0.0	3.5	0.0	8.5	1.0
17	8.5	3.5	5.5	0.5	1.0	0.0	0.0	0.0	4.5	0.0	8.5	0.5
18	9.0	4.0	5.5	0.5	1.0	0.0	0.0	0.0	4.0	0.0	5.0	0.0
19	8.5	3.0	7.0	3.0	1.5	0.0	0.0	0.0	3.0	0.0	3.5	0.0
20	9.0	3.0	6.0	1.5	3.0	0.5	0.0	0.0	3.0	0.0	3.5	0.0
21	9.0	2.5	5.5	1.5	2.5	0.5	0.0	0.0	0.5	0.0	4.5	0.0
22	8.5	2.5	3.5	0.0	1.5	0.0	0.0	0.0	3.0	0.0	8.0	0.5
23	6.0	2.5	4.5	0.5	2.5	0.0	0.0	0.0	1.5	0.0	4.0	1.5
24	10.0	4.0	4.0	0.0	1.0	0.0	0.0	0.0	0.5	0.0	8.0	1.5
25	9.5	3.5	3.5	0.0	1.0	0.0	0.0	0.0	1.0	0.0	9.0	0.0
26	---	---	2.0	0.0	1.5	0.0	0.5	0.0	1.0	0.0	9.5	1.0
27	---	---	4.0	0.0	2.0	0.0	1.5	0.0	2.5	0.0	8.5	0.5
28	---	---	3.0	0.5	0.5	0.0	2.0	0.0	4.5	0.0	8.5	0.0
29	---	---	3.5	0.0	1.0	0.0	2.5	0.0	---	---	9.5	0.0
30	---	---	1.0	0.0	0.5	0.0	2.5	0.0	---	---	11.0	1.0
31	---	---	---	---	1.5	0.0	1.5	0.0	---	---	11.5	2.5
MONTH	---	---	---	---	4.0	0.0	2.5	0.0	5.0	0.0	11.5	0.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.5	2.5	13.5	6.0	19.0	7.5	20.0	11.5	19.0	11.0	17.5	11.0
2	10.5	2.5	12.5	4.0	19.5	8.0	20.0	10.0	19.5	11.0	15.5	10.5
3	7.0	3.5	16.5	4.5	17.0	9.5	19.5	10.0	20.0	12.0	16.0	9.0
4	10.0	2.5	17.5	6.0	18.0	9.5	19.0	9.5	19.5	13.0	14.0	8.0
5	12.0	3.0	18.0	7.0	17.5	11.0	19.0	9.5	20.5	12.5	15.0	8.5
6	12.5	2.5	18.0	7.5	14.5	10.0	20.0	10.0	19.5	12.0	15.0	8.0
7	13.0	4.0	15.5	8.0	18.5	10.5	20.5	11.5	19.0	11.0	15.0	8.0
8	12.0	3.0	15.0	9.0	20.0	10.5	21.0	11.5	19.5	12.0	15.5	9.5
9	13.5	4.0	16.0	9.0	18.5	10.0	20.5	13.0	19.5	12.0	14.5	8.0
10	12.5	4.0	16.5	9.0	19.0	9.5	21.0	13.0	19.0	11.5	15.5	8.0
11	13.0	5.5	20.5	10.0	20.5	10.0	21.5	12.5	19.0	11.0	15.5	7.5
12	12.5	2.5	19.0	9.5	21.0	10.0	21.0	13.5	18.5	11.0	13.5	9.0
13	13.5	3.0	18.0	9.0	18.5	11.0	22.0	13.5	17.5	10.0	15.5	7.5
14	13.5	5.0	18.5	10.0	18.0	11.5	21.0	14.0	17.5	10.5	15.0	8.0
15	14.0	4.0	17.5	10.0	15.5	10.5	20.5	13.5	17.0	8.5	14.0	6.5
16	14.0	3.5	16.5	9.5	18.5	7.5	19.5	13.5	18.5	10.0	14.0	6.0
17	13.0	4.5	17.0	10.0	18.0	8.5	14.0	9.5	18.5	10.0	14.0	6.0
18	7.5	3.5	18.5	8.0	19.0	8.5	13.0	8.5	18.5	11.0	14.5	6.5
19	11.5	1.0	14.5	9.0	19.5	10.0	15.0	6.5	16.5	11.5	14.0	6.0
20	13.0	2.0	12.5	8.5	18.5	9.5	17.5	10.5	17.5	10.0	14.5	6.0
21	15.0	3.0	13.0	6.5	19.0	10.0	16.0	12.0	17.0	10.5	14.0	6.5
22	14.0	4.5	13.0	6.0	19.5	8.5	17.0	7.5	18.0	10.5	14.5	6.0
23	12.5	5.5	13.5	5.5	20.0	10.0	18.0	9.5	16.0	10.0	14.5	7.0
24	16.0	4.5	14.0	6.0	21.5	11.0	18.0	10.0	17.0	8.5	13.5	7.5
25	16.0	5.0	11.5	5.5	21.5	12.0	18.5	10.0	16.5	9.5	15.0	8.5
26	17.0	7.0	8.5	6.5	21.0	13.0	18.5	10.5	15.5	9.5	14.0	7.0
27	17.5	7.5	15.5	6.0	19.0	14.0	18.5	10.0	16.5	10.0	13.0	5.0
28	14.0	7.5	16.0	6.0	18.5	11.0	18.5	10.5	17.5	10.0	13.0	5.0
29	17.0	8.0	16.0	7.5	21.0	11.5	18.5	11.0	17.5	10.0	13.5	5.5
30	15.0	8.0	12.5	7.5	18.5	11.5	18.0	10.0	17.5	11.0	13.0	5.5
31	---	---	18.0	7.0	---	---	18.5	10.0	17.5	11.5	---	---
MONTH	17.5	1.0	20.5	4.0	21.5	7.5	22.0	6.5	20.5	8.5	17.5	5.0

PYRAMID AND WINNEMUCCA LAKES BASIN

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

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT					
07...	1020	10	5.0	6	0.16
APR					
29...	0950	10	9.5	7	0.19
JUN					
03...	0955	5.3	9.5	5	0.07
AUG					
25...	1010	3.4	10.5	6	0.05

PYRAMID AND WINNEMUCCA LAKES BASIN

10339380 MARTIS CREEK LAKE NEAR TRUCKEE, CA

LOCATION.--Lat 39°19'38", long 120°06'48", in NE 1/4 NW 1/4 sec.17, T.17 N., R.17 E., Nevada County, Hydrologic Unit 16050102, in control house at Martis Creek Dam, 2.0 mi upstream from mouth, and 3.5 mi east of Truckee.
DRAINAGE AREA.--39.6 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--March to May 1972 (occasional readings only), June 1972 to current year.

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

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

REMARKS.--Lake is formed by rolled-earthfill dam. Storage began Oct. 7, 1971. Usable capacity, 19,600 acre-ft between elevations 5,780 ft, bottom of intake tower, and 5,838 ft, crest of spillway. Dead contents, below elevation 5,780 ft, 775 acre-ft. Figures given herein, including extremes, represent total contents.

Reservoir is used for flood control, enhancement of fishery, and recreation.

COOPERATION.--Capacity tables were provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 7,700 acre-ft, May 11, 12, 1980, elevation, 5,815.16 ft; minimum since reservoir first filled, 768 acre-ft, Aug. 24, 1977, elevation, 5,779.88 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 855 acre-ft, Feb. 13, elevation, 5,781.24 ft; minimum, 779 acre-ft, July 16, 17, Aug. 10, elevation, 5,780.06 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated September 1975 provided by U.S. Army Corps of Engineers)

5,779	716	5,800	3,260
5,780	775	5,810	5,880
5,785	1,140	5,820	9,720
5,790	1,650		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	798	795	794	794	793	801	802	796	792	782	781	781
2	797	795	794	793	793	799	804	796	791	782	781	781
3	796	795	794	795	793	801	807	796	791	782	781	781
4	796	795	794	794	793	801	804	794	790	782	781	781
5	796	794	794	794	793	829	803	793	789	782	781	781
6	796	795	794	794	793	815	803	792	791	781	780	781
7	796	795	794	794	793	808	804	792	792	782	780	782
8	796	795	793	793	793	805	804	793	791	782	780	782
9	796	795	793	793	794	804	804	794	790	781	780	782
10	796	795	793	793	795	802	805	795	789	781	779	782
11	795	795	794	793	798	802	803	796	791	781	780	782
12	795	795	794	793	813	821	803	793	789	781	780	782
13	795	795	794	793	854	823	803	794	789	781	780	782
14	795	795	794	793	813	813	804	796	789	781	780	782
15	795	794	793	793	804	807	803	793	789	781	781	782
16	795	794	793	793	801	805	803	794	787	779	781	782
17	795	794	793	791	801	807	802	794	787	779	781	782
18	795	794	794	791	799	808	802	794	786	781	780	782
19	795	794	794	791	799	805	801	794	786	783	780	782
20	795	794	794	791	798	804	799	796	786	783	780	782
21	795	794	794	791	797	803	799	796	785	782	781	783
22	795	794	793	791	798	804	799	796	784	782	780	782
23	795	794	794	791	799	804	798	796	784	782	780	782
24	795	794	793	793	799	803	799	794	784	782	780	782
25	795	794	793	795	797	802	799	795	783	782	781	782
26	795	794	794	794	798	801	798	796	782	781	781	782
27	795	794	793	799	799	799	798	795	783	781	781	782
28	795	794	793	796	799	799	797	795	783	781	781	782
29	795	794	793	794	---	799	798	794	782	780	780	782
30	795	794	793	793	---	799	798	794	782	780	781	783
31	795	---	793	793	---	802	---	793	---	780	781	---
MAX	798	795	794	799	854	829	807	796	792	783	781	783
MIN	795	794	793	791	793	799	797	792	782	779	779	781
a	5780.32	5780.30	5780.28	5780.28	5780.39	5780.43	5780.36	5780.28	5780.12	5780.08	5780.09	5780.13
b	-3	-1	-1	0	+6	+3	-4	-5	-11	-2	+1	+2

CAL YR 1986 b -9

WTR YR 1987 b -15

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

PYRAMID AND WINNEMUCCA LAKES BASIN

10339380 MARTIS CREEK LAKE NEAR TRUCKEE, CA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL DATA: Water years 1975 to current year.

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3
OCT									
07...	1140	122	8.00	12.0	620	1.2	10.2	117	61
APR									
29...	1130	121	7.90	16.0	615	3.0	9.2	116	29
JUN									
03...	1135	142	7.60	15.5	620	4.2	9.8	121	65
AUG									
25...	1139	128	9.50	18.5	620	3.4	9.4	124	60

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT									
07...	<0.100	0.020	1.4	1.4	--	0.040	0.020	15	2
APR									
29...	<0.100	<0.010	--	0.40	--	0.020	0.020	4	2
JUN									
03...	0.400	0.020	0.78	0.80	1.2	0.050	0.030	4	2
AUG									
25...	<0.100	0.010	0.59	0.60	--	0.080	0.050	7	4

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT									
07...	370	190	<5	6	5	30	11	220	12
APR									
29...	270	93	<5	<5	7	10	5	<10	7
JUN									
03...	370	180	<5	<5	<10	30	30	10	<10
AUG									
25...	210	100	35	5	<4	20	7	<10	15

< Actual value is known to be less than the value shown.

SUSPENDED SEDIMENT CONCENTRATION, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)
OCT			
07...	1145	12.0	8
JUN			
03...	1140	15.5	6
AUG			
25...	1130	18.5	11

PYRAMID AND WINNEMUCCA LAKES BASIN

10339400 MARTIS CREEK NEAR TRUCKEE, CA

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

DRAINAGE AREA.--39.9 mi².

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Elevation of gage is 5,730 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 10, 1972, at site 1.0 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Low and medium flow may be regulated and high flow completely regulated by Martis Creek Lake Dam (station 10339380) since Oct. 7, 1971.

AVERAGE DISCHARGE (unadjusted).--29 years, 27.1 ft³/s, 19,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,880 ft³/s, Feb. 1, 1963, gage height, 6.16 ft, site and datum then in use; minimum, 1.1 ft³/s, July 19, 20, 1961. Maximum discharge since construction of Martis Creek Lake Dam in 1971, 663 ft³/s, Feb. 28, 1986, gage height, 5.66 ft; maximum gage height, 6.01 ft, Apr. 2, 1974; minimum daily, 0.20 ft³/s, Nov. 9-14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 155 ft³/s, Feb. 13, gage height, 3.49 ft; minimum daily, 4.7 ft³/s, Aug. 7, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	14	12	13	12	18	20	16	9.8	6.3	5.0	5.1
2	15	14	13	13	11	18	21	15	9.1	6.2	5.0	5.2
3	15	14	13	14	11	18	24	15	8.5	6.2	5.0	5.2
4	14	14	13	13	11	19	24	15	8.4	6.0	4.9	5.2
5	14	13	13	13	11	36	21	14	8.2	6.0	4.9	5.2
6	14	13	13	13	11	37	20	13	8.2	6.0	4.8	5.3
7	14	14	13	13	12	28	21	12	9.2	6.0	4.7	5.4
8	14	14	12	12	12	24	21	12	9.0	6.0	4.8	5.5
9	14	14	12	11	12	22	22	13	8.7	5.8	4.8	5.6
10	14	14	12	11	13	21	22	13	8.5	5.5	4.8	5.4
11	13	14	12	12	15	20	22	14	7.3	5.5	4.8	5.4
12	13	14	12	12	16	22	22	13	8.5	5.6	4.9	5.3
13	13	14	13	12	112	43	21	12	8.2	5.5	4.8	5.6
14	13	14	13	11	44	34	21	11	8.6	5.3	4.7	5.5
15	13	13	12	12	26	27	21	12	8.4	5.3	4.8	5.4
16	13	13	12	11	20	23	21	12	8.3	5.4	5.0	5.5
17	14	13	12	11	19	23	21	12	7.9	4.8	5.0	5.7
18	14	13	13	11	18	25	20	12	7.5	5.1	5.0	5.8
19	14	13	13	11	17	24	20	12	7.3	5.7	5.0	5.6
20	14	13	13	11	16	20	19	12	7.2	5.9	5.0	5.7
21	14	13	13	11	16	21	18	13	7.0	5.9	5.0	5.9
22	14	13	12	11	16	20	17	12	7.0	5.8	4.9	5.9
23	14	13	13	11	17	21	17	12	6.9	5.7	4.8	5.8
24	14	13	12	12	17	21	18	12	6.9	5.5	4.8	5.8
25	14	13	12	13	17	20	18	11	6.5	5.4	4.9	5.9
26	14	12	12	13	15	19	17	11	6.4	5.3	4.9	5.9
27	14	13	12	14	16	19	17	12	6.3	5.2	5.0	5.9
28	14	12	12	17	17	18	16	11	6.5	5.1	5.1	5.9
29	14	13	12	14	---	17	17	11	6.4	5.0	5.0	6.2
30	14	12	12	13	---	17	17	10	6.3	5.0	5.1	6.1
31	14	---	12	12	---	19	---	10	---	4.9	5.1	---
TOTAL	431	399	385	381	550	714	596	385	233.0	172.9	152.3	167.9
MEAN	13.9	13.3	12.4	12.3	19.6	23.0	19.9	12.4	7.77	5.58	4.91	5.60
MAX	15	14	13	17	112	43	24	16	9.8	6.3	5.1	6.2
MIN	13	12	12	11	11	17	16	10	6.3	4.8	4.7	5.1
AC-FT	855	791	764	756	1090	1420	1180	764	462	343	302	333
CAL YR 1986	TOTAL	18353.8	MEAN 50.3	MAX 626	MIN 7.0	AC-FT 36400						
WTR YR 1987	TOTAL	4567.1	MEAN 12.5	MAX 112	MIN 4.7	AC-FT 9060						

PYRAMID AND WINNEMUCCA LAKES BASIN

10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL DATA: Water years 1975 to current year.

WATER TEMPERATURE: Water years 1975 to current year.

SEDIMENT DATA: Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1974 to current year.

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

REMARKS.--No temperature record May 14 and June 11. Unpublished chemical-quality, water temperatures, and sediment data prior to October 1974, available at U.S. Geological Survey office in Carson City, Nev.

EXTREMES FOR PERIOD OF DAILY RECORD.--

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

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 21.5 °C, July 16; minimum recorded, 2.0 °C several days January to March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3
OCT 07...	1340	14	121	7.80	11.5	620	2.6	9.8	111	60
APR 29...	1215	17	127	7.90	15.0	615	2.0	8.7	107	57
JUN 03...	1355	8.3	135	8.60	16.0	625	3.5	9.2	114	64
AUG 25...	1227	5.6	129	9.50	19.0	625	3.1	9.8	129	56

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT 07...	<0.100	0.020	1.5	1.5	--	0.020	0.020	2	2
APR 29...	<0.100	<0.010	--	0.60	--	0.020	0.020	4	2
JUN 03...	<0.100	<0.010	--	0.80	--	0.040	0.030	3	2
AUG 25...	3.50	0.010	1.1	1.1	4.6	0.100	0.060	6	<1

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 07...	370	150	<5	5	6	40	11	160	10
APR 29...	230	79	<5	<5	6	20	3	<10	9
JUN 03...	350	130	<5	<5	<10	20	20	<10	<10
AUG 25...	220	71	<5	<5	<4	30	9	10	10

< Actual value is known to be less than the value shown.

PYRAMID AND WINNEMUCCA LAKES BASIN

10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

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

PYRAMID AND WINNEMUCCA LAKES BASIN

10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 07...	1310	14	11.5	6	0.23
JUN 03...	1350	8.3	16.0	7	0.16
AUG 25...	1230	5.6	19.0	8	0.12

PYRAMID AND WINNEMUCCA LAKES BASIN

10340300 PROSSER CREEK RESERVOIR NEAR TRUCKEE, CA

LOCATION.--Lat 39°22'46" (revised), long 120°08'12", in NW 1/4 SW 1/4 sec.30, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, in control house on Prosser Creek Dam on Prosser Creek, 1.4 mi upstream from mouth, and 4.2 mi northeast of Truckee.

DRAINAGE AREA.--50.3 mi².

PERIOD OF RECORD.--January 1963 to current year. Prior to October 1976, published as "near Boca."

GAGE.--Nonrecording gage read three times weekly. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

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

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

COOPERATION.--Gage readings and capacity table were provided by U.S. Bureau of Reclamation.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents, 32,269 acre-ft, June 1, 1973, elevation, 5,744.33 ft; minimum since reservoir first filled, 66 acre-ft, Oct. 10-12, 1983, elevation, 5,635.75 ft.

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents, 18,974 acre-ft, Oct. 1, elevation, 5,724.42 ft; minimum, 9,129 acre-ft, Feb. 6, elevation, 5,701.57 ft.

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	5,724.80	19,185	---
Oct. 31.....	5,706.58	10,845	-8,340
Nov. 30.....	5,701.95	9,251	-1,594
Dec. 31.....	5,703.62	9,804	+553
CAL YR 1986.....	--	--	+405
Jan. 31.....	5,701.94	9,248	-556
Feb. 28.....	5,702.78	9,522	+274
Mar. 31.....	5,704.42	10,076	+554
Apr. 30.....	5,707.87	11,323	+1,247
May 31.....	5,715.80	14,626	+3,303
June 30.....	5,715.92	14,680	+54
July 31.....	5,715.20	14,353	-327
Aug. 31.....	5,714.05	13,841	-512
Sept. 30.....	5,713.13	13,442	-399
WTR YR 1987.....	--	--	-5,743

PYRAMID AND WINNEMUCCA LAKES BASIN

10340500 PROSSER CREEK BELOW PROSSER CREEK DAM, NEAR TRUCKEE, CA

LOCATION.--Lat 39°22'24", long 120°07'50", in NW 1/4 NE 1/4 sec.31, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 300 ft downstream from Station Creek, 0.5 mi downstream from Prosser Creek Dam, 0.9 mi upstream from mouth, and 4.2 mi northeast of Truckee.

DRAINAGE AREA.--52.9 mi².

PERIOD OF RECORD.--October 1902 to June 1903 (gage heights only), October 1942 to December 1950, June 1951 to current year. Prior to October 1976, published as "near Boca." Monthly discharge only for October 1942 to December 1950, published in WSP 1734. Records for April 1889 to November 1890, published in the 11th and 12th Annual Reports, Part 2, have been found to be unreliable and should not be used.

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

GAGE.--Water-stage recorder. Datum of gage is 5,602.31 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). See WSP 2127 for history of changes prior to September 1956. October 1956 to May 1976, water-stage recorder at site 0.8 mi downstream at datum 29.69 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Prosser Creek Dam since Jan. 31, 1963.

AVERAGE DISCHARGE (adjusted for change in contents in Prosser Creek Reservoir since 1963).--44 years (water years 1943-50, 1952-87), 90.2 ft³/s, 65,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1943-86).--Maximum discharge, 4,560 ft³/s, Dec. 23, 1955, gage height, 10.13 ft, present datum, from rating curve extended above 910 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 11.0 ft from floodmarks, present datum, Nov. 20, 1950; minimum discharge, 0.4 ft³/s, July 18, 1961, result of work on dam upstream. Maximum discharge since construction of Prosser Creek Dam in 1963, 1,790 ft³/s, Feb. 20-22, 1986, gage height, 6.66 ft, from rating curve extended above 880 ft³/s on basis of valve setting at Prosser Creek Dam; minimum daily, 0.02 ft³/s, Jan. 2, 1975, result of temporary closing of Prosser Creek Dam for spillway maintenance.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 185 ft³/s, Oct. 13, gage height, 3.65 ft; minimum daily, 9.5 ft³/s, Dec. 23-25, 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	169	21	9.8	30	38	37	94	41	12	13	12
2	80	168	12	22	30	22	38	149	41	12	13	12
3	80	153	12	31	30	11	74	149	41	12	13	12
4	80	121	12	30	30	10	98	99	42	12	13	12
5	80	85	12	30	30	11	98	68	43	12	13	12
6	111	12	12	30	19	11	97	68	44	12	13	12
7	158	12	12	30	11	10	98	68	45	12	13	12
8	158	12	12	30	11	11	98	34	45	12	13	12
9	157	11	12	29	12	25	98	11	46	12	13	12
10	157	11	12	29	12	35	113	11	46	13	13	11
11	157	12	11	29	13	72	123	11	46	13	13	12
12	155	12	11	29	13	96	123	11	47	13	13	12
13	171	12	10	29	21	96	136	11	47	13	13	12
14	180	11	10	29	12	95	144	11	47	13	13	12
15	179	11	10	29	12	95	99	11	45	13	13	12
16	179	11	10	29	77	95	70	11	44	13	13	12
17	178	25	10	29	119	95	116	11	43	13	13	12
18	178	34	10	29	70	58	146	11	43	13	12	12
19	177	34	10	29	39	34	145	11	25	13	12	12
20	177	34	10	29	39	34	145	68	12	13	12	11
21	176	34	10	29	38	34	145	104	12	13	12	11
22	175	34	9.8	29	38	34	145	65	12	13	12	12
23	175	34	9.5	29	38	34	144	40	13	13	12	12
24	175	34	9.5	29	38	34	131	40	13	13	12	12
25	173	34	9.5	30	38	36	121	39	12	12	12	12
26	173	34	9.9	30	38	37	120	39	13	13	12	11
27	173	34	10	31	38	37	54	39	13	13	12	11
28	172	35	10	30	38	37	11	40	12	13	12	11
29	171	35	10	30	---	37	11	40	12	13	12	11
30	171	35	10	30	---	37	11	40	12	13	12	11
31	169	---	9.5	30	---	37	---	40	---	13	12	---
TOTAL	4795	1293	338.7	887.8	934	1348	2989	1444	957	393	389	352
MEAN	155	43.1	10.9	28.6	33.4	43.5	99.6	46.6	31.9	12.7	12.5	11.7
MAX	180	169	21	31	119	96	146	149	47	13	13	12
MIN	80	11	9.5	9.8	11	10	11	11	12	12	12	11
AC-FT	9510	2560	672	1760	1850	2670	5930	2860	1900	780	772	698

CAL YR 1986 TOTAL 52850.7 MEAN 145 MAX 1790 MIN 9.5 AC-FT 104800 MEAN a 145 AC-FT a 105200
WTR YR 1987 TOTAL 16120.5 MEAN 44.2 MAX 180 MIN 9.5 AC-FT 31980 MEAN a 36.2 AC-FT a 26240

a Adjusted for change in contents in Prosser Creek Reservoir.

PYRAMID AND WINNEMUCCA LAKES BASIN

10343000 INDEPENDENCE CREEK NEAR TRUCKEE, CA

LOCATION.--Lat 39°27'24", long 120°17'10", in SW 1/4 NW 1/4 sec.35, T.19 N., R.15 E., Sierra County, Hydrologic Unit 16050102, on left bank 0.4 mi downstream from Independence Lake outlet and 10.5 mi northwest of Truckee.

DRAINAGE AREA.--8.10 mi².

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

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

GAGE.--Water-stage recorder. Elevation of gage is 6,940 ft above National Geodetic Vertical Datum of 1929, from topographic map. July 1, 1904, to June 30, 1910, nonrecording gage 75 ft downstream from Independence Lake outlet; prior to July 1, 1904, nonrecording gage 600 ft downstream at approximately same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by dam at outlet of Independence Lake, usable capacity, 17,500 acre-ft.

AVERAGE DISCHARGE (unadjusted).--24 years (water years 1903-7, 1969-87), 27.6 ft³/s, 20,000 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17 ft³/s, Oct. 3-12, 21-31, Nov. 1-7, gage height, 2.68 ft; minimum daily, 6.2 ft³/s, Sept. 12-20, 25, 27-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	17	16	15	12	12	12	11	12	11	7.6	6.6
2	16	17	15	15	12	12	12	11	12	10	7.7	6.6
3	17	17	15	15	12	11	12	10	12	10	7.7	6.6
4	17	17	15	15	12	11	12	10	12	10	7.4	6.6
5	17	17	15	15	12	12	12	10	12	9.4	7.4	6.6
6	17	17	15	15	12	12	12	11	12	9.4	7.3	6.6
7	17	17	15	15	12	12	12	11	12	9.1	7.3	6.6
8	17	16	15	15	12	12	12	11	12	9.2	7.4	6.5
9	17	16	15	15	12	12	12	11	12	9.0	7.2	6.6
10	17	16	15	14	12	12	13	11	12	9.0	7.6	6.5
11	17	16	15	14	12	12	13	11	12	9.0	7.8	6.5
12	17	16	15	14	12	12	13	12	12	9.2	7.8	6.2
13	16	16	15	14	12	12	13	11	12	9.4	7.8	6.2
14	16	16	15	14	12	12	13	11	12	9.3	7.5	6.2
15	16	16	15	14	12	12	13	11	11	9.0	7.4	6.2
16	16	16	15	14	12	12	13	11	11	9.0	7.6	6.2
17	16	16	15	14	12	12	13	11	11	8.6	7.4	6.2
18	16	16	15	14	12	12	13	11	11	8.6	7.4	6.2
19	16	16	15	14	12	11	12	11	11	8.7	7.7	6.2
20	16	16	15	14	12	11	12	12	11	8.6	7.4	6.2
21	17	16	15	13	12	11	12	11	11	8.9	7.4	6.5
22	17	16	15	13	12	11	12	11	11	8.8	7.4	6.6
23	17	16	15	13	12	11	12	11	11	9.0	7.4	6.6
24	17	16	15	13	12	11	12	11	11	8.3	7.3	6.3
25	17	16	15	13	12	11	12	11	11	7.8	7.4	6.2
26	17	16	15	13	12	11	11	11	11	7.8	7.3	6.3
27	17	16	15	13	12	11	11	11	10	7.8	7.2	6.2
28	17	16	15	13	12	12	11	12	10	7.8	7.1	6.2
29	17	16	15	13	---	11	11	12	10	7.7	7.2	6.2
30	17	16	15	12	---	12	11	12	11	7.6	7.0	6.3
31	17	---	15	12	---	12	---	12	---	7.4	7.4	---
TOTAL	517	487	466	430	336	360	364	344	341	274.4	230.5	191.5
MEAN	16.7	16.2	15.0	13.9	12.0	11.6	12.1	11.1	11.4	8.85	7.44	6.38
MAX	17	17	16	15	12	12	13	12	12	11	7.8	6.6
MIN	16	16	15	12	12	11	11	10	10	7.4	7.0	6.2
AC-FT	1030	966	924	853	666	714	722	682	676	544	457	380
CAL YR 1986	TOTAL	13827.8	MEAN 37.9	MAX 207	MIN 4.0	AC-FT 27430						
WTR YR 1987	TOTAL	4341.4	MEAN 11.9	MAX 17	MIN 6.2	AC-FT 8610						

PYRAMID AND WINNEMUCCA LAKES BASIN

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA

LOCATION.--Lat 39°25'54", long 120°14'13", in NE 1/4 NE 1/4 sec.7, T.18 N., R.16 E., Nevada County, Hydrologic Unit 16050102, on left bank 2.2 mi upstream from bridge on State Highway 89 and 7.5 mi north of Truckee.

DRAINAGE AREA.--10.5 mi².

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 6,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 2, 1953, nonrecording gage at site 100 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Dec. 12-15, 19-24, 26-29, Jan. 3, 4, 9, 10, 16, 17, Mar. 17-19, Aug. 4-6, Sept. 28-30. Records good except June to September, which are fair. No storage or diversion upstream from station.

AVERAGE DISCHARGE.--34 years, 13.1 ft³/s, 9,490 acre-ft/yr.

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	0530	*24	*2.25				
Minimum daily, 1.7 ft ³ /s, Aug. 9-12.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	4.3	4.1	4.2	4.0	4.0	8.9	12	4.5	3.2	1.8	1.9
2	5.8	4.3	4.2	4.1	4.1	4.0	9.9	11	4.4	3.1	1.8	2.1
3	5.4	4.3	4.3	4.3	4.0	4.3	9.4	11	4.2	3.0	1.8	2.1
4	5.2	4.3	4.3	4.3	4.0	4.9	8.7	10	4.2	3.1	1.8	2.0
5	5.2	4.3	4.3	4.3	4.0	13	9.8	9.6	4.1	3.0	1.8	2.0
6	5.2	4.3	4.2	4.3	4.0	11	12	9.1	4.1	3.1	1.8	2.0
7	5.0	4.2	4.2	4.3	4.1	8.7	13	8.8	4.3	3.0	1.8	2.1
8	4.8	4.2	4.0	4.2	4.1	7.6	14	8.7	3.4	3.1	1.8	2.1
9	4.8	4.1	3.8	4.2	4.2	7.1	16	11	3.2	2.4	1.7	2.1
10	4.6	4.2	3.7	4.2	4.6	6.5	17	11	3.1	2.1	1.7	2.1
11	4.5	4.2	3.7	4.2	5.9	7.0	18	11	3.0	2.1	1.7	2.1
12	4.5	4.0	3.7	4.1	6.1	8.0	16	9.4	3.1	2.1	1.7	2.2
13	4.4	4.0	3.7	4.1	20	8.0	17	8.6	3.4	2.0	1.9	2.2
14	4.4	4.0	3.7	4.1	11	6.6	18	8.1	3.8	2.0	2.1	2.2
15	4.4	4.0	3.7	4.1	7.0	5.9	19	7.7	3.8	2.0	2.0	2.2
16	4.3	4.0	3.7	4.0	5.9	5.5	19	7.2	3.6	2.0	2.0	2.2
17	4.4	4.0	3.6	4.0	5.4	5.4	18	6.8	3.3	2.1	2.0	2.1
18	4.5	4.1	3.7	4.0	5.1	5.3	16	6.5	3.3	2.4	2.0	2.0
19	4.5	4.3	3.7	4.0	4.9	5.2	13	6.2	3.2	2.3	2.0	2.0
20	4.4	4.4	3.8	3.9	4.6	5.2	13	6.4	3.3	2.2	1.9	2.0
21	4.4	5.5	3.8	3.9	4.4	4.9	14	6.1	3.3	2.2	2.0	2.0
22	4.4	4.5	3.8	4.0	4.3	4.8	15	5.8	3.3	2.2	2.0	2.0
23	4.4	4.5	3.8	4.0	4.3	4.8	15	5.6	3.2	2.1	2.0	2.0
24	4.3	4.3	3.9	4.1	4.2	4.7	16	5.3	3.3	2.1	1.9	2.0
25	4.3	4.2	3.9	4.2	4.1	4.7	15	5.4	3.2	2.0	1.8	2.0
26	4.3	4.1	3.9	4.2	4.0	4.9	16	5.7	3.2	2.0	1.9	2.0
27	4.3	4.1	3.9	4.5	3.9	4.9	16	5.4	3.4	1.9	1.8	2.1
28	4.3	4.0	3.9	4.3	4.0	4.9	15	5.2	3.3	1.9	1.8	2.1
29	4.3	4.1	3.9	4.1	---	4.8	15	5.0	3.2	1.9	1.8	2.1
30	4.4	4.0	3.9	4.1	---	5.7	15	4.7	3.2	1.8	1.9	2.1
31	4.3	---	4.0	4.0	---	7.2	---	4.6	---	1.8	2.0	---
TOTAL	144.3	126.8	120.8	128.3	150.2	189.5	437.7	238.9	105.9	72.2	58.0	62.1
MEAN	4.65	4.23	3.90	4.14	5.36	6.11	14.6	7.71	3.53	2.33	1.87	2.07
MAX	6.3	5.5	4.3	4.5	20	13	19	12	4.5	3.2	2.1	2.2
MIN	4.3	4.0	3.6	3.9	3.9	4.0	8.7	4.6	3.0	1.8	1.7	1.9
AC-FT	286	252	240	254	298	376	868	474	210	143	115	123

CAL YR 1986	TOTAL	7713.8	MEAN	21.1	MAX	300	MIN	3.3	AC-FT	15300
WTR YR 1987	TOTAL	1834.7	MEAN	5.03	MAX	20	MIN	1.7	AC-FT	3640

PYRAMID AND WINNEMUCCA LAKES BASIN

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to 1975 and 1981 to current year.

CHEMICAL DATA: Water years 1968 to 1972 and October 1985 to current year.

WATER TEMPERATURE: Water years 1970 to 1974.

SEDIMENT DATA: Water years 1968 to 1975 and 1981 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1969 to September 1974.

REMARKS.--Detection level for nutrients changed for Aug. 27 sample.

COOPERATION.--Suspended-sediment samples were provided by University of California at Berkeley.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV										
20...	1105	4.3	115	8.2	5.0	605	1.0	10.3	102	K3
FEB										
05...	1010	4.1	115	7.6	0.0	615	1.2	11.8	100	K1
MAY										
12...	0938	9.5	80	7.8	7.5	605	1.4	9.4	99	K6
AUG										
27...	1030	1.9	138	8.1	9.0	610	0.40	9.2	100	K8
DATE		STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS WH WAT TOT FLD MG/L AS CACO3)	HARD- NESS NONCARB WH WAT DIS- SOLVED MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
NOV										
20...		63	51	0	13	4.5	5.3	18	0.3	1.8
FEB										
05...	K2		52	0	13	4.7	5.5	18	0.3	2.0
MAY										
12...	K3		36	0	9.1	3.1	4.0	19	0.3	1.1
AUG										
27...	60		63	1	16	5.5	6.9	19	0.4	2.6
DATE		BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LILITY, CARBON- ATE IT-FLD (MG/L CACO3)	ALKA- LILITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
NOV										
20...		71	58	59	1.5	0.40	<0.10	31	102	93
FEB										
05...		68	56	57	2.4	0.70	<0.10	31	91	94
MAY										
12...		49	41	44	1.2	0.30	<0.10	26	66	72
AUG										
27...		76	62	62	6.1	0.40	0.10	35	97	110
DATE		SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
NOV										
20...		0.14	<0.010	<0.100	<0.010	<0.010	0.90	0.020	0.010	0.010
FEB										
05...		0.12	<0.010	<0.100	0.010	<0.010	1.0	0.010	0.010	0.020
MAY										
12...		0.09	0.020	<0.100	0.030	0.040	<0.20	0.020	0.020	0.020
AUG										
27...		0.13	0.001	0.070	0.044	<0.002	<0.20	0.062	0.018	0.010

See footnotes at end of table.

PYRAMID AND WINNEMUCCA LAKES BASIN

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 20...	1105	30	<1	21	<0.5	<1	1	<3	2	61	<5
FEB 05...	1010	<10	<1	23	<0.5	<1	<1	<3	2	58	<5
MAY 12...	0940	20	<1	16	<0.5	<1	<1	<3	3	64	<5
AUG 27...	1030	<10	<1	29	<0.5	<1	2	<3	<1	150	<5

DATE	TIME	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 20...		<4	4	<0.1	<10	9	<1	<1	140	<6	5
FEB 05...		<4	6	<0.1	<10	<1	<1	<1	150	<6	9
MAY 12...		<4	6	<0.1	<10	<1	<1	<1	110	<6	<3
AUG 27...		<4	9	<0.1	<10	<1	<1	2	170	<6	3

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED (PCI/L METHOD EXTRAC- TION)	URANIUM DIS- SOLVED (UG/L)
NOV 20...	1105	0.5	<0.4	3.0	0.5	2.4	0.5	0.03	0.33
MAY 12...	0940	<0.4	<0.4	1.1	0.5	1.0	0.5	0.03	0.14

K Results based on colony count outside the acceptable range (non-ideal colony count).
 < Actual value is known to be less than the value shown.

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	SEDI- MENT, SUS- PENDED (MG/L)
MAY									
14...*	1028	2.00	72	7.90	9.5	605	9.0	100	2
14...*	1029	4.00	72	7.90	9.5	605	9.0	100	1
14...*	1030	5.75	72	7.90	9.5	605	9.0	100	1
14...*	1031	7.75	72	7.90	9.5	605	9.0	100	2
14...*	1032	10.0	72	7.90	9.5	605	9.0	100	2
AUG									
28...*	1113	0.60	129	8.40	10.0	610	9.2	102	2
28...*	1114	1.40	129	8.40	10.0	610	9.2	102	1
28...*	1115	2.30	129	8.40	10.0	610	9.2	102	0
28...*	1116	3.40	129	8.40	10.0	610	9.2	102	1
28...*	1117	5.60	129	8.40	10.0	610	9.2	102	0

*Instantaneous streamflow at the time of cross-sectional measurements: May 14, 8.1 ft³/s; Aug. 28, 2.0 ft³/s.

PYRAMID AND WINNEMUCCA LAKES BASIN

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV					
20...	1055	4.3	5.0	5	0.06
20...	1100	4.3	5.0	3	0.03
21...	1055	5.3	3.0	10	0.14
DEC					
22...	1200	3.8	0.5	3	0.03
FEB					
02...	1405	4.1	1.5	3	0.03
05...	1000	4.1	0.0	3	0.03
05...	1005	4.1	0.0	4	0.04
MAR					
06...	1700	12	2.5	4	0.13
APR					
01...	1630	11	6.0	7	0.21
20...	1530	13	9.0	7	0.25
23...	1515	14	10.0	2	0.08
27...	1515	14	12.0	3	0.11
29...	1205	13	8.5	3	0.11
MAY					
04...	1500	9.5	13.5	2	0.05
11...	1705	9.8	15.0	2	0.05
12...	0925	9.5	7.5	4	0.10
14...	1045	8.1	9.5	2	0.04
15...	1505	7.3	15.5	3	0.06
19...	1420	6.3	10.5	3	0.05
26...	1525	5.7	9.0	2	0.03
29...	1515	5.1	14.5	4	0.05
JUN					
01...	1505	4.5	16.5	5	0.06
04...	1455	4.1	16.0	3	0.03
10...	1525	3.0	17.5	7	0.06
12...	1520	3.0	18.5	3	0.02
15...	1500	4.1	15.0	4	0.04
19...	1510	3.2	18.0	3	0.03
22...	1515	3.3	17.5	5	0.05
25...	1515	3.0	19.0	1	0.01
30...	1515	3.2	17.0	1	0.01
JUL					
02...	1600	2.9	17.5	1	0.01
08...	1505	3.2	18.0	2	0.02
16...	1645	1.9	17.5	1	0.01
22...	1435	2.1	15.5	1	0.01
AUG					
05...	1630	1.8	18.5	1	0.00
27...	1020	1.9	9.0	1	0.01
27...	1025	1.9	9.0	2	0.01
28...	1125	2.0	10.0	1	0.01

PYRAMID AND WINNEMUCCA LAKES BASIN

10344300 STAMPEDE RESERVOIR NEAR TRUCKEE, CA

LOCATION (REVISED).--Lat 39°28'14", long 120°06'11", in SE 1/4 NE 1/4 sec.29, T.19 N., R.17 E., Sierra County, Hydrologic Unit 16050102, Tahoe National Forest, in control house near base of spillway of Stampede Dam on Little Truckee River, 0.2 mi upstream from Worn Mill Canyon, and 11.0 mi northeast of Truckee.
DRAINAGE AREA.--136 mi².

PERIOD OF RECORD.--August 1969 to current year. August 1969 to September 1977 (monthend elevations and contents only). Prior to October 1976, published as "near Boca."

GAGE.--Nonrecording gage read three times weekly. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by rolled-earth and rockfill dam. Storage began Aug. 1, 1969. Total capacity, 226,500 acre-ft at elevation 5,948.7 ft, spillway crest. Inactive contents, 5,010 acre-ft, includes 660 acre-ft dead contents below elevation 5,798.3 ft. Figures given here, including extremes, represent total contents at 0800 hours. Reservoir is used for flood control, municipal water supply, enhancement of fishery, and recreation.

COOPERATION.--Records and capacity table were provided by U.S. Bureau of Reclamation; not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents, 254,493 acre-ft, June 1, 1983, elevation, 5,956.55 ft; minimum since reservoir first filled, 30,772 acre-ft, Jan. 31, Feb. 1, 1978, elevation, 5,853.60 ft.

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents, 184,326 acre-ft, Feb. 18, elevation, 5,935.74 ft; minimum, 88,062 acre-ft, Sept. 30, elevation, 5,896.67 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated July 1971 provided by U.S. Bureau of Reclamation)

5,850	27,915	5,880	60,185	5,910	115,865	5,940	197,630
5,860	36,470	5,890	76,008	5,920	140,141	5,950	231,005
5,870	47,204	5,900	94,535	5,930	167,355	5,960	267,386

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	181471	180747	181471	181608	182652	183047	175378	153946	100796	92521	90934	89388
2	181441	180747	181502	181683	182682	182925	174995	151757	99920	92470	90908	89360
3	181411	180747	181532	181814	182698	182652	174612	149567	99043	92419	90883	89322
4	181401	180805	181502	181945	182713	182379	174240	147378	98076	92368	90854	89283
5	181391	180868	181471	182076	182652	182228	173867	145283	97108	92317	90824	89241
6	181381	180868	181461	182122	182591	182076	173495	143188	96306	92266	90766	89199
7	181360	180868	181451	182167	182642	181975	173144	141202	95505	92236	90708	89156
8	181351	180898	181441	182167	182692	181875	172793	139216	94703	92207	90663	89114
9	181321	180928	181381	182167	182743	181774	172500	138484	94163	92178	90618	89072
10	181290	180958	181320	182167	182819	181578	172208	137753	93623	92148	90573	89034
11	181280	181049	181305	182167	182895	181381	172014	137021	93308	92109	90496	88996
12	181270	181139	181290	182167	183230	181320	171820	133832	92992	92070	90418	88951
13	181260	181185	181310	182167	183564	181260	171626	130642	92972	92031	90350	88907
14	181170	181230	181330	182167	183777	181079	171466	128835	92953	92012	90283	88862
15	181079	181270	181351	182167	183991	180898	171306	127028	92953	91992	90225	89776
16	181039	181310	181336	182167	184204	180717	170538	125089	92884	91884	90167	88690
17	180989	181351	181320	182167	184265	180386	169770	123149	92835	91777	90109	88642
18	180928	181411	181351	182167	184326	180055	168889	121210	92815	91693	90070	88595
19	180868	181471	181381	182167	184204	180010	168007	119178	92795	91608	90032	88582
20	180808	181517	181381	182152	184082	179965	167126	117146	92756	91524	89955	88570
21	180793	181562	181381	182137	183940	179965	166100	115486	92716	91456	89878	88557
22	180778	181582	181381	182167	183797	179965	165075	113825	92677	91387	89820	88462
23	180763	181602	181426	182197	183655	179965	164014	112291	92668	91348	89763	88367
24	180747	181622	181471	182228	183624	179480	162954	110758	92658	91310	89705	88300
25	180747	181622	181502	182258	183594	178990	161871	109224	92648	91265	89657	88233
26	180747	181622	181532	182324	183442	178500	160788	107747	92638	91219	89609	88195
27	180747	181577	181532	182391	183290	178010	159705	106270	92612	91174	89580	88157
28	180747	181532	181532	182458	183168	177500	158306	105042	92586	91125	89551	88119
29	180747	181511	181532	182525	---	177000	156907	103815	92560	91076	89506	88090
30	180747	181491	181532	182591	---	176500	155426	102809	92540	91018	89462	88062
31	180747	---	181532	182621	---	175960	---	101802	---	90960	89417	---
MAX	181471	181622	181532	182621	184326	183047	175378	153946	100796	92521	90934	89776
MIN	180747	180747	181290	181608	182591	175960	155426	101802	92540	90960	89417	88062
a	5934.56	5934.81	5934.82	5935.18	5935.36	5932.96	5925.74	5903.56	5898.99	5897.18	5897.38	5896.67
b	-724	+744	+41	+1089	+547	-7208	-20534	-53624	-9262	-1580	-1543	-1355

CAL YR 1986 b +63430
WTR YR 1987 b -93409

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

PYRAMID AND WINNEMUCCA LAKES BASIN

10344400 LITTLE TRUCKEE RIVER ABOVE BOCA RESERVOIR, NEAR TRUCKEE, CA

LOCATION.--Lat 39°26'09", long 120°05'00", in SW 1/4 SW 1/4 sec.3, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 1 mi upstream from Boca Reservoir, 1.5 mi upstream from Dry Creek, 3.0 mi downstream from Stampede Dam, and 5.5 mi northeast of Truckee.

DRAINAGE AREA.--146 mi²

PERIOD OF RECORD.--June 1903 to October 1910, September 1939 to current year. Monthly discharge only for some periods, published in WSP 1314 and 1734. Published as "at Pine Station", June 1903 to December 1907, as "at Starr," January 1908 to October 1910, and as "near Boca," September 1939 to September 1976.

REVISED RECORDS.--WSP 1564: 1903-4, 1906-7, 1910, drainage area at site used in 1903-7.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 5,618.67 ft above National Geodetic Vertical Datum of 1929 (U.S. Bureau of Reclamation bench mark). June 1903 to October 1910, nonrecording gages at different sites and datums.

REMARKS.--Estimated daily discharges: Jan. 10-12, 14-21. Records excellent except estimated discharges, which are good. Flow regulated by Independence Lake, capacity, 17,500 acre-ft; one transbasin diversion to Sierra Valley, and Stampede Reservoir (station 10344300) since 1969.

AVERAGE DISCHARGE (adjusted for change in contents in Stampede Reservoir since 1969).--55 years (water years 1904-10, 1940-87), 194 ft³/s, 140,600 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,320 ft³/s, May 1, gage height, 2.91 ft; minimum daily, 17 ft³/s, Nov. 12-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	18	43	33	33	113	306	1230	524	33	47	29
2	42	18	43	33	33	160	307	1300	524	31	39	29
3	42	18	42	34	33	192	308	1300	524	30	28	29
4	42	18	42	32	33	193	306	1300	524	30	28	29
5	42	18	43	31	33	196	305	1290	467	30	28	29
6	42	18	43	33	34	194	305	1290	434	30	28	29
7	42	18	43	31	33	193	304	1290	433	30	28	29
8	42	18	42	31	33	193	304	1190	378	30	27	29
9	42	18	42	31	33	193	307	1140	271	31	27	29
10	42	18	42	31	34	193	304	1140	230	30	27	29
11	42	18	42	31	34	211	305	1140	178	30	28	28
12	42	17	39	31	34	224	304	1140	80	30	29	29
13	42	17	37	31	45	224	304	1130	33	30	29	29
14	42	17	28	31	35	223	304	1130	32	30	30	29
15	42	17	30	31	34	222	498	1120	32	30	31	28
16	42	17	31	31	33	223	634	1120	31	30	30	29
17	42	17	31	31	33	224	644	1120	31	30	30	28
18	44	17	31	31	87	226	644	1120	31	30	29	28
19	44	17	31	31	125	221	644	1120	31	30	29	28
20	44	17	31	31	119	239	647	1010	31	30	29	28
21	44	17	31	31	113	250	651	912	30	29	29	28
22	44	17	32	32	113	250	698	862	30	30	29	28
23	44	17	31	32	114	251	775	832	30	29	29	28
24	44	24	31	33	113	250	747	828	30	29	29	29
25	44	42	31	33	114	250	827	825	30	29	29	29
26	43	42	31	33	111	250	881	779	30	29	29	29
27	44	42	31	34	111	250	977	733	31	29	29	29
28	33	42	31	35	112	250	1090	643	30	29	29	29
29	18	43	31	33	---	250	1090	544	30	32	28	29
30	18	42	31	33	---	273	1090	525	30	51	28	28
31	18	---	31	33	---	304	---	524	---	50	29	---
TOTAL	1240	679	1098	992	1812	6885	16810	31627	5120	971	918	860
MEAN	40.0	22.6	35.4	32.0	64.7	222	560	1020	171	31.3	29.6	28.7
MAX	44	43	43	35	125	304	1090	1300	524	51	47	29
MIN	18	17	28	31	33	113	304	524	30	29	27	28
AC-FT	2460	1350	2180	1970	3590	13660	33340	62730	10160	1930	1820	1710

CAL YR 1986	TOTAL	75460	MEAN	207	MAX	1380	MIN	17	AC-FT	149700	MEAN a	294	AC-FT a	213100
WTR YR 1987	TOTAL	69012	MEAN	189	MAX	1300	MIN	17	AC-FT	136900	MEAN a	60.1	AC-FT a	43490

a Adjusted for change in contents in Stampede Reservoir.

PYRAMID AND WINNEMUCCA LAKES BASIN

10344490 BOCA RESERVOIR NEAR TRUCKEE, CA

LOCATION.--Lat 39°23'20", long 120°05'43", in NE 1/4 NW 1/4 sec.28, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, in control house at Boca Dam on Little Truckee River, 1,800 ft upstream from mouth, and 6.3 mi northeast of Truckee.

DRAINAGE AREA.--172 mi².

PERIOD OF RECORD.--December 1938 to current year. Prior to October 1976 published as "at Boca." Monthend contents only for December 1938 to September 1957, published in WSP 1734.

REVISED RECORDS.--WSP 1634: Drainage area.

GAGE.--Pressure gage with mercury column read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 8, 1938. Usable capacity, 40,868 acre-ft between elevations 5,521 ft, outlet sill, and 5,605 ft, top of spillway gates. Elevation of spillway (gate open) is 5,589.01 ft. Dead contents, 241 acre-ft. Records, including extremes, represent usable contents at 0800 hours. Water is used for irrigation in the State of Nevada and for power development. COOPERATION.--Records and capacity table were provided by U.S. Bureau of Reclamation; not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents, 41,440 acre-ft, Dec. 23, 1955, elevation, 5,605.55 ft; minimum, 37 acre-ft, Mar. 4-9, 1955, elevation, 5,521.65 ft.

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents, 40,235 acre-ft, June 8-11, elevation, 5,604.35 ft; minimum, 16,604 acre-ft, Apr. 4, 5, elevation, 5,574.80 ft.

Capacity table (elevation, in feet, and contents in acre-feet)
(Based on table dated November 1970 provided by U.S. Bureau of Reclamation)

5,548	4,352	5,570	13,768
5,552	5,636	5,580	20,002
5,556	7,112	5,590	27,488
5,560	8,778	5,600	36,128
5,565	11,119	5,605	40,868

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34089	32370	27895	22517	22700	22994	17295	28470	39800	39080	37006	34898
2	34179	32196	27732	22517	22773	22994	16970	29135	39897	39033	36913	34808
3	34224	32023	27609	22480	22773	22810	16822	29808	39993	38937	36821	34762
4	34179	31893	27488	22480	22773	22590	16604	30488	40042	38890	36774	34672
5	34134	31763	27326	22480	22773	22407	16604	30961	40090	38842	36682	34627
6	34134	31612	27164	22407	22810	22225	16729	31438	40090	38747	36635	34537
7	34089	31438	26923	22371	22847	22008	17105	32023	40139	38699	36589	34492
8	34045	31264	26683	22371	22847	21828	17486	32457	40235	38604	36497	34448
9	34045	31091	26523	22371	22847	21613	17936	32807	40235	38557	36404	34403
10	34045	30918	26346	22371	22847	21435	18392	33158	40235	38509	36312	34313
11	34045	30832	26206	22334	22847	21293	18854	33511	40235	38462	36266	34268
12	34045	30660	26088	22334	22847	21187	19289	33867	40187	38414	36220	34268
13	34000	30488	25891	22298	22994	21187	19729	34313	40187	38320	36036	34268
14	33956	30317	25655	22298	23068	21116	20209	34853	40090	38272	35990	34268
15	33911	30147	25499	22298	23216	21046	20695	35442	40042	38225	35944	34268
16	33867	30020	25343	22262	23265	20940	21081	35899	39993	38131	35899	34268
17	33778	29892	25186	22262	23402	20835	21471	36312	39897	37989	35807	33867
18	33733	29723	24995	22262	23439	20695	21936	36774	39849	37895	35716	33778
19	33644	29554	24802	22298	23514	20555	22407	37286	39800	37848	35670	33778
20	33556	29428	24649	22298	23514	20416	22590	37801	39752	37801	35579	33733
21	33511	29302	24458	22334	23477	20140	22920	38225	39656	37707	35533	33689
22	33423	29135	24268	22334	23439	20002	23216	38652	39560	37567	35488	33600
23	33379	28968	24040	22371	23365	19593	23589	38794	39512	37473	35397	33511
24	33335	28801	23814	22407	23290	19390	24192	38937	39464	37426	35306	33511
25	33290	28677	23664	22444	23216	19121	24802	38937	39464	37379	35260	33511
26	33246	28553	23514	22480	23142	18854	25343	38985	39416	37333	35215	33423
27	33158	28470	23290	22553	23068	18622	25891	39128	39368	37286	35169	33335
28	32982	28387	23068	22590	23031	18359	26523	39224	39320	37286	35124	33290
29	32851	28223	22883	22590	---	18098	27164	39416	39272	37286	35079	33202
30	32675	28058	22736	22626	---	17836	27813	39608	39176	37146	35034	33158
31	32501	---	22590	22663	---	17582	---	39704	---	37053	34943	---
MAX	34224	32370	27895	22663	23514	22994	27813	39704	40235	39080	37006	34898
MIN	32501	28058	22590	22262	22700	17582	16604	28470	39176	37053	34943	33158
a	5595.95	5590.70	5583.65	5583.75	5584.25	5576.35	5590.40	5603.80	5603.25	5601.00	5598.70	5596.70
b	-1499	-4443	-5468	+73	+368	-5449	+10231	+11891	-528	-2123	-2110	-1785

CAL YR 1986 b +365

WTR YR 1987 b -842

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

PYRAMID AND WINNEMUCCA LAKES BASIN

10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM, NEAR TRUCKEE, CA

LOCATION.--Lat 39°23'13", long 120°05'40", in NE 1/4 NW 1/4 sec.28, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on right bank 800 ft upstream from mouth, 1,000 ft downstream from Boca Dam, and 6.2 mi northeast of Truckee.

DRAINAGE AREA.--173 mi².

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

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

GAGE.--Water-stage recorder. Elevation of gage is 5,500 ft above National Geodetic Vertical Datum of 1929, from topographic map. Jan. 1, 1911, to Sept. 30, 1915, nonrecording gage at site 850 ft downstream at different datum. January 1939 to September 1957, records computed from daily log of rated settings of needle valve in dam, and from computed flow over spillway.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Boca Reservoir (station 10344490); Independence Lake, capacity, 17,500 acre-ft; one transmountain diversion to Sierra Valley, and Stampede Reservoir (station 10344300), since 1969.

AVERAGE DISCHARGE (unadjusted).--52 years (water years 1912-15, 1940-87), 193 ft³/s, 139,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,800 ft³/s, Dec. 24, 1955, from records of Washoe County Water Conservation District; no flow many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,010 ft³/s, May 5, 6, gage height, 4.46 ft; minimum daily, 0.27 ft³/s, Feb. 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	95	119	54	23	142	444	829	465	55	53	51
2	25	94	129	54	23	234	419	887	477	55	53	51
3	53	94	129	54	23	296	405	894	477	55	53	51
4	53	94	129	54	23	314	357	943	477	55	53	51
5	53	94	128	54	23	302	235	994	448	55	53	51
6	53	94	128	54	31	291	178	970	428	55	53	50
7	53	94	128	47	39	291	112	950	400	55	53	51
8	53	94	128	40	39	288	97	924	345	55	53	50
9	53	94	128	40	39	287	97	927	261	55	53	51
10	53	94	128	40	39	286	84	932	232	55	52	51
11	53	94	127	40	39	281	73	937	160	55	52	51
12	53	94	127	39	39	270	73	859	63	55	52	51
13	60	94	127	39	18	269	74	807	55	55	53	51
14	73	93	127	39	.28	267	74	810	65	55	52	50
15	73	93	126	39	.28	267	296	838	58	55	52	50
16	73	93	126	39	.27	282	395	868	54	55	52	50
17	73	93	126	29	.27	302	395	872	55	55	52	50
18	73	93	126	23	71	301	397	846	55	55	51	50
19	73	93	126	23	116	298	459	817	55	55	51	50
20	73	93	126	23	135	357	499	727	55	55	51	50
21	73	93	126	23	142	403	499	653	55	54	51	50
22	73	93	125	23	143	391	500	725	55	54	51	50
23	73	93	125	23	142	390	470	790	54	54	51	51
24	85	93	125	23	142	387	454	777	55	54	51	50
25	96	92	124	23	142	385	533	770	55	54	51	50
26	96	99	124	23	142	383	569	713	54	54	51	50
27	96	111	124	23	143	382	646	668	54	54	51	50
28	96	110	124	23	142	382	721	599	54	54	51	50
29	96	110	124	23	---	380	726	486	54	54	51	50
30	96	110	124	23	---	408	730	453	54	53	51	49
31	96	---	102	23	---	445	---	453	---	53	51	---
TOTAL	2104.2	2878	3885	1077	1859.10	9961	11011	24718	5229	1692	1608	1511
MEAN	67.9	95.9	125	34.7	66.4	321	367	797	174	54.6	51.9	50.4
MAX	96	111	129	54	143	445	730	994	477	55	53	51
MIN	2.2	92	102	23	.27	142	73	453	54	53	51	49
AC-FT	4170	5710	7710	2140	3690	19760	21840	49030	10370	3360	3190	3000
CAL YR 1986	TOTAL	88718.05	MEAN	243	MAX	1350	MIN	.56	AC-FT	176000		
WTR YR 1987	TOTAL	67533.30	MEAN	185	MAX	994	MIN	.27	AC-FT	134000		

PYRAMID AND WINNEMUCCA LAKES BASIN

10346000 TRUCKEE RIVER AT FARAD, CA

LOCATION.--Lat 39°25'41", long 120°01'59", in SE 1/4 NE 1/4 sec.12, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 0.5 mi upstream from Mystic Canyon, 0.7 mi downstream from Farad powerplant, 2.5 mi north of Floriston, and 3.5 mi upstream from California-Nevada State line.

DRAINAGE AREA.--932 mi².

PERIOD OF RECORD.--March to October 1890 (monthly discharge only), September 1899 to current year. Monthly discharge only for January 1944 to July 1957, published in WSP 1734. Published as "near Boca", March to October 1890, "at or near Nevada-California State line," September 1899 to August 1912, and as "at Iceland" August 1912 to December 1937.

CHEMICAL DATA: Water years 1951-61, 1964-81. Published as Truckee River at Floriston (station 10345900) January 1964 to September 1971.

BIOLOGICAL DATA: Water years 1975-77.

SPECIFIC CONDUCTANCE: Water years 1964-80.

SUSPENDED SEDIMENT: Water years 1974, 1978.

WATER TEMPERATURE: Water years 1964-81.

REVISED RECORDS.--WSP 1714: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,153.21 ft above National Geodetic Vertical Datum of 1929 (U.S. Bureau of Reclamation bench mark). See WSP 2127 for history of changes prior to Aug. 26, 1957.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Lake Tahoe, Martis Creek Lake, Prosser Creek, Stampede, and Boca Reservoirs (stations 10337000, 10339380, 10340300, 10344300, and 10344490), Donner and Independence Lakes, and by several powerplants.

AVERAGE DISCHARGE.--88 years (water years 1900-87), 820 ft³/s, 594,100 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,820 ft³/s, May 6, gage height, 4.82 ft; minimum daily, 276 ft³/s, Feb. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	429	396	396	403	396	489	774	1390	840	500	503	496
2	407	391	398	411	402	559	758	1520	825	492	503	494
3	446	389	399	420	407	675	789	1520	842	487	503	490
4	452	397	397	416	404	706	755	1560	856	485	503	485
5	435	382	403	412	403	789	620	1620	916	482	500	485
6	440	365	405	410	401	818	563	1620	897	482	493	483
7	465	376	402	405	401	697	524	1590	892	501	486	483
8	453	391	397	394	401	671	520	1530	822	500	486	481
9	444	392	396	391	403	666	537	1570	736	503	484	482
10	440	390	397	394	409	670	571	1540	693	499	482	477
11	456	387	398	396	435	662	589	1630	620	500	482	476
12	435	385	398	389	437	692	586	1480	513	500	482	485
13	420	382	398	388	750	752	561	1340	479	498	482	483
14	393	379	399	388	430	679	612	1320	500	496	485	479
15	390	376	395	389	280	649	798	1330	494	496	489	478
16	388	375	380	404	276	641	905	1360	498	493	488	473
17	387	381	394	401	388	665	950	1330	496	492	487	471
18	384	392	397	395	466	664	978	1250	492	497	485	473
19	383	392	402	370	479	607	944	1170	487	498	486	478
20	380	392	402	368	494	620	964	1120	501	497	492	477
21	379	397	400	384	496	697	966	1050	499	491	492	473
22	376	391	401	384	492	668	1020	1060	498	494	493	467
23	373	391	400	384	497	672	1040	1140	494	494	491	468
24	383	389	396	390	493	667	1020	1120	491	492	491	468
25	396	386	396	393	488	664	1100	1100	490	493	490	466
26	393	387	398	393	481	664	1210	1050	487	492	491	466
27	392	401	397	399	485	665	1330	986	487	492	492	461
28	393	399	394	424	487	656	1360	932	491	506	491	456
29	397	403	395	404	---	654	1370	871	486	504	489	454
30	399	396	393	399	---	688	1350	838	489	504	490	450
31	401	---	395	395	---	751	---	830	---	502	492	---
TOTAL	12709	11650	12318	12293	12381	20817	26064	39767	18311	15362	15203	14258
MEAN	410	388	397	397	442	672	869	1283	610	496	490	475
MAX	465	403	405	424	750	818	1370	1630	916	506	503	496
MIN	373	365	380	368	276	489	520	830	479	482	482	450
AC-FT	25210	23110	24430	24380	24560	41290	51700	78880	36320	30470	30160	28280
CAL YR 1986	TOTAL	480623	MEAN	1317	MAX	7060	MIN	359	AC-FT	953300		
WTR YR 1987	TOTAL	211133	MEAN	578	MAX	1630	MIN	276	AC-FT	418800		

PACIFIC SLOPE BASINS

BUENA VISTA LAKE BASIN

11186000 KERN RIVER NEAR KERNVILLE, CA

LOCATION.--Lat 35°56'43", long 118°28'36", unsurveyed, Tulare County, Hydrologic Unit 18030001, on left bank at Packsaddle Canyon Creek, 100 ft downstream from diversion dam, and 13.4 mi north of Kernville.

DRAINAGE AREA.--846 mi².

PERIOD OF RECORD.--January 1912 to current year. Records for water year 1912 incomplete; yearly estimates published in WSP 1315-A. March 1921 to October 1953, records for river and canal published separately; combined flow only, October 1953 to September 1960.

REVISED RECORDS.--WSP 1445: 1912, 1916(M). WSP 1930: 1914(M), 1918(M).

GAGE.--Water-stage recorder on river; water-stage recorder and rectangular concrete-lined flume for canal diversion. Elevation of gage is 3,620 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 1, 1913, at site 1.4 mi downstream at different datum. Apr. 1 to Sept. 14, 1913, nonrecording gage, and Sept. 15, 1913, to Sept. 30, 1967, water-stage recorder, at site 1.2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Since 1921 Kern River No. 3 Canal diverts up to 630 ft³/s 100 ft upstream from station, from left bank of Kern River for power development; water is returned to river 15 mi downstream from station. See schematic diagram of Kern River basin. For records of combined discharge of river and canal, see following page.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--River only: 9 years (water years 1912-20), 790 ft³/s, 571,900 acre-ft/yr; 60 years (water years 1921-53, 1961-87), 409 ft³/s, 296,300 acre-ft/yr.

Combined river and diversion: 67 years (water years 1921-87), 764 ft³/s, 553,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 60,000 ft³/s, Dec. 6, 1966, gage height, 22.77 ft, site and datum then in use, from floodmarks, from rating curve extended above 6,000 ft³/s on basis of computed flow over dam at gage height 17.55 ft (basic data for computation provided by Southern California Edison Co.) and slope-area measurement of peak flow; no flow many days in 1924 and 1925.

Combined river and diversion: Maximum discharge, 60,000 ft³/s, Dec. 6, 1966; minimum daily, 78 ft³/s, Aug. 30, 31, Sept. 17, 19, 1924.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 1,460 ft³/s, May 16, gage height, 6.02 ft; minimum daily, 42 ft³/s, Feb. 11, 12.

Combined river and diversion: Maximum daily discharge, 1,850 ft³/s, May 16; minimum daily, 149 ft³/s, Nov. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

MEAN VALUES

(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	242	46	44	41	1150	1880	2700	5640	1960	417	98
2	54	238	287	43	42	1190	1880	2880	5730	2150	408	88
3	54	238	99	43	43	1050	1680	3030	5890	2140	386	86
4	55	233	44	43	42	963	1610	2800	5960	2290	350	79
5	56	233	44	379	42	1010	1540	2330	5090	2240	318	128
6	55	231	44	139	42	1060	1480	2090	4520	1760	321	80
7	55	231	43	46	42	1090	1340	1820	4250	1520	310	81
8	55	225	43	42	42	3770	1260	1750	3890	1340	268	79
9	54	145	43	42	42	2850	1230	1740	3760	1220	234	79
10	54	44	43	41	42	2260	1290	1850	3840	1180	238	79
11	57	43	42	41	41	1880	1300	1940	3830	1220	321	79
12	61	44	41	41	512	1800	1400	2110	3890	1340	255	80
13	60	44	38	41	3590	1600	1340	2330	3850	1510	238	79
14	60	46	44	42	1260	1390	1290	2590	3950	1450	206	79
15	60	46	44	42	2460	1260	1270	2850	3710	1250	173	78
16	60	45	44	41	1640	1200	1240	3130	3550	1190	132	79
17	60	46	44	42	1790	1030	1120	3350	3460	982	120	79
18	60	46	45	42	506	924	1090	3770	3270	853	123	79
19	60	46	44	41	2920	939	1080	4260	2950	743	115	79
20	87	46	44	41	2620	983	1300	4420	2700	695	100	76
21	259	46	44	41	1610	1100	1580	4340	2610	658	104	77
22	281	46	43	41	1260	1200	1940	3810	2650	682	103	77
23	260	47	43	41	1090	1330	2030	3510	2610	823	105	76
24	298	48	43	41	1010	1390	2060	3400	2580	824	102	76
25	292	47	43	41	1050	1450	1980	3840	2760	656	113	79
26	284	47	43	42	1100	1510	1930	4370	2600	554	103	77
27	274	48	43	42	1090	1580	1990	4890	2740	494	104	76
28	267	46	43	41	1120	1640	2330	5400	2450	474	101	76
29	262	46	45	41	---	1700	2590	5700	1960	430	104	79
30	254	46	44	206	---	1760	2570	5950	1820	402	102	78
31	249	---	43	93	---	1820	---	6270	---	422	101	---
TOTAL	4152	2979	1643	1946	27089	45879	48620	105220	108510	35452	6175	2435
MEAN	134	99.3	53.0	62.8	967	1480	1621	3394	3617	1144	199	81.2
MAX	298	242	287	379	3590	3770	2590	6270	5960	2290	417	128
MIN	54	43	38	41	41	924	1080	1740	1820	402	100	76
AC-FT	8240	5910	3260	3860	53730	91000	96440	208700	215200	70320	12250	4830
CAL YR 1985	TOTAL	125819	MEAN	345	MAX	1990	MIN	37	AC-FT	249600		
WTR YR 1986	TOTAL	390100	MEAN	1069	MAX	6270	MIN	38	AC-FT	773800		

BUENA VISTA LAKE BASIN

11186000 KERN RIVER NEAR KERNVILLE, CA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	52	46	46	46	71	108	468	545	109	101	85
2	56	49	46	46	47	71	108	338	653	111	100	81
3	55	50	45	46	46	70	105	323	698	110	97	81
4	55	47	45	46	46	73	105	439	681	110	99	81
5	56	47	45	46	45	77	103	620	655	112	98	81
6	56	46	45	46	45	89	103	720	616	115	100	81
7	56	45	45	46	44	82	105	689	666	111	100	81
8	55	45	45	46	44	74	106	675	639	109	100	82
9	55	45	45	50	43	75	109	796	532	109	100	81
10	56	46	45	51	43	75	113	784	412	109	99	81
11	55	46	45	54	42	75	123	761	385	109	99	81
12	56	46	45	49	42	76	147	786	419	108	100	81
13	58	46	45	48	215	76	152	956	365	108	101	81
14	58	46	45	48	86	76	213	1060	422	109	99	81
15	57	46	45	48	51	79	238	1110	379	110	98	81
16	58	46	45	56	49	78	287	1280	247	105	99	81
17	55	46	45	55	50	79	377	1020	132	100	99	81
18	56	47	46	54	49	79	423	811	110	103	98	81
19	55	48	46	52	49	79	304	747	110	103	98	83
20	55	48	45	55	49	83	260	666	112	103	97	82
21	55	47	45	55	48	79	272	564	112	104	97	82
22	56	46	45	53	48	79	334	450	112	105	96	87
23	55	46	45	47	49	79	406	372	112	106	97	88
24	57	47	45	48	50	78	392	333	108	103	96	81
25	58	46	45	47	49	96	438	241	111	102	96	81
26	56	46	45	46	53	80	448	182	114	103	95	81
27	56	46	45	46	50	76	460	140	116	103	95	80
28	55	46	45	46	58	77	488	145	115	104	95	80
29	56	46	45	48	---	76	541	219	113	106	95	80
30	57	46	46	47	---	76	642	248	108	110	94	79
31	57	---	46	46	---	83	---	349	---	109	95	---
TOTAL	1749	1399	1401	1517	1536	2416	8010	18292	9899	3318	3033	2447
MEAN	56.4	46.6	45.2	48.9	54.9	77.9	267	590	330	107	97.8	81.6
MAX	68	52	46	56	215	96	642	1280	698	115	101	88
MIN	55	45	45	46	42	70	103	140	108	100	94	79
AC-FT	3470	2770	2780	3010	3050	4790	15890	36280	19630	6580	6020	4850
CAL YR 1986	TOTAL	385875	MEAN	1057	MAX	6270	MIN	41	AC-FT	765400		
WTR YR 1987	TOTAL	55017	MEAN	151	MAX	1280	MIN	42	AC-FT	109100		

BUENA VISTA LAKE BASIN

11186001 KERN RIVER NEAR KERNVILLE, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KERN RIVER AND KERN RIVER
NO. 3 CANAL NEAR KERNVILLE, CA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	420	317	275	258	271	302	421	1050	1120	513	230	171
2	430	311	277	264	273	303	447	915	1230	490	225	175
3	427	312	277	258	272	304	480	899	1270	468	221	194
4	406	306	282	290	271	314	453	1010	1260	446	231	198
5	397	304	284	291	262	439	440	1190	1230	433	246	194
6	390	303	298	259	261	653	450	1290	1200	418	256	190
7	388	298	311	268	267	533	476	1260	1250	402	245	181
8	388	292	288	263	266	471	504	1250	1220	395	239	177
9	390	293	278	248	267	440	546	1370	1110	396	234	170
10	389	301	278	268	293	408	617	1360	993	397	227	166
11	382	299	279	279	291	383	719	1330	966	393	224	165
12	377	299	285	277	286	385	732	1360	1003	387	221	165
13	373	297	284	281	661	399	742	1520	946	381	223	167
14	365	294	281	267	567	389	802	1630	1000	386	222	168
15	359	291	268	251	426	404	837	1680	961	374	212	166
16	355	293	276	226	368	393	869	1850	828	375	207	163
17	350	296	275	234	341	392	958	1590	713	351	196	162
18	349	346	273	284	334	408	1000	1380	671	338	189	162
19	347	375	276	278	317	388	882	1320	666	324	186	159
20	347	333	273	253	323	347	840	1240	672	301	183	158
21	345	321	260	258	298	386	853	1130	675	284	182	157
22	343	314	261	262	309	367	914	1020	672	272	178	159
23	338	304	278	263	306	382	986	939	631	258	176	153
24	336	306	273	259	284	368	971	899	590	246	172	153
25	334	302	260	266	278	360	1020	806	588	240	170	160
26	330	290	265	266	285	367	1030	747	592	236	167	160
27	329	288	258	274	300	374	1040	704	613	232	166	155
28	326	287	252	318	307	382	1060	702	579	232	166	153
29	327	290	249	293	---	388	1120	784	585	236	169	152
30	326	278	248	280	---	398	1220	814	555	242	168	149
31	325	---	255	274	---	418	---	917	---	238	167	---
TOTAL	11288	9140	8477	8310	8984	12245	23429	35956	26386	10684	6298	5002
MEAN	364	305	273	268	321	395	781	1160	880	345	203	167
MAX	430	375	311	318	661	653	1220	1850	1270	513	256	198
MIN	325	278	248	226	261	302	421	702	555	232	166	149
AC-FT	22390	18130	16810	16480	17820	24290	46470	71320	52340	21190	12490	9920
CAL YR 1986	TOTAL	553921	MEAN	1518	MAX	6870	MIN	248	AC-FT	1099000		
WTR YR 1987	TOTAL	166199	MEAN	455	MAX	1850	MIN	149	AC-FT	329700		

BUENA VISTA LAKE BASIN

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

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

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,621.57 ft above National Geodetic Vertical Datum of 1929. January 1905 to September 1912, nonrecording gage at two sites 3.5 mi downstream at different datums. October 1953 to Feb. 20, 1967, at present site and datum. Feb. 20, 1967, to Oct. 11, 1976, water-stage recorder 0.6 mi upstream at datum 2,634.57 ft above National Geodetic Vertical Datum of 1929.

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

COOPERATION.--One discharge measurement was provided by Southern California Edison Co.

AVERAGE DISCHARGE.--41 years, 922 ft³/s, 668,000 acre-ft/yr.

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

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	1015	*2,070	*6.90
Minimum daily, 150 ft ³ /s, Sept. 23.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	426	322	285	274	286	315	463	1120	1040	469	209	173
2	432	315	287	278	287	320	514	972	1180	445	200	172
3	428	313	288	274	289	322	556	916	1230	425	197	184
4	403	312	292	307	289	328	527	983	1210	400	202	189
5	387	309	292	318	282	501	511	1130	1170	387	216	182
6	383	307	310	282	281	853	530	1250	1100	372	229	180
7	383	305	330	285	285	676	557	1240	1230	359	222	174
8	387	295	305	284	285	572	590	1250	1100	354	216	169
9	391	302	289	262	285	521	640	1340	967	355	216	167
10	392	310	290	280	314	471	709	1360	886	356	211	164
11	384	303	289	290	314	431	786	1310	928	353	204	163
12	376	303	294	293	308	428	806	1320	928	348	201	163
13	372	299	293	292	717	450	813	1450	913	343	204	163
14	367	298	290	284	857	437	844	1590	977	342	205	165
15	359	294	281	270	520	457	868	1680	959	326	198	166
16	352	298	285	243	422	438	890	1870	853	337	194	160
17	351	299	287	245	377	435	956	1630	720	311	186	158
18	349	373	283	287	364	461	1020	1390	649	298	181	158
19	348	403	287	290	343	437	964	1270	635	290	178	156
20	349	346	286	267	343	386	889	1220	641	274	177	155
21	347	334	277	270	321	426	872	1120	644	259	177	154
22	344	327	276	275	325	405	908	974	641	246	176	153
23	337	314	290	280	323	423	968	892	600	236	175	150
24	331	315	289	275	303	411	978	854	554	225	170	157
25	329	313	278	281	298	382	999	778	544	218	169	157
26	327	301	279	283	303	407	1030	737	541	211	167	157
27	325	297	274	290	319	410	1040	688	558	209	166	155
28	323	297	269	339	319	423	1070	669	530	204	165	154
29	325	298	265	314	---	429	1100	720	533	206	168	154
30	324	291	263	297	---	441	1230	768	509	209	169	151
31	326	---	270	291	---	461	---	830	---	209	167	---
TOTAL	11257	9393	8873	8800	9959	13857	24628	35321	24970	9576	5915	4903
MEAN	363	313	286	284	356	447	821	1139	832	309	191	163
MAX	432	403	330	339	857	853	1230	1870	1230	469	229	189
MIN	323	291	263	243	281	315	463	669	509	204	165	150
AC-FT	22330	18630	17600	17450	19750	27490	48850	70060	49530	18990	11730	9730
CAL YR 1986	TOTAL	576298	MEAN	1579	MAX	7320	MIN	263	AC-FT	1143000		
WTR YR 1987	TOTAL	167452	MEAN	459	MAX	1870	MIN	150	AC-FT	332100		

BUENA VISTA LAKE BASIN

11187000 KERN RIVER AT KERNVILLE, CA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL DATA: Water years 1975 to current year.

BIOLOGICAL DATA: Water years 1978-81.

WATER TEMPERATURE: Water years 1962 to current year.

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1962 to current year.

INSTRUMENTATION.--Temperature recorder since June 1962.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 28.5 °C, Aug. 20, 1972; minimum recorded, 0.0 °C on several days in 1976, 1978-79, 1982, Dec. 17, 1984, and Jan. 16, 17, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 24.0 °C, Aug. 4; minimum recorded, 0.0 °C, Jan. 16, 17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV												
19...	1215	402	118	8.1	10.0	700	0.70	10.3	99	K15	28	38
JAN												
13...	1230	298	133	*8.0	2.5	705	0.30	13.0	103	K1	K4	41
MAR												
10...	1245	471	111	*7.8	8.0	700	1.2	11.2	103	K5	K9	38
MAY												
21...	1358	1130	45	7.8	13.5	700	1.1	9.8	102	K3	K20	15
JUL												
14...	1145	368	91	8.1	22.0	700	1.1	8.3	104	34	41	25
SEP												
22...	1215	145	156	8.1	18.5	700	0.40	8.8	102	K14	25	47

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	CAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L CACO3)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3
NOV											
19...	0	12	2.0	11	37	0.8	1.7	67	0	55	55
JAN											
13...	0	13	2.1	12	38	0.8	1.4	64	0	52	53
MAR											
10...	0	12	1.9	11	38	0.8	1.5	61	0	50	49
MAY											
21...	0	5.0	0.70	4.1	36	0.5	0.60	23	0	19	19
JUL											
14...	0	7.9	1.2	7.9	40	0.7	1.0	40	0	33	34
SEP											
22...	0	15	2.4	15	40	1	1.9	74	0	60	61

See footnotes at end of table.

BUENA VISTA LAKE BASIN

11187000 KERN RIVER AT KERNVILLE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS- SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 19...	9.4	4.8	0.20	17	75	91	0.10	<0.010	<0.100	<0.010	<0.010	0.40
JAN 13...	9.4	4.9	0.20	19	98	94	0.13	<0.010	<0.100	<0.010	<0.010	<0.20
MAR 10...	9.1	3.5	0.20	19	78	88	0.11	<0.010	<0.100	<0.010	0.020	0.30
MAY 21...	6.0	1.0	0.10	9.1	30	38	0.04	<0.010	<0.100	<0.010	<0.010	0.50
JUL 14...	7.6	2.8	0.20	11	54	60	0.07	<0.010	<0.100	0.020	0.030	0.40
SEP 22...	11	5.5	0.20	16	115	100	0.16	<0.010	<0.100	<0.010	<0.010	0.30

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 19...	<0.010	<0.010	<0.010	20	5	21	<0.5	1	1	<3	<1	44
JAN 13...	0.010	0.010	<0.010	--	--	--	--	--	--	--	--	--
MAR 10...	0.010	0.010	<0.010	20	4	18	<0.5	<1	<1	<3	1	52
MAY 21...	0.010	<0.010	<0.010	<10	2	9	<0.5	<1	<1	<3	<1	28
JUL 14...	0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
SEP 22...	0.010	0.010	<0.010	<10	5	22	<0.5	<1	<1	<3	<1	43

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 19...	<5	24	<4	<0.1	<10	1	<1	<1	81	<6	5
JAN 13...	--	--	--	--	--	--	--	--	--	--	--
MAR 10...	<5	21	3	<0.1	<10	<1	<1	<1	83	<6	6
MAY 21...	<5	8	2	<0.1	<10	<1	<1	<1	33	<6	29
JUL 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 22...	<5	27	4	<0.1	<10	1	<1	<1	97	<6	8

* Laboratory value.

K Results based on colony count outside the acceptable range (non-ideal colony count).

< Actual value is known to be less than the value shown.

BUENA VISTA LAKE BASIN

11187000 KERN RIVER AT KERNVILLE, CA--(Continued)

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDED (MG/L)
JAN									
13...*	1209	93.0	136	7.8	2.5	705	12.8	101	4
13...*	1210	114	136	7.8	2.5	705	13.0	103	3
13...*	1211	128	135	7.8	2.5	705	13.0	103	2
13...*	1213	137	134	7.8	2.5	705	13.0	103	2
13...*	1215	149	133	7.8	2.5	705	13.0	103	5
MAY									
21...*	1345	93.0	45	7.9	13.5	700	10.0	105	3
21...*	1355	108	45	7.9	13.5	700	9.9	104	3
21...*	1400	127	45	7.9	13.5	700	9.9	104	3
21...*	1405	151	45	7.9	13.5	700	10.0	105	--
21...*	1410	195	45	7.9	13.5	700	9.9	104	3

* Instantaneous streamflow at the time of cross-sectional measurements: Jan. 13, 298 ft³/s; May 21, 1,130 ft³/s.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	11.0	---	---	5.0	3.5	4.5	2.5	6.5	4.5	7.0	4.5
2	12.0	10.5	---	---	5.0	3.0	5.0	4.0	5.5	4.5	8.0	5.5
3	11.5	10.0	---	---	5.0	3.0	5.5	3.5	7.5	4.5	9.0	6.0
4	12.0	10.0	---	---	5.0	4.0	5.5	4.5	7.0	5.0	8.5	7.0
5	12.5	10.0	---	---	6.0	4.5	5.5	4.0	6.5	4.5	8.5	7.5
6	12.5	10.5	---	---	7.0	6.0	4.0	2.5	7.0	4.5	7.5	6.5
7	13.5	11.0	---	---	8.0	6.5	3.0	1.0	8.0	6.0	9.0	7.0
8	13.5	11.0	---	---	6.5	5.0	3.5	2.0	7.5	5.5	10.5	8.0
9	12.5	11.5	---	---	5.5	4.0	3.0	1.5	7.5	6.5	10.0	8.0
10	13.0	11.0	---	---	5.0	3.5	3.0	1.0	9.5	7.0	8.5	7.5
11	13.5	11.5	---	---	4.5	3.0	3.5	1.5	9.5	8.0	9.5	6.5
12	13.0	11.5	---	---	4.5	3.0	3.5	1.5	8.5	7.0	10.5	8.0
13	12.0	10.5	---	---	4.5	3.0	3.5	2.0	8.5	7.0	11.0	9.0
14	12.0	10.0	---	---	4.5	3.0	3.5	2.0	6.5	5.0	10.0	8.5
15	11.5	9.5	---	---	4.5	3.0	2.5	1.0	6.5	5.5	8.5	6.0
16	11.0	9.0	---	---	5.0	3.5	2.5	0.0	6.5	4.5	9.0	5.5
17	11.0	9.5	---	---	5.0	3.5	2.5	0.0	6.5	4.0	9.0	6.0
18	11.0	9.0	---	---	5.0	4.0	2.5	0.5	6.0	4.0	9.5	7.5
19	10.5	8.5	10.0	8.5	5.5	4.5	3.0	0.5	6.0	4.0	8.5	7.0
20	10.5	8.5	10.0	8.5	5.5	4.5	3.5	1.0	6.0	3.5	7.5	5.0
21	10.5	8.5	10.0	8.0	5.0	3.5	3.5	0.5	6.0	3.5	7.0	4.0
22	11.0	9.0	8.5	7.0	4.5	3.0	3.0	1.5	6.5	4.0	6.5	3.5
23	11.0	9.5	8.0	6.0	5.5	3.5	3.5	2.5	5.5	3.5	6.5	5.0
24	11.0	9.5	7.5	6.0	6.0	4.5	4.5	2.0	3.5	2.0	7.5	5.0
25	11.5	9.5	7.5	6.0	4.5	3.5	5.0	2.5	3.5	1.5	9.0	5.5
26	12.0	10.0	7.0	5.0	4.0	3.0	6.0	3.5	4.5	1.5	10.0	7.0
27	12.0	10.0	6.5	4.5	4.0	2.5	6.0	5.0	4.5	2.0	11.0	8.0
28	11.5	10.0	5.5	4.5	4.0	2.5	7.0	5.5	6.0	3.0	11.5	8.5
29	12.0	10.0	6.5	4.5	3.0	2.5	6.5	5.0	---	---	11.0	8.5
30	12.0	10.0	6.0	4.0	3.5	1.5	6.5	5.0	---	---	11.0	8.0
31	11.5	10.0	---	---	3.5	2.0	7.0	5.0	---	---	11.0	8.5
MONTH	13.5	8.5	---	---	8.0	1.5	7.0	0.0	9.5	1.5	11.5	3.5

BUENA VISTA LAKE BASIN

11187000 KERN RIVER AT KERNVILLE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (FT ³ /S)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
JAN					
13...	1212	298	2.5	3	2.4
MAR					
10...	1245	471	8.0	5	6.4
MAY					
21...	1400	1130	13.5	3	9.2
JUL					
14	1145	368	22.0	6	6.0
SEP					
22	1215	145	18.5	2	0.78

BUENA VISTA LAKE BASIN

11187500 BOREL CANAL BELOW ISABELLA DAM, CA

LOCATION.--Lat 35°38'32", long 118°28'09", in SW 1/4 NE 1/4 sec.30, T.26 S., R.33 E., Kern County, Hydrologic Unit 18030001, on right bank 500 ft downstream from Isabella Dam and 3 mi upstream from point where canal crosses Erskine Creek.

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

GAGE.--Water-stage recorder. Elevation of gage is 2,540 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 29, 1952, at site 4 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Jan. 5-28. Canal diverts from right bank of Kern River 5.5 mi upstream from Isabella Dam and above South Fork Kern River. When contents of Isabella Reservoir are above 110,000 acre-ft, diversion is at the dam. Canal is used to supply Borel powerplant of Southern California Edison Co., 6 mi downstream from station, at which point water is returned to the Kern River.

COOPERATION.--Records were provided by Southern California Edison Co. and reviewed by U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--66 years, 390 ft³/s, 282,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 634 ft³/s, Mar. 13, 14, 1952; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	480	580	570	334	408	581	421	590	595	585	577	424
2	580	581	519	334	408	577	440	592	594	585	575	443
3	580	583	430	334	407	577	479	590	595	588	570	424
4	579	582	390	334	407	580	492	590	598	581	561	380
5	578	581	372	5.4	408	580	461	592	598	567	565	332
6	580	581	372	.70	408	576	445	594	598	566	572	319
7	579	581	372	0	408	580	527	593	597	575	571	327
8	578	577	370	0	408	583	571	590	598	577	570	308
9	579	575	369	0	408	584	569	591	598	573	568	287
10	577	582	369	0	382	583	578	594	598	575	568	276
11	577	580	380	0	376	582	582	596	598	575	567	256
12	578	582	386	0	435	581	581	598	598	577	567	238
13	576	582	386	0	484	583	588	594	599	576	568	239
14	576	580	386	0	528	583	590	593	598	574	568	264
15	578	578	386	0	560	583	592	594	597	575	570	304
16	575	576	374	0	556	582	590	594	595	578	569	342
17	576	578	367	0	562	582	589	593	595	577	568	353
18	580	579	367	0	579	581	588	593	595	572	572	325
19	579	579	355	0	518	579	586	597	596	578	574	292
20	582	581	349	0	422	579	589	593	594	578	544	303
21	583	581	349	0	396	556	589	592	594	580	501	327
22	580	579	349	0	440	526	588	591	596	578	453	329
23	580	577	349	0	479	523	585	592	595	579	455	346
24	580	580	349	0	476	495	589	592	595	581	485	334
25	580	534	349	0	489	454	592	592	594	578	481	304
26	582	510	349	0	517	405	592	591	595	575	470	283
27	582	511	349	68	533	372	589	589	595	578	463	279
28	580	511	349	107	558	361	588	590	595	578	442	302
29	581	524	349	408	---	363	590	591	596	574	406	341
30	582	550	349	408	---	348	589	591	589	573	387	367
31	582	---	339	408	---	401	---	593	---	576	402	---
TOTAL	17859	17055	11698	2741.10	12960	16420	16749	18365	17878	17882	16309	9648
MEAN	576	569	377	88.4	463	530	558	592	596	577	526	322
MAX	583	583	570	408	579	584	592	598	599	588	577	443
MIN	480	510	339	0	376	348	421	589	589	566	387	238
AC-FT	35420	33830	23200	5440	25710	32570	33220	36430	35460	35470	32350	19140
CAL YR 1986	TOTAL	198971.00	MEAN	545	MAX	594	MIN	339	AC-FT	394700		
WTR YR 1987	TOTAL	175564.10	MEAN	481	MAX	599	MIN	0	AC-FT	348200		

BUENA VISTA LAKE BASIN

11189500 SOUTH FORK KERN RIVER NEAR ONYX, CA

LOCATION.--Lat 35°44'22", long 118°10'33", unsurveyed, T.25 S., R.35 E., Kern County, Hydrologic Unit 18030002, on left bank 0.8 mi north of State Highway 178, 1.6 mi upstream from Canebrake Creek, and 5 mi northeast of Onyx.
DRAINAGE AREA.--530 mi².

PERIOD OF RECORD.--September 1911 to August 1914, January 1919 to September 1942, October 1947 to current year.
Yearly estimate for water year 1927 (incomplete) and monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1151: 1948(M). WSP 1445: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,900 ft above National Geodetic Vertical Datum of 1929, from topographic map. Sept. 12, 1911, to Aug. 31, 1914, nonrecording gage and Jan. 23, 1919, to Apr. 17, 1936, water-stage recorder, 140 ft upstream at datum 2.88 ft lower. Apr. 18, 1936, to September 1942, and October 1947 to Feb. 8, 1967, at datum 6.88 ft higher. Feb. 9, 1967, to May 31, 1972, at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Jan. 15-18, July 26 to Aug. 10, Aug. 19 to Sept. 13. Records good except those for periods of estimated discharges, which are fair. Lowell and Thomas ditches divert above station for irrigation of 160 acres below station, combined capacity, 7 ft³/s.

AVERAGE DISCHARGE.--62 years (water years 1912-13, 1920-25, 1927, 1930-42, 1947-87), 129 ft³/s, 93,460 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,700 ft³/s, Dec. 6, 1966, gage height, 18.9 ft, from floodmarks, present datum, from rating curve extended above 3,000 ft³/s on basis of slope-area measurement of peak flow; no flow for several days in 1929, 1934, 1960-61.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 6	0230	*255	*4.88

Minimum daily, 6.6 ft³/s, Aug. 26, Sept. 9-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	51	43	48	54	60	102	86	47	15	6.8	7.1
2	53	49	43	53	55	59	109	78	42	15	6.7	7.5
3	55	50	46	45	55	58	122	73	39	13	7.0	7.6
4	53	50	51	56	55	59	127	69	36	13	7.4	7.3
5	51	49	53	60	52	110	106	65	33	12	7.8	7.4
6	49	50	56	43	52	196	110	63	34	12	7.6	7.0
7	48	50	65	43	54	156	118	61	40	12	7.3	6.8
8	48	48	54	48	55	150	120	64	49	11	7.2	6.7
9	50	46	45	41	55	132	124	65	54	11	7.1	6.6
10	54	49	41	43	65	112	138	68	46	11	7.3	6.6
11	53	51	43	49	64	101	150	75	39	9.1	7.8	6.6
12	52	50	50	50	67	104	153	73	34	7.8	7.8	6.7
13	51	51	53	53	93	116	143	79	31	7.6	7.5	7.3
14	50	51	52	45	117	120	140	80	28	7.3	7.5	8.1
15	50	50	50	41	77	114	136	83	27	7.3	7.3	8.5
16	49	50	52	38	78	102	125	117	26	7.3	8.2	8.2
17	50	53	51	39	65	96	122	107	25	8.1	8.0	8.4
18	50	68	49	44	65	95	124	92	24	8.3	7.3	8.6
19	51	72	49	53	59	99	118	80	23	9.2	7.2	8.6
20	51	71	49	45	58	89	105	70	22	8.8	7.1	8.5
21	52	65	47	44	55	89	100	66	21	8.2	7.0	8.4
22	53	60	43	48	57	81	95	67	21	7.9	7.0	8.1
23	52	58	51	54	60	84	89	65	21	7.7	6.9	9.5
24	52	54	50	45	51	82	86	62	21	7.7	6.8	11
25	52	55	45	53	42	77	84	59	19	7.3	6.7	12
26	51	53	44	49	55	74	83	58	18	7.0	6.6	13
27	51	49	44	57	57	76	84	58	17	6.9	6.7	14
28	51	49	44	60	62	83	84	60	17	7.0	6.8	14
29	51	50	45	56	---	87	83	63	16	7.1	6.8	15
30	51	48	39	54	---	92	86	60	16	7.2	6.9	14
31	52	---	44	55	---	97	---	55	---	7.1	7.0	---
TOTAL	1589	1600	1491	1512	1734	3050	3366	2221	886	286.9	223.1	269.1
MEAN	51.3	53.3	48.1	48.8	61.9	98.4	112	71.6	29.5	9.25	7.20	8.97
MAX	55	72	65	60	117	196	153	117	54	15	8.2	15
MIN	48	46	39	38	42	58	83	55	16	6.9	6.6	6.6
AC-FT	3150	3170	2960	3000	3440	6050	6680	4410	1760	569	443	534
CAL YR 1986	TOTAL	98018.0	MEAN	269	MAX	1200	MIN	32	AC-FT	194400		
WTR YR 1987	TOTAL	18228.1	MEAN	49.9	MAX	196	MIN	6.6	AC-FT	36160		

BUENA VISTA LAKE BASIN

11190500 ISABELLA LAKE NEAR LAKE ISABELLA, CA

LOCATION.--Lat 35°38'46", long 118°28'41", in SE 1/4 SW 1/4 sec.19, T.26 S., R.33 E., Kern County, Hydrologic Unit 18030001, in main control tower near left abutment of main dam on Kern River, 1.5 mi north of town of Lake Isabella, and 2.8 mi upstream from Erskine Creek.

DRAINAGE AREA.--2,074 mi².

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."

REVISED RECORDS.--WSP 1930: Drainage area.

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

REMARKS.--Reservoir is formed by earthfill dam with sidehill spillway and auxiliary earthfill dam completed in 1954. Regulation began Apr. 15, 1954. Usable capacity, 567,891 acre-ft between elevations 2,470.0 ft, invert of main outlet, and 2,605.5 ft, spillway crest. Dead storage 184 acre-ft. Surge flood-control storage, 272,528 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 (station 11187500) through concrete conduit in auxiliary dam.

COOPERATION.--Records provided by U.S. Army Corps of Engineers; not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 630,825 acre-ft, July 6, 1983, elevation, 2,610.84 ft; minimum since reservoir first filled, 34,504 acre-ft, Dec. 14, 16, 1977, elevation, 2,524.35 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 326,533 acre-ft, Oct. 1, elevation, 2,581.63 ft; minimum, 151,208 acre-ft, Sept. 30, elevation, 2,557.16 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by U.S. Army Corps of Engineers, from table dated September 1978)

2,500	6,154	2,515	19,161	2,540	74,802	2,590	403,846
2,505	9,345	2,520	26,226	2,550	114,845	2,620	746,024
2,510	13,612	2,530	45,919	2,570	233,425		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	326533	267089	245577	244011	244531	243192	240083	246924	273876	252051	197086	163383
2	324265	266071	245203	243936	244456	242671	240304	247299	274831	250461	195775	162743
3	322267	264978	245054	244011	244383	242079	240230	247449	275467	249028	194342	162045
4	320101	264354	244979	244531	244309	241412	240674	247975	275707	247374	193044	161640
5	317857	263420	244904	244680	244234	241264	240820	248802	276026	245951	191688	161177
6	315364	262487	244979	244829	244160	242079	241116	250009	276026	244234	190208	160714
7	313224	261633	245203	245427	244085	242228	241116	250764	276266	242599	188864	160253
8	311005	261015	245203	245427	244011	242228	240968	251749	276266	240748	187587	159909
9	308796	260474	245203	245352	243862	242079	240968	252963	275946	238977	186191	159563
10	306594	259701	245128	245352	243862	241708	241042	254485	275310	237215	184738	159161
11	304317	258469	245054	245352	244011	241412	241264	255708	274752	235244	183167	158704
12	302133	257317	244979	245278	243862	240968	241560	257010	274114	233353	181604	158417
13	300040	256166	244829	245427	244606	240526	241857	258392	273399	231398	180236	158131
14	298039	255020	244904	245352	246251	239935	242005	260087	272488	229526	178874	157789
15	295879	253951	244829	245427	246699	239861	242005	262099	271340	227447	177949	157389
16	293811	252887	244680	245352	246326	239640	242228	264666	270313	225166	176781	156992
17	291914	251977	244606	245203	246026	238758	242599	266384	269131	222899	175497	156537
18	290025	251370	244531	245278	245652	238463	243192	267637	268108	220928	174157	156084
19	288142	250991	244383	245502	245577	238390	243638	268738	267168	219106	172643	155745
20	286348	250234	244531	245502	245427	237949	243713	269681	265914	217083	171559	155293
21	284397	249632	244531	245502	245427	238022	243787	270629	264510	215349	170717	154954
22	282615	249179	244383	245427	245128	237949	243936	271261	263498	213486	169999	154504
23	280839	248726	244383	245502	245128	237875	244011	271734	262487	211632	169222	154111
24	279070	248201	244458	245427	244979	237949	244160	271893	261248	209924	168389	153605
25	277465	247975	244383	245352	244755	238096	244458	271814	260010	208224	167616	153157
26	276026	247599	244383	245278	244383	238316	245054	271972	258931	206466	166907	152822
27	274513	247299	244309	245054	244085	238537	245278	272210	257776	204716	166197	152487
28	273003	246924	244234	244904	243787	238831	245577	272289	256473	203042	165492	152152
29	271418	246549	244160	244755	---	239198	245951	272527	255173	201377	164904	151708
30	269839	246101	244160	244680	---	239640	246474	272765	253648	199719	164377	151208
31	268659	---	244085	244606	---	239861	---	273083	---	198268	163733	---
MAX	326533	267089	245577	245502	246699	243192	246474	273083	276266	252051	197086	163383
MIN	268659	246101	244085	243936	243787	237875	240083	246924	253648	198268	163733	151208
a	2574.66	2571.72	2571.45	2571.52	2571.41	2570.88	2571.77	2575.22	2572.72	2564.92	2559.36	2557.16
b	-58311	-22558	-2016	+521	-819	-3926	+6613	+26609	-19435	-55380	-34535	-12525
c	3868	2331	1211	910	1427	1836	3544	4618	6679	7113	6450	4467

CAL YR 1986 b + 48569

WTR YR 1987 b -163237

a Elevation, in acre-feet NGVD, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, published as provided, not reviewed by U.S. Geological Survey.

BUENA VISTA LAKE BASIN

11191000 KERN RIVER BELOW ISABELLA DAM, CA

LOCATION.--Lat 35°38'21", long 118°29'02", in SW 1/4 NW 1/4 sec.30, T.26 S., R.33 E., Kern County, Hydrologic Unit 18030003, on right bank 200 ft downstream from highway bridge, 0.6 mi downstream from Isabella Dam, and 1.6 mi southwest of town of Lake Isabella.

DRAINAGE AREA.--2,074 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1945 to current year. Prior to October 1951, published as "below Isabella dam site."
REVISED RECORDS.--WSP 1515: 1956. WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,435.07 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Mar. 12, 1952, water-stage recorder at site 0.6 mi upstream at different datum. Mar. 12, 1952, to July 26, 1953, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Isabella Lake (station 11190500) beginning Apr. 15, 1954. Borel Canal (station 11187500) diverts above station. Diversion for irrigation of 3,500 acres between head of Isabella Lake and upstream stations. An additional 6,500 acres in the lakebed can be irrigated when the lake is low.

COOPERATION.--Records were provided by U.S. Army Corps of Engineers and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE (adjusted for diversion to Borel Canal since 1945 and for change in contents in and evaporation from Isabella Lake since 1954).--42 years, 1,006 ft³/s, 728,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft³/s, Nov. 19, 1950, gage height, 28.6 ft, from floodmarks, present site and datum, from rating curve extended above 6,500 ft³/s on basis of slope-area measurement of peak flow; no flow at times in some years. Maximum discharge since construction of Isabella Dam in 1954, 7,300 ft³/s, May 3, 1969, gage height, 17.67 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,200 ft³/s, Oct. 7, gage height, 8.03 ft; minimum daily, 1.1 ft³/s, Mar. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	237	499	6.3	4.7	5.7	80	2.5	240	64	713	236	4.9
2	1010	304	6.3	4.5	5.7	127	5.2	199	121	683	243	4.8
3	1040	196	5.4	4.5	5.7	146	4.8	203	378	584	285	4.3
4	1070	186	5.2	57	5.7	136	4.3	167	515	524	292	5.1
5	1130	169	5.1	365	5.4	132	4.3	140	540	563	321	5.6
6	1140	151	5.1	365	5.2	178	4.2	201	591	623	324	5.6
7	1020	95	4.9	365	7.0	190	131	208	532	679	274	5.4
8	1000	71	3.6	365	7.7	161	195	133	502	733	220	5.4
9	1050	53	3.5	365	7.6	187	156	82	555	744	264	5.4
10	1090	148	3.5	365	7.5	171	179	40	647	760	310	5.5
11	1080	350	3.6	365	5.2	179	173	45	730	762	321	5.5
12	1000	358	3.5	365	5.6	216	176	81	741	813	315	4.5
13	953	344	3.6	343	7.8	201	238	120	744	844	224	6.0
14	884	344	3.6	331	5.7	176	288	141	807	830	118	7.0
15	925	320	3.5	331	15	157	344	83	859	896	80	5.7
16	885	301	3.5	331	18	155	297	13	789	915	121	5.9
17	790	324	2.5	331	39	168	159	81	657	834	195	6.8
18	752	256	3.5	331	43	168	58	104	568	665	247	6.5
19	771	162	6.0	331	9.2	167	176	75	543	604	264	5.9
20	806	127	5.3	330	6.3	123	281	38	543	615	117	5.7
21	830	75	4.9	347	6.0	36	284	19	580	580	4.9	6.0
22	838	66	4.9	360	5.6	7.1	285	47	685	579	4.7	6.0
23	761	36	5.0	360	5.6	6.9	344	65	708	523	4.6	5.8
24	727	7.5	4.9	384	5.6	6.8	367	57	661	523	4.6	4.3
25	668	7.2	4.8	395	5.6	6.2	280	42	654	503	4.6	5.5
26	600	7.1	4.9	414	5.6	6.2	237	16	629	523	4.6	6.6
27	601	7.0	4.7	331	5.5	4.1	330	6.3	581	543	4.5	5.4
28	588	6.9	4.6	291	5.5	1.7	386	4.4	605	472	4.4	6.2
29	560	6.3	4.6	5.9	---	1.6	353	4.0	652	431	4.4	6.3
30	560	6.3	4.7	5.7	---	1.3	278	3.8	677	422	4.4	6.2
31	541	---	4.7	5.7	---	1.1	---	6.8	---	350	4.3	---
TOTAL	25907	4983.3	140.2	8549.0	263.0	3297.0	6020.3	2665.3	17858	19833	4821.0	169.8
MEAN	836	166	4.52	276	9.39	106	201	86.0	595	640	156	5.66
MAX	1140	499	6.3	414	43	216	386	240	859	915	324	7.0
MIN	237	6.3	2.5	4.5	5.2	1.1	2.5	3.8	64	350	4.3	4.3
AC-FT	51390	9880	278	16960	522	6540	11940	5290	35420	39340	9560	337
MEAN a	526	395	369	388	483	602	930	1186	977	432	225	192
AC-FT a	32340	23500	22690	23860	26820	37020	55340	72920	58140	26560	13830	11420

CAL YR 1986 TOTAL 441197.4 MEAN 1209 MAX 3900 MIN 2.5 AC-FT 875100 MEAN a 1906 AC-FT a 1380000
WTR YR 1987 TOTAL 94506.9 MEAN 259 MAX 1140 MIN 1.1 AC-FT 187500 MEAN a 559 AC-FT a 404700

a Adjusted for change in contents and evaporation from Isabella Lake and diversion to Borel Canal.
Evaporation, in acre-feet, used as provided; not reviewed by U.S. Geological Survey.

BUENA VISTA LAKE BASIN

11191000 KERN RIVER BELOW ISABELLA DAM, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-66, 1971 to current year.

CHEMICAL DATA: Water years 1956-66.

WATER TEMPERATURE: Water years 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1970 to current year.

INSTRUMENTATION.--Temperature recorder since November 1970.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1971-87): Maximum recorded, 28.5 °C, Aug. 24, 1981; minimum recorded, 4.0 °C, Jan. 4, 1972; Feb. 1, 1973; Jan. 30-31, 1979; Dec. 25, 1984.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 25.0 °C, Aug. 30; minimum recorded, 4.5 °C, Feb. 1, 4-5.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

BUENA VISTA LAKE BASIN

11191000 KERN RIVER BELOW ISABELLA DAM, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

BUENA VISTA LAKE BASIN

11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CA

LOCATION.--Lat 35°31'15", long 118°40'34", in NE 1/4 SE 1/4 sec.6, T.28 S., R.31 E., Kern County, Hydrologic Unit 18030003, on left bank 1.0 mi southwest of Democrat Springs and 2.1 mi upstream from Cow Creek.

DRAINAGE AREA.--2,258 mi².

PERIOD OF RECORD.--July 1950 to current year. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder on river; water-stage recorder for conduit diversion. Datum of gage is 1,837.7 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Kern River No. 1 conduit diverts up to about 420 ft³/s from left bank of Kern River 0.4 mi upstream from station in sec.13, T.28 S., R.30 E., for power development; water is returned to river 10 mi below station. Flow regulated by Isabella Lake 22 mi upstream beginning in 1954 (station 11190500). Many diversions above station for irrigation. See schematic diagram of Kern River basin. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--River only, 37 years, 688 ft³/s, 498,500 acre-ft/yr.

Combined river and diversion, 37 years, 1,026 ft³/s, 743,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 40,000 ft³/s, Nov. 19, 1950, gage height, 30.7 ft, from rating curve extended above 8,700 ft³/s on basis of computation of peak flow over dam (basic data for computation provided by Southern California Edison Co.); minimum daily, 0.7 ft³/s, Nov. 17-19, 1951. Maximum discharge since construction of Isabella Dam in 1954, 10,100 ft³/s, Dec. 6, 1966, gage height, 18.55 ft; no flow May 26-28, 1977.

Combined flow: Maximum discharge, 40,000 ft³/s, Nov. 19, 1950; minimum daily, 123 ft³/s, Sept. 22, 1951.

Maximum discharge since construction of Isabella Dam in 1954, 10,100 ft³/s, Dec. 6, 1966; minimum daily, 10 ft³/s, Dec. 17, 1968.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 1,270 ft³/s, Oct. 6, gage height, 9.37 ft; minimum daily, 1.7 ft³/s, Jan. 17, 18.

Combined flow: Maximum daily discharge, 1,640 ft³/s, Oct. 6; minimum daily, 249 ft³/s, Sept. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	679	203	2.2	51	253	64	440	218	834	486	65
2	1040	589	196	2.1	50	315	56	400	305	854	420	93
3	1170	407	71	2.1	48	350	110	386	427	769	490	89
4	1170	400	48	2.9	49	345	133	393	680	693	489	66
5	1220	381	5.2	77	48	325	119	320	687	677	500	72
6	1260	363	13	4.3	46	375	83	366	753	767	542	78
7	1140	325	19	11	46	423	162	422	723	784	501	65
8	1100	284	18	5.8	53	364	387	349	671	848	438	65
9	1160	264	5.1	2.2	54	392	329	300	703	847	427	64
10	1190	263	13	1.9	49	393	335	264	766	870	510	64
11	1230	533	12	1.8	6.4	361	380	227	860	874	511	64
12	1120	564	21	1.9	39	415	314	281	879	899	529	64
13	1100	544	23	1.9	172	412	420	306	878	991	483	64
14	991	541	25	3.7	231	383	437	342	913	932	529	64
15	1050	533	24	2.5	233	395	509	341	995	1010	259	64
16	1030	486	16	1.9	261	361	511	221	970	1050	252	65
17	930	518	2.2	1.7	219	376	385	240	843	1020	337	65
18	888	520	2.0	1.7	307	376	289	310	748	869	388	65
19	895	369	2.0	1.9	225	375	285	307	704	820	434	65
20	946	366	2.3	2.0	104	367	466	255	717	806	383	65
21	956	292	2.2	2.1	41	280	452	228	706	767	143	65
22	1010	289	2.0	2.5	56	185	456	212	806	761	110	65
23	907	265	2.0	2.2	142	183	487	280	881	713	77	65
24	885	222	2.0	4.3	136	166	550	269	829	715	111	66
25	845	198	2.0	19	140	131	507	257	806	711	119	65
26	776	164	2.2	27	161	85	409	225	820	689	108	65
27	766	160	2.3	30	180	26	475	209	748	759	110	64
28	763	158	2.4	60	186	11	557	204	746	692	96	65
29	730	159	2.4	40	---	10	545	203	802	631	74	65
30	733	187	2.3	54	---	2.7	471	204	835	617	76	65
31	736	---	2.3	51	---	11	---	203	---	610	98	---
TOTAL	29880	11023	744.9	424.6	3333.4	8446.7	10683	8964	22419	24879	10030	2016
MEAN	964	367	24.0	13.7	119	272	356	289	747	803	324	67.2
MAX	1260	679	203	77	307	423	557	440	995	1050	542	93
MIN	143	158	2.0	1.7	6.4	2.7	56	203	218	610	74	64
AC-FT	59270	21860	1480	842	6610	16750	21190	17780	44470	49350	19890	4000
CAL YR 1986	TOTAL	506740.9	MEAN	1388	MAX	4340	MIN	2.0	AC-FT	1005000		
WTR YR 1987	TOTAL	132843.6	MEAN	364	MAX	1260	MIN	1.7	AC-FT	263500		

BUENA VISTA LAKE BASIN

11192501 KERN RIVER NEAR DEMOCRAT SPRINGS, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KERN RIVER AND KERN RIVER NO. 1 CONDUIT
 WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	529	1060	567	354	421	623	445	829	607	1210	836	408
2	1430	969	582	344	420	683	435	789	692	1230	770	442
3	1550	787	451	344	418	719	492	775	818	1140	838	443
4	1550	780	426	345	419	733	515	783	1060	1060	841	413
5	1600	761	381	464	418	708	501	712	1080	1050	848	392
6	1640	744	389	376	418	755	464	759	1140	1140	891	314
7	1530	706	395	384	418	803	542	812	1110	1160	851	329
8	1490	665	388	378	425	744	771	739	1050	1220	788	285
9	1550	645	375	375	419	773	713	690	1090	1220	777	284
10	1580	643	377	367	416	774	719	654	1150	1240	859	281
11	1620	913	376	367	376	741	764	619	1250	1240	860	264
12	1510	942	388	367	409	798	698	673	1270	1270	879	264
13	1490	924	390	367	540	795	801	698	1270	1350	833	264
14	1380	921	392	369	599	766	822	733	1300	1300	529	249
15	1430	913	392	335	601	778	894	731	1380	1370	656	272
16	1420	866	390	339	629	744	894	611	1350	1400	649	316
17	1310	900	376	339	586	759	770	630	1220	1370	734	352
18	1270	903	370	339	675	759	674	700	1130	1220	786	355
19	1280	749	368	334	593	758	670	697	1090	1170	829	355
20	1330	746	368	334	472	751	850	645	1100	1180	778	355
21	1340	672	368	337	409	665	835	618	1090	1120	538	330
22	1390	669	360	365	424	570	841	603	1180	1120	505	330
23	1290	645	357	364	512	568	876	671	1260	1070	472	335
24	1260	600	356	366	503	548	935	660	1210	1070	478	363
25	1220	576	356	381	507	516	892	647	1180	1070	502	333
26	1150	542	352	397	531	465	794	615	1200	1040	475	333
27	1150	538	352	400	550	404	863	596	1130	1110	474	332
28	1140	537	352	430	556	389	941	592	1130	1040	459	285
29	1110	538	352	410	---	388	935	591	1180	983	437	336
30	1110	566	353	421	---	370	863	592	1210	969	439	368
31	1120	---	354	418	---	375	---	592	---	960	444	---
TOTAL	41769	22420	12053	11510	13664	20222	22209	21056	33927	36092	21055	9982
MEAN	1347	747	389	371	488	652	740	679	1131	1164	679	333
MAX	1640	1060	582	464	675	803	941	829	1380	1400	891	443
MIN	529	537	352	334	376	370	435	591	607	960	437	249
AC-FT	82850	44470	23910	22830	27100	40110	44050	41760	67290	71590	41760	19800
CAL YR 1986	TOTAL	648317	MEAN	1776	MAX	4730	MIN	352	AC-FT	1286000		
WTR YR 1987	TOTAL	265959	MEAN	729	MAX	1640	MIN	249	AC-FT	527500		

TULARE LAKE BASIN

11199500 WHITE RIVER NEAR DUCOR, CA

LOCATION.--Lat 35°48'36", Long 118°55'03", in NW 1/4 SE 1/4 sec.26, T.24 S., R.28 E., Tulare County, Hydrologic Unit 18030012, on left bank 0.6 mi upstream from Tyler Gulch and 9.0 mi southeast of Ducor.

DRAINAGE AREA.--90.6 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 715 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1942 to September 1946, at site 3,800 ft downstream; October 1946 to September 1953, at site 4,300 ft downstream; and October 1971 to November 1978, at site 4,000 ft downstream, all at different datums.

REMARKS.--No estimated daily discharges. Records good. No storage or diversion above station.

AVERAGE DISCHARGE.--27 years (water years 1943-53, 1972-87), 10.8 ft³/s, 7,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft³/s, estimated by U.S. Bureau of Reclamation, Mar. 9, 1943; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	2400	*111	*2.04
Mar. 15	0830	37	1.57

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1.4	3.5	4.5	4.9	4.9	9.5	4.2	1.4			
2	0	1.5	3.8	4.4	4.9	4.7	9.4	4.2	1.1			
3	0	1.4	3.8	4.7	5.1	4.7	13	4.1	.73			
4	0	1.4	3.8	7.1	4.9	4.6	13	3.7	.43			
5	0	1.3	3.8	15	4.9	4.8	11	3.3	.25			
6	0	1.3	4.9	11	4.6	9.8	10	2.8	.50			
7	0	1.3	6.5	13	4.6	15	9.9	2.7	1.0			
8	0	1.5	6.0	9.6	4.4	12	9.6	2.9	1.0			
9	0	1.7	5.0	6.7	4.4	9.4	9.7	2.6	.46			
10	0	1.7	4.6	5.5	5.0	8.4	9.4	2.5	.25			
11	0	1.7	4.4	5.2	5.4	7.4	9.3	2.3	.07			
12	0	1.7	4.1	4.9	5.6	6.8	9.2	2.1	0			
13	0	1.7	4.1	4.5	16	7.0	8.6	1.7	0			
14	0	1.7	4.1	4.2	37	9.0	8.0	1.6	0			
15	0	1.7	4.2	4.2	13	23	7.5	1.5	0			
16	.10	1.7	4.3	4.1	12	20	7.2	1.8	0			
17	.37	1.9	4.4	3.8	10	16	7.0	2.1	0			
18	.65	3.1	4.4	3.5	8.9	14	6.9	1.7	0			
19	.91	4.4	4.6	4.0	8.0	12	6.7	1.8	0			
20	1.0	3.4	5.5	4.1	7.2	10	6.0	2.2	0			
21	1.1	2.8	6.2	3.8	6.7	10	5.4	2.6	0			
22	.96	3.0	5.5	4.0	6.6	13	4.8	2.5	0			
23	.94	3.1	5.4	4.2	6.9	12	4.5	2.1	0			
24	.94	2.8	5.3	4.4	7.4	13	4.3	1.8	0			
25	.95	2.7	5.3	4.2	6.5	12	4.3	1.9	0			
26	1.0	2.7	4.9	4.4	5.7	10	4.3	2.5	0			
27	1.1	2.7	4.7	4.8	5.3	10	4.7	2.6	0			
28	1.1	3.0	4.7	6.5	4.8	10	4.3	2.5	0			
29	1.2	3.2	4.7	7.4	---	9.8	4.4	2.3	0			
30	1.2	3.4	4.7	5.5	---	9.5	4.2	1.9	0			
31	1.3	---	4.7	5.1	---	9.4	---	1.6	---			
TOTAL	14.82	66.9	145.9	178.3	220.7	322.2	226.1	76.1	7.19	0	0	0
MEAN	.48	2.23	4.71	5.75	7.88	10.4	7.54	2.45	.24	0	0	0
MAX	1.3	4.4	6.5	15	37	23	13	4.2	1.4	0	0	0
MIN	0	1.3	3.5	3.5	4.4	4.6	4.2	1.5	0	0	0	0
AC-FT	29	133	289	354	438	639	448	151	14	0	0	0
CAL YR 1986	TOTAL	4060.03	MEAN	11.1	MAX	205	MIN	0	AC-FT	8050		
WTR YR 1987	TOTAL	1258.21	MEAN	3.45	MAX	37	MIN	0	AC-FT	2500		

TULARE LAKE BASIN

11200800 DEER CREEK NEAR FOUNTAIN SPRINGS, CA

LOCATION.--Lat 35°56'30", long 118°49'19", in SE 1/4 NE 1/4 sec.10, T.23 S., R.29 E., Tulare County, Hydrologic Unit 18030005, on left bank 1.0 mi upstream from Pothole Creek, 6.3 mi northeast of Fountain Springs, and 12 mi east of Terra Bella.

DRAINAGE AREA.--83.3 mi².

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

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

REMARKS.--Estimated daily discharges: Jan. 10 to Feb. 20. Records good except those for estimated daily discharges, which are fair. No storage or diversion above station.

AVERAGE DISCHARGE.--19 years, 37.3 ft³/s, 27,020 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,340 ft³/s, Feb. 24, 1969, gage height, 9.85 ft, from rating curve extended above 600 ft³/s on basis of slope-area measurements at gage heights 8.83 ft in gage well, 9.18 ft from floodmarks, and 12.54 ft from floodmarks; no flow for periods in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 6, 1966, reached a stage of 12.54 ft, from floodmarks, discharge, 5,330 ft³/s.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	Unknown	*274	*4.60				

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	7.5	9.1	9.7	16	21	33	14	6.7	.71	0	0
2	8.2	7.6	9.1	9.5	15	21	33	14	6.0	.75	0	0
3	8.5	7.6	9.1	9.5	17	21	40	13	4.4	1.1	0	0
4	8.3	7.6	9.1	17	20	21	38	11	4.3	1.5	0	0
5	8.0	7.6	9.1	44	18	22	33	11	4.5	1.9	0	0
6	7.8	7.6	11	24	18	31	30	9.6	5.6	1.9	0	0
7	7.4	7.6	19	25	17	39	29	9.0	6.9	.90	0	0
8	6.9	7.6	14	21	18	35	29	8.6	6.0	.76	0	0
9	6.7	7.6	12	17	18	31	28	9.1	4.9	1.5	0	0
10	6.9	7.6	11	16	26	28	27	9.4	4.6	1.6	0	0
11	6.9	7.6	11	16	24	27	26	8.8	4.1	1.8	0	0
12	6.9	7.6	11	16	22	26	25	8.0	4.1	1.5	0	0
13	6.9	7.6	10	16	127	25	24	7.7	3.1	1.1	0	.55
14	6.9	7.6	10	15	89	24	23	6.9	2.8	.61	0	1.1
15	6.6	7.6	10	13	44	51	22	6.5	2.8	.27	0	1.1
16	6.6	7.6	9.8	12	36	43	21	7.1	3.2	0	0	1.1
17	6.3	7.4	9.8	11	26	37	21	7.3	3.8	0	0	1.2
18	7.5	12	9.8	15	23	40	21	6.9	3.2	0	0	1.1
19	7.9	16	9.8	14	21	39	21	7.5	3.5	.50	0	.76
20	7.9	11	11	14	20	36	19	9.0	3.0	1.1	0	.98
21	7.9	9.9	12	13	20	37	21	9.6	2.6	1.3	0	1.1
22	7.9	10	11	13	19	35	20	9.0	2.8	1.5	0	.53
23	7.2	10	11	12	20	33	19	8.8	2.2	1.5	0	.17
24	6.4	10	11	11	20	36	15	8.2	2.3	1.1	.56	0
25	6.0	9.4	10	12	19	35	15	8.7	2.0	1.4	.63	0
26	6.0	9.1	10	13	18	36	15	10	2.1	1.4	.18	.28
27	6.0	9.1	9.9	15	19	34	15	11	2.0	1.1	.23	1.1
28	6.0	9.1	9.8	31	21	33	15	10	1.2	.13	0	.96
29	6.3	9.1	9.8	23	---	32	14	7.9	.94	0	0	1.1
30	6.3	9.1	9.8	18	---	32	13	7.2	.85	0	0	.77
31	7.1	---	9.8	17	---	33	---	7.8	---	0	0	---
TOTAL	220.0	262.7	328.8	512.7	771	994	705	282.6	106.49	28.93	1.60	13.90
MEAN	7.10	8.76	10.6	16.5	27.5	32.1	23.5	9.12	3.55	.93	.052	.46
MAX	8.5	16	19	44	127	51	40	14	6.9	1.9	.63	1.2
MIN	6.0	7.4	9.1	9.5	15	21	13	6.5	.85	0	0	0
AC-FT	436	521	652	1020	1530	1970	1400	561	211	57	3.2	28

CAL YR 1986	TOTAL	13746.20	MEAN	37.7	MAX	452	MIN	1.3	AC-FT	27270
WTR YR 1987	TOTAL	4227.72	MEAN	11.6	MAX	127	MIN	0	AC-FT	8390

TULARE LAKE BASIN

11201200 DEER CREEK DIVERSION NEAR TERRA BELLA, CA

LOCATION.--Lat 35°59'27", long 118°59'06", in NE 1/4 NE 1/4 sec.30, T.22 S., R.28 E., Tulare County, Hydrologic Unit 18030012, on right bank 1,000 ft downstream from diversion structure, 3.8 mi northeast of Terra Bella.

PERIOD OF RECORD.--October 1970 to September 1987 (discontinued).

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 510 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Diversion receives water from Deer Creek 1,000 ft upstream. Water is used for ground-water recharge.

AVERAGE DISCHARGE.--17 years, 2.27 ft³/s, 1,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 16 ft³/s, Sept. 30, Oct. 2, 1983, Mar. 16, 18, 1985; no flow for several months in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		.33	.70	.76	1.8	3.7	3.1	3.9	3.7			
2		1.1	.74	.78	2.6	3.6	2.8	3.8	2.3			
3		.47	.61	.81	3.3	3.5	2.8	3.8	.83			
4		.02	.64	1.2	3.4	3.5	2.8	3.8	0			
5		0	.75	2.0	3.1	3.8	2.7	3.8	0			
6		0	1.1	1.6	2.8	4.5	2.6	3.8	0			
7		0	1.1	1.5	2.6	4.6	2.5	3.8	0			
8		0	.63	1.4	2.5	4.4	2.5	3.8	0			
9		0	.38	.77	1.6	4.7	2.4	3.7	0			
10		0	.33	0	1.9	2.9	2.8	3.7	0			
11		0	.32	0	2.6	2.5	4.0	3.7	0			
12		0	.32	0	3.1	2.8	3.9	3.7	0			
13		0	.30	0	5.2	5.3	3.9	3.7	0			
14		0	.31	0	7.7	8.6	3.5	2.6	0			
15		0	.16	0	2.9	7.5	.89	1.5	0			
16		0	.18	0	2.5	2.6	.24	1.6	0			
17		0	.35	0	2.0	3.0	.12	1.8	0			
18		.09	.32	0	1.7	2.8	.07	1.9	0			
19		1.3	.40	0	1.7	3.0	.05	2.1	0			
20		.18	.65	.72	1.6	3.9	.04	2.7	0			
21		0	.71	1.2	1.4	5.1	.03	3.2	0			
22		0	.65	1.2	1.4	5.5	.02	3.2	0			
23		0	.66	1.4	1.5	2.9	.01	3.0	0			
24		.61	.66	1.5	1.6	.67	.01	3.0	0			
25		.48	.68	1.4	2.3	.34	.01	3.3	0			
26		.51	.67	1.4	3.6	0	.01	3.6	0			
27		.57	.67	1.4	3.6	0	.01	5.1	0			
28		.54	.67	2.3	3.7	0	.54	5.8	0			
29		.50	.69	3.5	---	0	2.4	5.6	0			
30		.59	.74	2.3	---	0	3.8	4.2	0			
31		---	.75	1.9	---	1.6	---	4.1	---			---
TOTAL	0	7.29	17.84	31.04	75.7	97.31	50.55	107.3	6.83	0	0	0
MEAN	0	.24	.58	1.00	2.70	3.14	1.69	3.46	.23	0	0	0
MAX	0	1.3	1.1	3.5	7.7	8.6	4.0	5.8	3.7	0	0	0
MIN	0	0	.16	0	1.4	0	.01	1.5	0	0	0	0
AC-FT	0	14	35	62	150	193	100	213	14	0	0	0
CAL YR 1986	TOTAL	530.53	MEAN	1.45	MAX	15	MIN	0	AC-FT	1050		
WTR YR 1987	TOTAL	393.86	MEAN	1.08	MAX	8.6	MIN	0	AC-FT	781		

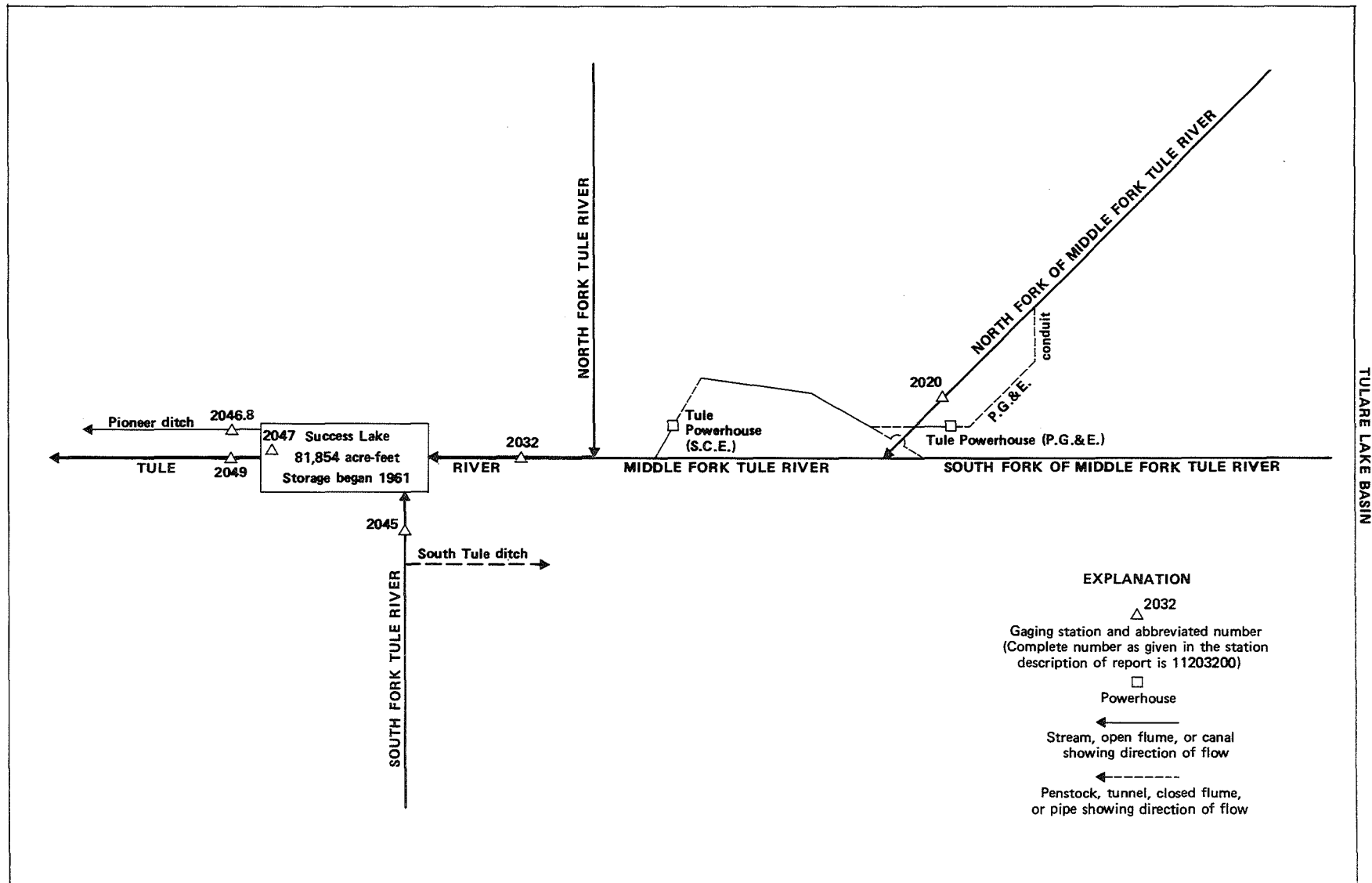


Figure 29. - Schematic diagram showing diversions and storage in Tule River basin.

TULARE LAKE BASIN

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

LOCATION.--Lat 36°10'29", long 118°41'41", unsurveyed, in T.20 S., R.30 E., Tulare County, Hydrologic Unit 18030006, on right bank 1.2 mi upstream from mouth, 2.2 mi downstream from Hossack Creek, and 7.4 mi northeast of Springville.

DRAINAGE AREA.--39.3 mi².

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-A. January 1909 to December 1912 at site 2 mi upstream, records not equivalent. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960. Prior to October 1982, combined flow consisted of river and Tule River conduit.

REVISED RECORDS.--WSP 1445: 1951.

GAGE.--Water-stage recorder. Concrete control on river since Aug. 6, 1958. Elevation of gage is 2,920 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. See schematic diagram of Tule River basin. For records of combined discharge of river and powerplant, see following page.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--River only: 48 years, 28.1 ft³/s, 20,360 acre-ft/yr.
Combined river and diversion: 48 years, 60.7 ft³/s, 43,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 16,900 ft³/s, Dec. 6, 1966, gage height, 13.83 ft, from floodmarks, from rating curve extended above 1,820 ft³/s on basis of critical-depth determinations at gage heights 9.67 and 12.47 ft; no flow Sept. 10, 11, 1955.
Combined flow: Maximum discharge, 16,900 ft³/s, Dec. 6, 1966; minimum daily, 6.7 ft³/s, Aug. 15, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 279 ft³/s, Feb. 13, gage height, 4.57 ft; minimum daily, 0.90 ft³/s, Sept. 20.
Combined flow: Maximum daily discharge, 167 ft³/s, Feb. 13; minimum daily, 8.0 ft³/s, Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	3.4	3.4	2.6	2.6	3.9	5.5	5.5	2.1	1.5	1.0	1.1
2	3.7	4.8	3.4	2.7	2.5	3.5	5.2	4.3	2.1	1.4	1.1	1.3
3	3.6	3.1	3.4	2.7	2.8	3.4	7.3	3.8	2.0	1.4	1.0	1.2
4	4.8	3.2	3.6	4.4	2.7	3.3	7.3	3.5	1.9	1.4	.95	.94
5	5.6	3.2	3.7	5.5	2.6	4.1	5.9	3.4	1.9	1.3	.94	.91
6	6.8	3.2	4.3	5.2	2.5	5.9	5.5	3.3	2.2	1.3	.92	.93
7	6.3	3.2	4.2	7.7	2.4	5.3	5.3	3.3	2.2	1.3	.93	.99
8	5.6	3.2	4.0	7.0	2.4	4.4	5.3	3.3	2.0	1.3	.95	.98
9	4.7	3.3	3.9	6.9	2.4	3.9	5.4	3.8	1.8	1.3	.98	.99
10	5.5	3.2	3.8	7.4	2.7	3.6	8.9	3.6	1.8	1.6	1.0	1.1
11	5.6	3.1	3.7	7.6	2.8	3.3	11	3.5	1.9	1.5	1.1	1.1
12	4.3	3.1	3.7	7.3	2.8	3.2	8.3	3.4	1.8	1.4	1.2	1.1
13	3.8	3.1	3.7	6.6	111	4.5	6.2	3.2	1.7	1.4	1.1	1.0
14	3.3	3.4	3.7	6.5	26	3.9	6.7	3.1	1.7	1.3	1.2	1.0
15	3.3	3.1	3.7	6.5	7.6	10	20	2.9	1.7	1.2	1.2	.99
16	3.1	3.1	3.8	6.4	5.7	11	55	2.8	1.7	1.1	1.2	.99
17	3.2	3.0	3.5	6.3	5.2	6.7	9.4	2.9	1.7	1.1	6.2	.98
18	3.4	4.6	3.5	6.3	4.6	7.1	14	2.6	1.7	1.2	12	.97
19	3.4	3.4	3.4	6.3	4.1	6.3	8.1	2.6	1.7	1.3	12	.92
20	3.4	3.3	3.5	6.2	3.8	5.3	4.9	2.8	1.6	1.2	12	.90
21	3.2	3.6	3.3	5.4	3.5	5.5	4.6	2.9	1.6	1.2	8.0	.93
22	3.2	3.5	2.9	2.7	3.3	5.5	4.8	2.6	1.7	1.1	8.5	1.3
23	3.1	3.8	2.8	2.7	3.6	5.6	4.9	3.0	1.6	1.1	8.4	1.0
24	3.2	3.4	2.8	2.6	3.6	5.9	4.7	4.4	1.6	1.1	8.7	.91
25	3.3	3.3	2.7	2.6	3.4	5.6	5.6	4.0	1.6	1.1	9.7	.95
26	3.3	3.4	2.7	2.6	3.2	5.8	5.6	3.0	1.6	1.1	9.4	.98
27	3.2	3.3	2.7	2.5	3.1	6.0	10	2.7	1.5	1.2	8.2	.98
28	3.6	3.3	2.7	4.2	3.3	6.0	7.7	2.5	1.6	1.2	3.8	.95
29	4.7	3.3	2.7	3.1	---	5.8	13	2.2	1.6	1.0	1.0	.94
30	3.3	3.4	2.8	2.8	---	7.0	10	2.2	1.5	1.0	.96	1.1
31	5.2	---	2.6	2.7	---	5.3	---	2.1	---	1.0	1.0	---
TOTAL	128.6	101.3	104.6	152.0	226.2	166.6	276.1	99.2	53.1	38.6	126.63	30.43
MEAN	4.15	3.38	3.37	4.90	8.08	5.37	9.20	3.20	1.77	1.25	4.08	1.01
MAX	6.8	4.8	4.3	7.7	111	11	55	5.5	2.2	1.6	12	1.3
MIN	3.1	3.0	2.6	2.5	2.4	3.2	4.6	2.1	1.5	1.0	.92	.90
AC-FT	255	201	207	301	449	330	548	197	105	77	251	60
CAL YR 1986	TOTAL	18944.10	MEAN	51.9	MAX	852	MIN	2.6	AC-FT	37580		
WTR YR 1987	TOTAL	1503.36	MEAN	4.12	MAX	111	MIN	.90	AC-FT	2980		

TULARE LAKE BASIN

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

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF NORTH FORK OF MIDDLE FORK TULE RIVER
AND PACIFIC GAS & ELECTRIC CO. TULE RIVER POWERHOUSE NEAR SPRINGVILLE, CAWATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	21	20	20	23	26	53	72	32	20	15	14
2	15	22	20	20	23	27	58	63	30	18	14	14
3	29	21	20	19	24	27	68	63	29	18	14	20
4	28	21	21	25	22	30	60	63	29	17	14	13
5	27	20	21	26	22	46	52	65	27	18	15	14
6	27	21	23	22	21	65	56	65	17	18	14	14
7	24	21	23	24	21	55	59	62	28	17	15	14
8	25	21	22	21	21	46	64	62	29	16	14	14
9	24	21	22	22	21	42	63	68	29	18	14	14
10	25	21	21	22	25	39	76	64	28	18	14	13
11	25	21	21	24	27	35	78	66	24	18	14	14
12	24	21	21	23	24	37	72	59	24	16	14	14
13	25	21	21	23	167	40	69	57	24	16	14	14
14	24	20	21	22	83	38	76	56	24	17	14	15
15	24	20	21	22	48	41	70	53	22	16	14	14
16	21	21	20	20	40	39	72	53	24	16	14	13
17	22	21	21	21	34	41	77	50	23	16	14	14
18	22	28	20	21	30	43	81	48	22	16	12	14
19	23	25	20	21	29	45	71	44	23	16	12	13
20	22	23	22	21	27	36	68	43	21	17	12	13
21	22	23	20	21	26	38	69	42	21	15	8.0	13
22	22	24	20	21	26	37	72	39	21	16	8.5	13
23	22	22	21	21	26	37	71	37	21	16	8.4	13
24	21	21	21	21	26	36	70	42	20	15	8.7	13
25	21	21	20	22	25	35	74	41	20	16	9.7	13
26	21	21	20	23	24	40	72	38	19	15	9.4	13
27	21	21	20	23	24	40	77	36	20	15	8.2	13
28	22	21	20	33	25	41	72	36	19	16	11	13
29	21	20	20	26	---	42	80	34	19	15	13	13
30	21	20	19	24	---	47	77	32	18	14	14	11
31	21	---	20	23	---	52	---	32	---	15	13	---
TOTAL	720	645	642	697	934	1243	2077	1585	707	510	388.9	410
MEAN	23.2	21.5	20.7	22.5	33.4	40.1	69.2	51.1	23.6	16.5	12.5	13.7
MAX	29	28	23	33	167	65	81	72	32	20	15	20
MIN	15	20	19	19	21	26	52	32	17	14	8.0	11
AC-FT	1430	1280	1270	1380	1850	2470	4120	3140	1400	1010	771	813
CAL YR 1986	TOTAL	33548.0	MEAN	91.9	MAX	921	MIN	15	AC-FT	66540		
WTR YR 1987	TOTAL	10558.9	MEAN	28.9	MAX	167	MIN	8.0	AC-FT	20940		

11202750 MIDDLE FORK TULE RIVER ABOVE SPRINGVILLE, CA

LOCATION.--Lat 36°09'00", long 118°44'56", unsurveyed, T.20 S., R.30 E., Tulare County, Hydrologic Unit 18030006, Sequoia National Forest, on right bank 0.6 mi downstream from Coffee Canyon and 4.0 mi northeast of Springville.

DRAINAGE AREA.--92.4 mi².

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder and concrete control on river; water-stage recorder and metal flume for conduit diversion. Elevation of gage is 1,680 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharge. Southern California Edison Co., 's Tule River conduit diverts from the right bank of Middle Fork Tule River 2.5 mi upstream from station. Flow from this conduit passes through Tule River powerplant of Southern California Edison Co. Diversions are made from powerplant tailrace ditch to Springville diversion and Duncan diversion ditches. Remaining water is returned to the Tule River 1.5 mi upstream from confluence of Middle and North Forks. See schematic diagram of Tule River basin. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--River only: 9 years, 113 ft³/s, 81,870 acre-ft/yr.
Combined river and diversion: 9 years, 147 ft³/s, 106,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 12,300 ft³/s, Jan. 13, 1980, gage height, 12.63 ft, from rating curve extended above 760 ft³/s, on basis of runoff comparisons with nearby stations; minimum daily, 5.0 ft³/s, Nov. 12, 13, 1981.
Combined river and diversion: Maximum discharge, 12,300 ft³/s, Jan. 13, 1980; minimum daily, 18 ft³/s, Sept. 30, 1987.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 563 ft³/s, Feb. 13, gage height, 6.00 ft; minimum daily, 7.6 ft³/s, Dec. 23, 25.
Combined river and diversion: Maximum daily discharge, 292 ft³/s, Feb. 13; minimum daily, 18 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	18	11	8.9	12	16	64	79	16	13	11	11
2	25	17	11	9.0	11	17	70	68	15	13	11	11
3	22	17	12	8.9	13	18	90	64	15	13	11	13
4	20	17	11	20	13	20	79	65	14	12	11	10
5	20	16	9.5	24	11	59	67	66	12	12	11	10
6	19	16	14	15	10	97	66	66	13	12	11	11
7	19	13	19	18	13	75	72	61	16	12	11	11
8	19	9.7	12	14	13	56	78	65	16	13	10	11
9	19	9.6	12	14	13	45	84	69	13	13	10	11
10	19	9.6	12	15	20	38	93	68	11	13	10	11
11	18	9.8	12	15	20	30	99	65	10	14	10	11
12	18	9.6	11	16	17	31	90	57	9.9	13	11	11
13	18	9.2	11	15	263	38	88	54	9.4	13	11	11
14	18	8.3	10	14	126	36	87	52	9.2	12	11	11
15	18	7.9	10	14	65	54	82	43	8.9	13	11	11
16	18	8.1	10	13	39	51	93	43	8.7	13	11	11
17	18	9.4	9.7	13	29	46	92	37	12	13	9.6	11
18	18	23	8.9	14	25	55	97	36	13	13	10	10
19	18	21	8.9	13	21	43	82	31	13	13	10	10
20	18	14	11	12	20	35	77	29	13	12	11	11
21	17	13	8.8	9.6	18	36	77	29	13	12	11	11
22	17	14	7.9	12	17	34	79	28	14	12	11	10
23	17	12	7.6	13	18	33	77	26	13	11	11	11
24	17	12	8.1	12	18	33	75	26	12	11	11	11
25	17	11	7.6	13	16	32	79	27	12	11	11	11
26	17	11	8.8	14	15	35	80	25	13	11	10	11
27	17	11	9.0	17	15	41	87	25	12	11	11	11
28	17	11	9.6	33	16	45	83	24	13	11	11	11
29	17	11	9.1	21	---	47	91	22	13	11	10	11
30	17	11	9.1	16	---	94	91	20	12	11	10	10
31	17	---	9.1	13	---	63	---	19	---	11	10	---
TOTAL	570	380.2	320.7	459.4	887	1353	2469	1389	375.1	378	329.6	326
MEAN	18.4	12.7	10.3	14.8	31.7	43.6	82.3	44.8	12.5	12.2	10.6	10.9
MAX	25	23	19	33	263	97	99	79	16	14	11	13
MIN	17	7.9	7.6	8.9	10	16	64	19	8.7	11	9.6	10
AC-FT	1130	754	636	911	1760	2680	4900	2760	744	750	654	647
CAL YR 1986	TOTAL	53675.9	MEAN	147	MAX	2230	MIN	7.6	AC-FT	106500		
WTR YR 1987	TOTAL	9237.0	MEAN	25.3	MAX	263	MIN	7.6	AC-FT	18320		

TULARE LAKE BASIN

11202751 MIDDLE FORK TULE RIVER ABOVE SPRINGVILLE, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MIDDLE FORK TULE RIVER AND SOUTHERN CALIFORNIA EDISON CO.'S
TULE RIVER CONDUIT ABOVE SPRINGVILLE, CA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	48	40	36	42	48	95	112	50	34	26	21
2	54	47	40	36	42	50	101	100	49	35	24	21
3	51	47	41	35	44	50	122	96	49	35	24	26
4	48	47	40	48	44	53	110	97	49	35	24	21
5	49	46	39	52	42	92	98	98	49	35	24	20
6	47	46	44	42	41	130	97	99	49	35	23	21
7	47	42	49	46	44	109	103	94	54	31	23	21
8	47	39	42	42	44	90	110	98	52	26	22	21
9	47	40	42	42	44	78	116	103	49	26	21	21
10	48	40	41	42	52	71	125	102	47	27	21	21
11	48	40	41	43	53	63	131	99	45	26	21	22
12	47	40	40	44	50	62	123	87	43	27	22	23
13	48	38	40	43	292	71	121	84	42	28	22	23
14	47	37	39	42	156	69	120	83	41	28	23	24
15	47	37	39	42	96	87	115	75	41	26	24	24
16	47	37	39	40	71	84	126	75	40	26	23	23
17	48	38	39	40	61	79	125	68	39	26	19	23
18	48	53	37	41	57	88	130	67	38	26	21	22
19	48	51	37	40	54	76	115	63	38	28	20	21
20	48	44	40	39	53	66	110	62	38	29	22	22
21	47	43	37	35	50	67	110	61	37	29	20	22
22	47	44	36	36	49	66	112	60	38	30	20	20
23	47	42	36	37	51	64	110	58	36	30	20	21
24	46	42	36	36	51	64	107	59	34	30	21	22
25	46	41	37	37	49	64	111	61	32	30	21	22
26	47	41	37	38	48	66	112	59	32	30	19	23
27	46	41	37	40	48	71	119	59	31	30	20	22
28	46	40	38	56	49	76	115	58	32	29	21	21
29	46	41	36	46	---	78	123	55	33	28	19	21
30	47	40	36	45	---	125	124	54	32	28	19	18
31	47	---	36	44	---	94	---	54	---	27	19	---
TOTAL	1476	1272	1211	1285	1777	2351	3436	2400	1239	910	668	653
MEAN	47.6	42.4	39.1	41.5	63.5	75.8	115	77.4	41.3	29.4	21.5	21.8
MAX	54	53	49	56	292	130	131	112	54	35	26	26
MIN	46	37	36	35	41	48	95	54	31	26	19	18
AC-FT	2930	2520	2400	2550	3520	4660	6820	4760	2460	1800	1320	1300
CAL YR 1986	TOTAL	65624	MEAN 180	MAX 2260	MIN 34	AC-FT 130200						
WTR YR 1987	TOTAL	18678	MEAN 51.2	MAX 292	MIN 18	AC-FT 37050						

TULARE LAKE BASIN

11203201 TULE RIVER AT HIGHWAY 190, NEAR SPRINGVILLE, CA
(Formerly published as 11203200 Tule River near Springville, CA)

LOCATION.--Lat 36°06'02", long 118°52'07", in NE 1/4 SW 1/4 sec.17, T.21 S., R.29 E., Tulare County, Hydrologic Unit 18030006, on left bank 10 ft downstream from highway bridge, 3.5 mi southwest of Springville, and 4.1 mi upstream from Success Dam.
DRAINAGE AREA.--247 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1968 to current year. October 1957 to March 1968, at site 1.9 mi upstream; records not equivalent because of inflow between sites. Prior to October 1984 and in 1986, published as "11203200 Tule River near Springville".

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 680 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. 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 mi downstream. Records include flow diverted to Tule River diversion ditch.

AVERAGE DISCHARGE.--19 years (water years 1969-87), 191 ft³/s, 138,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,800 ft³/s, Jan. 12, 1980, gage height, 11.97 ft; no flow Aug. 16, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 49,600 ft³/s, Dec. 6, 1966, gage height 16.9 ft, present datum, from high-water profile on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1745	*1,930	*7.70				
		Minimum daily, 1.8 ft ³ /s, Sept. 2.					

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	43	48	52	65	86	163	128	47	9.0	5.2	1.9
2	55	42	48	52	62	86	167	115	42	9.6	5.0	1.8
3	55	42	48	52	61	87	214	106	37	9.8	4.8	2.0
4	51	41	48	83	61	88	211	100	35	10	4.9	5.0
5	48	41	49	141	59	107	185	98	32	9.5	3.1	3.8
6	43	39	58	86	59	236	170	96	33	9.2	3.1	3.6
7	41	40	71	93	55	224	172	91	40	10	2.9	3.9
8	39	39	65	82	55	190	173	92	40	6.6	3.1	4.3
9	40	42	58	70	55	162	174	96	35	7.5	3.2	4.5
10	39	42	57	67	61	146	181	99	30	6.8	3.3	4.1
11	41	43	57	65	67	131	189	95	27	7.2	3.4	3.8
12	40	42	55	65	69	122	179	88	25	6.6	3.2	3.7
13	41	41	54	64	725	127	169	80	23	6.5	3.2	4.3
14	39	41	54	63	493	133	160	79	22	5.9	3.5	5.0
15	39	42	54	62	214	241	150	76	21	5.6	3.7	6.3
16	40	42	54	59	167	188	147	74	22	5.9	4.2	5.8
17	40	43	53	56	136	164	154	71	20	6.0	3.6	5.3
18	43	65	53	55	123	172	157	67	19	6.4	3.3	4.2
19	44	71	53	55	111	164	147	62	19	6.5	3.4	4.0
20	44	58	66	54	100	145	134	61	17	7.6	3.4	4.4
21	44	55	61	54	97	154	127	61	17	7.6	3.5	4.6
22	41	56	59	54	90	164	125	60	17	7.6	3.6	4.3
23	40	54	57	53	92	144	122	57	15	6.5	3.6	4.4
24	40	50	56	54	99	144	120	60	13	6.3	3.4	4.6
25	37	49	56	54	97	142	121	61	13	6.4	3.3	5.3
26	38	49	53	54	90	138	118	62	11	6.1	3.5	5.1
27	37	49	53	55	87	140	130	61	9.5	5.6	3.0	5.1
28	38	48	52	85	86	143	125	60	10	6.3	3.0	5.1
29	37	48	52	86	---	144	134	53	11	6.4	3.2	4.6
30	39	48	52	72	---	147	138	52	10	5.5	3.0	4.2
31	40	---	52	67	---	157	---	48	---	5.7	2.3	---
TOTAL	1304	1405	1706	2064	3536	4616	4656	2409	712.5	222.2	108.9	129.0
MEAN	42.1	46.8	55.0	66.6	126	149	155	77.7	23.8	7.17	3.51	4.30
MAX	55	71	71	141	725	241	214	128	47	10	5.2	6.3
MIN	37	39	48	52	55	86	118	48	9.5	5.5	2.3	1.8
AC-FT	2590	2790	3380	4090	7010	9160	9240	4780	1410	441	216	256
CAL YR 1986	TOTAL	95022.0	MEAN	260	MAX	4910	MIN	18	AC-FT	188500		
WTR YR 1987	TOTAL	22868.6	MEAN	62.7	MAX	725	MIN	1.8	AC-FT	45360		

TULARE LAKE BASIN

11203201 TULE RIVER AT HIGHWAY 190, NEAR SPRINGVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-67, 1969 to current year.

CHEMICAL DATA: Water years 1964-66.

WATER TEMPERATURE: Water years 1966-67, 1969 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1965 to September 1967, October 1968 to current year.

INSTRUMENTATION.--Temperature recorder October 1965 to September 1967, and since October 1968.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1966-67, 1969-87): Maximum recorded, 35.5 °C, July 1, 1972; minimum recorded, 2.5 °C, Jan. 5-8, 1971.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 31.5 °C, July 14; minimum recorded, 3.0 °C, Jan. 17-18.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	17.5	15.5	14.0	12.0	9.0	7.0	7.5	6.0	10.0	7.5	11.0	8.0
2	17.0	15.0	14.0	11.5	12.0	7.0	8.0	6.0	9.5	8.0	12.0	9.0
3	17.0	14.0	13.5	11.0	9.0	7.0	7.5	6.5	9.5	9.0	13.0	9.5
4	17.0	14.0	13.5	11.0	9.0	7.5	9.0	7.5	11.5	9.0	12.5	11.0
5	17.5	14.5	13.5	11.0	10.0	8.5	8.5	7.5	11.0	8.5	12.5	11.5
6	18.0	14.5	13.0	11.0	10.0	9.5	7.5	6.5	11.0	8.0	12.0	11.0
7	18.5	15.0	11.5	10.0	10.5	10.0	7.0	6.5	12.0	9.5	12.0	11.0
8	19.0	15.5	11.0	9.0	10.5	9.0	7.0	5.5	12.0	10.0	13.0	11.0
9	17.0	16.0	11.0	9.0	9.0	8.0	6.5	5.0	12.5	11.0	13.0	11.5
10	18.0	15.0	11.0	9.0	9.0	8.0	7.5	6.5	14.0	11.5	12.0	10.5
11	18.0	15.5	11.5	9.0	9.0	7.5	7.5	6.5	14.0	12.5	13.5	10.5
12	18.0	15.0	11.5	9.0	8.0	7.5	7.0	6.0	13.5	12.0	14.0	11.0
13	17.5	14.5	12.0	9.0	8.0	7.0	6.5	6.0	13.0	10.5	14.0	12.0
14	17.5	14.5	12.0	9.5	8.0	6.0	6.5	6.0	11.0	9.0	12.5	11.0
15	17.0	14.0	12.0	10.0	7.5	6.0	6.0	4.5	10.5	9.5	11.5	9.0
16	16.5	13.5	12.0	10.0	8.0	7.0	5.5	4.0	9.5	8.5	10.0	8.0
17	16.0	13.5	11.5	10.0	8.0	6.0	5.0	3.0	10.0	7.5	12.0	8.5
18	15.5	13.0	12.5	11.5	9.0	7.0	5.0	3.0	11.0	9.5	11.5	9.5
19	15.0	12.5	13.0	12.0	9.5	8.5	5.5	3.5	10.5	8.0	12.0	8.0
20	15.0	12.5	13.0	11.5	9.5	8.5	5.5	4.0	10.5	8.0	12.0	7.0
21	15.5	12.5	13.0	12.0	9.0	8.0	6.0	3.5	10.5	8.0	9.5	7.5
22	16.0	13.0	12.0	10.5	9.0	7.5	6.0	4.5	11.0	8.5	8.5	6.5
23	16.0	13.5	12.0	10.5	9.0	8.5	8.0	6.0	10.0	8.5	8.5	6.5
24	15.5	13.0	11.5	10.0	9.0	8.5	8.5	6.5	8.5	7.0	9.0	8.0
25	15.5	13.0	11.0	9.5	9.0	8.0	9.0	6.5	8.0	6.5	11.5	7.5
26	16.0	13.0	10.5	9.0	9.0	8.0	9.5	7.0	9.0	5.5	12.5	9.5
27	16.0	13.5	10.5	8.5	8.5	8.0	10.5	9.0	11.0	6.5	13.5	11.0
28	15.5	13.5	10.5	8.5	8.5	7.0	11.0	9.5	10.5	7.5	14.0	11.0
29	16.0	13.5	10.0	9.0	7.5	6.0	10.0	8.5	---	---	14.0	11.0
30	14.5	13.5	12.5	8.0	7.0	6.5	9.5	8.5	---	---	14.0	11.0
31	15.0	12.5	---	---	8.0	6.0	9.5	8.5	---	---	13.5	11.0
MONTH	19.0	12.5	14.0	8.0	12.0	6.0	11.0	3.0	14.0	5.5	14.0	6.5

TULARE LAKE BASIN

11203201 TULE RIVER AT HIGHWAY 190, NEAR SPRINGVILLE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.0	11.0	15.5	13.5	23.0	18.0	29.5	23.5	29.0	22.5	25.5	24.0
2	14.5	11.5	15.0	11.5	25.0	19.0	29.5	22.5	30.0	23.5	25.5	24.0
3	14.0	11.0	16.5	13.0	26.0	20.5	29.0	22.5	29.0	24.0	26.0	24.0
4	12.0	10.0	18.5	14.0	26.5	21.0	29.0	22.0	29.5	24.5	25.5	22.5
5	12.5	10.0	19.5	15.5	24.5	21.0	29.0	22.0	29.0	25.5	24.0	20.5
6	14.0	10.5	19.0	16.5	23.5	20.5	28.5	22.0	30.0	25.5	23.5	20.5
7	15.0	12.0	18.5	17.0	25.0	20.0	29.5	22.5	29.0	25.0	22.0	20.0
8	15.5	13.0	18.0	16.5	25.5	20.0	28.5	23.0	28.0	24.5	22.5	20.5
9	16.5	13.5	19.5	16.0	26.5	21.0	28.5	23.5	28.5	24.5	22.5	21.0
10	16.5	14.0	19.0	16.5	27.0	21.0	29.0	24.0	28.5	24.5	22.5	20.5
11	15.0	13.5	20.0	16.5	27.5	21.0	29.0	23.5	28.0	24.5	22.5	20.5
12	15.0	12.0	21.0	17.5	28.0	21.0	29.5	24.0	27.5	24.5	22.5	20.0
13	15.5	12.0	21.5	18.5	28.5	22.0	30.5	24.5	27.5	24.0	21.5	19.0
14	16.5	13.0	21.0	18.0	27.5	22.0	31.5	25.0	27.0	22.5	21.0	19.0
15	16.5	13.5	20.5	18.0	27.0	20.5	30.5	26.0	25.0	22.0	22.0	19.0
16	17.5	14.0	21.0	18.0	26.5	19.5	30.5	26.0	26.0	21.5	21.5	19.5
17	17.5	14.5	21.5	18.0	26.5	20.0	28.0	23.0	25.5	23.0	21.5	19.5
18	16.0	12.0	20.5	17.0	26.5	20.0	26.5	20.5	26.0	23.5	23.0	19.5
19	13.5	10.0	18.0	16.0	27.5	20.5	26.5	21.0	26.0	23.5	22.5	19.5
20	15.0	11.0	16.5	15.0	27.0	20.5	26.0	20.5	25.0	22.5	22.0	19.0
21	16.5	12.5	17.0	14.0	27.0	20.5	24.5	20.0	25.0	22.5	21.5	18.5
22	17.0	13.5	19.5	15.0	27.5	20.5	25.5	19.5	26.5	22.0	21.0	19.0
23	17.0	14.0	20.5	16.5	28.0	21.0	25.0	20.5	25.5	21.5	21.5	20.0
24	17.0	13.5	19.5	16.5	29.0	22.0	25.0	21.0	24.0	21.5	21.5	19.0
25	18.0	14.0	17.0	14.5	30.0	23.0	27.5	21.5	24.0	21.5	22.0	19.0
26	17.0	15.5	16.0	13.5	30.5	23.5	29.0	22.0	24.5	22.0	21.0	18.5
27	17.5	14.5	17.0	13.5	30.5	24.0	27.5	22.5	25.5	23.0	21.0	18.5
28	17.5	15.0	19.0	14.5	30.5	24.0	27.5	23.0	25.5	23.5	21.0	19.0
29	18.0	15.5	20.5	16.0	30.0	23.5	28.0	22.5	26.5	23.5	21.0	19.5
30	17.5	15.0	21.0	16.5	30.0	23.5	26.0	22.0	28.0	23.5	21.0	19.5
31	---	---	22.0	17.5	---	---	27.0	22.5	27.5	24.5	---	---
MONTH	18.0	10.0	22.0	11.5	30.5	18.0	31.5	19.5	30.0	21.5	26.0	18.5

TULARE LAKE BASIN

11204500 SOUTH FORK TULE RIVER NEAR SUCCESS, CA

LOCATION.--Lat 36°02'33", long 118°51'24", in NW 1/4 SW 1/4 sec.4, T.22 S., R.29 E., Tulare County, Hydrologic Unit 18030006, on left bank 0.5 mi upstream from Crew Creek, 4 mi southeast of Success, and 5 mi upstream from mouth.

DRAINAGE AREA.--109 mi².

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.

REVISED RECORDS.--WSP 1315-A: 1931-32(M). WSP 1445: 1952-53(P), drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 770 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 26, 1951, at site 0.4 mi downstream at different datum.

REMARKS.--Estimated daily discharges: July 6-16, Aug. 1-25. Records good except for estimated daily discharges, which are fair. Diversions for irrigation of about 640 acres above station.

AVERAGE DISCHARGE.--55 years, 46.1 ft³/s, 33,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft³/s, Dec. 6, 1956, gage height, 12.50 ft in gage well, 13.3 ft from floodmarks, from rating curve extended above 4,300 ft³/s on basis of slope-area measurement of peak flow; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 325 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1830	*479	*4.43				

Minimum daily, 0.13 ft³/s, Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	11	12	9.8	15	25	55	24	13	2.2	.39	.28
2	12	10	11	9.2	15	25	55	23	12	2.2	.37	.39
3	11	10	10	9.6	16	25	70	22	10	2.2	.36	.53
4	9.4	9.8	10	20	19	26	68	20	10	2.1	.35	.56
5	8.3	9.5	10	47	17	43	61	19	9.9	2.1	.25	.35
6	7.8	9.5	14	23	17	91	56	18	10	1.6	.23	.41
7	7.7	10	19	22	17	79	56	18	16	1.7	.22	.59
8	7.7	10	13	19	17	58	55	20	12	1.5	.23	.85
9	8.1	11	11	16	17	47	54	19	10	1.6	.24	.95
10	8.1	9.7	10	15	25	43	53	18	9.6	1.5	.25	.45
11	8.6	9.1	10	15	23	38	53	21	9.2	1.5	.26	.46
12	9.0	8.8	10	15	21	36	49	20	8.9	1.4	.24	.45
13	8.6	8.4	10	15	175	39	45	16	7.4	1.3	.24	.48
14	8.4	8.4	10	14	120	38	41	16	5.8	1.2	.26	.79
15	8.8	8.4	10	13	60	71	39	17	6.0	1.1	.28	.72
16	7.8	8.6	9.8	12	50	58	38	16	6.5	1.0	.32	.39
17	7.7	8.8	9.9	12	37	52	37	15	6.3	.98	.28	.35
18	9.1	17	10	14	32	61	38	15	6.0	.88	.25	.36
19	9.2	16	10	13	29	52	36	15	5.7	.62	.26	.34
20	9.3	12	15	13	27	45	33	16	5.4	.60	.25	.32
21	8.7	12	12	13	26	49	31	16	5.5	.59	.26	.28
22	8.5	13	12	13	25	50	30	16	5.2	.56	.27	.31
23	8.3	12	14	12	26	47	28	15	4.7	.62	.27	.26
24	8.4	12	14	11	26	50	28	15	4.0	.62	.26	.31
25	9.1	12	13	12	26	48	27	15	3.2	.54	.25	.38
26	9.7	12	13	13	25	50	26	16	2.9	.54	.26	.38
27	9.6	12	13	15	25	52	29	15	2.6	.50	.22	.39
28	9.7	11	13	30	25	55	26	15	2.1	.49	.13	.38
29	9.6	11	12	22	---	53	25	14	2.1	.46	.17	.38
30	9.9	12	12	17	---	55	24	14	2.2	.46	.26	.35
31	11	---	11	16	---	55	---	13	---	.44	.30	---
TOTAL	278.0	325.0	363.7	500.6	953	1516	1266	532	214.2	35.10	8.18	13.44
MEAN	8.97	10.8	11.7	16.1	34.0	48.9	42.2	17.2	7.14	1.13	.26	.45
MAX	12	17	19	47	175	91	70	24	16	2.2	.39	.95
MIN	7.7	8.4	9.8	9.2	15	25	24	13	2.1	.44	.13	.26
AC-FT	551	645	721	993	1890	3010	2510	1060	425	70	16	27

CAL YR 1986	TOTAL	26169.50	MEAN	71.7	MAX	1240	MIN	1.3	AC-FT	51910
WTR YR 1987	TOTAL	6005.22	MEAN	16.5	MAX	175	MIN	.13	AC-FT	11910

TULARE LAKE BASIN

11204680 PIONEER DITCH BELOW SUCCESS DAM, CA

LOCATION.--Lat 36°03'34", long 118°55'22", in SW 1/4 NW 1/4 sec.35, T.21 S., R.28 E., Tulare County, Hydrologic Unit 18030006, on left bank 0.1 mi downstream from Success Dam and 5.5 mi 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 National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Feb. 1, 1961, at site 0.5 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Ditch receives water from Success Lake (station 11204700).

COOPERATION.--Records were provided by U.S. Army Corps of Engineers and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE.--28 years, 6.96 ft³/s, 5,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 29 ft³/s, Apr. 15, 1961; no flow at times most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	3.5	.60	1.5	1.3	1.5	1.7	15	11	15	15	18
2	6.2	3.1	2.0	1.5	1.5	.70	2.0	16	15	15	12	18
3	5.4	5.3	2.6	1.5	1.5	0	2.3	13	17	15	14	17
4	5.4	7.5	5.4	1.5	1.5	0	2.3	12	17	9.5	17	16
5	4.8	7.7	4.1	1.5	1.5	0	2.3	12	17	5.6	18	14
6	4.8	9.3	1.5	1.5	1.5	1.5	3.9	15	12	12	17	9.8
7	6.2	10	.90	1.6	1.6	1.5	9.4	16	9.8	16	17	11
8	10	8.6	1.0	.90	1.6	1.5	12	16	10	18	16	12
9	12	4.9	.90	.90	1.7	1.5	9.1	16	14	18	11	13
10	11	3.4	.90	.70	1.7	2.8	7.2	14	16	18	14	13
11	8.4	3.4	.70	.70	2.3	3.5	7.2	14	16	15	17	11
12	7.1	2.5	.40	.70	2.6	3.4	7.2	18	18	9.2	17	11
13	7.6	2.0	.90	.70	1.7	3.4	8.4	18	14	12	15	11
14	7.4	2.6	.90	.70	1.3	3.4	9.2	16	11	15	12	14
15	7.2	3.1	.90	.70	1.3	2.2	13	15	11	16	7.7	15
16	9.9	3.1	.90	3.0	1.3	1.6	14	13	13	16	6.3	13
17	11	6.3	.90	4.2	1.3	1.6	11	11	14	13	10	12
18	11	5.8	1.0	4.2	2.0	2.1	6.3	8.1	14	12	13	11
19	7.4	4.1	1.7	4.2	2.4	1.8	4.8	10	13	10	13	6.2
20	3.4	3.7	2.0	4.2	1.9	1.9	4.8	12	9.0	13	15	1.5
21	2.1	3.1	1.3	4.2	1.9	2.0	5.6	11	7.0	16	15	0
22	2.0	1.5	.90	2.1	1.6	1.7	8.7	10	11	17	14	1.3
23	3.2	.70	.90	.90	1.5	1.7	13	8.8	14	17	11	9.0
24	6.8	.70	.90	.90	1.5	1.7	15	9.4	14	17	15	13
25	7.9	.80	1.0	.90	1.5	1.8	15	11	15	13	17	14
26	5.4	.70	.90	.90	1.5	1.9	11	12	15	9.5	16	12
27	5.2	.80	1.0	.90	1.5	1.9	9.0	12	12	13	16	11
28	7.7	.60	.90	.90	1.5	1.9	8.2	15	6.7	17	17	10
29	7.8	.70	.90	.90	---	1.9	10	17	9.8	18	18	11
30	8.1	.70	.90	1.0	---	1.9	14	17	14	17	15	14
31	5.9	---	1.0	1.0	---	2.0	---	14	---	16	17	---
TOTAL	216.9	110.20	40.80	51.00	46.0	56.30	247.6	417.3	390.3	443.8	448.0	342.8
MEAN	7.00	3.67	1.32	1.65	1.64	1.82	8.25	13.5	13.0	14.3	14.5	11.4
MAX	12	10	5.4	4.2	2.6	3.5	15	18	18	18	18	18
MIN	2.0	.60	.40	.70	1.3	0	1.7	8.1	6.7	5.6	6.3	0
AC-FT	430	219	81	101	91	112	491	828	774	880	889	680
CAL YR 1986	TOTAL	2693.00	MEAN 7.38	MAX 20	MIN 0	AC-FT 5340						
WTR YR 1987	TOTAL	2811.00	MEAN 7.70	MAX 18	MIN 0	AC-FT 5580						

TULARE LAKE BASIN

11204700 SUCCESS LAKE NEAR SUCCESS, CA

LOCATION.--Lat 36°03'40", long 118°55'18", in SE 1/4 NW 1/4 sec.35, T.21 S., R.28 E., Tulare County, Hydrologic Unit 18030006, in control tower near right abutment of Success Dam on Tule River, 5 mi east of Porterville.
DRAINAGE AREA.--391 mi².

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

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

REMARKS.--Lake is formed by earthfill dam and dike. Storage began November 1961. Usable capacity, 81,734 acre-ft between elevations 559.0 ft, invert of outlet structure, and 652.5 ft, spillway crest. Surchage flood control storage, 120,413 acre-ft between ungated spillway crest and elevation 686.8 ft, maximum spillway design flood pool. Dead storage, 557 acre-ft. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records were provided by U.S. Army Corps of Engineers; not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 101,300 acre-ft, Dec. 7, 1966, elevation, 658.63 ft; minimum since reservoir first filled, 3,406 acre-ft, Oct. 17, 1972, elevation, 579.52 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 35,931 acre-ft, May 12, elevation, 626.07 ft; minimum, 4,597 acre-ft, Sept. 30, elevation, 581.23 ft.

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

575	2,975	620	29,183
580	4,241	640	56,084
585	5,813	660	102,684
590	7,747	690	217,100
600	12,902		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20748	9805	9896	9821	11825	14645	26307	34355	34251	26163	13383	6323
2	20361	9795	9901	9795	11935	14819	26724	34540	34274	25694	13135	6126
3	19969	9780	9901	9785	12045	14986	27323	34715	34263	25222	12890	5936
4	19631	9770	9891	9886	12173	15176	27861	34879	34251	24783	12642	5772
5	19328	9755	9891	10194	12291	15428	28314	35031	34228	24330	12397	5675
6	19027	9750	9952	10266	12391	16028	28751	35172	34228	23883	12144	5644
7	18684	9770	10044	10308	12492	16675	29121	35302	34239	23423	11894	5627
8	18206	9795	10090	10292	12588	17134	29432	35444	34251	22961	11643	5600
9	17668	9826	10116	10168	12696	17511	29703	35574	34251	22503	11367	5556
10	17134	9871	10137	10019	12829	17834	29944	35728	34216	22035	11051	5499
11	16624	9907	10152	9856	12975	18114	30197	35883	34182	21615	10737	5438
12	16132	9947	10168	9705	13147	18374	30430	35931	34136	21242	10402	5389
13	15649	9978	10183	9576	14718	18621	30653	35848	34090	20873	10142	5329
14	15169	10013	10194	9526	15746	18902	30846	35705	34044	20682	9937	5254
15	14685	10055	10209	9561	15476	19455	31007	35538	33906	20509	9750	5192
16	14179	10090	10214	9620	14865	19921	31169	35384	33632	20221	9571	5138
17	13654	10121	10209	9670	14277	20344	31353	35207	33314	19912	9354	5087
18	13123	10256	10209	9725	13787	20807	31548	35066	33009	19623	9122	5033
19	12606	10371	10204	9805	13572	21225	31734	34937	32706	19335	8890	4992
20	12091	10345	10251	9886	13446	21589	31887	34855	32406	19043	8657	4970
21	11580	10271	10251	9978	13302	22026	32052	34785	32063	18769	8419	4957
22	11095	10204	10251	10090	13197	22442	32284	34692	31581	18359	8191	4942
23	10539	10137	10214	10230	13327	22810	32506	34575	31029	17849	7971	4907
24	10277	10055	10173	10376	13578	23191	32718	34448	30440	17281	7756	4864
25	10142	9973	10137	10518	13819	23549	32942	34332	29797	16697	7569	4815
26	10039	9891	10096	10672	14031	23911	33167	34228	29152	16118	7382	4769
27	9973	9861	10055	10823	14231	24285	33427	34147	28496	15531	7207	4726
28	9912	9871	10013	11090	14441	24681	33666	34136	27871	14953	7030	4687
29	9866	9881	9963	11333	---	25063	33917	34170	27244	14414	6852	4645
30	9841	9886	9917	11524	---	25448	34147	34205	26656	13947	6678	4597
31	9821	---	9871	11694	---	25866	---	34228	---	13641	6514	---
MAX	20748	10371	10251	11694	15746	25866	34147	35931	34274	26163	13383	6323
MIN	9821	9750	9871	9526	11825	14645	26307	34136	26656	13641	6514	4597
a	594.46	594.59	594.56	597.95	602.43	616.66	624.55	624.62	617.48	601.19	586.93	581.23
b	-11311	+65	-15	+1823	+2747	+11425	+8281	+81	-7572	-13015	-7127	-1917
c	248	95	35	36	69	150	426	566	717	566	373	187

CAL YR 1986 b +891

WTR YR 1987 b -16535

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet. Evaporation figures are published as provided; not reviewed by U.S. Geological Survey.

TULARE LAKE BASIN

11204900 TULE RIVER BELOW SUCCESS DAM, CA

LOCATION.--Lat 36°03'23", long 118°55'22", in NW 1/4 SW 1/4 sec.35, T.21 S., R.28 E., Tulare County, Hydrologic Unit 18030012, on right bank 1,000 ft downstream from Success Dam and 5 mi east of Porterville.

DRAINAGE AREA.--393 mi².

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to October 1960, at site 0.5 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Success Lake beginning Nov. 23, 1961 (station 11204700). Discharge records during periods of high flow include flow over spillway that bypasses the gaging station. Pioneer ditch (station 11204680) diverts above station for irrigation.

COOPERATION.--Records were provided by U.S. Army Corps of Engineers and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE (adjusted for change in contents, evaporation, and diversion).--34 years, 209 ft³/s, 151,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft³/s, Dec. 23, 1955, gage height, 21.65 ft, site and datum then in use, from rating curve extended above 1,400 ft³/s on basis of upstream peaks; no flow at times in 1954-57, 1959-61. Maximum discharge since construction of Success Dam in 1961, 9,050 ft³/s, Dec. 6, 1966 (includes flow through spillway); no flow at times in 1962, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 19, 1950, reached a stage of 26 ft, from floodmarks, site and datum then in use, discharge, 32,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 547 ft³/s, Feb. 15, gage height, 6.10 ft; minimum daily, 0.30 ft³/s, Mar. 20, 22, 23, 25-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	240	57	52	78	13	.40	.40	21	21	228	115	78
2	255	57	52	67	22	16	.50	21	21	214	114	84
3	247	53	52	60	22	21	.50	21	20	213	114	83
4	221	51	52	60	22	17	.50	21	20	212	112	71
5	202	50	52	60	22	18	.60	21	20	210	111	36
6	196	39	52	90	22	18	1.0	21	20	209	111	11
7	216	32	52	110	22	18	27	21	20	207	111	1.0
8	280	32	52	107	22	18	56	21	20	207	111	.80
9	308	32	52	132	22	18	84	21	20	206	126	11
10	308	32	52	140	22	17	101	21	19	205	133	18
11	297	32	52	139	22	15	102	21	19	195	132	18
12	289	32	52	134	22	18	102	54	19	175	143	18
13	283	32	52	127	23	30	88	115	19	173	109	17
14	281	32	52	93	116	36	90	144	20	84	83	17
15	281	32	52	53	428	36	97	144	69	70	82	17
16	288	32	57	38	537	13	91	144	136	121	82	17
17	304	32	60	35	469	.40	80	144	152	131	93	16
18	310	32	60	35	399	.40	80	130	148	131	100	15
19	308	36	60	26	243	.40	80	114	148	131	100	15
20	308	87	60	20	182	.30	80	97	148	128	101	13
21	307	106	60	20	182	.40	65	89	166	123	104	8.9
22	265	103	74	12	161	.30	27	100	239	188	101	9.0
23	309	103	80	.60	49	.30	21	111	266	235	97	9.0
24	168	102	80	.50	.60	.40	21	111	283	270	86	10
25	107	100	80	.50	.60	.30	21	111	310	280	79	12
26	92	99	79	.50	.50	.30	21	111	310	279	79	12
27	79	68	79	.50	.50	.30	21	96	310	277	76	12
28	74	53	79	.50	.50	.40	21	45	309	274	74	13
29	65	52	79	.50	---	.40	21	21	308	251	73	13
30	58	52	79	.50	---	.40	21	21	275	218	72	13
31	57	---	79	.50	---	.40	---	21	---	142	70	---
TOTAL	7003	1652	1925	1640.60	3046.70	314.80	1421.50	2154	3855	5987	3094	668.70
MEAN	226	55.1	62.1	52.9	109	10.2	47.4	69.5	129	193	99.8	22.3
MAX	310	106	80	140	537	36	102	144	310	280	143	84
MIN	57	32	52	.50	.50	.30	.40	21	19	70	70	.80
AC-FT	13890	3280	3820	3250	6040	624	2820	4270	7650	11880	6140	1330

CAL YR 1986 TOTAL 114819.30 MEAN 315 MAX 1750 MIN .60 AC-FT 227700 MEAN a 333 AC-FT a 241100
WTR YR 1987 TOTAL 32762.30 MEAN 89.8 MAX 537 MIN .30 AC-FT 64980 MEAN a 79 AC-FT a 57190
a Adjusted for change in contents and evaporation from Success Lake and diversion to Pioneer Ditch.

TULARE LAKE BASIN

11204900 TULE RIVER BELOW SUCCESS DAM, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962-69, 1971 to current year.

CHEMICAL DATA: Water years 1962-69, 1971-79.

WATER TEMPERATURE: Water years 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1970 to current year.

INSTRUMENTATION.--Temperature recorder since November 1970.

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

EXTREMES PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1971-87): Maximum recorded, 34.0 °C, July 15, Sept. 9, 1977; minimum recorded, 3.0 °C, Jan. 3, 1975.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 31.5 °C, Sept. 8; minimum recorded, 6.5 °C, Feb. 26.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	22.0	21.0	19.0	17.0	14.0	12.5	10.5	9.5	---	---	21.0	9.5
2	21.5	21.0	19.0	17.0	13.0	12.0	---	---	---	---	13.5	9.5
3	21.5	21.0	18.5	17.0	13.0	12.0	---	---	---	---	13.5	9.5
4	22.0	20.5	18.5	16.5	13.0	12.0	---	---	---	---	11.5	9.5
5	21.5	20.5	18.0	16.5	12.5	11.5	---	---	---	---	11.0	10.0
6	21.5	19.5	18.0	14.0	13.0	11.5	---	---	---	---	12.0	10.0
7	21.5	19.5	18.5	14.0	12.5	12.0	---	---	---	---	13.0	10.0
8	21.5	20.0	17.5	14.0	12.5	11.5	10.0	9.0	---	---	14.5	10.5
9	21.5	19.5	17.5	14.0	12.5	11.5	9.5	9.0	---	---	14.5	10.0
10	21.0	19.5	18.0	14.5	12.5	11.5	9.5	9.0	---	---	12.5	9.5
11	21.0	19.5	17.0	14.0	12.0	11.0	9.5	9.0	---	---	14.5	10.0
12	21.5	19.5	17.0	14.5	12.0	11.0	9.5	9.0	---	---	13.5	10.0
13	21.0	19.5	17.0	14.0	12.0	10.5	9.0	9.0	9.5	9.0	12.5	10.0
14	21.0	20.0	16.5	14.0	11.5	10.5	9.0	8.5	10.0	8.5	12.0	10.5
15	21.0	19.5	17.0	14.0	11.5	10.0	---	---	11.0	9.0	12.0	10.0
16	21.0	20.0	16.5	14.0	11.5	10.5	---	---	13.5	10.0	19.5	10.5
17	20.5	19.0	15.5	14.0	11.5	10.0	---	---	10.5	10.0	23.0	11.5
18	20.0	17.5	15.0	14.0	11.5	10.5	---	---	10.5	10.0	16.0	12.5
19	20.0	18.0	16.0	13.5	11.0	10.5	---	---	10.5	9.5	20.0	9.0
20	21.0	18.0	15.5	14.0	11.0	10.5	---	---	10.5	10.0	20.0	8.5
21	20.5	17.5	16.0	14.0	11.0	10.5	---	---	10.5	10.0	14.0	10.0
22	20.0	18.0	15.0	14.0	11.0	10.0	---	---	12.0	10.0	16.5	9.0
23	20.5	18.0	15.0	13.5	10.5	10.5	---	---	14.0	9.5	18.0	9.5
24	20.0	16.5	16.0	14.0	11.0	10.5	---	---	16.5	7.5	18.5	12.0
25	20.0	17.5	14.5	13.5	11.0	10.5	---	---	15.0	8.0	25.0	10.0
26	19.5	18.0	14.5	13.5	11.0	10.5	---	---	17.5	6.5	26.5	12.0
27	20.0	18.0	16.5	13.0	11.0	10.5	---	---	19.0	7.5	26.5	13.5
28	20.0	17.5	15.5	13.0	11.0	10.5	---	---	19.0	8.5	26.5	13.5
29	20.0	18.0	16.0	12.5	10.5	10.0	---	---	---	---	27.5	13.5
30	18.5	18.0	17.0	12.5	10.5	10.0	---	---	---	---	26.5	13.5
31	19.0	17.5	---	---	10.5	9.5	---	---	---	---	27.0	14.0
MONTH	22.0	16.5	19.0	12.5	14.0	9.5	---	---	---	---	27.5	8.5

TULARE LAKE BASIN

11204900 TULE RIVER BELOW SUCCESS DAM, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	14.0	11.5	15.5	12.0	18.0	16.5	25.0	23.5	26.5	25.0
2	---	---	15.5	11.0	16.0	12.5	18.0	16.5	25.0	22.5	27.0	25.5
3	---	---	15.5	11.5	15.5	12.5	18.5	16.5	25.0	22.5	26.5	25.0
4	---	---	16.0	11.5	16.0	12.0	19.0	16.5	25.0	23.0	26.5	24.5
5	---	---	16.5	11.5	16.0	12.0	19.0	17.0	25.5	23.5	27.0	24.0
6	---	---	16.0	11.0	16.0	12.0	19.5	16.0	25.5	23.5	31.0	21.5
7	19.0	11.5	15.0	11.5	16.0	13.0	19.5	16.5	25.5	22.5	31.0	18.5
8	13.0	11.5	15.0	12.0	16.0	12.0	20.0	17.5	25.5	23.5	31.5	19.5
9	13.0	11.0	16.5	11.5	16.5	12.5	20.5	17.5	25.5	23.0	27.0	20.0
10	13.0	11.5	16.0	12.0	17.0	12.0	20.5	18.0	26.0	23.5	27.0	24.0
11	12.5	11.0	16.5	12.0	17.0	12.5	21.0	19.5	26.0	24.5	27.0	23.5
12	12.5	11.0	14.0	12.0	17.0	12.5	20.5	19.0	26.5	24.5	26.5	24.0
13	13.0	9.5	13.5	12.0	17.0	13.0	21.0	20.0	26.0	24.5	26.0	22.5
14	13.0	11.5	13.5	12.0	17.0	12.5	21.0	17.0	26.0	23.0	26.0	23.0
15	13.0	11.5	14.5	12.0	16.5	13.0	21.0	17.5	25.5	23.5	26.5	22.5
16	13.5	10.5	13.5	12.0	16.5	12.5	22.5	19.0	26.0	23.5	26.5	22.5
17	13.0	11.5	13.5	12.0	16.5	13.0	22.0	19.5	26.5	24.0	26.5	22.0
18	12.5	11.0	13.5	12.0	16.0	13.0	23.0	18.0	26.5	25.0	26.0	22.0
19	14.5	11.0	13.0	12.0	16.5	13.0	22.5	19.0	26.0	25.0	26.0	21.5
20	13.5	11.0	13.0	12.0	15.5	13.0	22.5	19.0	26.5	25.0	27.0	21.0
21	13.0	11.5	13.5	11.5	16.0	13.5	23.0	18.5	26.5	24.5	28.0	21.0
22	15.5	11.0	13.5	12.0	16.5	13.5	24.0	20.5	26.5	25.5	27.0	21.5
23	15.5	11.0	14.0	12.0	17.0	15.0	24.0	21.5	26.0	24.5	25.5	21.0
24	15.5	11.0	14.0	12.5	17.0	15.5	24.0	21.5	26.5	24.5	27.0	20.0
25	16.0	11.0	13.0	12.0	17.0	16.0	24.5	22.0	26.0	25.0	26.5	22.0
26	15.0	11.5	14.0	12.0	17.0	15.5	24.5	23.5	26.5	24.0	26.0	20.5
27	16.0	11.5	14.0	12.0	18.0	16.0	25.0	23.5	26.5	25.0	26.5	21.0
28	14.5	11.5	16.0	12.5	17.5	16.5	25.0	23.0	26.5	25.0	26.0	20.0
29	15.5	11.5	15.5	12.0	18.0	16.5	25.0	23.0	26.5	24.5	26.0	21.0
30	15.5	11.5	15.5	12.0	18.0	16.5	25.0	24.0	26.0	25.0	26.5	20.5
31	---	---	15.5	12.0	---	---	25.0	23.5	26.0	24.0	---	---
MONTH	---	---	16.5	11.0	18.0	12.0	25.0	16.0	26.5	22.5	31.5	18.5

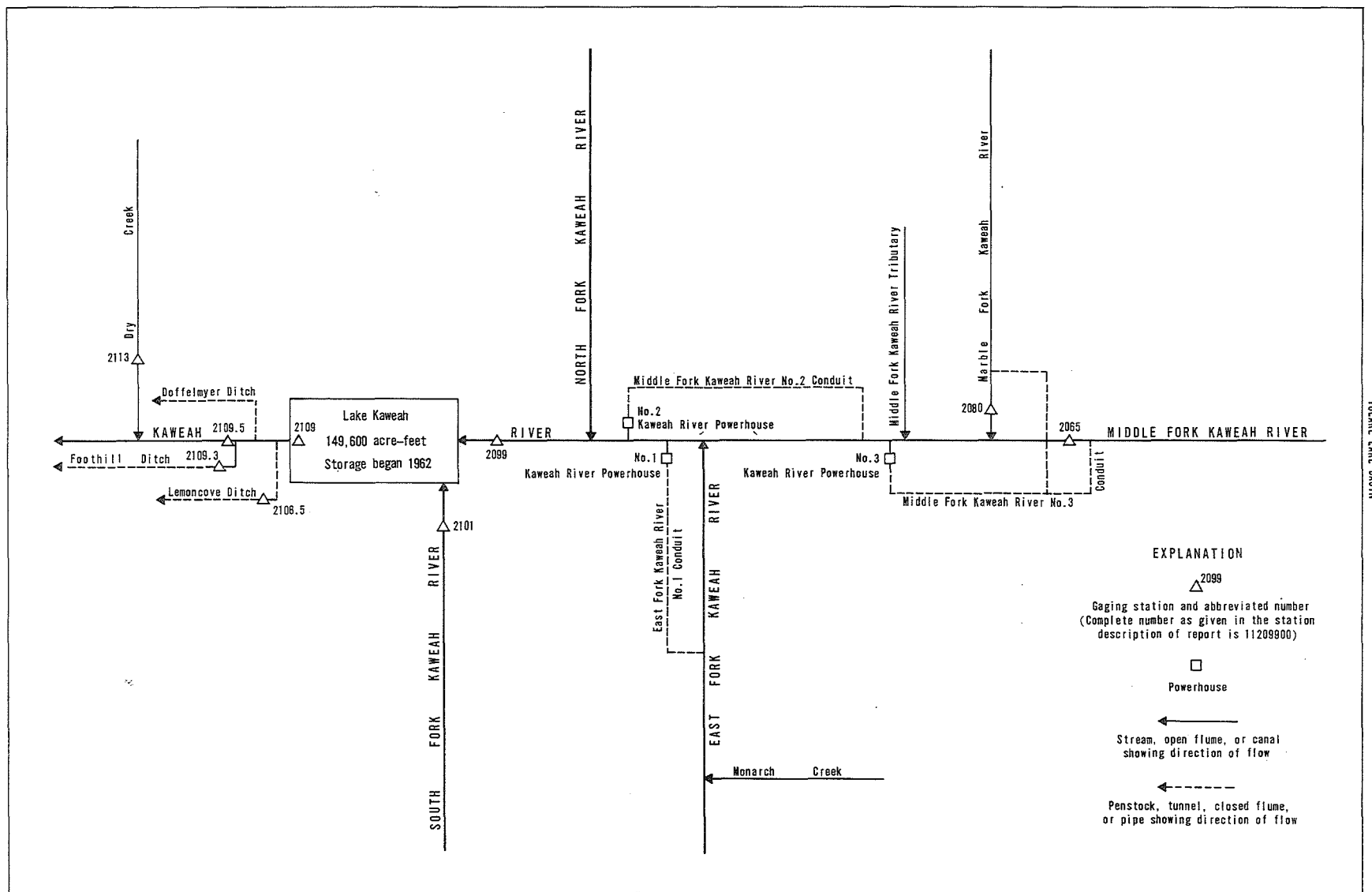


Figure 30. - Schematic diagram showing diversions and storage in Kaweah River basin.

TULARE LAKE BASIN

11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA

LOCATION.--Lat 36°30'48", long 118°47'27", unsurveyed, T.16 S., R.29 E., Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on right bank 0.5 mi southeast of Potwisha Camp, and 0.7 mi upstream from confluence with Marble Fork Kaweah River.

DRAINAGE AREA.--102 mi².

PERIOD OF RECORD.--July 1949 to current year. Monthly discharge only for water years 1956-57, published in WSP 1735. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

GAGE.--Water-stage recorder and concrete control on river; water-stage recorder and concrete-lined channel for conduit diversion. Elevation of gage is 2,100 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1955, at datum 0.70 ft higher.

REMARKS.--No estimated daily discharge. Middle Fork No. 3 conduit diverts from left bank of Middle Fork Kaweah River, 0.1 mi upstream from station. Flow from this conduit joins with that of Marble Fork Kaweah River No. 3 conduit, and the combined flow passes through Kaweah River No. 3 powerplant of Southern California Edison Co. Water is returned to Kaweah River 2.7 mi downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River basin. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--River only: 38 years, 146 ft³/s, 105,800 acre-ft/yr.
Combined river and diversion: 38 years, 187 ft³/s, 135,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 46,800 ft³/s, Dec. 23, 1955, gage height, 29.0 ft, from floodmarks, datum then in use, by slope-area measurement of peak flow; minimum daily, 0.1 ft³/s, Nov. 12-15, 1949.
Combined flow, maximum discharge, 46,800 ft³/s, Dec. 23, 1955; minimum daily, 7.7 ft³/s, Oct. 4, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 774 ft³/s, May 15, gage height, 6.99 ft; minimum daily, 11 ft³/s, Sept. 28-30.
Combined flow, maximum daily discharge, 440 ft³/s, May 15; minimum daily, 11 ft³/s, Sept. 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	13	12	16	13	26	76	211	189	16	16	14
2	43	13	12	16	13	26	92	165	171	15	16	15
3	26	13	12	16	13	28	120	198	176	15	16	14
4	21	12	12	19	13	29	90	247	155	16	17	13
5	25	13	12	20	13	62	82	277	144	16	17	12
6	27	13	13	19	13	86	89	274	179	16	17	13
7	28	13	14	19	13	70	101	243	149	17	17	13
8	27	13	14	19	14	61	116	272	106	16	17	13
9	22	13	13	18	16	49	145	324	101	16	17	13
10	20	13	13	19	18	38	177	291	93	16	17	13
11	20	13	13	19	17	30	179	298	96	16	17	13
12	17	13	12	19	17	29	162	347	91	16	16	13
13	15	12	12	18	349	51	182	322	98	16	17	13
14	14	12	12	17	85	42	202	288	99	16	18	13
15	14	12	13	17	39	49	205	378	91	16	16	13
16	14	12	12	16	23	41	235	349	62	16	16	13
17	14	13	13	17	18	51	254	253	53	16	16	13
18	13	25	13	17	16	53	252	209	50	16	16	13
19	13	15	12	16	17	40	198	196	49	16	16	13
20	13	14	13	16	16	33	191	179	48	15	17	14
21	13	14	13	15	16	33	223	157	45	16	16	14
22	13	14	13	14	17	29	248	133	42	16	16	13
23	12	13	13	13	17	29	241	118	37	16	15	13
24	12	13	13	13	16	26	240	95	32	16	16	13
25	12	13	13	13	17	27	274	94	28	16	16	12
26	12	13	13	13	18	32	278	85	28	16	15	12
27	12	13	13	13	18	37	295	74	26	16	14	12
28	13	12	13	19	20	38	277	74	26	16	14	11
29	14	12	12	14	---	43	331	71	26	16	14	11
30	13	12	12	13	---	60	307	106	24	16	14	11
31	13	---	14	13	---	66	---	174	---	17	14	---
TOTAL	570	399	394	506	875	1314	5862	6502	2514	495	496	386
MEAN	18.4	13.3	12.7	16.3	31.3	42.4	195	210	83.8	16.0	16.0	12.9
MAX	45	25	14	20	349	86	331	378	189	17	18	15
MIN	12	12	12	13	13	26	76	71	24	15	14	11
AC-FT	1130	791	781	1000	1740	2610	11630	12900	4990	982	984	766

CAL YR 1986 TOTAL 91998.0 MEAN 252 MAX 1910 MIN 7.2 AC-FT 182500
WTR YR 1987 TOTAL 20313.0 MEAN 55.7 MAX 378 MIN 11 AC-FT 40290

TULARE LAKE BASIN

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

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MIDDLE FORK KAWEAH RIVER AND MIDDLE FORK KAWEAH RIVER NO. 3 CONDUIT NEAR POTWISHA CAMP, CA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	37	28	25	40	52	139	274	220	78	22	14
2	102	37	28	25	40	55	155	227	236	75	21	15
3	85	35	27	25	40	61	183	260	240	69	21	16
4	80	32	27	41	40	68	153	310	219	67	22	16
5	85	32	28	41	38	113	144	340	209	63	22	14
6	87	31	36	34	38	141	152	336	245	59	22	14
7	88	31	41	35	38	127	164	306	214	57	22	14
8	87	30	36	34	38	119	179	334	171	54	22	14
9	82	31	33	35	38	106	209	385	165	52	22	14
10	79	30	32	38	42	94	241	352	156	50	22	14
11	79	30	32	40	43	84	243	359	162	50	21	14
12	76	30	29	41	47	87	226	408	157	50	20	14
13	71	29	29	40	401	112	246	383	165	49	21	14
14	65	28	28	36	142	103	266	349	167	46	22	14
15	60	28	29	34	97	110	269	440	159	42	20	14
16	55	28	28	29	80	102	299	411	129	41	19	14
17	53	29	29	34	74	112	318	315	120	38	19	13
18	51	59	29	34	69	115	316	271	116	37	18	13
19	49	52	28	32	61	102	262	258	115	34	17	13
20	47	43	30	30	58	93	255	241	115	32	17	14
21	45	41	30	30	54	94	287	219	112	30	16	14
22	43	40	29	31	54	89	312	195	109	28	16	13
23	41	37	29	32	53	89	305	180	101	26	15	13
24	41	36	29	31	48	85	304	156	98	26	16	13
25	40	35	29	33	48	86	338	155	100	26	16	12
26	39	33	28	34	49	92	342	146	101	24	15	12
27	38	31	27	39	49	98	359	135	96	24	14	12
28	38	29	26	66	51	99	340	135	92	23	14	11
29	38	29	26	48	---	104	395	132	92	23	14	11
30	38	28	24	43	---	122	370	143	84	23	14	11
31	38	---	24	40	---	128	---	177	---	23	14	---
TOTAL	1923	1021	908	1110	1870	3042	7771	8332	4465	1319	576	404
MEAN	62.0	34.0	29.3	35.8	66.8	98.1	259	269	149	42.5	18.6	13.5
MAX	103	59	41	66	401	141	395	440	245	78	22	16
MIN	38	28	24	25	38	52	139	132	84	23	14	11
AC-FT	3810	2030	1800	2200	3710	6030	15410	16530	8860	2620	1140	801
CAL YR 1986	TOTAL	109485	MEAN	300	MAX	1960	MIN	24	AC-FT	217200		
WTR YR 1987	TOTAL	32741	MEAN	89.7	MAX	440	MIN	11	AC-FT	64940		

TULARE LAKE BASIN

11206700 EMERALD LAKE OUTFLOW NEAR GIANT FOREST, CA

LOCATION.--Lat 36°35'54", long 118°40'32", in NE 1/4 NE 1/4 sec.25, T.15 S., R.30 E., Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on left bank at outlet of Emerald Lake and 5.9 mi northeast of Giant Forest.

DRAINAGE AREA.--0.44 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR CA-86-3: 1985(M).

GAGE.--Water-stage recorder. Elevation of gage is 9,180 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges for missing and ice-affected periods: Oct. 1-8, Oct. 14, 15, Nov. 18 to Dec. 17, Jan. 24 to Apr. 21, May 26 to June 22, Sept. 17-30. Records poor. No storage or diversion above station.

COOPERATION.--Periodic observations of gage height were provided by U.S National Park Service for acid precipitation research study.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40 ft³/s, July 3, 1986, gage height, 2.28 ft; minimum daily, 0.01 ft³/s, several days from January to April 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 22 ft³/s, May 15, gage height, 2.10 ft; minimum daily, 0.02 ft³/s, Dec. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.42	.14	.03	.03	.03	.09	.25	2.0	4.2	.76	.15	.06
2	.80	.15	.03	.03	.03	.13	.30	2.3	4.6	.70	.15	.10
3	1.3	.18	.03	.03	.03	.15	.20	2.2	4.9	.50	.18	.16
4	.92	.19	.03	.13	.03	.18	.25	4.4	5.1	.47	.18	.18
5	.79	.16	.03	.12	.04	.12	.25	5.4	5.2	.43	.24	.16
6	.76	.11	.05	.11	.03	.15	.40	5.8	5.1	.43	.25	.15
7	.84	.07	.10	.11	.03	.17	.63	5.3	4.9	.53	.21	.15
8	.90	.07	.07	.08	.03	.15	.70	5.7	4.6	.49	.23	.15
9	.91	.07	.03	.07	.04	.12	.78	5.0	4.3	.41	.22	.14
10	.77	.06	.03	.08	.04	.13	.63	5.4	3.7	.60	.21	.12
11	.65	.05	.03	.08	.03	.17	.63	5.8	3.0	.72	.20	.11
12	.51	.05	.03	.06	.03	.15	.87	6.0	2.7	.57	.25	.09
13	.46	.04	.03	.06	.03	.17	.78	6.0	2.6	.40	.31	.11
14	.44	.04	.03	.04	.04	.12	.96	5.8	3.0	.42	.35	.12
15	.40	.03	.03	.04	.03	.08	1.2	5.5	2.8	.36	.29	.11
16	.34	.04	.04	.04	.03	.12	1.2	5.6	2.2	.34	.27	.08
17	.26	.04	.04	.08	.04	.20	1.6	5.8	1.8	.31	.26	.05
18	.21	.15	.02	.08	.04	.10	2.0	5.7	1.7	.28	.23	.12
19	.21	.44	.02	.07	.04	.08	2.3	4.8	1.9	.27	.19	.10
20	.29	.33	.03	.08	.04	.12	2.5	3.0	2.0	.24	.11	.10
21	.29	.23	.04	.08	.05	.10	2.6	1.2	1.7	.18	.08	.09
22	.27	.15	.04	.07	.07	.17	2.4	1.6	1.4	.08	.08	.08
23	.26	.11	.03	.06	.04	.18	1.9	1.7	.97	.10	.06	.08
24	.24	.08	.04	.03	.04	.25	2.1	1.7	.96	.13	.04	.08
25	.22	.08	.04	.03	.04	.20	1.7	1.1	.90	.13	.04	.07
26	.19	.06	.04	.03	.07	.22	3.8	.98	1.2	.13	.05	.06
27	.18	.04	.03	.03	.10	.25	4.4	.90	1.1	.12	.05	.06
28	.14	.03	.03	.03	.09	.25	4.7	.90	.91	.13	.06	.06
29	.15	.03	.03	.04	---	.27	5.0	1.1	.71	.15	.06	.05
30	.14	.03	.03	.03	---	.25	5.0	2.0	.80	.15	.06	.04
31	.14	---	.03	.03	---	.25	---	3.4	---	.17	.05	---
TOTAL	14.40	3.25	1.11	1.88	1.18	5.09	52.03	114.08	80.95	10.70	5.11	3.03
MEAN	.46	.11	.036	.061	.042	.16	1.73	3.68	2.70	.35	.16	.10
MAX	1.3	.44	.10	.13	.10	.27	5.0	6.0	5.2	.76	.35	.18
MIN	.14	.03	.02	.03	.03	.08	.20	.90	.71	.08	.04	.04
AC-FT	29	6.4	2.2	3.7	2.3	10	103	226	161	21	10	6.0

CAL YR 1986 TOTAL 1276.98 MEAN 3.50 MAX 29 MIN .02 AC-FT 2530
WTR YR 1987 TOTAL 292.81 MEAN .80 MAX 6.0 MIN .02 AC-FT 581

TULARE LAKE BASIN

11206700 EMERALD LAKE OUTFLOW NEAR GIANT FOREST, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: October 1983 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	FILTER PORE SIZE (MICRO- METERS)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT										
14...	1100	--	0.50	3	6.4	8.0	0.10	1	0	0.40
NOV										
12...	1230	--	0.06	3	5.8	5.5	0.10	1	0	0.40
DEC										
15...	1130	E0.03	--	3	6.0	2.0	0.10	1	0	0.50
JAN										
14...	1630	--	0.05	9	6.2	0.0	0.10	2	0	0.55
FEB										
10...	1545	E0.04	--	4	6.4	0.0	0.10	1	0	0.45
MAR										
17...	1400	E0.20	--	4	6.0	1.0	0.10	2	0	0.51
17...	1415	E0.20	--	4	6.0	1.0	0.10	1	0	0.44
31...	1545	E0.25	--	5	6.0	1.0	0.10	2	0	0.53
APR										
13...	1500	E0.78	--	5	5.9	1.0	0.10	1	0	0.50
13...	1515	E0.78	--	5	5.9	1.0	0.10	2	0	0.50
29...	0900	--	5.4	4	5.6	1.5	0.10	1	0	0.50
MAY										
10...	1300	--	5.7	4	5.6	2.0	0.10	1	0	0.50
10...	1315	--	5.7	4	5.6	2.0	0.10	1	0	0.50
26...	1400	E0.98	--	3	5.5	6.0	0.10	2	0	0.61
JUN										
09...	1200	E4.3	--	5	5.8	8.0	0.10	2	1	0.70
09...	1215	E4.3	--	5	5.8	8.0	0.10	2	1	0.56
23...	1330	--	0.96	4	6.2	--	0.10	1	0	0.42
JUL										
07...	1300	--	0.63	4	6.4	17.0	0.10	1	0	0.40
21...	1400	--	0.20	4	6.1	11.0	0.10	1	0	0.49
21...	1410	--	0.20	4	6.1	11.0	0.10	1	0	0.45
AUG										
04...	1000	--	0.17	5	6.1	18.0	0.10	1	0	0.43
18...	1400	--	0.23	5	6.9	20.0	0.10	1	0	0.44
SEP										
01...	1500	--	0.07	5	6.4	16.0	0.10	1	0	0.41
15...	1100	--	0.13	5	7.2	11.0	0.10	2	0	0.51

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	BROMIDE DIS- SOLVED (MG/L AS BR)	SILICA, DIS- SOLVED (MG/L AS SIO2)
OCT										
14...	0.04	0.30	33	0.1	0.11	0.3	0.15	0.01	<0.010	1.5
NOV										
12...	0.04	0.30	33	0.1	0.14	0.3	0.17	0.01	<0.010	1.5
DEC										
15...	0.05	0.38	33	0.1	0.16	0.3	0.24	<0.01	<0.010	1.8
JAN										
14...	0.06	0.51	37	0.2	0.18	0.9	1.8	0.03	0.010	1.8
FEB										
10...	0.05	0.34	33	0.1	0.13	0.3	0.62	0.01	<0.010	1.5
MAR										
17...	0.06	0.45	35	0.2	0.27	0.2	0.19	<0.01	<0.010	1.7
17...	0.05	0.38	34	0.2	0.24	0.3	0.21	<0.01	<0.010	1.6
31...	0.05	0.36	31	0.1	0.17	0.3	0.21	<0.01	<0.010	2.1
APR										
13...	0.06	0.31	25	0.1	0.37	0.4	0.46	0.01	<0.010	2.5
13...	0.06	0.32	26	0.1	0.36	0.4	0.45	0.01	<0.010	2.5
29...	0.06	0.36	30	0.1	0.28	0.3	0.21	0.01	<0.010	1.7
MAY										
10...	0.06	0.34	26	0.1	0.49	0.4	0.19	0.01	<0.010	1.5
10...	0.06	0.34	26	0.1	0.48	0.4	0.20	<0.01	<0.010	1.5
26...	0.07	0.43	31	0.1	0.25	0.4	0.20	0.02	<0.010	1.5

See footnotes at end of table.

TULARE LAKE BASIN

1206700 EMERALD LAKE OUTFLOW NEAR GIANT FOREST, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	BROMIDE DIS- SOLVED (MG/L AS BR)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JUN										
09...	0.06	0.33	24	0.1	0.20	0.4	0.24	<0.01	<0.010	1.5
09...	0.06	0.33	28	0.1	0.20	0.4	0.25	0.01	<0.010	1.5
23...	0.06	0.36	34	0.1	0.16	0.4	0.20	0.01	<0.010	1.7
JUL										
07...	0.05	0.35	35	0.1	0.14	0.4	0.18	0.02	<0.010	1.6
21...	0.05	0.31	29	0.1	0.17	0.4	0.16	0.01	<0.010	1.5
21...	0.05	0.31	30	0.1	0.18	0.4	0.15	0.01	<0.010	1.5
AUG										
04...	0.05	0.34	33	0.1	0.17	0.4	0.19	0.02	<0.010	1.7
18...	0.06	0.39	35	0.2	0.17	0.4	0.17	0.03	<0.010	1.6
SEP										
01...	0.05	0.36	35	0.1	0.16	0.4	0.24	0.02	<0.010	1.5
15...	0.05	0.35	30	0.1	0.21	0.4	0.19	0.02	<0.010	1.6
DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
OCT										
14...	4	0.030	--	--	<0.001	<0.001	20	10	3	1.1
NOV										
12...	4	0.030	--	--	<0.001	<0.001	20	10	3	1.0
DEC										
15...	5	<0.010	--	--	0.032	0.001	30	30	3	--
JAN										
14...	7	0.060	--	--	0.020	<0.001	20	240	5	--
FEB										
10...	4	0.010	--	--	--	--	20	16	<1	--
MAR										
17...	4	0.020	--	--	0.041	<0.001	30	15	5	1.1
17...	4	0.030	--	--	0.100	<0.001	20	9	5	--
31...	5	0.030	--	--	0.030	<0.001	20	12	6	0.9
APR										
13...	6	0.090	--	--	0.056	0.003	40	31	<1	1.5
13...	6	0.080	--	--	0.049	0.004	50	37	<1	1.8
29...	5	0.160	--	--	0.044	0.001	20	10	4	1.3
MAY										
10...	5	0.160	--	--	0.003	<0.001	30	10	5	1.1
10...	5	0.160	--	--	0.002	<0.001	30	9	6	1.3
26...	--	0.150	--	--	0.012	<0.001	50	32	7	1.0
JUN										
09...	5	0.160	--	--	<0.001	<0.001	30	9	2	1.6
09...	5	0.170	--	--	<0.001	<0.001	30	7	2	1.7
23...	5	0.140	--	--	0.003	<0.001	30	16	3	1.0
JUL										
07...	4	0.110	--	--	0.010	<0.001	20	7	2	1.1
21...	4	0.090	--	--	0.016	<0.001	10	6	3	1.2
21...	4	0.080	--	--	0.018	<0.001	20	5	2	1.1
AUG										
04...	5	0.060	--	--	0.015	<0.001	20	6	3	1.5
18...	5	0.064	0.001	0.065	0.009	<0.001	20	4	4	1.2
SEP										
01...	4	0.050	--	--	0.052	<0.001	20	7	7	1.2
15...	4	0.040	--	--	0.017	<0.001	20	8	7	1.5

E Estimated.

< Actual value is known to be less than the value shown.

TULARE LAKE BASIN

11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA

LOCATION.--Lat 36°31'08", long 118°48'03", in NE 1/4 SW 1/4 sec.23, T.16 S., R.29 E., Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on left bank 0.1 mi north of Potwisha Camp, 0.3 mi upstream from confluence with Middle Fork Kaweah River, and 7.9 mi northeast of Three Rivers.

DRAINAGE AREA.--51.4 mi².

PERIOD OF RECORD.--March 1950 to current year. Monthly discharge only for March 1950, published in WSP 1315-A. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

GAGE.--Water-stage recorder on river; water-stage recorder and concrete control for conduit diversion. Elevation of gage is 2,150 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Marble Fork Kaweah River No. 3 conduit diverts from left bank of Marble Fork 0.3 mi above station. Water is returned to Kaweah River 2.7 mi downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River basin. For records of combined discharge of river and conduit, see following page.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project

AVERAGE DISCHARGE.--River only: 37 years, 80.9 ft³/s, 58,610 acre-ft/yr.
Combined river and diversion: 37 years, 106 ft³/s, 76,800 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 464 ft³/s, May 12, gage height, 5.26 ft; minimum daily, 1.4 ft³/s, Oct. 14.
Combined flow, maximum daily discharge, 232 ft³/s, May 13; minimum daily, 1.5 ft³/s, Oct. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	4.7	1.9	8.0	11	13	38	115	122	7.2	4.6	5.0
2	21	4.4	2.7	7.5	13	14	50	94	98	7.6	4.1	5.9
3	10	3.8	2.5	7.5	13	14	61	125	85	7.7	3.9	5.6
4	5.1	3.7	2.6	11	11	16	38	158	73	7.2	3.9	6.2
5	9.0	3.5	2.9	13	9.9	30	31	172	63	7.7	3.8	5.2
6	12	4.0	4.8	11	12	45	32	170	90	8.2	3.9	4.8
7	14	4.0	3.4	11	13	25	44	141	61	7.4	3.9	4.8
8	17	4.0	1.8	12	12	19	56	159	52	7.4	3.8	4.8
9	14	4.0	2.1	14	12	17	68	182	76	7.5	3.6	4.1
10	10	4.2	2.4	12	11	15	92	146	48	7.1	3.5	3.7
11	9.6	4.0	3.0	9.7	12	13	94	143	44	7.2	3.6	4.3
12	5.8	3.9	2.7	9.1	11	14	82	175	38	7.3	3.8	3.6
13	1.5	6.3	2.5	8.5	117	19	99	195	32	7.5	3.7	4.0
14	1.4	7.1	2.7	8.4	39	17	108	152	29	8.1	3.8	4.2
15	7.6	7.0	3.4	11	18	14	108	173	33	7.7	4.0	4.2
16	8.5	3.8	2.2	11	12	13	127	154	24	7.6	4.1	3.8
17	1.9	1.6	2.1	15	15	19	136	119	31	7.5	3.9	3.7
18	2.2	8.5	3.3	14	12	17	128	112	17	7.7	3.5	3.6
19	1.9	18	4.7	10	9.6	12	100	104	11	7.9	3.4	3.3
20	1.7	8.4	3.6	8.7	8.8	20	101	81	10	7.8	3.2	3.2
21	1.8	5.2	3.5	11	8.3	16	123	65	9.9	7.2	3.0	3.1
22	1.7	4.6	3.2	9.7	7.6	16	140	63	9.9	7.3	2.8	3.1
23	1.7	3.4	3.4	8.4	6.8	14	134	62	10	7.2	2.8	3.2
24	2.0	2.8	3.0	6.9	9.0	14	135	58	12	6.8	2.9	3.3
25	2.0	2.2	2.7	7.5	11	14	156	54	12	6.5	3.1	3.7
26	1.7	1.8	2.9	6.6	12	23	156	39	11	6.0	3.1	3.7
27	1.6	1.8	2.3	8.2	12	18	159	31	11	5.6	3.2	3.7
28	5.3	1.8	2.7	13	12	17	147	36	12	5.4	3.2	3.6
29	1.7	2.0	2.7	10	---	19	191	35	11	5.3	3.6	3.3
30	1.9	1.9	2.6	12	---	26	162	65	12	4.8	3.9	3.0
31	3.8	---	9.4	9.0	---	34	---	109	---	4.7	4.0	---
TOTAL	213.4	136.4	95.7	314.7	451.0	577	3096	3487	1147.8	218.1	111.6	121.7
MEAN	6.88	4.55	3.09	10.2	16.1	18.6	103	112	38.3	7.04	3.60	4.06
MAX	34	18	9.4	15	117	45	191	195	122	8.2	4.6	6.2
MIN	1.4	1.6	1.8	6.6	6.8	12	31	31	9.9	4.7	2.8	3.0
AC-FT	423	271	190	624	895	1140	6140	6920	2280	433	221	241

CAL YR 1986 TOTAL 56735.5 MEAN 155 MAX 1040 MIN 1.4 AC-FT 112500
WTR YR 1987 TOTAL 9970.4 MEAN 27.3 MAX 195 MIN 1.4 AC-FT 19780

TULARE LAKE BASIN

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

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MARBLE FORK KAWEAH RIVER AND MARBLE FORK KAWEAH RIVER NO. 3 CONDUIT AT POTWISHA CAMP, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCT	NOV	DEC	JAN	FEB	MEAN VALUES		APR	MAY	JUN	JUL	AUG	SEP
						MAR							
1	34	14	11	11	18	22	67	148	126	14	4.6	5.0	
2	21	14	12	11	18	24	81	128	124	14	4.1	5.9	
3	10	13	11	11	19	25	91	160	119	13	3.9	5.7	
4	5.1	13	12	15	18	30	67	192	106	13	3.9	6.4	
5	9.0	13	12	18	17	50	61	206	95	12	3.8	5.4	
6	12	12	16	15	18	75	63	205	122	12	3.9	5.0	
7	14	12	15	16	18	61	73	175	93	11	3.9	5.0	
8	17	12	13	15	19	55	85	195	84	11	3.8	5.0	
9	14	11	12	15	20	49	99	218	108	10	3.6	4.3	
10	10	12	11	15	21	44	122	182	79	9.7	3.5	3.9	
11	9.6	12	11	15	25	40	124	179	76	9.8	3.6	4.5	
12	5.8	12	11	15	25	43	112	211	70	9.7	3.8	3.8	
13	1.5	12	12	15	135	52	130	232	64	9.1	3.7	4.2	
14	28	13	11	14	68	49	139	188	62	9.4	3.8	4.4	
15	27	13	12	15	47	46	139	209	65	9.0	4.0	4.4	
16	25	12	11	12	35	42	158	190	50	8.9	4.1	3.9	
17	21	10	11	15	32	47	166	154	53	8.5	3.9	3.8	
18	19	18	12	14	30	49	157	146	39	8.2	3.5	3.7	
19	19	28	13	13	27	44	131	138	32	8.1	3.4	3.4	
20	18	19	12	12	25	41	133	116	30	7.9	3.2	3.3	
21	17	16	11	14	24	36	155	100	29	7.3	3.0	3.2	
22	17	16	11	13	23	37	171	98	27	7.3	2.8	3.2	
23	16	14	12	13	21	36	166	97	24	7.2	2.8	3.3	
24	15	14	11	12	20	37	168	93	22	6.8	2.9	3.4	
25	15	13	11	12	21	36	189	89	20	6.5	3.1	3.8	
26	15	13	11	13	20	44	188	74	19	6.0	3.1	3.7	
27	14	12	10	15	21	43	192	66	19	5.6	3.2	3.7	
28	15	12	10	24	22	45	180	71	18	5.4	3.2	3.6	
29	14	12	10	19	---	47	224	70	16	5.3	3.6	3.3	
30	14	11	10	19	---	56	196	85	16	4.8	3.9	3.0	
31	15	---	14	17	---	64	---	110	---	4.7	4.0	---	
TOTAL	487.0	408	362	453	807	1369	4027	4525	1807	275.2	111.6	125.2	
MEAN	15.7	13.6	11.7	14.6	28.8	44.2	134	146	60.2	8.88	3.60	4.17	
MAX	34	28	16	24	135	75	224	232	126	14	4.6	6.4	
MIN	1.5	10	10	11	17	22	61	66	16	4.7	2.8	3.0	
AC-FT	966	809	718	899	1600	2720	7990	8980	3580	546	221	248	
CAL YR 1986	TOTAL	65572.0	MEAN	180	MAX	1080	MIN	1.5	AC-FT	130100			
WTR YR 1987	TOTAL	14757.0	MEAN	40.4	MAX	232	MIN	1.5	AC-FT	29270			

TULARE LAKE BASIN

11209900 KAWEAH RIVER AT THREE RIVERS, CA

LOCATION.--Lat 36°26'38", long 118°54'09", in SW 1/4 SW 1/4 sec.13, T.17 S., R.28 E., Tulare County, Hydrologic Unit 18030007, on right bank opposite schoolhouse in Three Rivers, 0.2 mi downstream from North Fork Kaweah River.

DRAINAGE AREA.--418 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 809.62 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Diversions to 200 acres above station. Power is developed on the Middle and East Forks Kaweah River.

AVERAGE DISCHARGE.--29 years, 572 ft³/s, 414,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft³/s, Dec. 5, 1966, gage height, 16.69 ft in gage well, 19.0 ft from floodmarks, from rating curve extended above 13,000 ft³/s on basis of slope-area measurements at gage heights 13.68 and 16.69 ft; minimum daily, 14 ft³/s, Sept. 29, Oct. 4, 5, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 17.9 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1600	*3,220	*7.28				

Minimum daily, 20 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	91	76	71	106	135	340	731	558	126	38	25
2	249	86	75	73	105	142	388	603	563	119	36	26
3	197	83	73	73	107	148	510	676	554	113	36	29
4	174	78	72	117	110	166	437	802	502	108	37	27
5	176	76	74	143	102	251	377	873	472	102	37	25
6	181	84	84	113	100	560	369	864	550	99	37	24
7	183	79	116	102	100	442	405	767	490	93	36	25
8	183	77	99	97	101	355	450	852	409	91	33	24
9	171	78	90	93	100	304	505	958	415	88	33	25
10	166	78	85	97	108	267	600	859	365	86	33	24
11	166	78	82	99	118	233	637	873	365	83	33	24
12	163	76	82	100	129	230	567	963	337	81	32	25
13	151	74	82	99	1350	286	610	930	333	79	36	26
14	139	72	81	94	655	294	660	851	339	80	31	27
15	128	71	79	89	322	371	659	981	322	77	33	27
16	124	75	77	75	242	302	722	925	263	74	41	25
17	115	73	78	76	208	276	769	748	231	67	33	26
18	114	103	76	90	188	331	793	675	218	61	31	25
19	111	159	77	91	170	288	659	654	212	67	30	24
20	106	116	84	84	161	237	629	589	205	61	28	23
21	103	103	82	84	152	262	698	528	200	58	28	22
22	99	101	79	87	150	240	766	474	194	57	27	21
23	99	97	79	88	147	238	760	454	178	55	27	21
24	95	94	80	89	134	232	739	430	166	53	27	22
25	93	91	78	90	133	222	831	402	159	52	27	22
26	91	89	77	93	129	232	817	371	155	48	26	23
27	90	84	75	98	131	251	913	335	151	46	26	23
28	91	80	72	172	133	259	828	332	142	42	25	22
29	93	79	72	142	---	259	978	324	140	36	25	21
30	90	79	71	121	---	291	924	341	133	40	25	20
31	93	---	69	111	---	332	---	453	---	40	24	---
TOTAL	4233	2604	2476	3051	5691	8436	19340	20618	9321	2282	971	723
MEAN	137	86.8	79.9	98.4	203	272	645	665	311	73.6	31.3	24.1
MAX	249	159	116	172	1350	560	978	981	563	126	41	29
MIN	90	71	69	71	100	135	340	324	133	36	24	20
AC-FT	8400	5170	4910	6050	11290	16730	38360	40900	18490	4530	1930	1430
CAL YR 1986	TOTAL	346069	MEAN 948	MAX 8170	MIN 69	AC-FT 686400						
WTR YR 1987	TOTAL	79746	MEAN 218	MAX 1350	MIN 20	AC-FT 158200						

TULARE LAKE BASIN

11209900 KAWEAH RIVER AT THREE RIVERS, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-66, 1968 to current year.

CHEMICAL DATA: Water years 1964-66, 1977.

WATER TEMPERATURE: Water years 1966, 1968 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1965 to December 1966, January 1968 to current year.

INSTRUMENTATION.--Temperature recorder October 1965 to December 1966, and since January 1968.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1966, 1968-87): Maximum recorded, 30.0 °C, July 14-15, 1972; July 15, 18, 1977; minimum recorded, 0.5 °C, Jan. 7, 1971; Dec. 12, 1972; Jan. 17-18, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 28.5 °C, Aug. 4-5; minimum recorded, 0.5 °C, Jan. 17-18.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.0	12.5	15.0	10.0	---	---	6.0	3.5	9.0	5.5	10.0	5.0
2	18.0	11.5	---	---	---	---	6.5	4.0	7.5	6.0	10.0	6.5
3	15.0	11.0	---	---	---	---	6.0	5.0	8.0	6.5	11.5	6.5
4	15.0	11.0	---	---	7.5	5.5	8.5	6.0	10.0	6.5	10.5	8.0
5	15.5	11.5	---	---	8.0	6.5	7.5	6.5	9.5	5.5	9.5	9.0
6	16.0	11.5	---	---	8.5	7.5	6.0	5.0	9.5	5.0	10.0	8.5
7	16.5	12.0	---	---	9.0	8.0	6.5	5.0	10.5	6.5	10.0	8.5
8	16.5	12.5	---	---	9.5	7.0	6.5	4.0	10.0	6.5	12.0	8.5
9	15.5	12.5	---	---	8.0	5.5	6.0	3.0	10.0	8.0	12.5	9.5
10	16.0	12.5	---	---	7.0	4.5	5.5	4.0	12.0	8.0	10.5	8.5
11	16.0	13.0	---	---	7.0	5.0	5.5	3.5	12.0	9.5	12.0	7.5
12	16.0	12.5	---	---	6.5	5.0	5.0	3.0	11.0	9.0	12.0	8.0
13	15.5	12.0	---	---	6.5	4.5	4.5	4.0	10.0	8.0	13.0	10.0
14	15.5	11.5	---	---	6.5	3.5	5.0	3.0	9.0	6.5	10.5	9.0
15	15.5	11.5	---	---	6.5	3.5	3.5	3.0	8.0	7.0	8.5	7.0
16	15.0	11.5	---	---	6.5	4.0	3.5	1.5	8.5	5.5	8.5	6.0
17	14.0	11.0	---	---	7.5	4.0	4.0	0.5	9.0	6.0	10.5	6.0
18	14.0	10.5	---	---	8.0	5.0	4.0	0.5	9.0	6.0	9.0	7.5
19	14.0	10.5	---	---	7.5	6.0	4.5	1.5	9.0	5.5	10.0	6.5
20	16.5	10.0	---	---	8.5	6.5	4.5	1.0	9.0	5.0	8.5	5.0
21	16.5	10.0	---	---	8.0	5.5	5.0	1.0	8.5	4.5	7.0	5.5
22	14.5	11.0	---	---	7.5	5.0	5.0	2.0	9.0	5.0	7.0	4.5
23	14.0	11.0	---	---	7.0	6.5	5.5	4.0	6.5	5.0	6.5	5.0
24	14.5	11.0	---	---	7.5	6.0	7.0	4.5	8.0	3.5	9.5	5.5
25	15.0	10.0	---	---	8.0	6.5	8.0	4.0	6.5	3.5	11.5	6.0
26	15.0	11.5	---	---	7.0	5.0	8.5	4.5	7.5	3.0	12.0	7.0
27	15.0	11.5	---	---	7.0	5.0	8.5	6.0	8.5	4.0	13.0	8.0
28	17.0	11.5	---	---	6.5	4.5	9.0	7.0	8.5	4.5	13.5	9.0
29	15.5	12.0	---	---	6.0	3.5	8.5	6.5	---	---	13.0	8.5
30	13.5	12.0	---	---	6.0	4.5	8.5	6.0	---	---	13.0	8.5
31	14.5	12.0	---	---	5.5	3.5	8.5	6.5	---	---	13.0	9.0
MONTH	18.0	10.0	---	---	---	---	9.0	0.5	12.0	3.0	13.5	4.5

TULARE LAKE BASIN

11209900 KAWEAH RIVER AT THREE RIVERS, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

TULARE LAKE BASIN

11210100 SOUTH FORK KAWEAH RIVER AT THREE RIVERS, CA

LOCATION.--Lat 36°25'00", long 118°54'48", in SW 1/4 SE 1/4 sec.26, T.17 S., R.28 E., Tulare County, Hydrologic Unit 18030007, on right bank 200 ft upstream from unnamed tributary, 0.5 mi upstream from mouth, and 1.8 mi southwest of Three Rivers.

DRAINAGE AREA.--86.7 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 807.22 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several small diversions above station for irrigation.

AVERAGE DISCHARGE.--29 years, 75.7 ft³/s, 54,840 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s, Dec. 6, 1966, gage height, 9.30 ft in gage well, 10.4 ft from floodmarks, from rating curve extended above 2,600 ft³/s on basis of slope-area measurement of peak flow; no flow at times in 1960-62.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 9.5 ft from floodmarks, discharge, 10,000 ft³/s.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1330	*556	*3.72				

Minimum daily, 0.09 ft³/s, Sept. 7-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	8.9	9.4	9.1	13	16	41	150	52	3.4	.36	.17
2	14	8.3	9.5	9.2	13	16	43	112	46	3.3	.31	.17
3	13	8.3	9.2	9.2	13	16	61	142	41	3.3	.28	.18
4	11	8.1	9.0	17	14	17	56	173	37	3.2	.28	.10
5	10	7.8	9.8	20	13	28	49	187	34	3.2	.27	.12
6	12	7.6	12	15	12	91	47	179	40	3.0	.27	.10
7	12	7.8	15	15	12	83	51	150	47	2.9	.27	.09
8	13	7.8	12	14	12	61	55	178	51	3.0	.27	.09
9	13	8.0	11	13	11	46	61	207	42	2.2	.24	.09
10	13	8.1	11	12	11	38	71	154	33	2.2	.22	.10
11	13	8.1	11	12	15	33	79	149	28	2.2	.24	.11
12	14	8.0	11	12	16	30	77	152	23	2.1	.24	.13
13	14	7.6	10	12	258	33	79	144	21	1.9	.28	.15
14	13	7.5	10	11	100	33	86	141	19	1.8	.30	.17
15	12	7.5	10	11	47	55	95	151	18	1.8	.31	.26
16	11	7.7	9.7	11	35	49	125	141	17	1.6	.31	.33
17	10	8.0	10	10	29	46	130	125	15	1.3	.32	.36
18	10	15	9.6	11	24	53	143	106	14	1.3	.32	.37
19	10	24	9.6	11	21	45	115	95	12	1.5	.33	.29
20	9.8	16	11	11	20	37	108	81	12	1.6	.33	.22
21	9.0	15	10	10	18	38	126	73	11	1.6	.33	.18
22	8.5	14	9.6	10	18	36	141	66	11	1.8	.31	.16
23	8.2	13	9.7	11	18	34	141	64	9.8	2.0	.32	.15
24	8.1	12	10	11	17	37	137	71	8.7	1.6	.31	.15
25	7.7	12	9.7	11	17	35	168	75	7.5	1.5	.29	.18
26	7.8	11	9.5	11	16	35	164	63	6.5	1.1	.28	.15
27	7.7	10	9.3	11	16	35	190	57	5.4	.96	.21	.11
28	7.9	9.9	9.1	22	16	36	168	54	4.9	.70	.13	.11
29	8.1	10	9.0	18	---	35	203	53	4.6	.56	.13	.10
30	8.2	10	9.2	15	---	36	184	51	4.0	.45	.14	.11
31	8.8	---	8.9	14	---	39	---	52	---	.45	.18	---
TOTAL	329.8	307.0	313.8	389.5	825	1222	3194	3596	675.4	59.52	8.38	5.00
MEAN	10.6	10.2	10.1	12.6	29.5	39.4	106	116	22.5	1.92	.27	.17
MAX	14	24	15	22	258	91	203	207	52	3.4	.36	.37
MIN	7.7	7.5	8.9	9.1	11	16	41	51	4.0	.45	.13	.09
AC-FT	654	609	622	773	1640	2420	6340	7130	1340	118	17	9.9

CAL YR 1986	TOTAL	42702.10	MEAN	117	MAX	1000	MIN	1.6	AC-FT	84700
WTR YR 1987	TOTAL	10925.40	MEAN	29.9	MAX	258	MIN	.09	AC-FT	21670

TULARE LAKE BASIN

11210850 LEMONCOVE DITCH BELOW TERMINUS DAM, CA

LOCATION.--Lat 36°24'55", long 119°00'22", in SW 1/4 SW 1/4 sec.25, T.17 S., R.27 E., Tulare County, Hydrologic Unit 18030007, on left bank 250 ft downstream from outlet tunnel of Terminus Dam and 2.4 mi 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 National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Ditch receives water from Lake Kaweah (station 11210900), which is used for irrigation. At times up to 3 ft³/s is diverted 200 ft upstream into Doffelmyer ditch for irrigation.

COOPERATION.--Records were provided by U.S. Army Corps of Engineers and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE.--25 years, 4.86 ft³/s, 3,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 8.8 ft³/s, May 5, 1970; no flow at times in some years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	4.0	3.0	2.3	2.2	0	2.4	6.0	7.0	7.9	8.3	8.0
2	6.1	4.0	3.0	2.3	2.2	0	3.1	6.0	7.0	7.9	8.3	8.0
3	6.1	4.0	3.0	2.3	2.2	.80	3.1	6.0	7.0	7.9	8.3	8.0
4	6.1	4.0	3.0	2.3	2.2	1.2	3.1	6.0	7.0	7.9	8.3	8.0
5	6.1	4.0	2.5	1.6	2.2	1.2	3.1	6.0	7.0	7.9	8.3	8.0
6	6.0	4.0	2.2	1.0	2.2	1.2	3.1	6.6	7.0	7.9	8.3	8.0
7	5.9	4.0	2.2	1.0	2.2	1.2	3.1	7.0	7.0	7.9	8.3	8.0
8	5.9	4.0	2.2	1.0	2.2	1.2	3.1	7.0	7.0	7.9	8.3	8.0
9	5.9	4.0	2.3	1.0	.90	1.2	3.1	7.0	7.0	7.9	8.3	8.0
10	5.9	4.0	2.3	1.0	.10	1.2	4.3	7.0	7.0	7.9	8.3	8.0
11	5.9	4.0	2.3	1.0	0	1.2	4.9	7.0	7.0	7.9	8.3	8.0
12	5.9	4.0	2.3	1.0	0	2.3	4.9	7.0	7.0	7.9	8.3	8.2
13	5.9	4.0	2.2	1.6	0	2.9	4.9	7.0	7.0	7.9	8.3	8.1
14	5.9	4.0	2.2	2.3	0	2.9	5.3	7.0	7.0	7.9	8.3	8.0
15	5.9	4.0	2.2	2.3	0	2.9	6.0	7.1	7.0	7.9	8.2	8.1
16	5.9	4.0	2.2	2.3	0	2.9	6.0	7.2	7.0	7.9	8.1	8.1
17	5.9	4.0	2.2	2.3	0	1.7	6.0	7.1	7.0	7.9	8.1	7.4
18	5.9	4.0	2.2	2.3	0	1.2	6.0	7.1	7.0	7.9	8.1	7.2
19	5.9	4.0	2.2	2.3	0	1.2	6.0	7.1	7.0	7.9	8.1	7.2
20	5.9	4.0	2.2	2.3	0	1.2	6.0	7.1	7.0	6.4	8.1	7.2
21	5.9	4.0	2.2	2.3	0	1.2	6.0	7.1	6.9	7.8	8.1	7.2
22	5.4	4.0	2.2	2.3	0	1.2	6.0	7.0	6.8	8.4	8.1	7.2
23	4.9	4.0	2.2	2.3	0	1.3	6.0	6.8	6.8	8.4	8.1	7.2
24	4.5	4.0	2.2	2.3	0	1.3	6.0	6.8	6.8	8.3	8.1	7.3
25	4.0	3.6	2.2	2.3	0	1.3	6.0	6.8	6.8	8.3	8.1	7.4
26	4.0	3.2	2.2	2.3	0	1.3	6.0	6.8	6.8	8.3	8.1	7.3
27	4.0	3.2	2.2	2.3	0	1.3	6.0	6.8	6.8	8.3	8.1	7.3
28	4.0	3.1	2.2	2.3	0	1.3	6.0	6.8	6.8	8.3	8.2	7.2
29	4.0	3.1	2.2	2.3	---	1.3	6.0	6.8	6.8	8.3	8.1	7.1
30	4.0	3.1	2.2	2.3	---	1.3	6.0	6.8	7.6	8.3	8.1	7.2
31	4.0	---	2.2	2.3	---	1.3	---	6.8	---	8.3	8.0	---
TOTAL	167.7	115.3	72.1	60.8	18.60	43.70	147.5	210.6	208.9	247.5	254.0	229.9
MEAN	5.41	3.84	2.33	1.96	.66	1.41	4.92	6.79	6.96	7.98	8.19	7.66
MAX	6.1	4.0	3.0	2.3	2.2	2.9	6.0	7.2	7.6	8.4	8.3	8.2
MIN	4.0	3.1	2.2	1.0	0	0	2.4	6.0	6.8	6.4	8.0	7.1
AC-FT	333	229	143	121	37	87	293	418	414	491	504	456

CAL YR 1986 TOTAL 1670.00 MEAN 4.58 MAX 8.4 MIN 0 AC-FT 3310
WTR YR 1987 TOTAL 1776.60 MEAN 4.87 MAX 8.4 MIN 0 AC-FT 3520

TULARE LAKE BASIN

11210900 LAKE KAWEAH NEAR LEMONCOVE, CA

LOCATION.--Lat 36°24'53", long 119°00'07", in SE 1/4 SW 1/4 sec.25, T.17 S., R.27 E., Tulare County, Hydrologic Unit 18030007, in control tower near left abutment of Terminus Dam on Kaweah River, 2.1 mi northeast of Lemoncove.

DRAINAGE AREA.--560 mi².

PERIOD OF RECORD.--October 1961 to current year. Fragmentary prior to March 1962.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 22, 1962, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam and earthfill auxiliary dam, completed in February 1962. Usable capacity, 142,931 acre-ft between elevations 520.0 ft, invert of outlet structure, and 694.0 ft, spillway crest. Dead storage, 33 acre-ft. Spillway design flood pool elevation, 745.1 ft, capacity, 256,167 acre-ft. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records were provided by U.S. Army Corps of Engineers; not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents (based on capacity table then in use; new capacity table put into use Oct. 1, 1978), 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.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 107,368 acre-ft, June 4, elevation, 674.23 ft; minimum, 9,639 acre-ft, Sept. 30, elevation, 578.69 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by U.S. Army Corps of Engineers, from table dated September 1978)

520	33	540	1,347	580	10,112	660	84,644
525	170	550	2,703	600	19,970	680	117,289
530	436	560	4,509	620	35,541	700	154,644
535	832	570	6,903	640	57,212	720	196,552

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11804	17493	20292	12147	16329	12194	31374	70915	106476	63654	23839	12354
2	12198	17595	19190	12220	16502	12371	32181	72051	106981	62203	23252	11976
3	12463	17687	18005	12293	16529	12687	33224	73350	107317	60730	22668	11612
4	12670	17767	16787	12493	16486	13037	34142	74973	107368	59276	22068	11334
5	12875	17842	15581	12763	16399	13524	34883	76829	107283	57817	21453	11105
6	13105	17923	14680	12942	16226	14820	35634	78635	107283	56316	20915	11009
7	13353	18010	13954	13087	16007	15885	36452	80124	107250	54777	20457	10989
8	13627	18086	13178	13224	15796	16721	37359	81805	106241	53202	20121	10950
9	13906	18168	12363	13334	15576	17419	38308	83802	104871	51606	19888	10906
10	14175	18262	11538	13450	15328	18016	39411	85504	103475	50048	19614	10867
11	14438	18362	10703	13571	15052	18522	40645	87117	101972	48540	19312	10816
12	14700	18462	10519	13693	14755	19020	41727	88944	100349	47147	18971	10766
13	14936	18558	10618	13816	16793	19845	42836	90836	98657	45734	18611	10715
14	15143	18653	10711	13930	16732	20343	44069	92479	96946	44399	18291	10646
15	15333	18743	10797	14031	15607	21242	45312	94311	95170	43192	17999	10546
16	15498	18839	10879	14107	14306	21973	46728	96305	93267	42005	17716	10427
17	15665	18929	10966	14175	13538	22620	48249	97784	91351	40848	17453	10306
18	15822	19099	11049	14267	13224	23378	49877	99014	89252	39710	17199	10220
19	15981	19410	11133	14365	12960	24025	51176	100071	87086	39602	16931	10149
20	16125	19614	11237	14453	12648	24531	52353	100872	84930	37416	16622	10083
21	16264	19788	11334	14542	12520	25118	53676	101561	82771	36169	16307	10016
22	16394	19951	11415	14631	12502	25640	55223	102120	80550	34929	15986	9958
23	16513	20089	11501	14720	12498	26131	56781	102648	78127	33654	15675	9907
24	16633	20228	11587	14825	12454	26652	58252	103160	75927	32391	15358	9856
25	16743	20368	11670	14925	12406	27164	59995	103657	74011	31134	15006	9809
26	16859	20496	11749	15032	12354	27691	61714	104055	72176	29868	14636	9762
27	16964	20611	11825	15153	12302	28241	63667	104404	70351	28587	14253	9715
28	17059	20714	11896	15477	12246	28814	65349	104737	68522	27290	13863	9683
29	17171	20837	11959	15754	---	29371	67429	105054	66705	26215	13482	9661
30	17278	20948	12027	15965	---	29968	69406	105404	65111	25371	13096	9636
31	17391	---	12087	16157	---	30666	---	105923	---	24574	12723	---
MAX	17391	20948	20292	16157	16793	30666	69406	105923	107368	63654	23839	12354
MIN	11804	17493	10519	12147	12246	12194	31374	70915	65111	24574	12723	9636
a	595.68	601.53	584.96	593.44	585.33	614.52	649.39	673.37	646.19	606.79	586.42	578.69
b	+5906	+3557	-8861	+4070	-3911	+18420	+38740	+36517	-40812	-40537	-11851	-3087
c	240	174	55	46	79	143	514	913	1162	855	623	348

CAL YR 1986 b +2390

WTR YR 1987 b -1849

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, published as provided; not reviewed by U.S. Geological Survey.

TULARE LAKE BASIN

11210930 FOOTHILL DITCH BELOW TERMINUS DAM, CA

LOCATION.--Lat 36°24'48", long 119°00'47", in NW 1/4 NW 1/4 sec.35, T.17 S., R.27 E., Tulare County, Hydrologic Unit 18030012, on left bank 0.7 mi downstream from Terminus Dam and 2.1 mi 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 National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Ditch receives water from Lake Kaweah (station 11210900) which is used for irrigation.

COOPERATION.--Records were provided by U.S. Army Corps of Engineers and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE.--26 years, 15.9 ft³/s, 11,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 50 ft³/s Apr. 7, 1979; no flow many days in 1975, 1978-85, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	13	2.9		0	6.0	8.1	15	15	14	14	11
2	19	13	4.4		0	5.4	8.0	15	15	14	13	14
3	20	13	4.5		0	4.5	7.9	15	16	14	13	14
4	20	13	4.5		0	4.3	7.7	15	16	14	13	14
5	20	13	4.4		0	4.3	7.6	15	16	14	14	14
6	19	13	1.9		0	4.4	8.7	15	16	14	13	13
7	14	13	0		0	4.5	10	15	16	15	13	12
8	13	12	0		0	4.4	10	15	17	15	12	12
9	12	12	0		0	4.4	13	15	18	15	11	13
10	12	12	0		0	6.9	14	15	18	15	12	13
11	12	12	0		0	10	14	15	18	15	12	13
12	12	12	0		0	11	14	15	18	15	12	15
13	12	12	0		0	10	14	15	18	12	12	15
14	12	12	0		0	8.8	14	15	18	6.7	12	15
15	12	12	0		0	8.3	14	14	18	8.6	12	16
16	12	12	0		4.9	8.3	14	14	18	9.9	11	16
17	12	12	0		6.9	8.4	14	14	18	10	11	16
18	12	12	0		6.5	8.5	14	14	18	11	11	16
19	12	12	0		6.2	8.8	14	15	18	9.7	13	15
20	11	12	0		6.2	9.0	14	16	18	13	15	15
21	11	7.2	0		6.0	9.0	14	16	18	16	14	15
22	11	0	0		5.9	9.0	14	16	18	16	13	15
23	11	0	0		5.9	9.0	14	15	17	16	13	14
24	11	0	0		5.9	8.8	14	15	16	16	12	14
25	11	0	0		6.1	8.4	14	15	16	16	12	14
26	11	0	0		6.0	8.3	14	15	16	16	12	14
27	11	0	0		6.0	8.3	14	15	16	16	11	14
28	11	0	0		6.0	8.3	14	15	15	16	11	14
29	10	0	0		---	8.4	14	15	15	15	9.2	13
30	10	0	0		---	8.5	14	15	14	14	8.6	14
31	10	---	0		---	8.5	---	15	---	14	8.2	---
TOTAL	404	254.2	22.6	0	78.5	234.7	375.0	464	504	425.9	373.0	423
MEAN	13.0	8.47	.73	0	2.80	7.57	12.5	15.0	16.8	13.7	12.0	14.1
MAX	20	13	4.5	0	6.9	11	14	16	18	16	15	16
MIN	10	0	0	0	0	4.3	7.6	14	14	6.7	8.2	11
AC-FT	801	504	45	0	156	466	744	920	1000	845	740	839
CAL YR 1986	TOTAL	2752.70	MEAN 7.54	MAX 20	MIN 0	AC-FT	5460					
WTR YR 1987	TOTAL	3558.90	MEAN 9.75	MAX 20	MIN 0	AC-FT	7060					

TULARE LAKE BASIN

11210950 KAWEAH RIVER BELOW TERMINUS DAM, CA.

LOCATION.--Lat 36°24'51", long 119°00'42", in SE 1/4 SE 1/4 sec.26, T.17 S., R.27 E., Tulare County, Hydrologic Unit 18030012, on left bank 0.6 mi downstream from Terminus Dam and 2.2 mi northeast of Lemoncove.

DRAINAGE AREA.--561 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR CA-71-2: 1963.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 495.90 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Lake Kaweah (station 11210900). Lemoncove ditch (station 11210850) diverts water from Lake Kaweah for irrigation. Foothill ditch (station 11210930) diverts water from the gage pool for irrigation. Doffelmyer ditch diverts up to 3 ft³/s above station for irrigation. At times some of this water is returned to the river above the station.

COOPERATION.--Records were provided by U.S. Army Corps of Engineers and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE (adjusted for change in contents, evaporation, and diversion).--26 years, 706 ft³/s, 511,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,610 ft³/s, June 3, 1969, gage height, 8.77 ft; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,380 ft³/s, June 23, gage height, 5.46 ft; minimum daily, 6.6 ft³/s, Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	25	381	53	34	179	19	113	267	803	323	181
2	38	25	655	53	34	92	19	110	304	793	262	178
3	54	25	700	53	97	12	22	110	382	783	253	176
4	54	25	723	55	149	11	26	101	494	779	265	139
5	54	25	730	55	160	11	26	105	510	775	273	106
6	49	25	599	56	193	11	30	127	541	782	240	55
7	49	24	522	56	217	11	31	136	579	801	209	12
8	41	24	524	56	217	11	30	136	924	812	159	15
9	32	24	528	56	222	15	52	136	1110	815	115	19
10	29	20	525	56	238	21	77	135	1070	799	121	19
11	29	15	515	56	271	23	82	139	1100	776	156	21
12	29	15	222	57	304	20	83	144	1140	727	175	22
13	29	14	53	57	554	12	107	146	1160	730	185	22
14	29	15	52	57	918	8.5	112	147	1170	709	169	27
15	29	15	52	56	991	9.7	108	126	1180	649	160	43
16	29	15	52	56	982	11	109	115	1180	622	156	52
17	27	15	52	56	662	14	110	121	1170	594	143	52
18	25	15	52	57	387	15	111	119	1230	571	134	41
19	25	15	52	57	328	27	111	187	1260	563	140	28
20	26	16	53	57	335	36	117	224	1250	605	155	28
21	24	19	52	57	243	32	118	219	1240	632	161	26
22	27	27	52	57	179	32	110	218	1260	626	160	21
23	27	27	53	57	174	32	108	214	1330	639	160	19
24	28	26	53	57	179	26	105	208	1220	634	160	18
25	28	27	53	56	178	15	102	209	1070	626	175	18
26	28	27	53	56	174	9.9	103	208	1030	632	187	18
27	28	27	53	55	178	12	114	206	1010	637	189	18
28	28	27	53	44	180	16	115	197	1010	637	192	12
29	28	28	53	34	---	16	111	194	991	524	191	6.6
30	28	28	53	34	---	18	115	197	877	414	191	6.8
31	28	---	53	34	---	20	---	200	---	384	187	---
TOTAL	1008	655	7623	1656	8778	779.1	2483	4947	29059	20873	5746	1399.4
MEAN	32.5	21.8	246	53.4	314	25.1	82.8	160	969	673	185	46.6
MAX	54	28	730	57	991	179	118	224	1330	815	323	181
MIN	24	14	52	34	34	8.5	19	101	267	384	115	6.6
AC-FT	2000	1300	15120	3280	17410	1550	4930	9810	57640	41400	11400	2780
MEAN a	151	96.9	106	122	248	336	760	790	326	49.7	23.0	22.5
AC-FT a	9280	5770	6520	7500	13770	20660	45220	48580	19400	3060	1410	1340

CAL YR 1986 TOTAL 392873.0 MEAN 1076 MAX 3280 MIN 14 AC-FT 779300 MEAN a 1100 AC-FT a 796400
 WTR YR 1987 TOTAL 85006.5 MEAN 233 MAX 1330 MIN 6.6 AC-FT 168600 MEAN a 252 AC-FT a 182400
 a Adjusted for change in contents and evaporation from Lake Kaweah and for diversions to Lemoncove and Foothill
 ditches. Evaporation adjustments provided by U.S. Army Corps of Engineers; not reviewed by U.S. Geological Survey.

TULARE LAKE BASIN

11210950 KAWEAH RIVER BELOW TERMINUS DAM, CA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL DATA: Water years 1962-79.

WATER TEMPERATURE: Water years 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1970 to current year.

INSTRUMENTATION.--Temperature recorder since November 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1971-87): Maximum recorded, 30.0 °C, Sept. 9, 1984; minimum recorded, 4.5 °C, Feb. 26, 1986.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 28.0 °C, Sept. 11; minimum recorded, 5.5 °C, Jan. 20-21.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

TULARE LAKE BASIN

11210950 KAWEAH RIVER BELOW TERMINUS DAM, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

TULARE LAKE BASIN

11211300 DRY CREEK NEAR LEMONCOVE, CA

LOCATION.--Lat 36°26'51", long 119°01'38", in NE 1/4 SE 1/4 sec.15, T.17 S., R.27 E., Tulare County, Hydrologic Unit 18030012, on right bank 0.5 mi downstream from Bequette Canyon, 2.9 mi upstream from mouth, and 4.4 mi north of Lemoncove.

DRAINAGE AREA.--75.6 mi².

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

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

REMARKS.--No estimated daily discharge. Small diversions above station for irrigation.

AVERAGE DISCHARGE.--28 years, 25.6 ft³/s, 18,550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/s, Dec. 6, 1966, gage height, 7.30 ft in gage well, 8.94 ft from floodmarks, site and datum then in use; no flow for several months most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a discharge of 6,070 ft³/s, from slope-area measurement. Flood of 1867 is believed to have exceeded that of December 1955, from information by local residents.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1700	*458	*3.89	Mar. 15	0900	50	2.16

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1.7	2.8	7.0	4.5	6.0	9.2	3.0	.49			
2	0	1.6	2.8	7.0	4.4	6.0	8.7	3.1	.37			
3	0	1.5	2.8	7.0	4.6	5.8	15	2.9	.26			
4	0	1.5	3.1	15	4.7	5.7	20	2.6	.20			
5	0	1.4	3.9	21	4.6	6.2	13	2.2	.16			
6	0	1.4	4.9	13	4.3	19	10	1.8	.14			
7	0	1.4	6.1	8.3	4.1	26	9.1	1.6	.14			
8	0	1.5	6.4	8.1	3.9	19	8.3	1.4	.13			
9	0	1.6	5.4	6.1	3.9	13	7.9	1.3	.11			
10	0	1.7	5.0	4.9	3.8	11	7.5	1.2	.06			
11	0	1.7	4.9	4.4	4.2	9.5	7.0	1.1	.02			
12	0	1.7	4.9	4.2	5.3	8.6	6.9	1.0	0			
13	0	1.7	4.9	4.0	180	14	6.6	.88	0			
14	0	1.6	4.9	3.9	75	18	6.2	.73	0			
15	0	1.6	4.9	3.9	27	38	5.9	.98	0			
16	0	1.7	4.9	4.0	18	33	5.6	1.3	0			
17	0	1.8	4.9	3.7	13	24	5.3	.82	0			
18	.03	2.6	4.9	3.3	10	21	5.1	.67	0			
19	.16	2.9	4.9	3.3	9.4	17	5.2	.67	0			
20	.23	2.9	6.2	3.4	8.4	14	5.0	.79	0			
21	.41	2.8	6.9	3.3	7.6	16	4.6	1.0	0			
22	.95	2.7	7.0	3.3	7.1	20	4.1	1.3	0			
23	1.0	2.5	7.0	3.6	7.2	16	3.7	1.3	0			
24	1.0	2.5	6.7	3.7	7.5	18	3.3	1.2	0			
25	1.0	2.5	6.6	3.6	7.0	15	3.4	1.1	0			
26	1.0	2.6	6.8	3.6	6.6	13	3.4	1.3	0			
27	1.1	2.5	6.9	4.1	6.2	12	3.4	1.4	0			
28	1.3	2.5	6.9	7.4	6.1	11	3.4	1.4	0			
29	1.4	2.6	6.7	9.0	---	11	3.2	1.1	0			
30	1.6	2.6	7.0	6.1	---	9.9	2.9	.88	0			
31	1.8	---	7.0	5.0	---	9.7	---	.68	---			
TOTAL	12.98	61.3	169.0	188.2	448.4	466.4	202.9	42.70	2.08	0	0	0
MEAN	.42	2.04	5.45	6.07	16.0	15.0	6.76	1.38	.069	0	0	0
MAX	1.8	2.9	7.0	21	180	38	20	3.1	.49	0	0	0
MIN	0	1.4	2.8	3.3	3.8	5.7	2.9	.67	0	0	0	0
AC-FT	26	122	335	373	889	925	402	85	4.1	0	0	0

CAL YR 1986	TOTAL	16865.48	MEAN	46.2	MAX	1260	MIN	0	AC-FT	33450
WTR YR 1987	TOTAL	1593.96	MEAN	4.37	MAX	180	MIN	0	AC-FT	3160

TULARE LAKE BASIN

11211785 COTTONWOOD CREEK ABOVE COLLIER CREEK, NEAR ELDERWOOD, CA

LOCATION.--Lat 36°32'33", long 119°06'40", in NW 1/4 NE 1/4 sec.14, T.16 S., R.26 E., Tulare County, Hydrologic Unit 18030012, on left bank, 4.0 mi north of Elderwood and 8.0 mi north of Woodlake, on State Highway 245.

DRAINAGE AREA.--52.3 mi².

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

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

REMARKS.--No estimated daily discharges. Records good.

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1530	*310	*3.10	Mar. 15	0815	40	1.83

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	3.7	3.7	3.3	4.3	4.9	5.9	1.9	.46			
2	4.8	3.4	3.7	3.3	4.3	4.6	5.4	2.1	.41			
3	3.2	3.3	3.5	3.4	4.9	4.3	8.9	2.0	.35			
4	3.0	3.0	3.2	11	4.7	4.7	8.2	1.7	.30			
5	2.7	2.6	3.1	9.3	4.6	5.5	6.5	1.3	.24			
6	2.6	2.3	4.4	6.1	4.3	12	6.2	.94	.30			
7	2.3	2.7	5.5	5.7	4.3	14	5.8	.85	1.0			
8	2.1	2.9	4.2	5.3	4.3	14	5.4	.88	.98			
9	2.1	3.0	3.6	4.9	4.4	11	5.4	.78	.70			
10	2.4	3.0	3.3	4.7	4.7	9.0	5.1	.76	.61			
11	2.6	3.0	3.3	4.7	4.7	6.8	5.1	.65	.50			
12	3.0	3.0	3.3	4.7	5.1	5.7	5.2	.56	.37			
13	3.0	3.0	3.3	4.7	86	13	5.1	.48	.17			
14	3.0	3.0	3.3	4.7	33	12	5.0	.42	.08			
15	3.0	3.3	3.3	4.7	19	28	4.9	.47	.02			
16	2.8	3.0	3.3	4.6	17	23	4.5	.79	0			
17	2.8	3.2	3.3	4.3	16	16	4.5	.64	0			
18	3.0	4.4	3.0	4.3	15	13	4.1	.59	0			
19	3.7	5.0	3.1	4.3	14	9.7	4.2	.66	0			
20	3.8	3.9	4.1	4.3	11	7.9	3.9	1.3	0			
21	3.2	3.4	3.7	4.1	9.9	8.9	3.7	1.9	0			
22	3.0	3.3	3.3	4.2	8.4	10	3.6	1.6	0			
23	3.0	3.3	3.3	4.5	7.1	8.2	3.0	1.0	0			
24	2.8	3.3	3.3	4.3	6.7	7.7	2.3	.62	0			
25	2.6	3.3	3.3	4.0	6.2	7.1	2.3	.71	0			
26	2.8	3.3	3.3	4.0	5.7	6.7	2.2	1.4	0			
27	2.6	3.3	3.3	4.3	5.3	6.5	2.5	1.6	0			
28	2.7	3.4	3.3	5.6	4.7	6.3	1.9	1.4	0			
29	3.0	3.7	3.3	5.2	---	6.2	1.9	1.0	0			
30	3.0	3.7	3.3	4.7	---	6.0	1.7	.74	0			
31	3.6	---	3.3	4.5	---	6.0	---	.55	---			
TOTAL	93.1	98.7	108.2	151.7	319.6	298.7	134.4	32.29	6.49	0	0	0
MEAN	3.00	3.29	3.49	4.89	11.4	9.64	4.48	1.04	.22	0	0	0
MAX	4.9	5.0	5.5	11	86	28	8.9	2.1	1.0	0	0	0
MIN	2.1	2.3	3.0	3.3	4.3	4.3	1.7	.42	0	0	0	0
AC-FT	185	196	215	301	634	592	267	64	13	0	0	0

CAL YR 1986	TOTAL	8011.38	MEAN	21.9	MAX	481	MIN	.12	AC-FT	15890
WTR YR 1987	TOTAL	1243.18	MEAN	3.41	MAX	86	MIN	0	AC-FT	2470

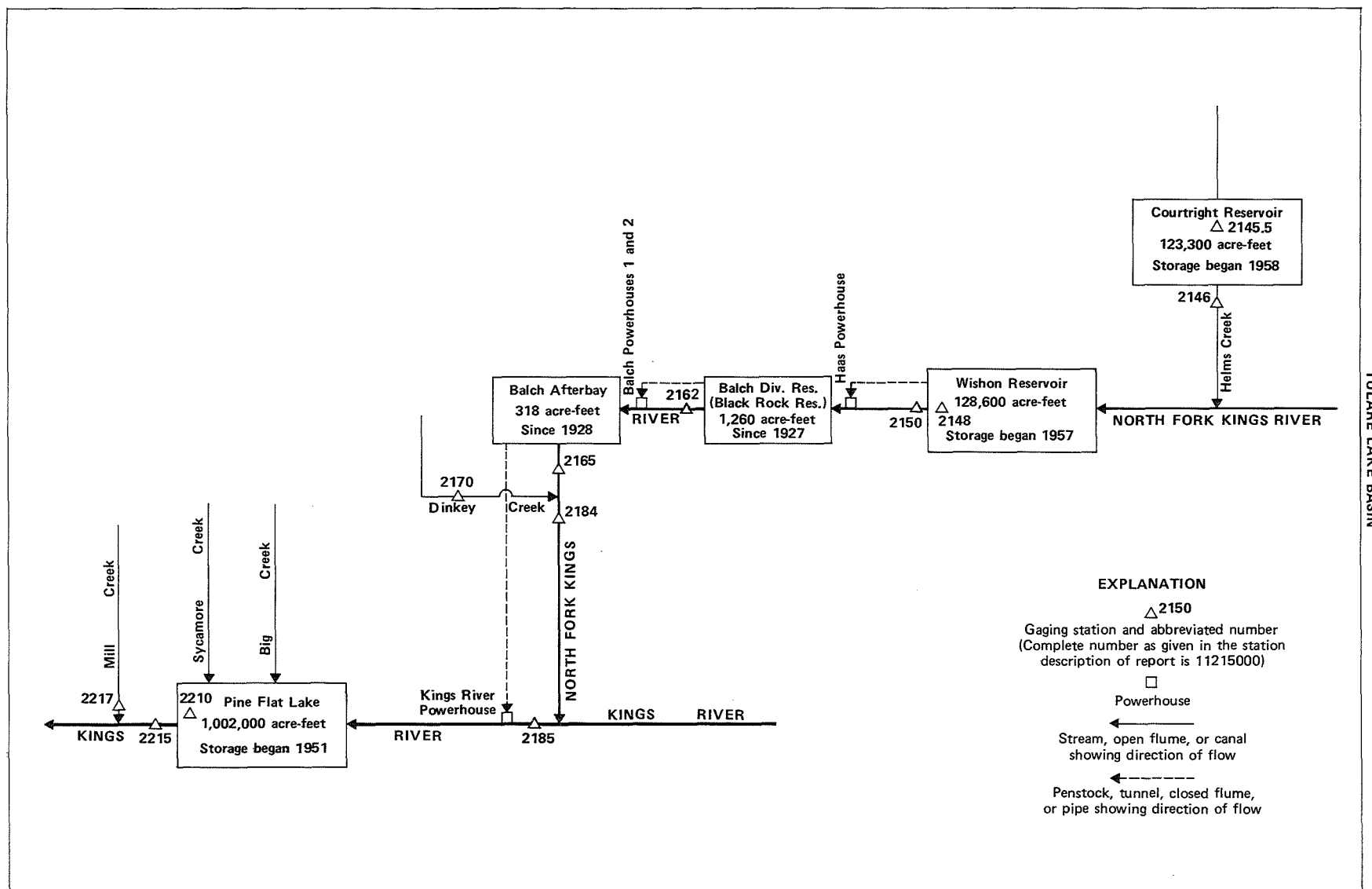


Figure 31. - Schematic diagram showing diversions and storage in Kings River basin.

TULARE LAKE BASIN

11214550 COURTRIGHT RESERVOIR NEAR NELSON MOUNTAIN, CA

LOCATION.--Lat 37°04'45", Long 119°58'07", in NW 1/4 NW 1/4 sec.7, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, at left end of dam on Helms Creek, 2.5 mi upstream from mouth, 4.6 mi east of Nelson Mountain, and 9.7 mi west of Blackcap Mountain.

DRAINAGE AREA.--39.7 mi².

PERIOD OF RECORD.--October 1958 to September 1982 (monthend elevation and contents only), October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by rockfill dam completed in 1958. Usable capacity, 123,300 acre-ft between elevations 7,902 ft, invert of tunnel, and 8,184 ft, elevation of spillway. Dead storage negligible. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., in connection with a Federal Energy Regulatory Commission Project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 124,220 acre-ft, Sept. 26, 1982, elevation, 8,184.57 ft; no contents in 1961-62, 1968, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 119,378 acre-ft, July 20, elevation, 8,181.58 ft; minimum, 29,716 acre-ft, Mar. 5, elevation, 8,097.41 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Pacific Gas & Electric Co., from table dated Apr. 13, 1959)

7,902	0	7,970	736	8,035	6,269	8,115	42,141
7,950	267	7,990	1,617	8,060	12,298	8,150	75,878
7,960	462	8,010	3,129	8,085	22,584	8,184	123,286

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90306	71920	35897	41198	42606	35058	67626	83957	101448	115197	112687	78930
2	90293	71741	33364	41820	42383	32596	69570	90359	98754	113503	111796	75080
3	90267	68697	33964	41322	41695	30888	70539	94608	98754	114885	112748	74953
4	90254	64899	34835	40223	41067	30241	70561	96665	100138	114917	111597	75380
5	90082	62369	36403	36834	40277	29716	70606	94172	102065	117330	110803	75334
6	88278	60003	36417	34108	40659	31251	70032	91100	105631	114279	110119	75878
7	83221	58000	39526	35353	41586	32662	69395	89347	111398	111827	111184	77859
8	80667	57430	40859	35989	42338	33738	68209	89216	114201	111811	112456	76192
9	76099	56379	40154	37196	42118	35156	66961	90359	115431	112041	114077	73853
10	72605	53945	39805	37940	43169	34800	66844	91073	115463	111856	115650	72481
11	72583	51205	38176	39942	44220	35223	67090	88486	116968	114419	112871	69823
12	72493	48612	37290	40629	45393	36017	67540	85266	113643	117142	109937	69812
13	72436	46003	37261	39828	48835	38250	68621	83882	113643	115948	108098	70694
14	72414	45838	38724	39639	53798	41307	68003	82502	115979	113736	108038	68231
15	72414	45821	39609	39262	58281	44585	67379	84370	115228	111276	107993	68187
16	72391	45788	38731	34349	59074	43560	66759	92969	115541	110772	107948	67831
17	72391	44967	38021	33507	58194	45147	67208	103364	116136	112563	105660	67626
18	72391	43368	37559	34898	56379	47973	71785	106503	113350	114652	105365	67605
19	72391	43869	37109	35818	53451	50781	78441	107783	111856	117853	103698	67519
20	72391	41797	37559	36117	50781	53341	79493	108178	114262	119378	102122	67486
21	72369	39669	38561	35451	49162	56218	81103	107978	117111	119299	100223	63404
22	72369	40033	39556	34654	45771	56218	81201	105749	115729	119266	100166	65235
23	72346	40460	40238	34668	40844	55315	81458	105955	115259	119108	100109	66333
24	72346	39150	42157	35268	38435	55653	80592	106103	112487	119044	97247	68231
25	72324	36575	42141	39008	36060	56503	81249	106236	109816	118981	94295	68187
26	72324	34453	42566	38605	36074	57913	83869	103422	111780	118917	92527	68166
27	72301	34453	42558	39427	34349	59646	80495	104252	113673	118853	88473	68122
28	72279	36117	42535	41245	35058	60872	80933	104018	116623	118806	84195	68112
29	72234	37501	41852	41781	---	64878	82330	102280	116701	118742	82601	66887
30	72144	38487	41400	42165	---	65340	82564	102150	115697	118662	82428	64294
31	72088	---	40583	42354	---	66535	---	103524	---	114481	81286	---
MAX	90306	71920	42566	42354	59074	66535	83869	108178	117111	119378	115650	78930
MIN	72088	34453	33364	33507	34349	29716	66759	82502	98754	110772	81286	63404
a	8146.68	8110.21	8112.99	8115.27	8105.45	8141.60	8155.58	8171.19	8179.25	8178.47	8154.54	8139.47
b	-18205	-33601	+2096	+1771	-7296	+31477	+16029	+20960	+12173	-1216	-33195	-16992

CAL YR 1986 b -12051
WTR YR 1987 b -25999

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

11214600 HELMS CREEK BELOW COURTRIGHT DAM, CA

LOCATION.--Lat 37°04'35", long 118°58'04", in SW 1/4 NW 1/4 sec.7, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 500 ft downstream from Courtright Dam, 2.5 mi upstream from North Fork Kings River, and 17 mi southeast of town of Huntington Lake.

DRAINAGE AREA.--39.7 mi².

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

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

GAGE.--Water-stage recorder and broad-crested weir with trapezoidal notch. Elevation of gage is 7,836 ft above National Geodetic Vertical Datum of 1929, from photogrammetry survey.

REMARKS.--No estimated daily discharges. Flow regulated since October 1958 by Courtright Reservoir (station 11214550) 500 ft upstream and by Helms Creek Project pump/generator facility since June 1984. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft³/s, Aug. 29, 1969, gage height, 5.81 ft; maximum gage height, 7.70 ft, Aug. 23, 1978; no flow on several days in 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15 ft³/s, Feb. 20, gage height, 1.09 ft; minimum daily, 2.4 ft³/s, Dec. 3, 4, 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	5.4	4.2	3.6	3.6	3.9	3.7	4.3	7.1	8.6	9.0	6.6
2	6.3	5.4	3.0	3.6	3.7	3.9	3.9	4.5	7.0	8.6	8.8	6.6
3	6.3	5.3	2.4	3.6	3.8	3.9	5.7	5.5	7.0	8.6	8.8	6.2
4	6.3	5.2	2.4	3.6	3.9	3.9	6.1	6.0	7.0	8.6	8.8	6.1
5	6.3	4.8	2.5	3.5	3.9	3.9	6.1	6.1	7.0	8.7	8.8	6.1
6	6.3	4.3	2.5	3.4	3.9	3.9	6.1	6.1	7.1	8.8	8.8	6.1
7	6.3	4.1	2.6	3.3	3.9	3.7	6.1	6.1	7.4	8.8	8.6	6.1
8	6.4	4.0	2.6	3.4	3.9	3.7	6.4	5.9	7.7	8.8	8.6	6.2
9	5.9	4.0	2.6	3.4	3.9	3.7	6.7	6.0	8.1	8.6	8.7	6.1
10	5.3	4.6	2.5	3.4	3.9	3.7	6.9	6.1	8.3	8.6	8.9	6.1
11	5.1	5.0	2.5	3.5	3.9	3.7	5.7	6.1	8.3	8.6	9.0	6.0
12	5.1	4.8	2.5	3.6	4.0	3.7	4.0	5.9	8.2	8.7	9.0	5.9
13	4.8	5.7	2.4	3.6	4.2	3.7	4.0	5.6	8.2	9.1	8.8	5.9
14	4.8	6.1	2.4	3.4	4.2	3.7	3.9	5.2	8.2	9.2	8.8	5.9
15	4.8	6.1	2.5	3.4	4.7	3.9	3.8	5.1	8.3	9.1	8.6	5.9
16	4.7	6.1	2.5	3.4	5.1	3.9	3.7	5.5	8.3	8.8	8.6	5.9
17	4.6	6.1	2.5	3.4	5.2	3.9	3.7	6.2	8.3	8.8	8.6	5.9
18	4.6	6.1	2.5	3.4	5.2	3.9	3.7	6.9	8.3	8.8	8.4	5.9
19	4.6	6.1	2.5	3.4	5.2	3.9	3.8	7.2	8.2	8.8	8.4	5.9
20	4.6	6.1	2.5	3.4	5.8	3.9	4.2	7.3	8.2	8.9	8.3	5.9
21	4.6	6.0	2.5	3.4	4.6	3.9	4.4	7.5	8.2	9.0	8.2	5.9
22	5.2	5.9	3.0	3.4	4.6	3.9	4.6	7.4	8.3	9.0	8.1	5.9
23	6.1	5.8	3.6	3.4	4.1	3.9	4.6	7.2	8.4	9.3	8.0	5.9
24	5.7	5.8	3.6	3.4	3.9	3.9	4.7	7.3	8.4	9.2	8.0	5.9
25	5.7	5.5	3.7	3.4	3.9	3.9	4.9	7.2	8.2	9.2	7.8	5.9
26	5.4	5.0	3.7	3.4	3.9	3.9	5.1	7.2	8.2	9.2	7.6	5.9
27	5.4	4.8	3.7	3.5	3.9	3.9	5.1	7.2	8.2	9.2	7.6	5.9
28	5.4	4.8	3.7	3.6	3.9	3.9	5.1	7.2	8.2	9.2	7.4	5.9
29	5.4	5.0	3.7	3.6	---	3.7	5.1	7.2	8.5	9.2	7.2	5.9
30	5.7	5.1	3.6	3.6	---	3.7	5.0	7.1	8.6	9.2	7.0	5.9
31	5.4	---	3.6	3.6	---	3.7	---	7.0	---	9.2	6.9	---
TOTAL	169.6	159.0	90.5	107.6	118.7	118.7	146.8	197.1	239.4	276.4	258.1	180.3
MEAN	5.47	5.30	2.92	3.47	4.24	3.83	4.89	6.36	7.98	8.92	8.33	6.01
MAX	6.5	6.1	4.2	3.6	5.8	3.9	6.9	7.5	8.6	9.3	9.0	6.6
MIN	4.6	4.0	2.4	3.3	3.6	3.7	3.7	4.3	7.0	8.6	6.9	5.9
AC-FT	336	315	180	213	235	235	291	391	475	548	512	358

WTR YR 1987 TOTAL 2062.2 MEAN 5.65 MAX 9.3 MIN 2.4 AC-FT 4090

TULARE LAKE BASIN

11214800 WISHON RESERVOIR NEAR CLIFF CAMP, CA

LOCATION.--Lat 37°00'19", long 118°58'07", in NW 1/4 NW 1/4 sec.6, T.11 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right end of dam on North Fork Kings River, 1.2 mi north of Cliff Camp, and 20 mi southeast of Big Creek.

DRAINAGE AREA.--177 mi².

PERIOD OF RECORD.--December 1957 to September 1982 (monthend elevation and contents only), October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by rockfill dam completed in 1957. Capacity, 128,600 acre-ft between elevations 6,317 ft, bottom of slide gates, and 6,550 ft, operating crest of spillway gates. Dead storage negligible. Water is diverted to Haas powerplant. Records, including extremes, represent contents at 2400 hours. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., in connection with a Federal Energy Regulatory Commission Project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 129,700 acre-ft, July 29, 1958, elevation, 6,551.1 ft; no contents in 1960.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 110,734 acre-ft, June 3, elevation, 6,531.83 ft; minimum, 44,001 acre-ft, Apr. 3, elevation, 6,447.55 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Pacific Gas & Electric Co., from table dated Apr. 13, 1959)

6,317	40	6,385	11,618	6,440	39,471	6,520	99,807
6,360	2,810	6,400	18,359	6,460	51,900	6,550	129,118
6,370	5,738	6,420	28,362	6,490	74,128	6,551.1	129,733

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81795	69342	89048	71005	64460	73538	46073	73135	106961	95731	77020	81653
2	80418	69499	90941	70317	64634	76103	44503	67938	110298	96845	77365	84576
3	79031	72638	89498	70601	65411	77875	44001	65350	110734	94825	75288	83397
4	78057	76545	87685	71783	66070	78626	44325	65396	109658	94773	75207	81695
5	77744	79156	85289	74971	66870	79695	44651	70380	108475	92262	74849	81553
6	78436	81528	85289	77143	66485	78420	45657	75663	105682	94623	74289	80926
7	83114	82769	81879	75508	65534	77176	46829	79537	100703	96176	71982	78816
8	84440	82785	79744	74752	64771	76193	48620	82525	98412	95145	70625	79678
9	87891	83425	79587	73490	65106	75288	50614	83721	97747	93836	68857	80843
10	90175	84915	79280	72526	64111	75785	51669	85136	98071	93447	66039	81210
11	89697	86715	80160	70348	63108	75451	52563	90201	96961	90784	67768	83088
12	89888	88529	80393	69452	62030	74784	53231	95882	100304	88012	69766	82575
13	88875	90184	80360	70128	58921	72750	53399	99032	100703	88219	70585	81135
14	87616	89299	78717	70112	53972	69908	55431	102905	98618	89533	69413	82811
15	86878	88788	77070	70065	49544	66739	57505	104150	99744	91151	68740	81804
16	85221	88348	77078	74411	48780	67868	59835	98089	99429	90689	68436	81060
17	83949	88253	77028	75174	49731	66431	61244	89463	98753	87788	69531	80127
18	83949	88970	76823	73740	51603	63695	58432	87917	101801	85562	68569	78982
19	83949	87676	76873	72710	54597	61022	53104	88038	103509	82181	68920	78213
20	82794	88762	76071	72182	57335	58511	53587	88814	101164	79678	69155	77694
21	81243	89967	74784	72494	59022	55797	53763	90297	98322	78700	69609	80893
22	79935	89567	73353	72894	62500	55935	55866	93686	99330	77694	69014	77900
23	78577	89082	72366	72654	67690	56912	57853	94720	99465	76922	68615	75793
24	77184	89628	70380	71950	70128	56660	61044	95589	101846	76267	70807	72830
25	76447	91561	70364	68125	72430	55922	62763	96363	103665	76250	73007	72318
26	76381	92929	69884	68421	72462	54631	62231	100123	101220	76242	73941	72318
27	75190	92867	69884	67581	74225	52990	68047	100015	99310	75467	76905	72308
28	73958	90549	69868	65863	73538	51996	69892	101010	96310	74541	79886	71727
29	73232	88503	70396	65289	---	48111	71115	103610	95509	73627	80676	72062
30	72030	87444	70807	64923	---	47857	72926	104593	95465	72678	80418	73925
31	70175	---	71616	64748	---	46911	---	104189	---	75818	80335	---
MAX	90175	92929	90941	77143	74225	79695	72926	104593	110734	96845	80676	84576
MIN	70175	69342	69868	64748	48780	46911	44001	65350	95465	72678	66039	71727
a	6485.05	6505.97	6486.87	6478.04	6489.27	6452.25	6488.51	6524.81	6515.15	6492.08	6497.56	6489.75
b	-13048	+17269	-15828	-6868	+8790	-26627	+26015	+31263	-8724	-19647	+4517	-6410

CAL YR 1986 b +15535

WTR YR 1987 b -9298

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

TULARE LAKE BASIN

11214900 NORTH FORK KINGS RIVER BELOW WISHON RESERVOIR, CA

LOCATION.--Lat 37°00'05", long 118°58'20", in SE 1/4 NE 1/4 sec.1, T.11 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank 1,700 ft downstream from Wishon Dam and 20 mi southeast of Big Creek.

DRAINAGE AREA.--178 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

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

REMARKS.--No estimated daily discharges. Flow regulated by Wishon Reservoir (station 11214800) and Courtright Reservoir (station 11214550). Water diverted for power from Wishon Reservoir by tunnel to Haas powerplant. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 30 ft³/s, Mar. 6, June 3-6, 1987; minimum daily, 12 ft³/s, Aug. 10, 11, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	21	24	22	21	23	19	22	29	24	13	14
2	23	21	24	22	21	23	19	22	29	22	13	14
3	23	22	24	22	22	23	19	21	30	18	13	14
4	23	22	24	22	22	23	19	21	30	16	13	14
5	23	22	24	22	22	28	19	21	30	16	13	14
6	23	23	24	23	22	30	19	22	30	16	13	14
7	24	23	23	23	22	24	19	22	29	14	13	14
8	24	23	23	22	21	23	19	23	28	14	13	14
9	24	23	23	22	22	23	20	23	28	14	13	14
10	24	23	23	22	22	23	20	24	28	14	12	14
11	24	23	23	22	22	23	20	25	28	14	12	14
12	24	24	23	22	21	23	20	26	28	13	13	14
13	24	24	23	22	22	23	20	27	28	13	13	14
14	23	24	23	22	21	23	20	28	28	13	13	14
15	23	24	23	22	20	23	20	29	28	14	13	14
16	23	24	23	22	20	23	20	29	28	14	13	14
17	23	24	23	22	20	23	21	28	28	14	13	14
18	23	24	23	22	20	23	21	26	28	13	14	14
19	23	24	23	22	20	22	20	25	28	13	14	14
20	23	24	22	22	21	22	20	26	28	13	13	14
21	23	24	22	22	21	21	20	26	28	13	13	14
22	23	24	22	22	21	21	20	26	28	13	13	14
23	22	24	22	22	22	21	20	27	28	13	13	14
24	22	24	22	22	22	21	21	28	28	13	13	14
25	22	24	22	22	23	21	21	27	28	13	13	14
26	22	25	22	22	23	21	21	28	28	13	13	13
27	22	25	22	22	23	21	21	28	28	13	13	13
28	22	24	22	22	23	21	21	28	28	13	13	13
29	22	24	22	21	---	20	22	28	27	13	13	13
30	22	24	22	21	---	20	22	29	27	13	14	13
31	21	---	22	21	---	20	---	29	---	13	14	---
TOTAL	711	704	707	681	602	699	603	794	849	445	405	415
MEAN	22.9	23.5	22.8	22.0	21.5	22.5	20.1	25.6	28.3	14.4	13.1	13.8
MAX	24	25	24	23	23	30	22	29	30	24	14	14
MIN	21	21	22	21	20	20	19	21	27	13	12	13
AC-FT	1410	1400	1400	1350	1190	1390	1200	1570	1680	883	803	823

WTR YR 1987 TOTAL 7615 MEAN 20.9 MAX 30 MIN 12 AC-FT 15100

TULARE LAKE BASIN

11215000 NORTH FORK KINGS RIVER NEAR CLIFF CAMP, CA

LOCATION.--Lat 36°59'38", long 118°58'49", in NE 1/4 NW 1/4 sec.12, T.11 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank at Cliff Camp bridge, 1 mi northwest of Cliff Camp, 1.2 mi downstream from Wishon Dam, and 2 mi downstream from Woodchuck Creek.

DRAINAGE AREA.--181 mi².

PERIOD OF RECORD.--August 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1715: 1951, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,143.95 ft above National Geodetic Vertical Datum of 1929 (levels by San Joaquin Light and Power Corp.). Prior to Nov. 24, 1922, at site 1 mi upstream at different datum.

REMARKS.--Flow regulated since Dec. 5, 1957, by Wishon Reservoir (station 11214800) 1.2 mi upstream, and since Oct. 17, 1958, by Courtright Reservoir (station 11214550). Water diverted for power from Wishon Reservoir by tunnel to Haas powerplant since Dec. 10, 1958. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (adjusted for storage and diversion).--66 years, 380 ft³/s, 275,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (prior to regulation by Wishon Reservoir).--Maximum discharge, 14,000 ft³/s, Dec. 11, 1937, gage height, 18.0 ft, from floodmarks, from rating curve extended above 4,200 ft³/s on basis of velocity-area studies; minimum, 0.6 ft³/s, Dec. 30, 1930.
1957 to current year.--Maximum discharge, 5,110 ft³/s, Sept. 5, 1978, gage height, 11.96 ft; minimum daily, 0.8 ft³/s, Dec. 14, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 84 ft³/s, Mar. 5, gage height 3.73 ft; minimum daily, 14 ft³/s, July 23 to Aug. 17, Aug. 21-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	22	24	21	22	26	24	21	27	22	14	15
2	26	22	24	21	22	26	24	21	27	20	14	16
3	26	23	24	21	23	27	27	20	27	19	14	16
4	26	23	23	21	23	29	25	20	28	18	14	16
5	26	23	23	21	23	55	25	20	27	18	14	16
6	26	23	23	21	23	55	25	20	28	17	14	15
7	26	23	23	21	23	38	25	21	28	16	14	15
8	26	23	23	21	23	35	25	22	27	15	14	15
9	26	23	23	21	24	32	26	23	27	15	14	15
10	26	23	23	21	25	29	26	23	26	15	14	15
11	25	24	23	21	27	27	26	25	25	15	14	16
12	25	24	23	21	25	27	24	25	25	15	14	16
13	25	24	22	21	48	33	23	27	26	15	14	16
14	25	24	22	21	31	30	23	27	26	15	14	16
15	25	24	22	21	26	30	22	28	25	15	14	16
16	25	24	22	21	24	29	22	30	25	15	14	16
17	25	24	22	22	24	31	22	27	25	15	14	16
18	25	24	22	22	24	31	22	25	25	15	15	16
19	24	24	22	21	24	27	20	24	26	15	15	15
20	24	24	22	22	24	25	20	24	26	15	15	15
21	23	24	22	22	24	24	20	26	26	15	14	15
22	23	24	21	22	24	23	20	26	25	15	14	16
23	23	24	21	22	25	23	20	28	25	14	14	15
24	23	23	21	22	25	24	20	29	25	14	14	15
25	23	24	21	22	25	26	20	27	26	14	14	15
26	23	24	21	22	25	27	21	27	26	14	14	15
27	23	24	21	23	25	28	21	27	26	14	14	15
28	23	24	21	23	26	27	21	27	25	14	15	15
29	23	24	21	22	---	25	21	27	25	14	15	15
30	22	23	21	22	---	25	23	27	24	14	15	15
31	22	---	21	22	---	24	---	27	---	14	15	---
TOTAL	759	706	687	667	707	918	683	771	779	481	441	463
MEAN	24.5	23.5	22.2	21.5	25.3	29.6	22.8	24.9	26.0	15.5	14.2	15.4
MAX	26	24	24	23	48	55	27	30	28	22	15	16
MIN	22	22	21	21	22	23	20	20	24	14	14	15
AC-FT	1510	1400	1360	1320	1400	1820	1350	1530	1550	954	875	918
CAL YR 1986	TOTAL	41429	MEAN 114	MAX 1550	MIN 20	AC-FT 82170						
WTR YR 1987	TOTAL	8062	MEAN 22.1	MAX 55	MIN 14	AC-FT 15990						

TULARE LAKE BASIN

11216100 BLACK ROCK RESERVOIR NEAR BALCH CAMP, CA

LOCATION.--Lat 36°55'13", long 119°01'20", in NW 1/4 NW 1/4 sec.6, T.12 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank at intake tower on North Fork Kings River, 5.6 mi east-northeast of Balch Camp.

DRAINAGE AREA.--233 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete arch-type dam, completed to elevation 4,054 ft in 1927 and raised to 4,098 ft in 1958. Storage began in 1927. Spillway is ungated. Capacity, 1,260 acre-ft between elevation 4,054 ft, fish release valve, and 4,098 ft, top of spillway crest. Water is diverted from reservoir through tunnel to Balch powerplant 3.7 mi downstream. Flow is diverted from powerplant tailrace in a closed conduit to Kings River powerplant. See schematic diagram of Kings River basin. Records, including extremes, represent contents at 2400 hours.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,255 acre-ft, Nov. 1, 1986, elevation, 4,097.86 ft; minimum, 359 acre-ft, Nov. 3, 1986, elevation 4,064.51 ft.

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

4,050	165	4,065	367	4,080	706	4,095	1,157
4,055	219	4,070	465	4,085	846	4,100	1,331
4,060	286	4,075	579	4,090	996	4,108	1,635

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1149	1255	1175	1214	614	1170	1202	1009	1174	1163	1172	1089
2	1135	406	1149	1136	614	1221	1063	1089	1072	1136	1149	1070
3	1135	359	1149	982	649	1123	1147	1092	1059	1165	1003	1066
4	1138	438	1149	1009	644	901	970	1066	1201	1204	1067	1138
5	1151	520	1156	1189	601	710	1145	963	1063	1205	1019	1182
6	1129	584	1185	1164	595	1013	1128	1000	1060	1137	1024	1155
7	1118	1092	1202	1145	688	1003	1155	1165	1133	1122	1137	1129
8	1135	1115	1150	1207	770	1128	1076	1092	1163	1155	1065	1106
9	1135	1155	1150	1213	811	1175	1236	1148	1218	1168	1065	1113
10	1110	1131	1028	1175	885	1141	1158	1095	1188	1125	1091	1138
11	1175	1209	1128	1185	1007	1192	1145	1054	1178	1158	1137	1138
12	1135	1149	1035	1141	1111	1099	1060	1054	1178	1131	1137	1153
13	1135	1226	1092	1195	839	1155	1060	1192	1174	1131	1137	1157
14	1135	1125	1199	1199	810	952	1079	1006	1128	1141	1134	1131
15	1174	1171	1168	1172	801	710	1060	1165	1128	1133	1164	1118
16	1128	1185	1155	1182	781	662	1070	1057	1143	1133	1155	1082
17	1165	1149	1172	1184	862	609	1042	985	1160	1117	1085	1139
18	1229	1165	1187	1219	903	729	1004	1185	1155	1114	1104	1082
19	1099	1145	1175	1172	948	747	1097	1141	1161	1149	1087	1161
20	1128	1151	1209	1205	1028	742	1023	1141	1171	1149	1069	1138
21	1168	1216	1175	1151	1071	891	997	1099	1172	1125	1038	1158
22	1128	1145	1185	1155	1135	1024	1004	960	1147	1148	1038	1112
23	1145	1165	1188	1203	1128	1099	1009	1107	1156	1138	1143	1131
24	1201	1041	1076	1184	1079	1145	1073	1082	1155	1158	944	1125
25	1120	1063	1138	1184	1185	1182	1065	1103	1170	1192	1005	1151
26	1185	1128	1209	1219	1158	1073	1047	1128	1165	1151	990	1184
27	1125	1223	1209	1185	1199	1104	957	1125	1111	1135	1225	1215
28	1125	1145	1199	1135	1082	1106	1028	1107	1113	1138	1167	1151
29	1141	1156	1229	1099	---	1092	1031	1092	1139	1148	1140	1141
30	1130	1089	1205	1178	---	1094	1074	1046	1146	1137	1144	1138
31	1141	---	1151	579	---	1226	---	1163	---	1173	1171	---
MAX	1229	1255	1229	1219	1199	1226	1236	1192	1218	1205	1225	1215
MIN	1099	359	1028	579	595	609	957	960	1059	1114	944	1066
a	4094.51	4092.95	4094.84	4075.00	4092.70	4097.00	4092.46	4095.15	4094.65	4095.45	4095.36	4094.40
b	+6	-52	+62	-572	+503	+144	-152	+89	-17	+27	-2	-33

CAL YR 1986 b +52

WTR YR 1987 b +3

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

TULARE LAKE BASIN

11216200 NORTH FORK KINGS RIVER BELOW BALCH DIVERSION DAM, CA

LOCATION.--Lat 36°54'10", long 119°03'00", in NE 1/4 sec.8, T.12 S., R.27 E., Fresno County, Hydrologic Unit 18030010, on right bank 2.0 mi downstream from Balch Diversion Dam (Black Rock Reservoir), 400 ft upstream from Weir Creek, and 4 mi east of Balch Camp.

DRAINAGE AREA.--238 mi².

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

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

REMARKS.--No estimated daily discharges. Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,830 ft³/s, Nov. 24, 1983, gage height, 7.63 ft; minimum daily, 0.89 ft³/s, Oct. 21, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53 ft³/s, Feb. 13, gage height, 2.17 ft; minimum daily, 2.5 ft³/s, Jan. 9, Feb. 1, June 27-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	6.0	5.0	2.8	2.5	3.9	3.9	2.9	2.7	2.6	3.0	3.0
2	5.7	6.0	4.4	2.9	4.0	3.8	3.7	2.9	2.6	3.4	3.0	2.9
3	5.7	5.7	4.3	2.9	5.1	4.7	8.0	2.9	2.6	3.4	3.0	2.9
4	5.7	6.3	4.0	6.8	4.7	3.7	5.3	2.9	3.2	3.2	2.9	2.9
5	5.7	4.7	3.3	5.0	4.6	5.9	4.4	2.8	3.7	3.2	2.9	3.0
6	5.7	4.8	3.6	3.9	4.4	13	4.2	2.7	4.7	3.2	2.9	3.0
7	5.7	5.1	3.6	3.1	4.3	7.3	4.1	3.4	3.2	3.1	3.0	3.0
8	5.6	5.6	3.4	2.6	4.1	5.7	4.0	4.8	2.9	3.1	3.0	3.0
9	5.6	5.5	2.7	2.5	4.1	4.9	3.8	4.8	2.9	3.1	3.0	2.9
10	5.6	5.5	2.7	2.8	4.3	4.5	3.8	4.8	2.9	3.1	3.0	2.9
11	5.7	5.5	2.6	2.9	4.9	4.1	3.6	4.9	2.9	3.2	3.0	3.0
12	5.7	5.5	2.7	2.9	3.8	4.0	3.6	4.5	2.9	3.2	3.6	3.0
13	5.7	5.3	2.9	2.9	27	6.2	3.4	3.3	2.9	3.1	3.3	3.0
14	5.7	5.4	2.9	2.8	9.8	5.4	3.4	3.3	2.8	3.1	3.3	3.0
15	5.7	5.3	3.0	2.7	6.5	8.6	3.3	3.1	2.8	3.1	3.4	3.0
16	5.7	5.3	3.0	2.6	5.5	6.6	3.2	3.2	2.7	3.1	3.4	3.0
17	5.7	5.3	3.0	2.7	5.0	6.2	3.2	3.1	2.7	3.0	3.3	2.9
18	5.8	5.7	3.0	2.7	4.8	6.3	3.2	3.0	2.7	3.0	3.3	2.8
19	6.0	5.5	3.1	2.8	4.7	5.7	3.2	3.2	2.7	3.0	3.3	2.9
20	5.9	5.5	3.2	2.7	4.5	5.0	3.2	3.2	2.7	3.2	3.2	3.0
21	5.8	5.3	3.0	2.7	4.5	5.8	3.0	3.1	2.7	3.2	3.2	3.0
22	5.8	5.3	3.0	2.7	4.5	5.8	2.9	2.8	2.7	3.2	3.2	3.0
23	5.8	5.4	3.0	3.0	4.9	6.4	2.9	2.6	2.7	3.1	3.4	3.0
24	5.8	5.3	3.0	2.9	4.8	6.4	2.9	2.8	2.7	2.9	3.4	3.2
25	6.0	5.0	2.9	2.9	4.6	6.0	2.9	2.9	2.6	3.1	3.1	3.3
26	5.8	5.0	2.9	2.9	4.5	5.9	2.9	2.9	2.6	3.2	3.3	3.4
27	5.9	5.0	2.9	3.0	4.0	5.7	2.9	2.9	2.5	3.1	3.1	3.4
28	5.8	5.1	2.9	5.5	4.0	5.6	2.8	2.8	2.5	3.0	3.0	3.4
29	5.8	5.3	2.9	3.4	---	5.3	2.9	2.8	2.5	3.0	3.0	3.5
30	5.9	5.2	2.9	3.1	---	5.2	3.0	2.7	2.6	3.0	2.9	3.5
31	6.0	---	2.9	3.0	---	4.9	---	2.7	---	3.0	3.0	---
TOTAL	178.7	161.4	98.7	98.1	154.4	178.5	107.6	100.7	85.3	96.2	97.4	91.8
MEAN	5.76	5.38	3.18	3.16	5.51	5.76	3.59	3.25	2.84	3.10	3.14	3.06
MAX	6.0	6.3	5.0	6.8	27	13	8.0	4.9	4.7	3.4	3.6	3.5
MIN	5.6	4.7	2.6	2.5	2.5	3.7	2.8	2.6	2.5	2.6	2.9	2.8
AC-FT	354	320	196	195	306	354	213	200	169	191	193	182
CAL YR 1986	TOTAL	80425.3	MEAN	220	MAX	2210	MIN	2.6	AC-FT	159500		
WTR YR 1987	TOTAL	1448.8	MEAN	3.97	MAX	27	MIN	2.5	AC-FT	2870		

11216400 DINKEY CREEK SIPHON FISH RELEASE AT BALCH CAMP, CA

LOCATION.--Lat 36°54'29", long 119°07'27", in NW 1/4 NE 1/4 sec.10, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, in concrete vault on right bank of Dinkey Creek, 200 ft downstream from Dinkey Creek Siphon at invert of Kings River powerplant conduit, and 1,700 ft northwest of Balch Camp.

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Pressure differential flowmeter. Elevation of gage is 1,320 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 7.0 ft³/s, Sept. 30, 1987; no flow Oct. 3 to June 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0								0	5.0	5.0	5.5
2	1.8								0	5.0	5.0	5.5
3	0								0	5.0	5.0	5.5
4	0								0	5.0	5.0	5.5
5	0								3.0	5.0	5.0	5.0
6	0								5.0	5.0	5.0	5.0
7	0								5.0	5.0	5.0	5.0
8	0								5.0	5.0	5.0	5.0
9	0								5.0	5.0	5.0	5.0
10	0								5.0	5.0	5.0	5.0
11	0								5.0	5.0	5.0	5.1
12	0								5.0	5.0	5.4	5.1
13	0								5.0	5.0	6.0	5.0
14	0								5.0	5.0	6.0	5.3
15	0								5.0	5.0	6.0	5.3
16	0								5.0	5.0	6.0	5.3
17	0								5.0	5.0	6.0	5.2
18	0								5.0	5.0	6.0	5.3
19	0								5.0	5.0	6.0	5.3
20	0								5.0	5.0	6.0	5.3
21	0								5.0	5.0	6.0	5.3
22	0								5.0	5.0	6.0	5.3
23	0								5.0	5.0	6.0	5.3
24	0								5.0	5.0	6.0	5.3
25	0								5.0	5.0	6.6	5.3
26	0								5.0	5.0	6.1	5.3
27	0								5.0	5.0	5.5	5.3
28	0								5.0	5.0	5.5	5.3
29	0								5.0	5.0	5.5	6.4
30	0								5.0	5.0	5.5	7.0
31	0	---			---		---		---	5.0	5.5	---
TOTAL	6.8	0	0	0	0	0	0	0	128.0	155.0	172.6	160.0
MEAN	.22	0	0	0	0	0	0	0	4.27	5.00	5.57	5.33
MAX	5.0	0	0	0	0	0	0	0	5.0	5.0	6.6	7.0
MIN	0	0	0	0	0	0	0	0	0	5.0	5.0	5.0
AC-FT	13	0	0	0	0	0	0	0	254	307	342	317

WTR YR 1987 TOTAL 622.4 MEAN 1.71 MAX 7.0 MIN 0 AC-FT 1230

TULARE LAKE BASIN

11216500 NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CA

LOCATION.--Lat 36°54'12", long 119°07'14", in SE 1/4 NE 1/4 sec.10, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 12 ft downstream from bridge at Balch Camp, 300 ft upstream from Dinkey Creek, and 9.3 mi east of Trimmer.

DRAINAGE AREA.--250 mi².

PERIOD OF RECORD.--October 1919 to September 1930 (published as "above Dinkey Creek"), March 1960 to current year. Records for water year 1920 incomplete; yearly estimate and monthly discharge only for some months, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Apr. 15, 1966. Elevation of gage is 1,240 ft above National Geodetic Vertical Datum of 1929, from river-profile map. October 1919 to Sept. 30, 1930, and Mar. 24, 1960, to Apr. 14, 1966, at site 100 ft downstream at different datum.

REMARKS.--Estimated daily discharges: Apr. 25-28. Flow regulated by Courtright Reservoir (station 11214550) and Wishon Reservoir (station 11214800); Black Rock Reservoir, capacity, 1,260 acre-ft; Balch Afterbay, capacity, 318 acre-ft; and Haas and Balch powerplants. Diversion from Balch Afterbay to Kings River powerplant began Mar. 1, 1962. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD (prior to regulation by Wishon and Courtright Reservoirs): Maximum discharge, 6,080 ft³/s, June 4, 1922, gage height, 12.18 ft, site and datum then in use; minimum, 4 ft³/s, Aug. 29 to Sept. 1, 1924.

1960 to current year: Maximum discharge, 14,000 ft³/s, Feb. 1, 1963, gage height, 13.24 ft, site and datum then in use, backwater from Dinkey Creek, from rating curve extended above 890 ft³/s; minimum daily, 0.30 ft³/s, Nov. 3, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 545 ft³/s, Nov. 3, gage height, 2.76 ft; minimum daily, 6.6 ft³/s, Nov. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	16	16	13	11	13	12	13	12	11	12	11
2	16	16	12	13	12	13	12	12	12	11	12	11
3	16	55	11	12	13	12	15	11	12	12	12	11
4	16	8.3	11	13	12	12	13	11	12	11	12	12
5	15	7.6	12	13	13	12	13	11	14	11	12	12
6	15	6.6	12	13	14	13	13	11	16	11	12	12
7	15	11	12	12	14	13	13	11	13	11	13	12
8	15	16	11	12	13	13	13	11	13	11	12	11
9	15	17	12	13	13	14	12	11	12	11	12	12
10	15	19	11	12	12	12	12	11	12	12	12	12
11	15	16	12	13	13	13	12	11	12	12	12	12
12	15	18	12	12	13	13	12	11	12	11	12	12
13	19	17	12	12	27	14	12	12	12	11	12	12
14	16	16	11	12	15	13	12	13	12	12	12	12
15	17	17	12	13	13	14	12	13	12	12	11	12
16	17	16	11	12	12	13	12	12	12	11	11	12
17	16	17	11	12	13	13	12	12	12	11	11	12
18	16	17	11	12	12	12	12	12	12	11	11	12
19	17	17	11	11	12	13	12	11	12	12	12	11
20	16	17	11	11	11	13	12	12	11	11	11	12
21	16	16	11	11	11	12	12	12	11	11	11	11
22	17	17	13	12	13	12	12	12	12	11	11	12
23	17	17	13	12	12	12	12	12	12	12	11	12
24	16	17	13	11	13	12	12	11	17	11	12	12
25	17	19	12	11	12	12	12	12	12	12	12	12
26	16	16	12	11	12	13	12	12	12	11	11	12
27	17	18	12	12	13	13	12	12	11	12	11	11
28	17	18	12	13	12	13	14	12	11	12	12	11
29	16	17	12	12	---	13	13	12	11	12	11	11
30	16	17	12	12	---	13	13	12	11	12	12	13
31	16	---	12	12	---	12	---	12	---	12	11	---
TOTAL	499	512.5	368	375	366	395	372	363	367	354	361	352
MEAN	16.1	17.1	11.9	12.1	13.1	12.7	12.4	11.7	12.2	11.4	11.6	11.7
MAX	19	55	16	13	27	14	15	13	17	12	13	13
MIN	15	6.6	11	11	11	12	12	11	11	11	11	11
AC-FT	990	1020	730	744	726	783	738	720	728	702	716	698

CAL YR 1986 TOTAL 77034.5 MEAN 211 MAX 2710 MIN 6.6 AC-FT 152800
WTR YR 1987 TOTAL 4684.5 MEAN 12.8 MAX 55 MIN 6.6 AC-FT 9290

TULARE LAKE BASIN

11217000 DINKEY CREEK AT DINKEY MEADOW, NEAR SHAVER LAKE, CA

LOCATION.--Lat 37°02'50", long 119°08'52", in SW 1/4 NW 1/4 sec.21, T.10 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 0.5 mi downstream from Dinkey Meadow, 2.0 mi south of Dinkey Creek Post Office, and 14.4 mi southeast of town of Shaver Lake.

DRAINAGE AREA.--50.7 mi².

PERIOD OF RECORD.--September 1910 to September 1915 (fragmentary records), published as "near Ockenden"; October 1921 to September 1935, published as "at Dinkey Meadow;" July 1977 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 5,440 ft above National Geodetic Vertical Datum of 1929, from topographic map. September 1910 to September 1915, at site 1 mi upstream at different datum. October 1921 to September 1935, at present site at same datum.

REMARKS.--Estimated daily discharges: Oct. 3-21, Jan. 5 to Feb. 7, Feb. 16-26. Records good except those for estimated daily discharges, which are poor. No diversion or regulation above gage.

AVERAGE DISCHARGE.--24 years (water years 1922-35, 1978-87), 120 ft³/s, 86,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s, Apr. 11, 1982, gage height, 12.07 ft; minimum recorded, 0.2 ft³/s, Aug. 24-30, 1931, Sept. 7-9, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1615	448	4.40	May 15	2045	*638	*5.01
Apr. 17	1900	435	4.35				

Minimum daily, 0.96 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	6.2	5.0	5.3	10	26	105	181	46	8.7	3.0	1.6
2	20	6.1	5.1	5.5	11	29	131	157	42	8.6	2.8	1.6
3	19	6.0	4.9	5.4	12	32	148	182	40	8.1	2.7	1.5
4	17	5.9	5.4	5.1	13	37	106	204	37	8.0	2.7	1.5
5	15	5.7	5.9	5.8	12	190	103	211	35	7.8	2.5	1.4
6	14	5.6	7.7	6.6	13	187	124	199	53	7.4	2.3	1.5
7	13	5.4	7.9	6.4	15	108	162	180	63	7.1	2.3	1.4
8	12	5.4	6.0	6.2	19	90	193	187	65	6.8	2.3	1.4
9	12	5.6	5.9	6.8	24	80	239	203	61	6.5	2.2	1.3
10	11	5.8	5.4	7.4	33	68	261	175	42	6.7	2.1	1.3
11	11	5.8	5.6	8.4	48	59	283	166	35	6.4	2.1	1.3
12	10	5.7	5.7	9.6	38	64	271	178	30	6.2	2.1	1.4
13	9.8	5.6	5.8	8.6	231	84	279	157	27	5.8	2.1	1.4
14	9.6	5.4	5.3	7.8	80	66	284	153	26	5.4	2.1	1.5
15	9.3	5.4	4.9	7.0	53	62	284	242	24	5.5	2.2	1.5
16	9.8	5.5	5.3	7.4	36	55	296	245	23	5.2	2.2	1.4
17	8.7	5.5	5.1	7.6	33	67	306	144	22	5.0	2.2	1.4
18	8.4	5.7	5.4	8.3	29	68	249	117	20	5.0	2.0	1.3
19	8.1	6.0	5.5	8.3	27	53	197	101	19	5.2	1.9	1.2
20	7.8	5.8	5.6	7.6	25	49	225	90	17	5.2	1.9	1.2
21	7.6	5.6	5.6	8.2	23	45	269	88	16	5.3	1.8	1.1
22	7.3	5.6	5.6	8.9	22	46	280	84	16	5.4	1.8	1.1
23	7.1	5.4	6.0	8.6	21	43	263	75	14	5.2	1.6	1.1
24	7.0	5.5	5.3	8.6	20	43	268	67	13	5.0	1.6	1.1
25	6.8	5.3	5.3	9.6	20	50	285	63	12	4.6	1.7	1.1
26	6.6	5.0	5.5	11	21	57	285	59	11	4.2	1.6	1.1
27	6.4	4.9	5.3	13	22	65	268	54	11	3.9	1.6	1.1
28	6.4	4.7	4.8	16	24	70	255	51	10	3.7	1.6	1.1
29	6.3	5.6	5.1	14	---	76	266	50	9.6	3.4	1.5	1.1
30	6.2	5.2	4.4	12	---	89	254	48	9.2	3.3	1.5	.96
31	6.3	---	5.1	9.9	---	95	---	47	---	3.2	1.6	---
TOTAL	322.5	166.9	171.4	260.9	935	2153	6939	4158	848.8	177.8	63.6	38.96
MEAN	10.4	5.56	5.53	8.42	33.4	69.5	231	134	28.3	5.74	2.05	1.30
MAX	23	6.2	7.9	16	231	190	306	245	65	8.7	3.0	1.6
MIN	6.2	4.7	4.4	5.1	10	26	103	47	9.2	3.2	1.5	.96
AC-FT	640	331	340	517	1850	4270	13760	8250	1680	353	126	77

CAL YR 1986	TOTAL	77677.40	MEAN	213	MAX	2380	MIN	4.4	AC-FT	154100
WTR YR 1987	TOTAL	16235.86	MEAN	44.5	MAX	306	MIN	.96	AC-FT	32200

TULARE LAKE BASIN

11218400 NORTH FORK KINGS RIVER BELOW DINKEY CREEK, NEAR BALCH CAMP, CA

LOCATION.--Lat 36°52'47", long 119°07'40", in NE 1/4 NW 1/4 sec.22, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank 1.1 mi upstream from mouth, 1.7 mi south of Balch Camp, 2.1 mi downstream from Dinkey Creek, and 9 mi east of Trimmer.

DRAINAGE AREA.--387 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 1,035 ft above National Geodetic Vertical Datum of 1929, from river-profile map.

REMARKS.--Estimated daily discharges: June 9-15. Flow regulated by Courtright Reservoir (station 11214550); Wishon Reservoir (station 11214800); Black Rock Reservoir, capacity, 1,260 acre-ft; Balch Afterbay, capacity, 318 acre-ft; and Haas and Balch powerplants. Diversion from Balch Afterbay to Kings River powerplant began Mar. 1, 1962. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 931 ft³/s, Feb. 13, gage height, 5.07 ft; minimum daily, 23 ft³/s, Sept. 21, 23, 27-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	41	39	34	51	67	185	339	100	44	28	24
2	88	40	34	35	64	74	236	275	94	43	28	24
3	68	71	32	34	71	76	310	292	91	43	27	24
4	59	32	32	61	72	83	215	326	88	42	27	25
5	55	30	34	53	62	228	195	332	88	41	27	24
6	53	28	39	46	53	406	215	331	99	40	27	24
7	51	33	45	44	56	249	275	297	125	39	27	24
8	50	39	39	40	56	186	332	313	113	39	27	24
9	49	40	36	40	57	169	389	309	105	38	26	24
10	48	42	34	42	75	153	432	300	85	38	26	24
11	47	41	34	43	90	123	454	268	82	37	25	24
12	52	41	35	43	98	135	440	332	80	36	26	24
13	56	40	35	46	497	166	441	264	75	36	26	24
14	45	39	34	42	239	160	486	250	72	35	26	25
15	45	40	34	41	139	146	448	265	70	34	26	25
16	44	40	33	34	97	128	456	448	75	33	27	25
17	43	41	34	39	91	125	484	252	73	32	27	25
18	43	41	33	41	82	159	467	207	69	32	26	24
19	44	43	34	40	75	126	338	178	66	33	26	24
20	43	42	36	38	72	105	355	163	64	33	26	24
21	43	40	34	39	68	115	421	163	62	33	26	23
22	43	41	35	40	70	105	456	171	61	33	26	24
23	43	41	36	42	70	108	432	152	59	33	25	23
24	42	41	37	42	64	100	425	134	61	32	25	24
25	42	42	35	43	66	106	443	128	54	32	26	24
26	41	39	34	45	61	119	460	124	51	31	26	24
27	41	40	34	50	65	135	419	120	49	30	24	23
28	41	39	34	67	66	144	417	115	48	30	25	23
29	40	39	33	57	---	147	416	111	47	29	24	23
30	40	40	32	53	---	170	428	107	45	29	25	23
31	40	---	32	49	---	190	---	102	---	29	25	---
TOTAL	1505	1206	1082	1363	2627	4503	11470	7168	2251	1089	808	719
MEAN	48.5	40.2	34.9	44.0	93.8	145	382	231	75.0	35.1	26.1	24.0
MAX	88	71	45	67	497	406	486	448	125	44	28	25
MIN	40	28	32	34	51	67	185	102	45	29	24	23
AC-FT	2990	2390	2150	2700	5210	8930	22750	14220	4460	2160	1600	1430
CAL YR 1986	TOTAL	230155	MEAN 631	MAX 5850	MIN 28	AC-FT 456500						
WTR YR 1987	TOTAL	35791	MEAN 98.1	MAX 497	MIN 23	AC-FT 70990						

TULARE LAKE BASIN

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

LOCATION.--Lat 36°52'29", long 119°08'27", in SW 1/4 NE 1/4 sec.21, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, on right bank 0.8 mi downstream from North Fork, 2.4 mi southwest of Balch Camp, and 8.5 mi southeast of Trimmer.
DRAINAGE AREA.--1,342 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1951 to current year. Prior to January 1952 monthly discharge only, published in WSP 1735. Published as Kings River below North Fork, October 1951 to September 1965. Records for 1962 to 1984 include flow diverted to Kings River powerplant.
REVISED RECORDS.--WSP 1930: Drainage area. WDR CA-72-2: Adjusted data for 1971.
GAGE.--Water-stage recorder. Datum of gage is 942.42 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).
REMARKS.--No estimated daily discharges. Records good. Flow regulated by Courtright and Wishon Reservoirs (stations 11214550 and 11214800). This station measures inflow to Pine Flat Lake. See schematic diagram of Kings River basin. For records of combined discharge of river and powerplant, see following page.
COOPERATION.--Records of diversion to Kings River powerplant and contents for Courtright and Wishon Reservoirs were provided by Pacific Gas & Electric Co.
AVERAGE DISCHARGE (adjusted for diversion to Kings River powerplant and change in contents in Wishon and Courtright Reservoirs).--36 years, 2,347 ft³/s, 1,700,000 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 85,200 ft³/s, Dec. 23, 1955, gage height, 23.08 ft, from rating curve extended above 22,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 86 ft³/s, Oct. 1, 1977.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 19, 1950, reached a stage of 21.6 ft from floodmarks, discharge, 74,200 ft³/s.
EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 6,620 ft³/s, May 15, gage height, 8.27 ft; minimum daily, 150 ft³/s, Sept. 30. Combined river and powerplant: Maximum daily discharge, 4,790 ft³/s, May 16; minimum daily, 157 ft³/s, Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	559	294	229	210	255	339	743	2700	2370	941	305	196
2	604	282	295	214	265	345	871	2140	2560	923	299	197
3	558	310	402	214	280	337	1160	2200	2550	883	298	218
4	507	266	265	299	281	361	991	2650	2520	847	304	213
5	480	260	262	290	266	665	935	3110	2470	808	313	208
6	462	257	242	258	255	1230	944	3260	2420	773	316	202
7	453	256	257	249	257	930	1040	3130	2480	753	314	197
8	450	253	244	242	257	766	1170	3760	2300	748	316	195
9	451	252	232	227	260	704	1340	3730	2150	751	314	191
10	447	258	231	230	294	640	1640	3570	2070	741	307	187
11	437	255	227	244	325	565	1880	3530	2140	729	300	185
12	437	254	234	257	342	561	1890	3600	2010	727	295	183
13	429	252	233	263	1600	634	1940	3940	2070	716	298	184
14	401	248	231	252	875	625	2200	4340	2100	697	298	185
15	384	246	226	229	556	702	2200	4300	2110	656	288	183
16	370	245	221	211	477	630	2360	4620	1730	649	281	178
17	360	248	225	204	443	642	2660	3650	1510	620	264	175
18	362	257	223	218	416	876	2810	3100	1430	565	254	172
19	360	307	225	234	386	632	2190	2960	1410	499	248	169
20	352	283	233	222	373	554	2030	2560	1410	452	244	166
21	345	273	226	222	370	605	2240	2320	1420	408	240	164
22	338	269	223	227	371	560	2560	2180	1440	375	235	161
23	327	259	229	231	367	574	2770	2020	1310	351	228	159
24	319	258	228	229	349	550	2650	1900	1240	335	222	159
25	315	257	222	231	348	542	2970	1710	1240	326	218	160
26	310	245	221	230	333	556	2970	1600	1240	315	214	160
27	305	240	219	235	337	579	3040	1470	1200	309	208	157
28	303	239	215	314	339	595	3100	1420	1130	306	205	152
29	300	240	211	282	---	606	3720	1490	1070	309	202	152
30	299	235	208	264	---	656	3730	1580	982	312	201	150
31	299	---	206	256	---	725	---	1880	---	311	199	---
TOTAL	12323	7798	7345	7488	11277	19286	62744	86420	54082	18135	8228	5358
MEAN	398	260	237	242	403	622	2091	2788	1803	585	265	179
MAX	604	310	402	314	1600	1230	3730	4620	2560	941	316	218
MIN	299	235	206	204	255	337	743	1420	982	306	199	150
AC-FT	24440	15470	14570	14850	22370	38250	124500	171400	107300	35970	16320	10630
MEAN a	411	278	245	292	476	802	2938	3767	2039	564	237	151
AC-FT a	25270	16540	15060	17950	26440	49310	174800	231600	121300	34680	14570	8990

CAL YR 1986 TOTAL 1274711 MEAN 3492 MAX 17100 MIN 206 AC-FT 2528000 MEAN a 4099 AC-FT a 2968000
WTR YR 1987 TOTAL 300484 MEAN 823 MAX 4620 MIN 150 AC-FT 596000 MEAN a 1017 AC-FT a 736300

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

TULARE LAKE BASIN

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

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF KINGS RIVER BELOW NORTH FORK
AND KINGS RIVER POWERPLANT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1320	716	701	210	255	339	851	2870	2600	1070	608	765
2	1340	692	663	296	265	400	1020	2220	2900	1280	600	689
3	1280	443	792	458	280	424	1310	2340	2830	1180	859	873
4	1000	266	661	389	281	575	1180	2800	2740	847	870	720
5	753	260	655	395	266	914	935	3330	2590	808	864	289
6	1090	257	301	631	255	1340	1050	3500	2510	1190	853	202
7	769	354	408	436	257	1090	1140	3280	2540	1240	823	247
8	1110	537	635	316	257	821	1330	3940	2430	1250	392	609
9	1150	474	672	287	315	791	1450	3830	2200	1240	314	761
10	1130	764	625	370	294	740	1820	3720	2230	1050	845	653
11	679	720	564	339	325	630	2020	3700	2210	729	792	564
12	515	703	626	399	394	712	2070	3820	2300	727	765	433
13	1000	715	290	349	2110	713	2080	4260	2130	1190	782	426
14	1040	813	231	360	991	830	2330	4580	2180	1170	846	590
15	970	482	589	477	625	923	2340	4370	2180	1100	611	688
16	997	478	662	546	477	724	2540	4790	1880	1110	467	743
17	974	719	598	312	443	789	2830	3790	1640	1130	842	606
18	362	716	566	218	416	948	2980	3100	1490	565	805	733
19	447	727	625	329	444	707	2290	3040	1470	499	893	519
20	920	756	288	319	373	672	2190	2660	1460	870	888	435
21	1080	749	383	450	370	605	2390	2440	1480	904	938	653
22	994	356	437	464	371	560	2700	2350	1740	846	468	663
23	970	315	403	358	417	645	2910	2020	1590	794	435	581
24	977	721	334	326	436	550	2760	1990	1520	648	661	640
25	707	612	222	292	418	617	3110	1800	1710	382	605	409
26	374	633	221	285	407	696	3140	1680	1570	370	641	160
27	925	240	282	330	392	660	3230	1540	1200	704	657	157
28	882	485	215	410	440	701	3200	1520	1130	756	903	435
29	928	557	310	376	---	716	3880	1570	1450	754	606	568
30	911	326	262	264	---	793	3860	1700	1520	789	428	513
31	915	---	287	618	---	796	---	1880	---	805	757	---
TOTAL	28509	16586	14508	11609	12574	22421	66936	90430	59420	27997	21818	16324
MEAN	920	553	468	374	449	723	2231	2917	1981	903	704	544
MAX	1340	813	792	631	2110	1340	3880	4790	2900	1280	938	873
MIN	362	240	215	210	255	339	851	1520	1130	370	314	157
AC-FT	56550	32900	28780	23030	24940	44470	132800	179400	117900	55530	43280	32380
CAL YR 1986	TOTAL	1494548	MEAN	4095	MAX	18000	MIN	215	AC-FT	2964000		
WTR YR 1987	TOTAL	389132	MEAN	1066	MAX	4790	MIN	157	AC-FT	771800		

TULARE LAKE BASIN

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

WATER-QUALITY RECORDS

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

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

BIOLOGICAL DATA: Water years 1978-81.

WATER TEMPERATURE: Water years 1967 to current year.

SEDIMENT DATA: Water years 1978 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1966 to current year.

INSTRUMENTATION.--Temperature recorder since October 1966.

REMARKS.--Quality of water samples are obtained at the gaging station upstream from the powerplant. Temperature recorder located 1 mi downstream from gaging station. Temperature subject to fluctuation because of power-plant operation upstream. Temperature sensor inundated by Pine Flat Lake from Apr. 30 to June 6 when lake elevation exceeded 903.0 ft. Interruption of record was due to malfunction of recording instruments.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 26.5 °C, Sept. 2, 1977; minimum recorded, 0.0 °C on several days in 1966 and 1967.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 24.0 °C, Aug. 4; minimum recorded, 1.0 °C, Jan. 17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV												
20...	1315	287	53	7.5	11.5	745	0.40	11.0	102	<1	K3	18
JAN												
12...	1145	263	56	7.4	3.5	750	0.20	13.0	99	K1	K1	19
MAR												
11...	1245	568	44	7.4	10.5	750	0.50	11.0	100	<1	K4	16
MAY												
22...	1230	2090	19	7.2	13.0	745	0.70	10.4	101	K3	K8	7
JUL												
15...	1045	588	31	7.5	21.5	740	0.50	8.6	100	K3	K5	10
SEP												
23...	1400	155	51	8.0	20.0	745	0.30	10.2	115	K1	K4	18

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	CAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L CACO3)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3
NOV											
20...	0	5.8	0.80	3.6	29	0.4	1.0	26	0	21	22
JAN											
12...	0	6.1	0.80	3.9	30	0.4	1.0	30	0	25	24
MAR											
11...	0	5.3	0.70	3.2	29	0.4	1.0	23	0	19	20
MAY											
22...	0	2.4	0.30	1.3	27	0.2	0.40	9	0	8	9
JUL											
15...	0	3.3	0.33	1.9	28	0.3	0.70	14	0	11	12
SEP											
23...	0	5.8	0.75	3.6	29	0.4	1.1	23	0	19	20

See footnotes at end of table.

TULARE LAKE BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 20...	4.0	2.0	0.10	12	38	43	0.05	<0.010	<0.100	<0.010	<0.010	<0.36
JAN 12...	4.3	2.4	<0.10	16	48	49	0.06	<0.010	<0.100	<0.010	<0.010	0.40
MAR 11...	4.0	1.5	<0.10	12	31	40	0.04	<0.010	<0.100	0.020	0.020	0.29
MAY 22...	5.0	--	<0.10	6.2	8	--	--	<0.010	<0.100	<0.010	<0.010	0.70
JUL 15...	2.8	3.0	<0.10	6.1	17	25	0.02	<0.010	<0.100	<0.010	0.020	0.30
SEP 23...	4.6	1.8	0.10	9.4	37	39	0.05	<0.010	<0.100	<0.010	<0.010	<0.20

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 20...	0.010	<0.010	<0.010	20	1	19	<0.5	<1	2	<3	<1	18
JAN 12...	<0.010	0.010	<0.010	--	--	--	--	--	--	--	--	--
MAR 11...	0.010	0.010	<0.010	40	<1	13	<0.5	<1	2	<3	1	21
MAY 22...	0.010	<0.010	<0.010	30	<1	8	<0.5	<1	<1	<3	<1	12
JUL 15...	0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
SEP 23...	<0.010	<0.010	<0.010	10	1	14	<0.5	<1	<1	<3	<1	11

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 20...	<5	4	<1	<0.1	<10	1	<1	<1	40	<6	17
JAN 12...	--	--	--	--	--	--	--	--	--	--	--
MAR 11...	<5	<4	4	<0.1	<10	<1	<1	<1	38	<6	16
MAY 22...	<5	<4	1	<0.1	<10	<1	<1	<1	16	<6	29
JUL 15...	--	--	--	--	--	--	--	--	--	--	--
SEP 23...	<5	<4	2	<0.1	<10	<1	<1	<1	37	<6	7

K Results based on colony count outside the acceptable range (non-ideal colony count).
 < Actual value is known to be less than the value shown.

TULARE LAKE BASIN

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

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDED (MG/L)
NOV									
20...*	1305	27.0	53	7.5	11.5	745	11.1	104	--
20...*	1310	42.0	53	7.4	11.5	745	11.1	104	--
20...*	1316	57.0	53	7.5	11.5	745	11.0	103	--
20...*	1320	84.0	53	7.4	11.5	745	11.0	103	--
20...*	1325	126	53	7.4	11.5	745	11.0	103	--
SEP									
23...*	1350	32.0	51	7.9	20.0	745	--	--	1
23...*	1354	54.0	51	7.9	20.0	745	--	--	1
23...*	1358	71.0	51	7.9	20.0	745	--	--	1
23...*	1402	93.0	52	8.0	20.0	745	--	--	1
23...*	1406	112	50	8.0	20.0	745	--	--	1

* Instantaneous streamflow at the time of cross-sectional measurements: Nov. 20, 287 ft³/s; Sep. 23, 155 ft³/s.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

TULARE LAKE BASIN

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

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
JAN					
12....	1145	263	3.5	1	0.71
MAR					
11...	1245	568	10.5	7	11
MAY					
22...	1230	2090	13.0	10	56
JUL					
15...	1045	588	21.5	2	3.2
SEP					
23...	1400	155	20.0	1	0.42

TULARE LAKE BASIN

11221000 PINE FLAT LAKE NEAR PIEDRA, CA

LOCATION.--Lat 36°49'58", long 119°19'29", in SE 1/4 NE 1/4 sec.2, T.13 S., R.24 E., Fresno County, Hydrologic Unit 18030010, near center of Pine Flat Dam on Kings River, 1.9 mi upstream from Mill Creek, 3.5 mi northeast of Piedra, and 16 mi northeast of Sanger.

DRAINAGE AREA.--1,545 mi².

PERIOD OF RECORD.--October 1951 to current year. Prior to October 1970, published as "Pine Flat Reservoir."

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Apr. 8, 1952, nonrecording mercury gage on dam at same datum.

REMARKS.--Reservoir is formed by gravity-type concrete dam; regulation of discharge from reservoir began Dec. 4, 1951. Total capacity, 1,001,055 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 were provided by U.S. Army Corps of Engineers; not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,009,000 acre-ft, July 15, 1967, June 8, 9, 1974, elevation, 952.76 ft; minimum since gross pool elevation first obtained, 86,339 acre-ft, Sept. 12, 1977, elevation, 691.29 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 791,650 acre-ft, May 22, elevation, 913.88 ft; minimum, 107,927 acre-ft, Aug. 30, elevation, 717.02 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by U.S. Army Corps of Engineers)

690	64,528	740	154,021	820	383,196	920	823,775
700	74,248	760	201,186	840	457,481	950	992,146
710	85,542	780	255,055	860	538,559	960	1,052,445
720	113,424	800	315,716	890	673,065		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	562266	534721	564991	590660	613395	631475	613440	743957	779609	488453	169774	108474
2	563476	535985	566248	591148	613847	628999	615430	745713	773859	476438	164281	108456
3	564514	536743	567809	592302	614299	626255	618468	747471	767469	464930	159621	109096
4	564601	537166	569199	593678	614842	623699	620921	749533	759840	453412	156597	109609
5	563952	537545	570461	594745	615430	622697	622788	752456	751446	441776	153801	109499
6	563952	537967	571026	596079	615838	623927	624931	755434	742704	431047	151401	108821
7	562742	538390	571853	596971	616201	624292	627215	757711	733671	419563	148999	108365
8	561619	539319	573030	597594	616653	623745	630053	760702	724499	408350	145806	108694
9	560411	540080	574296	597996	617198	622925	632991	763446	715049	395885	142040	109811
10	559031	541562	575520	598665	617741	622059	636626	765889	705616	383054	139322	110768
11	556708	542833	576569	599246	618649	621376	640734	768183	695961	369955	136796	111545
12	553919	544149	577664	600004	619830	620649	644949	770583	686571	356340	133907	112008
13	552207	545467	578190	600585	626989	620330	649180	773654	676202	344098	130889	112324
14	550710	546999	578584	601256	629779	620421	654033	777553	665634	330305	128226	112808
15	549173	547893	579729	602151	631153	621058	658858	780845	655015	321412	125709	113835
16	547467	548746	580954	603225	632210	620875	663607	785384	644486	312234	122712	115055
17	545722	550069	582141	603674	633267	620467	669084	787867	633864	302944	120735	116092
18	542452	551521	583197	603897	634094	620012	675156	789213	623380	293648	119004	116793
19	539319	552934	584430	604526	635014	618967	679663	790457	613259	284169	117649	118144
20	537292	554477	584827	604975	635659	617741	683935	790976	603450	275929	116225	118603
21	536027	555935	585532	605782	636211	616880	688589	791390	593944	267933	115431	119407
22	534595	556623	586282	606635	636856	615974	693788	791650	585223	260409	113779	120407
23	533124	557095	586989	607354	637456	615158	699350	791390	575739	252343	111489	121315
24	531738	558472	587519	607939	637733	614480	704642	790976	565987	243684	109903	122343
25	531444	559635	587917	608434	636948	613983	710739	790353	555978	234061	109261	123140
26	530396	560799	588271	609065	635842	613576	716864	789628	545382	223896	108894	123238
27	530437	561230	588713	609514	634553	613078	723166	788591	534091	213942	108401	123316
28	530563	562179	589067	610416	633449	612627	728755	787349	522797	203491	108675	123785
29	530815	563260	589509	611092	---	611995	734915	786211	511544	198335	108566	124804
30	531528	563779	589952	611589	---	611408	740502	785436	500621	183898	107927	125453
31	533124	---	590395	612763	---	611679	---	784764	---	175855	108292	---
MAX	564601	563779	590395	612763	637733	631475	740502	791650	779609	488453	169774	125453
MIN	530396	534721	564991	590660	613395	611408	613440	743957	500621	175855	107927	108365
a	858.71	865.90	871.98	876.98	881.52	876.74	903.84	912.55	850.85	749.61	717.22	726.27
b	-27933	+30655	+26616	+22368	+20686	-21770	+128823	+44262	-284143	-324766	-67563	+17161
c	1677	917	404	363	524	813	1856	2674	3310	2468	1584	1157

CAL YR 1986 b +221970

WTR YR 1987 b -435604

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, published as provided; not reviewed by U.S. Geological Survey.

TULARE LAKE BASIN

11221500 KINGS RIVER BELOW PINE FLAT DAM, CA

LOCATION.--Lat 36°49'50", long 119°20'07", in SW 1/4 NW 1/4 sec.2, T.13 S., R.24 E., Fresno County, Hydrologic Unit 18030012, on right bank 0.6 mi downstream from Pine Flat Dam and 2.9 mi northeast of Piedra.

DRAINAGE AREA.--1,545 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1953 to current year. Monthly and yearly discharges only and adjusted flow for some periods published in WSP 1735.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder and concrete control since Sept. 1, 1956. Datum of gage is 556.97 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1956, at site 0.2 mi downstream at datum 3.48 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Pine Flat Lake (station 11221000). 0.6 mi upstream and Wishon and Courtright Reservoirs (stations 11214550 and 11214800). See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by U.S. Army Corps of Engineers and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE (adjusted for change in contents and evaporation).--34 years, 2,443 ft³/s, 1,770,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft³/s, June 3, 4, 8, 9, 1969, gage height, 10.73 ft; minimum daily, 1.1 ft³/s, Feb. 26, 27, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,810 ft³/s, July 14, gage height, 7.83 ft; minimum daily, 34 ft³/s, Jan. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	814	71	50	52	69	1340	61	1230	5230	7150	3450	699
2	807	71	52	52	68	1640	51	1350	5740	7120	3210	704
3	813	71	54	53	60	1860	47	1460	6120	6880	2980	625
4	1010	73	54	45	47	1910	38	1770	6590	6540	2410	522
5	1070	72	54	35	50	1610	51	1920	6820	6520	2210	449
6	1100	72	54	34	52	1080	54	1990	6900	6420	2060	506
7	1400	72	54	38	52	1130	46	2150	7120	6740	2020	403
8	1750	70	54	43	52	1190	50	2370	7120	7090	1970	336
9	1850	70	54	44	52	1290	52	2430	6900	7510	2110	290
10	1900	70	54	48	53	1240	55	2470	6980	7600	2050	245
11	1940	70	54	48	50	1060	59	2490	7060	7580	2030	231
12	1950	70	54	48	45	1070	59	2560	7010	7490	2180	243
13	1920	73	54	48	39	1060	60	2640	7330	7590	2220	297
14	1850	72	54	48	37	1010	60	2590	7520	7640	2150	312
15	1850	72	55	48	36	846	70	2520	7550	5860	1850	213
16	1850	61	52	48	37	988	86	2480	7390	5720	1840	197
17	1960	50	50	48	51	1090	91	2510	6930	5440	1780	197
18	2060	47	51	48	75	1210	95	2460	6700	5170	1660	197
19	2040	43	52	48	78	1310	98	2360	6390	5140	1620	197
20	1980	44	52	49	70	1340	98	2300	6240	4950	1610	197
21	1820	44	52	52	110	1260	110	2180	6190	4740	1360	200
22	1760	44	52	52	111	1120	129	2100	6070	4600	1380	203
23	1760	44	52	53	111	1130	195	2040	6220	4770	1510	180
24	1720	44	52	52	350	998	181	2040	6540	4920	1330	147
25	872	44	52	52	796	946	110	1990	6750	5180	893	118
26	874	44	52	52	955	949	121	1920	6800	5350	824	106
27	862	44	52	52	1010	948	144	1960	6820	5570	882	110
28	852	44	52	51	1020	998	314	2000	6800	5910	815	125
29	826	44	52	46	---	1070	792	1990	6880	5580	748	134
30	613	45	52	44	---	1100	1130	1990	7140	5610	679	136
31	115	---	52	61	---	688	---	2020	---	4800	626	---
TOTAL	43988	1755	1634	1492	5536	36481	4507	66280	201850	189180	54457	8519
MEAN	1419	58.5	52.7	48.1	198	1177	150	2138	6728	6103	1757	284
MAX	2060	73	55	61	1020	1910	1130	2640	7550	7640	3450	704
MIN	115	43	50	34	36	688	38	1230	5230	4600	626	106
AC-FT	87250	3480	3240	2960	10980	72360	8940	131500	400400	375200	108000	16900
MEAN a	484	315	269	335	607	915	3053	3751	2067	521	217	199
AC-FT a	29760	18740	16540	20600	33710	56260	181700	230600	123000	32040	13340	11840

CAL YR 1986	TOTAL	1447940	MEAN	3967	MAX	12000	MIN	27	AC-FT	2872000	MEAN	a 4311	AC-FT a	3121000
WTR YR 1987	TOTAL	615679	MEAN	1687	MAX	7640	MIN	34	AC-FT	1221000	MEAN	a 1061	AC-FT a	768100

a Adjusted for change in contents in Wishon and Courtright Reservoirs, Pine Flat Lake, and evaporation from Pine Flat Lake.

TULARE LAKE BASIN

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

WATER-QUALITY RECORDS

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

CHEMICAL DATA: Water years 1956-66.

WATER TEMPERATURE: Water years 1970 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1969 to current year.

INSTRUMENTATION.--Temperature recorder since October 1969.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1970-87): Maximum recorded, 25.0 °C, Sept. 21, 1976, and Sept. 4, 5, 1985;
minimum recorded, 6.5 °C several days during January 1982 and Jan. 18, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 22.5 °C, Aug. 25, Sept. 10, 11, 16, and Sept. 24-27; minimum recorded, 6.5 °C, Jan. 18.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

TULARE LAKE BASIN

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

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

TULARE LAKE BASIN

11221700 MILL CREEK NEAR PIEDRA, CA

LOCATION.--Lat 36°49'07", long 119°20'27", in NE 1/4 NE 1/4 sec.10, T.13 S., R.24 E., Fresno County, Hydrologic Unit 18030008, on left bank 150 ft upstream from road bridge, 0.7 mi upstream from mouth, and 2.3 mi east of Piedra.

DRAINAGE AREA.--127 mi².

PERIOD OF RECORD.--October 1957 to current year. November 1938 to September 1957 in reports of Kings River Water Association.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 550 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 14, 1958, at site 150 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 20-29, Jan. 31 to Feb. 1, Apr. 18-24, May 6-18, May 24 to June 9. Records good except those for estimated daily discharge, which are fair. Some small diversions above station for irrigation. See schematic diagram of Kings River basin.

AVERAGE DISCHARGE.--30 years, 47.1 ft³/s, 34,120 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s, Dec. 6, 1966, gage height, 9.53 ft in gage well, 10.2 ft from floodmarks; maximum gage height, 9.65 ft in gage well (backwater from debris), Jan. 19, 1969; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1645	*827	*4.17

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	2.9	5.0	6.4	10	9.7	20	7.0	.50			
2	0	3.0	5.0	6.2	11	11	19	7.0	.26			
3	0	3.2	5.0	6.7	11	10	33	6.9	.16			
4	0	3.2	5.0	21	11	9.8	39	6.4	.09			
5	0	3.2	5.3	27	10	11	29	6.4	.06			
6	0	3.2	5.5	19	9.8	30	26	5.9	.03			
7	0	3.2	7.0	14	9.8	37	23	5.5	.02			
8	0	3.2	7.4	12	9.6	30	21	5.0	.01			
9	0	3.5	6.6	11	9.4	25	20	4.6	0			
10	0	3.5	6.1	11	9.8	21	18	4.2	0			
11	0	3.8	5.9	11	11	18	17	4.2	0			
12	0	3.9	5.9	10	13	16	17	3.9	0			
13	0	3.9	5.9	9.8	304	22	16	3.5	0			
14	0	3.9	5.9	9.8	141	30	15	3.2	0			
15	0	3.9	5.9	9.8	48	52	14	3.2	0			
16	0	3.9	5.9	9.4	32	44	13	2.6	0			
17	0	3.9	5.7	8.8	24	34	11	2.3	0			
18	.11	4.0	5.5	8.6	20	30	10	2.0	0			
19	1.2	4.3	6.4	8.2	18	28	10	1.7	0			
20	1.6	4.8	6.6	8.3	16	25	9.6	1.7	0			
21	1.8	5.0	6.6	8.0	14	28	9.1	2.0	0			
22	2.0	4.6	7.6	8.0	13	34	8.7	2.3	0			
23	2.0	4.6	7.2	8.0	13	29	8.3	2.3	0			
24	2.1	4.6	7.2	8.6	13	30	7.9	2.0	0			
25	2.3	4.6	7.0	8.4	13	31	7.5	1.8	0			
26	2.3	4.6	7.2	8.2	12	29	7.5	2.0	0			
27	2.3	4.6	7.2	8.2	12	27	7.0	2.3	0			
28	2.6	4.6	7.0	12	11	26	7.0	2.4	0			
29	2.5	4.8	6.6	14	---	25	7.0	2.1	0			
30	2.5	5.0	6.4	11	---	22	7.0	1.3	0			
31	2.6	---	6.4	10	---	21	---	.76	---			---
TOTAL	27.91	119.4	193.9	332.4	829.4	795.5	457.6	108.46	1.13	0	0	0
MEAN	.90	3.98	6.25	10.7	29.6	25.7	15.3	3.50	.038	0	0	0
MAX	2.6	5.0	7.6	27	304	52	39	7.0	.50	0	0	0
MIN	0	2.9	5.0	6.2	9.4	9.7	7.0	.76	0	0	0	0
AC-FT	55	237	385	659	1650	1580	908	215	2.2	0	0	0
CAL YR 1986	TOTAL	30924.96	MEAN	84.7	MAX	2620	MIN	0	AC-FT	61340		
WTR YR 1987	TOTAL	2865.70	MEAN	7.85	MAX	304	MIN	0	AC-FT	5680		

TULARE LAKE BASIN

11224500 LOS GATOS CREEK ABOVE NUNEZ CANYON, NEAR COALINGA, CA

LOCATION.--Lat 36°12'53", long 120°28'11", in NW 1/4 SE 1/4 sec.5, T.20 S., R.14 E., Fresno County, Hydrologic Unit 18030012, on left bank 50 ft downstream from highway bridge, 1.1 mi upstream from Nunez Canyon, 3.0 mi downstream from White Creek, and 8.1 mi northwest of Coalinga.

DRAINAGE AREA.--95.8 mi².

PERIOD OF RECORD.--May 1945 to current year. Prior to October 1949 monthly discharge only, published in WSP 1315-A.

REVISED RECORDS.--WSP 1215: 1950. WSP 1735: 1952(M), 1956(M). WSP 1930: Drainage area. WDR CA-72-2: 1971(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,065.2 ft above National Geodetic Vertical Datum of 1929. Aug. 2, 1959, to Jan. 11, 1985, at site on right bank at datum 2.00 ft higher. Prior to Aug. 2, 1959, at site 100 ft downstream on right bank at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Minor diversion for irrigation and stock ponds.

AVERAGE DISCHARGE.--42 years, 5.87 ft³/s, 4,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (SINCE 1950).--Maximum discharge, 4,360 ft³/s, Feb. 24, 1969, gage height, 12.34 ft, present datum, in gage well, 13.30 ft from floodmarks, from rating curve extended above 800 ft³/s on basis of slope-area measurement at gage height 12.34 ft; maximum gage height, 12.65 ft in gage well, 13.95 ft from floodmarks, Jan. 16, 1978; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 6	0100	*149	*4.36

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.45	.47	.19	.51	.67	.32	.13			
2		0	.45	.48	.19	.50	.67	.29	.12			
3		0	.45	.48	.20	.49	.69	.28	.11			
4		0	.45	1.0	.20	.47	.73	.27	.11			
5		0	.52	.68	.20	13	.72	.25	.12			
6		0	.57	.73	.20	50	.69	.23	.13			
7		0	.55	.75	.20	7.5	.68	.24	.12			
8		.01	.53	.64	.20	2.7	.66	.25	.11			
9		.12	.53	.60	.20	1.8	.65	.29	.10			
10		.17	.53	.59	.23	1.4	.58	.30	.07			
11		.20	.53	.60	.25	1.2	.58	.28	.05			
12		.21	.53	.53	.27	1.1	.57	.26	.04			
13		.22	.53	.46	.41	1.1	.56	.24	.01			
14		.24	.53	.39	1.1	1.0	.53	.22	0			
15		.25	.51	.34	1.4	1.2	.52	.21	0			
16		.28	.50	.29	1.3	1.0	.50	.20	0			
17		.29	.49	.26	1.1	.96	.47	.18	0			
18		.33	.47	.23	1.0	.90	.46	.19	0			
19		.34	.49	.21	.88	.91	.46	.19	0			
20		.35	.52	.19	.78	.89	.45	.19	0			
21		.35	.52	.18	.70	1.0	.43	.20	0			
22		.34	.52	.17	.65	1.1	.41	.19	0			
23		.38	.51	.16	.63	.98	.39	.18	0			
24		.44	.51	.17	.61	.93	.37	.16	0			
25		.44	.51	.17	.60	.88	.34	.16	0			
26		.44	.51	.18	.58	.82	.33	.16	0			
27		.43	.51	.18	.55	.78	.32	.16	0			
28		.44	.49	.18	.53	.75	.31	.15	0			
29		.44	.50	.18	---	.72	.31	.15	0			
30		.45	.51	.18	---	.68	.32	.15	0			
31		---	.50	.19	---	.69	---	.15	---			
TOTAL	0	7.16	15.72	11.86	15.35	97.96	15.37	6.69	1.22	0	0	0
MEAN	0	.24	.51	.38	.55	3.16	.51	.22	.041	0	0	0
MAX	0	.45	.57	1.0	1.4	50	.73	.32	.13	0	0	0
MIN	0	0	.45	.16	.19	.47	.31	.15	0	0	0	0
AC-FT	0	14	31	24	30	194	30	13	2.4	0	0	0
CAL YR 1986	TOTAL	4292.98	MEAN	11.8	MAX	523	MIN	0	AC-FT	8520		
WTR YR 1987	TOTAL	171.33	MEAN	.47	MAX	50	MIN	0	AC-FT	340		

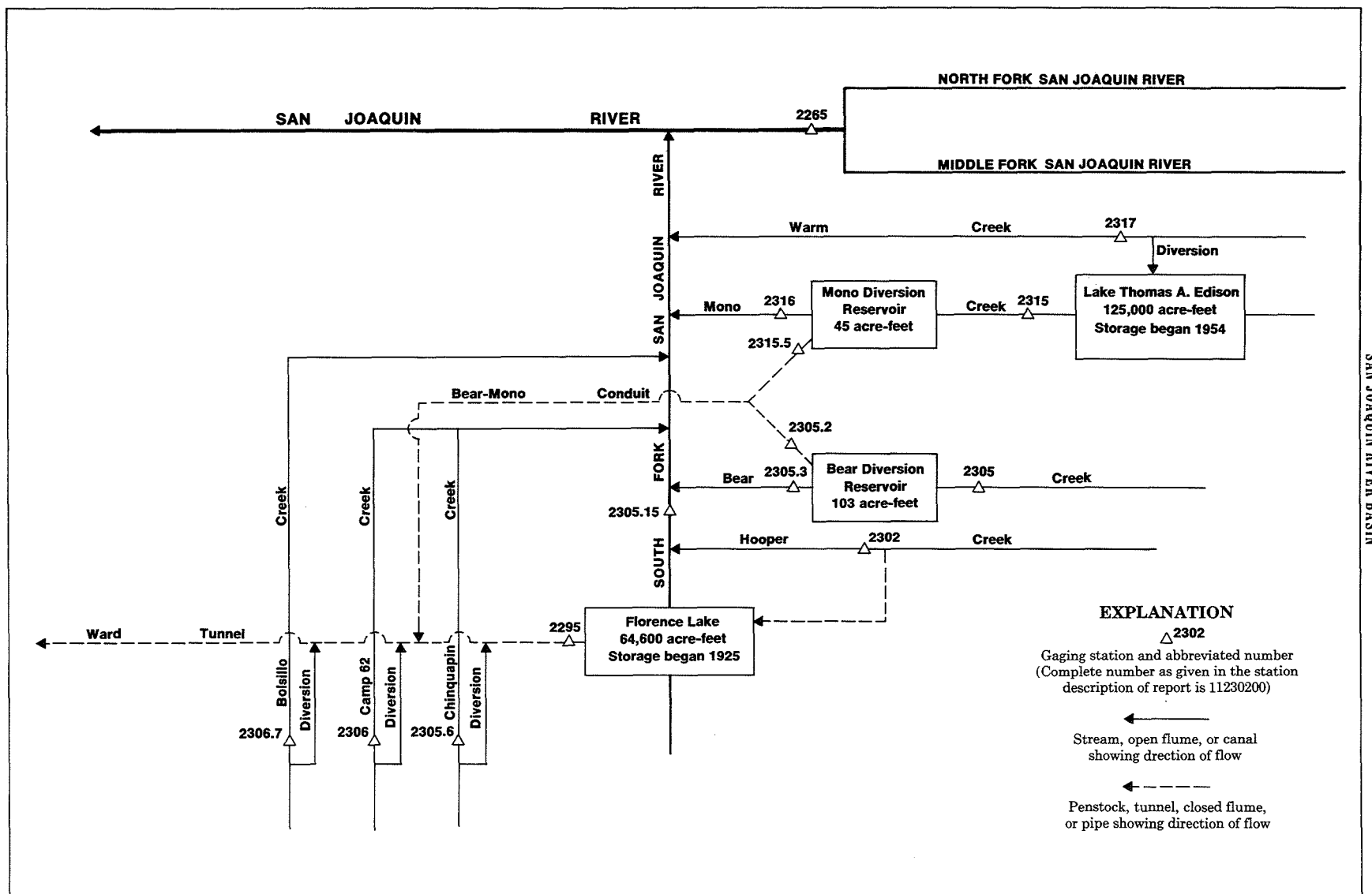


Figure 32. - Schematic diagram showing diversions and storage in upper San Joaquin River basin.

SAN JOAQUIN RIVER BASIN

11226500 SAN JOAQUIN RIVER AT MILLER CROSSING, CA

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

DRAINAGE AREA.--249 mi².

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

REVISED RECORDS.--WSP 1930: Drainage area.

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

REMARKS.--Estimated daily discharges: Nov. 6 to Jan. 28, Sept. 3-24. No regulation or diversion above station. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--43 years, 622 ft³/s, 450,600 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR:--Maximum discharge, 4,000 ft³/s, May 15, gage height, 15.92 ft; minimum daily, 46 ft³/s, Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172	77	60	49	74	103	261	1010	929	305	106	68
2	150	72	66	50	74	111	345	798	931	292	105	70
3	136	74	75	52	75	117	411	910	912	268	108	72
4	132	74	78	49	72	136	309	1160	931	252	114	74
5	126	72	71	48	73	313	315	1370	920	240	120	73
6	126	71	63	56	74	333	345	1430	873	233	123	71
7	127	72	57	60	77	233	428	1360	1180	231	124	69
8	127	72	55	62	78	216	526	1410	963	233	122	68
9	127	72	57	67	79	191	639	1620	775	231	118	67
10	124	73	58	75	93	176	710	1510	763	229	114	66
11	122	71	61	84	113	152	731	1470	761	224	113	65
12	116	70	61	86	113	159	706	1530	698	220	115	64
13	109	68	60	79	168	173	794	1440	695	218	114	63
14	105	66	56	68	144	176	900	1500	650	209	109	62
15	102	65	53	63	150	192	907	1840	649	199	103	60
16	100	67	54	56	137	205	1010	1890	489	197	92	58
17	98	71	53	54	134	212	1070	1500	444	184	88	56
18	95	72	56	54	126	227	935	1260	432	158	89	55
19	92	73	53	55	117	174	643	1140	435	136	91	53
20	91	69	51	56	114	148	631	1010	440	122	90	51
21	89	67	49	55	108	150	787	896	425	111	86	49
22	88	65	49	54	105	148	998	759	412	105	81	48
23	86	62	48	54	103	155	1040	703	377	100	78	48
24	85	61	48	55	103	148	1100	649	365	100	74	47
25	84	60	49	56	116	143	1170	569	370	102	72	47
26	84	60	50	60	103	142	1200	520	365	106	68	46
27	83	60	49	69	97	159	1300	492	360	106	66	47
28	82	59	48	81	100	163	1380	534	342	108	67	48
29	82	59	47	78	---	161	1630	583	317	112	68	49
30	82	58	47	75	---	181	1430	633	307	114	68	49
31	81	---	48	72	---	230	---	806	---	111	67	---
TOTAL	3303	2032	1730	1932	2920	5527	24651	34302	18510	5556	2953	1763
MEAN	107	67.7	55.8	62.3	104	178	822	1107	617	179	95.3	58.8
MAX	172	77	78	86	168	333	1630	1890	1180	305	124	74
MIN	81	58	47	48	72	103	261	492	307	100	66	46
AC-FT	6550	4030	3430	3830	5790	10960	48900	68040	36710	11020	5860	3500

CAL YR 1986 TOTAL 330608 MEAN 906 MAX 6090 MIN 47 AC-FT 655800
WTR YR 1987 TOTAL 105179 MEAN 288 MAX 1890 MIN 46 AC-FT 208600

SAN JOAQUIN RIVER BASIN

11229500 WARD TUNNEL INTAKE AT FLORENCE LAKE, CA

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

PERIOD OF RECORD.--April 1925 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as Florence Lake tunnel at intake 1925-36 and as Ward tunnel at intake 1937-60.

REVISED RECORDS.--WSP 1515: 1931.

GAGE.--Water-stage recorder, concrete control, and Venturi meter. Datum of gage is 7,213.89 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

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

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--62 years, 282 ft³/s, 204,300 acre-ft/yr.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	369	260	7.0	3.4	13	22	71	400	297	320	388	9.5
2	370	258	7.4	3.8	13	23	89	379	205	493	386	140
3	368	257	7.8	4.6	14	25	108	378	59	549	383	257
4	271	255	9.2	7.5	14	29	96	382	9.2	545	382	252
5	237	350	10	8.3	14	94	95	340	9.2	541	379	251
6	236	410	12	8.3	15	124	96	324	9.6	539	378	251
7	234	405	13	9.5	14	101	105	330	9.8	537	376	248
8	234	386	10	10	14	90	121	341	10	505	373	245
9	233	379	9.5	10	16	78	152	350	11	485	371	242
10	233	416	9.2	11	18	65	189	358	12	485	200	241
11	233	464	8.9	13	20	58	215	365	39	383	277	238
12	314	493	9.8	14	21	58	219	373	200	307	610	237
13	368	510	10	14	42	57	226	340	428	308	603	236
14	405	516	9.8	13	41	56	278	355	435	304	595	233
15	426	516	7.3	11	38	56	283	247	330	298	592	230
16	426	534	6.5	9.2	39	54	310	651	235	274	585	227
17	423	524	6.5	7.8	42	55	341	939	236	249	594	225
18	213	215	6.5	7.0	41	61	363	387	234	248	594	111
19	284	62	6.5	7.0	37	55	351	469	234	313	702	362
20	295	38	6.1	6.7	32	45	307	476	234	363	864	351
21	293	29	5.4	6.7	29	48	296	504	233	371	872	341
22	290	24	5.2	6.3	28	44	345	558	233	369	853	332
23	337	18	7.3	6.7	26	45	376	543	233	367	838	321
24	448	19	6.7	6.7	24	44	393	527	234	365	821	308
25	443	17	6.3	7.3	24	44	417	576	233	362	805	293
26	438	12	6.3	7.5	23	42	438	601	233	385	502	311
27	433	11	6.1	8.1	22	44	407	613	233	410	9.5	316
28	355	10	5.0	11	23	44	386	621	233	410	9.5	281
29	262	11	4.4	11	---	45	416	617	231	410	9.5	141
30	261	7.3	3.3	12	---	51	420	613	230	402	9.5	43
31	261	---	2.8	12	---	61	---	401	---	400	9.5	---
TOTAL	9993	7406.3	231.8	274.4	697	1718	7909	14358	5562.8	12297	14370.5	7273.5
MEAN	322	247	7.48	8.85	24.9	55.4	264	463	185	397	464	242
MAX	448	534	13	14	42	124	438	939	435	549	872	362
MIN	213	7.3	2.8	3.4	13	22	71	247	9.2	248	9.5	9.5
AC-FT	19820	14690	460	544	1380	3410	15690	28480	11030	24390	28500	14430
CAL YR 1986	TOTAL	131060.1	MEAN	359	MAX	1150	MIN	2.8	AC-FT	260000		
WTR YR 1987	TOTAL	82091.3	MEAN	225	MAX	939	MIN	2.8	AC-FT	162800		

SAN JOAQUIN RIVER BASIN

11229600 FLORENCE LAKE NEAR BIG CREEK, CA

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

DRAINAGE AREA.--171 mi².

PERIOD OF RECORD.--November 1925 to current year. Prior to October 1931, published in WSP 721. Maximum and minimum daily contents (water years 1926-39) summarized in WSP 881. Prior to 1960, maximum and minimum daily contents were published.

REVISED RECORDS.--WDR CA-78-3: 1977.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Lake is formed by multiple-arch concrete dam; storage began in April 1925. Usable capacity, 64,406 acre-ft between elevations 7,220.94 ft, throat of Venturi tube in Ward Tunnel intake, and 7,327.50 ft, top of spillway drum gates, NGVD. Additional storage of 168 acre-ft is not available for diversion. Water is diverted through Ward Tunnel to Huntington Lake via Portal powerplant and used for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were provided by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 65,990 acre-ft, July 3, 1932, elevation, 7,329.14 ft; minimum occurred during period of no record, Oct. 2-4, 1926, or Nov. 30 to Dec. 2, 1927.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 56,599 acre-ft, June 30, elevation, 7,319.23 ft; minimum, 1,033 acre-ft, Dec. 30, elevation, 7,230.94 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Southern California Edison Co., from table dated Aug. 26, 1926)

7,220.94	0	7,235	1,774	7,260	11,608	7,290	31,966
7,222	63	7,240	2,976	7,265	14,580	7,300	39,851
7,224	201	7,245	4,666	7,270	17,755	7,310	48,284
7,227	495	7,250	6,648	7,275	21,097	7,320	57,312
7,230	887	7,255	8,950	7,280	24,588	7,330	66,826

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32548	14710	1056	1037	1083	1119	1183	6245	32035	56553	40309	15477
2	31882	14208	1056	1037	1086	1119	1209	6304	33495	56192	39648	15288
3	31320	13699	1056	1042	1090	1119	1221	6417	35139	55510	39015	14840
4	30851	13207	1062	1052	1090	1124	1202	7007	36954	54876	38393	14391
5	30488	12507	1066	1054	1090	1285	1202	8126	38805	54208	37751	13916
6	30105	11666	1073	1052	1090	1251	1205	9343	40505	53559	37137	13446
7	29722	10889	1069	1056	1091	1219	1221	10677	42446	52888	36533	12975
8	29364	10119	1042	1056	1091	1209	1251	12536	44300	52347	35924	12507
9	28954	9368	1056	1056	1098	1188	1278	14055	45762	51816	35327	12034
10	28606	8560	1056	1057	1103	1170	1314	15470	47267	51271	35013	11564
11	28191	7680	1056	1057	1107	1161	1336	16902	48713	50887	34685	11102
12	27640	6739	1059	1057	1107	1161	1328	18749	49760	50664	33627	10644
13	26989	5776	1062	1057	1158	1159	1364	20289	50415	50433	32579	10188
14	26270	4722	1059	1057	1134	1154	1387	22917	51003	50202	31518	9725
15	25504	3635	1049	1056	1136	1156	1397	25900	51745	49971	30473	9268
16	24745	2544	1049	1056	1137	1154	1436	28213	52347	49769	29416	8808
17	23985	1556	1049	1056	1137	1159	1531	29036	52798	49530	28339	8363
18	23598	1205	1049	1057	1137	1163	1611	30360	53206	49275	27201	8107
19	23064	1132	1049	1057	1137	1134	1496	31282	53614	48871	30315	7380
20	22512	1110	1047	1057	1137	1144	1389	31844	54016	48310	24262	6683
21	21957	1102	1042	1057	1137	1144	1417	32196	54445	47710	22603	6004
22	21420	1085	1047	1057	1129	1141	1605	32265	54840	47112	20981	5323
23	20798	1085	1054	1057	1127	1141	1804	32410	55134	42246	19355	4623
24	19972	1083	1051	1057	1119	1141	2012	32372	55391	45839	17755	3929
25	19141	1076	1049	1057	1120	1136	2355	32135	55685	45190	16223	3279
26	18207	1066	1049	1057	1117	1136	2741	31738	55953	44511	15307	2615
27	17405	1066	1049	1078	1115	1136	3394	31259	56156	43785	15307	1981
28	16767	1064	1042	1083	1117	1136	4269	30752	56368	43072	15338	1423
29	16274	1066	1040	1083	---	1136	5487	30442	56497	42363	15376	1180
30	15766	1054	1033	1083	---	1144	6040	30202	56599	41650	15439	1117
31	15194	---	1034	1083	---	1170	---	30843	---	41022	15445	---
MAX	32548	14710	1073	1083	1158	1285	6040	32410	56599	56553	40309	15477
MIN	15194	1054	1033	1037	1083	1119	1183	6245	32035	41022	15307	1117
a	7265.99	7231.07	7230.95	7231.24	7231.44	7231.75	7248.54	7288.52	7319.23	7301.43	7266.39	7231.44
b	-17870	-14140	-20	+49	+34	+53	+4870	+24803	+25756	-15577	-25577	-14328

CAL YR 1986 b +175
WTR YR 1987 b -31947

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

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

LOCATION.--Lat 37°18'19", long 118°56'57", unsurveyed, T.7 S., R.28 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 80 ft downstream from diversion dam, 0.8 mi upstream from mouth, 2.5 mi north of Florence Lake, and 17.6 mi northeast of town of Big Creek.

DRAINAGE AREA.--7.22 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

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

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

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 6.1 ft³/s, Dec. 8, 1986; minimum daily, 1.8 ft³/s, Dec. 16, 1986.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.6	2.7	2.3	2.2	2.3	2.7	4.3	2.6	2.7	2.7	2.4
2	3.0	2.6	2.7	2.3	2.1	2.3	2.7	4.1	2.7	2.7	2.7	2.3
3	3.1	2.5	2.9	2.3	2.2	2.3	2.8	4.0	2.7	2.7	2.7	2.3
4	3.1	2.5	3.1	2.3	2.2	2.3	2.9	3.9	2.7	2.7	2.7	2.2
5	3.1	2.5	3.2	2.3	2.2	2.3	2.9	3.9	2.7	2.7	2.7	2.2
6	3.3	2.4	5.9	2.3	2.2	2.3	2.9	3.8	2.7	2.7	2.7	2.2
7	3.5	2.7	5.9	2.3	2.2	2.3	3.0	3.8	2.7	2.7	2.7	2.1
8	3.7	3.1	6.1	2.2	2.2	2.3	3.0	3.5	2.7	2.7	2.7	2.0
9	3.9	3.0	3.7	2.2	2.2	2.3	3.0	3.1	2.7	2.7	2.7	2.1
10	3.9	3.0	3.5	2.2	2.2	2.3	3.1	3.0	2.7	2.7	2.7	2.2
11	3.9	2.9	2.8	2.2	2.3	2.3	3.1	2.9	2.7	2.7	2.7	2.2
12	3.8	2.8	2.1	2.2	2.3	2.3	3.2	4.5	2.7	2.7	2.7	2.2
13	3.7	2.8	2.0	2.2	2.3	2.3	3.2	5.5	2.7	2.7	2.7	2.2
14	3.5	2.7	1.9	2.2	2.3	2.3	3.3	5.5	2.6	2.7	2.6	2.2
15	3.5	2.7	1.9	2.2	2.3	2.3	3.4	5.5	2.5	2.7	2.6	2.2
16	3.5	2.6	1.8	2.2	2.3	2.3	3.6	5.5	2.4	2.7	2.5	2.2
17	3.6	2.6	2.2	2.2	2.3	2.3	3.6	5.5	2.3	2.9	2.5	2.2
18	3.7	2.6	2.5	2.2	2.3	2.3	3.8	4.8	2.2	3.0	2.5	2.1
19	3.7	2.5	2.5	2.2	2.4	2.3	4.0	3.0	2.2	3.0	2.5	2.0
20	3.5	2.5	2.5	2.2	2.4	2.3	4.0	3.0	2.2	3.1	2.5	2.0
21	3.3	2.6	2.5	2.2	2.4	2.3	4.0	3.0	2.2	3.1	2.5	2.0
22	3.2	2.7	2.5	2.2	2.4	2.3	4.0	3.0	2.2	2.6	2.5	2.0
23	3.1	2.8	2.5	2.2	2.4	2.3	4.0	2.9	2.5	2.5	2.6	2.0
24	3.0	2.7	2.5	2.2	2.4	2.3	4.0	2.9	2.7	2.5	2.5	1.9
25	2.9	2.7	2.5	2.2	2.4	2.3	4.0	2.8	2.7	2.5	2.5	1.9
26	2.8	2.8	2.5	2.2	2.4	2.4	4.0	2.8	2.7	2.5	2.5	1.9
27	2.7	2.8	2.4	2.2	2.4	2.4	4.0	2.8	2.7	2.5	2.5	1.9
28	2.7	2.7	2.4	2.2	2.4	2.5	4.0	2.7	2.7	2.5	2.5	1.9
29	2.7	2.7	2.4	2.2	---	2.5	4.0	2.7	2.7	2.5	2.5	1.9
30	2.7	2.7	2.4	2.2	---	2.6	4.0	2.6	2.7	2.5	2.5	1.9
31	2.6	---	2.4	2.2	---	2.6	---	2.6	---	2.6	2.5	---
TOTAL	101.7	80.8	88.9	68.9	64.3	72.5	104.2	113.9	77.2	83.5	80.4	62.8
MEAN	3.28	2.69	2.87	2.22	2.30	2.34	3.47	3.67	2.57	2.69	2.59	2.09
MAX	3.9	3.1	6.1	2.3	2.4	2.6	4.0	5.5	2.7	3.1	2.7	2.4
MIN	2.6	2.4	1.8	2.2	2.1	2.3	2.7	2.6	2.2	2.5	2.5	1.9
AC-FT	202	160	176	137	128	144	207	226	153	166	159	125

WTR YR 1987 TOTAL 999.10 MEAN 2.74 MAX 6.1 MIN 1.8 AC-FT 1980

SAN JOAQUIN RIVER BASIN

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

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

DRAINAGE AREA.--184 mi².

PERIOD OF RECORD.--October 1978 to current year. October 1946 to September 1978, operated as a low-flow station only, in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Datum of gage is 6,949.41 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Estimated daily discharges: Periods of ice effect, Jan. 6-21, Feb. 20, 21, 24-28. Flow regulated by Florence Lake (station 11229600) 3.2 mi upstream, and Hooper Creek diversion dam (capacity less than 2 acre-ft) 0.7 mi upstream. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (combined flow of South Fork San Joaquin River and Ward Tunnel at Intake).--9 years, 437 ft³/s, 316,600 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 39 ft³/s, May 17; minimum daily, 15 ft³/s, many days from November through March.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	18	15	15	15	15	21	20	19	23	24	24
2	16	17	15	15	15	15	22	21	20	23	23	25
3	18	16	15	15	15	15	24	21	21	22	23	25
4	18	16	15	16	15	16	22	21	21	22	24	25
5	18	16	15	15	15	30	23	21	21	21	24	24
6	18	16	16	15	15	26	22	22	22	22	23	24
7	18	15	15	15	15	25	22	22	23	22	23	23
8	18	16	15	15	15	25	22	23	23	21	23	23
9	18	16	15	15	15	22	22	23	22	22	23	23
10	17	16	15	15	16	20	22	23	22	21	22	22
11	17	16	15	15	15	20	22	24	22	21	24	22
12	17	16	15	15	15	20	22	25	21	22	23	23
13	17	16	15	15	21	20	21	26	20	22	23	24
14	17	16	15	15	17	19	19	27	20	22	23	24
15	17	15	15	15	16	19	18	29	20	22	23	23
16	17	18	15	15	15	18	18	36	20	22	23	23
17	17	18	15	15	15	19	18	39	20	23	23	23
18	17	17	15	15	15	20	17	34	22	23	22	23
19	17	16	15	15	15	19	17	27	22	24	22	22
20	19	16	15	15	15	17	16	23	22	24	22	22
21	19	16	15	15	15	17	16	25	23	24	22	22
22	19	16	15	15	15	17	16	24	23	24	22	23
23	19	16	15	15	16	18	16	23	25	25	22	23
24	20	16	15	15	15	17	16	22	24	25	24	22
25	19	16	15	15	15	17	16	22	24	24	26	22
26	19	16	15	15	15	17	16	22	24	24	25	23
27	18	16	15	15	15	17	17	21	24	24	24	23
28	18	16	15	15	15	18	17	21	24	24	24	23
29	18	15	15	15	---	18	18	20	23	24	24	22
30	18	15	16	15	---	19	19	20	23	24	24	22
31	18	---	15	15	---	20	---	20	---	24	25	---
TOTAL	559	484	467	466	431	595	577	747	660	710	722	692
MEAN	18.0	16.1	15.1	15.0	15.4	19.2	19.2	24.1	22.0	22.9	23.3	23.1
MAX	23	18	16	16	21	30	24	39	25	25	26	25
MIN	16	15	15	15	15	15	16	20	19	21	22	22
AC-FT	1110	960	926	924	855	1180	1140	1480	1310	1410	1430	1370
CAL YR 1986	TOTAL	67878	MEAN 186	MAX 3000	MIN 15	AC-FT 134600						
WTR YR 1987	TOTAL	7110	MEAN 19.5	MAX 39	MIN 15	AC-FT 14100						

SAN JOAQUIN RIVER BASIN

11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°20'18", long 118°58'23", unsurveyed, in SW 1/4 sec.12, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.2 mi upstream from diversion dam, 1.7 mi upstream from mouth, 2.1 mi south of Lake Thomas A. Edison, and 2.4 mi northeast of Mono Hot Springs.

DRAINAGE AREA.--52.5 mi².

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

REVISED RECORDS.--WSP 611: 1922(M). WSP 1345: 1931-35. WSP 1515: 1922-30. WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,366.94 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Estimated daily discharges: Periods of ice effect, Dec. 1 to Feb. 10, Feb. 13 to Mar. 7, Mar. 10, 11, 15-18. No storage or diversion above station. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--66 years, 93.6 ft³/s, 67,810 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 670 ft³/s, May 15, gage height, 5.49 ft; minimum daily, 4.3 ft³/s, Feb. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	11	6.5	5.6	7.4	11	31	145	235	79	20	7.7
2	31	11	6.4	5.8	7.6	12	42	113	290	77	20	8.3
3	29	12	6.6	6.2	7.0	13	44	131	272	71	21	11
4	28	11	6.7	5.9	6.5	16	35	179	266	70	23	12
5	28	12	7.2	5.3	7.3	22	39	222	269	65	24	11
6	27	11	6.3	7.3	7.6	24	40	253	241	63	23	11
7	27	7.7	5.9	7.6	7.4	23	46	261	280	63	23	10
8	27	11	5.6	7.8	7.4	26	55	304	340	63	22	9.8
9	28	10	6.7	8.8	8.5	24	70	272	246	63	21	9.4
10	27	11	6.6	9.9	11	20	79	253	218	61	20	9.0
11	27	11	7.9	11	12	19	83	246	223	59	20	8.3
12	26	10	7.9	11	11	21	79	267	221	59	19	8.3
13	24	11	7.8	10	9.5	20	90	299	246	56	18	8.3
14	23	9.8	8.0	9.1	7.3	19	105	369	233	52	17	7.7
15	21	9.4	6.6	8.3	7.2	18	106	408	233	50	17	7.1
16	20	10	6.8	7.4	6.8	17	120	419	165	52	15	6.5
17	19	10	6.7	6.8	7.0	21	135	326	143	46	14	6.0
18	18	11	7.1	6.8	7.2	20	123	247	141	41	14	5.8
19	17	11	6.5	7.0	6.1	20	91	221	141	35	13	5.8
20	17	11	5.5	6.9	6.5	19	88	188	146	32	12	5.6
21	17	11	5.4	6.9	6.0	17	114	163	143	28	12	5.4
22	17	8.3	6.0	6.9	7.1	19	146	150	141	26	11	5.4
23	16	10	5.7	6.9	5.4	17	150	149	122	24	9.8	5.2
24	16	9.8	5.3	6.9	4.4	18	153	120	116	23	9.4	5.2
25	15	7.7	5.4	7.1	4.7	18	176	100	120	22	9.0	5.4
26	15	7.1	6.3	7.6	4.3	18	182	93	118	21	9.0	5.4
27	14	7.7	5.6	7.9	8.0	19	232	82	108	20	8.3	5.2
28	14	7.1	5.4	9.2	10	20	220	81	102	21	8.3	5.2
29	14	7.1	5.8	7.2	---	21	221	87	92	21	8.3	5.2
30	14	5.8	5.7	7.3	---	26	201	102	82	22	9.0	5.2
31	13	---	5.6	6.8	---	30	---	167	---	21	9.0	---
TOTAL	662	293.5	197.5	235.2	208.2	608	3296	6417	5693	1406	479.1	221.4
MEAN	21.4	9.78	6.37	7.59	7.44	19.6	110	207	190	45.4	15.5	7.38
MAX	33	12	8.0	11	12	30	232	419	340	79	24	12
MIN	13	5.8	5.3	5.3	4.3	11	31	81	82	20	8.3	5.2
AC-FT	1310	582	392	467	413	1210	6540	12730	11290	2790	950	439
CAL YR 1986	TOTAL	49727.0	MEAN	136	MAX	1180	MIN	5.3	AC-FT	98630		
WTR YR 1987	TOTAL	19716.9	MEAN	54.0	MAX	419	MIN	4.3	AC-FT	39110		

SAN JOAQUIN RIVER BASIN

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

LOCATION.--Lat 37°20'06", Long 118°58'24", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank at diversion dam, 2.2 mi northeast of Mono Hot Springs, and 2.3 mi south of Lake Thomas A. Edison.

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Discharge computed as difference between flows at Bear Creek near Lake Thomas A. Edison (station 11230500) and Bear Creek at diversion dam (station 11230530). Datum of conduit invert, 7,340 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

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

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 396 ft³/s, May 16, 1987; minimum daily, 2.1 ft³/s, Feb. 24, 26, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	8.3	4.4	3.4	5.2	8.8	30	143	232	77	17	5.2
2	31	8.5	4.3	3.6	5.4	9.8	40	111	287	75	16	5.3
3	28	9.6	4.5	4.0	4.8	11	42	129	269	69	17	7.2
4	27	8.7	5.2	3.7	4.2	14	33	177	263	68	19	8.7
5	26	8.8	5.1	3.1	5.0	20	37	220	266	63	20	8.4
6	25	8.0	4.2	3.1	5.3	22	38	250	238	61	19	7.5
7	24	5.1	3.8	5.5	5.1	21	44	258	276	61	19	6.9
8	25	7.2	3.4	5.7	5.1	24	53	302	334	61	19	6.3
9	25	7.8	4.5	6.7	6.2	23	68	270	243	61	18	5.8
10	24	7.6	4.4	7.8	8.4	18	77	250	215	59	17	5.4
11	24	7.8	5.7	8.9	9.2	17	81	243	220	57	17	5.1
12	23	7.5	5.6	8.7	8.7	19	77	264	218	57	16	4.8
13	21	7.4	5.5	7.9	7.2	18	88	296	243	54	15	4.8
14	20	7.0	5.0	7.0	5.0	17	103	365	230	50	14	4.7
15	19	6.4	4.3	6.2	4.9	16	104	382	230	48	13	4.3
16	18	7.7	4.4	5.3	4.5	15	118	396	163	50	12	4.1
17	17	7.6	4.3	4.7	4.7	19	133	323	141	44	11	3.8
18	16	8.8	4.7	4.7	4.9	18	121	245	139	39	10	3.6
19	15	7.8	4.1	4.9	3.8	18	89	219	139	33	9.4	3.4
20	15	7.5	3.1	4.8	4.2	17	86	186	144	30	9.0	3.4
21	15	7.6	3.0	4.7	3.7	15	112	161	140	25	8.5	3.2
22	14	5.6	3.6	4.7	4.8	16	144	148	138	23	7.5	2.9
23	13	7.6	3.3	4.7	3.1	15	148	147	118	21	6.4	2.7
24	13	7.1	2.9	4.7	2.1	15	151	117	114	20	5.8	2.7
25	13	5.6	3.0	4.9	2.5	15	174	98	118	19	5.6	2.9
26	12	4.9	4.0	5.4	2.1	15	180	91	116	18	5.5	2.9
27	12	5.4	3.3	5.7	5.8	16	230	80	106	17	5.2	2.7
28	11	5.1	3.1	7.0	7.8	17	218	79	100	18	5.0	2.5
29	12	5.1	3.5	5.0	---	18	219	85	90	18	4.9	2.4
30	11	3.7	3.4	5.1	---	23	199	99	80	19	5.1	2.4
31	10	---	3.3	4.6	---	29	---	164	---	18	5.1	---
TOTAL	588	212.8	126.9	166.2	143.7	539.6	3237	6298	5610	1333	372.0	136.0
MEAN	19.0	7.09	4.09	5.36	5.13	17.4	108	203	187	43.0	12.0	4.53
MAX	31	9.6	5.7	8.9	9.2	29	230	396	334	77	20	8.7
MIN	10	3.7	2.9	3.1	2.1	8.8	30	79	80	17	4.9	2.4
AC-FT	1170	422	252	330	285	1070	6420	12490	11130	2640	738	270

WTR YR 1987 TOTAL 18763.20 MEAN 51.4 MAX 396 MIN 2.1 AC-FT 37220

SAN JOAQUIN RIVER BASIN

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

LOCATION.--Lat 37°20'05", long 118°58'26", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 450 ft downstream from diversion dam, 2.5 mi south of Lake Thomas A. Edison, and 18.3 mi east of town of Big Creek.

DRAINAGE AREA.--52.8 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

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

REMARKS.--Flow consists of fishery release and spill over diversion dam. Diversion through Bear conduit at diversion dam to Ward tunnel. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 26 ft³/s, May 15, 1987; minimum daily, 2.1 ft³/s, Nov. 26 to Dec. 7, 1986, Jan. 7-20, Apr. 27, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.2	2.1	2.2	2.2	2.2	2.3	2.4	2.6	2.7	2.8	2.6
2	3.0	2.2	2.1	2.2	2.2	2.2	2.3	2.4	2.6	2.7	2.8	2.6
3	2.7	2.2	2.1	2.2	2.2	2.2	2.4	2.4	2.6	2.7	2.8	2.6
4	2.4	2.2	2.1	2.2	2.3	2.2	2.4	2.4	2.7	2.7	2.8	2.6
5	2.4	2.2	2.1	2.2	2.3	2.2	2.4	2.5	2.7	2.7	2.7	2.6
6	2.4	2.2	2.1	2.2	2.3	2.2	2.4	2.6	2.6	2.7	2.7	2.5
7	2.4	2.2	2.1	2.1	2.3	2.2	2.4	2.6	4.1	2.7	2.7	2.5
8	2.4	2.2	2.2	2.1	2.3	2.2	2.4	2.5	6.2	2.7	2.7	2.4
9	2.4	2.2	2.2	2.1	2.3	2.2	2.4	2.5	2.8	2.7	2.7	2.4
10	2.4	2.2	2.2	2.1	2.3	2.2	2.4	2.6	2.7	2.7	2.7	2.3
11	2.4	2.2	2.2	2.1	2.3	2.4	2.4	2.8	2.7	2.7	2.7	2.3
12	2.3	2.2	2.3	2.1	2.3	2.4	2.5	2.8	2.7	2.7	2.7	2.3
13	2.3	2.2	2.3	2.1	2.3	2.4	2.5	2.7	2.6	2.7	2.7	2.3
14	2.3	2.2	2.3	2.1	2.3	2.4	2.5	3.7	2.6	2.7	2.7	2.3
15	2.3	2.2	2.3	2.1	2.3	2.4	2.5	26	2.7	2.7	2.7	2.3
16	2.3	2.2	2.4	2.1	2.3	2.4	2.5	23	2.7	2.7	2.7	2.4
17	2.3	2.2	2.4	2.1	2.3	2.4	2.4	2.8	2.7	2.7	2.7	2.4
18	2.3	2.2	2.4	2.1	2.3	2.4	2.4	2.5	2.7	2.7	2.7	2.4
19	2.2	2.2	2.4	2.1	2.3	2.4	2.4	2.5	2.7	2.7	2.7	2.4
20	2.2	2.2	2.4	2.1	2.3	2.4	2.4	2.5	2.7	2.7	2.7	2.4
21	2.2	2.2	2.4	2.2	2.3	2.4	2.4	2.4	2.7	2.8	2.7	2.5
22	2.2	2.2	2.4	2.2	2.3	2.4	2.4	2.4	2.7	2.8	2.7	2.5
23	2.2	2.2	2.4	2.2	2.3	2.4	2.4	2.5	2.7	2.8	2.7	2.5
24	2.2	2.2	2.4	2.2	2.3	2.4	2.4	2.7	2.7	2.8	2.7	2.5
25	2.2	2.2	2.4	2.2	2.2	2.4	2.2	2.5	2.7	2.8	2.7	2.5
26	2.2	2.1	2.3	2.2	2.2	2.4	2.2	2.5	2.7	2.8	2.7	2.5
27	2.2	2.1	2.3	2.2	2.2	2.3	2.1	2.5	2.7	2.8	2.6	2.5
28	2.2	2.1	2.3	2.2	2.2	2.3	2.5	2.5	2.7	2.8	2.6	2.5
29	2.2	2.1	2.3	2.2	---	2.3	2.5	2.5	2.7	2.8	2.6	2.6
30	2.2	2.1	2.3	2.2	---	2.3	2.4	2.6	2.7	2.8	2.6	2.6
31	2.2	---	2.3	2.2	---	2.3	---	2.6	---	2.8	2.6	---
TOTAL	72.6	65.5	70.5	66.8	63.7	71.9	71.8	123.9	85.4	84.8	83.6	73.8
MEAN	2.34	2.18	2.27	2.15	2.28	2.32	2.39	4.00	2.85	2.74	2.70	2.46
MAX	3.0	2.2	2.4	2.2	2.3	2.4	2.5	26	6.2	2.8	2.8	2.6
MIN	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.4	2.6	2.7	2.6	2.3
AC-FT	144	130	140	132	126	143	142	246	169	168	166	146

WTR YR 1987 TOTAL 934.3 MEAN 2.56 MAX 26 MIN 2.1 AC-FT 1850

SAN JOAQUIN RIVER BASIN

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

LOCATION.--Lat 37°18'11", long 119°01'08", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, at diversion dam to Ward tunnel 0.7 mi upstream from mouth, 1.7 mi south of Mono Hot Springs, and 14.0 mi northeast of town of Big Creek.

DRAINAGE AREA.--1.65 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,260 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records of fishery release normally computed only during periods of diversion to Ward tunnel. Diversion occurred from Apr. 17 to June 21. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	.88	1.2			---
2							---	.88	1.1			---
3							---	.85	1.1			---
4							---	.85	1.2			---
5							---	.92	1.3			---
6							---	1.1	1.3			---
7							---	1.3	1.4			---
8							---	1.3	1.4			---
9							---	1.2	1.4			---
10							---	1.2	1.4			---
11							---	1.3	1.3			---
12							---	1.1	1.3			.04
13							---	1.2	1.3			.06
14							---	1.4	1.3			.06
15							---	5.0	1.3			.06
16							---	4.3	1.3			.05
17							.59	1.6	1.3			.05
18							.59	1.2	1.3			.05
19							.54	1.2	1.3			.05
20							.59	1.2	1.3			.05
21							.59	1.2	1.3			.05
22							.61	1.2	1.2			.04
23							.61	1.1	1.0			.04
24							.64	1.1	.92			.05
25							.67	1.1	.79			.05
26							.67	1.0	.76			.05
27							.67	1.0	.76			.05
28							.70	1.0	---			.05
29							.70	1.0	---			.04
30							.79	1.1	---			.04
31							---	1.2	---			---
TOTAL							---	41.98	---			---
MEAN							---	1.35	---			---
MAX							---	5.0	---			---
MIN							---	.85	---			---
AC-FT							---	83	---			---

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

LOCATION.--Lat 37°20'05", long 118°58'26", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 450 ft downstream from diversion dam, 2.5 mi south of Lake Thomas A. Edison, and 18.3 mi east of town of Big Creek.

DRAINAGE AREA.--52.8 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

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

REMARKS.--Flow consists of fishery release and spill over diversion dam. Diversion through Bear conduit at diversion dam to Ward tunnel. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 26 ft³/s, May 15, 1987; minimum daily, 2.1 ft³/s, Nov. 26 to Dec. 7, 1986, Jan. 7-20, Apr. 27, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.2	2.1	2.2	2.2	2.2	2.3	2.4	2.6	2.7	2.8	2.6
2	3.0	2.2	2.1	2.2	2.2	2.2	2.3	2.4	2.6	2.7	2.8	2.6
3	2.7	2.2	2.1	2.2	2.2	2.2	2.4	2.4	2.6	2.7	2.8	2.6
4	2.4	2.2	2.1	2.2	2.3	2.2	2.4	2.4	2.7	2.7	2.8	2.6
5	2.4	2.2	2.1	2.2	2.3	2.2	2.4	2.5	2.7	2.7	2.7	2.6
6	2.4	2.2	2.1	2.2	2.3	2.2	2.4	2.6	2.6	2.7	2.7	2.5
7	2.4	2.2	2.1	2.1	2.3	2.2	2.4	2.6	4.1	2.7	2.7	2.5
8	2.4	2.2	2.2	2.1	2.3	2.2	2.4	2.5	6.2	2.7	2.7	2.4
9	2.4	2.2	2.2	2.1	2.3	2.2	2.4	2.5	2.8	2.7	2.7	2.4
10	2.4	2.2	2.2	2.1	2.3	2.2	2.4	2.6	2.7	2.7	2.7	2.3
11	2.4	2.2	2.2	2.1	2.3	2.4	2.4	2.8	2.7	2.7	2.7	2.3
12	2.3	2.2	2.3	2.1	2.3	2.4	2.5	2.8	2.7	2.7	2.7	2.3
13	2.3	2.2	2.3	2.1	2.3	2.4	2.5	2.7	2.6	2.7	2.7	2.3
14	2.3	2.2	2.3	2.1	2.3	2.4	2.5	3.7	2.6	2.7	2.7	2.3
15	2.3	2.2	2.3	2.1	2.3	2.4	2.5	26	2.7	2.7	2.7	2.3
16	2.3	2.2	2.4	2.1	2.3	2.4	2.5	23	2.7	2.7	2.7	2.4
17	2.3	2.2	2.4	2.1	2.3	2.4	2.4	2.8	2.7	2.7	2.7	2.4
18	2.3	2.2	2.4	2.1	2.3	2.4	2.4	2.5	2.7	2.7	2.7	2.4
19	2.2	2.2	2.4	2.1	2.3	2.4	2.4	2.5	2.7	2.7	2.7	2.4
20	2.2	2.2	2.4	2.1	2.3	2.4	2.4	2.5	2.7	2.7	2.7	2.4
21	2.2	2.2	2.4	2.2	2.3	2.4	2.4	2.4	2.7	2.8	2.7	2.5
22	2.2	2.2	2.4	2.2	2.3	2.4	2.4	2.4	2.7	2.8	2.7	2.5
23	2.2	2.2	2.4	2.2	2.3	2.4	2.4	2.5	2.7	2.8	2.7	2.5
24	2.2	2.2	2.4	2.2	2.3	2.4	2.4	2.7	2.7	2.8	2.7	2.5
25	2.2	2.2	2.4	2.2	2.2	2.4	2.2	2.5	2.7	2.8	2.7	2.5
26	2.2	2.1	2.3	2.2	2.2	2.4	2.2	2.5	2.7	2.8	2.7	2.5
27	2.2	2.1	2.3	2.2	2.2	2.3	2.1	2.5	2.7	2.8	2.6	2.5
28	2.2	2.1	2.3	2.2	2.2	2.3	2.5	2.5	2.7	2.8	2.6	2.5
29	2.2	2.1	2.3	2.2	---	2.3	2.5	2.5	2.7	2.8	2.6	2.6
30	2.2	2.1	2.3	2.2	---	2.3	2.4	2.6	2.7	2.8	2.6	2.6
31	2.2	---	2.3	2.2	---	2.3	---	2.6	---	2.8	2.6	---
TOTAL	72.6	65.5	70.5	66.8	63.7	71.9	71.8	123.9	85.4	84.8	83.6	73.8
MEAN	2.34	2.18	2.27	2.15	2.28	2.32	2.39	4.00	2.85	2.74	2.70	2.46
MAX	3.0	2.2	2.4	2.2	2.3	2.4	2.5	26	6.2	2.8	2.8	2.6
MIN	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.4	2.6	2.7	2.6	2.3
AC-FT	144	130	140	132	126	143	142	246	169	168	166	146

WTR YR 1987 TOTAL 934.3 MEAN 2.56 MAX 26 MIN 2.1 AC-FT 1850

SAN JOAQUIN RIVER BASIN

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

LOCATION.--Lat 37°18'11", long 119°01'08", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, at diversion dam to Ward tunnel 0.7 mi upstream from mouth, 1.7 mi south of Mono Hot Springs, and 14.0 mi northeast of town of Big Creek.

DRAINAGE AREA.--1.65 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,260 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records of fishery release normally computed only during periods of diversion to Ward tunnel. Diversion occurred from Apr. 17 to June 21. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	.88	1.2			---
2							---	.88	1.1			---
3							---	.85	1.1			---
4							---	.85	1.2			---
5							---	.92	1.3			---
6							---	1.1	1.3			---
7							---	1.3	1.4			---
8							---	1.3	1.4			---
9							---	1.2	1.4			---
10							---	1.2	1.4			---
11							---	1.3	1.3			---
12							---	1.1	1.3			.04
13							---	1.2	1.3			.06
14							---	1.4	1.3			.06
15							---	5.0	1.3			.06
16							---	4.3	1.3			.05
17							.59	1.6	1.3			.05
18							.59	1.2	1.3			.05
19							.54	1.2	1.3			.05
20							.59	1.2	1.3			.05
21							.59	1.2	1.3			.05
22							.61	1.2	1.2			.04
23							.61	1.1	1.0			.04
24							.64	1.1	.92			.05
25							.67	1.1	.79			.05
26							.67	1.0	.76			.05
27							.67	1.0	.76			.05
28							.70	1.0	---			.05
29							.70	1.0	---			.04
30							.79	1.1	---			.04
31							---	1.2	---			---
TOTAL							---	41.98	---			---
MEAN							---	1.35	---			---
MAX							---	5.0	---			---
MIN							---	.85	---			---
AC-FT							---	83	---			---

SAN JOAQUIN RIVER BASIN

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

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

DRAINAGE AREA.--1.97 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

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

REMARKS.--Records of fishery release normally computed only during periods of diversion to Ward tunnel. Diversion during water year 1987 occurred Apr. 16 to July 17. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	.34	.40	.40	.11	.05
2							---	.32	.42	.40	.10	.06
3							---	.36	.40	.40	.11	.08
4							---	.32	.40	.38	.16	.07
5							---	.32	.38	.38	.14	.05
6							---	.32	.38	.38	.10	.04
7							---	.34	.36	.38	.09	.04
8							---	.38	.36	.38	.09	.04
9							---	.36	.38	.38	.09	.03
10							---	.34	.40	.38	.09	.03
11							---	3.4	.38	.38	.09	.03
12							---	7.8	.36	.38	.09	.04
13							---	4.3	.38	.38	.09	.05
14							---	10	.38	.40	.09	.06
15							---	20	.36	.40	.10	.05
16								.32	9.4	.36	.09	.04
17								.30	3.4	.40	.08	.04
18								.30	.44	.42	.09	.04
19								.32	.46	.42	.09	.04
20								.32	.49	.42	.09	.03
21								.54	.46	.42	.05	.03
22								1.6	.46	.42	.04	.03
23								2.6	.46	.42	.04	.03
24								3.2	.46	.42	.04	.03
25								4.9	.44	.42	.04	.04
26								6.2	.44	.42	.04	.04
27								4.2	.44	.40	.04	.04
28								.38	.44	.40	.05	.04
29								1.2	.42	.40	.05	.04
30								1.5	.42	.40	.05	.03
31								---	.40	---	.12	---
TOTAL							---	67.93	11.88	9.37	2.48	1.26
MEAN							---	2.19	.40	.30	.080	.042
MAX							---	20	.42	.40	.16	.08
MIN							---	.32	.36	.12	.04	.03
AC-FT							---	135	24	19	4.9	2.5

SAN JOAQUIN RIVER BASIN

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

LOCATION.--Lat 37°18'40", long 119°02'22", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, 50 ft downstream from diversion dam, 1.5 mi upstream from mouth, 1.7 mi southwest of Mono Hot Springs, and 13.3 mi northeast of town of Big Creek.

DRAINAGE AREA.--1.40 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,600 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records of fishery release normally computed only during periods of diversion to Ward tunnel. Diversion during water year 1987 occurred from Apr. 16 to June 27. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	.44	.46			
2							---	.42	.46			
3							---	.42	.46			
4							---	.42	.46			
5							---	.42	.46			
6							---	.42	.46			
7							---	.44	.46			
8							---	.44	.46			
9							---	.44	.46			
10							---	.45	.44			
11							---	.54	.44			
12							---	.54	.44			
13							---	.51	.44			
14							---	.46	.44			
15							---	.91	.44			
16							3.7	.79	.44			
17							.44	.46	.44			
18							.44	.44	.44			
19							.44	.44	.44			
20							.44	.44	.44			
21							.44	.44	.44			
22							.44	.44	.46			
23							.44	.44	.44			
24							.46	.44	.40			
25							.46	.44	.34			
26							.46	.44	.32			
27							.46	.44	.32			
28							.46	.44	---			
29							.46	.44	---			
30							.44	.46	---			
31							---	.46	---			
TOTAL							---	14.72	---			
MEAN							---	.47	---			
MAX							---	.91	---			
MIN							---	.42	---			
AC-FT							---	29	---			

SAN JOAQUIN RIVER BASIN

11231000 LAKE THOMAS A. EDISON NEAR BIG CREEK, CA

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

DRAINAGE AREA.--90.0 mi².

PERIOD OF RECORD.--October 1954 to current year. Prior to 1960, maximum and minimum daily contents were published.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Lake is formed by earthfill dam; dam completed and storage began Oct. 12, 1954. Usable capacity, 125,035 acre-ft between elevations 7,508.9 ft, invert of outlet works, and 7,642.50 ft, top of gates in service spillway, NGVD. Dead storage negligible. Water is released for diversion to Ward tunnel via Mono Creek diversion works. See schematic diagram of upper San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were provided by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 125,983 acre-ft, Sept. 26, 1982, elevation, 7,643.55 ft; minimum since appreciable storage was attained, 5,080 acre-ft, Mar. 27, 1969, elevation, 7,553.09 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 117,074 acre-ft, Oct. 1, elevation, 7,638.17 ft; minimum, 17,911 acre-ft, Sept. 30, elevation, 7,569.76 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Southern California Edison Co., from table dated July 22, 1955)

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

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117074	113361	100880	74807	63106	64302	54221	51202	67366	73397	51229	34894
2	116891	113343	100015	73981	63121	64332	53657	51271	67897	73091	50422	34029
3	116708	113325	99134	73204	63362	64439	53211	51312	68366	72577	49631	33208
4	116635	113343	98255	72448	63211	64454	52639	51505	68900	72014	48875	32397
5	116672	113343	97448	71646	63211	64607	52126	52029	68884	71470	48067	31558
6	116727	113343	96642	70833	63227	64683	51602	52486	70116	70928	47292	30750
7	116800	113307	95786	69974	63257	64745	51078	53058	70785	70354	46467	29943
8	116873	113270	94949	69184	63287	64806	50586	53643	71375	69784	45686	29120
9	116928	113270	94115	68366	63347	64836	50163	54305	71661	69121	44886	28305
10	116982	113270	93299	67569	63362	64882	49754	54884	71757	68444	44101	27497
11	117001	113270	92450	66744	63423	64912	49361	55537	71598	67725	43556	26709
12	116964	113270	91602	65925	63483	64974	48956	56093	71677	67007	43323	25928
13	116690	113252	90791	65111	63770	65019	48605	56794	72207	66296	43102	25132
14	116344	113035	89946	64302	63770	61882	48308	57660	72673	65601	42934	24355
15	115998	112890	89035	63483	63830	64286	48121	58749	73108	64882	42741	23597
16	115615	112691	88195	62879	63860	63679	47987	59787	73656	64118	42548	22908
17	115251	112528	87459	62849	63906	63076	48014	60730	73867	63302	42330	22237
18	114977	112003	86605	62849	63951	62472	48067	61433	73754	62517	42073	21716
19	114650	111208	85737	62849	63981	61876	47933	62069	73575	61771	41855	21157
20	114305	110433	84888	62849	63981	61279	47706	62668	73478	60952	41650	20727
21	113924	109568	84042	62849	63981	60686	47492	63151	73397	60126	41421	20437
22	113525	108580	83179	62849	64042	60097	47492	63558	73268	59332	41166	20178
23	113252	107718	82338	62864	64164	59507	47639	64027	73188	58530	40937	19921
24	113252	106895	81464	62910	64134	58895	47840	64378	73236	57732	40619	19657
25	113288	106071	80611	62925	64195	58282	48187	64699	73284	56924	40479	19353
26	113307	105197	79760	62940	64210	57689	48646	65080	73333	56079	40013	19050
27	113307	104340	78930	62985	64241	57097	49186	65340	73381	55280	39195	18762
28	113325	103433	78068	63045	64271	56464	49836	65616	73446	54489	38360	18464
29	113379	102545	77228	63061	---	55865	50408	65972	73510	53685	37456	18185
30	113379	101748	76423	63076	---	55308	50968	66327	73559	52848	36473	17911
31	113379	---	75623	63076	---	54757	---	66729	---	52043	35668	---
MAX	117074	113361	100880	74807	64271	65019	54221	66729	73867	73397	51229	34894
MIN	113252	101748	75623	62849	63106	54757	47492	51202	67366	52043	35668	17911
a	7636.14	7629.65	7614.37	7606.40	7607.19	7600.70	7597.98	7608.79	7613.10	7598.76	7586.14	7569.76
b	-3896	-11631	-26125	-12547	+1195	-9514	-3789	+15761	+6830	-21516	-16375	-17757

CAL YR 1986 b +26505

WTR YR 1987 b -99364

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11231500 MONO CREEK BELOW LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°21'40", long 118°59'26", unsurveyed, SW 1/4 sec.35, T.6 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 0.6 mi upstream from diversion dam, 1 mi downstream from Lake Thomas A. Edison Dam, and 1.9 mi northeast of Mono Hot Springs.

DRAINAGE AREA.--92.5 mi².

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

REVISED RECORDS.--WSP 1011: 1943. WSP 1515: 1956.

GAGE.--Water-stage recorder. Elevation of gage is 7,400 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Beginning Oct. 12, 1954, flow regulated by Lake Thomas A. Edison (station 11231000) 1 mi upstream. No diversion above station. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (adjusted for storage).--66 years, 162 ft³/s, 117,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,160 ft³/s, Sept. 26, 1982, gage height, 8.87 ft; minimum daily, 0.3 ft³/s, Nov. 11, 12, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 444 ft³/s, July 28; minimum daily, 12 ft³/s, Apr. 28, June 13-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	17	436	424	16	16	326	143	13	159	436	432
2	117	17	432	424	16	16	322	180	70	273	436	432
3	117	17	432	428	16	16	322	175	18	361	432	432
4	69	17	433	428	16	16	322	158	13	365	432	428
5	25	17	432	428	16	16	322	29	13	365	428	424
6	18	16	432	428	16	16	318	107	13	361	428	424
7	18	16	428	424	16	16	318	40	13	361	432	424
8	18	16	428	424	16	16	318	40	47	388	428	420
9	18	16	428	420	16	16	318	13	126	428	428	420
10	18	16	432	420	16	16	318	78	226	428	424	420
11	18	16	432	420	16	17	318	13	321	428	306	420
12	62	16	432	420	16	17	315	62	157	424	143	412
13	156	81	432	416	17	17	315	13	12	424	133	412
14	203	111	432	412	16	196	299	13	12	428	133	412
15	203	111	432	412	16	337	261	14	12	440	130	383
16	203	111	432	285	16	337	249	14	12	440	130	365
17	203	111	376	16	16	333	186	14	117	436	130	365
18	130	273	436	16	16	333	186	14	241	436	130	262
19	205	408	436	16	16	333	227	14	250	440	128	306
20	205	408	432	16	16	333	267	13	220	440	128	235
21	205	428	432	15	16	330	255	13	220	436	130	173
22	205	432	432	15	16	330	184	13	220	436	130	159
23	152	432	432	15	16	330	144	13	179	435	130	162
24	16	432	432	15	16	330	128	13	133	432	130	172
25	15	432	432	15	16	330	71	13	133	436	130	177
26	15	436	432	15	16	330	25	13	135	440	233	177
27	16	436	428	16	16	330	20	13	135	440	436	177
28	16	436	428	16	16	326	12	13	135	444	436	177
29	16	436	428	16	---	326	28	13	135	440	436	177
30	16	436	428	16	---	326	15	13	135	440	432	177
31	16	---	424	16	---	326	---	13	---	440	436	---
TOTAL	2809	6147	13313	6847	449	6027	6709	1290	3466	12644	8854	9556
MEAN	90.6	205	429	221	16.0	194	224	41.6	116	408	286	319
MAX	205	436	436	428	17	337	326	180	321	444	436	432
MIN	15	16	376	15	16	16	12	13	12	159	128	159
AC-FT	5570	12190	26410	13580	891	11950	13310	2560	6870	25080	17560	18950

CAL YR 1986 TOTAL 76644 MEAN 210 MAX 669 MIN 13 AC-FT 152000
WTR YR 1987 TOTAL 78111 MEAN 214 MAX 444 MIN 12 AC-FT 154900

SAN JOAQUIN RIVER BASIN

11231550 MONO CREEK CONDUIT NEAR MONO HOT SPRINGS, CA

LOCATION.--Lat 37°21'36", long 118°59'54", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank at diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 1.9 mi northeast of Mono Hot Springs.

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Discharge computed as difference between flow at Mono Creek below Lake Thomas A. Edison (station 11231500) and Mono Creek at diversion dam (station 11231600). Datum of conduit invert is 7,338 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

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

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 430 ft³/s, July 28, 1987; no flow May 28-31 and June 13-16, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	7.5	428	416	7.8	7.5	316	133	1.0	144	422	422
2	105	8.5	424	416	7.8	7.5	312	170	43	258	422	422
3	104	8.5	424	420	7.8	7.5	312	165	4.0	346	418	422
4	58	8.5	425	419	7.8	7.5	312	148	2.0	350	418	418
5	14	8.5	424	419	7.7	7.5	312	19	2.0	351	414	414
6	8.0	7.4	424	419	7.7	7.5	308	97	2.0	347	414	414
7	8.0	7.4	420	415	7.7	7.5	308	29	2.0	347	418	414
8	8.0	7.4	420	415	7.6	7.5	308	29	36	374	414	410
9	8.0	7.4	420	411	7.6	7.5	308	2.0	115	414	414	410
10	8.0	7.4	424	412	7.6	7.5	308	67	215	414	410	410
11	8.0	7.2	424	412	7.5	8.5	308	2.0	309	414	292	410
12	52	7.0	424	412	7.5	8.4	305	51	145	410	129	402
13	146	72	424	408	8.5	8.3	305	2.0	0	410	119	402
14	193	102	424	404	7.5	187	289	2.0	0	414	119	402
15	191	102	424	404	7.5	328	251	4.0	0	426	116	373
16	193	102	424	277	7.5	328	239	4.0	0	426	116	355
17	194	102	367	7.9	7.5	324	176	4.0	105	422	116	355
18	121	264	427	8.0	7.5	324	176	4.0	228	422	116	252
19	196	399	427	8.1	7.5	324	218	3.0	237	426	114	295
20	195	399	423	8.1	7.5	323	258	2.0	207	426	114	224
21	195	420	423	7.2	7.5	320	246	2.0	207	422	118	162
22	195	424	423	7.3	7.5	320	175	1.0	207	422	120	148
23	142	424	423	7.3	7.5	320	135	1.0	166	421	120	151
24	5.0	424	423	7.4	7.5	320	119	1.0	120	418	120	161
25	4.0	424	424	7.5	7.5	320	62	1.0	120	422	120	166
26	4.0	428	424	7.5	7.5	320	16	1.0	122	426	222	166
27	5.0	428	420	8.6	7.5	320	11	1.0	121	426	426	166
28	5.0	428	420	8.0	7.5	316	3.6	0	121	430	426	166
29	5.0	428	420	7.9	---	316	20	0	121	426	426	166
30	5.0	428	420	7.9	---	316	5.8	0	120	426	422	166
31	5.0	---	416	7.9	---	316	---	0	---	426	426	---
TOTAL	2483.0	5890.7	13057	6595.6	213.1	5742.2	6422.4	945.0	3078.0	12206	8461	9244
MEAN	80.1	196	421	213	7.61	185	214	30.5	103	394	273	308
MAX	196	428	428	420	8.5	328	316	170	309	430	426	422
MIN	4.0	7.0	367	7.2	7.5	7.5	3.6	0	0	144	114	148
AC-FT	4930	11680	25900	13080	423	11390	12740	1870	6110	24210	16780	18340

WTR YR 1987 TOTAL 74338.00 MEAN 204 MAX 430 MIN 0 AC-FT 147400

SAN JOAQUIN RIVER BASIN

11231600 MONO CREEK AT DIVERSION DAM, NEAR MONO HOT SPRINGS, CA

LOCATION.--Lat 37°21'37", long 118°59'50", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank at diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 1.9 mi northeast of Mono Hot Springs.

DRAINAGE AREA.--92.8 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 7,350 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow consists of fishery release and spill over diversion dam. Diversion to Mono-Bear conduit, thence to Ward tunnel and Huntington Lake via Portal Powerplant for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 27 ft³/s, June 2, 1987; minimum daily, 7.4 ft³/s, Jan. 27, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	9.5	8.3	8.5	8.2	8.5	10	10	12	15	14	9.9
2	12	8.5	8.3	8.5	8.2	8.5	10	10	27	15	14	10
3	13	8.5	8.3	8.5	8.2	8.5	10	10	14	15	14	10
4	11	8.5	8.3	8.6	8.2	8.5	10	10	11	15	14	10
5	11	8.5	8.3	8.6	8.3	8.5	10	10	11	14	14	10
6	10	8.6	8.3	8.6	8.3	8.5	10	10	11	14	14	10
7	10	8.6	8.4	8.6	8.3	8.5	10	11	11	14	14	10
8	10	8.6	8.4	8.6	8.4	8.5	10	11	11	14	14	10
9	10	8.6	8.4	8.6	8.4	8.5	10	11	11	14	14	10
10	10	8.6	8.4	8.5	8.4	8.5	10	11	11	14	14	10
11	10	8.8	8.4	8.5	8.5	8.5	10	11	12	14	14	10
12	10	9.0	8.5	8.4	8.5	8.6	10	11	12	14	14	10
13	10	9.2	8.5	8.3	8.5	8.7	10	11	12	14	14	10
14	10	9.1	8.5	8.3	8.5	8.9	10	11	12	14	14	10
15	12	8.8	8.5	8.2	8.5	9.0	10	10	12	14	14	10
16	9.9	9.0	8.5	8.1	8.5	9.1	9.9	10	12	14	14	10
17	9.5	9.2	8.6	8.1	8.5	9.2	9.7	10	12	14	14	10
18	9.2	9.0	8.6	8.0	8.5	9.4	9.6	10	13	14	14	9.7
19	8.8	8.6	8.6	7.9	8.5	9.5	9.5	11	13	14	14	11
20	10	8.6	8.6	7.9	8.5	9.6	9.4	11	13	14	14	11
21	10	8.4	8.6	7.8	8.5	9.7	9.3	11	13	14	12	11
22	10	8.2	8.6	7.7	8.5	9.9	9.2	12	13	14	10	11
23	10	8.2	8.6	7.7	8.5	10	9.0	12	13	14	10	11
24	11	8.2	8.6	7.6	8.5	10	8.9	12	13	14	10	11
25	11	8.2	8.5	7.5	8.5	10	8.8	12	13	14	10	11
26	11	8.2	8.5	7.5	8.5	10	8.7	12	13	14	11	11
27	11	8.2	8.5	7.4	8.5	10	8.6	12	14	14	9.9	11
28	11	8.3	8.5	8.0	8.5	10	8.4	13	14	14	9.9	11
29	11	8.3	8.5	8.1	---	10	8.3	13	14	14	9.9	11
30	11	8.3	8.5	8.1	---	10	9.2	13	15	14	9.9	11
31	11	---	8.5	8.1	---	10	---	13	---	14	9.9	---
TOTAL	326.4	258.3	262.6	252.8	235.9	285.1	286.5	345	388	438	392.5	311.6
MEAN	10.5	8.61	8.47	8.15	8.43	9.20	9.55	11.1	12.9	14.1	12.7	10.4
MAX	13	9.5	8.6	8.6	8.5	10	10	13	27	15	14	11
MIN	8.8	8.2	8.3	7.4	8.2	8.5	8.3	10	11	14	9.9	9.7
AC-FT	647	512	521	501	468	565	568	684	770	869	779	618

WTR YR 1987 TOTAL 3782.7 MEAN 10.4 MAX 27 MIN 7.4 AC-FT 7500

11231700 WARM CREEK AT DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°23'03", long 119°01'33", unsurveyed, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank, 40 ft downstream from diversion dam, 3.8 mi north of Mono Hot Springs, and 17 mi northeast of town of Big Creek.

DRAINAGE AREA.--1.76 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records of fishery release normally computed only during periods of diversion to Lake Thomas A. Edison. Diversion occurred Oct. 1-31, 1986, and Apr. 30 to June 27, 1987. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24						---	.27	.34	.49	.16	.17
2	.22						---	.29	.34	.46	.16	.17
3	.22						---	.38	.34	.44	.16	.18
4	.22						---	.38	.36	.42	.16	.17
5	.22						---	.36	.36	.38	.16	.17
6	.21						---	.36	.36	.36	.16	.17
7	.24						---	.34	.36	.34	.14	.17
8	.25						---	.34	.38	.34	.16	.17
9	.25						---	.34	.36	.32	.16	.16
10	.25						---	.34	.36	.30	.16	.16
11	.25						---	.34	.36	.29	.17	.16
12	.25						---	.34	.32	.27	.17	.17
13	.25						---	.34	.36	.25	.17	.18
14	.24						---	.34	.36	.27	.17	.17
15	.24						---	.34	.36	.25	.17	.17
16	.24						---	.36	.34	.27	.17	.17
17	.24						---	.36	.34	.24	.16	.16
18	.24						---	.36	.34	.25	.16	.16
19	.24						---	.35	.34	.25	.17	.16
20	.24						---	.34	.34	.24	.16	.16
21	.24						---	.32	.36	.24	.16	.16
22	.24						---	.34	.27	.24	.17	.16
23	.24						---	.34	.12	.22	.17	.16
24	.24						1.8	.34	.12	.21	.17	.17
25	.22						1.9	.36	.12	.21	.17	.17
26	.22						1.8	.36	.12	.19	.16	.17
27	.22						1.8	.36	.11	.18	.16	.16
28	.22						1.9	.38	.38	.18	.17	.16
29	.24						1.4	.36	.64	.17	.17	.16
30	.24						.27	.36	.54	.17	.16	.16
31	.31						---	.36	---	.16	.17	---
TOTAL	7.38						---	10.75	9.80	8.60	5.08	4.98
MEAN	.24						---	.35	.33	.28	.16	.17
MAX	.31						---	.38	.64	.49	.17	.18
MIN	.21						---	.27	.11	.16	.14	.16
AC-FT	15						---	21	19	17	10	9.9

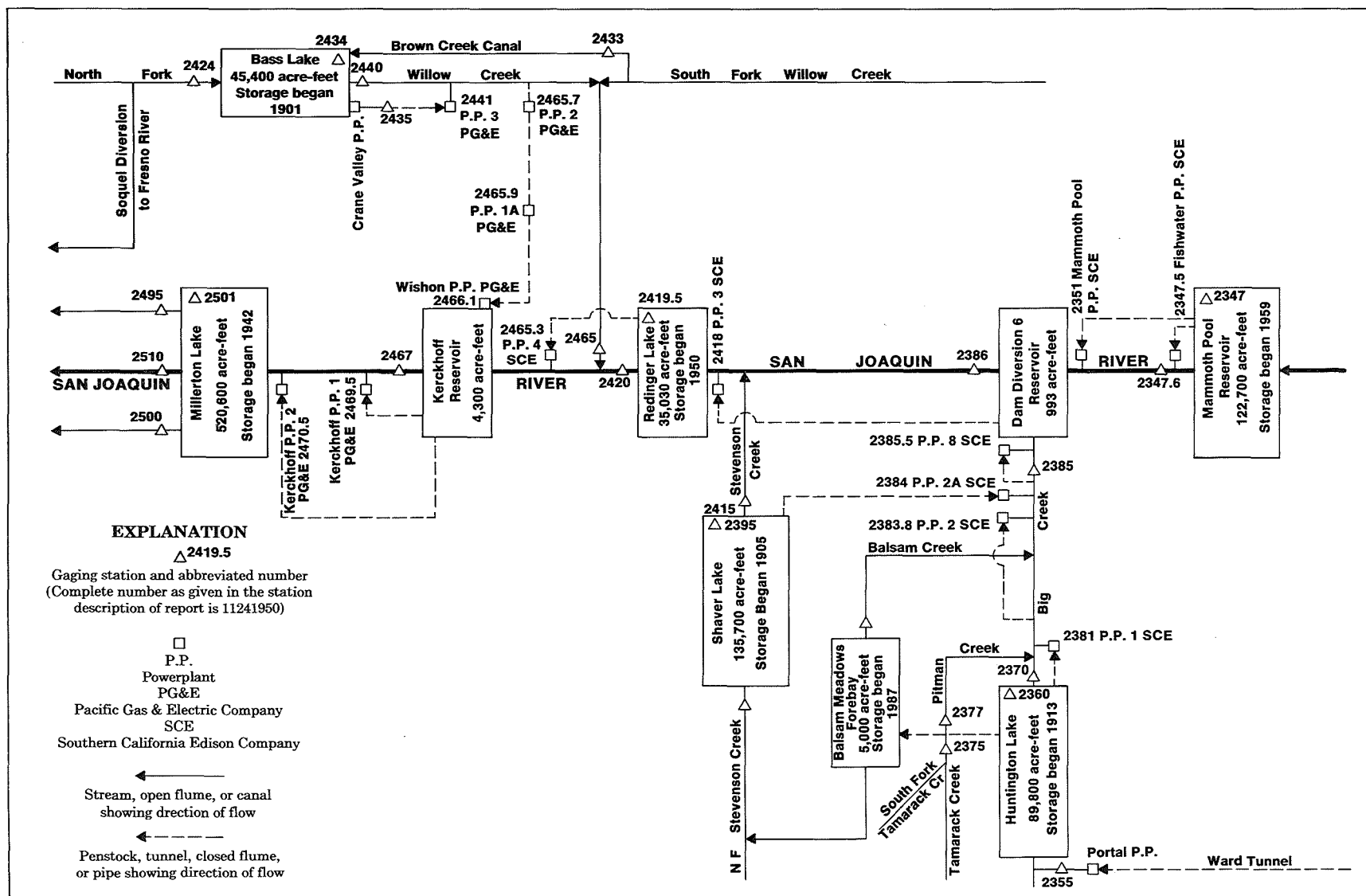


Figure 33. - Schematic diagram showing diversions and storage in lower San Joaquin River basin.

SAN JOAQUIN RIVER BASIN

11234700 MAMMOTH POOL RESERVOIR NEAR BIG CREEK, CA

LOCATION.--Lat 37°19'45", long 119°19'40", in SW 1/4 sec.10, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of power tunnel intake near dam on San Joaquin River, 10 mi northwest of town of Big Creek.

DRAINAGE AREA.--995 mi².

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Reservoir is formed by an earthfill dam; storage began Oct. 8, 1959. Usable capacity, 119,940 acre-ft between elevations 3,100.00 ft, invert of power tunnel, and 3,330.00 ft, crest of spillway, NGVD. Additional storage of 2,780 acre-ft is not available for release. Water is diverted through tunnel for power development; water is returned to river 8.5 mi downstream from dam. See schematic diagram of lower San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were provided by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 126,503 acre-ft, June 2, 3, 1969; maximum elevation, 3,335.86 ft, June 3, 1969; minimum contents since appreciable storage was attained, 2,956 acre-ft, Feb. 6, 1982, elevation, 3,128.81 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 95,116 acre-ft, June 10, elevation, 3,305.67 ft; minimum, 20,638 acre-ft, Sept. 30, elevation, 3,198.19 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Southern California Edison Co., from table dated Nov. 6, 1959)

3,100	0	3,130	3,114	3,180	14,060	3,260	56,381
3,105	417	3,140	4,605	3,190	17,414	3,280	72,109
3,110	861	3,150	6,402	3,200	21,400	3,300	89,781
3,115	1,355	3,160	8,618	3,220	31,109	3,320	109,336
3,120	1,900	3,170	11,165	3,240	42,787	3,336	126,661

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60819	41922	31553	30948	32066	31002	29505	64383	89290	84448	57698	28176
2	61389	40671	31521	31239	32071	30414	29968	63116	89744	83843	56787	27904
3	61428	39433	31450	31597	31837	29968	31071	62310	90247	83175	55769	27639
4	61420	38641	31396	32039	31858	29552	31071	62402	90750	82798	54721	27349
5	61656	38041	31315	31935	31902	29541	31002	63953	91452	82215	53934	26764
6	61496	37659	31337	31962	31913	30627	30991	65783	92175	81499	53133	26284
7	60796	37260	31369	31979	32011	30852	31380	66427	93731	80759	52308	25536
8	59994	36917	31402	31902	32121	30669	32099	68718	94727	79746	50931	25307
9	59224	36564	31174	31864	32335	30483	33101	70951	95021	79247	49927	25079
10	58444	36216	31114	31880	32478	30270	33969	73364	95116	78464	49025	24910
11	57690	35951	30970	31891	32670	29900	35185	74857	94831	77686	48117	24667
12	57023	35606	30991	31919	32874	29468	36500	76311	94489	76191	47327	24499
13	56905	35259	30937	31962	35424	29191	37921	77289	94527	75292	46588	24317
14	56199	34992	30911	31908	36163	29123	39494	78368	94518	74449	45877	24134
15	55652	34561	30836	31875	36570	29259	41318	80591	94717	73550	45169	23785
16	55030	34242	30798	31418	36698	29154	43339	84593	94082	72698	44376	23636
17	54320	33907	30771	31423	37077	29196	44866	86575	93296	71792	43505	23400
18	53585	33590	30745	31532	36617	29243	46705	87087	92373	70935	42774	23160
19	52907	33212	30728	31613	36355	28863	46790	86932	92138	69975	41841	22945
20	52252	32852	30707	31608	35664	28769	46392	87106	91893	69169	40972	22372
21	51593	32428	30632	31646	34986	29332	46438	86822	91293	68359	39950	22073
22	50868	32340	30562	31656	34622	29821	48620	86274	90583	67252	38912	21820
23	50176	32050	30546	31782	34058	29731	50750	87106	90033	66193	37999	21586
24	49398	31897	30509	32077	33339	29873	52625	87592	89364	65142	37284	21456
25	48714	31749	30477	31869	32665	29852	54907	87914	88734	64176	36588	21349
26	47851	31695	30451	31820	31738	29721	57305	88144	88116	63523	35778	21294
27	47098	31656	30424	31798	31034	29526	59269	88126	87556	62588	34348	21260
28	46275	31591	30366	31864	31002	29212	60728	87647	86731	61580	32941	21044
29	45376	31537	30627	31902	---	28976	62837	87969	85809	60675	31940	20930
30	44318	31450	30392	31946	---	29091	64734	88328	85064	59692	31029	20638
31	43124	---	30643	32071	---	29285	---	88854	---	58691	29858	---
MAX	61656	41922	31553	32077	37077	31002	64734	88854	95116	84448	57698	28176
MIN	43124	31450	30366	30948	31002	28769	29505	62310	85064	58691	29858	20638
a	3240.53	3220.63	3219.13	3221.77	3219.80	3216.56	3270.97	3299.00	3294.86	3263.11	3217.65	3198.19
b	-17188	-11674	-807	+1428	-1069	-1717	+35449	+24120	-3790	-26373	-28833	-9220

CAL YR 1986 b +537

WTR YR 1987 b -39674

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11234760 SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CA

LOCATION.--Lat 37°19'00", long 119°19'37", in NW 1/4 SW 1/4 sec.14, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,500 ft upstream from Shakeflat Creek, 4,900 ft downstream from Mammoth Pool Dam, and 10 mi northwest of town of Big Creek.

DRAINAGE AREA.--1,003 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 2,865.50 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--No estimated daily discharges. Flow regulated by Mammoth Pool Reservoir (station 11234700) 4,900 ft upstream. Flow partly regulated by Florence Lake (station 11229600), Lake Thomas A. Edison (station 11231000) and diversions through Ward tunnel (station 11229500), and through Mono-Bear conduit to Ward tunnel. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s, June 3, 1969, gage height, 18.38 ft; minimum daily, 0.3 ft³/s, Oct. 14, Dec. 5, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 34 ft³/s, Oct. 28-31; minimum daily, 12 ft³/s, Dec. 9, 10, Feb. 17, 18, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	26	14	13	14	14	14	14	14	13	15	14
2	31	17	14	13	14	14	14	14	15	14	15	14
3	31	15	13	13	14	14	14	14	16	14	15	15
4	31	14	13	13	14	14	14	14	15	14	15	15
5	31	14	13	13	14	14	13	14	14	14	15	15
6	31	14	13	13	14	14	14	14	14	14	15	15
7	32	14	13	13	14	14	14	14	14	14	15	15
8	32	14	14	13	14	14	15	14	14	14	15	15
9	32	14	12	13	14	14	14	14	14	14	15	15
10	31	14	12	13	14	14	14	14	14	14	15	15
11	31	14	14	13	14	14	14	14	14	14	15	15
12	31	14	14	13	14	14	14	14	14	14	15	15
13	31	14	14	13	14	14	15	14	14	14	15	15
14	32	14	14	13	14	14	15	14	14	14	15	15
15	32	14	14	13	14	14	15	14	14	14	15	15
16	32	14	14	13	14	14	15	14	14	15	15	15
17	32	14	14	13	12	14	15	14	14	15	15	15
18	32	14	13	14	12	14	15	15	14	15	15	15
19	32	14	13	14	14	14	14	15	14	15	15	15
20	33	14	13	14	12	14	14	15	14	15	15	15
21	33	14	13	14	13	14	14	14	14	15	15	15
22	33	14	13	14	13	14	14	14	14	15	15	15
23	33	14	13	14	13	14	14	14	14	15	15	15
24	33	14	13	14	14	14	14	14	14	15	15	15
25	33	14	13	14	14	14	14	14	14	15	15	15
26	33	14	13	14	14	14	14	14	14	15	14	15
27	33	14	13	14	14	14	14	14	14	15	14	15
28	34	14	13	14	14	14	14	14	14	15	14	15
29	34	14	13	14	---	14	14	14	14	15	14	15
30	34	14	13	14	---	14	14	14	14	15	14	15
31	34	---	13	14	---	14	---	14	---	15	14	---
TOTAL	998	436	411	417	383	434	426	437	424	449	459	448
MEAN	32.2	14.5	13.3	13.5	13.7	14.0	14.2	14.1	14.1	14.5	14.8	14.9
MAX	34	26	14	14	14	14	15	15	16	15	15	15
MIN	31	14	12	13	12	14	13	14	14	13	14	14
AC-FT	1980	865	815	827	760	861	845	867	841	891	910	889
CAL YR 1986	TOTAL	330599.0	MEAN	906	MAX	10600	MIN	9.2	AC-FT	655700		
WTR YR 1987	TOTAL	5722.0	MEAN	15.7	MAX	34	MIN	12	AC-FT	11350		

SAN JOAQUIN RIVER BASIN

11235500 WARD TUNNEL OUTLET AT HUNTINGTON LAKE, CA

LOCATION.--Lat 37°15'25", long 119°09'38", in SE 1/4 SW 1/4 sec.5, T.8 S., R.26 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, at tunnel outlet at east end of Huntington Lake, 0.9 mi east of Lakeshore Post Office, and 6 mi northeast of Big Creek.

PERIOD OF RECORD.--October 1927 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1960, published as Ward tunnel at outlet.

GAGE.--Pressure-differential recorder to record discharge through penstock. November 1927 to May 23, 1956, water-stage recorder at datum 6,999.00 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.). May 24, 1956, to Sept. 30, 1968, no recorder, see REMARKS below.

REMARKS.--Daily discharge for the period May 24, 1956, to Sept. 30, 1968, computed as the sum of Ward tunnel at intake, Mono-Bear conduit, Camp Creek conduit, and corrected for change in contents of Portal Forebay. Tunnel diverts from Florence Lake to Huntington Lake via Portal Powerplant, receives diversions from Bear and Mono Creeks and at times from several other small tributaries of South Fork San Joaquin River. See record for station 11229500 Ward tunnel intake at Florence Lake. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--60 years, 498 ft³/s, 360,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,080 ft³/s, June 21, 1935; no flow at times many years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	483	278	435	422	0	0	414	714	463	450	793	414
2	461	274	438	418	86	112	447	699	519	715	786	545
3	477	274	451	423	0	0	424	713	406	916	767	647
4	387	272	435	435	0	140	447	700	272	903	782	636
5	278	357	452	422	0	82	439	697	281	920	778	664
6	281	385	446	422	118	203	454	686	294	892	777	637
7	294	405	440	441	0	127	491	683	271	916	769	648
8	266	400	431	432	0	125	489	691	358	885	752	650
9	282	388	439	435	3.0	128	557	687	399	896	789	633
10	273	413	442	431	100	76	590	687	475	892	654	635
11	253	447	433	437	0	99	655	686	430	876	529	630
12	142	468	459	437	0	93	643	688	559	745	734	629
13	506	562	427	434	36	87	677	691	660	727	716	632
14	628	615	445	428	105	143	709	689	657	719	715	624
15	589	601	432	426	72	394	710	696	555	735	711	598
16	629	637	439	440	101	394	707	1020	399	704	701	574
17	626	638	399	0	85	405	711	1360	398	660	706	547
18	396	505	438	0	74	413	709	655	571	652	717	365
19	468	468	437	0	24	394	708	659	621	728	788	631
20	516	435	431	0	113	386	705	649	566	773	927	579
21	503	452	441	73	0	395	709	655	568	773	979	511
22	489	452	434	0	106	405	705	669	580	759	940	472
23	474	449	439	0	0	443	705	655	480	751	935	448
24	421	448	432	0	97	444	705	673	426	797	936	489
25	425	448	435	90	0	386	705	651	471	741	916	478
26	439	448	424	0	0	382	707	663	416	787	720	449
27	421	448	431	0	126	391	706	579	485	816	424	470
28	367	442	417	0	0	382	696	735	449	770	414	438
29	301	444	418	103	---	382	689	660	441	797	421	300
30	290	439	419	0	---	386	698	665	395	797	491	178
31	280	---	420	0	---	414	---	647	---	772	427	---
TOTAL	12645	13292	13459	7149	1246.0	8211	18711	22002	13865	24264	22494	16151
MEAN	408	443	434	231	44.5	265	624	710	462	783	726	538
MAX	629	638	459	441	126	444	711	1360	660	920	979	664
MIN	142	272	399	0	0	0	414	579	271	450	414	178
AC-FT	25080	26360	26700	14180	2470	16290	37110	43640	27500	48130	44620	32040

CAL YR 1986 TOTAL 238062.0 MEAN 652 MAX 1620 MIN 80 AC-FT 472200
WTR YR 1987 TOTAL 173489.0 MEAN 475 MAX 1360 MIN .00 AC-FT 344100

SAN JOAQUIN RIVER BASIN

11236000 HUNTINGTON LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°14'03", long 119°12'41", in SW 1/4 sec.14, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gate tower of dam 1 on Big Creek, 2 mi northeast of town of Big Creek.
DRAINAGE AREA.--80.5 mi².

PERIOD OF RECORD.--April 1913 to current year. Prior to October 1926, monthly contents only, published in WSP 1315-A; 1926-31, published in WSP 721. Maximum and minimum daily contents (water years 1913-39) were summarized in WSP 881. Prior to 1960, maximum and minimum daily contents were published.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.). Prior to June 19, 1920, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by four dams; storage began Apr. 11, 1913. Dams were raised in 1914 and again in 1917. Usable capacity, 89,166 acre-ft between elevations 6,819.90 ft, invert of outlet tunnel No. 1, and 6,950.00 ft, spillway crest at dam 1, NGVD. Additional storage of 600 acre-ft is not available for release. Huntington-Shaver conduit (station 11239000) has diverted water from Huntington Lake to Shaver Lake since Apr. 21, 1928. Water is used for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were provided by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 90,491 acre-ft, May 31, 1926, elevation, 6,950.92 ft; minimum, 2,103 acre-ft, Nov. 6, 1937, elevation, 6,838.53 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 87,523 acre-ft, Dec. 14, elevation, 6,948.85 ft; minimum, 40,739 acre-ft, Mar. 27, elevation, 6,910.52 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Southern California Edison Co., from table dated Sept. 24, 1964)

6,819.90	0	6,835	1,552	6,870	11,293	6,920	50,812
6,820	8	6,840	2,354	6,880	16,370	6,930	62,555
6,822	142	6,845	3,324	6,890	22,882	6,940	75,344
6,825	382	6,850	4,480	6,900	30,861	6,950	89,166
6,830	899	6,860	7,427	6,910	40,216	6,951	90,606

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87410	87027	86913	87027	75678	54925	41242	59374	86303	84853	85022	84406
2	87268	87055	86856	87012	75159	54070	41344	59794	86445	85177	85360	84154
3	87168	87083	86785	87027	74496	52856	41415	60744	86317	85810	85641	84448
4	87154	86771	86686	87154	73795	52106	41314	61809	85895	86473	85613	84601
5	87069	86544	86700	87140	73112	51441	41242	62888	85500	86984	85726	84741
6	86941	86388	86700	87083	72665	50846	41182	63850	85205	87027	85726	84881
7	86828	86233	86658	87055	71960	50100	41172	64832	85036	87069	86078	85022
8	86672	86120	86658	86998	71399	49282	41283	65833	84965	87069	86204	85430
9	86587	85979	86672	86941	70804	48468	41507	66726	86247	86927	86970	85529
10	86686	86909	86686	86899	70364	47467	41833	67649	84615	86771	87126	85669
11	86686	85895	86700	86870	69874	46648	42292	68503	84867	86615	86899	85824
12	86345	85923	87254	86799	69232	45643	42755	69450	85036	86431	86757	85951
13	86261	86078	87452	86729	68617	44797	43322	70338	85388	86247	86558	86064
14	86388	86331	87523	86658	68146	44187	43979	71283	85782	86007	86360	86218
15	86473	86587	87509	86558	67181	43937	44660	71869	85895	85810	86289	86275
16	86572	86913	87523	86501	66284	43687	45387	75092	85697	85599	86120	86275
17	86799	87239	87424	85838	65344	43437	46229	77473	85514	85303	85796	86218
18	86686	87438	87424	85162	64385	43188	46993	78269	85683	85092	85317	85810
19	86729	87353	87466	84839	63307	42940	47739	78961	85810	84979	84965	86134
20	86842	87310	87438	84168	62420	42642	48577	79218	86007	84993	84979	86120
21	86913	87282	87381	83623	62054	42425	49392	80365	86120	84965	85050	85965
22	87012	87239	87324	82970	62237	42159	50389	81105	86275	84937	85050	85923
23	87055	87282	87296	82028	61186	41924	50846	81807	86134	84909	85022	85852
24	87012	87254	87211	81133	60277	41619	52368	82415	86078	84895	85008	85599
25	86998	87211	87168	80392	59169	41324	53473	82970	85979	84825	85064	85416
26	86941	87168	87097	79668	58071	41011	54462	83511	85768	84839	85050	85345
27	86870	87126	87027	78893	57183	40739	55529	84028	85697	84895	84993	85388
28	86870	87055	86956	78161	56067	41182	56429	84601	85444	84881	84867	85345
29	86870	86998	86870	77662	---	41823	57537	85275	85261	84909	84853	85022
30	86814	86984	87211	76989	---	41599	58429	85782	85008	84937	84685	84462
31	86998	---	87126	76305	---	41426	---	86218	---	84937	84532	---
MAX	87410	87438	87523	87154	75678	54925	58429	86218	86445	87069	87126	86275
MIN	86261	85895	86658	76305	56067	40739	41172	59374	84615	84825	84532	84154
a	6948.48	6948.47	6948.57	6940.72	6924.59	6911.20	6926.59	6947.93	6947.07	6947.02	6946.73	6946.68
b	-483	-14	+142	-10821	-20238	-14641	+17003	+27789	-1210	-71	-405	-70

CAL YR 1986 b +30931

WTR YR 1987 b -3019

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11237000 BIG CREEK BELOW HUNTINGTON LAKE, CA

LOCATION.--Lat 37°13'19", long 119°12'43", in SW 1/4 NW 1/4 sec. 23, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 500 ft upstream from Grouse Creek, 0.8 mi south of main dam of Huntington Lake, and 2.1 mi northeast of town of Big Creek.

DRAINAGE AREA.--81.1 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder with Parshall flume control. Elevation of gage is 6,600 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated by Huntington Lake with releases for fishery maintenance. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4.0 ft³/s, Feb. 13, 1987; minimum daily, 2.3 ft³/s, Mar. 2, Aug. 1, Aug. 17-25, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	2.9	2.9	2.8	2.6	2.4	2.7	2.7	2.8	2.5	2.3	2.7
2	3.0	2.8	2.9	2.8	2.6	2.3	2.8	2.7	2.8	2.5	2.4	2.8
3	3.0	2.8	2.9	2.8	2.6	2.4	2.8	2.7	2.8	2.5	2.4	2.9
4	3.0	2.8	2.9	2.8	2.6	2.5	2.7	2.7	2.8	2.5	2.4	2.9
5	3.0	2.8	2.9	2.8	2.6	3.9	2.7	2.6	2.8	2.5	2.4	3.0
6	3.0	2.9	3.0	2.8	2.6	3.7	2.8	2.7	3.5	2.5	2.4	3.1
7	2.9	2.8	2.9	2.8	2.6	3.2	2.9	2.7	3.1	2.4	2.4	3.1
8	3.0	2.9	2.9	2.8	2.6	3.0	2.9	2.7	3.0	2.4	2.4	3.2
9	3.0	2.8	2.9	2.8	2.6	2.9	3.0	2.7	2.9	2.4	2.4	3.2
10	3.0	2.9	2.9	2.8	2.6	2.7	3.0	2.6	2.9	2.4	2.4	3.2
11	3.0	2.9	2.9	2.8	2.7	2.7	3.1	2.7	2.9	2.4	2.4	3.2
12	3.0	2.8	2.9	2.8	2.6	2.7	3.0	2.7	2.9	2.4	2.4	3.3
13	3.0	2.8	2.9	2.8	4.0	2.8	2.9	2.6	2.9	2.4	2.4	3.3
14	3.0	2.9	2.9	2.8	3.0	2.7	2.9	2.6	2.9	2.4	2.4	3.2
15	3.0	2.8	2.9	2.8	2.7	2.6	2.8	2.9	2.9	2.4	2.4	3.2
16	3.0	2.9	2.9	2.8	2.6	2.5	2.8	2.9	2.8	2.4	2.4	3.2
17	3.0	2.9	2.9	2.8	2.6	2.6	2.8	2.7	2.8	2.4	2.3	3.1
18	3.0	2.9	2.9	2.7	2.6	2.5	2.8	2.7	2.8	2.4	2.3	3.1
19	3.0	2.9	2.9	2.7	2.6	2.5	2.8	2.7	2.8	2.4	2.3	3.1
20	3.0	2.9	2.9	2.7	2.6	2.6	2.8	2.7	2.7	2.4	2.3	3.1
21	3.0	2.9	2.8	2.7	2.5	2.6	2.7	2.8	2.7	2.4	2.3	3.1
22	3.0	2.9	2.9	2.7	2.5	2.6	2.7	2.8	2.7	2.4	2.3	3.1
23	3.0	2.9	2.8	2.7	2.5	2.6	2.7	2.8	2.7	2.4	2.3	3.1
24	3.0	2.9	2.8	2.7	2.5	2.4	2.7	2.8	2.6	2.4	2.3	3.1
25	3.0	2.9	2.9	2.6	2.4	2.5	2.7	2.8	2.6	2.4	2.3	3.1
26	2.9	2.9	2.8	2.6	2.4	2.5	2.7	2.8	2.6	2.4	2.4	3.1
27	2.9	2.9	2.7	2.7	2.4	2.5	2.7	2.8	2.6	2.4	2.4	3.1
28	2.9	2.9	2.7	2.6	2.4	2.6	2.7	2.8	2.6	2.4	2.5	3.1
29	2.9	2.9	2.7	2.6	---	2.6	2.7	2.8	2.5	2.4	2.6	3.1
30	2.9	2.9	2.8	2.6	---	2.6	2.8	2.8	2.5	2.4	2.7	3.1
31	2.9	---	2.8	2.6	---	2.7	---	2.8	---	2.4	2.7	---
TOTAL	92.4	86.1	88.8	84.8	73.6	83.4	84.1	84.8	83.9	75.0	74.3	92.9
MEAN	2.98	2.87	2.86	2.74	2.63	2.69	2.80	2.74	2.80	2.42	2.40	3.10
MAX	3.1	2.9	3.0	2.8	4.0	3.9	3.1	2.9	3.5	2.5	2.7	3.3
MIN	2.9	2.8	2.7	2.6	2.4	2.3	2.7	2.6	2.5	2.4	2.3	2.7
AC-FT	183	171	176	168	146	165	167	168	166	149	147	184

WTR YR 1987 TOTAL 1004.1 MEAN 2.75 MAX 4.0 MIN 2.3 AC-FT 1990

SAN JOAQUIN RIVER BASIN

11237500 PITMAN CREEK BELOW TAMARACK CREEK, CA

LOCATION.--Lat 37°11'54", long 119°12'48", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 250 ft upstream from Huntington-Shaver conduit tunnel, 0.8 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.4 mi upstream from mouth, and 1.9 mi east of town of Big Creek.

DRAINAGE AREA.--22.9 mi².

PERIOD OF RECORD.--October 1927 to current year. Records for water year 1928 incomplete, yearly estimate published in WSP 1315-A.

REVISED RECORDS.--WSP 931: 1940. WSP 1315-A: 1944. WSP 1395: 1928-29, 1938. WSP 1515: 1929.

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Elevation of gage is 7,005 ft above National Geodetic Vertical Datum of 1929, from Southern California Edison Co. contour map. Prior to Sept. 29, 1940, at site 10 ft downstream at same datum.

REMARKS.--No diversion above station; practically all flow is diverted below station to Huntington-Shaver conduit. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--60 years, 42.0 ft³/s, 30,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft³/s, Dec. 23, 1955, gage height, 11.20 ft, from rating curve extended above 1,100 ft³/s on basis of slope-area measurement at gage height 10.77 ft; no flow Oct. 15-18, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 292 ft³/s, May 15, gage height, 5.80 ft; minimum daily, 0.11 ft³/s, Sept. 21-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	1.4	1.0	.80	1.1	1.6	15	95	22	3.3	.56	.17
2	3.4	1.3	1.1	.82	1.1	1.8	19	77	20	3.2	.54	.16
3	3.1	1.4	1.2	.86	.95	2.5	22	83	19	3.0	.49	.17
4	2.6	1.3	1.2	.82	.93	4.0	19	91	17	2.9	.46	.16
5	2.3	1.3	.92	.78	1.0	12	19	91	15	2.7	.42	.13
6	2.1	1.1	.84	.98	1.1	13	20	83	23	2.5	.42	.12
7	1.9	1.1	.77	1.1	1.0	12	26	76	27	2.4	.32	.13
8	1.9	1.2	.74	1.1	1.0	13	38	75	24	2.2	.32	.14
9	1.8	1.2	.85	1.2	1.2	11	56	70	19	2.1	.30	.14
10	1.7	1.3	.90	1.4	1.7	11	73	65	15	1.9	.27	.14
11	1.6	1.3	1.0	1.5	1.8	9.1	85	64	14	1.9	.24	.14
12	1.7	.92	.99	1.5	1.5	8.5	87	62	12	1.8	.24	.14
13	1.6	1.2	.95	1.6	1.4	8.8	93	56	11	1.6	.22	.16
14	1.6	1.5	.92	1.6	1.2	8.6	104	54	11	1.5	.22	.17
15	1.5	1.4	.88	1.2	1.0	8.4	109	104	10	1.5	.24	.16
16	1.5	1.4	.91	1.1	.97	8.2	118	117	9.4	1.4	.24	.14
17	1.4	1.4	.97	.98	1.0	8.2	125	66	9.1	1.3	.22	.14
18	1.5	1.4	1.1	.97	.98	9.1	110	52	8.5	1.3	.21	.13
19	1.5	1.3	.78	.98	.89	8.5	89	44	8.2	1.4	.19	.12
20	1.5	1.3	.70	.99	.90	8.3	99	40	7.6	1.3	.18	.12
21	1.6	1.3	.74	.98	.86	8.2	119	41	7.6	1.3	.17	.11
22	1.6	1.3	.78	.98	.95	8.5	127	39	7.3	1.3	.17	.11
23	1.6	1.3	.71	.99	.72	8.2	124	41	6.8	1.3	.14	.11
24	1.5	1.3	.70	1.0	.64	8.2	125	39	6.4	1.2	.14	.11
25	1.5	1.2	.77	1.0	.66	8.2	130	36	5.9	1.1	.14	.12
26	1.5	.98	.82	1.1	.80	8.2	130	33	5.5	.96	.13	.12
27	1.5	.83	.88	1.1	1.1	8.5	124	31	5.1	.84	.13	.12
28	1.5	.83	.80	1.2	1.4	8.8	121	30	4.5	.72	.12	.13
29	1.5	.81	.82	1.1	---	9.7	126	28	4.0	.70	.14	.12
30	1.4	.76	.81	1.0	---	12	126	25	3.7	.67	.16	.12
31	1.4	---	.80	1.0	---	14	---	24	---	.59	.18	---
TOTAL	55.5	36.33	27.35	33.73	29.85	270.1	2578	1832	358.6	51.88	7.92	4.05
MEAN	1.79	1.21	.88	1.09	1.07	8.71	85.9	59.1	12.0	1.67	.26	.14
MAX	3.4	1.5	1.2	1.6	1.8	14	130	117	27	3.3	.56	.17
MIN	1.4	.76	.70	.78	.64	1.6	15	24	3.7	.59	.12	.11
AC-FT	110	72	54	67	59	536	5110	3630	711	103	16	8.0

CAL YR 1986 TOTAL 27206.29 MEAN 74.5 MAX 518 MIN .59 AC-FT 53960
WTR YR 1987 TOTAL 5285.31 MEAN 14.5 MAX 130 MIN .11 AC-FT 10480

SAN JOAQUIN RIVER BASIN

11237600 PITMAN CREEK SHAFT BELOW TAMARACK CREEK, CA

LOCATION.--Lat 37°11'48", long 119°12'42", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank at Huntington-Shaver conduit tunnel, 0.8 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.3 mi north of Tamarack Mountain, and 1.9 mi east of town of Big Creek.

DRAINAGE AREA.--23.0 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Discharge computed as difference between Pitman Creek below Tamarack Creek (station 11237500) and Pitman Creek near Tamarack Mountain (station 11237700). Elevation of gage is 6,980 ft above National Geodetic Vertical Datum, from topographic map.

REMARKS.--Flow consists of diversion into Huntington-Shaver conduit for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 128 ft³/s, Apr. 25, 26, 1987; no flow for many days in 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	.30	.07			0	13	93	21	2.6	.07	.03
2	1.3	.30	.22			0	17	75	19	2.6	.08	.03
3	1.0	.30	.32			.60	20	81	18	2.4	.03	.04
4	.70	.30	.20			2.0	17	89	16	2.3	.02	.04
5	.60	.20	0			10	17	89	14	2.1	.02	.02
6	.40	.28	0			11	18	81	22	1.9	.02	.01
7	.40	.37	0			10	24	74	26	1.8	0	0
8	.40	.44	0			11	36	73	23	1.6	0	0
9	.30	.44	0			9.0	54	68	18	1.5	0	0
10	.20	.54	0			9.0	71	63	14	1.3	0	0
11	.10	.54	0			7.1	83	62	13	1.3	0	0
12	.20	0	0			6.5	86	60	11	1.2	0	0
13	.10	.46	0			6.7	92	54	9.8	.99	0	0
14	.10	.86	0			6.5	103	52	9.8	.83	0	0
15	.20	.78	0			6.3	109	102	8.8	.86	0	0
16	.30	.81	0			6.1	118	115	8.2	.76	0	0
17	.20	.83	0			6.1	125	64	7.9	.66	0	0
18	.30	.81	0			7.0	110	50	7.3	.66	0	0
19	.30	.79	0			6.4	89	42	7.0	.76	0	0
20	.20	.79	0			6.2	98	38	6.4	.63	0	0
21	.30	.76	0			6.1	117	40	6.5	.63	0	0
22	.30	.81	0			6.4	125	38	6.2	.60	0	0
23	.40	.79	0			6.1	122	40	5.7	.60	0	0
24	.30	.81	0			6.1	123	38	5.1	.54	0	0
25	.30	.76	0			6.1	128	34	5.0	.47	0	0
26	.40	.65	0			6.1	128	32	4.8	.36	0	0
27	.40	.56	0			6.4	122	30	4.4	.28	0	0
28	.40	.49	0			6.7	120	29	3.8	.67	0	.01
29	.40	.21	0		---	7.6	124	27	3.3	.21	.01	.01
30	.30	0	0		---	9.9	124	24	3.0	.18	.03	.01
31	.30	---	0		---	12	---	23	---	.10	.02	---
TOTAL	11.70	15.98	.81	0	0	207.00	2533	1780	328.0	33.39	.30	.20
MEAN	.38	.53	.026	0	0	6.68	84.4	57.4	10.9	1.08	.010	.007
MAX	1.3	.86	.32	0	0	12	128	115	26	2.6	.08	.04
MIN	.10	0	0	0	0	0	13	23	3.0	.10	0	0
AC-FT	23	32	1.6	0	0	411	5020	3530	651	66	.6	.4
WTR YR 1987	TOTAL	4910.38	MEAN 13.5	MAX	128	MIN 0	AC-FT	9740				

SAN JOAQUIN RIVER BASIN

11237700 PITMAN CREEK NEAR TAMARACK MOUNTAIN, CA

LOCATION.--Lat 37°12'00", long 119°12'55", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 100 ft downstream from Huntington-Shaver conduit tunnel, 0.9 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.3 mi upstream from mouth, and 1.8 mi east of town of Big Creek.

DRAINAGE AREA.--23.0 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and 90° V-notch control. Elevation of gage is 6,970 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Entire flow except for fishery maintenance is diverted above station at Pitman Creek Shaft below Tamarack Creek (station 11237600) to Huntington-Shaver conduit. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2.1 ft³/s, Oct. 1-3, 1986, Mar. 13 to Apr. 10, 1987; minimum daily, 0.05 ft³/s, July 28, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	1.1	.93	.80	1.1	1.6	2.1	1.8	1.3	.66	.49	.14
2	2.1	1.0	.88	.82	1.1	1.8	2.1	1.7	1.3	.64	.46	.13
3	2.1	1.1	.88	.86	.95	1.9	2.1	1.8	1.3	.64	.46	.13
4	1.9	1.0	1.0	.82	.93	2.0	2.1	1.8	1.3	.64	.44	.12
5	1.7	1.1	.92	.78	1.0	2.0	2.1	1.8	1.3	.61	.40	.11
6	1.7	.82	.84	.98	1.1	2.0	2.1	1.8	1.3	.61	.40	.13
7	1.5	.73	.77	1.1	1.0	2.0	2.1	1.7	1.3	.64	.32	.14
8	1.5	.76	.74	1.1	1.0	2.0	2.1	1.7	1.3	.64	.32	.14
9	1.5	.76	.85	1.2	1.2	2.0	2.1	1.7	1.3	.64	.30	.14
10	1.5	.76	.90	1.4	1.7	2.0	2.1	1.7	1.2	.61	.27	.14
11	1.5	.76	1.0	1.5	1.8	2.0	1.7	1.7	1.2	.64	.24	.14
12	1.5	.92	.99	1.5	1.5	2.0	1.3	1.7	1.2	.61	.24	.14
13	1.4	.74	.95	1.6	1.4	2.1	.90	1.6	1.2	.61	.22	.16
14	1.3	.64	.92	1.6	1.2	2.1	.60	1.6	1.2	.67	.22	.17
15	1.3	.62	.88	1.2	1.0	2.1	.20	1.7	1.2	.64	.24	.16
16	1.2	.59	.91	1.1	.97	2.1	.50	1.6	1.2	.64	.24	.14
17	1.2	.57	.97	.98	1.0	2.1	.16	1.6	1.2	.64	.22	.14
18	1.2	.59	1.1	.97	.98	2.1	.11	1.6	1.2	.64	.21	.13
19	1.2	.51	.78	.98	.89	2.1	.08	1.5	1.2	.64	.19	.12
20	1.3	.51	.70	.99	.90	2.1	1.3	1.5	1.2	.67	.18	.12
21	1.3	.54	.74	.98	.86	2.1	1.6	1.5	1.1	.67	.17	.11
22	1.3	.49	.78	.98	.95	2.1	1.7	1.5	1.1	.70	.17	.11
23	1.2	.51	.71	.99	.72	2.1	1.7	1.5	1.1	.70	.14	.11
24	1.2	.49	.70	1.0	.64	2.1	1.6	1.5	1.3	.66	.14	.11
25	1.2	.44	.77	1.0	.66	2.1	1.6	1.5	.85	.63	.14	.12
26	1.1	.33	.82	1.1	.80	2.1	1.6	1.4	.70	.60	.13	.12
27	1.1	.27	.88	1.1	1.1	2.1	1.5	1.4	.70	.56	.13	.12
28	1.1	.34	.80	1.2	1.4	2.1	1.5	1.4	.70	.05	.12	.12
29	1.1	.60	.82	1.1	---	2.1	1.7	1.4	.70	.49	.13	.11
30	1.1	.76	.81	1.0	---	2.1	1.9	1.4	.68	.49	.13	.11
31	1.1	---	.80	1.0	---	2.1	---	1.4	---	.49	.16	---
TOTAL	43.5	20.35	26.54	33.73	29.85	63.2	44.25	49.5	33.83	18.77	7.62	3.88
MEAN	1.40	.68	.86	1.09	1.07	2.04	1.48	1.60	1.13	.61	.25	.13
MAX	2.1	1.1	1.1	1.6	1.8	2.1	2.1	1.8	1.3	.70	.49	.17
MIN	1.1	.27	.70	.78	.64	1.6	.08	1.4	.68	.05	.12	.11
AC-FT	86	40	53	67	59	125	88	98	67	37	15	7.7

WTR YR 1987 TOTAL 375.02 MEAN 1.03 MAX 2.1 MIN .05 AC-FT 744

SAN JOAQUIN RIVER BASIN

11238500. BIG CREEK NEAR MOUTH, NEAR BIG CREEK, CA

LOCATION.--Lat 37°12'28", long 119°19'13", in SE 1/4 NW 1/4 sec.26, T.8 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.6 mi upstream from mouth and 3.9 mi west of town of Big Creek.

DRAINAGE AREA.--131 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder. Elevation of gage is 2,640 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated by Huntington Lake (station 11236000) and diversions for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 9.7 ft³/s, Feb. 13, 1987; minimum daily, 1.9 ft³/s, Nov. 19, 22-24, 1986.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.2	2.5	2.6	2.5	2.4	3.2	2.7	2.3	2.1	2.3	2.3
2	3.0	3.3	2.5	2.6	2.5	2.4	3.3	2.2	2.3	2.1	2.3	2.3
3	3.1	3.4	2.6	2.9	2.6	2.4	3.8	2.2	2.3	2.1	2.3	2.3
4	3.1	3.4	2.7	3.2	2.5	2.4	3.4	2.2	2.3	2.1	2.4	2.3
5	3.1	3.4	2.6	2.8	2.5	3.2	3.2	2.2	2.3	2.2	2.4	2.3
6	3.0	3.3	2.5	2.7	2.4	4.0	3.2	2.2	2.5	2.2	2.4	2.3
7	3.0	3.2	2.6	2.6	2.1	3.0	3.2	2.2	2.3	2.2	2.4	2.3
8	3.0	3.2	2.6	2.6	2.1	2.8	3.2	2.2	2.2	2.2	2.4	2.4
9	3.2	3.2	2.6	2.6	2.1	2.7	3.2	2.2	2.2	2.2	2.4	2.3
10	3.5	3.2	2.6	2.5	2.2	2.7	3.2	2.2	2.2	2.2	2.4	2.3
11	3.5	3.2	2.7	2.5	2.3	2.7	3.2	2.2	2.2	2.2	2.4	2.3
12	3.4	3.1	2.6	2.4	2.3	2.6	3.2	2.1	2.2	2.2	2.4	2.3
13	3.3	3.1	2.7	2.4	9.7	3.1	3.1	2.1	2.2	2.2	2.4	2.3
14	3.3	3.0	2.7	2.4	2.9	3.0	3.1	2.1	2.2	2.2	2.4	2.3
15	3.3	3.2	2.7	2.4	2.5	3.3	2.8	2.4	2.2	2.2	2.3	2.3
16	3.3	3.1	2.7	2.4	2.5	3.0	2.5	2.2	2.2	2.1	2.3	2.3
17	4.4	2.9	2.7	2.3	2.5	2.8	2.7	2.2	2.2	2.1	2.3	2.3
18	3.4	2.5	2.7	2.3	2.5	2.8	3.0	2.2	2.2	2.2	2.3	2.3
19	3.4	1.9	2.7	2.3	2.4	2.8	3.1	2.2	2.2	2.3	2.3	2.3
20	3.4	2.0	2.7	6.7	2.4	2.8	3.0	2.2	2.2	2.3	2.3	2.3
21	3.4	2.0	2.7	2.5	2.3	2.9	3.0	2.2	2.2	2.2	2.3	2.4
22	3.4	1.9	2.6	2.4	2.2	2.9	2.9	2.2	2.2	2.3	2.3	2.3
23	3.4	1.9	2.6	2.5	2.5	2.9	2.9	2.2	2.2	2.3	2.3	2.3
24	3.4	1.9	2.6	2.5	2.5	3.0	2.9	2.2	2.2	2.2	2.4	2.4
25	3.4	2.1	2.6	2.5	2.4	2.9	2.9	2.2	2.2	2.2	2.4	2.4
26	3.5	2.5	2.6	5.1	2.4	3.0	2.9	2.2	2.2	2.2	2.4	2.4
27	3.5	2.6	2.6	2.5	2.4	2.9	3.0	2.3	2.2	2.2	3.3	2.4
28	3.5	2.6	2.6	2.8	2.4	2.9	3.0	2.3	2.2	2.2	2.4	2.4
29	3.4	2.5	2.6	2.5	---	2.8	2.8	2.3	2.2	2.2	2.4	2.4
30	3.4	2.5	2.5	2.5	---	2.9	3.0	2.3	2.1	2.3	2.5	2.4
31	3.3	---	2.6	2.5	---	3.0	---	2.3	---	2.3	2.4	---
TOTAL	103.3	83.3	81.3	85.5	74.6	89.0	91.9	69.1	66.8	68.2	74.2	69.9
MEAN	3.33	2.78	2.62	2.76	2.66	2.87	3.06	2.23	2.23	2.20	2.39	2.33
MAX	4.4	3.4	2.7	6.7	9.7	4.0	3.8	2.7	2.5	2.3	3.3	2.4
MIN	3.0	1.9	2.5	2.3	2.1	2.4	2.5	2.1	2.1	2.1	2.3	2.3
AC-FT	205	165	161	170	148	177	182	137	132	135	147	139

WTR YR 1987 TOTAL 957.1 MEAN 2.62 MAX 9.7 MIN 1.9 AC-FT 1900

SAN JOAQUIN RIVER BASIN

11238600 SAN JOAQUIN RIVER ABOVE STEVENSON CREEK, NEAR BIG CREEK, CA

LOCATION.--Lat 37°11'20", long 119°20'35", in SE 1/4 NE 1/4 sec.27, T.8 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, at dam 6 intake structure, 2.4 mi upstream from Stevenson Creek and 3.8 mi west of Big Creek.

DRAINAGE AREA.--1,197 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder. Elevation of gage is 2,160 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Record consists of computed flow over spillway at dam 6 and through fishwater release valve. Tunnel to powerplant No. 4 diverts at dam 6. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of U.S. Geological Survey, in connection with Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4.9 ft³/s, Mar. 17-26, 1987; minimum daily, 3.6 ft³/s, June 17-20, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	3.9	4.0	4.2	4.5	4.8	4.7	4.2	3.8	3.9	4.0	4.0
2	3.9	3.9	4.0	4.2	4.5	4.8	4.7	4.2	3.8	3.9	4.0	4.0
3	3.9	3.9	4.0	4.2	4.5	4.8	4.7	4.2	3.8	3.9	4.0	4.0
4	3.9	3.9	4.0	4.2	4.5	4.8	4.7	4.2	3.8	4.0	4.0	4.0
5	3.9	3.9	4.0	4.2	4.5	4.8	4.6	4.2	3.8	4.0	4.0	4.0
6	3.9	3.9	4.0	4.2	4.6	4.8	4.6	4.1	3.8	4.0	4.0	4.0
7	3.9	3.9	4.0	4.2	4.6	4.8	4.6	4.1	3.8	4.0	4.0	4.0
8	3.9	3.9	4.0	4.2	4.6	4.8	4.6	4.1	3.7	4.0	4.0	4.0
9	3.9	3.9	4.0	4.2	4.6	4.8	4.5	4.1	3.7	4.1	4.0	4.0
10	3.9	3.9	4.0	4.2	4.6	4.8	4.5	4.1	3.7	4.1	4.0	4.0
11	3.9	3.9	4.0	4.3	4.7	4.8	4.5	4.1	3.7	4.1	4.0	4.0
12	3.9	3.9	4.0	4.3	4.7	4.8	4.5	4.1	3.7	4.1	4.0	4.0
13	3.9	3.9	4.0	4.3	4.6	4.8	4.5	4.0	3.7	4.1	4.0	4.0
14	3.9	3.9	4.0	4.3	4.7	4.8	4.4	4.0	3.7	4.1	4.0	4.0
15	3.9	3.9	4.0	4.3	4.7	4.8	4.4	4.0	3.7	4.1	4.0	4.0
16	3.9	3.9	4.1	4.3	4.7	4.8	4.4	4.0	3.7	4.1	4.0	4.0
17	3.9	4.0	4.1	4.3	4.7	4.9	4.4	4.0	3.6	4.1	4.0	4.0
18	3.9	4.0	4.1	4.3	4.7	4.9	4.4	4.0	3.6	4.1	4.0	4.1
19	3.9	4.0	4.1	4.3	4.7	4.9	4.4	4.0	3.6	4.1	4.0	4.1
20	3.9	4.0	4.1	4.4	4.7	4.9	4.4	3.9	3.6	4.1	4.0	4.1
21	3.9	4.0	4.1	4.4	4.7	4.9	4.3	3.9	3.7	4.1	4.0	4.1
22	3.9	4.0	4.1	4.4	4.7	4.9	4.3	3.9	3.7	4.1	4.0	4.1
23	3.9	4.0	4.1	4.4	4.7	4.9	4.3	3.9	3.7	4.1	4.0	4.1
24	3.9	4.0	4.1	4.4	4.7	4.9	4.3	3.9	3.7	4.1	4.0	4.1
25	3.9	4.0	4.1	4.4	4.7	4.9	4.3	3.9	3.8	4.1	4.0	4.1
26	3.9	4.0	4.1	4.4	4.8	4.9	4.3	3.9	3.8	4.0	4.0	4.1
27	3.9	4.0	4.1	4.4	4.8	4.8	4.3	3.9	3.8	4.0	4.0	4.1
28	3.9	4.0	4.1	4.5	4.8	4.8	4.2	3.9	3.8	4.0	4.0	4.1
29	3.9	4.0	4.2	4.5	---	4.8	4.2	3.9	3.8	4.0	4.0	4.1
30	3.9	4.0	4.2	4.5	---	4.8	4.2	3.8	3.9	4.0	4.0	4.1
31	3.9	---	4.2	4.5	---	4.7	---	3.8	---	4.0	4.0	---
TOTAL	120.9	118.4	125.9	133.9	130.3	149.7	133.2	124.3	112.0	125.4	124.0	121.3
MEAN	3.90	3.95	4.06	4.32	4.65	4.83	4.44	4.01	3.73	4.05	4.00	4.04
MAX	3.9	4.0	4.2	4.5	4.8	4.9	4.7	4.2	3.9	4.1	4.0	4.1
MIN	3.9	3.9	4.0	4.2	4.5	4.7	4.2	3.8	3.6	3.9	4.0	4.0
AC-FT	240	235	250	266	258	297	264	247	222	249	246	241

WTR YR 1987 TOTAL 1519.3 MEAN 4.16 MAX 4.9 MIN 3.6 AC-FT 3010

SAN JOAQUIN RIVER BASIN

11239500 SHAVER LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°08'40", long 119°18'08", in SE 1/4 sec.13, T.9 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, near center of dam on Stevenson Creek, 6 mi southwest of town of Big Creek.
DRAINAGE AREA.--29.1 mi².

PERIOD OF RECORD.--November 1909 to current year. Prior to January 1927, monthly contents only, published in WSP 1315-A; January 1927 to September 1931, published in WSP 721. Maximum and minimum daily contents (water years 1928-39) summarized in WSP 881. Prior to 1960, maximum and minimum daily contents were published.
REVISED RECORDS.--WSP 1565: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.). Prior to Jan. 11, 1927, gage on rockfilled dam a short distance upstream at different datum.

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, 135,568 acre-ft between elevations 5,225 ft, trash-rack foundation, and 5,370.13 ft, crest of spillway, NGVD. Additional storage of 92 acre-ft is not available for release. Water is received from Pitman Creek (since Feb. 22, 1928) and Huntington Lake (since Apr. 21, 1928) through Huntington-Shaver conduit (station 11239000) and released for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were provided by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 135,897 acre-ft, July 5, 1946, Aug. 4, 1978; maximum elevation, 5,370.28 ft, Aug. 4, 1978; minimum contents, 652 acre-ft, Mar. 7, 1942, elevation, 5,249.38 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 85,657 acre-ft, Oct. 1, elevation, 5,345.16 ft; minimum, 18,998 acre-ft, Sept. 29, elevation, 5,294.34 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Southern California Edison Co., from table dated Oct. 1, 1967)

5,225	0	5,250	700	5,280	9,189	5,330	60,942
5,230	42	5,255	1,254	5,290	15,598	5,340	76,741
5,235	97	5,260	2,070	5,300	24,004	5,350	94,568
5,240	191	5,265	3,206	5,310	34,455	5,360	114,220
5,245	379	5,270	4,748	5,320	46,797	5,371	137,476

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85657	66255	65497	65544	66255	65269	63124	60197	53818	44771	39791	32187
2	84486	66007	65497	65544	66255	64948	62852	60137	53521	44356	39264	31748
3	83374	65760	65482	65714	66316	64826	62746	60197	53255	43995	38610	31233
4	82187	65606	65482	65868	66285	64643	62640	60242	53045	43688	38767	30757
5	80993	65606	65513	65930	66270	65055	62519	60346	52751	43560	38477	30542
6	79807	65667	65544	65976	66177	65345	62338	60465	52569	43880	37779	30262
7	78597	65606	65544	66069	66177	65406	62158	60391	52401	43841	37434	29730
8	77364	65544	65544	66069	66208	65360	61963	60301	52151	43803	36802	29193
9	76174	65575	65544	66069	66255	65238	61843	60272	51821	43918	36145	28682
10	74974	65559	65528	66085	66285	65208	61708	60137	51464	44059	35491	28103
11	73787	65559	65528	66085	66424	65101	61467	60063	51286	44097	34869	27481
12	72576	65559	65528	66069	65837	65040	61107	59810	51052	44008	34651	26862
13	71391	65528	65528	66085	67325	65055	60942	59631	50819	43854	34478	26243
14	70215	65528	65528	66085	67450	65009	60689	59334	50533	43739	34297	25650
15	69039	65528	65528	66100	67528	64933	60450	59349	50261	43739	34172	25074
16	67811	65528	65528	66054	67560	64750	60331	59216	50003	43598	34003	24500
17	67497	65528	65513	66054	67607	64582	60480	58905	49717	43419	33957	23957
18	67497	65528	65528	66054	67607	64445	60361	58565	49513	43112	34161	23380
19	67481	65528	65544	66054	67497	64506	60301	58181	49147	42806	34274	22917
20	67481	65528	65544	66038	67184	64567	60257	57871	48767	42554	34432	22433
21	67481	65513	65544	66038	67027	64750	60108	57549	48374	42289	34444	21801
22	67481	65497	65544	66038	67043	64811	60063	57182	48009	42049	34720	21187
23	67481	65497	65544	66038	66873	64872	60063	56771	47592	41784	34904	20663
24	67466	65497	65544	66085	66564	64674	60033	56406	47215	41521	34996	20130
25	67466	65497	65544	66085	66255	64476	60003	56029	46837	41446	35019	19875
26	67466	65497	65544	66100	65961	64232	59884	55638	46456	41235	34904	19527
27	67466	65497	65544	66146	65667	64018	59825	55246	46114	40999	34754	19296
28	67293	65497	65544	66224	65544	63927	59884	54916	45852	40751	34365	19180
29	67090	65497	65544	66239	---	63654	60003	54517	45576	40490	33912	18998
30	66888	65497	65544	66239	---	63488	60108	54260	45225	40219	33426	19022
31	66502	---	65544	66255	---	63321	---	54032	---	39876	32833	---
MAX	85657	66255	65544	66255	67607	65406	63124	60465	53818	44771	39791	32187
MIN	66502	65497	65482	65544	65544	63321	59825	54032	45225	39876	32833	18998
a	5333.66	5333.01	5333.04	5333.50	5333.04	5331.58	5329.44	5325.28	5318.80	5314.57	5308.56	5294.37
b	-20302	-1005	+47	+711	-711	-2223	-3213	-6076	-8807	-5349	-7043	-13811

CAL YR 1986 b +39982
WTR YR 1987 b -67782

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11241500 STEVENSON CREEK AT SHAVER LAKE, CA

LOCATION.--Lat 37°08'41", long 119°18'27", in NE 1/4 SW 1/4 sec.13, T.9 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,600 ft downstream from Shaver Lake dam, 2.6 mi north of town of Shaver Lake, and 5.1 mi southwest of town of Big Creek.

DRAINAGE AREA.--29.4 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 5,200 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated by Shaver Lake (station 11238500), capacity 135,568 acre-ft. Practically all flow is diverted for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 6.8 ft³/s, Oct. 19, 1986; minimum daily, 2.5 ft³/s, Nov. 17, 1986.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	3.5	2.6	2.6	2.7	2.7	3.6	3.6	3.5	3.3	3.3	3.5
2	3.4	3.4	2.7	2.6	2.7	2.7	3.6	3.5	3.5	3.3	3.3	3.5
3	3.5	3.4	2.7	2.7	2.7	2.7	3.9	3.5	3.5	3.2	3.3	3.5
4	3.4	3.4	2.7	2.8	2.7	2.7	3.7	3.5	3.5	3.2	3.3	3.5
5	3.4	3.4	2.7	2.7	2.7	3.8	3.7	3.5	3.5	3.3	3.3	3.4
6	3.4	3.4	2.7	2.6	2.7	3.6	3.6	3.5	3.9	3.3	3.3	3.4
7	3.3	3.4	2.7	2.6	2.7	3.2	3.6	3.5	3.6	3.3	3.3	3.4
8	3.3	3.4	2.7	2.6	2.7	3.0	3.6	3.5	3.6	3.3	3.3	3.4
9	3.3	3.5	2.7	2.6	2.7	2.9	3.5	3.5	3.5	3.3	3.3	3.4
10	3.3	3.5	2.7	2.6	2.7	2.9	3.5	3.5	3.5	3.3	3.3	3.4
11	3.3	3.5	2.7	2.6	2.9	2.8	3.5	3.4	3.5	3.3	3.3	3.4
12	3.3	3.5	2.7	2.6	2.9	2.8	3.5	3.4	3.4	3.3	3.3	3.4
13	3.3	3.5	2.7	2.6	4.9	3.2	3.5	3.4	3.4	3.3	3.5	3.4
14	3.2	3.5	2.6	2.6	2.6	3.0	3.5	3.4	3.4	3.3	3.5	3.4
15	3.2	3.5	2.6	2.6	2.9	3.0	3.5	3.7	3.4	3.3	3.5	3.3
16	3.4	3.0	2.6	2.6	2.8	2.9	3.5	3.5	3.4	3.3	3.5	3.3
17	6.0	2.5	2.6	2.6	2.8	3.0	3.5	3.5	3.4	3.3	3.5	3.3
18	6.5	2.7	2.6	2.6	2.8	2.9	3.5	3.5	3.4	3.2	3.5	3.3
19	6.8	2.7	2.6	2.6	2.8	2.9	3.5	3.5	3.4	3.2	3.5	3.3
20	5.8	2.7	2.6	2.6	2.8	2.9	3.5	3.5	3.4	3.2	3.5	3.3
21	3.7	2.7	2.6	2.6	2.8	2.9	3.5	3.5	3.4	3.3	3.5	3.2
22	3.8	2.7	2.6	2.6	2.8	2.9	3.5	3.6	3.4	3.3	3.5	3.2
23	3.7	2.6	2.6	2.6	2.8	2.9	3.5	3.7	3.4	3.2	3.5	3.2
24	3.7	2.6	2.6	2.6	2.8	2.9	3.5	3.7	3.3	3.3	3.5	3.2
25	3.6	2.6	2.6	2.6	2.8	2.9	3.5	3.7	3.3	3.5	3.5	3.2
26	3.5	2.7	2.6	2.6	2.8	2.9	3.5	3.7	3.3	3.5	3.5	3.2
27	3.5	2.6	2.6	2.7	2.8	3.0	3.6	3.7	3.3	3.5	3.5	3.3
28	3.5	2.6	2.6	2.7	2.7	3.0	3.5	3.6	3.3	3.5	3.5	3.6
29	3.5	2.6	2.6	2.7	---	2.9	3.5	3.6	3.3	3.5	3.5	3.6
30	3.5	2.6	2.6	2.7	---	2.9	3.6	3.5	3.3	3.7	3.5	3.6
31	3.5	---	2.6	2.7	---	3.4	---	3.5	---	3.4	3.5	---
TOTAL	117.9	91.7	81.8	81.5	79.5	92.2	106.5	109.7	103.0	103.2	106.1	101.1
MEAN	3.80	3.06	2.64	2.63	2.84	2.97	3.55	3.54	3.43	3.33	3.42	3.37
MAX	6.8	3.5	2.7	2.8	4.9	3.8	3.9	3.7	3.9	3.7	3.5	3.6
MIN	3.2	2.5	2.6	2.6	2.6	2.7	3.5	3.4	3.3	3.2	3.3	3.2
AC-FT	234	182	162	162	158	183	211	218	204	205	210	201

WTR YR 1987 TOTAL 1174.2 MEAN 3.22 MAX 6.8 MIN 2.5 AC-FT 2330

SAN JOAQUIN RIVER BASIN

11241950 REDINGER LAKE NEAR AUBERRY, CA

LOCATION.--Lat 37°08'42", long 119°26'58", in SW 1/4 sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on upstream face of dam No. 7 on San Joaquin River, 4.2 mi northeast of Auberry.

DRAINAGE AREA.--1,295 mi².

PERIOD OF RECORD.--November 1950 to current year. Prior to October 1965, monthend contents only, published in WSP 1930.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Lake is formed by a concrete dam; storage began Nov. 19, 1950. Usable capacity, 26,120 acre-ft between elevations 1,320.00 ft, invert of tunnel, and 1,403.00 ft, top of radial gates, NGVD. Additional storage of 8,914 acre-ft not available for release. Water is used for power development in Big Creek powerplant No. 4. See schematic diagram of lower San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were provided by Southern California Edison Co., in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 26,586 acre-ft, Aug. 5, 1978, elevation, 1,404.00 ft; minimum since appreciable storage was attained, 5,985 acre-ft, Nov. 22, 1981, elevation, 1,346.85 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 25,689 acre-ft, Dec. 1, elevation, 1,402.07 ft; minimum, 9,699-acre-ft, Aug. 20, elevation, 1,360.16 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Southern California Edison Co., from table dated Oct. 27, 1950)

1,320	0	1,330	2,014	1,355	8,196	1,380	16,455
1,322	384	1,335	3,116	1,360	9,651	1,385	18,396
1,324	778	1,340	4,282	1,365	11,203	1,390	20,427
1,326	1,180	1,345	5,515	1,370	12,858	1,400	24,748
1,328	1,592	1,350	6,809	1,375	14,610	1,405	27,058

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23329	24920	25689	24739	25028	24929	24906	25101	24443	25064	25137	10638
2	23905	25046	25001	24762	25087	24811	24506	25128	24762	25051	25006	11139
3	24915	25182	24969	24748	25096	24726	24640	25110	24753	25137	24385	11712
4	25282	24965	24983	24703	25141	25096	24640	24938	24798	25019	23093	12254
5	24256	24897	24956	24897	25033	25168	24520	24771	24807	24793	21570	12733
6	24888	24807	25024	24915	24920	24748	24542	24933	24627	24667	20097	13278
7	25387	24757	25001	24960	25082	24087	24771	25123	24340	24569	18683	14012
8	25657	24712	24947	25141	25186	24069	24726	25105	24256	25042	17648	14310
9	25616	24780	24924	25087	25024	24416	24784	25019	24354	24956	16596	14711
10	25479	24762	24879	24965	25232	24870	24825	25132	24475	25069	15336	15161
11	25296	24676	25141	24929	24875	24798	24992	25278	24699	25033	14264	15539
12	25620	24636	24956	24988	24816	24798	25010	25069	24730	24974	12903	15959
13	25351	24744	25110	24960	24676	24780	24988	25319	24654	24983	11683	16346
14	24802	24721	25006	24979	23728	24564	25168	25383	24614	24960	10648	16745
15	24942	24951	25046	24988	23588	24771	25146	25205	24300	24902	9992	17106
16	25177	25218	25037	24974	24136	24712	25051	25195	24506	24838	9967	17562
17	25524	25291	24969	24983	24609	24694	25278	25319	24582	24703	10142	17954
18	25611	25237	24627	24992	24632	24717	25328	25246	24834	24771	9847	18631
19	25232	25155	24992	24793	24331	24676	25424	25346	24856	25101	9980	18928
20	24829	25209	25019	24924	23980	23931	25383	25110	24730	25006	9699	19563
21	24748	25273	25006	25214	24997	23676	25584	25237	24825	25055	9792	20241
22	24640	25241	25141	25015	24843	23715	24744	25155	24834	24997	9955	20510
23	24992	25246	25046	24920	24775	24278	24829	25051	25132	24911	9904	20823
24	24951	25250	24875	24902	24748	24372	24560	25010	25105	24911	9922	21320
25	24870	25218	24856	24992	24730	24434	24582	24988	25033	24915	9916	21749
26	24988	25191	24861	25200	24793	24390	24852	24879	25087	24870	9961	21988
27	24942	25182	24951	25141	24915	24434	24658	24524	25128	24911	9983	22107
28	25028	25218	24757	24938	24951	24636	24587	24735	25092	25028	10330	21988
29	24726	25232	25552	25078	---	24771	24654	24618	25182	24911	9958	22005
30	24632	25200	24956	25015	---	24816	24847	24416	25051	24888	9983	21847
31	24870	---	24730	24906	---	24793	---	24242	---	25255	10105	---
MAX	25657	25291	25689	25214	25232	25168	25584	25383	25182	25255	25137	22107
MIN	23329	24636	24627	24703	23588	23676	24506	24242	24256	24569	9699	10638
a	1400.27	1401.00	1399.96	1400.35	1400.45	1400.10	1400.22	1398.87	1400.67	1401.12	1361.50	1393.37
b	+247	+330	-470	+176	+45	-158	+54	-605	+809	+204	-15150	+11742

CAL YR 1986 b +251

WTR YR 1987 b -2776

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11242000 SAN JOAQUIN RIVER ABOVE WILLOW CREEK, NEAR AUBERRY, CA

LOCATION.--Lat 37°08'40", long 119°27'13", in SW 1/4 SW 1/4 sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,000 ft downstream from Redinger Lake Dam, 0.4 mi upstream from Willow Creek, and 4.2 mi northeast of Auberry.

DRAINAGE AREA.--1,295 mi².

PERIOD OF RECORD.--March 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,175.54 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--No estimated daily discharges. Flow regulated by nine powerplants and six reservoirs with combined capacity of about 559,900 acre-ft. Conduit to powerplant No. 4 diverts 1,000 ft above station. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--36 years, 493 ft³/s, 357,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,200 ft³/s, Dec. 23, 1955, gage height, 54.2 ft, from floodmarks, from rating curve extended above 7,000 ft³/s on basis of computed flow over dam; no flow Sept. 25, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 27 ft³/s, Sept. 9; minimum daily, 4.8 ft³/s, Mar. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	19	18	17	20	14	7.4	11	24	24	24	24
2	18	19	18	17	20	14	7.4	12	24	24	24	24
3	18	19	18	18	19	13	7.1	13	24	24	24	24
4	19	19	18	16	19	13	7.6	13	25	24	24	24
5	19	19	18	15	19	12	7.6	16	25	24	24	24
6	20	19	18	15	18	5.5	7.6	18	25	24	24	23
7	20	19	17	15	18	4.8	7.6	17	25	24	23	23
8	20	19	16	14	17	6.8	7.6	15	25	24	23	23
9	20	19	16	14	17	7.3	8.0	16	25	24	24	27
10	21	19	16	16	15	7.4	7.9	18	25	24	24	24
11	21	19	17	17	13	7.4	8.3	18	24	24	24	23
12	21	19	14	17	13	7.4	9.2	19	24	24	23	23
13	21	18	17	16	15	7.6	8.0	20	24	24	23	23
14	21	19	17	16	5.4	8.0	7.6	19	24	24	23	24
15	20	19	18	22	6.8	7.3	7.6	19	24	25	23	24
16	21	14	18	18	7.3	7.3	9.1	19	24	24	23	24
17	21	17	18	17	6.6	7.3	9.8	20	24	24	24	24
18	21	17	18	17	8.1	7.3	9.8	20	24	24	24	24
19	22	18	17	19	10	7.4	9.8	20	24	24	24	24
20	22	18	15	19	11	7.4	11	21	24	24	24	24
21	22	18	16	19	13	8.0	12	21	24	24	24	24
22	22	18	16	20	15	7.4	11	23	24	24	24	24
23	22	18	16	20	15	8.0	8.7	23	24	24	24	25
24	22	18	15	20	14	8.0	11	23	24	24	24	25
25	22	18	16	20	14	8.0	13	23	24	24	24	24
26	22	19	15	20	14	8.0	15	23	24	24	24	24
27	19	18	16	20	14	7.6	15	23	24	24	24	24
28	18	18	15	21	15	7.6	15	23	24	24	24	24
29	18	18	17	20	---	7.6	16	23	24	25	24	24
30	19	18	19	20	---	7.4	14	23	24	25	24	24
31	19	---	17	21	---	7.4	---	24	---	24	24	---
TOTAL	627	549	520	556	392.2	257.2	296.7	596	727	747	737	719
MEAN	20.2	18.3	16.8	17.9	14.0	8.30	9.89	19.2	24.2	24.1	23.8	24.0
MAX	22	19	19	22	20	14	16	24	25	25	24	27
MIN	16	14	14	14	5.4	4.8	7.1	11	24	24	23	23
AC-FT	1240	1090	1030	1100	778	510	589	1180	1440	1480	1460	1430
CAL YR 1986	TOTAL	403397.9	MEAN	1105	MAX	11300	MIN	3.9	AC-FT	800100		
WTR YR 1987	TOTAL	6724.1	MEAN	18	MAX	27	MIN	4.8	AC-FT	13340		

SAN JOAQUIN RIVER BASIN

11242400 NORTH FORK WILLOW CREEK NEAR SUGAR PINE, CA

LOCATION.--Lat 37°23'52", long 119°33'55", in SW 1/4 NE 1/4 sec.21, T.6 S., R.22 E., Madera County, Hydrologic Unit 18040006, on right bank at road bridge 0.6 mi downstream from Soquel Campground, 3.0 mi upstream from Chilkoot Creek, and 4.7 mi southeast of Sugar Pine.

DRAINAGE AREA.--16.9 mi².

PERIOD OF RECORD.--August 1965 to current year.

REVISED RECORDS.--WDR CA-67-2: 1966 (M). WDR CA-72-2: 1970, 1971. WDR CA-85-3: 1983, 1984 (F).

GAGE.--Water-stage recorder. Elevation of gage is 5,200 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 16 to Jan. 26, Feb. 23-27, Mar. 21, 22. Records good except those for estimated periods, which are fair. No storage above station. See schematic diagram of lower San Joaquin River basin.

AVERAGE DISCHARGE.--22 years, 27.7 ft³/s, 20,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,750 ft³/s, Jan. 13, 1980, gage height, 7.41 ft, from rating curve extended above 1,100 ft³/s on basis of a step-backwater survey; minimum daily, 0.29 ft³/s, Sept. 11, Oct. 3-5, 12-17, 1977.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1030	*328	*4.30, from floodmarks
Mar. 5	1630	159	3.82

Minimum daily, 0.63 ft³/s, Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	4.2	3.5	5.4	4.7	8.4	21	33	9.6	3.8	1.8	1.2
2	11	4.1	3.5	10	5.2	8.4	24	27	8.8	3.8	1.7	1.2
3	9.0	4.0	3.8	24	6.2	8.4	34	27	8.5	3.5	1.7	1.8
4	8.0	3.9	3.8	15	5.4	8.7	24	28	7.4	3.5	1.6	1.3
5	6.9	3.8	4.6	12	5.0	81	21	27	6.8	3.5	1.5	1.1
6	6.3	4.0	8.5	8.4	5.4	93	20	26	9.7	3.5	1.4	1.1
7	6.0	4.1	6.4	7.7	5.8	44	23	24	8.8	3.5	1.4	.89
8	5.7	4.4	5.1	7.0	5.8	30	27	25	7.0	3.5	1.5	.87
9	5.5	4.4	4.7	6.8	8.7	23	30	36	6.7	3.3	1.7	.83
10	5.5	4.4	4.3	6.2	12	19	31	31	6.4	3.3	1.8	.84
11	5.5	4.4	4.5	6.0	18	18	31	22	6.0	3.3	1.9	.87
12	5.6	4.4	4.4	6.0	16	20	30	25	5.8	3.3	1.8	.88
13	5.4	3.8	4.3	5.8	167	37	33	30	5.4	2.9	1.9	.94
14	5.4	3.8	4.3	5.6	36	20	36	22	5.2	2.7	1.8	1.1
15	4.9	3.5	4.3	5.4	19	20	39	27	5.2	2.3	2.2	.95
16	4.9	3.5	4.5	5.5	12	18	41	28	5.3	2.3	2.3	.88
17	4.9	3.5	4.3	5.4	10	19	44	22	5.4	2.3	1.8	.84
18	5.3	3.5	4.8	5.6	8.7	19	39	19	5.4	2.7	1.5	.75
19	5.4	3.5	5.6	5.5	8.7	17	29	17	5.2	2.7	1.5	.72
20	5.5	3.8	5.8	5.2	9.2	16	33	17	5.1	2.4	1.4	.69
21	5.4	3.8	5.6	5.5	8.6	15	40	19	4.9	2.3	.86	.68
22	4.9	3.8	5.2	5.6	8.6	12	43	16	5.1	2.6	.71	.67
23	4.9	3.8	5.0	5.6	8.5	14	43	15	4.9	2.6	.68	.67
24	4.8	3.8	4.9	5.8	8.1	15	43	16	4.7	2.4	.67	.78
25	4.7	3.8	4.8	5.7	8.0	16	45	16	4.5	2.4	.65	.88
26	4.6	3.8	4.9	6.2	7.6	17	47	16	4.4	2.3	.63	.94
27	4.2	3.8	4.7	6.6	7.7	17	47	15	4.1	2.1	.79	1.0
28	4.2	3.5	4.7	8.2	8.2	18	43	14	4.0	2.0	1.5	.91
29	4.2	3.5	4.7	6.5	---	18	44	12	3.9	1.9	1.2	.89
30	4.1	3.5	4.6	6.3	---	20	46	10	3.9	1.9	1.4	.89
31	4.5	---	4.7	5.6	---	21	---	9.9	---	1.9	1.4	---
TOTAL	180.2	116.1	148.8	226.1	434.1	710.9	1051	671.9	178.1	86.5	44.69	28.06
MEAN	5.81	3.87	4.80	7.29	15.5	22.9	35.0	21.7	5.94	2.79	1.44	.94
MAX	13	4.4	8.5	24	167	93	47	36	9.7	3.8	2.3	1.8
MIN	4.1	3.5	3.5	5.2	4.7	8.4	20	9.9	3.9	1.9	.63	.67
AC-FT	357	230	295	448	861	1410	2080	1330	353	172	89	56

CAL YR 1986	TOTAL	19105.90	MEAN	52.3	MAX	992	MIN	3.5	AC-FT	37900
WTR YR 1987	TOTAL	3876.45	MEAN	10.6	MAX	167	MIN	.63	AC-FT	7690

SAN JOAQUIN RIVER BASIN

11243300 BROWNS CREEK CANAL AT BASS LAKE, CA

LOCATION.--Lat 37°17'19", long 119°31'09", in SE 1/4 SW 1/4 sec.25, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 900 ft upstream from Bass Lake, and 3.0 mi southeast of town of Bass Lake.

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and concrete canal. Elevation of gage is 3,440 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Canal diverts from South Fork Willow Creek at diversion dam 1.5 mi upstream from gage, in NW 1/4 NE 1/4 sec.30, T.7 S., R.23 E. Flow enters Bass Lake for power development in San Joaquin River powerplants. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 76 ft³/s, Mar. 6, 1987; no flow July 3 to Sept. 30, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	3.9	5.1	4.5	6.8	13	41	24	8.3	.60		
2	7.7	3.9	4.9	4.9	6.6	15	45	21	7.7	.40		
3	6.2	4.1	4.8	5.4	7.5	15	60	19	6.6	0		
4	5.8	3.6	4.7	10	7.4	16	44	17	5.2	0		
5	5.4	3.5	4.3	9.7	6.7	53	41	16	5.0	0		
6	5.2	3.7	6.8	7.6	6.6	76	39	15	7.9	0		
7	5.0	3.7	6.7	7.2	6.9	66	42	14	7.6	0		
8	4.9	3.9	5.4	6.5	6.9	51	48	13	6.4	0		
9	4.9	3.1	4.9	6.4	7.6	40	52	16	5.5	0		
10	4.7	2.1	4.6	6.8	13	35	52	18	5.6	0		
11	4.8	2.0	4.6	7.3	24	29	50	13	5.2	0		
12	4.9	1.9	4.6	7.2	18	30	46	12	4.5	0		
13	4.0	1.9	4.5	6.8	75	56	44	11	4.0	0		
14	2.5	2.5	4.4	6.2	53	42	42	11	3.7	0		
15	2.3	2.6	4.2	6.1	32	38	40	19	3.6	0		
16	2.3	2.7	4.3	8.6	21	34	39	26	3.3	0		
17	2.5	2.7	4.3	11	17	36	39	15	2.4	0		
18	2.9	2.7	4.4	5.6	14	39	38	13	2.2	0		
19	3.1	2.8	4.9	5.5	12	31	32	12	2.1	0		
20	3.3	2.8	5.7	5.4	15	28	30	12	1.9	0		
21	3.1	2.8	5.3	5.4	13	25	29	13	1.8	0		
22	3.0	3.0	5.0	5.7	13	27	28	13	1.8	0		
23	2.9	3.0	5.0	5.7	11	26	27	11	1.8	0		
24	2.8	3.3	4.7	6.0	13	25	27	11	2.1	0		
25	2.8	3.9	4.7	6.8	13	29	26	11	1.8	0		
26	2.7	3.7	4.7	6.9	12	31	25	11	1.6	0		
27	3.2	3.7	4.7	7.5	12	35	24	11	1.4	0		
28	3.7	3.6	4.5	10	13	36	23	11	1.2	0		
29	3.7	4.0	4.5	8.6	---	37	23	10	1.0	0		
30	3.7	4.9	4.3	7.7	---	41	29	9.7	.80	0		
31	4.0	---	4.4	7.0	---	43	---	9.1	---	0		
TOTAL	124.3	96.0	149.9	216.0	457.0	1098	1125	437.8	114.00	1.00	0	0
MEAN	4.01	3.20	4.84	6.97	16.3	35.4	37.5	14.1	3.80	.032	0	0
MAX	7.7	4.9	6.8	11	75	76	60	26	8.3	.60	0	0
MIN	2.3	1.9	4.2	4.5	6.6	13	23	9.1	.80	0	0	0
AC-FT	247	190	297	428	906	2180	2230	868	226	2.0	0	0

WTR YR 1987 TOTAL 3819.00 MEAN 10.5 MAX 76 MIN 0 AC-FT 7570

SAN JOAQUIN RIVER BASIN

11243400 BASS LAKE NEAR BASS LAKE, CA

LOCATION.--Lat 37°17'33", long 119°31'43", in SE 1/4 NE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, at outlet tower at dam on North Fork Willow Creek, 2.2 mi southeast of town of Bass Lake, and 5 mi north of North Fork.
DRAINAGE AREA.--50.4 mi².

PERIOD OF RECORD.--January 1911 to September 1982 (monthend contents only), October 1982 to current year. Bass Lake was formerly called Crane Valley Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir formed by earthfill and rockfill dam; completed in 1901 and raised in 1910. Since 1910 usable contents 45,100 acre-ft between elevations 3,280.22 ft, invert of outlet conduit No. 3, and 3,376.40 ft, top of spillway gates. Additional storage of 300 acre-ft not available for release. Water is released through Crane Valley powerplant below dam for use in three small powerplants before being discharged into Kerkhoff Reservoir at Wishon powerplant. Water is diverted from South Fork Willow Creek via Browns Creek ditch into Bass Lake near left end of dam. Madera Irrigation District has water rights to divert up to 50 ft³/s from North Fork Willow Creek through Sequel ditch into Nelder Creek (Fresno River basin) during October and March to July each year. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 45,960 acre-ft, June 17, 1923, elevation, 3,376.8 ft; minimum, 35 acre-ft, Nov. 19, 1953, elevation, 3,270.2 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 39,624 acre-ft, June 23, 24, elevation, 3,371.29 ft; minimum, 20,339 acre-ft, Nov. 17, elevation, 3,350.90 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Pacific Gas & Electric Co., from table dated March 1937)

3,280	290	3,310	3,404	3,340	13,227	3,370	38,218
3,290	890	3,320	5,584	3,350	19,663	3,376.4	45,410
3,300	1,896	3,330	8,717	3,360	28,121		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30841	23739	20631	21611	23241	26500	32152	36631	39036	39363	36566	32043
2	30879	23451	20631	21636	23249	26536	32320	36728	39068	39352	36556	32033
3	30899	23148	20639	21806	23257	26599	32520	36836	39101	39330	36415	32043
4	30928	22879	20655	22034	23392	26725	32690	36944	39123	39308	36134	32023
5	30947	22653	20700	22132	23451	27141	32850	37052	39145	39286	35834	32003
6	30928	22478	20801	22206	23476	27703	33011	37172	39188	39275	35535	31984
7	30812	22404	20862	22255	23518	28009	33152	37237	39221	39254	35376	31964
8	30533	22420	20870	22304	23544	28149	33316	37313	39297	39243	35355	31954
9	30245	22429	20878	22337	23595	28391	33509	37422	39330	39221	35334	31934
10	29977	22263	20878	22395	23680	28530	33693	37542	39341	39199	35165	31934
11	29683	21960	20886	22420	23850	28633	33856	37629	39373	39199	34860	31924
12	29418	21660	20886	22429	24020	28800	34011	37695	39406	39177	34672	31905
13	29136	21363	21059	22445	25048	29117	34196	37782	39439	39166	34651	31895
14	28856	21051	21067	22495	25356	29389	34351	37891	39472	39155	34630	31885
15	28567	20747	21083	22520	25542	29588	34516	38011	39482	39145	34610	31885
16	28279	20462	21099	22537	25658	29759	34672	38109	39515	39123	34599	31875
17	27982	20339	21107	22528	25765	29930	34839	38196	39537	39079	34433	31865
18	27703	20347	21123	22528	25881	30082	35007	38251	39559	39057	34124	31856
19	27407	20385	21227	22678	25970	30235	35123	38283	39581	39036	33815	31846
20	27141	20408	21275	22703	26005	30379	35249	37403	39591	38861	33509	31826
21	26851	20447	21307	22703	26068	30571	35397	37480	39602	38534	33336	31816
22	26581	20462	21339	22753	26122	30696	35525	37545	39613	38218	33316	31797
23	26293	20477	21371	22770	26131	30860	35663	38600	39624	37913	33305	31787
24	26014	20485	21395	22804	26167	31006	35791	38643	39624	37760	33122	31787
25	25729	20493	21403	22829	26266	31122	35941	38676	39515	37749	32830	31767
26	25436	20524	21411	22913	26320	31258	36080	38730	39395	37738	32540	31748
27	25154	20501	21475	22930	26374	31395	36113	38785	39395	37564	32251	31728
28	24865	20501	21499	22997	26428	31542	36178	38850	39384	37270	32092	31709
29	24587	20501	21515	23115	---	31689	36296	38905	39373	37009	32073	31689
30	24303	20509	21555	23157	---	31846	36502	38948	39373	36739	32073	31669
31	24028	---	21603	23190	---	31993	---	39003	---	36599	32063	---
MAX	30947	23739	21603	23190	26428	31993	36502	39003	39624	39363	36566	32043
MIN	24028	20339	20631	21611	23241	26500	32152	36631	39036	39286	32063	31669
a	3355.42	3351.12	3352.51	3354.43	3358.15	3364.06	3368.42	3370.72	3371.06	3368.51	3364.13	3363.73
b	-6754	-3519	+1094	+1587	+3238	+5565	+4509	+2501	+370	-2774	-4536	-394

CAL YR 1986 b -2769

WTR YR 1987 b +887

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11243500 PACIFIC GAS & ELECTRIC CO. CONDUIT NO. 3 NEAR BASS LAKE, CA

LOCATION.--Lat 37°17'21", long 119°31'44", in NE 1/4 SE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 1,000 ft downstream from Crane Valley powerplant and dam and 2.5 mi southeast of town of Bass Lake.

PERIOD OF RECORD.--October 1940 to current year. Prior to October 1954, published as "near Crane Valley Reservoir."

GAGE.--Water-stage recorder and concrete flume. Elevation of gage is 3,300 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-6, Mar. 20-23, Apr. 4-6, June 26 to July 19, Sept. 6-30. Conduit diverts from Bass Lake in sec.26, T.7 S., R.22 E. Water passes through Crane Valley powerplant, then to powerplant No. 3, and is stored temporarily at Manzanita Lake on North Fork Willow Creek; flow then diverts to powerplants No. 2 and 1A before it enters San Joaquin River at Kerckhoff Reservoir through San Joaquin powerplant No. 1. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--47 years, 71.5 ft³/s, 51,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 167 ft³/s, June 23, 24, 1965; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	147	1.9	1.0	.61	.92	.61	.10	.06	.92	.06	.06
2	0	147	.64	1.0	.61	.92	.61	.10	.44	.92	.06	.05
3	0	146	.03	1.0	.61	2.3	.61	.10	.91	.92	.63	.03
4	0	146	.03	1.0	.61	1.7	.61	.10	.92	.90	151	.03
5	0	146	.22	.96	.59	5.0	.61	.30	.92	.90	151	.03
6	0	119	.54	.92	.59	1.4	.61	.65	.92	.90	151	0
7	28	92	.61	.92	.59	.65	.66	.71	.92	.90	73	0
8	71	43	.61	.92	.36	.61	.71	.71	.92	.90	.06	0
9	150	.03	.61	.97	.05	.61	.71	.73	.92	.90	.06	0
10	150	.03	.69	.97	.03	.61	.72	.74	.92	.90	86	0
11	150	83	.81	.95	.03	.61	.71	.71	.92	.90	149	0
12	150	150	.81	1.1	.03	.61	.71	.71	.98	.90	89	0
13	150	149	.85	1.6	.37	.62	.60	.71	1.0	.90	.71	0
14	150	149	.92	2.0	.61	.61	.55	.71	1.0	.90	.65	0
15	149	148	.94	1.9	.61	.62	.48	.72	1.0	.90	.61	0
16	149	148	1.0	1.4	.61	.61	.70	.71	.99	.90	.61	0
17	149	148	1.0	.53	.61	.61	1.2	.74	.92	.90	83	0
18	149	80	1.1	.31	.57	.61	1.2	.78	.92	.90	151	0
19	148	.03	1.2	.61	.60	.61	1.2	.81	.89	.90	151	0
20	148	.03	1.2	.61	.78	.61	1.2	.77	.92	85	151	0
21	148	.03	1.2	.61	.61	3.1	1.2	.71	.92	165	76	0
22	148	.03	1.2	.61	.61	2.3	1.2	.71	.92	166	.39	0
23	148	.24	1.2	.61	46	.61	1.2	.71	.92	161	.39	0
24	148	.45	1.2	.61	5.4	.61	1.2	.71	.92	75	93	0
25	148	.45	1.2	.61	5.4	.61	1.2	.71	63	.08	152	0
26	148	.46	1.2	.61	3.0	.61	1.2	.81	123	.06	152	0
27	147	17	1.2	.61	1.7	.61	53	.54	.92	88	152	6.0
28	147	.63	1.1	.61	.92	.61	37	.07	.92	141	73	5.0
29	147	.03	1.0	.61	---	.61	.10	.06	.92	132	.06	2.0
30	147	1.0	1.0	.61	---	.61	.10	.06	.92	135	.06	1.0
31	147	---	1.0	.61	---	.61	---	.06	---	75	.06	---
TOTAL	3514	2061.44	28.21	27.38	73.11	31.73	112.41	16.76	210.75	1240.30	2150.78	14.20
MEAN	113	68.7	.91	.88	2.61	1.02	3.75	.54	7.03	40.0	69.4	.47
MAX	150	150	1.9	2.0	46	5.0	53	.81	123	166	152	6.0
MIN	0	.03	.03	.31	.03	.61	.10	.06	.06	.06	.06	0
AC-FT	6970	4090	56	54	145	63	223	33	418	2460	4270	28
CAL YR 1986	TOTAL	34723.69	MEAN	95.1	MAX	166	MIN	0	AC-FT	68870		
WTR YR 1987	TOTAL	9481.07	MEAN	26.0	MAX	166	MIN	0	AC-FT	18810		

11244000 NORTH FORK WILLOW CREEK NEAR BASS LAKE, CA

LOCATION.--Lat 37°17'20", long 119°31'45", in SE 1/4 SE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,500 ft downstream from Bass Lake spillway and 2.5 mi southeast of town of Bass Lake.

DRAINAGE AREA.--50.8 mi².

PERIOD OF RECORD.--May 1940 to current year. Prior to October 1944, published as Willow Creek below Crane Valley Reservoir. October 1944 to September 1954, published as "below Crane Valley Reservoir."

GAGE.--Water-stage recorder. Broad-crested weir with V-notch Dec. 21, 1961, to Jan. 16, 1969, and since Mar. 26, 1971. Elevation of gage is 3,200 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 27-30, Apr. 7-9. Flow regulated by Bass Lake (station 11243400) 1,500 ft upstream and by diversion into Pacific Gas & Electric Co. conduit No. 3 near Bass Lake (station 11243500). Soquel ditch diverts up to 50 ft³/s from North Fork Willow Creek into Nelder Creek in Fresno River basin. Brown's Creek ditch diverted 7,570 acre-ft from South Fork Willow Creek into Bass Lake during the current year. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--47 years, 14.4 ft³/s, 10,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,100 ft³/s, Feb. 19, 1986; minimum daily, 0.1 ft³/s, Nov. 13-16, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.8 ft³/s, Feb. 13, gage height, 2.11 ft; minimum daily, 0.15 ft³/s, Feb. 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.61	.27	.25	.16	.27	.26	.58	1.4	.93	.83	.57	.40
2	.62	.27	.25	.16	.29	.25	.59	1.3	.90	.82	.56	.56
3	.61	.26	.25	.27	.33	.24	.71	1.2	.92	.82	.57	.60
4	.61	.26	.25	.99	.31	.24	.63	1.2	.94	.82	.60	.58
5	.62	.26	.26	.44	.26	.59	.63	1.2	.94	.82	.58	.60
6	.50	.26	.32	.33	.16	1.8	.63	1.3	1.0	.82	.55	.60
7	.41	.27	.28	.31	.15	.75	.60	1.3	.99	.81	.50	.60
8	.39	.27	.26	.26	.15	.54	.57	1.2	.96	.80	.47	.59
9	.39	.27	.25	.23	.18	.44	.54	1.2	.85	.80	.46	.58
10	.38	.28	.25	.20	.18	.39	.50	1.3	.83	.80	.47	.58
11	.37	.31	.25	.17	.29	.37	.51	1.2	.83	.80	.50	.60
12	.35	.29	.25	.17	.31	.36	.52	1.3	.83	.80	.48	.60
13	.33	.27	.21	.17	3.2	.63	.67	1.2	.84	.81	.44	.61
14	.32	.27	.21	.17	.83	.66	.56	1.0	.85	.81	.43	.61
15	.32	.27	.21	.16	.61	.98	.75	1.1	.85	.81	.44	.61
16	.31	.28	.21	.16	.47	.68	.75	1.0	.85	.80	.44	.61
17	.32	.27	.21	.16	.39	.56	.74	1.0	.86	.80	.45	.60
18	.31	.26	.20	.17	.34	.50	.77	1.0	.85	.79	.48	.60
19	.31	.26	.19	.17	.31	.49	.80	1.0	.86	.80	.45	.60
20	.31	.26	.19	.17	.29	.48	.87	1.0	.87	.79	.44	.60
21	.30	.27	.17	.16	.27	.53	.95	1.0	.88	.79	.41	.60
22	.30	.26	.16	.24	.27	.58	.94	1.0	.88	.77	.37	.60
23	.28	.26	.16	.35	.32	.78	.89	.99	.88	.75	.37	.60
24	.28	.26	.16	.40	.30	.79	.99	.96	.87	.70	.38	.60
25	.31	.25	.16	.41	.30	.71	1.1	.99	.87	.66	.40	2.2
26	.29	.25	.16	.41	.29	.64	2.2	1.0	.85	.65	.38	3.8
27	.26	.25	.16	.41	.29	.63	1.5	1.0	.84	.65	.36	3.8
28	.27	.25	.16	.40	.28	.62	1.3	.99	.83	.66	.33	3.4
29	.26	.26	.16	.28	---	.62	1.3	.95	.82	.67	.29	3.2
30	.27	.25	.16	.29	---	.61	1.4	.94	.83	.64	.29	3.2
31	.28	---	.16	.32	---	.59	---	.94	---	.61	.29	---
TOTAL	11.49	7.97	6.52	8.69	11.64	18.31	25.49	34.16	26.30	23.70	13.75	33.73
MEAN	.37	.27	.21	.28	.42	.59	.85	1.10	.88	.76	.44	1.12
MAX	.62	.31	.32	.99	3.2	1.8	2.2	1.4	1.0	.83	.60	3.8
MIN	.26	.25	.16	.16	.15	.24	.50	.94	.82	.61	.29	.40
AC-FT	23	16	13	17	23	36	51	68	52	47	27	67

CAL YR 1986 TOTAL 19308.59 MEAN 52.9 MAX 2100 MIN .16 AC-FT 38300
WTR YR 1987 TOTAL 221.75 MEAN .61 MAX 3.8 MIN .15 AC-FT 440

SAN JOAQUIN RIVER BASIN

11246500 WILLOW CREEK AT MOUTH, NEAR AUBERRY, CA

LOCATION.--Lat 37°09'03", long 119°27'34", in SE 1/4 NE 1/4 sec.16, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 40 ft upstream from bridge, 0.4 mi upstream from mouth, 1.3 mi downstream from Whiskey Creek, and 4.3 mi northeast of Auberry.

DRAINAGE AREA.--130 mi².

PERIOD OF RECORD.--January 1952 to current year.

REVISED RECORDS.--WSP 2130: 1956-58(M).

GAGE.--Water-stage recorder. Concrete control since Oct. 22, 1964. Datum of gage is 1,174.69 ft above National Geodetic Vertical Datum of 1929 (levels by Southern California Edison Co.).

REMARKS.--Flow regulated by Bass Lake (station 11243400) 10 mi upstream and diversion into Pacific Gas & Electric Co. conduit No. 1. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--35 years, 70.7 ft³/s, 51,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s, Dec. 23, 1955, gage height, 28.5 ft, from floodmarks, from rating curve extended above 4,700 ft³/s; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 961 ft³/s, Feb. 13, gage height, 9.45 ft; no flow Aug. 6-9, Aug. 30 to Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	2.6	3.0	2.4	4.2	8.7	18	9.3	2.9	.72	.13	0
2	5.8	2.4	3.0	2.4	4.0	8.9	18	8.1	2.6	.80	.10	0
3	5.0	2.1	2.9	3.0	5.1	8.7	27	7.9	2.5	.80	.10	0
4	4.2	2.3	2.8	16	5.3	8.9	23	7.5	2.2	.72	.10	0
5	3.9	2.1	2.8	12	4.6	17	21	7.7	2.0	.65	.08	0
6	11	2.1	3.5	8.5	4.2	113	20	6.3	3.8	.72	0	0
7	8.6	2.1	5.5	6.6	4.2	43	19	5.1	11	.58	0	0
8	4.0	2.2	4.3	5.5	4.4	28	19	5.1	8.4	.52	0	.02
9	3.4	2.6	3.6	4.4	4.4	23	18	5.3	3.6	.47	0	.01
10	3.2	2.8	3.4	4.2	7.7	19	17	5.1	2.6	.47	.05	.02
11	3.1	3.1	3.3	4.2	9.3	17	16	4.9	2.2	.42	.10	.06
12	3.0	25	3.1	4.0	12	16	16	4.0	1.9	.36	.10	.06
13	3.0	6.4	3.0	4.0	345	29	15	3.8	1.7	.23	.08	.08
14	2.9	3.7	2.8	3.8	80	29	14	3.4	1.5	.17	.08	.10
15	3.8	3.3	2.7	3.6	25	45	13	3.4	1.5	.23	.08	.13
16	2.7	21	2.5	2.5	18	31	12	7.5	1.5	.30	.08	.13
17	2.7	4.9	2.4	2.6	14	25	11	5.6	1.6	.23	.08	.17
18	2.8	4.3	2.4	3.4	13	26	11	4.4	1.5	.23	.08	.23
19	3.0	3.5	2.5	3.6	11	22	11	4.0	1.4	.23	.08	.17
20	3.0	3.3	3.1	3.4	9.8	19	11	4.6	2.5	.23	.08	.17
21	2.8	3.1	2.9	3.2	9.1	21	10	5.3	2.3	.30	.08	.13
22	2.7	3.1	2.8	3.4	8.9	21	16	5.7	1.5	.42	.08	.10
23	2.7	3.1	2.6	3.4	9.3	20	11	5.3	1.4	.37	.08	.10
24	2.6	3.2	2.6	3.6	8.7	20	8.9	4.2	1.2	.36	.08	.10
25	2.4	3.1	2.6	3.8	10	19	8.3	4.0	1.1	.36	.06	.10
26	2.4	3.0	2.6	3.8	8.7	19	7.9	4.4	1.0	.30	.06	.10
27	2.4	2.8	2.5	4.0	8.9	19	7.7	4.6	.87	.23	.06	.10
28	2.4	2.7	2.5	6.2	9.8	20	7.1	4.6	.80	.17	.02	.10
29	2.4	2.8	2.5	6.0	---	19	6.8	4.2	.80	.17	.01	.10
30	2.4	3.0	2.4	4.9	---	19	8.5	3.6	.72	.13	0	.08
31	2.4	---	2.2	4.4	---	19	---	3.2	---	.13	0	---
TOTAL	112.6	131.7	90.8	146.8	658.6	753.2	422.2	162.1	70.59	12.02	1.93	2.36
MEAN	3.63	4.39	2.93	4.74	23.5	24.3	14.1	5.23	2.35	.39	.062	.079
MAX	11	25	5.5	16	345	113	27	9.3	11	.80	.13	.23
MIN	2.4	2.1	2.2	2.4	4.0	8.7	6.8	3.2	.72	.13	0	0
AC-FT	223	261	180	291	1310	1490	837	322	140	24	3.8	4.7

CAL YR 1986 TOTAL 66454.44 MEAN 182 MAX 5800 MIN .01 AC-FT 131800
WTR YR 1987 TOTAL 2564.90 MEAN 7.03 MAX 345 MIN 0 AC-FT 5090

SAN JOAQUIN RIVER BASIN

11246650 KERCKHOFF RESERVOIR NEAR AUBERRY, CA

LOCATION.--Lat 37°07'40", long 119°31'25", in SE 1/4 SW 1/4 sec.24, R.9 S., T.22 E., Fresno County, Hydrologic Unit 18040006, near center of Kerckhoff Dam on San Joaquin River, 2.0 mi downstream from A.G. Wishon powerplant, and 7.9 mi northwest of Auberry.

DRAINAGE AREA.--1,460 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete arch dam with spillway completed in 1920. Usable contents, 4,247 acre-ft between elevations 900.14 ft, invert of sluice gates, and 985.68 ft, top of spillway gates. Water is released for use in Kerckhoff powerplants 1 and 2 before being discharged into the San Joaquin River above Millerton Lake. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of lower San Joaquin River basin.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,140 acre-ft, June 7, 1987, elevation, 985.0 ft; minimum, 3,358 acre-ft, Nov. 6, 1986, elevation, 979.8 ft.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4125	3860	3459	3664	3992	3739	3664	4125	3605	3830	3769	3922
2	3644	3517	3459	3647	3845	3605	3937	3644	3922	3860	3984	3709
3	3444	3488	3769	3532	3800	3709	3815	3937	3984	3830	3830	3876
4	3416	3532	3724	3517	3769	3590	3694	3937	3953	3906	3724	3576
5	3620	3561	3724	3664	3830	3815	3937	3953	3754	3709	3769	3576
6	3679	3358	3769	3830	3891	3739	3532	3891	3937	3694	3830	3953
7	3953	3517	3784	3860	3830	3739	3709	3845	4140	3590	3845	3891
8	3800	3532	3664	3845	3953	3937	3679	4062	3984	3845	3830	3459
9	3769	3800	4062	3992	3922	3830	3860	3922	3984	4015	3891	3650
10	3876	3784	3546	3845	3968	3739	4030	4125	4015	3694	3605	3830
11	3845	3532	3769	3769	3984	3739	3922	4015	3444	3664	3605	3650
12	3815	3815	3906	3876	4109	3937	3968	3815	3561	4125	3644	3754
13	3694	3754	4093	3546	3876	3992	4030	3968	3891	3830	3679	3860
14	3784	3724	3922	3937	3644	4109	4046	4046	3517	3769	3644	3992
15	3906	3830	3800	3968	3724	3679	3664	4077	3679	3620	3502	3784
16	3679	3739	3739	3906	3891	3679	4046	3992	3906	3724	3605	3576
17	3546	3664	3620	3815	3845	3984	3815	4030	3830	3953	3679	3830
18	3644	3605	3906	3830	3754	4046	3922	3922	3664	3664	3650	3620
19	3968	3664	3416	3754	3620	3937	3830	4062	3679	3694	3473	3644
20	3590	3644	3724	3605	4062	4109	3754	3922	3679	3937	3724	3876
21	3891	3644	3891	3372	3968	3784	3590	3815	3815	3769	3709	3922
22	3992	3664	4030	3590	3754	3709	3679	3992	3784	3984	3679	3891
23	3694	3488	4030	3860	4062	3401	3620	3754	3769	3709	3754	3876
24	3937	3650	3830	3891	3992	3784	3815	3590	3860	3644	3891	3769
25	3937	3754	3815	3906	3800	3650	3769	3739	3679	3679	3922	3815
26	3953	3644	3784	3992	3891	3517	3769	3937	3590	3830	3922	3679
27	3947	3800	4109	3739	3800	3784	3984	3953	3891	3968	3724	3876
28	3863	3906	3679	3815	3937	3644	3769	4077	3605	3937	3561	3605
29	3922	3717	3474	3906	---	3984	3984	3800	3576	3984	3769	3724
30	3860	3709	3532	3968	---	3900	4046	3679	3664	3815	3922	3860
31	3769	---	3968	3953	---	3922	---	3620	---	3694	3709	---
MAX	4125	3906	4109	3992	4109	4109	4046	4125	4140	4125	3984	3992
MIN	3416	3358	3416	3372	3620	3401	3532	3590	3444	3590	3473	3459
a	982.6	982.2	983.9	983.8	983.7	983.6	984.4	981.6	981.9	982.1	982.2	983.2
b	+237	-60	+259	-15	-16	-15	+124	-426	+44	+30	+15	+151

CAL YR 1986 b +153

WTR YR 1987 b +328

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11246700 SAN JOAQUIN RIVER NEAR AUBERRY, CA

LOCATION.--Lat 37°07'56", long 119°31'50", in NW 1/4 SW 1/4 sec. 24, T.9 S., R.22 E., Fresno County, Hydrologic Unit 18040006, on left bank 2,300 ft downstream from Kerckhoff Dam, 2.8 mi northwest of Auberry, and 6.7 mi south of town of North Fork.

DRAINAGE AREA.--1,461 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder. Datum of gage is 870.11 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--No estimated discharge. Flow regulated by nine powerplants and eight reservoirs with combined capacity of about 609,300 acre-ft. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,380 ft³/s, Mar. 29, 1987, gage height, 8.45 ft; minimum daily, 16 ft³/s, May 9-18, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	26	26	29	28	25	25	28	25	17	17	18
2	27	26	26	28	28	42	25	28	17	17	17	18
3	27	26	26	29	29	26	26	28	17	17	17	19
4	27	25	26	29	28	26	25	28	17	17	17	19
5	27	25	26	28	28	26	25	28	17	21	17	18
6	27	25	26	28	28	27	25	28	17	17	18	19
7	27	26	26	29	28	26	24	24	17	17	18	19
8	27	26	26	28	28	26	25	17	18	17	18	18
9	27	26	26	28	28	26	25	16	17	17	18	18
10	40	26	26	29	28	26	25	16	17	17	18	18
11	27	26	26	29	28	26	27	16	17	17	18	19
12	27	26	26	29	29	26	24	16	17	17	17	19
13	27	26	26	29	32	26	25	16	17	17	18	19
14	27	26	26	28	28	26	24	16	17	17	18	19
15	27	27	27	29	28	27	24	16	17	17	18	18
16	27	26	28	29	28	26	24	16	17	17	18	18
17	26	27	28	29	28	26	24	16	17	17	18	18
18	26	26	28	29	27	26	24	16	17	17	18	18
19	26	26	29	29	25	27	24	17	17	17	18	18
20	26	26	28	29	25	27	24	17	17	17	18	18
21	26	26	28	29	25	27	24	17	17	17	18	18
22	26	26	29	29	25	27	24	28	17	17	18	18
23	26	26	29	29	25	27	24	17	17	17	18	18
24	26	26	28	29	25	26	66	17	17	17	18	18
25	26	26	29	40	25	26	25	17	17	17	18	18
26	26	26	29	30	25	26	25	17	17	17	19	18
27	26	26	29	30	25	27	25	17	17	17	18	18
28	26	26	29	29	25	27	25	17	17	17	18	18
29	26	26	28	28	---	51	25	17	17	18	18	18
30	26	26	28	28	---	26	27	17	17	18	18	18
31	26	---	28	28	---	25	---	17	---	17	18	---
TOTAL	835	779	846	903	759	854	784	601	519	533	553	548
MEAN	26.9	26.0	27.3	29.1	27.1	27.5	26.1	19.4	17.3	17.2	17.8	18.3
MAX	40	27	29	40	32	51	66	28	25	21	19	19
MIN	26	25	26	28	25	25	24	16	17	17	17	18
AC-FT	1660	1550	1680	1790	1510	1690	1560	1190	1030	1060	1100	1090

WTR YR 1987 TOTAL 8514 MEAN 23.3 MAX 66 MIN 16 AC-FT 16890

SAN JOAQUIN RIVER BASIN

11249500 MADERA CANAL AT FRIANT, CA

LOCATION.--Lat 37°00'10", long 119°42'21", in NW 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Madera County, Hydrologic Unit 18040006, at Friant Dam 0.9 mi northeast of Friant.

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for October 1943 to September 1950 published in WSP 1315-A. October 1954 to September 1966 published as Friant-Madera Canal at Friant.

REVISED RECORDS.--WSP 1151: 1944-48.

GAGE.--Discharge computed on basis of valve openings in dam and head on valves. Prior to Oct. 1, 1948, water-stage recorder at several sites at various datums. Oct. 1, 1948, to Sept. 30, 1949, water-stage recorder at site 8.8 mi downstream.

REMARKS.--Canal diverts from Millerton Lake (station 11250100) at right end of Friant Dam for irrigation between San Joaquin and Chowchilla Rivers. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation and reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--44 years, 339 ft³/s, 245,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,330 ft³/s, July 2, 1973, May 21, 1983; no flow many days in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	626	369			0	0			0	830	870	0
2	619	371			0	0			0	817	707	0
3	610	393			0	0			250	778	497	0
4	600	405			0	130			420	747	456	0
5	612	415			0	202			578	740	535	0
6	612	421			0	200			384	721	570	0
7	558	387			0	200			306	710	591	0
8	529	256			0	202			492	723	602	0
9	381	75			0	204			727	762	601	0
10	301	0			0	205			929	799	572	0
11	301	0			0	207			1000	822	555	133
12	302	0			0	74			974	829	529	199
13	303	125			0	0			960	820	596	199
14	364	201			0	0			960	836	632	198
15	456	201			0	0			947	871	624	99
16	484	201			0	0			928	911	608	0
17	333	200			201	0			897	944	581	0
18	250	200			432	158			875	954	569	0
19	243	75			502	210			851	927	569	0
20	240	0			370	210			795	938	569	0
21	255	0			104	210			770	956	553	134
22	262	0			0	210			754	940	461	325
23	261	0			0	210			713	932	415	187
24	238	0			0	210			695	916	415	0
25	238	0			0	215			714	877	434	0
26	247	0			0	215			744	860	445	0
27	272	0			0	215			784	886	481	0
28	287	0			0	270			800	900	500	0
29	296	0			---	300			800	904	384	0
30	318	0			---	0			819	904	320	0
31	354	---			---	0	---		---	878	168	---
TOTAL	11752	4295	0	0	1609	4257	0	0	20866	26432	16409	1474
MEAN	379	143	0	0	57.5	137	0	0	696	853	529	49.1
MAX	626	421	0	0	502	300	0	0	1000	956	870	325
MIN	238	0	0	0	0	0	0	0	0	710	168	0
AC-FT	23310	8520	0	0	3190	8440	0	0	41390	52430	32550	2920
CAL YR 1986	TOTAL	271999.00	MEAN	745	MAX	1300	MIN	0	AC-FT	539500		
WTR YR 1987	TOTAL	87094.00	MEAN	239	MAX	1000	MIN	0	AC-FT	172800		

SAN JOAQUIN RIVER BASIN

11250000 FRIANT-KERN CANAL AT FRIANT, CA

LOCATION.--Lat 36°59'53", long 119°42'11", in SE 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040006, at Friant Dam 0.9 mi northeast of Friant.

PERIOD OF RECORD.--March 1949 to current year.

GAGE.--Discharge computed on basis of megawatt meter reading and efficiency of generator coefficient and net head on turbines. Prior to July 8, 1949, nonrecording gages at various sites and datums. July 8 to Sept. 30, 1949, water-stage recorder at site 0.2 mi downstream.

REMARKS.--Canal diverts from Millerton Lake (station 11250100) at left end of Friant Dam for irrigation in upper San Joaquin Valley.

COOPERATION.--Records of discharge were provided by U.S. Bureau of Reclamation and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE.--38 years, 1,421 ft³/s, 1,030,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 5,330 ft³/s, June 25, 1982; no flow for several months in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1560	612	384	334	475	562	676	827	841	2030	1730	1180
2	1580	600	400	355	484	587	771	770	975	1950	1700	1230
3	1560	600	474	371	576	609	871	770	1140	1720	1900	1200
4	1780	690	502	335	756	608	828	805	1190	1560	2080	1080
5	1800	760	477	273	805	552	839	830	1120	1700	2260	867
6	2050	760	472	262	932	502	912	853	971	1820	2230	815
7	1760	718	479	259	1280	461	1020	922	935	1850	2040	854
8	1590	651	482	268	1560	472	1100	948	948	1960	1870	896
9	1600	676	484	291	1860	476	1120	940	981	2030	1980	875
10	1500	735	488	303	2160	492	1080	940	1040	1940	2110	900
11	1370	768	474	306	2150	526	1060	1010	1090	1880	2030	922
12	1390	779	460	315	2230	537	1120	1120	1060	1820	1720	835
13	1360	749	458	339	2090	521	1220	1210	1040	1610	1480	832
14	1430	665	459	373	1490	511	1270	1280	1080	1650	1380	925
15	1460	618	464	390	1220	521	1290	1120	1160	1920	1130	910
16	1400	638	453	333	1270	508	1210	962	1340	2120	1090	938
17	1170	852	447	293	1330	464	1170	992	1610	2000	1160	953
18	1020	871	433	295	1360	431	1140	995	1600	1860	1230	875
19	1000	778	425	270	1330	446	1270	947	1470	1860	1310	783
20	1000	684	412	251	1300	440	1300	912	1510	1780	1290	785
21	1030	534	389	252	[B380	418	1300	836	1760	1810	1150	939
22	1020	506	362	253	1360	420	1340	743	1950	1860	882	1030
23	1010	500	340	237	1330	410	1290	722	2090	1900	898	1080
24	1000	497	336	226	1190	425	1180	771	2270	1860	1080	1150
25	960	449	341	227	1060	425	1140	800	2330	1780	1150	1160
26	900	382	326	247	1020	436	1300	771	2280	1890	1180	982
27	893	358	314	261	811	411	1420	750	2290	2040	1240	964
28	960	374	317	273	622	393	1470	715	2500	2030	1080	1040
29	926	386	324	282	---	429	1100	690	2420	2030	932	1090
30	900	388	329	377	---	548	971	690	2180	2030	967	1130
31	768	---	332	452	---	674	---	754	---	1950	1060	---
TOTAL	39747	18578	12837	9303	35431	15215	33778	27395	45171	58240	45339	29220
MEAN	1282	619	414	300	1265	491	1126	884	1506	1879	1463	974
MAX	2050	871	502	452	2230	674	1470	1280	2500	2120	2260	1230
MIN	768	358	314	226	475	393	676	690	841	1560	882	783
AC-FT	78840	36850	25460	18450	70280	30180	67000	54340	89600	115500	89930	57960
CAL YR 1986	TOTAL	748783.00	MEAN	2051	MAX	5010	MIN	.00	AC-FT	1485000		
WTR YR 1987	TOTAL	370254.00	MEAN	1014	MAX	2500	MIN	226	AC-FT	734400		

SAN JOAQUIN RIVER BASIN

11250100 MILLERTON LAKE AT FRIANT, CA

LOCATION.--Lat 37°00'00", long 119°42'13", in SW 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040006, near center of Friant Dam on San Joaquin River just upstream from Cottonwood Creek, 0.9 mi northeast of Friant.

DRAINAGE AREA.--1,638 mi².

PERIOD OF RECORD.--October 1941 to current year. Monthend contents only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to May 29, 1944, nonrecording gage on left bank at same datum.

REMARKS.--Reservoir is formed by gravity-type concrete dam with spillway near center, completed in December 1942. Control valves installed in February 1944, and spillway gates installed in November 1947. Usable capacity, 503,200 acre-ft between elevations 375.4 ft, invert of river outlet, and 578.0 ft, top of drum-type spillway gates. Not available for release, 17,400 acre-ft. Millerton Lake is one of the storage units in Central Valley Project. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 528,700 acre-ft, June 12, 1973, elevation, 579.66 ft; minimum since lake first filled, 133,600 acre-ft, Apr. 11, 1969, elevation, 467.81 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 325,000 acre-ft, June 8, elevation, 532.71 ft; minimum, 140,700 acre-ft, Oct. 24, 25, elevation, 471.03 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by U.S. Bureau of Reclamation, from table dated 1921)

400	36,400	440	83,300	480	161,700	520	279,400	560	436,500
420	57,000	460	117,500	500	215,000	540	353,000	580	530,400

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157400	141700	147000	160000	177900	160700	207300	249600	323700	277500	202200	184400
2	155300	142700	148200	160300	178100	162100	208600	253700	324400	274800	200500	183600
3	153200	143200	148100	160900	178400	162600	209800	256600	324700	272500	199300	182700
4	150500	143400	148300	161900	178000	163900	211600	260100	324600	270400	198900	182300
5	148700	143200	148800	162700	177600	165700	212900	262900	324300	268500	198100	182000
6	145200	142900	149000	163300	176900	168700	214700	265100	324500	266100	196800	181400
7	143000	142300	149400	164200	175300	171500	215800	267500	324500	264100	196000	181600
8	142200	142000	149700	164900	172800	173400	216800	269600	325000	261400	195200	181600
9	141800	141800	149800	165500	170400	174900	217500	272100	324600	258500	194000	181200
10	141500	142000	150700	166500	166900	175900	218500	274000	323500	256400	193000	180700
11	141800	142600	150600	167400	164200	177200	219800	276200	323000	254200	192000	180400
12	142100	142700	150400	167800	161400	178400	220900	279400	322300	252200	191700	179700
13	142400	142800	150100	168900	163200	180500	222000	281700	320800	250900	191200	179000
14	143100	143000	150700	169000	164100	182800	223100	284100	320000	249000	190800	178200
15	142700	142900	151100	169400	163900	185500	224400	287100	318500	246000	190500	178100
16	142700	143000	151600	170500	162600	187700	225100	290200	316900	243300	189500	177900
17	142100	142700	152000	171100	160900	189300	226800	292900	315000	240300	188500	177300
18	141600	142200	152400	171400	160000	190900	227800	295900	313300	238000	188000	177100
19	141500	142000	153000	171800	159000	192600	229300	298800	311300	235100	187500	176900
20	142100	142300	153200	172300	158200	194100	231100	301800	309400	232500	186700	176600
21	141600	143000	153500	172700	156700	195200	233000	304700	307100	230100	186300	175800
22	141300	143300	153900	173100	155800	196200	234300	307400	304700	227700	186300	174700
23	140900	144000	154700	173600	155300	197200	234900	309500	302000	225800	186300	173700
24	140700	144200	155600	174100	156000	198000	235700	311200	299100	223800	185700	172800
25	140700	144500	156400	175000	156900	199500	237100	312400	296300	221100	185300	171600
26	140800	145100	157100	175300	157800	201000	237800	313700	293500	218100	184900	170900
27	140900	145400	157300	176300	159100	202300	239100	315500	290100	215100	184200	170000
28	140800	145800	158500	177200	159600	202900	241200	317200	286900	212400	184200	169600
29	140800	146500	158300	177500	---	202900	243600	319000	283400	209500	183900	168600
30	141000	146900	159200	177800	---	204100	246400	320700	280500	207100	183600	167700
31	141300	---	159400	178000	---	205800	---	322400	---	204700	184000	---
MAX	157400	146900	159400	178000	178400	205800	246400	322400	325000	277500	202200	184400
MIN	140700	141700	147000	160000	155300	160700	207300	249600	280500	204700	183600	167700
a	471.32	473.76	479.03	486.43	479.13	496.61	510.03	532.01	520.32	496.21	488.70	482.39
b	-17300	+5600	+12500	+18600	-18400	+42600	+40600	+76000	-41900	-75800	-20700	-16300
c	760	450	170	230	360	610	1310	2090	2710	2370	1890	1320

CAL YR 1986 b -177800

WTR YR 1987 b +9100

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, published as provided; not reviewed by U.S. Geological Survey.

SAN JOAQUIN RIVER BASIN

11251000 SAN JOAQUIN RIVER BELOW FRIANT, CA

LOCATION.--Lat 36°59'04", long 119°43'24", in SW 1/4 SW 1/4 sec.7, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040001, on left bank 0.5 mi west of Friant, 1.5 mi downstream from Cottonwood Creek, 2 mi downstream from Friant Dam, and at mile 268.1.

DRAINAGE AREA.--1,676 mi².

PERIOD OF RECORD.--October 1907 to current year. Published as "near Pollasky" October 1907 to December 1908, and as "near Friant" January 1909 to September 1938. Monthly discharge only for October 1907 to November 1908, published in WSP 1315-A.

REVISED RECORDS.--WSP 843: 1914(M).

GAGE.--Water-stage recorder. Datum of gage is 294.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Oct. 18, 1907, to Nov. 9, 1913, nonrecording gage at site 4.5 mi upstream at different datum. Nov. 10, 1913, to Sept. 30, 1938, water-stage recorder at site 2.5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by Millerton Lake (station 11250100) beginning in 1941, and by reservoirs described in REMARKS for San Joaquin River below Kerckhoff powerplant (station 11247000). Diversion for irrigation through Madera and Friant-Kern Canals (stations 11249500 and 11250000) began in 1944 and 1949, respectively. See schematic diagram of San Joaquin River basin.

AVERAGE DISCHARGE (adjusted for change in contents in and evaporation from Millerton Lake and for diversions to Madera and Friant-Kern Canals).--80 years, 2,448 ft³/s, 1,774,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,200 ft³/s, Dec. 11, 1937, gage height, 23.8 ft, site and datum then in use; minimum, 38 ft³/s, regulated, July 29, 1940. Maximum discharge since construction of Friant Dam in 1941, 15,500 ft³/s, Feb. 18, 1986, gage height, 13.41 ft; minimum, 5.5 ft³/s, Oct. 20, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 245 ft³/s, Apr. 13, gage height, 2.76 ft; minimum daily, 22 ft³/s, several days in December and January.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	64	68	73	22	59	48	29	121	126	145	166	137	
2	64	68	73	22	58	57	29	121	126	144	165	147	
3	64	67	75	23	58	67	33	121	126	144	166	146	
4	63	66	76	27	56	68	50	122	127	144	166	146	
5	63	66	77	23	54	71	50	122	134	144	161	146	
6	66	66	82	22	53	65	57	123	144	144	161	147	
7	66	68	79	22	53	34	81	123	144	144	161	150	
8	66	68	55	22	54	30	141	124	144	143	161	143	
9	66	68	24	23	53	28	180	125	143	144	161	141	
10	68	68	23	22	53	28	205	125	145	150	161	139	
11	68	67	23	22	53	27	232	125	142	159	161	139	
12	68	68	23	22	55	28	232	126	142	157	161	139	
13	68	64	23	22	55	28	221	126	142	161	161	139	
14	68	68	23	23	34	30	195	128	144	164	161	134	
15	69	68	23	23	26	32	173	125	143	164	161	124	
16	69	68	22	24	25	30	172	130	139	165	154	122	
17	69	68	24	24	26	29	163	130	133	166	149	124	
18	69	68	23	24	27	29	146	130	129	166	142	124	
19	69	68	24	24	39	29	146	130	129	166	124	122	
20	56	69	24	25	48	29	146	131	128	166	124	123	
21	38	70	24	25	47	30	147	136	128	166	124	122	
22	39	71	24	32	47	30	132	132	128	166	124	122	
23	42	71	24	51	47	30	119	132	128	169	124	119	
24	42	70	24	51	46	30	119	132	128	169	126	112	
25	42	70	24	51	47	29	120	132	127	168	125	111	
26	42	71	24	52	48	29	119	133	136	166	126	111	
27	50	72	24	53	48	29	118	129	146	166	126	111	
28	65	72	24	55	48	29	118	129	146	167	125	110	
29	65	72	23	56	---	29	119	126	146	166	125	109	
30	65	72	22	57	---	28	120	126	146	166	124	108	
31	65	---	23	58	---	29	---	126	---	169	125	---	
TOTAL	1878	2060	1129	1002	1317	1109	3912	3941	4089	4918	4501	3867	
MEAN	60.6	68.7	36.4	32.3	47.0	35.8	130	127	136	159	145	129	
MAX	69	72	82	58	59	71	232	136	146	169	166	150	
MIN	38	64	22	22	25	27	29	121	126	143	124	108	
AC-FT	3730	4090	2240	1990	2610	2200	7760	7820	8110	9750	8930	7670	
MEAN a	1453	933	657	639	1045	1425	1961	2281	1679	1695	1831	900	
AC-FT a	89340	55520	40400	39290	58040	87620	116700	140300	99910	104200	112600	53550	
CAL YR 1986	TOTAL	488842	MEAN	1339	MAX	14900	MIN 22	AC-FT	969600	MEAN a	3915	AC-FT a	2834000
WTR YR 1987	TOTAL	33723	MEAN	92	MAX	232	MIN 22	AC-FT	66890	MEAN a	1378	AC-FT a	997600

a Adjusted for change in contents and evaporation from Millerton Lake and for diversions to Madera and Friant-Kern canals.

SAN JOAQUIN RIVER BASIN

11253310 CANTUA CREEK NEAR CANTUA CREEK, CA

LOCATION.--Lat 36°24'08", long 120°25'57", in SE 1/4 SE 1/4 sec.34, T.17 S., R.14 E., Fresno County, Hydrologic Unit 18030012, on left bank 9.2 mi southwest of town of Cantua Creek and 19 mi north of Coalinga.

DRAINAGE AREA.--46.4 mi².

PERIOD OF RECORD.--Water years 1958-65 (annual maximum), October 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 680 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1966, crest-stage gage at datum 2.00 ft lower.

REMARKS.--No estimated daily discharges. Records good. Some small dams for stock use above station.

AVERAGE DISCHARGE.--21 years, 3.36 ft³/s, 2,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,420 ft³/s, Mar. 1, 1983, gage height, 5.72 ft; maximum gage height, 6.60 ft, Feb. 24, 1969; no flow for several months in most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	2145	*96	*2.51

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	.48	.44	.58	.67	.64	1.1	.72	.11			
2	.17	.48	.44	.57	.67	.61	1.1	.73	.10			
3	.17	.48	.44	.61	.76	.59	1.1	.67	.09			
4	.19	.48	.44	2.0	.72	.55	1.3	.59	.08			
5	.20	.44	.44	1.1	.64	26	1.2	.51	.08			
6	.20	.39	.46	.85	.66	31	1.1	.40	.08			
7	.21	.38	.50	.85	.61	7.5	1.1	.28	.07			
8	.22	.42	.48	.80	.57	3.8	1.0	.33	.14			
9	.22	.43	.49	.77	.60	2.7	.96	.41	.18			
10	.23	.44	.50	.76	.90	2.2	.91	.34	.06			
11	.27	.44	.52	.73	.79	1.9	.89	.28	.07			
12	.28	.40	.52	.72	.75	1.7	.92	.17	.07			
13	.28	.42	.52	.69	13	1.6	.90	.11	.06			
14	.28	.40	.52	.67	6.8	1.6	.90	.10	.05			
15	.29	.38	.55	.67	2.1	1.8	.85	.06	.03			
16	.30	.36	.57	.63	1.5	1.6	.82	.07	.02			
17	.34	.39	.52	.61	1.2	1.5	.80	.06	0			
18	.36	.41	.52	.61	1.1	1.4	.79	.10	0			
19	.38	.44	.54	.60	.95	1.4	.82	.11	0			
20	.39	.44	.58	.58	.88	1.4	.86	.17	0			
21	.42	.42	.57	.58	.84	1.5	.82	.39	0			
22	.39	.39	.55	.60	.84	1.8	.77	.32	0			
23	.39	.39	.57	.63	.80	1.6	.73	.27	0			
24	.41	.41	.56	.68	.81	1.5	.73	.23	0			
25	.41	.42	.57	.66	.81	1.4	.73	.24	0			
26	.40	.43	.57	.67	.79	1.3	.68	.26	0			
27	.43	.44	.57	.63	.70	1.2	.61	.30	0			
28	.46	.41	.57	.64	.66	1.2	.58	.27	0			
29	.45	.39	.57	.60	---	1.2	.58	.21	0			
30	.47	.41	.57	.69	---	1.1	.61	.16	0			
31	.48	---	.59	.70	---	1.1	---	.14	---			---
TOTAL	9.86	12.61	16.25	22.48	42.12	106.39	26.26	9.00	1.29	0	0	0
MEAN	.32	.42	.52	.73	1.50	3.43	.88	.29	.043	0	0	0
MAX	.48	.48	.59	2.0	13	31	1.3	.73	.18	0	0	0
MIN	.17	.36	.44	.57	.57	.55	.58	.06	0	0	0	0
AC-FT	20	25	32	45	84	211	52	18	2.6	0	0	0

CAL YR 1986	TOTAL	1856.65	MEAN	5.09	MAX 199	MIN 0	AC-FT	3680
WTR YR 1987	TOTAL	246.26	MEAN	.67	MAX 31	MIN 0	AC-FT	488

SAN JOAQUIN RIVER BASIN

11253500 JAMES BYPASS NEAR SAN JOAQUIN, CA

LOCATION.--Lat 36°39'08", long 120°10'49", in NE 1/4 SW 1/4 sec.1, T.15 S., R.16 E., Fresno County, Hydrologic Unit 18030012, on right bank 3.2 mi north of San Joaquin.

PERIOD OF RECORD.--October 1947 to current year. Published as "Fresno Slough bypass" in WSP 1315-A and 1735. Daily discharge data for period October 1954 to September 1972 are in files of U.S. Bureau of Reclamation. Monthly totals published in WDR CA-72-2.

GAGE.--Water-stage recorder. Elevation of gage is 160 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Diversion above station for irrigation. James Bypass carries overflow from Kings River to San Joaquin River.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation; rounded to U.S. Geological Survey standards.

AVERAGE DISCHARGE.--40 years, 281 ft³/s, 203,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 5,570 ft³/s, June 7, 1969; no flow for all or most of each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	38								
2			0	39								
3			0	41								
4			0	43								
5			0	45								
6			0	47								
7			0	40								
8			0	98								
9			0	78								
10			0	52								
11			0	39								
12			0	26								
13			0	22								
14			0	19								
15			0	25								
16			0	8.0								
17			0	2.0								
18			14	4.0								
19			15	4.0								
20			16	4.0								
21			19	3.0								
22			20	2.0								
23			22	0								
24			23	0								
25			25	0								
26			27	0								
27			28	0								
28			30	0								
29			32	0								
30			34	0								
31			36	0								
TOTAL	0	0	341	679.0	0	0	0	0	0	0	0	0
MEAN	0	0	11.0	21.9	0	0	0	0	0	0	0	0
MAX	0	0	36	98	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	676	1350	0	0	0	0	0	0	0	0
CAL YR 1986	TOTAL	337551.00	MEAN	925	MAX	4980	MIN	0	AC-FT	669500		
WTR YR 1987	TOTAL	1020.00	MEAN	2.79	MAX	98	MIN	0	AC-FT	2020		

SAN JOAQUIN RIVER BASIN

11257500 FRESNO RIVER NEAR KNOWLES, CA

LOCATION.--Lat 37°14'14", long 119°46'26", in SE 1/4 NW 1/4 sec.15, T.8 S., R.20 E., Madera County, Hydrologic Unit 18040007, on left bank at Fresno Crossing, 0.1 mi downstream from Bean Gulch, and 6 mi northeast of Knowles.

DRAINAGE AREA.--133 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1911 to August 1913, November 1915 to current year.

REVISED RECORDS.--WSP 1515: 1916-19, 1920(M), 1921-23, 1925-26(M), 1932(M), 1935-36(M).

GAGE.--Water-stage recorder. Datum of gage is 1,086.4 ft above National Geodetic Vertical Datum of 1929. 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.

REMARKS.--Estimated daily discharges: Jan. 16-18. Records fair. Diversions for irrigation of 160 acres above station. Diversions into Fresno River basin above station of up to 60 ft³/s at times since 1888 from the Merced River basin. Diversions are for irrigation downstream from station.

AVERAGE DISCHARGE.--72 years (water years 1912, 1917-87), 85.3 ft³/s, 61,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft³/s, Dec. 23, 1955, gage height, 11.52 ft, from rating curve extended above 4,500 ft³/s, on basis of slope-area measurement of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 590 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1545	*868	*3.65				

No flow Aug. 4 to Sept. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	13	16	15	20	31	38	44	15	2.4	.20	0
2	13	13	16	16	20	31	34	38	16	2.8	.03	0
3	14	13	17	17	21	30	45	34	12	2.7	.02	0
4	12	14	16	83	20	30	59	34	9.9	2.7	0	0
5	10	14	16	51	20	57	50	33	10	2.6	0	0
6	9.6	12	19	33	19	327	48	29	11	2.4	0	0
7	9.0	16	26	26	18	208	45	26	12	2.1	0	0
8	8.6	14	22	24	18	130	45	26	12	2.2	0	0
9	8.5	12	18	23	19	90	46	27	10	1.9	0	0
10	8.5	13	17	21	22	71	45	81	9.4	1.5	0	0
11	8.4	12	16	21	55	60	44	41	10	1.6	0	0
12	10	12	16	20	125	54	43	27	9.9	1.7	0	0
13	9.1	14	16	20	500	124	43	23	9.7	.63	0	0
14	9.2	12	16	20	312	105	42	23	8.8	.56	0	0
15	9.4	12	15	19	151	180	41	24	8.8	.52	0	0
16	9.3	12	15	19	118	119	40	22	9.0	.28	0	0
17	8.8	12	15	18	74	92	40	24	9.5	.24	0	.03
18	9.3	13	15	19	60	88	40	21	9.3	.20	0	.08
19	12	13	15	19	50	76	41	20	8.0	.14	0	.18
20	13	13	18	18	43	69	39	29	7.2	.17	0	.63
21	13	13	18	17	37	85	39	37	6.3	1.1	0	.93
22	13	15	16	19	34	83	37	44	6.4	1.4	0	.83
23	13	16	17	19	34	79	36	41	7.5	1.5	0	.67
24	12	16	17	18	36	89	35	34	6.4	1.6	0	.52
25	12	15	16	19	34	73	35	21	5.6	1.6	0	.32
26	12	15	16	19	33	71	37	22	4.9	1.5	0	.22
27	12	15	16	19	31	69	36	20	4.0	1.4	0	.20
28	12	15	15	25	30	67	36	20	3.3	1.1	0	.22
29	12	16	15	27	---	64	35	17	2.9	.96	0	.30
30	12	17	15	22	---	61	40	14	2.5	.78	0	.33
31	13	---	14	21	---	49	---	14	---	.59	0	---
TOTAL	338.7	412	515	727	1954	2762	1234	910	257.3	42.87	.25	5.46
MEAN	10.9	13.7	16.6	23.5	69.8	89.1	41.1	29.4	8.58	1.38	.008	.18
MAX	14	17	26	83	500	327	59	81	16	2.8	.20	.93
MIN	8.4	12	14	15	18	30	34	14	2.5	.14	0	0
AC-FT	672	817	1020	1440	3880	5480	2450	1800	510	85	.5	11

CAL YR 1986 TOTAL 59247.90 MEAN 162 MAX 4490 MIN 4.6 AC-FT 117500
WTR YR 1987 TOTAL 9158.58 MEAN 25.1 MAX 500 MIN 0 AC-FT 18170

NOTE.--Beaver activity affected stage-discharge relationship.

SAN JOAQUIN RIVER BASIN

11257500 FRESNO RIVER NEAR KNOWLES, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1971 to current year.

INSTRUMENTATION.--Temperature recorder since July 1971.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1972-87): Maximum recorded, 33.5 °C, July 5, 1984; minimum recorded, 0.0 °C, Jan. 5, 7, 1973, Dec. 8-9, 1978.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 32.0 °C, July 15; minimum recorded, 2.0 °C, Jan. 17, 19.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19.0	15.0	15.5	11.5	8.0	5.0	6.5	4.0	9.0	7.0	10.5	7.0
2	19.5	14.0	14.5	11.0	8.0	4.5	7.0	5.0	8.5	7.5	11.0	8.5
3	19.0	14.0	14.0	10.5	7.5	4.5	7.5	6.0	10.0	8.0	12.5	9.0
4	19.5	14.0	14.0	10.0	7.0	5.5	7.5	7.0	11.0	9.0	11.5	10.0
5	19.5	14.5	14.0	10.0	8.5	6.5	8.0	7.5	10.5	8.0	11.0	10.5
6	20.5	14.5	13.0	10.0	9.0	8.0	7.5	6.5	10.5	8.0	11.0	10.5
7	20.5	15.0	11.5	8.5	10.5	8.5	8.0	6.5	10.5	8.0	11.0	10.0
8	21.0	16.0	10.5	7.5	10.0	7.0	8.0	6.5	10.5	8.5	12.0	10.0
9	21.0	16.5	11.0	7.5	9.0	6.5	7.5	6.0	11.0	9.5	13.0	10.5
10	21.0	16.5	11.0	7.0	8.0	5.5	7.0	6.0	13.0	10.0	12.0	10.5
11	20.5	16.5	11.0	7.5	7.5	5.0	7.0	5.0	13.0	11.0	14.0	10.5
12	20.0	16.0	11.5	7.5	7.5	5.5	5.5	4.0	12.0	11.0	14.0	11.5
13	19.5	15.0	11.5	8.0	8.0	5.5	5.5	5.0	11.0	11.0	13.5	11.5
14	19.5	14.5	11.5	8.5	7.0	4.5	6.0	4.5	11.0	9.0	12.0	10.0
15	19.0	14.0	11.0	8.0	7.0	4.0	6.0	4.0	10.0	9.0	10.0	9.0
16	17.5	13.5	11.0	8.5	7.0	4.5	5.0	3.5	9.5	7.5	10.5	8.5
17	17.5	13.5	11.5	8.5	7.5	4.0	4.5	2.0	10.0	8.0	12.0	9.0
18	16.5	12.5	12.0	10.0	7.0	5.0	4.0	2.5	11.5	9.0	12.0	10.5
19	16.5	12.5	12.5	9.5	8.0	6.0	4.0	2.0	10.5	8.5	11.5	9.0
20	16.5	12.0	13.5	11.0	8.0	6.0	4.5	2.5	10.5	7.5	10.5	7.5
21	16.5	12.0	13.5	11.0	7.5	4.5	4.5	2.5	9.5	7.0	9.0	7.5
22	17.0	12.5	12.0	9.5	8.0	4.5	4.5	3.0	10.0	7.0	9.0	6.5
23	15.5	12.5	11.5	8.5	8.5	7.0	5.5	4.0	9.0	6.5	9.5	8.0
24	16.5	13.0	11.0	8.0	9.5	7.5	6.5	4.5	8.5	6.0	9.5	7.5
25	16.5	12.5	10.5	7.0	10.0	8.0	7.5	5.0	8.0	6.0	12.5	9.0
26	17.0	12.5	10.0	6.5	8.5	6.5	8.0	5.5	9.0	6.0	13.5	10.0
27	17.5	13.5	9.5	6.0	8.5	7.0	8.0	7.0	9.5	6.0	14.0	11.0
28	16.0	13.5	8.5	5.5	7.5	6.0	9.0	7.5	10.0	7.0	14.5	11.0
29	17.5	14.5	9.0	6.5	6.5	4.0	9.0	7.5	---	---	15.0	11.0
30	17.5	14.0	8.5	5.5	6.0	4.0	9.0	7.5	---	---	15.5	12.0
31	16.0	12.5	---	---	6.0	4.5	9.0	7.0	---	---	15.5	12.5
MONTH	21.0	12.0	15.5	5.5	10.5	4.0	9.0	2.0	13.0	6.0	15.5	6.5

SAN JOAQUIN RIVER BASIN

11257500 FRESNO RIVER NEAR KNOWLES, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	17.0	12.0	21.0	17.0	26.0	17.5	29.5	22.0	28.0	20.0	---	---
2	17.5	13.0	20.5	15.0	27.5	19.0	29.0	20.5	28.5	20.0	---	---
3	16.0	13.0	22.0	15.5	28.0	21.0	29.0	20.5	29.5	21.5	---	---
4	15.0	11.0	24.0	16.5	28.0	21.5	28.0	20.0	---	---	---	---
5	16.0	12.5	25.5	18.0	27.0	21.5	28.0	19.5	---	---	---	---
6	17.5	13.0	26.5	18.5	25.0	21.5	28.0	20.0	---	---	---	---
7	18.5	14.0	25.0	19.5	27.0	20.5	29.0	20.5	---	---	---	---
8	18.5	14.5	25.5	19.5	28.0	20.5	29.0	21.5	---	---	---	---
9	20.0	15.5	26.0	20.0	28.0	21.0	29.5	22.5	---	---	---	---
10	20.0	16.5	23.0	20.0	28.5	21.0	29.5	22.5	---	---	---	---
11	20.0	16.5	26.5	20.0	28.0	21.0	29.0	22.0	---	---	---	---
12	19.0	15.0	27.5	20.5	29.0	21.0	30.0	22.5	---	---	---	---
13	20.0	15.0	28.0	20.5	28.5	22.0	30.0	23.0	---	---	---	---
14	20.0	15.5	28.0	21.0	29.0	23.0	31.0	24.0	---	---	---	---
15	21.0	15.5	27.0	22.0	27.5	21.5	32.0	25.0	---	---	---	---
16	21.5	16.0	27.0	21.5	27.5	19.5	31.0	23.5	---	---	---	---
17	21.5	16.5	26.5	20.0	27.5	20.0	27.0	20.5	---	---	23.0	17.0
18	19.0	15.5	25.0	19.0	27.0	19.0	26.0	18.5	---	---	22.5	17.5
19	18.0	13.0	23.0	18.0	27.5	19.5	26.5	19.5	---	---	22.0	18.0
20	19.0	13.0	20.0	17.0	28.0	20.0	26.0	20.0	---	---	22.5	18.5
21	20.0	14.0	18.5	16.0	28.0	19.5	25.5	19.5	---	---	23.0	17.5
22	20.5	15.0	22.0	15.5	27.5	19.0	25.5	18.0	---	---	21.5	17.0
23	21.0	16.0	23.5	17.0	28.5	20.0	26.0	18.0	---	---	21.5	17.0
24	21.5	15.5	21.5	17.0	29.0	21.0	26.0	19.0	---	---	22.0	17.5
25	22.5	16.5	20.0	16.0	30.0	21.5	26.5	19.5	---	---	21.5	17.5
26	23.0	17.5	19.0	14.0	30.0	22.5	27.0	20.0	---	---	21.5	17.5
27	24.5	18.0	20.5	14.5	30.5	22.5	26.5	20.0	---	---	21.5	18.0
28	22.0	19.0	23.0	14.5	30.5	22.5	27.0	20.5	---	---	21.5	18.0
29	23.0	18.0	22.5	17.0	30.0	22.0	27.5	20.5	---	---	21.0	18.0
30	21.0	18.5	24.5	17.0	30.0	22.0	27.0	20.0	---	---	21.0	18.0
31	---	---	24.5	17.0	---	---	27.0	20.0	---	---	---	---
MONTH	24.5	11.0	28.0	14.0	30.5	17.5	32.0	18.0	---	---	---	---

SAN JOAQUIN RIVER BASIN

11257950 HENSLEY LAKE NEAR DAULTON, CA

LOCATION.--Lat 37°06'34", long 119°53'05", in NE 1/4 NW 1/4 sec.34, T.9 S., R.19 E., Madera County, Hydrologic Unit 18040007, in control tower at center of Hidden Dam on Fresno River and 5.3 mi southeast of Daulton.

DRAINAGE AREA.--236 mi².

PERIOD OF RECORD.--October 1975 to current year.

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

REMARKS.--Lake is formed by earthfill dam. Storage began Oct. 1, 1975, usable capacity, 85,289 acre-ft, between elevations 448.0 ft, lowest outlet, and 540.0 ft, crest of spillway. Dead storage, 4,970 acre-ft. Records, including extremes, represent total contents at 2400 hours. Reservoir is used for flood control, irrigation, recreation, and wildlife enhancement.

COOPERATION.--Records provided by U.S. Army Corps of Engineers; not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 89,509 acre-ft, June 6, 1979, elevation, 539.52 ft; minimum since reservoir first filled, 8,790 acre-ft, Sept. 30 and Oct. 1, 1984, elevation, 459.06 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 30,060 acre-ft, June 6-8, elevation, 491.69 ft; minimum, 9,648 acre-ft, Sept. 30, elevation, 461.07 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by U.S. Army Corps of Engineers, from 1975 survey)

435	2,134	460	9,185	490	28,556	520	61,525
445	4,173	470	14,138	500	38,094	530	75,247
455	7,217	480	20,569	510	49,115	540	90,259

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21304	15760	15895	16906	18377	21727	27045	29120	30024	23458	11455	9830
2	21312	15639	15938	16932	18438	21794	27113	29173	30033	23078	11215	9821
3	21327	15512	15962	17053	18458	21839	27207	29218	30051	22693	10978	9817
4	21341	15404	15993	17181	18512	21921	27317	29271	30051	22320	10744	9812
5	21356	15380	16036	17297	18539	22071	27403	29315	30051	21936	10570	9799
6	21327	15380	16073	17362	18600	22617	27506	29360	30060	21563	10435	9790
7	21114	15398	16116	17414	18641	23039	27600	29405	30060	21187	10301	9781
8	20829	15416	16153	17466	18641	23287	27695	29449	30060	20815	10164	9772
9	20555	15434	16203	17505	18701	23466	27781	29485	29997	20454	10032	9772
10	20275	15452	16221	17563	18769	23576	27868	29547	29960	20090	9978	9763
11	19998	15476	16240	17609	18844	23725	27954	29610	29889	19723	9969	9759
12	19730	15488	16277	17622	18974	23843	28032	29646	29736	19353	9964	9750
13	19464	15518	16308	17681	19653	23993	28110	29682	29556	18967	9955	9741
14	19229	15542	16346	17701	20325	24255	28180	29709	29351	18566	9947	9737
15	18988	15554	16371	17747	20583	24574	28258	29727	29102	18170	9938	9732
16	18749	15573	16389	17780	20771	24816	28328	29736	28793	17760	9929	9728
17	18505	15597	16414	17799	20902	24986	28389	29754	28468	17355	9920	9719
18	18270	15621	16433	17832	21011	25124	28433	29772	28154	16951	9915	9710
19	18037	15651	16470	17865	21092	25287	28494	29790	27833	16552	9911	9706
20	17799	15669	16533	17905	21158	25410	28547	29808	27497	16153	9902	9697
21	17577	15700	16577	17931	21231	25566	28608	29826	27155	15755	9897	9693
22	17355	15712	16609	17944	21312	25739	28670	29853	26825	15350	9888	9688
23	17149	15724	16634	18004	21371	25896	28731	29871	26471	14941	9884	9684
24	16951	15760	16678	18030	21430	26061	28784	29880	26120	14527	9879	9679
25	16760	15791	16709	18070	21482	26195	28846	29897	25763	14115	9870	9670
26	16577	15797	16741	18110	21571	26345	28890	29906	25385	13689	9861	9666
27	16414	15809	16760	18150	21615	26479	28952	29924	25002	13266	9857	9662
28	16265	15828	16804	18203	21674	26614	28996	29951	24615	12856	9852	9657
29	16135	15864	16830	18264	---	26732	29040	29969	24231	12440	9848	9653
30	16005	15870	16855	18311	---	26841	29085	29988	23843	12038	9843	9648
31	15889	---	16887	18337	---	26960	---	29997	---	11709	9830	---
MAX	21356	15870	16887	18337	21674	26960	29085	29997	30060	23458	11455	9830
MIN	15889	15380	15895	16906	18377	21727	27045	29120	23843	11709	9830	9648
a	472.97	472.94	474.57	476.79	481.51	488.15	490.60	491.62	484.34	465.45	461.48	461.07
b	-5401	-19	+1017	+1450	+3337	+5286	+2125	+912	-6154	-12134	-1879	-182
c	382	211	71	71	119	201	449	609	739	597	426	330

CAL YR 1986 b +2034

WTR YR 1987 b -11642

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, published as provided; not reviewed by U.S. Geological Survey.

SAN JOAQUIN RIVER BASIN

11258000 FRESNO RIVER BELOW HIDDEN DAM, NEAR DAULTON, CA

LOCATION.--Lat 37°06'16", long 119°53'13", in NE 1/4 SW 1/4 sec.34, T.9 S., R.19 E., Madera County, Hydrologic Unit 18040007, on left bank 350 ft upstream from Willow Creek, 2,000 ft downstream from Hidden Dam, and 5.2 mi southeast of Daulton.
DRAINAGE AREA.--237 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1941 to current year. Prior to October 1975, published as "near Daulton."

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Elevation of gage is 385 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WDR CA-75-3 for history of changes prior to Oct. 1, 1975.

REMARKS.--Estimated daily discharges: Dec. 19-24, Mar. 12, 13. Flow completely regulated by Hensley Lake (station 11257950) since October 1975.

COOPERATION.--Records were provided by U.S. Corps of Engineers and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE.--46 years, 118 ft³/s, 85,490 acre-ft/yr, adjusted for change in contents and evaporation from Hensley Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft³/s, Dec. 23, 1955, gage height, 17.64 ft, site and datum then in use, from rating curve extended above 6,400 ft³/s on basis of slope-area measurement at gage height 17.60 ft, site and datum then in use; maximum gage height; 17.69 ft, Feb. 24, 1969, site and datum then in use; no flow at times most years. Maximum discharge since construction of Hidden Dam in 1975, 4,190 ft³/s, Mar. 1, 1983, gage height, 8.83 ft; no flow at times some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 3, 1938, reached a discharge of 15,000 ft³/s, provided by U.S. Bureau of Reclamation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 301 ft³/s, June 9, gage height, 5.36 ft; minimum, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	73	.10	0	.20	.10	.60		0	209	135	
2	3.5	73	.20	0	.20	.10	.60		0	203	126	
3	3.3	68	.20	0	.20	.10	.60		0	201	124	
4	3.3	64	.20	.30	.20	.10	.50		0	206	123	
5	3.3	38	.20	.10	.20	.30	.50		0	207	94	
6	18	8.9	.30	0	.20	.80	.40		0	204	76	
7	112	1.1	.20	0	.20	.60	.50		0	202	75	
8	142	.60	.30	.10	.10	.60	.40		0	194	75	
9	141	.90	.20	0	.10	.60	.50		57	190	75	
10	141	1.0	.10	0	.20	.60	.50		30	190	30	
11	140	.90	.20	.10	.20	.60	.40		33	189	0	
12	140	1.0	.20	0	.20	.50	.40		80	189	0	
13	135	1.0	.10	.10	.90	.70	.30		100	202	.10	
14	123	.90	.10	.10	.70	.70	.20		98	211	.10	
15	123	.80	0	0	.60	1.2	.20		127	211	0	
16	122	.80	.10	.10	.60	1.1	.10		162	209	0	
17	124	.70	.10	.10	.40	1.1	.10		174	205	0	
18	124	.60	0	.10	.40	1.0	.10		172	206	0	
19	124	.60	.10	.10	.30	.90	0		172	207	0	
20	124	.50	0	0	.30	.80	.10		171	207	0	
21	123	.60	0	.10	.20	.90	0		182	203	0	
22	117	.50	0	.10	.20	.90	0		185	203	0	
23	112	.40	.10	.10	.20	1.5	0		195	210	0	
24	112	.50	0	.10	.20	1.4	.10		201	213	0	
25	104	.40	0	.10	.20	1.0	0		195	215	0	
26	98	.30	0	.10	.20	.80	0		204	220	0	
27	93	.30	.10	.20	.10	.80	0		211	222	0	
28	87	.20	0	.20	.10	.70	0		214	221	0	
29	80	.30	0	.20	---	.80	0		206	219	0	
30	73	.20	0	.20	---	.70	0		210	219	0	
31	73	---	.10	.20	---	.70	---		---	178	0	
TOTAL	2922.0	340.00	3.20	2.80	7.80	22.70	7.10	0	3379	6365	933.20	0
MEAN	94.3	11.3	.10	.090	.28	.73	.24	0	113	205	30.1	0
MAX	142	73	.30	.30	.90	1.5	.60	0	214	222	135	0
MIN	3.3	.20	0	0	.10	.10	0	0	0	178	0	0
AC-FT	5800	674	6.3	5.6	15	45	14	0	6700	12620	1850	0

CAL YR 1986	TOTAL	71026.60	MEAN	195	MAX	3080	MIN	0	AC-FT	140900	MEAN	a206	AC-FT	a149100
WTR YR 1987	TOTAL	13982.80	MEAN	38.3	MAX	222	MIN	0	AC-FT	27730	MEAN	a28.0	AC-FT	a20270

a Adjusted for change in contents and evaporation from Hensley Lake.

NOTE.--Backwater from beaver dams Nov. 8 to June 9 and Aug. 10 to Sept. 30.

SAN JOAQUIN RIVER BASIN

11258000 FRESNO RIVER BELOW HIDDEN DAM, NEAR DAULTON, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1975 to current year.

INSTRUMENTATION.--Temperature recorder since Oct. 29, 1975.

REMARKS.--Interruptions in record are due to no flow at the gaging station. Water temperatures are affected by regulation from Hidden Dam.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE (water years 1976-87): Maximum recorded, 32.0 °C, June 15, 1976; minimum recorded, 3.0 °C, Jan. 17, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 24.5 °C, Aug. 7-9, 12-13; minimum recorded, 3.0 °C, Jan. 17.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	17.5	16.5	18.5	17.5	10.0	6.5	---	---	9.0	8.5	11.0	10.5
2	17.0	15.5	18.0	17.0	11.0	7.0	---	---	9.5	9.0	12.0	11.0
3	16.0	15.0	18.0	17.0	10.5	7.0	---	---	10.0	9.5	12.5	12.0
4	15.5	15.0	18.0	16.5	9.5	8.0	10.5	8.5	10.5	10.0	13.0	12.5
5	16.0	15.0	18.5	16.0	10.5	9.0	10.0	9.0	10.5	10.0	13.0	13.0
6	20.5	15.5	17.5	14.5	11.0	10.0	---	---	10.5	10.0	13.0	13.0
7	20.5	19.5	15.0	11.0	10.5	9.5	---	---	11.5	10.5	13.5	13.5
8	20.5	20.0	13.0	10.5	10.5	8.0	9.0	6.5	11.5	11.0	14.0	13.5
9	20.5	20.0	12.5	10.0	10.0	7.5	---	---	12.0	11.5	14.5	14.0
10	20.5	20.0	13.0	10.0	10.0	8.5	---	---	12.5	12.0	14.5	14.0
11	20.5	20.0	13.5	10.0	9.5	8.5	7.5	6.5	14.0	13.0	14.5	14.0
12	20.5	20.0	14.0	10.5	9.0	8.0	---	---	14.0	13.5	15.0	14.5
13	20.5	20.0	14.0	10.5	9.0	8.0	6.0	6.0	13.5	13.0	16.0	15.0
14	20.5	20.0	13.5	10.5	8.0	6.5	6.5	5.0	13.0	11.5	16.0	15.0
15	20.5	19.5	13.5	10.5	---	---	---	---	13.0	12.0	15.0	14.0
16	20.5	19.5	13.5	10.5	9.0	6.5	5.5	3.5	12.0	11.0	14.0	13.5
17	20.0	19.5	13.5	11.0	9.5	6.5	5.0	3.0	11.5	11.0	14.0	13.5
18	19.5	19.0	13.5	12.0	---	---	6.0	3.5	12.0	11.0	15.0	14.0
19	19.5	19.0	15.0	12.5	10.5	9.0	5.5	3.5	12.0	10.5	15.0	13.5
20	19.5	19.0	14.5	12.0	---	---	---	---	11.0	10.5	14.0	13.0
21	19.5	18.5	14.5	13.0	---	---	6.5	4.0	11.0	10.5	13.0	12.5
22	19.0	18.5	14.0	10.5	---	---	6.5	5.0	10.5	10.0	12.5	12.0
23	19.0	18.5	12.5	10.0	---	---	8.5	6.0	11.0	10.5	12.0	12.0
24	19.0	18.0	14.0	10.0	---	---	8.5	7.0	11.0	9.5	12.0	12.0
25	19.0	18.0	11.5	10.0	---	---	9.0	7.0	10.5	10.0	13.0	12.0
26	19.0	18.0	12.0	9.0	---	---	9.5	8.0	10.0	9.5	14.0	13.0
27	19.0	18.0	11.5	9.0	9.0	8.5	10.5	9.5	10.0	10.0	14.5	14.0
28	18.5	18.0	11.0	8.0	---	---	10.5	9.5	10.5	10.0	15.0	14.5
29	19.0	18.0	11.0	9.0	---	---	10.5	9.0	---	---	15.0	15.0
30	19.0	18.0	10.0	7.5	---	---	11.0	9.5	---	---	15.5	15.5
31	18.5	17.5	---	---	7.5	6.5	10.5	9.0	---	---	16.5	15.5
MONTH	20.5	15.0	18.5	7.5	---	---	---	---	14.0	8.5	16.5	10.5

SAN JOAQUIN RIVER BASIN

11258000 FRESNO RIVER BELOW HIDDEN DAM, NEAR DAULTON, CA--(Continued)

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.5	16.5			---	---	14.0	14.0	23.5	23.0		
2	17.0	16.5			---	---	14.5	14.0	24.0	23.0		
3	17.0	16.5			---	---	14.5	14.0	24.0	23.5		
4	16.5	15.5			---	---	14.5	14.0	24.0	23.5		
5	16.5	15.5			---	---	14.5	14.0	24.0	23.5		
6	17.0	16.5			---	---	14.5	14.5	24.0	23.0		
7	17.0	17.0			---	---	15.0	14.5	24.5	23.0		
8	18.0	17.0			---	---	15.0	14.5	24.5	23.0		
9	18.5	18.0			24.0	13.0	15.0	14.5	24.5	23.5		
10	19.5	18.5			20.5	13.0	15.5	15.0	---	---		
11	20.0	19.0			20.5	15.5	15.5	15.0	---	---		
12	19.5	18.0			15.0	13.0	16.0	15.5	24.5	23.5		
13	18.5	18.0			14.0	13.0	16.5	16.0	24.5	24.0		
14	19.0	18.5			14.0	13.0	17.0	16.5	---	---		
15	19.5	19.0			13.5	13.0	17.5	17.0	---	---		
16	19.5	19.5			13.5	13.0	17.5	17.0	---	---		
17	20.0	19.5			13.5	13.0	18.0	17.5	---	---		
18	20.0	19.5			13.5	13.0	18.5	18.0	---	---		
19	---	---			13.5	13.0	19.0	18.5	---	---		
20	17.5	17.5			13.5	13.0	19.5	19.0	---	---		
21	---	---			13.5	13.0	20.5	19.5	---	---		
22	---	---			13.5	13.0	21.0	20.0	---	---		
23	---	---			14.0	13.0	21.5	21.0	---	---		
24	19.5	19.5			14.0	13.0	22.0	21.5	---	---		
25	---	---			14.0	13.5	22.5	22.0	---	---		
26	---	---			14.0	13.5	23.0	22.5	---	---		
27	---	---			14.0	13.5	23.5	23.0	---	---		
28	---	---			14.0	13.5	23.5	23.0	---	---		
29	---	---			14.0	13.5	24.0	23.0	---	---		
30	---	---			14.0	13.5	24.0	23.5	---	---		
31	---	---			---	---	24.0	23.5	---	---		
MONTH	---	---			---	---	24.0	14.0	---	---		

SAN JOAQUIN RIVER BASIN

11258960 CHOWCHILLA RIVER ABOVE WILLOW CREEK, NEAR RAYMOND, CA

LOCATION.--Lat 37°16'23", long 119°52'49", in NE 1/4 NW 1/4 sec.3, T.8 S., R.19 E., Madera County, Hydrologic Unit 18040007, on left bank 0.9 mi upstream from Willow Creek and 4.7 mi northeast of Raymond.

DRAINAGE AREA.--173 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 680 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No storage or diversions above station.

AVERAGE DISCHARGE.--7 years, 127 ft³/s, 92,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s, Feb. 18, 1986, gage height, 15.25 ft; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 660 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1700	*1,010	*7.29
Mar. 6	1015	852	7.00

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	2.8	5.0	6.7	9.0	15	28	7.4	2.2			
2	3.2	3.0	4.7	6.7	8.6	15	27	7.7	1.9			
3	3.3	3.2	4.8	7.6	8.6	15	26	7.2	1.6			
4	3.4	3.3	5.0	34	8.6	14	27	6.6	1.3			
5	2.9	3.4	5.1	32	8.6	18	26	6.2	1.1			
6	2.6	3.4	6.3	21	8.3	422	27	5.8	.88			
7	2.5	3.3	8.8	16	8.0	152	24	4.9	.77			
8	2.4	3.2	12	12	7.9	76	23	4.5	.63			
9	1.9	3.2	9.6	11	8.0	53	23	5.5	.50			
10	2.2	3.6	8.1	10	8.6	40	22	6.5	.33			
11	2.1	3.6	7.3	9.6	12	33	21	6.6	.22			
12	2.2	3.7	7.0	8.9	18	29	21	5.6	.16			
13	2.2	3.9	6.7	8.6	415	123	20	4.3	.11			
14	2.2	3.8	6.4	8.6	225	93	19	3.5	.07			
15	2.3	3.8	6.4	8.6	68	241	18	3.2	.04			
16	2.4	3.8	6.4	8.3	68	109	16	2.7	.02			
17	2.3	3.9	6.4	8.0	39	74	14	2.3	.01			
18	2.2	3.9	6.4	7.7	29	60	12	2.2	0			
19	2.2	3.9	6.3	7.9	24	49	12	2.1	0			
20	2.3	4.1	7.4	7.9	21	42	12	2.2	0			
21	2.5	4.1	8.3	7.8	19	44	11	2.7	0			
22	2.7	4.1	8.3	7.6	18	56	11	3.8	0			
23	2.7	4.1	7.8	7.9	18	48	9.8	4.7	0			
24	2.7	4.1	7.3	7.9	18	60	9.2	4.2	0			
25	2.6	4.2	7.0	8.0	17	52	8.5	3.6	0			
26	2.7	4.4	6.9	8.2	17	44	8.1	3.3	0			
27	2.9	4.5	6.9	8.2	16	39	7.5	3.3	0			
28	2.6	4.5	7.0	10	16	35	7.0	3.3	0			
29	3.1	4.7	6.7	11	---	33	6.6	3.1	0			
30	2.9	5.0	6.7	11	---	31	6.6	2.9	0			
31	2.8	---	6.7	9.7	---	29	---	2.7	---			
TOTAL	79.9	114.5	215.7	338.4	1142.2	2144	503.3	134.6	11.84	0	0	0
MEAN	2.58	3.82	6.96	10.9	40.8	69.2	16.8	4.34	.39	0	0	0
MAX	3.4	5.0	12	34	415	422	28	7.7	2.2	0	0	0
MIN	1.9	2.8	4.7	6.7	7.9	14	6.6	2.1	0	0	0	0
AC-FT	158	227	428	671	2270	4250	998	267	23	0	0	0
CAL YR 1986	TOTAL	53710.25	MEAN	147	MAX	6000	MIN	0	AC-FT	106500		
WTR YR 1987	TOTAL	4684.44	MEAN	12.8	MAX	422	MIN	0	AC-FT	9290		

SAN JOAQUIN RIVER BASIN

11258960 CHOWCHILLA RIVER ABOVE WILLOW CREEK, NEAR RAYMOND, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1980 to current year.

INSTRUMENTATION.--Temperature recorder since July 9, 1980.

REMARKS.--No temperatures shown for period of no flow June 20 to Sept. 30. Interruptions in record were due to malfunction of recording instruments.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1981-87): Maximum recorded, 38.0 °C, July 2, 1985; minimum recorded, 1.5 °C, Dec. 10-14, 1980.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 34.0 °C, June 13; minimum recorded, 2.0 °C, Jan. 22.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	16.0	12.0	---	---	7.5	5.5	10.5	6.5	13.5	7.5
2	---	---	15.5	11.5	---	---	8.0	6.0	9.5	8.0	14.0	9.0
3	---	---	15.5	11.0	---	---	8.0	7.0	10.5	8.5	15.0	10.0
4	---	---	15.5	11.0	---	---	9.0	7.5	13.0	9.5	13.0	11.0
5	---	---	15.0	11.0	---	---	9.5	8.0	12.0	8.0	13.0	12.0
6	---	---	13.5	10.0	---	---	---	---	12.0	8.0	13.0	11.5
7	---	---	12.0	9.0	---	---	---	---	12.5	8.0	13.5	11.5
8	---	---	12.0	8.0	---	---	---	---	12.5	9.0	15.0	11.5
9	---	---	12.0	8.0	---	---	---	---	12.5	10.5	16.5	12.0
10	22.5	17.0	12.0	8.0	---	---	---	---	15.5	11.0	15.0	12.0
11	21.5	17.0	12.5	8.0	---	---	---	---	14.5	12.5	17.5	12.0
12	21.0	16.5	12.5	8.5	---	---	---	---	13.5	12.0	17.0	12.5
13	20.5	15.5	12.5	8.5	---	---	---	---	13.0	11.0	16.5	13.5
14	20.5	15.0	11.5	8.5	---	---	---	---	11.0	9.0	14.0	11.5
15	20.0	15.0	11.5	8.5	---	---	---	---	12.0	10.0	11.5	9.5
16	19.0	14.0	12.0	8.0	---	---	---	---	11.0	8.0	13.0	9.0
17	18.5	14.0	12.5	9.0	---	---	---	---	13.0	9.0	14.5	10.0
18	17.5	13.0	12.5	10.0	---	---	---	---	13.5	9.0	15.0	12.0
19	17.5	13.0	13.5	10.0	---	---	---	---	12.0	8.5	14.5	10.0
20	18.0	13.0	14.0	10.5	---	---	---	---	12.5	7.5	13.5	9.5
21	18.0	13.0	13.5	10.5	---	---	---	---	11.5	7.0	11.0	9.5
22	18.0	13.5	12.0	9.0	---	---	5.5	2.0	12.0	7.0	12.0	7.5
23	17.5	13.5	12.0	8.5	---	---	7.5	4.5	11.5	7.5	11.5	10.5
24	18.0	14.0	11.5	8.0	10.5	8.0	7.5	5.5	11.0	6.5	12.5	9.0
25	18.0	13.5	---	---	10.5	8.5	9.0	5.0	10.5	7.0	16.0	10.5
26	18.5	14.0	---	---	8.0	7.0	9.5	5.5	11.0	6.0	17.5	11.5
27	18.5	14.5	---	---	8.5	7.5	9.0	8.0	11.5	6.0	18.5	12.5
28	17.5	14.5	---	---	8.0	6.0	10.5	8.0	12.5	7.0	18.5	12.5
29	19.5	15.0	---	---	7.5	5.0	10.5	7.5	---	---	19.5	13.0
30	18.0	15.0	---	---	7.0	5.5	10.5	8.0	---	---	19.5	13.5
31	16.5	13.0	---	---	7.5	5.5	10.5	7.0	---	---	19.0	14.5
MONTH	---	---	---	---	---	---	---	---	15.5	6.0	19.5	7.5

SAN JOAQUIN RIVER BASIN

11258960 CHOWCHILLA RIVER ABOVE WILLOW CREEK, NEAR RAYMOND, CA-Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.5	13.5	23.5	18.0	28.5	19.0						
2	20.5	14.5	23.5	16.5	30.0	20.5						
3	18.0	15.0	25.0	17.0	30.5	22.5						
4	19.0	13.0	27.0	18.5	30.5	22.5						
5	21.0	14.5	28.5	20.0	28.5	22.0						
6	21.5	14.5	29.0	21.0	28.0	21.5						
7	22.5	15.5	27.5	21.5	30.0	20.5						
8	22.5	16.0	28.0	21.5	31.0	21.5						
9	24.0	17.0	29.0	22.0	31.0	21.0						
10	24.0	18.0	29.5	21.5	31.5	20.5						
11	23.5	18.0	30.0	22.5	32.0	20.0						
12	23.0	16.0	30.5	23.0	33.5	20.5						
13	24.0	16.5	30.5	23.0	34.0	21.5						
14	24.0	17.0	30.5	23.0	29.5	22.5						
15	24.5	17.5	30.5	24.0	28.0	20.5						
16	25.0	17.5	29.5	23.0	29.5	18.5						
17	24.5	18.0	28.0	21.0	30.0	18.5						
18	22.0	18.0	27.0	19.5	29.0	18.0						
19	21.5	14.5	22.5	19.0	31.5	18.5						
20	22.5	15.0	20.0	18.0	---	---						
21	---	---	23.0	17.0	---	---						
22	---	---	25.5	17.0	---	---						
23	24.5	17.5	26.0	19.0	---	---						
24	25.0	17.5	23.5	18.5	---	---						
25	26.0	18.0	20.5	16.5	---	---						
26	26.5	19.5	23.0	16.5	---	---						
27	28.0	20.0	24.0	16.5	---	---						
28	---	---	26.0	18.0	---	---						
29	26.0	19.5	26.0	18.5	---	---						
30	24.5	19.0	26.5	18.5	---	---						
31	---	---	27.0	18.5	---	---						
MONTH	---	---	30.5	16.5	---	---						

SAN JOAQUIN RIVER BASIN

11258990 H. V. EASTMAN LAKE NEAR RAYMOND, CA

LOCATION.--Lat 37°13'00", long 119°59'04", in SW 1/4 SE 1/4 sec.22, T.8 S., R.18 E., Madera County, Hydrologic Unit 18040007, in intake structure at center of dam on Chowchilla River, 4.4 mi west of Raymond.

DRAINAGE AREA.--235 mi².

PERIOD OF RECORD.--January 1976 to current year.

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

REMARKS.--Reservoir is formed by earth- and rockfill dam completed in December 1975. Capacity, 150,604 acre-ft between elevations 410.0 ft, invert elevation to outlet tunnel, and 587.0 ft, crest of ungated spillway. Inactive pool, 10,150 acre-ft. Reservoir is used for flood control, irrigation, recreation, and fish and wildlife enhancement. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records provided by U.S. Army Corps of Engineers; not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 145,687 acre-ft, June 4, 5, 1979, elevation, 584.22 ft; minimum since initial season of normal operation, 1,978 acre-ft, Nov. 20, 1977, elevation, 440.81 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 101,416 acre-ft, Oct. 1, elevation, 556.57 ft; minimum, 30,293 acre-ft, Sept. 30, elevation, 495.77 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by U.S. Army Corps of Engineers, from 1975 survey)

438	1,519	455	5,620	470	12,190	500	34,039	560	106,476
442	2,197	460	7,485	475	15,038	520	54,354	580	138,394
446	3,043	465	9,673	480	18,213	540	78,560	600	174,809
450	4,069			490	25,520				

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101416	92086	91947	92296	92925	95619	100601	101125	98606	81315	66260	39782
2	101402	92086	91947	92296	92939	95633	100645	101125	97630	80787	65438	39082
3	101373	92058	91947	92394	92954	95661	100703	101125	96515	80286	64188	38397
4	101373	92058	91947	92478	92982	95676	100761	101110	95392	79872	62830	37718
5	101358	92058	91989	92478	92996	95875	100805	101038	94218	79539	61484	37081
6	101329	92031	92017	92505	93010	96743	100849	100951	93080	79173	60126	36497
7	101256	92003	92031	92519	93024	97129	100892	100921	91905	78716	58804	35908
8	101169	91989	92045	92547	93038	97315	100921	100878	91029	78221	57506	35313
9	100761	91975	92058	92575	93066	97433	100965	100878	90599	77637	56221	34724
10	100181	91975	92058	92589	93080	97529	100994	100863	90267	77081	54969	34157
11	99543	91975	92072	92617	93150	97601	101008	100863	89907	76578	53763	33630
12	98908	91975	92100	92617	93276	97687	101023	100849	89549	76063	52579	33135
13	98304	91975	92100	92646	94162	97916	101052	100834	89177	75550	51669	32660
14	97873	91961	92100	92646	94769	98261	101067	100820	88765	74936	51026	32277
15	97615	91947	92100	92660	94953	98779	101081	100776	88353	74299	50602	31994
16	97501	91947	92114	92660	95094	99038	101096	100674	87997	73639	50245	31694
17	97100	91947	92128	92660	95194	99211	101110	100630	87724	73044	49900	31413
18	96543	91961	92128	92674	95264	99327	101125	100587	87492	72477	49406	31116
19	95988	91947	92156	92674	95307	99428	101140	100558	87233	71936	48860	30829
20	95505	91961	92184	92716	95349	99515	101154	100558	86960	71397	48338	30534
21	95038	91947	92212	92716	95406	99674	101154	100544	86675	70910	47871	30439
22	94543	91947	92184	92730	95434	99775	101169	100514	86322	70462	47238	30431
23	94078	91933	92212	92744	95463	99905	101169	100485	85862	70027	46546	30422
24	93683	91933	92212	92757	95491	100021	101169	100427	85375	69630	45900	30353
25	93388	91933	92226	92771	95520	100123	101169	100340	84863	69309	45165	30336
26	93080	91933	92240	92785	95534	100210	101183	100297	84298	69000	44383	30327
27	92785	91933	92254	92813	95562	100282	101183	100282	83695	68655	43608	30319
28	92519	91933	92268	92841	95590	100355	101183	100267	83041	68212	42859	30310
29	92338	91933	92268	92883	---	100413	101169	100253	82415	67710	42135	30301
30	92198	91947	92282	92897	---	100485	101154	99891	81844	67233	41407	30293
31	92114	---	92282	92911	---	100544	---	99327	---	68746	40655	---
MAX	101416	92086	92282	92911	95590	100544	101183	101125	98606	81315	66260	39782
MIN	92114	91933	91947	92296	92925	95619	100601	99327	81844	68746	40655	30293
a	550.05	549.93	550.17	550.62	552.52	555.97	556.39	555.13	542.50	530.62	506.98	495.77
b	-9317	-167	+335	+629	+2679	+4954	+610	-1827	-17483	-15098	-26091	-10362
c	626	352	111	121	188	320	616	837	1048	1023	906	565

CAL YR 1986 b +79032

WTR YR 1987 b -71138

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, published as provided; not reviewed by U.S. Geological Survey.

SAN JOAQUIN RIVER BASIN

11259000 CHOWCHILLA RIVER BELOW BUCHANAN DAM, NEAR RAYMOND, CA

LOCATION.--Lat 37°12'56", long 119°59'25", in SE 1/4 SW 1/4 sec.22, T.8 S., R.18 E., Madera County, Hydrologic Unit 18040007, on left bank 1,800 ft downstream from Buchanan Dam and 4.6 mi west of Raymond.
DRAINAGE AREA.--236 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1921 to September 1923, October 1930 to September 1972, October 1975 to current year.
Prior to Oct. 1, 1962, published as "at Buchanan damsite."

GAGE.--Water-stage recorder and concrete control since October 1975. Elevation of gage is 420 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1921 to September 1923, at site 2.4 mi upstream at different datum. Oct. 30 to May 17, 1972, at site 0.3 mi upstream at datum 407.32 ft above National Geodetic Vertical Datum of 1929. May 18, 1972, to Sept. 30, 1972, at site 500 ft downstream at different datum. Oct. 1, 1975, to Mar. 2, 1982, at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Flow completely regulated by H. V. Eastman Lake (station 11258990) 1,800 ft upstream beginning Jan. 1, 1976.

COOPERATION.--Records were provided by U.S. Corps of Engineers and reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE (adjusted for change in contents in and evaporation from H. V. Eastman Lake since 1976).--56 years (water years 1922-23, 1931-72, 1976-87), 106 ft³/s, 76,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s, Dec. 23, 1955, gage height, 16.50 ft, site and datum then in use, from rating curve extended above 6,000 ft³/s on basis of slope-area measurement at gage height 15.06 ft; no flow for part of each year except 1937-38, 1940-43. Maximum discharge since construction of Buchanan Dam in 1975, 5,020 ft³/s, Mar. 1, 1983, gage height, 11.67 ft; no flow many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 677 ft³/s, Aug. 3, gage height, 6.52 ft; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	0	8.5	.10	.10	0	.10	0	.10	351	239	236	361		
2	0	.70	.10	.10	0	.10	0	0	488	240	392	338		
3	0	.90	.10	.10	.10	.10	.10	0	539	228	593	319		
4	0	.70	.10	.10	0	.10	.10	11	539	171	661	317		
5	.10	.50	.10	.10	0	.20	0	37	539	156	660	292		
6	11	.50	.10	.10	0	.20	0	41	548	168	657	279		
7	31	.20	.10	.10	0	.10	.10	21	551	199	648	277		
8	44	.10	.10	.10	0	.10	0	13	424	234	634	277		
9	175	.10	.10	.10	0	.10	.10	3.3	203	265	625	276		
10	271	0	0	0	0	.10	0	.20	149	263	607	266		
11	287	.10	.10	0	.10	.10	0	.20	159	229	591	247		
12	297	.10	.10	0	.20	.10	0	.20	161	234	572	228		
13	281	.10	0	0	.30	.10	.10	.20	161	249	441	220		
14	210	.10	.10	.10	.10	.20	0	.20	173	287	301	160		
15	112	.10	0	.10	.10	.10	0	11	180	298	193	136		
16	48	.10	.10	0	.10	.10	0	32	155	293	171	137		
17	177	.10	0	0	.10	.10	.10	11	118	265	160	137		
18	257	.10	.10	0	.10	.10	0	.20	109	258	233	136		
19	252	.10	.10	.10	.10	0	.10	.30	110	247	247	136		
20	229	.10	.10	0	.10	.10	0	.30	110	240	242	137		
21	220	.10	0	0	.10	.10	0	.30	126	224	222	47		
22	220	.10	.10	.10	.10	0	0	.20	166	205	299	.20		
23	220	.10	.10	0	.10	.10	.10	.20	207	199	331	.10		
24	180	.10	0	0	.10	0	0	11	233	181	306	.10		
25	145	.10	.10	.10	.10	0	0	31	240	150	353	.10		
26	143	.10	0	0	.10	0	0	12	262	138	377	.10		
27	141	.10	.10	0	.10	0	.10	.40	285	154	376	.10		
28	123	.10	0	.10	.10	0	0	.30	306	205	366	0		
29	93	.10	.10	0	---	0	0	.30	300	224	350	0		
30	67	.10	0	.10	---	0	.10	167	257	223	348	0		
31	34	---	.10	0	---	0	---	251	---	222	360	---		
TOTAL	4268.10	14.20	2.20	1.60	2.20	2.40	1.00	655.90	8149	6888	12552	4723.70		
MEAN	138	.47	.071	.052	.079	.077	.033	21.2	272	222	405	157		
MAX	297	8.5	.10	.10	.30	.20	.10	251	551	298	661	361		
MIN	0	0	0	0	0	0	0	0	109	138	160	0		
AC-FT	8470	28	4.4	3.2	4.4	4.8	2.0	1300	16160	13660	24900	9370		
CAL YR 1986	TOTAL	19603.83	MEAN	53.7	MAX	428	MIN	0	AC-FT	38880	MEAN	a 174	AC-FT	a 126000
WTR YR 1987	TOTAL	37260.30	MEAN	102	MAX	661	MIN	0	AC-FT	73910	MEAN	a 13.1	AC-FT	a 9480

a Adjusted for change in contents and evaporation from H. V. Eastman Lake. Evaporation adjustments used as provided; not reviewed by U.S. Geological Survey.

SAN JOAQUIN RIVER BASIN

11259000 CHOWCHILLA RIVER BELOW BUCHANAN DAM, NEAR RAYMOND, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-65, 1976 to current year.

CHEMICAL DATA: Water years 1958-65. Published as "at Buchanan Damsite."

WATER TEMPERATURE: Water years 1976 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1975 to current year.

INSTRUMENTATION.--Temperature recorder since October 1975.

REMARKS.--Water temperatures are affected by regulation from Buchanan Dam. Water temperatures for periods when flow was less than 1 ft³/s are not reliable and are not published. No record May 4, 5, due to recorder failure.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE (water years 1976-87): Maximum recorded, 33.5 °C, June 7, 1977; minimum recorded, 0.0 °C, Jan. 2, 4, 1976.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 29.0 °C, May 15; minimum recorded, 10.0 °C, Nov. 1, May 26, 31.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCTOBER		NOVEMBER		DECEMBER	JANUARY	FEBRUARY	MARCH
	MAX	MIN	MAX	MIN	Discharge <1 ft ³ /s	Discharge <1 ft ³ /s	Discharge <1 ft ³ /s	Discharge <1 ft ³ /s
1	---	---	14.5	10.0				
2	---	---	---	---				
3	---	---	---	---				
4	---	---	---	---				
5	---	---	---	---				
6	---	---	---	---				
7	14.0	12.5	---	---				
8	13.5	12.5	---	---				
9	12.5	12.5	---	---				
10	12.5	12.0	---	---				
11	12.5	12.0	---	---				
12	12.5	12.5	---	---				
13	12.5	12.5	---	---				
14	12.5	12.0	---	---				
15	12.5	12.0	---	---				
16	13.0	10.5	---	---				
17	12.5	12.0	---	---				
18	12.5	12.5	---	---				
19	12.5	12.5	---	---				
20	12.5	12.5	---	---				
21	12.5	12.5	---	---				
22	12.5	12.5	---	---				
23	12.5	12.5	---	---				
24	12.5	12.0	---	---				
25	12.5	12.0	---	---				
26	12.5	12.0	---	---				
27	12.5	12.0	---	---				
28	12.5	12.0	---	---				
29	12.5	12.0	---	---				
30	12.5	12.0	---	---				
31	13.0	12.0	---	---				
MONTH	---	---	---	---				

SAN JOAQUIN RIVER BASIN

11259000 CHOWCHILLA RIVER BELOW BUCHANAN DAM, NEAR RAYMOND, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	APRIL	MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	Discharge <1 ft ³ /s	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1		---	---	11.0	10.5	11.5	11.0	12.0	11.0	14.0	13.0
2		---	---	11.5	10.5	11.5	11.0	11.5	11.0	14.0	13.0
3		---	---	11.5	10.5	11.5	11.0	11.5	11.5	14.5	13.0
4		21.5	11.5	11.0	10.5	12.0	11.0	11.5	11.5	14.5	13.5
5		14.0	11.0	11.5	10.5	12.0	11.0	11.5	11.5	14.5	13.5
6		13.0	11.0	12.0	10.5	12.0	11.0	11.5	11.5	14.5	13.5
7		13.5	11.0	11.5	11.0	12.0	11.0	11.5	11.5	15.0	13.5
8		16.0	11.0	11.5	11.0	11.5	11.0	12.0	11.5	15.5	14.5
9		19.0	11.5	11.5	11.0	11.5	11.0	12.0	11.5	15.5	15.0
10		---	---	11.5	11.0	11.5	11.0	12.0	11.5	15.5	15.0
11		---	---	11.5	10.5	11.5	11.0	12.0	11.5	16.0	14.5
12		---	---	11.5	11.0	11.5	11.0	12.5	11.5	16.0	15.0
13		---	---	11.5	11.0	11.5	11.0	12.0	12.0	16.5	15.0
14		---	---	11.5	11.0	11.5	11.0	12.5	11.5	16.0	15.0
15		29.0	11.0	11.5	11.0	11.5	11.0	12.5	12.0	16.5	15.5
16		13.0	11.0	11.5	11.0	11.5	11.0	12.5	12.0	17.5	15.0
17		18.0	10.5	12.0	11.0	11.5	11.0	12.5	12.0	17.0	15.5
18		---	---	12.0	11.0	11.5	11.0	12.0	12.0	17.5	15.5
19		---	---	12.0	11.0	11.5	11.0	12.5	12.0	17.5	15.0
20		---	---	12.0	11.0	11.5	11.0	12.5	12.0	18.0	15.5
21		---	---	12.0	11.0	11.5	11.0	12.5	12.0	18.5	16.5
22		---	---	11.5	11.0	11.5	11.0	12.5	12.0	---	---
23		---	---	11.5	11.0	11.5	11.0	13.5	12.0	---	---
24		20.5	11.0	11.5	11.0	12.0	11.0	13.0	12.0	---	---
25		12.5	10.5	11.5	11.0	12.0	11.0	13.5	12.0	---	---
26		16.5	10.0	11.5	11.0	12.0	11.0	13.5	12.5	---	---
27		---	---	11.5	11.0	12.0	11.0	13.5	12.5	---	---
28		---	---	11.5	11.0	12.0	11.0	13.5	12.0	---	---
29		---	---	11.5	11.0	12.0	11.0	13.5	12.0	---	---
30		19.0	11.0	11.5	11.0	12.0	11.0	14.0	12.5	---	---
31		12.0	10.0	---	---	12.0	11.0	14.0	12.5	---	---
MONTH		---	---	12.0	10.5	12.0	11.0	14.0	11.0	---	---

SAN JOAQUIN RIVER BASIN

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA

LOCATION.--Lat 37°14'52", long 120°51'04", in SE 1/4 SE 1/4, sec.10, T.8 S., R.10 E., Merced County, Hydrologic Unit 18040001, on right bank at bridge on Highway 165 and 5.5 miles south of Stevinson.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Estimated daily discharges: Nov. 20-29, Dec. 12-15, Jan. 21-29, Feb. 17, 18, July 11-23. Records good except those for estimated daily discharge, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 810 ft³/s, Feb. 20, 1986; minimum daily, 36 ft³/s, Dec. 27, 1985.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	252	255	227	129	222	227	370	293	475	390	318	276
2	198	259	252	138	232	241	374	365	516	379	316	281
3	164	256	229	133	238	223	376	403	482	346	365	281
4	163	258	183	141	243	231	392	379	410	321	323	293
5	122	251	187	156	238	348	406	374	370	331	241	272
6	131	228	187	147	225	549	413	376	331	394	223	277
7	131	213	188	137	225	674	372	352	379	401	206	296
8	114	216	188	136	213	752	346	343	446	298	226	318
9	109	226	183	131	210	762	339	365	439	234	236	273
10	132	226	193	127	217	736	343	331	379	221	299	252
11	117	211	184	120	222	674	308	339	299	246	319	246
12	139	194	171	128	232	503	290	348	251	283	296	237
13	184	208	157	152	273	473	295	341	250	319	256	238
14	195	200	150	162	363	494	284	318	252	312	215	237
15	179	200	149	152	372	513	242	316	290	290	216	215
16	185	200	148	138	312	511	232	270	323	256	216	231
17	181	220	142	137	280	554	217	296	298	241	222	202
18	165	222	123	139	277	494	211	352	228	267	210	185
19	145	211	114	143	237	422	217	368	243	296	168	192
20	170	202	114	140	243	394	252	335	272	327	173	181
21	223	196	113	136	240	464	256	341	321	359	204	188
22	223	197	108	136	241	459	226	350	348	368	228	174
23	216	198	130	144	247	506	222	357	361	365	251	130
24	229	199	134	152	241	374	202	370	332	301	294	130
25	228	178	131	165	223	396	191	406	313	286	297	141
26	256	204	130	179	208	403	206	346	319	277	283	152
27	223	215	132	168	193	443	240	329	259	323	277	171
28	231	215	126	165	220	429	233	376	284	365	242	198
29	263	211	120	164	---	401	213	387	341	318	223	180
30	274	220	118	179	---	406	233	429	365	287	263	145
31	263	---	115	197	---	385	---	437	---	296	276	---
TOTAL	5805	6489	4826	4571	6887	14441	8501	10992	10176	9677	7882	6592
MEAN	187	216	156	147	246	466	283	355	339	312	254	220
MAX	274	259	252	197	372	762	413	437	516	401	365	318
MIN	109	178	108	120	193	223	191	270	228	221	168	130
AC-FT	11510	12870	9570	9070	13660	28640	16860	21800	20180	19190	15630	13080

CAL YR 1986 TOTAL 104550 MEAN 286 MAX 810 MIN 57 AC-FT 207400
WTR YR 1987 TOTAL 96839 MEAN 265 MAX 762 MIN 108 AC-FT 192100

SAN JOAQUIN RIVER BASIN

11261500 SAN JOAQUIN RIVER AT FREMONT FORD BRIDGE, CA

LOCATION.--Lat 37°18'35", long 120°55'47", in NW 1/4 SE 1/4 sec.24, T.7 S., R.9 E., Merced County, Hydrologic Unit 18040001, on left bank 20 ft upstream from Fremont Ford bridge, 2.1 mi downstream from Salt Slough, 4.5 mi west of Stevinson, and 6.7 mi upstream from Merced River.

DRAINAGE AREA.--7,615 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1937 to September 1970, October 1985 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to September 1970, records did not include flow bypassing station.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1970, at site 120 ft downstream at same datum. March 1937 to Oct. 1, 1959, at datum 3.77 ft lower.

REMARKS.--Estimated daily discharges: Aug. 4-17. Records good, except those for periods of estimated daily discharge, which are fair. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water from Delta-Mendota Canal (station 11313000). Low flows consist mainly of return water from irrigated areas. Stage affected at times by backwater from the Merced River.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 18,100 ft³/s, Mar. 18, 1986; maximum elevation, 67.65 ft, Mar. 18, 1986; minimum, 9.5 ft³/s, Oct. 30, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,410 ft³/s, Mar. 8, elevation, 60.49 ft; minimum daily, 190 ft³/s, Dec. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	734	297	244	199	287	256	412	295	436	388	336	311
2	681	313	256	219	285	258	403	358	487	395	340	313
3	612	322	265	231	287	252	392	396	487	370	346	314
4	584	314	225	248	334	231	374	405	450	347	360	316
5	545	310	209	293	330	309	380	386	408	347	320	317
6	493	291	221	299	307	522	393	403	380	367	270	310
7	489	269	224	283	296	1080	387	393	376	393	250	343
8	441	251	225	270	290	1380	359	384	421	378	260	354
9	384	258	228	264	275	1260	347	382	450	303	270	335
10	362	260	229	251	273	1070	349	379	431	264	290	307
11	345	253	234	239	270	908	328	367	385	258	310	288
12	346	237	224	248	273	769	318	369	329	280	325	278
13	375	232	213	275	308	642	313	368	314	321	300	291
14	413	240	203	332	442	621	314	350	309	334	265	280
15	431	223	211	326	686	625	299	334	320	325	240	279
16	426	236	240	284	710	698	269	312	345	289	245	266
17	393	235	249	262	649	793	253	308	342	251	250	273
18	475	244	234	266	549	777	248	337	302	264	236	256
19	497	242	215	272	451	716	237	356	262	285	205	264
20	453	234	198	274	380	642	272	389	287	309	193	263
21	468	227	192	265	356	593	297	379	315	324	209	259
22	514	223	190	239	325	579	284	388	349	338	238	242
23	468	224	208	225	316	596	267	385	350	353	293	217
24	399	224	228	225	315	587	282	371	354	354	338	194
25	350	219	235	235	292	575	261	394	334	311	350	207
26	334	210	235	267	278	543	250	414	340	295	325	215
27	327	227	228	274	254	516	284	388	324	333	309	234
28	281	235	232	268	245	501	278	382	296	366	298	272
29	300	234	222	268	---	480	264	403	324	366	263	277
30	310	236	218	279	---	458	252	422	357	333	272	235
31	305	---	202	283	---	426	---	437	---	330	311	---
TOTAL	13535	7520	6937	8163	10063	19663	9366	11634	10864	10171	8817	8310
MEAN	437	251	224	263	359	634	312	375	362	328	284	277
MAX	734	322	265	332	710	1380	412	437	487	395	360	354
MIN	281	210	190	199	245	231	237	295	262	251	193	194
AC-FT	26850	14920	13760	16190	19960	39000	18580	23080	21550	20170	17490	16480
CAL YR 1986	TOTAL	836896	MEAN	2293	MAX	18100	MIN	172	AC-FT	1660000		
WTR YR 1987	TOTAL	125043	MEAN	343	MAX	1380	MIN	190	AC-FT	248000		

SAN JOAQUIN RIVER BASIN

11262900 MUD SLOUGH NEAR GUSTINE, CA

LOCATION.--Lat 37°15'45", long 120°54'20", in SE 1/4 SE 1/4 sec.6, T.8 S., R.10 E., Merced County, Hydrologic Unit 18040001, Kesterson National Wildlife Refuge, on right bank at footbridge 400 ft northwest of terminus of San Luis Drain and 5.2 mi east of Gustine.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 70 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 13, 14. Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 570 ft³/s, Mar. 16, 1986; minimum daily, 2.1 ft³/s, Sept. 10, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 204 ft³/s, Feb. 15; minimum daily, 3.5 ft³/s, Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	18	21	25	49	98	132	11	44	7.5	88	66
2	14	19	26	27	50	101	126	16	42	6.5	86	40
3	15	19	23	27	68	109	118	13	42	7.1	83	33
4	15	19	21	32	114	66	146	12	41	9.1	105	21
5	17	24	20	35	126	82	152	21	41	13	108	16
6	21	31	19	36	116	145	156	14	43	15	101	18
7	21	30	20	40	104	150	138	14	48	15	101	23
8	17	29	23	36	103	129	131	15	51	23	103	22
9	11	27	24	36	103	114	127	14	55	38	105	18
10	9.1	27	25	40	106	98	112	13	55	44	126	18
11	8.6	30	25	44	116	164	124	12	58	52	132	14
12	7.9	23	26	74	114	182	130	16	45	58	135	11
13	7.1	22	26	86	144	180	124	27	33	61	141	11
14	10	26	27	76	199	175	111	27	32	65	127	5.8
15	21	28	25	72	204	173	94	24	41	64	111	5.2
16	5.8	26	26	54	196	168	75	28	58	58	109	5.0
17	7.5	28	26	45	193	162	44	32	64	68	108	7.1
18	7.1	28	22	43	202	159	35	38	48	70	97	10
19	10	30	26	43	170	154	32	51	31	61	84	12
20	13	27	27	43	157	156	37	52	18	64	102	13
21	16	31	27	49	138	159	43	42	18	66	113	14
22	14	30	27	47	127	159	30	37	18	77	100	15
23	19	24	27	52	122	156	20	30	18	86	94	11
24	23	22	29	57	115	153	17	37	21	111	75	5.8
25	28	22	29	59	110	147	22	42	21	117	70	4.0
26	34	22	27	60	107	142	22	36	17	97	82	3.5
27	31	21	25	59	101	139	16	32	14	100	88	4.0
28	25	21	24	55	96	130	13	28	13	101	75	4.4
29	30	21	24	49	---	128	11	36	18	106	79	4.7
30	28	21	24	51	---	126	11	35	14	105	86	4.6
31	18	---	23	48	---	128	---	38	---	91	90	---
TOTAL	515.1	746	764	1500	3550	4332	2349	843	1062	1856.2	3104	440.1
MEAN	16.6	24.9	24.6	48.4	127	140	78.3	27.2	35.4	59.9	100	14.7
MAX	34	31	29	86	204	182	156	52	64	117	141	66
MIN	5.8	18	19	25	49	66	11	11	13	6.5	70	3.5
AC-FT	1020	1480	1520	2980	7040	8590	4660	1670	2110	3680	6160	873
CAL YR 1986	TOTAL	39816.0	MEAN	109	MAX	570	MIN	2.1	AC-FT	78980		
WTR YR 1987	TOTAL	21061.4	MEAN	57.7	MAX	204	MIN	3.5	AC-FT	41780		

SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA
(Hydrologic bench-mark station)

LOCATION.--Lat 37°43'54", long 119°33'28", unsurveyed, Mariposa County, Hydrologic Unit 18040008, Yosemite National Park, on right bank 10 ft downstream from footbridge at Happy Isles, 0.4 mi downstream from Illilouette Creek, and 2.0 mi southeast of Yosemite National Park Headquarters.

DRAINAGE AREA.--181 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1915 to current year.

REVISED RECORDS.--WSP 1215: 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 4,016.58 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 2, 1916, nonrecording gage at datum 0.55 ft lower.

REMARKS.--Estimated daily discharges: Sept. 11-30. Records good. Up to 5 ft³/s can be diverted above station for Yosemite Valley water supply.

AVERAGE DISCHARGE.--72 years, 353 ft³/s, 255,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft³/s, Dec. 23, 1955, gage height, 12.73 ft, from rating curve extended above 4,000 ft³/s on basis of contracted-opening measurements at gage heights 10.4 and 11.55 ft; minimum, 1.5 ft³/s Sept. 30, 1926, Sept. 26, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 15	2115	*1,750	*5.85				

Minimum daily, 5.8 ft³/s, Sept. 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	16	11	12	17	36	138	722	472	140	30	13
2	51	16	11	12	17	40	175	500	542	138	29	14
3	47	15	11	14	17	42	208	522	546	130	29	18
4	44	15	12	14	16	49	166	725	507	118	31	20
5	41	14	13	16	17	91	158	910	512	109	33	20
6	39	14	15	15	17	104	169	985	459	102	34	19
7	38	14	14	15	18	97	215	979	521	98	35	17
8	39	14	12	14	19	89	274	1050	525	96	35	16
9	39	14	13	13	21	84	340	1170	450	96	35	14
10	39	14	12	14	25	77	416	1230	368	95	34	14
11	39	14	13	15	33	70	467	1030	376	94	32	13
12	38	14	13	15	38	72	463	1090	350	92	31	12
13	36	14	13	16	78	87	484	997	350	90	31	12
14	34	14	13	15	60	82	583	986	387	89	30	12
15	32	14	11	13	55	83	596	1070	368	85	28	12
16	30	14	13	12	46	78	655	1540	294	78	26	11
17	29	14	12	13	48	83	716	1230	232	71	24	11
18	27	14	13	14	46	93	687	837	212	66	21	10
19	26	15	13	14	42	82	477	669	209	59	20	10
20	26	15	12	14	40	73	448	580	212	51	19	9.8
21	25	14	12	15	38	73	573	521	209	44	19	9.8
22	24	13	13	15	39	69	741	460	202	39	18	9.4
23	24	13	13	15	37	70	740	417	185	35	17	9.4
24	23	14	12	17	33	66	723	380	171	31	15	9.0
25	23	13	12	17	36	65	792	332	169	29	14	8.4
26	22	12	12	17	33	65	874	295	177	27	14	8.0
27	21	11	12	17	33	69	939	256	204	27	13	7.1
28	19	11	11	17	36	73	985	249	191	27	13	6.2
29	18	12	12	18	---	79	1130	321	180	27	13	5.8
30	17	10	10	18	---	99	1150	319	150	28	13	5.8
31	17	---	11	17	---	124	---	383	---	30	13	---
TOTAL	975	411	380	463	955	2364	16482	22755	9730	2241	749	356.7
MEAN	31.5	13.7	12.3	14.9	34.1	76.3	549	734	324	72.3	24.2	11.9
MAX	51	16	15	18	78	124	1150	1540	546	140	35	20
MIN	17	10	10	12	16	36	138	249	150	27	13	5.8
AC-FT	1930	815	754	918	1890	4690	32690	45130	19300	4450	1490	708

CAL YR 1986	TOTAL	191370.0	MEAN 524	MAX 3700	MIN 10	AC-FT 379600
WTR YR 1987	TOTAL	57861.7	MEAN 159	MAX 1540	MIN 5.8	AC-FT 114800

SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

CHEMICAL DATA: Water years 1968 to current year.

BIOLOGICAL DATA: Water years 1973-81.

WATER TEMPERATURE: Water years 1966-77, 1979 to current year.

SEDIMENT DATA: Water years 1970-71, 1973 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1965 to September 1977, October 1978 to current year.

INSTRUMENTATION.--Temperature recorder October 1965 to September 1977 and since October 1978.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 20.0 °C, July 15, 1979; minimum recorded, 0.0 °C on many days during winter period most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 18.5 °C, July 11-13, 15; minimum recorded, 0.0 °C, Feb. 26, Mar. 19-22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1986												
21...	1200	20	37	6.8	6.0	665	0.50	10.6	98	<1	<1	11
JAN , 1987												
15...	1350	12	41	7.5	0.5	660	0.20	12.3	99	K2	K2	12
MAY												
19...	1300	693	7	6.9	9.0	660	0.40	9.8	98	K1	<1	3
JUL												
17...	1030	72	17	6.9	13.5	665	0.50	9.2	101	K9	K18	5
DATE		HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	CAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LITY, CARBON- ATE IT-FLD (MG/L CACO3)	
NOV												
21...		0	3.7	0.40	3.0	36	0.4	0.70	14	0	11	
JAN												
15...		0	4.1	0.50	3.3	35	0.4	0.80	18	0	14	
MAY												
19...		0	0.90	0.06	0.70	37	0.2	<0.10	4	0	4	
JUL												
17...		0	1.6	0.16	1.3	37	0.3	0.20	5	0	4	
DATE		ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
NOV												
21...		12	1.3	4.8	<0.10	12	24	33	0.03	<0.010	<0.100	<0.010
JAN												
15...		16	1.7	4.7	<0.10	13	35	38	0.05	<0.010	<0.100	0.040
MAY												
19...		4	5.0	1.0	<0.10	4.2	8	--	--	<0.010	<0.100	<0.010
JUL												
17...		5	1.0	2.6	<0.10	3.3	12	13	0.02	<0.010	<0.100	0.020

See footnotes at end of table.

SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
NOV 21...	<0.010	<0.20	<0.010	<0.010	<0.010	20	<1	13	<0.5	<1	<1
JAN 15...	<0.010	0.40	0.020	0.020	0.010	10	1	9	<0.5	<1	<1
MAY 19...	0.020	0.60	0.010	0.010	0.010	50	<1	7	<0.5	<1	<1
JUL 17...	0.040	0.40	<0.010	0.010	<0.010	10	1	7	1	<1	3

DATE	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)
NOV 21...	<3	<1	33	<5	8	1	<0.1	<10	2	<1	<1
JAN 15...	<3	1	21	<5	9	<1	<0.1	<10	<1	<1	<1
MAY 19...	<3	1	19	<5	6	2	<0.1	<10	<1	<1	<1
JUL 17...	<3	<1	42	<5	6	<1	0.2	<10	<1	<1	<1

DATE	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED METHOD (PCI/L)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)
NOV 21...	54	<6	13	--	--	--	--	--	--	--	--
JAN 15...	62	<6	14	0.5	0.4	1.3	0.6	1.2	0.6	0.04	0.47
MAY 19...	11	<6	12	--	--	--	--	--	--	--	--
JUL 17...	24	<6	4	<0.4	<0.4	0.8	<0.4	0.7	<0.4	0.03	0.23

K Results based on colony count outside the acceptable range (nonideal colony count).

< Actual value is known to be less than the value shown.

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PEN- DED (MG/L)
JAN									
15...*	1403	7.00	41	7.5	0.5	660	12.1	97	1
15...*	1404	13.0	41	7.5	0.5	660	12.2	98	2
15...*	1406	17.0	42	7.5	0.5	660	12.2	98	2
15...*	1408	25.0	42	7.5	0.5	660	12.3	99	1
15...*	1409	35.0	42	7.5	0.5	660	12.3	99	2
MAY									
19...*	1245	8.00	7	7.0	9.0	660	9.8	98	7
19...*	1255	13.0	7	6.9	9.0	660	9.9	99	7
19...*	1305	17.0	7	6.8	9.0	660	9.9	99	4
19...*	1315	21.0	7	6.9	9.0	660	9.9	99	2
19...*	1325	28.0	7	6.9	9.0	660	9.8	98	4

* Instantaneous streamflow at the time of cross-sectional measurements: Jan. 15, 12 ft³/s; May 19, 693 ft³/s.

SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	7.5	5.5	4.5	3.0	2.0	3.5	3.0	2.0	1.5	1.5	0.5
2	7.5	5.5	4.5	4.0	3.5	2.5	3.5	3.0	2.5	1.5	1.5	0.5
3	7.5	5.5	5.0	4.0	3.0	2.5	3.5	2.5	2.5	2.0	2.0	1.0
4	8.5	6.0	5.0	4.5	4.0	3.0	2.0	1.0	2.0	1.0	3.5	1.5
5	9.0	6.5	5.5	5.0	4.0	4.0	2.0	2.0	3.0	1.0	3.0	2.5
6	9.0	7.5	5.5	3.5	4.5	4.0	2.0	1.5	2.5	1.5	4.5	2.5
7	10.0	8.0	4.0	3.0	4.0	3.0	2.0	1.5	2.5	2.0	4.5	2.5
8	10.0	8.5	3.5	2.5	3.5	2.0	2.0	1.5	3.0	2.0	4.5	3.5
9	10.0	8.5	3.5	2.5	2.5	2.0	1.5	1.0	4.0	2.5	5.0	2.0
10	10.0	8.5	4.0	3.0	3.0	2.0	2.0	1.0	3.5	3.0	4.0	2.5
11	10.0	8.5	4.0	3.5	2.5	2.0	2.0	1.5	4.0	3.5	5.5	3.0
12	10.0	7.0	4.5	4.0	2.5	2.5	2.0	1.5	3.5	3.0	5.5	4.0
13	8.5	7.5	4.5	4.0	3.5	2.5	2.0	1.5	3.5	2.5	4.5	2.0
14	8.5	7.0	4.5	3.5	3.0	2.5	1.5	1.0	2.5	1.0	3.5	0.5
15	8.5	7.0	4.5	3.5	3.0	2.0	1.5	0.5	2.0	1.5	1.5	0.5
16	7.5	6.5	4.5	4.0	2.5	2.5	1.5	1.0	---	---	2.5	0.5
17	7.0	6.0	5.5	4.5	3.0	2.5	1.5	1.0	---	---	5.0	2.0
18	6.5	5.0	6.5	5.5	3.5	2.5	1.5	1.0	---	---	4.0	2.0
19	6.0	5.0	6.0	5.5	4.0	3.0	1.5	1.0	---	---	1.5	0.0
20	6.5	5.5	6.0	5.5	3.0	2.0	1.5	1.0	---	---	1.0	0.0
21	6.5	5.5	6.0	5.0	3.0	2.0	1.5	1.0	---	---	0.5	0.0
22	6.5	6.0	5.0	3.5	3.0	2.0	2.0	1.5	---	---	0.5	0.0
23	7.0	6.0	4.0	3.5	3.0	3.0	2.0	1.5	---	---	1.0	0.5
24	7.0	6.5	4.5	3.5	3.0	2.5	2.0	1.5	---	---	2.0	0.5
25	7.5	6.5	4.0	2.5	3.0	2.0	2.0	1.5	---	---	2.5	1.0
26	8.0	7.0	3.5	2.5	3.0	2.0	2.0	1.5	1.5	0.0	4.5	1.0
27	8.0	7.0	3.5	2.0	3.0	2.5	2.5	2.0	1.5	0.5	4.5	1.5
28	7.5	6.5	3.5	2.0	3.0	2.0	2.5	1.5	1.5	0.5	5.5	2.0
29	8.5	7.0	3.0	2.0	2.5	2.0	2.0	1.5	---	---	6.5	2.0
30	8.5	8.0	3.0	2.0	3.0	2.0	2.5	2.0	---	---	7.0	4.0
31	7.5	5.5	---	---	3.0	2.0	2.0	1.5	---	---	6.5	4.0
MONTH	10.0	5.0	6.5	2.0	4.5	2.0	3.5	1.0	---	---	7.0	0.0

SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, Ca--Continued

TEMPERATURE (DEG.C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JAN					
15...	1250	12	0.5	1	0.03
MAY					
19...	1325	693	9.0	1	1.9
JUL					
17...	1030	72	13.5	2	0.38

SAN JOAQUIN RIVER BASIN

11266500 MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CA

LOCATION.--Lat 37°43'01", long 119°39'55", unsurveyed, Mariposa County, Hydrologic Unit 18040008, Yosemite National Park, on left bank 150 ft upstream from Pohono bridge, 0.4 mi upstream from Artist Creek, and 4.8 mi southwest of Yosemite National Park Headquarters.

DRAINAGE AREA.--321 mi².

PERIOD OF RECORD.--October 1916 to current year. Monthly discharge only for October and November 1916, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 3,861.66 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 5, 1918, at datum 1.8 ft higher. Sept. 5, 1918, to Sept. 30, 1955, at datum 1.0 ft higher.

REMARKS.--No estimated daily discharges. Records good. No diversions between stations at Happy Isles bridge and Pohono bridge.

AVERAGE DISCHARGE.--71 years, 622 ft³/s, 450,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,400 ft³/s, Dec. 23, 1955, gage height, 21.52 ft, from floodmarks in well, from rating curve extended above 17,000 ft³/s on basis of computation of flow over diversion dam for Yosemite powerplant 1 mi downstream at gage heights 20.1 and 21.98 ft, present datum; minimum, 3.3 ft³/s, Sept. 29, Oct. 1, 1924.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	2145	*2,410	*6.49				

Minimum daily, 13 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	34	26	25	33	70	315	1290	635	178	42	26
2	85	34	26	26	34	76	398	954	700	173	41	28
3	79	33	26	27	35	82	484	928	707	165	41	29
4	73	33	26	37	34	92	366	1140	656	152	41	34
5	68	32	27	31	33	160	355	1330	650	141	42	34
6	65	31	30	31	34	228	405	1410	604	131	43	32
7	63	30	31	30	35	223	555	1390	683	125	43	31
8	61	30	29	27	36	216	679	1430	663	122	44	29
9	61	30	27	26	38	200	778	1580	648	120	44	27
10	60	31	27	26	45	180	909	1860	506	118	43	26
11	59	31	27	27	59	157	975	1530	490	116	42	25
12	58	30	27	28	74	161	948	1540	457	113	41	24
13	56	30	27	28	188	196	973	1450	438	110	41	24
14	54	29	27	26	145	188	1120	1370	542	108	40	24
15	52	29	26	24	129	172	1150	1430	489	105	39	22
16	49	30	25	23	104	166	1230	2110	417	98	38	21
17	48	29	26	24	107	170	1340	1800	342	90	35	21
18	47	29	26	25	102	199	1310	1260	307	85	33	20
19	46	29	27	26	95	171	911	1030	294	79	32	20
20	45	29	27	26	89	144	858	904	289	72	30	19
21	44	29	25	26	82	150	1030	858	282	63	30	18
22	43	29	25	26	81	134	1300	789	271	57	30	18
23	42	29	26	27	79	143	1320	721	250	52	29	18
24	41	29	26	29	68	133	1300	643	229	48	27	17
25	39	28	25	31	72	132	1390	571	219	46	27	17
26	39	27	25	29	63	133	1430	528	224	43	28	17
27	38	27	25	30	66	145	1500	478	248	42	27	16
28	37	26	25	37	68	154	1550	449	242	41	26	14
29	37	28	24	35	---	170	1660	529	230	41	26	14
30	35	26	24	35	---	223	1810	513	196	41	25	13
31	35	---	23	34	---	289	---	553	---	42	25	---
TOTAL	1640	891	813	882	2028	5057	30349	34368	12908	2917	1095	678
MEAN	52.9	29.7	26.2	28.5	72.4	163	1012	1109	430	94.1	35.3	22.6
MAX	85	34	31	37	188	289	1810	2110	707	178	44	34
MIN	35	26	23	23	33	70	315	449	196	41	25	13
AC-FT	3250	1770	1610	1750	4020	10030	60200	68170	25600	5790	2170	1340
CAL YR 1986	TOTAL	350815	MEAN 961	MAX 5820	MIN 23	AC-FT 695800						
WTR YR 1987	TOTAL	93626	MEAN 257	MAX 2110	MIN 13	AC-FT 185700						

SAN JOAQUIN RIVER BASIN

11267350 BIG CREEK DIVERSION NEAR FISH CAMP, CA

LOCATION.--Lat 37°28'10", long 119°36'51", in SE 1/4 NE 1/4 sec.25, T.5 S., R.21 E., Mariposa County, Hydrologic Unit 18040008, Sierra National Forest, on right bank 0.5 mi downstream from diversion weir, 0.5 mi upstream from Rainier Creek, and 1.2 mi southeast of Fish Camp.

PERIOD OF RECORD.--October 1969 to June 1977, April 1987 to September 1987.

GAGE.--Water-stage recorder, crest-stage gage and culvert control. Elevation of gage is 5,400 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Flow is diverted from the left bank of Big Creek, a tributary to the Merced River, to Rainier Creek which is tributary to the Fresno River. Flow is used for domestic and irrigation purposes.

AVERAGE DISCHARGE.--7 years (water years 1970-76), 12.0 ft³/s, 8,690 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 66 ft³/s, June 1, 2, 1975; no flow July 1, 2, 1973, and many days in August and September 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							.61	16	4.4	1.5	0	
2							9.7	16	2.4	1.5	0	
3							17	15	2.5	1.5	0	
4							16	15	2.2	1.5	0	
5							16	15	2.1	1.5	0	
6							16	14	2.0	1.5	0	
7							17	14	1.9	1.4	0	
8							17	13	1.9	1.3	0	
9							17	14	1.9	1.4	0	
10							17	13	1.9	1.4	0	
11							17	12	1.9	1.4	0	
12							17	11	1.9	1.4	0	
13							17	11	1.9	1.4	0	
14							17	11	1.9	1.3	.24	
15							17	11	1.9	1.3	.48	
16							17	12	1.9	1.2	.47	
17							17	11	1.8	1.2	.42	
18							17	11	1.8	1.2	.36	
19							17	10	1.7	1.2	.32	
20							17	10	1.7	.64	.30	
21							17	11	1.7	.23	.28	
22							17	10	1.8	.22	.17	
23							17	9.7	1.7	.17	0	
24							17	9.7	1.8	0	0	
25							17	9.8	1.8	.05	0	
26							17	9.7	1.8	.22	0	
27							17	9.6	1.7	.04	0	
28							17	9.4	1.6	.05	0	
29							18	9.1	1.6	.08	0	
30							18	8.5	1.6	0	0	
31							---	8.0	---	.14	0	
TOTAL							485.31	359.5	58.7	27.94	3.04	0
MEAN							16.2	11.6	1.96	.90	.098	0
MAX							18	16	4.4	1.5	.48	0
MIN							.61	8.0	1.6	0	0	0
AC-FT							963	713	116	55	6.0	0

SAN JOAQUIN RIVER BASIN

11269500 LAKE MCCLURE AT EXCHEQUER, CA

LOCATION.--Lat 37°35'02", long 120°16'09", in NW 1/4 SE 1/4 sec.13, T.4 S., R.15 E., Mariposa County, Hydrologic Unit 18040008, on left end of New Exchequer Dam on Merced River, 0.9 mi east of Exchequer, and 5.5 mi northeast of Merced Falls.

DRAINAGE AREA.--1,037 mi².

PERIOD OF RECORD.--April 1926 to September 1930 (daily gage heights; also summary of yearly contents in WSP 881), October 1930 to current year.

REVISED RECORDS.--WSP 881: 1926-32 (yearly summaries only). WSP 1345: 1951(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Merced Irrigation District). Prior to Oct. 1, 1964, indicator in powerplant at same datum. Oct. 1, 1964, to July 31, 1966, nonrecording gage at center of upstream face of dam at same datum.

REMARKS.--Reservoir is formed by a rockfill dam with a reinforced concrete face completed in March 1967. Dam is downstream from and connected to the original concrete arch and gravity-type dam which was completed in April 1926. Usable capacity, 1,024,000 acre-ft between elevations 440.0 ft, invert entrance to outlet tunnel, and 867.0 ft, top of spillway gates. Dead storage, 300 acre-ft. Water is released through a series of powerplants down the Merced River to a diversion dam for Merced Irrigation District's main canal. Records, including extremes, represent total contents at 2400 hours.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,026,000 acre-ft, July 14, 15, 1969, elevation, 867.2 ft; practically no storage at times in 1926, 1930-31, 1964-65 when reservoir was drained for inspection or construction. Minimum since construction of New Exchequer Dam in 1966 and since lake first filled, 72,200 acre-ft, Dec. 14, 1977, elevation, 593.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 692,500 acre-ft, Oct. 1, elevation, 813.1 ft; minimum, 313,800 acre-ft, Sept. 30, elevation, 718.6 ft.

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

590	67,900	640	137,800	720	317,800	840	845,800
600	79,900	660	173,500	750	415,900	860	975,700
610	92,800	680	215,200	780	534,500	870	1,046,000
620	106,700	700	263,000	820	729,600		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	692500	649000	639000	632700	625300	636600	660100	679500	664700	582800	472500	373300
2	690400	649500	639000	630700	626800	636600	660600	678500	662600	580000	468900	370700
3	688400	649000	639000	631200	626800	635100	662100	678000	661100	575900	465800	368300
4	686300	649000	639500	631700	626800	634600	662600	677000	659600	572300	462300	365300
5	684700	648500	639500	632200	625900	635600	663100	677500	657500	568600	458500	363000
6	682100	648000	639500	631200	626400	639500	663100	678000	655500	564600	455000	360800
7	680000	647500	639500	631200	625900	641500	663100	678500	654000	561400	451500	357900
8	678500	647500	640000	630700	625400	642000	663700	678500	651000	557800	447300	355600
9	676400	647500	640000	630700	624900	643000	664200	679500	648000	554700	444300	353400
10	673900	646000	640000	630300	624900	643000	664200	681600	646000	550700	440900	351500
11	671800	646000	640000	630300	624900	644000	664200	682100	644000	547600	437500	348300
12	669800	646000	640000	630300	625400	645000	664200	682600	641500	544100	433800	346100
13	667700	645000	640000	630300	631700	646500	665200	683700	639000	540600	430900	344200
14	665700	645000	640000	629800	633700	648500	665700	683200	636600	537100	426800	342300
15	663700	644500	640000	629300	634600	649500	665700	684700	633200	534100	423900	339800
16	661600	644000	639500	628300	635100	651000	666200	686800	631200	530200	420600	337700
17	660600	643500	639000	628300	635600	652000	666700	687800	627800	526300	417400	334900
18	660600	643500	638100	628800	635600	652500	668300	688400	624900	522900	413000	333100
19	659000	643000	636100	628300	636100	653500	667200	687300	622000	519500	409100	331000
20	657500	642500	636100	627800	635600	654500	666700	686300	619100	515700	406300	329400
21	657000	642500	635100	627800	636100	654500	666700	684700	615700	512400	403100	327600
22	656000	642500	635100	627300	636600	655000	668300	683700	612800	509000	400300	325200
23	655000	642500	634200	627300	636600	655000	668800	682600	610000	505300	397900	322300
24	654000	641500	634600	627300	636100	656000	669300	680600	606600	501500	395100	319600
25	654000	641500	634600	627300	636100	656500	670300	678500	603400	497900	391900	317300
26	653000	640500	633200	627300	636100	656500	671300	676400	600100	494200	389500	315500
27	652000	640500	633200	627300	636100	657500	673400	674400	597200	490500	386400	314400
28	650500	640500	633200	626800	636600	658000	674900	672300	593000	486800	384000	314400
29	650000	640000	632700	626800	---	659000	676400	670300	589300	483600	381000	314100
30	650000	639000	632200	626800	---	659000	678500	668800	585500	480000	379000	313800
31	649500	---	632200	627300	---	659000	---	666700	---	476100	376300	---
MAX	692500	649500	640000	632700	636600	659000	678500	688400	664700	582800	472500	373300
MIN	649500	639000	632200	626800	624900	634600	660100	666700	585500	476100	376300	313800
a	804.7	802.6	801.2	800.2	802.1	806.6	810.4	808.1	791.4	765.9	738.6	718.6
b	-45100	-10500	-6800	-4900	+9300	+22400	+19500	-11800	-81200	-109400	-99800	-62500

CAL YR 1986 b 373200

WTR YR 1987 b -380800

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11270800 NORTHSIDE CANAL AT MERCED FALLS, CA

LOCATION.--Lat 37°31'22", long 120°20'00", in SE 1/4 SW 1/4 sec.4, T.5 S., R.15 E., Merced County, Hydrologic Unit 18040008, on left bank 1,200 ft downstream from Merced Falls Dam, 0.2 mi west of Merced Falls, and 5.8 mi east of Snelling.

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and sharp-crested rectangular weir. Elevation of gage is 340 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow diverted at Merced Falls Dam for irrigation of 4,100 acres below gage. Flow regulated by three powerplants and Lake McClure (station 11269500) and McSwain Reservoir, combined capacity, 1,035,000 acre-ft.

COOPERATION.--Records were provided by Merced Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 72 ft³/s, July 21, 1987; minimum daily, 1.1 ft³/s, Oct. 16, 1986.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	3.8	5.0	4.1	4.4	4.7	4.4	69	67	70	70	56
2	24	3.8	5.0	4.1	4.4	4.7	4.4	68	67	70	70	55
3	24	4.1	4.7	4.1	4.4	4.7	4.4	68	67	70	70	55
4	24	4.1	4.7	4.1	4.4	4.7	4.4	68	67	70	70	55
5	23	4.4	4.7	4.1	4.4	4.7	4.4	68	67	71	70	55
6	23	4.4	4.7	4.4	4.4	4.7	5.2	68	67	70	70	55
7	23	4.4	4.7	4.4	4.4	4.7	16	68	67	70	70	55
8	23	4.4	4.7	4.4	4.4	4.7	30	68	67	70	70	55
9	23	4.4	4.7	4.4	4.4	4.4	37	68	67	70	70	55
10	23	4.4	4.7	4.4	4.4	4.4	47	68	67	70	70	55
11	23	4.4	4.7	4.4	4.4	4.4	49	68	67	70	70	55
12	23	4.4	4.7	4.4	4.4	4.7	52	68	67	70	70	55
13	23	4.4	4.4	4.4	4.4	4.7	57	67	67	70	70	55
14	23	4.4	4.4	4.4	4.4	4.7	59	67	67	70	68	55
15	11	4.4	4.4	4.4	4.4	4.7	60	67	67	70	64	54
16	1.1	4.4	4.4	4.4	4.4	4.4	66	66	67	70	64	54
17	3.8	4.4	4.4	4.4	4.4	4.4	66	66	67	70	63	54
18	5.3	4.4	4.4	4.4	4.4	4.4	66	66	67	70	63	54
19	5.0	4.4	4.4	4.4	4.4	4.1	67	66	67	70	61	54
20	4.7	4.4	4.4	4.4	4.4	4.1	66	66	67	69	56	54
21	4.7	4.4	4.4	4.4	4.4	4.1	68	66	67	72	56	54
22	4.7	4.4	4.4	4.4	4.4	4.1	69	66	67	70	56	54
23	4.7	4.4	4.4	4.4	4.4	4.1	69	66	67	70	57	54
24	4.4	4.7	4.4	4.4	4.4	4.1	69	66	69	70	59	54
25	4.4	5.0	4.4	4.4	4.4	4.1	69	66	70	70	59	54
26	4.4	5.0	4.4	4.4	4.4	4.1	69	66	70	70	59	54
27	4.4	5.0	4.4	4.4	4.7	4.1	69	66	70	70	59	38
28	4.1	5.0	4.4	4.4	4.7	4.4	69	66	70	70	59	2.4
29	4.1	5.0	4.4	4.4	---	4.4	69	66	70	70	59	4.1
30	3.8	5.0	4.4	4.4	---	4.4	69	67	70	70	57	4.4
31	3.8	---	4.1	4.4	---	4.4	---	67	---	70	56	---
TOTAL	403.4	134.1	140.3	134.9	123.8	137.3	1454.2	2076	2030	2172	1985	1467.9
MEAN	13.0	4.47	4.53	4.35	4.42	4.43	48.5	67.0	67.7	70.1	64.0	48.9
MAX	24	5.0	5.0	4.4	4.7	4.7	69	69	70	72	70	56
MIN	1.1	3.8	4.1	4.1	4.4	4.1	4.4	66	67	69	56	2.4
AC-FT	800	266	278	268	246	272	2880	4120	4030	4310	3940	2910

WTR YR 1987 TOTAL 12258.9 MEAN 33.6 MAX 72 MIN 1.1 AC-FT 24320

SAN JOAQUIN RIVER BASIN

11270900 MERCED RIVER BELOW MERCED FALLS DAM, NEAR SNELLING, CA

LOCATION.--Lat 37°31'18", long 120°19'53", in SE 1/4 SW 1/4 sec.4, T.5 S., R.15 E., Merced County, Hydrologic Unit 18040008, on right bank 0.1 mi south of Merced Falls, 0.2 mi downstream from Merced Falls Dam, and 5.8 mi east of Snelling.

DRAINAGE AREA.--1,061 mi².

PERIOD OF RECORD.--April 1901 to current year. Records for water years 1914-16 incomplete, yearly estimates published in WSP 1315-A. Published as "near Merced Falls" 1901-13; as "at Exchequer" 1916-64. Records at present site are about equivalent when adjusted for diversion to North Side Canal and change in contents in Lake McClure and McSwain Reservoir.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 310.55 ft above National Geodetic Vertical Datum of 1929. See WSP 1930 for history of changes prior to Oct. 1, 1964.

REMARKS.--No estimated daily discharges. 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 (station 11269500) since 1926, and McSwain Reservoir since 1966, capacity, 9,200 acre-ft.

AVERAGE DISCHARGE (adjusted for diversion to North Side Canal and change in contents in Lake McClure since 1965, and change in contents in McSwain Reservoir since 1969).--86 years, 1,369 ft³/s, 991,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1901-13, 1916-87): Maximum discharge observed, 47,700 ft³/s, Jan. 31, 1911, gage height, 23.3 ft, site and datum then in use; no flow for part of Nov. 21, 1901. Maximum discharge since construction of Exchequer Dam in 1926, 46,200 ft³/s, Dec. 4, 1950, gage height, 22.6 ft, from floodmarks, site and datum then in use, from rating curve extended above 16,000 ft³/s on basis of computation of peak flow over dam; minimum daily, 3.4 ft³/s, Mar. 5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,690 ft³/s, May 15, gage height, 7.85 ft; minimum daily, 131 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	1130	192	171	179	168	166	313	1670	1610	1770	1690	1270	
2	1130	193	168	173	164	168	398	1690	1620	1750	1670	1250	
3	1130	186	167	188	171	356	439	1700	1640	1750	1690	1210	
4	1130	186	169	182	166	478	468	1730	1710	1770	1720	1200	
5	1130	191	170	186	166	332	477	1740	1730	1770	1710	1200	
6	1130	186	170	181	171	226	522	1770	1740	1760	1710	1200	
7	1130	197	170	185	171	166	637	1760	1740	1750	1710	1190	
8	1120	199	170	175	168	168	797	1750	1740	1760	1720	1140	
9	1130	197	171	171	173	179	1010	1750	1740	1780	1710	1120	
10	1130	196	171	168	171	178	1220	1750	1730	1760	1690	1120	
11	1140	200	171	168	174	175	1330	1760	1730	1760	1690	1120	
12	1130	202	172	168	174	173	1400	1750	1700	1750	1670	1110	
13	1140	194	171	165	203	173	1420	1750	1690	1750	1660	1100	
14	1120	202	173	166	174	174	1480	1750	1680	1720	1640	1070	
15	1140	200	167	167	183	183	1520	1810	1690	1710	1610	1030	
16	1150	203	175	168	169	182	1520	1770	1720	1750	1620	1010	
17	728	199	173	171	176	177	1560	1760	1740	1750	1570	1020	
18	510	199	173	172	171	171	1570	1740	1750	1710	1570	1030	
19	506	199	180	167	169	176	1560	1720	1760	1700	1550	1040	
20	508	195	172	173	174	176	1530	1720	1730	1730	1470	1030	
21	506	200	168	173	172	172	1510	1710	1740	1720	1430	1020	
22	500	194	176	166	167	173	1550	1680	1750	1740	1370	1080	
23	504	194	172	172	171	172	1590	1680	1750	1770	1350	1110	
24	498	188	176	172	168	177	1580	1690	1810	1760	1340	1110	
25	494	197	172	166	168	174	1580	1670	1840	1750	1330	1080	
26	490	194	169	167	173	173	1580	1630	1850	1740	1320	1070	
27	497	198	176	170	172	170	1620	1620	1850	1730	1290	685	
28	495	194	176	164	168	173	1640	1590	1840	1720	1270	140	
29	310	190	172	169	---	164	1640	1580	1820	1710	1280	136	
30	193	193	176	168	---	169	1640	1580	1820	1700	1270	131	
31	191	---	173	170	---	176	---	1570	---	1680	1260	---	
TOTAL	25040	5858	5330	5330	4815	6070	37101	52840	52260	53970	47580	30022	
MEAN	808	195	172	172	172	196	1237	1705	1742	1741	1535	1001	
MAX	1150	203	180	188	203	478	1640	1810	1850	1780	1720	1270	
MIN	191	186	167	164	164	164	313	1570	1610	1680	1260	131	
AC-FT	49670	11620	10570	10570	9550	12040	73590	104800	103700	107000	94370	59550	
CAL YR 1986	TOTAL	559421	MEAN	1533	MAX	3690	MIN 156	AC-FT	1110000	MEAN	a2079	AC-FT	a1505000
WTR YR 1987	TOTAL	326216	MEAN	894	MAX	1850	MIN 131	AC-FT	647000	MEAN	a400	AC-FT	a289600

a Adjusted for diversion to Northside Canal and change in contents in Lake McClure and McSwain Reservoir.

SAN JOAQUIN RIVER BASIN

11271290 MERCED RIVER AT SHAFFER BRIDGE, NEAR CRESSEY, CA

LOCATION.--Lat 37°27'15", long 120°36'28", in NW 1/4 SW 1/4 sec.36, T.5 S., R.12 E., Merced County, Hydrologic Unit 18040002, near center of span on downstream side of county road bridge, 0.6 mi upstream from Dry Creek, and 4.0 mi northeast of Cressey.

DRAINAGE AREA.--1,117 mi².

PERIOD OF RECORD.--October 1965 to current year (low flow only).

GAGE.--Water-stage recorder. Datum of gage is 116.79 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Most water released from Lake McClure (station 11269500) is diverted upstream into the Main Canal of Merced Irrigation District. Flow past station consists of releases from diversion dam, irrigation return flow, and tributary inflow. No records computed above 200 ft³/s.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	179	182	179	170	164	167	150	140	116	86	118
2	196	173	167	182	179	161	161	150	135	112	92	121
3	189	176	161	182	189	161	156	156	135	121	92	107
4	179	176	158	---	170	158	147	169	137	129	92	103
5	164	170	164	---	170	---	127	153	142	140	94	94
6	170	170	173	196	167	---	127	142	137	142	89	87
7	182	164	170	193	170	---	135	147	153	119	89	98
8	179	176	170	193	161	193	137	140	145	109	93	100
9	179	179	170	186	167	179	147	156	137	110	105	94
10	189	179	170	186	158	179	158	161	145	118	103	100
11	193	176	170	182	158	179	156	170	137	121	103	98
12	193	176	170	182	167	179	147	147	137	119	103	107
13	182	173	170	176	---	182	147	140	133	123	94	110
14	200	170	170	176	---	182	147	140	129	105	97	125
15	---	176	170	176	193	193	150	156	129	102	83	123
16	---	179	167	176	---	186	153	---	121	109	66	118
17	---	179	173	179	176	182	167	173	121	107	100	116
18	---	176	170	179	176	176	164	170	133	112	97	109
19	---	176	173	182	176	173	164	176	135	116	98	112
20	---	176	176	179	173	170	158	167	137	112	105	118
21	---	170	176	182	170	167	137	176	145	100	112	121
22	---	176	176	182	167	167	131	193	158	92	125	109
23	---	173	182	179	167	167	125	189	140	92	119	119
24	---	176	176	173	161	167	135	---	137	94	119	129
25	---	176	182	173	164	170	147	---	145	92	119	135
26	---	179	179	173	164	170	145	186	145	84	123	137
27	---	179	176	161	164	167	150	140	140	94	125	123
28	---	182	182	164	167	164	142	133	137	89	135	119
29	---	179	186	158	---	164	156	142	133	87	153	114
30	---	179	182	161	---	161	164	147	131	87	135	102
31	179	---	186	158	---	164	---	134	---	78	119	---
a	28630	210	184	246	274	1500	62270	89970	90540	96940	87410	55320

a Diversion, in acre-feet, to Main Canal near diversion dam, near Merced Falls, provided by Merced Irrigation District.

SAN JOAQUIN RIVER BASIN

11271320 DRY CREEK NEAR SNELLING, CA

LOCATION.--Lat 37°33'18", long 120°27'44", in NE 1/4 SE 1/4 sec.30, T.4 S., R.14 E., Merced County, Hydrologic Unit 18040002, on left bank 650 ft downstream from Fields Road and 2.8 mi northwest of Snelling.

DRAINAGE AREA.--67.6 mi².

PERIOD OF RECORD.--October 1966 to current year.

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

REMARKS.--Estimated daily discharges: Jan. 29 to Feb. 4. Records good. Small weir upstream from gage regulates storage for stock pond and irrigation pumping.

AVERAGE DISCHARGE.--21 years, 21.9 ft³/s, 15,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,710 ft³/s, Jan. 21, 1969, gage height, 17.01 ft; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 6	0245	*1,100	*8.27				

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.06	.05	.13	.27	.68	1.2					
2	.08	.05	.05	.12	.31	.57	1.1					
3	.16	.05	.05	.17	.31	.63	1.2					
4	.12	.05	.05	.46	.36	.54	.89					
5	.09	.04	.05	.50	.30	333	.74					
6	.07	.04	.06	.52	.26	476	.73					
7	.05	.05	.08	.38	.23	32	.70					
8	.04	.07	.10	.26	.23	13	.61					
9	.04	.08	.10	.20	.23	7.8	.50					
10	.03	.08	.10	.18	.20	5.5	.44					
11	.03	.07	.10	.16	.19	4.2	.34					
12	.02	.07	.10	.17	.25	3.5	.27					
13	.12	.07	.10	.15	200	21	.23					
14	.12	.06	.10	.15	32	57	.19					
15	.09	.06	.11	.15	53	82	.15					
16	.06	.06	.10	.13	20	17	.13					
17	.05	.06	.10	.11	7.3	8.3	.14					
18	.05	.06	.10	.11	4.7	5.7	.10					
19	.06	.05	.11	.11	3.2	4.4	.07					
20	.04	.05	.11	.11	2.5	3.4	.05					
21	.03	.04	.11	.12	2.2	4.3	.04					
22	.02	.03	.11	.11	1.5	6.7	.04					
23	.02	.04	.12	.13	1.3	8.2	.03					
24	.01	.05	.12	.14	1.8	14	.03					
25	.01	.06	.13	.13	1.2	6.6	.02					
26	0	.06	.13	.14	.90	4.3	.02					
27	.01	.05	.13	.15	.73	3.1	.02					
28	0	.05	.13	.20	.72	2.5	.01					
29	.06	.05	.12	.18	---	2.0	0					
30	.10	.05	.13	.18	---	1.6	.01					
31	.08	---	.13	.23	---	1.4	---					
TOTAL	1.74	1.66	3.08	5.98	336.19	1130.92	10.00	0	0	0	0	0
MEAN	.056	.055	.099	.19	12.0	36.5	.33	0	0	0	0	0
MAX	.16	.08	.13	.52	200	476	1.2	0	0	0	0	0
MIN	0	.03	.05	.11	.19	.54	0	0	0	0	0	0
AC-FT	3.5	3.3	6.1	12	667	2240	20	0	0	0	0	0
CAL YR 1986 TOTAL	9255.15			MEAN 25.4	MAX 921	MIN 0	AC-FT 18360					
WTR YR 1987 TOTAL	1489.57			MEAN 4.08	MAX 476	MIN 0	AC-FT 2950					

SAN JOAQUIN RIVER BASIN

11272500 MERCED RIVER NEAR STEVINSON, CA

LOCATION.--Lat 37°22'15", long 120°55'46", in SW 1/4 NE 1/4 sec.36, T.6 S., R.9 E., Merced County, Hydrologic Unit 18040002, on right bank 4.4 mi upstream from mouth and 5.3 mi northwest of Stevinson.

DRAINAGE AREA.--1,273 mi².

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. October 1940 to Aug. 15, 1955, at datum 55.74 ft higher; Aug. 16, 1955, to Sept. 30, 1959, at datum 54.74 ft higher.

REMARKS.--No estimated daily discharges. Records good. Practically entire flow is diverted above station for irrigation of 120,000 acres during low runoff years. Some return flow enters above station. Flow regulated by three reservoirs, combined capacity, 1,035,000 acre-ft, the largest of which is Lake McClure (station 11269500).

AVERAGE DISCHARGE.--47 years, 726 ft³/s, 526,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s, Dec. 5, 1950, elevation, 73.79 ft, present datum; no flow July 19 to Aug. 21, 1961, result of temporary dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,180 ft³/s, Mar. 7, gage height, 60.68 ft; minimum daily, 67 ft³/s, July 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	341	311	245	225	204	208	215	210	216	172	90	148
2	347	296	248	223	209	208	223	220	198	142	91	144
3	344	278	236	226	221	198	216	224	155	119	106	145
4	340	261	231	231	226	191	200	217	140	109	81	146
5	328	248	229	250	218	226	210	185	156	143	69	134
6	331	243	232	243	212	529	217	155	167	162	71	154
7	263	240	235	237	210	996	186	139	176	169	71	162
8	256	238	234	234	212	520	172	152	195	139	89	130
9	254	259	232	234	203	375	170	166	169	126	105	128
10	272	251	229	231	206	319	162	173	162	105	105	109
11	284	230	227	227	200	295	181	190	174	119	117	110
12	295	232	225	225	204	276	187	209	151	144	117	144
13	293	231	226	224	222	255	188	177	153	145	109	175
14	299	228	225	222	323	255	148	144	159	115	111	183
15	309	237	225	221	386	281	140	137	169	92	123	172
16	429	249	225	245	318	354	80	153	162	74	148	177
17	914	246	222	247	323	306	146	188	153	82	187	177
18	932	241	224	238	275	273	169	200	141	67	161	169
19	684	238	224	228	255	249	195	185	144	107	135	154
20	635	234	227	221	241	231	225	181	153	128	127	154
21	611	236	229	232	234	238	205	195	169	110	127	151
22	583	239	229	226	230	229	187	202	219	121	143	147
23	568	241	227	228	223	239	157	227	219	130	157	152
24	554	240	230	246	219	245	168	243	191	121	170	143
25	589	243	227	248	214	239	180	266	168	140	155	160
26	603	238	227	245	212	241	177	256	159	158	152	165
27	575	245	225	227	211	237	194	241	138	156	136	176
28	507	244	222	223	210	238	178	210	164	131	141	179
29	464	247	223	223	---	225	185	190	187	115	150	140
30	454	247	225	208	---	224	195	193	167	101	159	125
31	355	---	224	209	---	214	---	211	---	99	170	---
TOTAL	14013	7411	7089	7147	6621	9114	5456	6039	5074	3841	3873	4553
MEAN	452	247	229	231	236	294	182	195	169	124	125	152
MAX	932	311	248	250	386	996	225	266	219	172	187	183
MIN	254	228	222	208	200	191	80	137	138	67	69	109
AC-FT	27790	14700	14060	14180	13130	18080	10820	11980	10060	7620	7680	9030
CAL YR 1986	TOTAL	318161	MEAN 872	MAX 4750	MIN 202	AC-FT 631100						
WTR YR 1987	TOTAL	80231	MEAN 220	MAX 996	MIN 67	AC-FT 159100						

SAN JOAQUIN RIVER BASIN

11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA

LOCATION.--Lat 37°21'02", long 120°58'34", in NW 1/4 SW 1/4 sec.3, T.7 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 600 ft downstream from bridge on Hills Ferry Road, 650 ft downstream from Merced River, and 3.5 mi northeast of Newman.

DRAINAGE AREA.--9,520 mi².

PERIOD OF RECORD.--April 1912 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Mar. 3, 1931, nonrecording gage at various sites within 240 ft of bridge. Mar. 3, 1931, to Sept. 30, 1959, water-stage recorder within 300 ft of bridge, at datum 47.31 ft higher. Oct. 1, 1959, to Aug. 9, 1960, water-stage recorder at site 70 ft upstream, at present datum. Since Aug. 10, 1960, at present site and datum.

REMARKS.--Estimated daily discharges: June 25 to July 7. Records good except those for period of estimated discharge, which are fair. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas.

AVERAGE DISCHARGE.--75 years, 2,088 ft³/s, 1,513,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (river only), 30,700 ft³/s, Mar. 4, 1983, elevation, 65.78 ft; river and Merced River Slough, 34,400 ft³/s, Feb 26, 1969, elevation, 65.90 ft, present datum; minimum, 15 ft³/s, Aug. 9, 10, 1924.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 2, 1868, reached a stage of 69.0 ft from floodmarks; flood of February 1886 reached a stage of 67.1 ft from floodmarks; and flood of 1911 reached a stage of 66.3 ft from floodmarks. All stages referred to current datum. Discharges unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,060 ft³/s, Mar. 7, elevation, 52.93 ft; minimum daily, 318 ft³/s, Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1090	684	512	495	624	626	902	637	746	620	580	555
2	1060	665	516	493	626	626	924	641	774	600	574	534
3	1000	659	524	494	628	626	910	660	760	615	610	516
4	962	632	526	503	661	625	858	716	719	620	593	502
5	929	610	520	515	720	642	864	702	686	660	545	491
6	895	596	513	564	728	925	890	700	661	680	481	483
7	825	590	511	591	717	1870	868	695	641	637	481	544
8	790	574	509	598	698	1980	812	688	676	598	461	516
9	754	564	508	598	673	1800	790	681	731	547	499	497
10	710	566	508	596	665	1600	775	678	711	490	534	440
11	707	563	508	592	661	1410	760	678	695	475	589	405
12	697	550	508	591	660	1330	742	675	660	520	610	424
13	705	534	504	607	719	1200	750	674	616	582	587	483
14	733	526	499	652	885	1160	716	669	588	574	545	482
15	768	522	492	682	1170	1150	703	648	567	558	519	463
16	796	522	490	669	1210	1230	697	628	562	504	517	433
17	1060	525	490	642	1210	1290	688	611	572	455	565	451
18	1280	528	495	617	1130	1280	675	605	584	467	553	410
19	1200	530	497	615	1000	1200	662	605	564	519	499	399
20	1090	530	496	616	882	1110	658	613	548	558	438	399
21	1050	528	491	615	819	1070	658	625	545	561	450	397
22	1050	525	486	615	774	1050	663	635	548	604	509	367
23	1060	521	486	610	739	1050	665	654	570	637	565	352
24	980	516	486	610	723	1050	659	679	590	665	634	318
25	953	514	486	608	700	1040	653	711	615	654	610	322
26	946	505	489	608	674	1010	645	757	640	640	586	340
27	943	500	493	608	644	979	639	733	605	653	561	385
28	881	501	493	611	630	954	640	695	600	667	554	436
29	819	505	493	614	---	934	640	677	640	669	513	409
30	818	509	494	618	---	918	639	678	650	624	518	340
31	766	---	497	620	---	909	---	736	---	593	571	---
TOTAL	28317	16594	15520	18467	21970	34644	22145	20784	19064	18246	16851	13093
MEAN	913	553	501	596	785	1118	738	670	635	589	544	436
MAX	1280	684	526	682	1210	1980	924	757	774	680	634	555
MIN	697	500	486	493	624	625	639	605	545	455	438	318
AC-FT	56170	32910	30780	36630	43580	68720	43920	41230	37810	36190	33420	25970
CAL YR 1986	TOTAL	1211008	MEAN	3318	MAX	23000	MIN	458	AC-FT	2402000		
WTR YR 1987	TOTAL	245695	MEAN	673	MAX	1980	MIN	318	AC-FT	487300		

SAN JOAQUIN RIVER BASIN

11274500 ORESTIMBA CREEK NEAR NEWMAN, CA

LOCATION.--Lat 37°18'56", long 121°07'27", in NE 1/4 NE 1/4 sec.19, T.7 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, on right bank 20 ft downstream from bridge at California Aqueduct siphon, 3 mi downstream from Oso Creek, and 5.5 mi west of Newman.

DRAINAGE AREA.--134 mi².

PERIOD OF RECORD.--January 1932 to current year.

REVISED RECORDS.--WSP 1445: 1932(M), 1938(P), 1940-41(M), 1945, 1951(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 216.01 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1958, at site 1,080 ft downstream at datum 24.14 ft lower. Oct. 1, 1958, to Aug. 13, 1969, at site 960 ft downstream at datum 27.14 ft lower. Aug. 13, 1969, to Feb. 6, 1984, at site 240 ft upstream, present datum.

REMARKS.--No estimated daily discharges. Records good. No storage or diversion above station except for minor stock ponds.

AVERAGE DISCHARGE.--55 years, 17.3 ft³/s, 12,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/s, Apr. 2, 1958, gage height, 6.57 ft, site and datum then in use, from rating curve extended above 5,000 ft³/s; no flow for all or parts of each year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1800	107	4.07
Mar. 6	0500	*112	*4.09

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0	0	.28					
2					0	0	0					
3					0	0	0					
4					0	0	0					
5					0	8.5	0					
6					0	77	0					
7					0	25	0					
8					0	12	0					
9					0	6.7	0					
10					0	4.4	0					
11					0	3.4	0					
12					0	2.6	0					
13					24	2.0	0					
14					18	1.9	0					
15					2.4	2.1	0					
16					.17	1.9	0					
17					0	1.5	0					
18					0	1.3	0					
19					0	1.2	0					
20					0	1.2	0					
21					0	1.6	0					
22					0	2.2	0					
23					0	1.9	0					
24					0	1.6	0					
25					0	1.4	0					
26					0	1.1	0					
27					0	.90	0					
28					0	.62	0					
29					---	.43	0					
30					---	.28	0					
31		---			---	.27	---		---			---
TOTAL	0	0	0	0	44.57	165.00	.28	0	0	0	0	0
MEAN	0	0	0	0	1.59	5.32	.009	0	0	0	0	0
MAX	0	0	0	0	24	77	.28	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	88	327	.6	0	0	0	0	0
CAL YR 1986	TOTAL	20179.07	MEAN	55.3	MAX	2790	MIN	0	AC-FT	40030		
WTR YR 1987	TOTAL	209.85	MEAN	.57	MAX	77	MIN	0	AC-FT	416		

SAN JOAQUIN RIVER BASIN

11274630 DEL PUERTO CREEK NEAR PATTERSON, CA

LOCATION.--Lat 37°29'12", long 121°12'29", in SE 1/4 NW 1/4 sec.21, T.5 S., R.7 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 1.0 mi upstream from California Aqueduct crossing and 4.4 mi west of Patterson.

DRAINAGE AREA.--72.6 mi².

PERIOD OF RECORD.--October 1958 to May 1965 (maximums only), June 1965 to current year.

REVISED RECORDS.--WSP 1930: 1959-60(M), drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 200 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 1965, crest-stage gage at site 1.0 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records fair. Some stock ponds and small diversions above station.

AVERAGE DISCHARGE.--22 years, 7.58 ft³/s, 5,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft³/s, Feb. 16, 1959, gage height, 14.68 ft, site and datum then in use, from rating curve extended above 690 ft³/s; no flow for several months in most years.

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

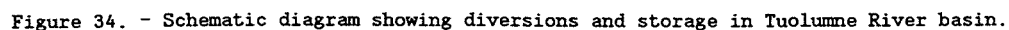
Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1300	*117	*2.91

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.40	.76	.86	1.4	1.5	1.7	.59	.44	.01		
2	.06	.41	.76	.79	1.4	1.4	1.6	.57	.36	.01		
3	.06	.39	.76	.94	1.7	1.4	1.8	.51	.41	.01		
4	.06	.41	.75	1.5	1.3	1.4	2.6	.45	.40	0		
5	.06	.40	.93	1.4	1.2	8.4	2.3	.44	.36	0		
6	.06	.40	1.0	1.4	1.1	25	2.0	.44	.36	0		
7	.06	.42	.95	2.1	1.0	12	1.9	.39	.40	0		
8	.06	.45	.88	1.6	.95	7.4	1.7	.43	.38	0		
9	.06	.49	.98	1.5	.97	5.3	1.5	.43	.35	0		
10	.06	.53	1.1	1.4	1.2	3.9	1.3	.43	.38	0		
11	.07	.54	1.1	1.3	1.7	3.4	1.2	.35	.38	0		
12	.07	.55	1.1	1.3	2.7	2.8	1.1	.30	.39	0		
13	.07	.49	1.1	1.2	53	2.9	.90	.28	.38	0		
14	.07	.56	1.1	1.0	20	3.0	.85	.24	.38	0		
15	.06	.55	1.1	1.1	9.3	3.1	.84	.23	.40	0		
16	.07	.55	1.2	.84	6.1	2.8	.81	.26	.43	0		
17	.07	.66	1.1	.90	4.4	2.4	.75	.35	.43	0		
18	.07	.66	1.2	.95	3.5	2.4	.71	.47	.41	0		
19	.07	.65	1.3	1.0	2.7	2.2	.72	.49	.38	0		
20	.07	.59	1.3	.98	2.4	2.2	.69	.52	.35	0		
21	.08	.69	1.3	1.2	2.2	2.4	.62	.71	.33	0		
22	.09	.70	1.3	1.4	2.2	2.9	.59	.64	.27	0		
23	.10	.68	1.5	1.8	2.0	2.7	.59	.57	.19	0		
24	.11	.68	1.3	1.6	2.0	2.9	.60	.57	.10	0		
25	.13	.79	1.3	1.5	1.9	2.4	.57	.57	.04	0		
26	.13	.76	1.3	1.4	1.7	2.2	.57	.63	.02	0		
27	.16	.82	1.3	1.3	1.5	1.8	.56	.62	.01	0		
28	.18	.90	1.4	1.5	1.5	1.6	.52	.56	.01	0		
29	.25	.93	1.3	1.7	---	1.5	.53	.52	.01	0		
30	.32	.86	.93	2.0	---	1.4	.53	.48	.01	0		
31	.36	---	.89	1.8	---	1.5	---	.47	---	0		---
TOTAL	3.21	17.91	34.29	41.26	133.02	118.2	32.65	14.51	8.76	.03	0	0
MEAN	.10	.60	1.11	1.33	4.75	3.81	1.09	.47	.29	.001	0	0
MAX	.36	.93	1.5	2.1	53	25	2.6	.71	.44	.01	0	0
MIN	.06	.39	.75	.79	.95	1.4	.52	.23	.01	0	0	0
AC-FT	6.4	36	68	82	264	234	65	29	17	.06	0	0

CAL YR 1986	TOTAL	5975.41	MEAN	16.4	MAX	775	MIN	0	AC-FT	11850
WTR YR 1987	TOTAL	403.84	MEAN	1.11	MAX	53	MIN	0	AC-FT	801



DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	275700	231200	184300	150500	126700	121800	121200	187300	290700	311100	290000	263600
2	274600	229800	183100	148700	126400	121700	121600	189700	292600	310800	289100	262900
3	273700	228200	181800	149000	126000	121100	122300	191300	295000	310400	288200	262000
4	272500	226700	180600	148000	125700	120500	123000	193400	296600	309800	287100	261300
5	271200	225200	179600	147300	125000	120300	123600	196800	298500	309100	286400	260300
6	270000	223500	178500	146500	124400	120900	124400	201400	299800	308700	285400	259200
7	268500	222200	177400	145500	123900	121300	125100	205800	301400	308100	284700	257800
8	267500	220600	176800	144400	123700	121600	126200	210200	303500	307800	283800	257000
9	266400	219100	175800	143400	123700	121900	127600	214800	305500	307200	282700	255700
10	265400	217500	174700	142400	123200	121800	129000	219900	307000	306600	282000	255200
11	264000	215700	173500	141300	122800	121700	130800	226300	308100	306100	281300	253500
12	262900	214000	172500	140900	122600	121400	132700	232300	309100	305300	280500	252600
13	261700	212600	171300	139900	123100	121300	135400	239100	309800	304800	279800	251400
14	260500	211000	170100	138800	124300	121700	137300	244500	310900	304200	278900	250500
15	259200	209500	169400	138100	124600	121900	139300	249900	311900	303500	278000	248800
16	257800	207900	168200	137300	125000	122100	141200	254900	312400	302900	277100	247600
17	256600	206500	167000	136500	125300	122100	143800	261000	312800	302500	276200	246600
18	255200	204900	166100	135700	125000	122300	146600	265900	313200	301800	275300	245700
19	254000	202400	164800	135300	124800	122600	148400	269400	313200	301100	274600	244500
20	252800	199700	163800	134700	124500	122700	150100	272600	313200	300500	273700	243500
21	251400	198100	162700	134000	124000	122800	151700	275100	313000	299600	272800	242600
22	250000	196500	161800	133100	123900	122600	153500	277300	313000	298800	271600	241300
23	248800	195300	160800	132400	123900	122500	156000	279100	313000	297900	271000	240300
24	247400	193800	159800	131800	123600	122200	158800	280900	313000	297200	270500	239200
25	246100	192100	158500	130900	123200	122100	161700	282000	312800	296300	269600	238200
26	244700	190800	157400	130800	123000	121800	165400	282900	312600	295200	268700	237000
27	243200	189300	156300	130100	122500	121600	169700	283800	312400	294000	268000	235900
28	241800	187900	155300	129500	122100	121200	173800	284700	312100	293300	267100	234800
29	238900	186700	154600	128900	---	121300	178300	286000	311500	292400	266200	233500
30	236500	185300	153500	128100	---	121300	183100	287300	311300	291800	265400	232500
31	233500	---	152400	127300	---	121200	---	288700	---	290700	264700	---
MAX	275700	231200	184300	150500	126700	122800	183100	288700	313200	311100	290000	263600
MIN	233500	185300	152400	127300	122100	120300	121200	187300	290700	290700	264700	232500
a	3736.8	3706.8	3684.4	3665.8	3661.7	3661.0	3705.3	3768.3	3780.5	3769.4	3754.9	3736.2
b	-43300	-48200	-32900	-25100	-5200	-900	+61900	+105600	+22600	-20600	-26000	-32200
CAL YR 1986	b	-27600										
WTR YR 1987	b	-44300										
a	Gage height, in feet, at end of month.											
b	Change in contents, in acre-feet.											

SAN JOAQUIN RIVER BASIN

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°56'15", long 119°47'50", in SW 1/4 SE 1/4 sec.17, T.1 N., R.20 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on left bank 0.9 mi downstream from O'Shaughnessy Dam at Hetch Hetchy and 2.5 mi downstream from Falls Creek.

DRAINAGE AREA.--457 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Hetch Hetchy damsite, near Sequoia" 1910-14 and as "below Hetch Hetchy damsite, near Sequoia" 1915-18.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage with concrete control since May 5, 1970. Elevation of gage is 3,480 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 1, 1915, water-stage recorder at site 1 mi upstream, at damsite, at different datum. Jan. 1, 1915, to Sept. 30, 1968, water-stage recorder, at same site and datum. Oct. 1, 1968, to May 4, 1970, nonrecording gage at site 0.5 mi upstream at different datum.

REMARKS.--Estimated daily discharges: May 28 to July 1. Records good except those for period of estimated daily discharge, which are fair. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 1 mi upstream beginning in April 1923. Flow diverted above station through tunnel to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct beginning Apr. 26, 1967. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE (prior to diversion to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct).--57 years (water years 1911-67), 999 ft³/s, 723,800 acre-ft/yr; 20 years (water years 1968-87), 435 ft³/s, 315,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft³/s, June 1, 1943, gage height, 13.90 ft; no flow at times in 1968-70.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft³/s, Oct. 28, gage height, 6.87 ft; minimum daily, 35 ft³/s, Apr. 16-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	791	58	52	39	38	36	44	51	80	130	108
2	107	962	54	52	39	38	36	52	75	79	129	107
3	109	844	54	52	39	38	40	52	75	79	129	107
4	108	803	54	53	39	38	41	52	75	78	129	106
5	81	840	54	45	39	38	41	52	75	78	130	106
6	79	834	54	38	39	36	41	52	75	78	130	107
7	80	827	54	37	39	36	41	52	75	79	130	110
8	80	820	54	36	39	36	40	52	75	79	130	109
9	80	813	54	36	39	36	38	52	76	79	130	108
10	80	827	53	36	40	36	37	52	76	80	117	109
11	80	841	52	36	41	36	37	51	76	81	110	109
12	80	833	53	36	41	36	37	49	76	80	110	109
13	80	827	53	36	50	36	37	49	76	81	109	109
14	82	818	53	36	41	36	36	49	76	82	106	108
15	79	812	53	36	40	36	36	50	76	82	104	108
16	79	805	53	38	36	37	35	51	77	82	104	91
17	79	796	53	41	41	37	35	51	77	82	104	61
18	79	788	53	41	39	37	35	52	77	81	104	61
19	79	774	53	40	38	37	36	52	77	83	104	60
20	79	519	53	39	38	37	36	52	78	110	104	61
21	62	63	53	39	38	37	36	52	78	161	103	61
22	61	65	53	39	38	37	36	52	78	161	105	61
23	60	65	53	39	38	37	36	50	78	157	106	61
24	60	65	53	39	38	37	37	50	79	153	107	60
25	60	65	52	39	38	37	37	51	80	153	106	61
26	60	65	52	39	38	36	37	52	80	153	107	60
27	121	65	52	39	38	36	36	52	80	153	107	60
28	506	65	52	39	38	36	36	52	80	155	106	60
29	812	65	52	39	---	36	36	52	80	157	106	60
30	793	65	52	39	---	36	37	52	81	157	106	61
31	784	---	52	39	---	36	---	51	---	139	107	---
TOTAL	5085	16822	1648	1245	1100	1136	1115	1584	2289	3332	3509	2559
MEAN	164	561	53.2	40.2	39.3	36.6	37.2	51.1	76.3	107	113	85.3
MAX	812	962	58	53	50	38	41	52	81	161	130	110
MIN	60	63	52	36	36	36	35	44	51	78	103	60
AC-FT	10090	33370	3270	2470	2180	2250	2210	3140	4540	6610	6960	5080

CAL YR 1986 TOTAL 318616 MEAN 873 MAX 5700 MIN 42 AC-FT 632000
WTR YR 1987 TOTAL 41424 MEAN 113 MAX 962 MIN 35 AC-FT 82160

SAN JOAQUIN RIVER BASIN

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August to September 1987.

INSTRUMENTATION.--Temperature recorder August to September 1987.

REMARKS.--Temperature recorder installed Aug. 13, 1987, located 0.6 mi upstream from gaging station on left bank at road bridge. Water temperatures are affected by releases from O'Shaughnessy Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (August to September 1987): Maximum recorded, 11.5 °C, Sept. 10; minimum recorded, 8.5 °C, several days in August and September.

TEMPERATURE (DEG. C) OF WATER, PERIOD AUGUST 1987 TO SEPTEMBER 1987

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1									---	---	10.5	8.5
2									---	---	10.5	9.0
3									---	---	10.5	9.0
4									---	---	10.0	9.0
5									---	---	10.5	9.0
6									---	---	10.0	8.5
7									---	---	10.5	8.5
8									---	---	10.5	8.5
9									---	---	10.5	8.5
10									---	---	11.5	8.5
11									---	---	10.5	9.0
12									---	---	10.5	8.5
13									11.0	9.5	10.5	8.5
14									11.0	9.5	10.5	8.5
15									11.0	9.0	10.5	8.5
16									10.5	9.0	10.5	8.5
17									10.5	9.0	10.5	9.0
18									10.5	9.0	10.0	8.5
19									10.5	8.5	10.5	9.0
20									10.5	9.0	10.5	8.5
21									10.5	9.0	10.0	9.0
22									10.5	9.0	10.5	9.0
23									10.5	8.5	10.5	8.5
24									10.0	8.5	11.0	9.0
25									10.5	8.5	11.0	9.0
26									10.5	8.5	11.0	9.0
27									10.5	9.0	10.5	9.0
28									10.0	8.5	10.5	9.0
29									10.5	8.5	10.5	9.0
30									10.5	8.5	10.5	8.5
31									10.5	9.0	---	---
MONTH									---	---	11.5	8.5

SAN JOAQUIN RIVER BASIN

1276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA

LOCATION.--Lat 37°52'46", long 119°56'46", in SE 1/4 SW 1/4 sec.1, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 0.5 mi upstream from Early Intake, 2.4 mi upstream from Cherry Creek, and 5.0 mi west of Mather.

DRAINAGE AREA.--484 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,420 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 12 mi upstream. Flow diverted above station through tunnel to Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--17 years, 471 ft³/s, 341,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s, July 7, 1983, gage height, 21.38 ft; minimum daily, 33 ft³/s, Aug. 17, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1943, reached a stage of 22.1 ft, discharge, 12,900 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 926 ft³/s, Nov. 2, gage height, 15.06 ft; minimum daily, 41 ft³/s, Jan. 10, 11, 13-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	752	70	57	44	43	48	47	56	80	130	108
2	67	891	61	57	44	43	48	56	79	80	129	108
3	65	844	59	60	44	43	54	60	81	79	129	108
4	65	759	59	72	44	42	52	60	81	78	129	108
5	65	806	60	60	44	50	50	59	81	78	129	108
6	65	801	63	48	43	64	49	59	82	78	128	107
7	65	798	60	45	43	55	48	60	82	78	128	107
8	65	792	59	42	43	49	48	60	82	78	128	111
9	65	786	59	42	44	47	47	66	81	78	128	110
10	65	792	58	41	45	45	47	63	81	78	125	110
11	65	810	58	41	49	44	47	61	81	79	108	110
12	65	803	58	42	47	44	47	58	81	80	107	110
13	65	798	58	41	147	65	47	57	81	80	107	110
14	64	791	58	41	79	59	46	57	81	80	107	110
15	64	785	59	41	62	72	46	58	82	80	103	109
16	64	780	58	41	61	72	47	59	82	79	103	109
17	64	775	58	44	55	65	46	59	81	78	103	104
18	64	768	58	46	49	59	46	59	81	79	103	62
19	64	757	59	46	47	56	46	59	81	79	102	58
20	64	689	58	44	45	53	47	64	81	83	102	58
21	64	142	58	44	45	53	47	63	81	147	103	57
22	64	78	58	44	45	53	46	61	81	162	103	57
23	64	75	58	44	45	55	46	56	81	160	106	57
24	63	74	57	45	45	57	46	56	82	155	107	57
25	65	72	57	45	44	53	46	56	82	155	107	57
26	66	71	57	45	44	52	47	56	81	154	106	57
27	70	71	57	44	43	50	47	56	81	154	106	57
28	324	70	56	50	43	49	45	56	80	155	106	57
29	780	72	57	46	---	48	45	56	80	158	106	56
30	764	70	56	45	---	47	49	56	80	158	106	56
31	757	---	56	44	---	48	---	55	---	151	106	---
TOTAL	4396	16572	1817	1447	1433	1635	1420	1808	2407	3291	3490	2593
MEAN	142	552	58.6	46.7	51.2	52.7	47.3	58.3	80.2	106	113	86.4
MAX	780	891	70	72	147	72	54	66	82	162	130	111
MIN	63	70	56	41	43	42	45	47	56	78	102	56
AC-FT	8720	32870	3600	2870	2840	3240	2820	3590	4770	6530	6920	5140
CAL YR 1986	TOTAL	338328	MEAN 927	MAX 6200	MIN 56	AC-FT 671100						
WTR YR 1987	TOTAL	42309	MEAN 116	MAX 891	MIN 41	AC-FT 83920						

SAN JOAQUIN RIVER BASIN

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August to September 1987.

INSTRUMENTATION.--Temperature recorder since August 12, 1987.

REMARKS.--Temperature recorder located 150 ft upstream from gaging station on right bank. Interruptions in record were due to malfunction of recording instruments.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (August to September 1987): Maximum recorded, 20.0 °C, Aug. 12-13; minimum recorded, 11.5 °C, Sept. 7-9.

TEMPERATURE (DEG. C) OF WATER, AUGUST 1987 TO SEPTEMBER 1987

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

SAN JOAQUIN RIVER BASIN

11276900 TUOLUMNE RIVER BELOW EARLY INTAKE, NEAR MATHER, CA

LOCATION.--Lat 37°52'54", long 119°58'09", in NW 1/4 SW 1/4 sec.2, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 0.6 mi upstream from Cherry Creek, 0.7 mi downstream from Robert C. Kirkwood powerplant and Hetch Hetchy aqueduct, and 6.3 mi west of Mather.

DRAINAGE AREA.--487 mi².

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,200 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 13 mi upstream and Robert C. Kirkwood powerplant beginning Apr. 26, 1967. Water is diverted to Hetch Hetchy aqueduct from the tailrace of the powerplant through a closed conduit. Flow in excess of aqueduct capacity is diverted to river. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--21 years, 573 ft³/s, 415,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft³/s, June 4, 1969, gage height, 9.82 ft; minimum daily, 12 ft³/s, Nov. 28-30, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,040 ft³/s, Nov. 18, gage height, 5.42 ft; minimum daily, 39 ft³/s, Mar. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	222	82	71	43	42	45	44	63	77	130	105
2	78	278	72	68	43	42	45	46	77	76	129	105
3	72	320	68	75	43	42	51	53	78	76	130	105
4	72	126	58	73	43	42	52	56	78	75	130	105
5	73	160	55	71	43	42	48	124	77	75	131	105
6	76	146	57	59	43	54	47	100	77	75	131	194
7	76	136	59	57	43	55	46	44	76	75	131	258
8	76	135	59	55	43	50	61	45	76	71	131	268
9	73	144	60	54	43	48	62	45	76	71	131	275
10	73	169	62	58	43	46	47	45	76	93	117	275
11	73	185	63	46	44	45	44	47	76	98	106	275
12	73	177	61	47	45	44	44	46	76	79	107	275
13	75	161	66	51	131	55	44	45	76	77	104	275
14	76	146	61	45	83	60	43	53	76	75	103	275
15	77	143	63	43	62	73	42	60	76	76	103	275
16	76	147	65	42	61	74	54	65	73	75	103	275
17	75	151	69	42	55	66	50	61	73	74	103	275
18	74	582	65	42	53	60	45	59	73	76	104	181
19	74	821	68	42	50	56	43	56	77	78	104	66
20	74	764	70	42	45	53	42	56	80	78	104	69
21	73	156	60	42	44	52	43	57	78	127	105	65
22	73	86	61	42	44	86	43	55	78	146	105	65
23	73	121	63	42	44	44	42	55	78	148	105	66
24	71	106	65	42	44	39	42	55	78	150	105	62
25	69	87	67	42	44	49	42	55	78	153	105	57
26	70	82	69	51	44	50	42	64	78	153	105	57
27	71	83	72	42	43	49	42	55	78	153	105	57
28	284	90	60	50	43	47	43	55	77	153	105	57
29	857	87	64	46	---	46	44	55	77	153	105	57
30	828	93	67	43	---	46	43	53	77	154	105	57
31	789	---	67	43	---	45	---	53	---	144	105	---
TOTAL	4769	6104	1998	1568	1409	1602	1381	1762	2287	3184	3487	4636
MEAN	154	203	64.5	50.6	50.3	51.7	46.0	56.8	76.2	103	112	155
MAX	857	821	82	75	131	86	62	124	80	154	131	275
MIN	69	82	55	42	43	39	42	44	63	71	103	57
AC-FT	9460	12110	3960	3110	2790	3180	2740	3490	4540	6320	6920	9200
CAL YR 1986	TOTAL	374216	MEAN	1025	MAX	6200	MIN	55	AC-FT	742300		
WTR YR 1987	TOTAL	34187	MEAN	93.7	MAX	857	MIN	39	AC-FT	67810		

SAN JOAQUIN RIVER BASIN

11277200 CHERRY LAKE NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'33", long 119°54'47", in SE 1/4 NW 1/4 sec.5; T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on upstream face of Cherry Valley Dam on Cherry Creek, 4.2 mi upstream from Eleanor Creek, 7 mi north of Early Intake, and 7.3 mi northwest of Hetch Hetchy.

DRAINAGE AREA.--117 mi².

PERIOD OF RECORD.--August 1956 to current year. Prior to October 1959, published as Lake Lloyd near Hetch Hetchy.

GAGE.--Water-stage recorder. Datum of gage is 2.42 ft above National Geodetic Vertical Datum of 1929. Prior to October 1974, datum published as at mean sea level.

REMARKS.--Reservoir is formed by a rockfill dam completed in 1956. Storage began in December 1955. Capacity, 274,300 acre-ft between gage heights 4,430 ft, bottom of sluice gates, and 4,703 ft, top of flashboard gates on concrete spillway. No dead storage. Installation of flashboard gates on top of concrete spillway completed in 1979. Water is released down Cherry Creek for power development and domestic supply as part of Hetch Hetchy system of city and county of San Francisco. Unmeasured diversion from Lake Eleanor into Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake through tunnel to Dion R. Holm powerplant near mouth of Cherry Creek began Aug. 1, 1960. See schematic diagram of Tuolumne River basin. Records, including extremes, represent contents at 2400 hours.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 274,300 acre-ft, June 25-28, 1986, gage height, 4,703.0 ft; normal minimum since reservoir first filled, 7,660 acre-ft, Jan. 24, 1960, gage height, 4,502.1 ft. Reservoir drained for inspection in 1961 and 1964.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 236,100 acre-ft, June 8-11, gage height, 4,681.2 ft; minimum, 135,900 acre-ft, Feb. 10, gage height, 4,617.2 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Provided by San Francisco Public Utilities Commission, dated May 15, 1971)

4,440	0	4,490	3,020	4,560	60,800	4,660	201,100
4,450	75	4,500	6,030	4,580	85,100	4,680	234,100
4,460	250	4,510	11,700	4,600	111,800	4,700	268,800
4,470	675	4,520	19,700	4,620	139,900	4,705	277,900
4,480	1,530	4,540	38,900	4,640	169,700		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	215300	187400	171100	154300	139100	139400	156600	203200	234400	230600	217700	199200
2	214600	187400	170600	153700	138500	139600	157600	204200	234600	230200	217400	198600
3	214000	186600	170000	153400	138100	139900	158800	205000	234900	229700	216900	198100
4	213100	185800	169400	153100	137600	140200	159600	206300	235100	229400	216100	197600
5	212500	184900	168900	152700	137400	140400	160500	207900	235400	229100	215400	197300
6	211700	184000	168600	152100	136900	142600	161200	209600	235800	228600	214800	197000
7	211000	183200	168500	151700	136500	143300	162400	211300	236000	228200	214100	196600
8	210200	182200	167900	151200	136600	144200	163600	213000	236100	227700	213600	196000
9	209600	182100	167400	150600	136200	144900	165500	215300	236100	227400	213300	195200
10	208900	181600	166800	150000	135900	145500	167100	217200	236100	226900	212500	194400
11	208100	181200	166400	149900	136200	146100	168900	219000	236100	226600	211800	193800
12	207300	180700	165800	149500	136500	146700	170800	220700	236000	226200	211300	193300
13	206600	180200	165200	148900	138200	147700	172300	222200	236000	225700	210500	192800
14	205800	179800	164600	148300	138400	148400	174200	223700	236000	225600	209900	192200
15	205000	179300	164000	147800	139200	149200	176200	225200	235800	225100	209400	191700
16	204200	178800	163300	147100	139800	149700	178100	227100	235800	224700	209100	191400
17	203400	178400	162900	146500	139900	150200	180100	229100	235400	224200	208400	190800
18	202400	177900	162300	146400	140100	150900	181500	230200	235100	223900	207600	190400
19	201700	177400	161700	145800	140100	151200	182200	230600	234800	223400	206800	190400
20	200900	176800	161100	145200	139900	151100	183000	231400	234600	223100	206100	190600
21	200100	176400	160600	144500	139800	151700	184100	232100	234400	222600	205500	190600
22	199200	175900	160000	143900	140200	151900	185700	232700	233900	222200	205200	190400
23	198600	175400	159400	143100	140100	152500	187100	233200	233600	221700	204700	190300
24	197400	175000	158700	142600	140100	152700	188700	233700	233100	221200	204000	190000
25	196000	174200	158100	142400	139800	153100	190300	234200	232700	220700	203400	189600
26	194600	173900	157600	141800	139600	153400	192200	234400	232400	220400	202700	189500
27	193300	173300	157000	141200	139500	153900	194400	234400	232100	220000	202100	189500
28	191900	172500	156400	140900	139100	154300	196300	234400	231700	219500	201400	189300
29	190400	172200	155600	140400	---	154600	198600	234200	231400	219000	201100	189000
30	189200	171700	155200	139800	---	155200	201700	234200	231100	218700	200800	188700
31	187900	---	154600	139400	---	155800	---	234600	---	218200	200100	---
MAX	215300	187400	171100	154300	140200	155800	201700	234600	236100	230600	217700	199200
MIN	187900	171700	154600	139400	135900	139400	156600	203200	231100	218200	200100	188700
a	4651.7	4641.3	4630.0	4619.6	4619.4	4630.8	4660.4	4680.3	4678.2	4670.5	4659.4	4652.2
b	-27800	-16200	-17100	-15200	-300	+16700	+45900	+32900	-3500	-12900	-18100	-11400

CAL YR 1986 b +50600

WTR YR 1987 b -27000

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

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11277300 CHERRY CREEK BELOW CHERRY VALLEY DAM, NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'04", long 119°54'59", in SE 1/4 SW 1/4 sec.5, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 0.7 mi downstream from Cherry Valley Dam, 3.5 mi upstream from Eleanor Creek, 6.7 mi north of Early Intake, and 7.2 mi west of Hetch Hetchy.

DRAINAGE AREA.--118 mi².

PERIOD OF RECORD.--November 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,337.08 ft above National Geodetic Vertical Datum of 1929 (levels by city and county of San Francisco).

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Cherry Lake (station 11277200) 0.7 mi upstream. Diversion between Lake Eleanor (station 11277500) and Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake to Dion R. Holm powerplant began Aug. 1, 1960. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE (since diversion to Dion R. Holm powerplant).--27 years (water years 1961-87), 35.0 ft³/s, 25,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,210 ft³/s, July 10, 1974, gage height, 10.53 ft; minimum daily, 1.6 ft³/s, Apr. 10, 1957, Oct. 12, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 424 ft³/s, May 4, gage height, 5.87 ft; minimum daily, 2.8 ft³/s, Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	6.1	5.6	6.2	6.1	5.8	5.8	5.5	177	169	171	171
2	4.9	6.3	5.8	6.1	6.1	5.8	5.8	5.5	159	171	171	171
3	2.9	6.4	6.4	6.4	6.1	5.8	6.0	5.5	102	171	171	170
4	2.8	6.3	6.4	6.5	6.1	5.8	5.8	89	57	171	171	170
5	4.4	6.1	6.4	6.1	6.1	6.3	5.8	75	57	171	171	170
6	4.9	6.1	6.5	6.1	6.1	6.5	5.8	62	79	172	171	170
7	4.5	6.1	6.3	6.1	6.1	6.1	5.8	52	153	172	171	170
8	3.7	6.1	6.2	6.1	5.8	6.1	5.8	28	110	172	171	170
9	3.7	6.1	6.1	6.1	5.9	6.1	5.8	6.5	80	172	171	169
10	3.7	6.1	6.1	6.1	5.7	6.1	5.8	6.4	112	172	171	169
11	3.7	6.1	6.1	6.1	5.7	6.1	5.8	6.4	131	172	172	169
12	3.7	6.1	6.1	6.1	6.2	6.2	5.8	6.3	124	172	172	169
13	3.7	6.1	6.1	6.1	12	6.7	5.8	6.3	123	172	172	169
14	3.7	6.1	6.1	6.1	7.0	6.6	6.3	6.3	122	172	172	169
15	3.7	6.1	6.1	6.1	6.6	6.4	6.3	6.4	122	172	172	169
16	3.7	6.1	6.1	6.1	6.3	6.6	6.1	6.4	132	172	172	169
17	3.7	6.1	6.1	6.1	6.1	6.4	6.1	6.4	148	172	172	169
18	3.7	6.1	6.1	6.1	6.1	6.5	6.1	6.4	156	171	172	91
19	3.7	6.1	6.1	6.1	5.9	6.4	6.1	9.9	156	171	172	15
20	3.7	6.1	6.1	6.1	5.8	6.4	6.0	14	162	171	172	15
21	3.7	6.1	6.1	6.3	5.8	6.5	5.8	14	167	171	171	15
22	5.0	6.1	6.1	6.4	5.8	6.5	5.8	14	167	171	171	15
23	6.1	6.1	6.1	6.4	5.8	6.7	5.8	14	167	171	171	10
24	6.1	6.1	6.1	6.5	5.8	6.4	5.8	14	167	171	171	12
25	6.1	6.1	6.1	6.2	5.8	6.2	5.4	15	167	171	171	14
26	6.1	6.1	6.1	6.1	5.8	6.1	5.4	15	167	171	171	14
27	6.1	6.1	6.1	5.9	5.8	6.0	5.5	115	167	171	171	14
28	6.1	6.1	6.1	6.3	5.8	5.9	5.5	177	167	171	171	14
29	6.1	6.1	6.1	6.1	---	5.9	5.5	177	167	171	171	15
30	6.1	6.1	6.1	6.1	---	5.8	5.6	177	167	171	171	15
31	6.1	---	6.1	6.1	---	5.8	---	177	---	171	171	---
TOTAL	146.1	183.7	189.9	191.2	174.2	192.5	174.7	1319.2	4132	5311	5311	3142
MEAN	4.71	6.12	6.13	6.17	6.22	6.21	5.82	42.6	138	171	171	105
MAX	10	6.4	6.5	6.5	12	6.7	6.3	177	177	172	172	171
MIN	2.8	6.1	5.6	5.9	5.7	5.8	5.4	5.5	57	169	171	10
AC-FT	290	364	377	379	346	382	347	2620	8200	10530	10530	6230

CAL YR 1986 TOTAL 8356.0 MEAN 22.9 MAX 660 MIN 2.8 AC-FT 16570
WTR YR 1987 TOTAL 20467.5 MEAN 56.1 MAX 177 MIN 2.8 AC-FT 40600

SAN JOAQUIN RIVER BASIN

11277500 LAKE ELEANOR NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'27", long 119°52'48", in SE 1/4 NW 1/4 sec.3, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, 710 ft from left bank on upstream side of dam on Eleanor Creek, 1.7 mi upstream from Miguel Creek, and 5.5 mi northwest of Hetch Hetchy.

DRAINAGE AREA.--78.1 mi².

PERIOD OF RECORD.--June 1918 to current year. Prior to October 1930, published in WSP 1315-A. Published as "near Sequoia" 1919-20.

REVISED RECORDS.--WSP 1445: 1938(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.39 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1927, nonrecording gage on upstream side of dam at same site and datum.

REMARKS.--Reservoir is formed by multiple-arch dam completed in 1918; storage began June 23, 1918. Usable capacity, 26,110 acre-ft between gage heights 4,620.9 ft, natural outlet of old lake, and 4,660.0 ft, top of 5-ft flashboards. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of Tuolumne River basin.

COOPERATION.--Periodic observations of gage height were provided by city and county of San Francisco.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,000 acre-ft, Dec. 11, 1937, from capacity table then in use, gage height, 4,663.4 ft; no usable contents at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 27,300 acre-ft, May 11, gage height, 4,661.2 ft; minimum, 950 acre-ft, Jan. 23-25, gage height, 4,626.9 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Provided by San Francisco Public Utilities Commission, dated May 1941)

4,608	0	4,620	36	4,628	1,480	4,646	13,500
4,610	6	4,622	49	4,630	2,450	4,650	17,000
4,612	12	4,624	92	4,632	3,580	4,655	21,500
4,614	18	4,625	211	4,635	5,270	4,660	26,100
4,616	24	4,626	550	4,638	7,330	4,663	29,100
4,618	27	4,627	996	4,642	10,300		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18400	18900	11200	2900	1140	1620	3630	24700	26800	26700	25200	23500
2	18500	18900	10900	2680	1140	1580	4080	25000	26900	26700	25100	23500
3	18600	18900	10500	2560	1140	1620	4650	25300	27000	26600	25100	23400
4	18700	18900	10300	2400	1140	1720	4930	25600	26900	26600	25000	23400
5	18700	18900	9980	2260	1140	2110	5100	26000	26800	26500	25000	23400
6	18800	18800	9660	2110	1090	2510	5480	26300	26800	26500	24900	23300
7	18800	18800	9420	2010	1090	2620	5960	26500	26900	26500	24900	23300
8	18800	18800	9180	1870	1090	2560	6580	26700	26900	26400	24800	23200
9	18800	18800	8870	1770	1140	2510	7260	26900	26900	26400	24800	23200
10	18900	18600	8640	1620	1240	2450	8020	27200	26900	26300	24800	23100
11	18900	18200	8430	1530	1480	2350	8710	27300	26900	26300	24700	23100
12	18900	17800	8160	1480	2110	2350	9500	27100	26900	26300	24600	23000
13	18900	17300	7880	1380	3240	2450	10100	26900	26900	26200	24600	22900
14	18900	16800	7610	1330	3580	2560	11000	26900	26800	26200	24500	22900
15	18900	16500	7330	1290	3630	2510	11900	27000	26800	26100	24400	22600
16	18900	16100	7060	1190	3630	2510	12800	26900	26800	26100	24400	22200
17	18900	15800	6780	1140	3460	2560	13700	26900	26800	25900	24400	21900
18	18900	15300	6510	1090	3350	2620	14500	26800	26800	25900	24300	21400
19	18900	15000	6230	1040	3180	2680	15000	26700	26800	25900	24200	21100
20	18900	14700	5960	1040	2900	2560	15400	26700	26800	25900	24200	20800
21	19000	14300	5610	996	2620	2450	16000	26700	26800	25800	24100	20600
22	19000	14000	5340	996	2560	2450	16600	26700	26900	25800	24000	20400
23	19000	13600	5100	950	2260	2400	17400	26600	26900	25600	24000	20200
24	19000	13300	4870	950	2110	2450	18200	26400	26900	25600	23900	20100
25	19000	13000	4590	950	2010	2450	19100	26200	26900	25600	23900	19800
26	19000	12700	4370	996	1820	2510	20100	26100	26900	25500	23800	19600
27	19000	12400	4140	996	1720	2620	21000	26100	26900	25500	23800	19500
28	19000	12000	3860	1090	1670	2730	22000	26300	26900	25400	23700	19400
29	19000	11700	3630	1090	---	2840	22800	26400	26800	25300	23700	19200
30	18900	11400	3350	1090	---	3070	24000	26500	26800	25300	23600	19100
31	18900	---	3070	1140	---	3350	---	26700	---	25200	23600	---
MAX	19000	18900	11200	2900	3630	3350	24000	27300	27000	26700	25200	23500
MIN	18400	11400	3070	950	1090	1580	3630	24700	26800	25200	23600	19100
a	4652.1	4643.4	4631.1	4627.3	4628.4	4631.6	4657.7	4660.6	4660.7	4659.0	4657.3	4652.4
b	+500	-7500	-8330	-1930	+530	+1680	+20650	+2700	+100	-1600	-1600	-4500

CAL YR 1986 b -1070

WTR YR 1987 b +700

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

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11278000 ELEANOR CREEK NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'09", long 119°52'52", in NW 1/4 SW 1/4 sec.3, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on right bank 0.5 mi downstream from Lake Eleanor Dam, 1.1 mi upstream from Miguel Creek, and 5.5 mi northwest of Hetch Hetchy.

DRAINAGE AREA.--78.4 mi².

PERIOD OF RECORD.--October 1909 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Sequoia" 1910-18.

REVISED RECORDS.--WSP 1315-A: 1923(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,500 ft above National Geodetic Vertical Datum of 1929, from topographic map. November 1909 to November 1915, nonrecording gage and water-stage recorder at site 1 mi upstream at different datum.

REMARKS.--Estimated daily discharges: May 6-19. Records good except those for estimated daily discharges and for Feb. 11 to Apr. 14, which are fair. Flow regulated by Lake Eleanor (station 11277500) 0.5 mi upstream beginning in 1918. Diversion from Lake Eleanor to Cherry Lake began in March 1960. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE (prior to diversion to Cherry Lake).--50 years (water years 1910-59), 223 ft³/s, 161,400 acre-ft/yr; 28 years (water years 1960-87), 90.4 ft³/s, 65,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s, Nov. 19, 1950, gage height, 14.95 ft, from rating curve extended above 1,600 ft³/s on basis of slope-area measurements at gage heights 9.94 and 12.24 ft; no flow at times in 1910, 1930-31, 1933, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 538 ft³/s, May 13, gage height, 4.42 ft; minimum daily, 5.0 ft³/s, Apr. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	7.2	7.3	7.2	6.7	6.9	8.1	42	14	18	18	19
2	6.7	7.2	7.2	7.2	6.3	7.0	6.7	64	35	18	18	19
3	6.9	7.2	7.2	7.2	6.6	6.6	5.2	78	87	18	18	19
4	7.2	7.2	7.2	7.2	6.8	7.2	5.7	90	122	18	18	19
5	7.2	7.2	7.2	7.1	7.2	8.7	6.8	104	127	18	18	19
6	7.2	7.2	7.2	6.8	7.2	8.4	6.6	137	72	18	18	19
7	7.2	7.2	7.0	6.7	7.2	6.9	6.9	152	38	18	18	19
8	7.2	7.2	6.7	6.7	7.2	6.7	6.6	179	72	18	18	19
9	7.2	7.2	6.7	6.7	6.6	6.1	6.3	190	92	18	18	19
10	7.2	7.2	7.4	6.7	6.3	5.7	6.8	214	59	18	18	19
11	6.8	7.2	7.4	6.7	6.5	5.9	6.7	330	48	18	18	19
12	6.7	7.2	7.2	6.7	7.8	6.2	5.9	448	54	18	18	19
13	6.7	7.2	7.2	6.7	14	7.2	5.1	444	55	18	18	19
14	6.7	7.2	7.2	7.3	7.2	6.3	5.0	305	55	19	18	19
15	6.5	6.9	7.2	7.6	7.4	6.9	5.6	202	55	19	18	19
16	6.3	6.7	7.2	7.4	6.8	7.7	6.2	279	45	19	20	19
17	6.3	6.7	7.2	6.7	6.7	6.5	6.3	325	28	19	20	19
18	6.8	6.7	7.2	6.7	6.5	6.1	6.3	230	22	19	20	18
19	7.2	6.7	7.2	6.7	6.3	5.9	6.3	187	22	19	19	16
20	7.2	6.7	7.0	6.7	6.3	5.9	6.6	166	13	19	19	16
21	7.2	6.7	6.8	6.7	6.3	6.1	6.7	164	6.7	19	19	16
22	7.2	6.3	6.7	6.7	6.3	6.7	6.7	158	6.7	19	19	16
23	7.2	6.3	7.2	6.7	6.5	7.3	6.7	159	6.7	19	19	16
24	7.2	7.3	7.4	6.8	6.5	6.9	6.7	162	6.7	19	19	21
25	7.2	7.6	7.2	6.8	6.8	6.7	6.0	164	6.7	19	19	19
26	7.2	7.6	7.2	7.1	6.8	6.8	5.3	162	6.7	19	19	16
27	7.2	7.6	7.2	7.0	6.5	7.2	5.3	76	6.7	19	19	16
28	7.2	7.6	7.2	7.7	6.9	7.2	5.6	14	6.7	19	19	16
29	7.2	7.6	7.2	7.6	---	7.3	5.6	14	6.7	19	19	16
30	7.2	7.6	7.2	8.0	---	7.6	10	14	13	19	19	16
31	7.2	---	7.2	7.0	---	7.6	---	14	---	18	19	---
TOTAL	221.4	213.4	221.6	216.8	196.2	212.2	190.3	5267	1188.3	575	577	541
MEAN	7.14	7.11	7.15	6.99	7.01	6.85	6.34	170	39.6	18.5	18.6	18.0
MAX	11	7.6	7.4	8.0	14	8.7	10	448	127	19	20	21
MIN	6.3	6.3	6.7	6.7	6.3	5.7	5.0	14	6.7	18	18	16
AC-FT	439	423	440	430	389	421	377	10450	2360	1140	1140	1070

CAL YR 1986 TOTAL 83056.4 MEAN 228 MAX 3870 MIN 4.7 AC-FT 164700
WTR YR 1987 TOTAL 9620.2 MEAN 26.4 MAX 448 MIN 5.0 AC-FT 19080

SAN JOAQUIN RIVER BASIN

1278200 CHERRY CREEK CANAL NEAR EARLY INTAKE, CA

LOCATION.--Lat 37°53'36", long 119°57'17", in SW 1/4 SW 1/4 sec.36, T.1 N., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 1.3 mi northeast of Early Intake and 10 mi southwest of Hetch Hetchy Reservoir.

PERIOD OF RECORD.--April 1956 to May 1971, July 1987 to September 1987.

GAGE.--Water-stage recorder and concrete canal. Elevation of gage is 2,700 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from left bank of Cherry Creek in NW 1/4 SW 1/4 sec.31, T.1 N., R.19 E., to supplement Tuolumne River flows exported to city of San Francisco via the Hetch Hetchy Aqueduct. Canal was originally constructed in 1915 to provide flow for domestic use and power development at Early Intake powerplant during initial construction of Hetch Hetchy Project facilities.

AVERAGE DISCHARGE.--14 years (water years 1957-70), 53.6 ft³/s, 38,830 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 194 ft³/s, July 30, 1959; no flow at times in 1964, 1969, 1971, and 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	158	158	159
2									---	159	158	159
3									---	160	158	159
4									---	160	158	159
5									---	160	158	158
6									---	160	159	158
7									---	160	159	158
8									---	160	158	158
9									---	161	158	158
10									150	161	158	158
11									156	160	159	158
12									156	160	159	158
13									156	160	159	158
14									156	160	159	158
15									156	160	159	158
16									156	160	159	158
17									156	159	159	158
18									156	159	159	66
19									156	159	159	0
20									157	159	158	0
21									156	159	159	0
22									156	159	159	0
23									156	158	159	0
24									156	158	159	0
25									156	158	159	0
26									156	158	159	0
27									156	158	159	0
28									156	158	159	0
29									156	158	159	0
30									156	158	159	0
31									---	158	159	---
TOTAL									---	4935	4921	2756
MEAN									---	159	159	91.9
MAX									---	161	159	159
MIN									---	158	158	0
AC-FT									---	9790	9760	5470

SAN JOAQUIN RIVER BASIN

11278300 CHERRY CREEK NEAR EARLY INTAKE, CA

LOCATION.--Lat 37°53'40", long 119°57'42", in NW 1/4 SE 1/4 sec.35, T.1 N., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 1.2 mi upstream from mouth, 1.3 mi north of Early Intake, and 10.3 mi southwest of Hetch Hetchy.

DRAINAGE AREA.--226 mi².

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,272.00 ft above National Geodetic Vertical Datum of 1929 (levels by city and county of San Francisco).

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Cherry Lake (station 11277200) 10 mi upstream and Lake Eleanor (station 11277500) 9.8 mi upstream. Diversion from Cherry Lake to Dion R. Holm powerplant began Aug. 1, 1960. Water is returned to creek 1.2 mi below station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE (since diversion to Dion R. Holm powerplant).--27 years (water years 1961-87), 147 ft³/s, 106,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft³/s, Feb. 1, 1963, gage height, 14.50 ft, from rating curve extended above 4,600 ft³/s; minimum daily, 0.30 ft³/s, Apr. 5, 6, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 534 ft³/s, May 4, gage height, 5.76 ft; minimum daily, 10 ft³/s, Oct. 4, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	13	14	14	15	16	20	39	46	34	39	41
2	18	13	13	15	14	16	20	72	45	37	39	40
3	12	14	14	17	14	15	23	89	45	37	39	40
4	10	14	14	25	14	15	23	178	28	37	39	40
5	11	14	14	17	14	22	23	118	35	37	39	40
6	12	14	17	15	14	37	21	44	27	38	39	40
7	11	14	15	15	13	30	20	49	39	38	38	40
8	11	14	14	14	13	26	20	52	31	38	38	40
9	11	14	14	14	14	23	19	42	26	38	38	39
10	11	14	14	14	15	20	19	65	23	39	39	39
11	11	14	14	14	16	19	18	181	27	40	40	39
12	11	13	14	14	16	19	18	299	27	40	40	39
13	11	13	14	14	102	35	16	295	26	40	40	39
14	11	13	14	14	39	31	16	156	25	40	40	39
15	11	13	14	14	28	35	16	53	25	40	40	39
16	10	13	14	16	25	32	18	130	25	40	41	38
17	11	13	14	19	21	32	19	176	24	40	41	38
18	11	13	14	15	19	34	19	81	25	41	41	93
19	11	13	15	14	18	31	19	42	25	41	41	34
20	11	13	15	15	17	27	19	42	26	40	41	32
21	11	13	14	14	17	27	19	40	24	40	40	31
22	11	13	14	15	17	26	18	31	24	40	40	31
23	13	13	14	15	17	28	18	29	24	40	40	31
24	14	13	14	16	16	30	18	32	23	40	40	25
25	13	14	14	16	17	28	18	35	23	40	40	37
26	13	14	14	15	16	26	16	35	23	40	40	30
27	13	14	14	15	16	25	16	41	23	39	39	30
28	13	14	14	19	16	24	16	46	23	39	39	30
29	13	15	14	16	---	23	15	46	23	39	39	30
30	13	14	14	15	---	22	19	46	24	39	40	30
31	13	---	14	15	---	21	---	46	---	39	40	---
TOTAL	390	406	439	480	573	795	559	2630	834	1210	1229	1134
MEAN	12.6	13.5	14.2	15.5	20.5	25.6	18.6	84.8	27.8	39.0	39.6	37.8
MAX	34	15	17	25	102	37	23	299	46	41	41	93
MIN	10	13	13	14	13	15	15	29	23	34	38	25
AC-FT	774	805	871	952	1140	1580	1110	5220	1650	2400	2440	2250
CAL YR 1986	TOTAL	112608	MEAN 309	MAX 5280	MIN 10	AC-FT 223400						
WTR YR 1987	TOTAL	10679	MEAN 29.3	MAX 299	MIN 10	AC-FT 21180						

SAN JOAQUIN RIVER BASIN

11278400 CHERRY CREEK BELOW DION R. HOLM POWERPLANT, NEAR MATHER, CA

LOCATION.--Lat 37°53'24", long 119°58'08", in NE 1/4 NW 1/4 sec.2, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 600 ft upstream from mouth, 0.5 mi downstream from powerplant, 0.8 mi northwest of Early Intake, and 6.2 mi west of Mather.

DRAINAGE AREA.--234 mi².

PERIOD OF RECORD.--March 1963 to current year. Prior to October 1965, published as "below Cherry powerhouse, near Mather."

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,133.50 ft above National Geodetic Vertical Datum of 1929 (levels by city and county of San Francisco).

REMARKS.--Estimated daily discharges: Oct. 1-23, Oct. 25 to June 18. Records good except those for period of estimated discharge, which are fair. Flow regulated by Cherry Lake (station 11277200) 11 mi upstream and Lake Eleanor (station 11277500) 10 mi upstream. Flow diverted, at times, into Cherry Creek Canal 2 mi upstream from station for domestic use and to supplement flow to Hetch Hetchy aqueduct. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--24 years, 693 ft³/s, 502,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft³/s, Apr. 11, 1982, gage height, 15.36 ft, from rating curve extended above 4,400 ft³/s on basis of combined peak flow for Cherry Creek near Early Intake (station 11278300) and Dion R. Holm powerplant; minimum daily, 1.6 ft³/s, June 4, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 745 ft³/s, Oct. 24, gage height, 7.87 ft; minimum daily, 24 ft³/s, June 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	467	40	462	363	200	83	89	107	120	66	48	244
2	451	224	463	409	377	84	89	141	87	68	49	243
3	445	463	464	409	329	82	92	158	87	79	189	168
4	445	463	463	293	289	83	91	247	74	46	218	49
5	445	457	463	409	282	109	88	213	88	43	221	48
6	444	469	451	408	310	148	122	113	40	76	212	48
7	443	464	106	401	369	98	120	86	53	77	208	48
8	445	463	465	404	82	65	140	111	90	81	48	232
9	446	100	463	398	303	99	90	88	79	80	47	230
10	444	395	464	380	285	94	90	109	70	80	221	272
11	444	462	464	200	294	95	87	245	74	50	210	233
12	446	461	464	327	295	119	86	367	67	49	209	115
13	445	464	463	378	387	139	85	362	38	84	206	48
14	445	468	464	378	399	101	85	228	38	80	213	227
15	445	462	465	378	95	106	85	121	69	79	49	227
16	442	462	465	382	93	109	134	177	70	88	49	246
17	442	462	459	385	298	218	127	210	70	80	242	245
18	443	461	464	203	298	132	108	145	69	49	210	280
19	444	462	464	377	299	202	104	107	54	50	210	108
20	446	462	465	378	299	386	167	101	31	78	210	40
21	446	460	463	378	383	93	113	73	28	83	207	220
22	445	463	465	380	86	90	101	71	60	78	49	220
23	445	461	465	381	296	109	92	73	57	76	48	219
24	576	462	464	385	296	133	86	71	52	78	205	211
25	700	462	463	200	298	119	86	43	55	49	210	227
26	727	463	463	381	294	102	87	72	57	48	212	106
27	700	462	463	380	296	101	101	136	29	99	209	39
28	700	462	465	384	381	91	83	110	24	80	206	218
29	700	463	465	403	---	91	85	106	58	78	49	228
30	644	462	465	363	---	96	87	54	60	81	49	234
31	604	---	464	380	---	97	---	54	---	77	206	---
TOTAL	15604	12784	14006	11275	7913	3674	3000	4299	1848	2210	4919	5273
MEAN	503	426	452	364	283	119	100	139	61.6	71.3	159	176
MAX	727	469	465	409	399	386	167	367	120	99	242	280
MIN	442	40	106	200	82	65	83	43	24	43	47	39
AC-FT	30950	25360	27780	22360	15700	7290	5950	8530	3670	4380	9760	10460
CAL YR 1986	TOTAL	329020	MEAN 901	MAX 6950	MIN 40	AC-FT 652600						
WTR YR 1987	TOTAL	86805	MEAN 238	MAX 727	MIN 24	AC-FT 172200						

SAN JOAQUIN RIVER BASIN

11281000 SOUTH FORK TUOLUMNE RIVER NEAR OAKLAND RECREATION CAMP, CA

LOCATION.--Lat 37°49'18", long 120°00'43", in SE 1/4 SE 1/4 sec.29, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 75 ft downstream from highway bridge on Big Oak Flat Road, 0.5 mi southwest of Oakland Recreation Camp, and 0.6 mi upstream from Middle Tuolumne River.

DRAINAGE AREA.--87.0 mi².

PERIOD OF RECORD.--March 1923 to current year.

REVISED RECORDS.--WSP 1445: 1923, 1925(M), 1926-28, 1929-30(M), 1932(M), 1935-36(M), 1937-38, 1943(M), 1945(M).
WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,800 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 22, 1931, at site 50 ft upstream at same datum. Nov. 22, 1931, to July 19, 1977, at present site, datum 1.00 ft higher.

REMARKS.--Estimated daily discharges: Dec. 4-10, Jan. 15-18. Records good. No diversion above station. One small recreation reservoir (capacity unknown) is located approximately 3.5 mi upstream. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--64 years, 98.5 ft³/s, 71,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft³/s, Dec. 23, 1955, gage height, 11.9 ft, from floodmarks, present datum, from rating curve extended above 3,300 ft³/s on basis of slope-area measurements at gage heights 9.08 and 11.9 ft; minimum, 0.3 ft³/s, Aug 23, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1115	*411	*5.13				

Minimum daily, 1.6 ft³/s, Aug. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	10	12	13	16	20	46	82	19	6.6	3.5	2.9
2	15	11	12	13	15	21	47	61	18	6.7	3.4	3.2
3	13	11	15	16	15	20	52	58	17	7.0	3.3	3.3
4	13	11	14	42	15	20	56	58	16	6.1	3.6	3.3
5	12	11	13	21	14	64	54	62	15	5.8	2.5	3.3
6	12	11	17	17	14	170	50	63	15	5.0	2.8	3.0
7	12	11	18	17	14	94	48	57	18	4.9	2.8	3.0
8	11	11	15	14	14	66	52	52	21	4.8	2.2	3.1
9	11	11	13	13	15	58	56	50	21	4.8	2.2	2.9
10	11	11	12	14	16	53	69	73	20	4.8	3.3	3.0
11	11	11	12	14	20	44	73	62	17	5.0	3.4	2.8
12	11	11	12	14	29	38	69	55	14	5.2	3.0	2.9
13	12	11	12	15	260	54	70	44	13	5.3	2.6	3.0
14	11	11	12	11	95	59	77	38	12	7.4	2.5	3.2
15	11	11	12	7.8	63	59	80	33	12	6.8	2.7	3.3
16	11	11	11	7.6	51	57	82	44	13	4.7	1.6	3.3
17	11	11	12	9.6	35	54	86	47	12	3.7	1.9	3.2
18	11	11	11	14	29	54	88	36	12	3.9	5.0	3.1
19	11	11	11	15	25	53	61	32	11	5.0	2.7	3.0
20	11	11	11	14	23	48	57	33	11	4.6	2.7	2.9
21	11	11	19	14	22	45	66	38	10	4.4	2.6	2.9
22	11	10	14	14	22	41	80	35	10	4.4	2.7	2.9
23	11	11	13	14	22	44	79	32	9.8	4.5	2.7	3.0
24	11	12	13	15	18	43	78	32	9.3	4.6	2.7	2.9
25	11	11	12	16	22	41	78	31	8.8	4.4	2.7	3.0
26	11	11	12	16	20	40	83	30	7.9	4.3	2.7	3.1
27	11	11	13	16	20	41	81	28	6.5	4.0	2.7	3.2
28	11	11	11	19	20	42	80	27	5.0	3.8	2.5	3.2
29	11	12	13	20	---	42	79	25	6.8	3.6	2.5	3.1
30	11	14	11	19	---	44	96	23	6.6	3.8	2.6	3.1
31	10	---	13	18	---	46	---	21	---	4.1	2.8	---
TOTAL	354	333	401	483.0	944	1575	2073	1362	387.7	154.0	86.9	92.1
MEAN	11.4	11.1	12.9	15.6	33.7	50.8	69.1	43.9	12.9	4.97	2.80	3.07
MAX	15	14	19	42	260	170	96	82	21	7.4	5.0	3.3
MIN	10	10	11	7.6	14	20	46	21	5.0	3.6	1.6	2.8
AC-FT	702	661	795	958	1870	3120	4110	2700	769	305	172	183
CAL YR 1986	TOTAL	58004.8	MEAN	159	MAX	3620	MIN	6.4	AC-FT	115100		
WTR YR 1987	TOTAL	8245.7	MEAN	22.6	MAX	260	MIN	1.6	AC-FT	16360		

SAN JOAQUIN RIVER BASIN

11282000 MIDDLE TUOLUMNE RIVER AT OAKLAND RECREATION CAMP, CA

LOCATION.--Lat 37°49'42", long 120°00'38", in SW 1/4 NW 1/4 sec.28, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 1,000 ft downstream from Oakland Recreation Camp, 0.8 mi upstream from South Fork Tuolumne River, and 2.7 mi east of Buck Meadows Post Office.

DRAINAGE AREA.--73.5 mi².

PERIOD OF RECORD.--October 1916 to current year. Monthly discharge only for October and November 1916, published in WSP 1315-A. Published as Middle Fork of Tuolumne River near Buck Meadows 1917-32 and as "near Buck Meadows" 1933-40.

REVISED RECORDS.--WSP 1395: 1919(M), 1938(M), 1951(P). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Jan. 15-17, period of ice effect. Records good. No regulation but small diversion above station for irrigation. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--71 years, 78.9 ft³/s, 57,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,920 ft³/s, Dec. 23, 1955, gage height, 11.75 ft from flood profile, 11.05 ft from floodmarks inside gage well, from rating curve extended above 3,000 ft³/s on basis of slope-area measurement of peak flow; no flow at times in 1924, 1931, 1934, 1961, and 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 10	0415	*250	*3.52				

Minimum daily, 0.05 ft³/s, Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	4.7	4.6	5.7	7.3	9.9	24	106	29	5.8	1.0	.26
2	7.3	4.6	4.8	6.0	7.3	10	25	79	26	5.2	.95	.72
3	6.9	4.5	5.2	7.9	7.3	10	33	77	23	4.9	.86	1.4
4	6.2	4.5	5.0	13	7.1	10	30	94	22	4.6	.81	1.5
5	5.8	4.5	5.0	8.4	6.7	29	26	99	20	4.4	.65	1.5
6	5.6	4.5	6.3	7.4	6.8	62	27	97	19	4.2	.45	1.7
7	5.3	4.4	6.8	7.3	7.0	43	30	88	22	3.7	.36	1.6
8	5.1	4.5	5.7	5.8	7.0	33	33	86	25	3.4	.33	1.5
9	5.0	4.5	4.5	5.0	7.3	27	37	113	34	3.2	.39	1.4
10	4.9	4.6	4.3	5.7	9.0	24	44	154	31	3.0	.43	1.2
11	4.9	4.8	4.7	6.3	14	21	54	118	23	2.9	.28	.92
12	5.0	4.9	5.2	5.9	16	20	60	94	19	2.7	.47	.85
13	5.0	4.8	5.4	6.6	95	43	61	84	15	2.5	.47	.84
14	5.0	4.7	5.2	4.8	52	35	65	69	15	2.3	.47	.77
15	4.9	4.6	4.9	3.7	31	33	74	61	18	2.1	.54	.90
16	4.8	4.7	4.9	3.5	20	28	79	101	15	1.9	.70	1.0
17	4.8	4.7	5.0	4.5	17	27	86	104	14	1.7	.09	.91
18	4.8	4.8	5.2	6.1	15	27	91	71	13	1.7	.42	.79
19	4.8	4.9	5.4	6.3	12	24	62	56	11	1.7	.26	.86
20	4.9	5.0	6.2	5.7	12	19	57	58	11	1.7	.11	.77
21	5.0	5.0	5.6	5.8	11	23	68	60	10	1.8	.09	.72
22	5.0	4.9	5.0	6.1	11	18	87	56	9.6	2.0	.19	.71
23	5.5	5.0	5.7	6.2	11	23	91	64	9.1	1.9	.19	.57
24	5.0	4.8	5.4	6.9	9.1	19	92	52	8.4	1.8	.47	.53
25	5.0	5.0	4.9	7.9	11	19	96	45	7.8	1.7	.22	.48
26	4.9	4.8	5.1	7.4	9.5	19	105	43	7.3	1.5	.05	.54
27	4.8	4.6	5.8	7.3	10	19	105	43	6.5	1.4	.10	.43
28	4.8	4.3	4.7	9.9	10	20	111	39	6.3	1.4	.15	.32
29	4.8	4.9	4.9	9.1	---	20	112	37	6.1	1.3	.15	.37
30	4.7	5.3	4.6	8.2	---	21	129	35	6.0	1.2	.22	.27
31	4.7	---	5.1	7.9	---	23	---	32	---	1.1	.20	---
TOTAL	161.5	141.8	161.1	208.3	439.4	758.9	1994	2315	482.1	80.7	12.07	26.33
MEAN	5.21	4.73	5.20	6.72	15.7	24.5	66.5	74.7	16.1	2.60	.39	.88
MAX	7.3	5.3	6.8	13	95	62	129	154	34	5.8	1.0	1.7
MIN	4.7	4.3	4.3	3.5	6.7	9.9	24	32	6.0	1.1	.05	.26
AC-FT	320	281	320	413	872	1510	3960	4590	956	160	24	52

CAL YR 1986 TOTAL 46378.90 MEAN 127 MAX 1800 MIN 2.1 AC-FT 91990
WTR YR 1987 TOTAL 6781.20 MEAN 18.6 MAX 154 MIN .05 AC-FT 13450

SAN JOAQUIN RIVER BASIN

11283250 CLAVEY RIVER NEAR LONG BARN, CA

LOCATION.--Lat 38°04'36", long 120°00'37", in NW 1/4 NW 1/4 sec.33, T.3 N., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 10 ft upstream from Forest Service road bridge, 0.4 mi downstream from Trout Creek, and 7.0 mi east of town of Long Barn.

DRAINAGE AREA.--48.9 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder. Elevation of gage is 5,160 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1, Oct. 29 to Nov. 4, Nov. 26 to Mar. 16, July 7-14. Records good except those for periods of estimated discharge, which are poor. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	Unknown	e300	Unknown	May 15	2200	*418	*3.63

e Estimated on basis of peak flows recorded at nearby streams.

Minimum daily, 0.14 ft³/s, Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	1.5	1.3	1.8	5.0	18	111	164	41	4.3	.69	.21
2	7.6	1.5	1.3	2.5	7.0	18	135	115	36	3.8	.62	.24
3	6.8	1.5	1.4	4.5	7.7	19	143	107	33	3.5	.53	.25
4	5.6	1.5	1.4	7.0	7.6	20	109	135	29	3.3	.46	.25
5	4.9	1.4	1.5	4.5	7.5	120	103	135	26	3.3	.43	.26
6	4.7	1.4	1.7	3.2	7.4	190	125	143	24	3.2	.40	.27
7	4.3	1.4	1.9	2.4	8.0	110	151	123	31	3.1	.36	.26
8	4.3	1.3	1.6	2.0	8.3	90	180	147	36	3.0	.32	.25
9	4.0	1.3	1.5	2.1	8.8	70	185	163	27	2.9	.31	.24
10	3.8	1.3	1.3	2.3	10	66	190	166	24	2.7	.30	.24
11	3.3	1.6	1.3	2.4	15	56	190	146	21	2.5	.26	.24
12	2.9	1.4	1.4	2.2	25	55	180	127	18	2.3	.26	.24
13	2.9	1.3	1.5	2.6	210	100	170	118	14	2.1	.27	.25
14	2.6	1.2	1.5	2.2	54	80	200	108	14	2.0	.28	.25
15	2.6	1.2	1.4	2.2	36	62	223	143	15	1.8	.28	.24
16	2.6	1.2	1.3	2.0	30	48	223	173	15	1.7	.26	.24
17	2.6	1.2	1.4	2.6	26	65	230	123	15	1.6	.26	.23
18	2.6	1.2	1.4	3.5	23	82	192	95	14	1.5	.24	.22
19	2.5	1.2	1.5	3.2	20	64	124	76	13	1.6	.24	.20
20	2.5	1.3	1.6	3.0	18	52	146	69	12	1.6	.23	.19
21	2.5	1.5	1.5	3.3	18	49	171	107	12	1.7	.23	.18
22	2.5	1.5	1.4	3.7	18	50	184	105	9.4	1.7	.22	.17
23	2.2	1.5	1.6	4.2	16	50	172	88	7.8	1.6	.21	.16
24	2.2	1.4	1.5	4.8	14	48	171	74	7.0	1.5	.21	.17
25	2.2	1.3	1.4	5.0	16	48	182	61	5.9	1.4	.21	.17
26	2.0	1.3	1.5	4.4	14	53	205	56	5.5	1.3	.19	.17
27	1.9	1.2	1.7	4.4	16	65	227	53	5.2	1.2	.19	.16
28	1.9	1.2	1.4	6.8	17	70	186	49	5.0	1.1	.19	.14
29	1.8	1.3	1.6	5.6	---	76	213	47	4.9	.96	.18	.15
30	1.6	1.4	1.4	5.4	---	98	277	46	4.7	.85	.20	.16
31	1.7	---	1.5	5.2	---	108	---	44	---	.76	.20	---
TOTAL	103.9	40.5	45.7	111.0	663.3	2100	5298	3306	525.4	65.87	9.23	6.40
MEAN	3.35	1.35	1.47	3.58	23.7	67.7	177	107	17.5	2.12	.30	.21
MAX	8.3	1.6	1.9	7.0	210	190	277	173	41	4.3	.69	.27
MIN	1.6	1.2	1.3	1.8	5.0	18	103	44	4.7	.76	.18	.14
AC-FT	206	80	91	220	1320	4170	10510	6560	1040	131	18	13

WTR YR 1987 TOTAL 12275.22 MEAN 33.6 MAX 277 MIN .14 AC-FT 24350

11283350 REED CREEK NEAR LONG BARN, CA

LOCATION.--Lat 38°00'17", long 120°01'16", in NW 1/4 NE 1/4 sec.29, T.2 N., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 1.0 mi upstream from Niagara Creek and 8.7 mi southeast of town of Long Barn.

DRAINAGE AREA.--27.2 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder. Elevation of gage is 4,575 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 7 to Nov. 4, Nov. 12-16, Nov. 25 to Jan. 15. Records good except those for periods of estimated discharge, which are poor. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 175 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	0930	*222	*2.77	Mar. 5	1900	218	2.76

Minimum daily, 0.44 ft³/s, Sept. 23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	2.9	2.6	3.2	5.4	9.1	38	48	7.8	2.2	.84	.55
2	4.3	2.8	2.8	3.5	5.2	9.4	41	38	7.1	2.2	.80	.62
3	3.7	2.8	2.9	5.0	5.4	9.9	50	34	6.6	2.1	.75	.64
4	3.5	2.8	2.8	12	5.4	11	40	32	6.0	2.1	.70	.65
5	3.4	2.7	3.0	5.6	5.2	95	39	29	5.5	2.0	.68	.62
6	3.3	2.7	3.4	5.0	5.3	93	41	27	5.8	2.0	.64	.62
7	3.4	2.7	3.7	4.6	5.7	53	46	24	7.8	1.9	.61	.63
8	3.4	2.8	3.2	4.0	5.8	40	56	28	12	1.8	.61	.63
9	3.4	3.0	2.7	3.0	6.6	34	62	29	8.8	1.7	.60	.60
10	3.4	3.2	2.5	3.2	9.9	32	63	28	7.1	1.7	.60	.55
11	3.3	3.0	2.7	3.5	15	27	62	25	6.2	1.7	.58	.55
12	3.3	2.9	2.9	3.0	18	30	61	23	5.3	1.7	.54	.55
13	3.3	2.8	3.0	3.7	107	57	58	20	4.6	1.6	.54	.58
14	3.3	2.7	2.9	3.5	37	41	58	18	4.2	1.4	.56	.60
15	3.3	2.7	2.8	3.2	21	37	59	17	4.6	1.2	.60	.61
16	3.3	2.7	2.8	3.1	17	31	61	17	5.2	1.2	.62	.59
17	3.3	2.8	2.9	3.4	15	34	60	16	4.7	1.1	.60	.56
18	3.3	2.9	3.0	3.6	14	37	58	15	4.4	1.3	.56	.54
19	3.2	3.0	3.2	3.5	12	31	43	14	4.1	1.5	.53	.51
20	3.2	3.0	3.4	3.5	11	27	44	15	3.8	1.5	.52	.49
21	3.2	3.2	3.1	3.8	10	25	45	16	3.7	1.4	.54	.48
22	3.3	3.2	2.9	4.0	9.9	28	45	15	3.5	1.5	.53	.45
23	3.3	2.9	3.2	4.1	9.1	25	43	13	3.3	1.4	.52	.44
24	3.3	2.9	3.0	5.9	8.5	24	41	11	3.2	1.3	.52	.44
25	3.2	2.9	2.9	6.5	8.5	25	38	11	2.9	1.2	.52	.46
26	3.2	2.8	3.1	5.5	8.2	27	41	12	2.7	1.2	.50	.48
27	3.1	2.7	3.3	5.7	8.7	29	49	12	2.6	1.1	.49	.50
28	3.0	2.7	2.7	7.8	8.8	29	42	11	2.5	.99	.47	.50
29	3.0	2.7	2.9	6.0	---	31	41	9.8	2.5	.98	.46	.49
30	3.0	2.9	2.7	5.8	---	36	58	9.2	2.4	.94	.48	.49
31	3.0	---	3.0	5.4	---	38	---	8.4	---	.90	.52	---
TOTAL	103.7	85.8	92.0	143.6	398.6	1055.4	1483	625.4	150.9	46.81	18.03	16.42
MEAN	3.35	2.86	2.97	4.63	14.2	34.0	49.4	20.2	5.03	1.51	.58	.55
MAX	4.5	3.2	3.7	12	107	95	63	48	12	2.2	.84	.65
MIN	3.0	2.7	2.5	3.0	5.2	9.1	38	8.4	2.4	.90	.46	.44
AC-FT	206	170	182	285	791	2090	2940	1240	299	93	36	33

WTR YR 1987 TOTAL 4219.60 MEAN 11.6 MAX 107 MIN .44 AC-FT 8370

SAN JOAQUIN RIVER BASIN

11283500 CLAVEY RIVER NEAR BUCK MEADOWS, CA

LOCATION.--Lat 37°54'02", long 120°04'15", in SW 1/4 NE 1/4 sec.35, T.1 N., R.17 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 300 ft upstream from Forest Service Road bridge, 1.7 mi downstream from Quilty Creek, and 6 mi north of Buck Meadows Post Office.

DRAINAGE AREA.--144 mi².

PERIOD OF RECORD.--October 1959 to September 1983, October 1986 to September 1987.

GAGE.--Water-stage recorder. Elevation of gage is 2,374.08 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharge: Oct. 1-5, 7, 8, Nov. 8-16, Nov. 29 to Jan. 11, Jan. 21-24, 26-28. Records good except those for periods of estimated discharge, which are fair. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--25 years (water years 1960-83, 1987), 278 ft³/s, 201,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1960-83, 1987).--Maximum discharge, 19,400 ft³/s Jan. 13, 1980, gage height, 21.47 ft, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement at gage height 21.40 ft; minimum daily, 1.2 ft³/s Sept. 11, 12, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1045	*829	*7.81				
Minimum daily, 4.3 ft ³ /s, Sept. 23, 24.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	20	19	23	30	49	202	312	59	13	6.3	5.1
2	27	20	20	25	29	51	233	191	54	13	6.1	5.3
3	25	20	21	40	32	52	283	172	50	13	5.9	5.5
4	25	19	20	72	30	58	213	197	45	13	5.7	5.4
5	26	19	21	40	28	283	185	213	41	12	5.5	5.5
6	26	19	25	34	28	435	211	216	40	12	5.3	5.6
7	26	19	27	33	30	267	258	192	44	12	5.1	5.8
8	25	20	23	25	31	195	301	179	56	11	5.0	5.7
9	25	20	19	21	32	169	306	282	49	11	4.9	5.4
10	25	20	18	23	44	148	335	288	40	11	4.9	5.2
11	24	20	19	25	63	129	342	228	35	10	4.8	5.0
12	24	20	21	21	76	127	312	197	31	10	4.8	5.0
13	24	19	22	27	524	244	286	174	28	9.7	4.9	5.1
14	23	19	21	21	231	215	321	154	26	9.3	4.9	5.3
15	23	19	20	21	135	187	330	139	25	8.7	5.0	5.4
16	23	19	20	16	98	167	326	260	26	8.0	5.3	5.2
17	22	19	21	23	90	168	340	195	25	7.6	5.3	5.0
18	22	19	22	27	77	192	328	140	23	8.3	5.0	4.9
19	22	19	23	24	65	173	203	116	22	8.9	4.8	4.8
20	22	20	24	22	64	142	201	103	21	8.8	4.8	4.6
21	23	20	22	22	57	143	247	139	20	8.8	4.8	4.5
22	23	20	20	23	56	133	286	144	19	9.1	4.8	4.5
23	22	20	23	25	57	142	270	124	19	9.1	4.8	4.3
24	22	20	22	29	48	128	269	105	18	8.7	4.7	4.3
25	22	20	20	35	52	134	269	89	17	8.5	4.8	4.4
26	21	19	21	30	43	138	288	81	16	8.1	4.7	4.5
27	21	19	23	30	47	150	344	79	15	7.7	4.6	4.7
28	21	19	19	40	48	153	292	72	14	7.3	4.4	4.7
29	21	19	20	37	---	155	287	67	14	6.9	4.4	4.6
30	21	21	19	33	---	173	396	65	14	6.6	4.4	4.5
31	21	---	21	31	---	201	---	62	---	6.5	4.9	---
TOTAL	727	586	656	898	2145	5101	8464	4975	906	297.6	155.6	149.8
MEAN	23.5	19.5	21.2	29.0	76.6	165	282	160	30.2	9.60	5.02	4.99
MAX	30	21	27	72	524	435	396	312	59	13	6.3	5.8
MIN	21	19	18	16	28	49	185	62	14	6.5	4.4	4.3
AC-FT	1440	1160	1300	1780	4250	10120	16790	9870	1800	590	309	297

WTR YR 1987 TOTAL 25060.9 MEAN 68.7 MAX 524 MIN 4.3 AC-FT 49710

SAN JOAQUIN RIVER BASIN

11284400 BIG CREEK ABOVE WHITES GULCH, NEAR GROVELAND, CA

LOCATION.--Lat 37°50'31", long 120°11'02", in SW 1/4 NE 1/4 sec.23, T.1 S., R.16 E., Tuolumne County, Hydrologic Unit 18040009, on right bank 500 ft upstream from Whites Gulch and 2.5 mi east of Groveland.

DRAINAGE AREA.--16.4 mi².

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

REVISED RECORDS.--WDR CA-85-3: 1980-84(P).

GAGE.--Water-stage recorder. Datum of gage is 2,561.79 ft above National Geodetic Vertical Datum of 1929 (levels by Boise-Cascade Corp.).

REMARKS.--No estimated daily discharges. Records good. No storage or diversion above station. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--18 years, 10.1 ft³/s, 7,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft³/s, Feb. 17, 1986, gage height, 7.03 ft, from rating curve extended above 1,100 ft³/s on basis of slope-area measurement at gage height 6.51 ft; no flow many days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1964 reached a stage of 6.4 ft from floodmarks, discharge, 1,850 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	0945	*140	*3.48				

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	.07	.36	.75	1.7	.52	.03			
2			0	.10	.35	.74	1.5	.45	.03			
3			0	.93	.40	.69	1.8	.43	.02			
4			0	3.6	.35	.66	1.7	.40	.02			
5			0	.86	.31	7.7	1.5	.34	.02			
6			0	.46	.29	30	1.3	.31	.02			
7			0	.46	.29	9.2	1.2	.26	.02			
8			0	.32	.28	4.7	1.1	.25	.01			
9			0	.26	.29	3.2	1.1	.22	.01			
10			0	.22	.36	2.5	1.0	.16	.01			
11			0	.19	.81	2.1	.96	.15	0			
12			0	.17	1.3	1.9	.94	.13	0			
13			0	.17	69	12	.87	.11	0			
14			0	.17	12	11	.82	.09	0			
15			0	.16	6.3	25	.71	.07	0			
16			0	.15	4.7	12	.62	.06	0			
17			0	.14	2.8	6.6	.56	.05	0			
18			0	.15	2.1	4.7	.52	.04	0			
19			0	.16	1.6	4.1	.52	.04	0			
20			0	.16	1.3	3.9	.53	.04	0			
21			0	.16	1.1	5.2	.53	.05	0			
22			0	.18	1.0	5.8	.52	.06	0			
23			0	.24	1.0	5.9	.50	.07	0			
24			0	.37	.98	6.2	.47	.06	0			
25			0	.48	.95	4.5	.44	.05	0			
26			0	.36	.87	3.6	.43	.05	0			
27			0	.34	.82	3.0	.42	.06	0			
28			.03	.85	.77	2.5	.41	.05	0			
29			.05	.66	---	2.2	.37	.04	0			
30			.05	.50	---	2.0	.48	.04	0			
31		---	.06	.41	---	1.8	---	.04	---			---
TOTAL	0	0	.19	13.45	112.68	186.14	25.52	4.69	.19	0	0	0
MEAN	0	0	.006	.43	4.02	6.00	.85	.15	.006	0	0	0
MAX	0	0	.06	3.6	69	30	1.8	.52	.03	0	0	0
MIN	0	0	0	.07	.28	.66	.37	.04	0	0	0	0
AC-FT	0	0	.4	27	224	369	51	9.3	.4	0	0	0
CAL YR 1986	TOTAL	7050.91	MEAN	19.3	MAX	1340	MIN	0	AC-FT	13990		
WTR YR 1987	TOTAL	342.86	MEAN	.94	MAX	69	MIN	0	AC-FT	680		

SAN JOAQUIN RIVER BASIN

11287500 DON PEDRO RESERVOIR NEAR LA GRANGE, CA

LOCATION.--Lat 37°42'06", long 120°25'16", in NE 1/4 SW 1/4 sec.3, T.3 S., R.14 E., Tuolumne County, Hydrologic Unit 18040009, on left end of New Don Pedro Dam on Tuolumne River, 500 ft downstream from Mexican Gulch, and 3.4 mi northeast of La Grange.

DRAINAGE AREA.--1,533 mi².

PERIOD OF RECORD.--September 1923 to current year. Yearend contents only 1923-24 and October 1924 to September 1930 monthend contents, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Turlock Irrigation District). Prior to Feb. 1, 1941, nonrecording gage at site 1.5 mi upstream at same datum. Feb. 2, 1941, to Nov. 3, 1970, water-stage recorder at site 1.5 mi upstream at same datum. Nov. 4, 1970, to Apr. 26, 1972, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam completed June 23, 1971. Storage began Nov. 3, 1970. Total capacity, 2,030,000 acre-ft at elevation 830.0 ft, top of uncontrolled spillway, of which 309,000 acre-ft below elevation 600.0 ft, mutually agreed-upon minimum, is not available for release. Water passes through powerplant at dam and down Tuolumne River to La Grange Dam, 2.5 mi downstream, where it is diverted into Turlock and Modesto Canals (stations 11289500 and 11289000) for irrigation. This reservoir is operated jointly by Turlock and Modesto Irrigation Districts. Prior to June 1971, reservoir was formed by a concrete gravity-type dam completed Jan. 1, 1923, capacity, 290,400 acre-ft. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,025,000 acre-ft, Aug. 4-6, 13, 1983, elevation, 829.6 ft; minimum, 29,200 acre-ft, Sept. 1-3, 5, 1934; minimum elevation, 475.0 ft, Sept. 1, 2, 1934. Minimum since reservoir first filled, 302,600 acre-ft, Oct. 14, 15, 1977, elevation, 598.2 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,668,000 acre-ft, Oct. 1, elevation, 799.9 ft; minimum, 932,600 acre-ft, Sept. 30, elevation, 718.9 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Modesto and Turlock Irrigation Districts, dated August 1970)

550	158,700	650	517,400	770	1,359,000
570	212,900	680	679,000	800	1,669,000
590	274,800	710	869,700	830	2,030,000
620	384,100	740	1,095,000		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1668000	1614000	1599000	1519000	1517000	1524000	1525000	1433000	1344000	1236000	1114000	989000
2	1665000	1614000	1596000	1519000	1517000	1524000	1523000	1431000	1339000	1234000	1110000	983700
3	1661000	1612000	1592000	1521000	1516000	1523000	1519000	1431000	1334000	1231000	1106000	977700
4	1659000	1611000	1588000	1524000	1516000	1521000	1518000	1427000	1329000	1230000	1098000	974700
5	1658000	1610000	1585000	1524000	1516000	1524000	1518000	1423000	1325000	1230000	1093000	973200
6	1657000	1609000	1584000	1524000	1516000	1527000	1514000	1418000	1322000	1227000	1088000	973200
7	1653000	1607000	1584000	1523000	1516000	1529000	1511000	1413000	1322000	1222000	1082000	973200
8	1650000	1606000	1579000	1523000	1516000	1530000	1508000	1408000	1318000	1217000	1076000	970200
9	1647000	1607000	1575000	1523000	1516000	1530000	1505000	1405000	1313000	1211000	1076000	967200
10	1645000	1606000	1571000	1521000	1515000	1529000	1502000	1405000	1308000	1206000	1072000	965000
11	1642000	1606000	1567000	1523000	1515000	1529000	1500000	1401000	1302000	1202000	1067000	963500
12	1642000	1606000	1562000	1521000	1516000	1529000	1498000	1396000	1296000	1201000	1062000	962800
13	1640000	1606000	1559000	1521000	1525000	1531000	1493000	1392000	1292000	1197000	1058000	962800
14	1638000	1605000	1559000	1521000	1527000	1532000	1489000	1387000	1292000	1192000	1055000	961300
15	1635000	1604000	1557000	1520000	1529000	1535000	1483000	1382000	1287000	1185000	1052000	959100
16	1630000	1604000	1553000	1520000	1529000	1535000	1479000	1380000	1284000	1178000	1052000	956900
17	1627000	1604000	1549000	1520000	1529000	1534000	1475000	1380000	1280000	1174000	1047000	954600
18	1626000	1603000	1546000	1520000	1528000	1532000	1473000	1377000	1277000	1171000	1042000	953200
19	1626000	1603000	1541000	1519000	1528000	1530000	1471000	1375000	1273000	1168000	1039000	951700
20	1624000	1604000	1539000	1519000	1527000	1529000	1467000	1373000	1272000	1165000	1036000	951700
21	1622000	1603000	1540000	1518000	1526000	1530000	1464000	1370000	1271000	1160000	1032000	949500
22	1619000	1603000	1537000	1516000	1526000	1530000	1461000	1368000	1267000	1156000	1027000	947300
23	1617000	1603000	1534000	1516000	1525000	1530000	1458000	1366000	1262000	1152000	1027000	945100
24	1616000	1603000	1531000	1516000	1525000	1530000	1454000	1366000	1256000	1147000	1023000	943600
25	1616000	1601000	1532000	1517000	1524000	1530000	1451000	1366000	1251000	1142000	1018000	942200
26	1616000	1600000	1530000	1516000	1524000	1529000	1451000	1363000	1246000	1141000	1013000	941400
27	1616000	1601000	1528000	1515000	1524000	1528000	1447000	1360000	1243000	1139000	1009000	941400
28	1614000	1601000	1529000	1515000	1524000	1528000	1443000	1357000	1244000	1134000	1004000	939200
29	1614000	1601000	1525000	1515000	---	1528000	1439000	1353000	1241000	1130000	998900	935500
30	1614000	1601000	1521000	1516000	---	1527000	1435000	1352000	1239000	1126000	998900	932600
31	1614000	---	1518000	1516000	---	1527000	---	1349000	---	1120000	993600	---
MAX	1668000	1614000	1599000	1524000	1529000	1535000	1525000	1433000	1344000	1236000	1114000	989000
MIN	1614000	1600000	1518000	1515000	1515000	1521000	1435000	1349000	1239000	1120000	993600	932600
a	795.0	793.8	786.0	785.8	786.5	786.8	777.8	768.9	758.9	743.1	727.1	718.9
b	-57000	-13000	-83000	-2000	+8000	+3000	-92000	-86000	-110000	-119000	-126400	-61000

CAL YR 1986 b +300000

WTR YR 1987 b -738400

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11289000 MODESTO CANAL NEAR LA GRANGE, CA

LOCATION.--Lat 37°40'04", long 120°27'26", in SE 1/4 SW 1/4 sec.17, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 0.5 mi northeast of La Grange and 1.4 mi downstream from intake at La Grange Dam.

PERIOD OF RECORD.--April 1903 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1315-A: 1904-9 (monthly figures only).

GAGE.--Water-stage recorder. V-notch sharp-crested weir since Mar. 19, 1963. Datum of gage is 272.4 ft above National Geodetic Vertical Datum of 1929 (levels by Modesto Irrigation District). See WSP 1930 for history of changes prior to March 1932. March 1932 to Aug. 14, 1975, on right bank at same datum.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from right bank of Tuolumne River at La Grange Dam for irrigation in Modesto and Waterford Irrigation Districts. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--84 years, 416 ft³/s, 301,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,820 ft³/s, July 1, 1935; no flow at times most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	714	185	857	0	0	12	511	747	785	1110	1120	1100
2	724	28	817	0	.04	11	764	298	1010	1040	129	1130
3	711	687	813	0	.17	11	760	83	942	93	988	1140
4	247	417	877	0	.10	11	296	1020	724	88	1010	1110
5	126	647	820	0	.04	11	37	1060	790	88	994	848
6	886	637	371	0	0	11	822	1080	368	813	986	34
7	916	543	30	0	0	10	604	1060	89	942	1000	24
8	929	212	.20	0	0	10	518	1080	934	949	1520	1070
9	930	28	.08	0	0	9.9	386	944	927	1110	43	1040
10	844	551	0	0	0	9.6	358	90	967	1100	1000	749
11	251	28	0	0	0	9.5	357	1070	978	1020	802	207
12	128	599	0	0	0	9.2	94	1040	996	90	810	93
13	736	716	0	0	11	9.0	860	1080	875	1040	722	88
14	745	630	0	0	699	8.6	893	1080	91	1110	473	259
15	762	273	0	0	27	8.5	909	1090	797	1010	846	385
16	592	27	0	10	26	8.2	916	573	770	942	30	377
17	436	795	0	13	122	7.9	647	91	711	325	954	502
18	117	707	0	11	259	689	390	798	834	874	986	494
19	27	868	0	16	133	528	90	641	852	92	456	133
20	493	705	0	13	193	586	821	660	256	572	415	84
21	458	649	0	22	803	451	759	688	89	438	703	440
22	509	263	0	11	30	28	893	654	914	583	1110	432
23	449	27	0	1.8	184	261	715	191	982	683	51	455
24	441	671	0	.15	132	612	960	92	982	906	729	258
25	147	703	0	.12	133	705	735	91	1020	999	843	212
26	23	748	0	.10	193	713	85	556	989	28	846	77
27	548	29	0	.09	88	748	976	593	866	688	833	75
28	471	309	0	.13	65	333	986	694	44	731	910	578
29	495	274	0	.11	---	28	978	533	764	859	1140	661
30	471	26	0	.09	---	779	959	230	977	942	44	737
31	367	---	0	.07	---	788	---	96	---	1340	928	---
TOTAL	15693	12782	4585.28	98.66	3098.35	7416.4	19079	20003	22323	22605	23421	14792
MEAN	506	426	148	3.18	111	239	836	645	744	729	756	493
MAX	930	795	877	22	803	788	986	1090	1020	1340	1520	1140
MIN	23	26	0	0	0	7.9	37	83	44	28	30	24
AC-FT	31130	25350	9090	196	6150	14710	37840	39680	44280	44840	46460	29340
CAL YR 1986	TOTAL	168814.46	MEAN	463	MAX	1520	MIN	0	AC-FT	334800		
WTR YR 1987	TOTAL	165896.69	MEAN	455	MAX	1520	MIN	0	AC-FT	329100		

SAN JOAQUIN RIVER BASIN

11289500 TURLOCK CANAL NEAR LA GRANGE, CA

LOCATION.--Lat 37°39'49", long 120°26'23", in NW 1/4 NW 1/4 sec.21, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on right bank 3,460 ft downstream from intake at La Grange Dam and 1.2 mi east of La Grange.

PERIOD OF RECORD.--October 1898 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1315-A: 1899-1908 (monthly figures only). WSP 1445: 1917-20, 1922.

GAGE.--Electromagnetic flow meter and concrete control. Datum of gage is 274.98 ft above National Geodetic Vertical Datum of 1929 (levels by Turlock Irrigation District). See WSP 1930 for history of changes prior to Apr. 17, 1924. Prior to May 17, 1984, water-stage recorder at site 0.2 mi upstream at datum 2.72 ft higher.

REMARKS.--Estimated daily discharge: Dec. 8 to Jan. 7, Mar. 12 to Apr. 1. Records good. Canal diverts from left bank of Tuolumne River at La Grange Dam for irrigation in Turlock Irrigation District and to supply town of La Grange. Capacity of canal increased in March 1980 and in March 1984. During autumn and winter some unmeasured flow is diverted from canal at tunnel 0.3 mi upstream from gage, passed through La Grange powerplant, and returned to river. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--89 years, 646 ft³/s, 468,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,400 ft³/s several days in May 1984; no diversion for irrigation during some periods in some years. Prior to 1939, unmeasured small discharge during winter called zero. No flow Jan. 27, 1984, to Mar. 14, 1984, when canal was drained for construction and installation of electromagnetic flow meter.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1120	911	1390	1.0	1.2	96	462	1120	1710	366	2480	1730
2	1160	355	1320	1.0	319	434	575	838	1770	644	438	1900
3	1140	1260	1360	1.1	260	446	715	30	2000	878	2550	1860
4	885	1000	1370	1.1	238	430	398	1540	1840	1.0	1960	865
5	20	750	1310	1.0	357	397	111	1850	1530	1.0	1980	59
6	391	819	977	1.1	312	436	1180	1880	1130	1660	1880	53
7	862	828	25	1.0	133	319	1350	1900	1.1	1930	1970	1.0
8	937	751	0	61	27	46	1280	1790	1780	1750	1690	850
9	946	23	0	214	336	467	1270	1420	1840	1810	58	908
10	760	801	0	132	298	448	1300	13	1870	1540	1690	732
11	372	22	0	11	296	470	1110	1700	1900	679	1750	984
12	20	810	0	239	489	442	749	1800	1970	1.0	1740	546
13	694	862	0	248	321	443	1520	1730	1750	1720	1640	1.0
14	709	779	0	266	103	399	1570	1800	1.1	1940	1310	1000
15	465	707	0	255	19	40	1660	1660	1460	2420	1010	1170
16	365	22	0	286	19	655	1710	747	1330	2310	22	1020
17	1240	754	0	172	360	776	1230	18	964	1480	1880	1150
18	926	796	0	15	274	907	1030	735	990	488	1610	1160
19	20	777	0	386	340	656	779	690	1130	1450	1270	352
20	1220	776	0	413	402	419	1400	885	533	1640	1350	1.0
21	1220	755	0	420	321	52	1060	960	1.0	1560	1570	1030
22	1240	631	0	472	68	40	871	865	1390	1660	1610	1010
23	1230	40	0	336	478	180	740	327	1890	1790	58	808
24	1240	783	0	98	525	40	1040	1.0	1930	1800	1530	694
25	1080	861	0	8.0	469	40	885	1.0	1900	1410	1800	550
26	19	878	0	342	469	44	36	808	1590	89	1790	254
27	1280	31	0	375	300	40	1510	904	888	1220	1830	1.0
28	1370	574	1.0	327	102	40	1170	906	34	1530	1930	875
29	1270	544	1.0	303	---	40	1210	895	827	1380	1680	1070
30	1350	44	1.0	3.7	---	40	984	863	585	1510	61	1160
31	1330	---	1.0	1.3	---	40	---	1100	---	2180	2000	---
TOTAL	26881	18944	7756.0	5391.3	7636.2	9322	30905	31776.0	38534.2	40837.0	46137	23794.0
MEAN	867	631	250	174	273	301	1030	1025	1284	1317	1488	793
MAX	1370	1260	1390	472	525	907	1710	1900	2000	2420	2550	1900
MIN	19	22	0	1.0	1.2	40	36	1.0	1.0	1.0	22	1.0
AC-FT	53320	37580	15380	10690	15150	18490	61300	63030	76430	81000	91510	47200
CAL YR 1986	TOTAL	339657.00	MEAN	931	MAX	2840	MIN	0	AC-FT	673700		
WTR YR 1987	TOTAL	287913.7	MEAN	789	MAX	2550	MIN	0	AC-FT	571100		

SAN JOAQUIN RIVER BASIN

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA

LOCATION.--Lat 37°39'59", long 120°26'28", in NW 1/4 NW 1/4 sec.21, T.3 S., R.14 E., Stanislaus County,
Hydrologic Unit 18040002, on left bank 0.5 mi downstream from La Grange Dam and 1.1 mi east of La Grange.

DRAINAGE AREA.--1,538 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 170.19 ft above National Geodetic Vertical
Datum of 1929 (levels by Turlock Irrigation District).

REMARKS.--No estimated daily discharges. Records good. Flow diverted into Modesto Canal (station 11289000) and
Turlock Canal (station 11289500) at La Grange Dam. Flow regulated by Don Pedro powerplant, Don Pedro
Reservoir (station 11287500), 4.5 mi upstream, Hetch Hetchy Reservoir (station 11275500), Cherry Lake (station
11277200), and Lake Eleanor (station 11277500). Tuolumne Canal (station 11297500) diverts water from the
Stanislaus River basin into the Tuolumne River basin for power, irrigation, and domestic supply in the
vicinity of Sonora, upstream from station. Diversion through Hetch Hetchy aqueduct to San Francisco began
Oct. 19, 1934; an average of 323 ft³/s was diverted during the current year. See schematic diagram of
Tuolumne River basin. For records of combined discharge of river and Modesto and Turlock canals, see
following page.

AVERAGE DISCHARGE (River only).--17 years, 1,080 ft³/s, 782,500 acre-ft/yr.
(Combined river and canals).--17 years, 2,407 ft³/s, 1,744,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 10,400 ft³/s, Apr. 24, 1983, gage height,
15.09 ft; no flow for several days during September and October 1977.
Combined flow, maximum daily discharge, 13,800 ft³/s, May 26, 1983; minimum daily, 0.45 ft³/s, Nov. 2,
1970.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 4,730 ft³/s, Dec. 8, gage height, 10.61 ft;
minimum daily, 7.6 ft³/s, July 18.
Combined flow, maximum daily discharge, 3,680 ft³/s, Aug. 1; minimum daily, 47 ft³/s, Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	678	237	455	239	281	347	569	275	25	9.1	82	24
2	673	232	562	627	446	352	564	231	17	9.1	26	34
3	673	231	538	576	535	350	564	230	16	9.1	94	32
4	679	231	537	200	403	349	566	229	13	9.1	92	11
5	244	231	536	951	297	349	567	228	11	13	107	10
6	629	231	551	1270	264	350	564	227	9.8	7.7	111	26
7	696	231	248	1190	230	349	564	227	9.8	9.0	42	22
8	695	232	2980	1310	223	345	564	227	11	8.7	16	9.8
9	679	230	2970	591	228	351	563	227	16	11	27	9.4
10	688	230	2950	535	230	351	564	227	16	9.2	22	9.6
11	665	230	2940	197	230	350	564	231	17	8.2	13	11
12	254	231	2920	779	231	350	565	228	30	7.7	13	12
13	642	231	2310	724	230	352	564	227	15	20	13	13
14	768	231	249	673	224	350	564	227	14	27	12	13
15	1510	231	2700	742	223	346	564	227	13	40	12	10
16	1540	233	2750	749	223	352	563	228	13	18	23	9.6
17	449	231	2800	524	224	349	562	226	12	8.5	39	9.4
18	299	231	2820	195	221	345	564	227	12	7.6	12	9.4
19	299	231	2670	611	224	344	564	229	12	9.3	11	9.4
20	306	231	2050	623	225	347	564	230	12	12	11	9.4
21	306	231	241	665	224	348	566	229	12	12	11	9.4
22	304	231	2650	665	225	347	567	229	12	12	11	9.4
23	305	230	2580	593	224	349	567	230	23	12	27	9.4
24	296	231	2000	501	224	347	567	228	23	12	12	9.4
25	287	231	234	195	226	346	567	228	18	12	14	9.4
26	286	231	1930	524	226	346	567	229	12	29	28	9.4
27	285	229	2030	677	225	347	563	229	11	21	18	9.4
28	285	229	237	585	233	348	564	229	28	9.4	35	9.4
29	285	232	2470	586	---	347	564	229	18	8.7	29	9.4
30	285	234	2750	631	---	348	567	229	9.2	8.2	27	16
31	286	---	2340	343	---	378	---	228	---	22	26	---
TOTAL	16276	6936	55998	19271	7199	10829	16946	7125	460.8	411.6	1016	394.6
MEAN	525	231	1806	622	257	349	565	230	15.4	13.3	32.8	13.2
MAX	1540	237	2980	1310	535	378	569	275	30	40	111	34
MIN	244	229	234	195	221	344	562	226	9.2	7.6	11	9.4
AC-FT	32280	13760	111100	38220	14280	21480	33610	14130	914	816	2020	783
CAL YR 1986	TOTAL	617890.4	MEAN	1693	MAX	6870	MIN	9.4	AC-FT	1226000		
WTR YR 1987	TOTAL	142863.0	MEAN	391	MAX	2980	MIN	7.6	AC-FT	283400		

SAN JOAQUIN RIVER BASIN

11289651 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF TUOLUMNE RIVER, MODESTO CANAL NEAR
LA GRANGE, AND TURLOCK CANAL NEAR LA GRANGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2510	1340	2710	240	282	455	1540	2150	2530	1490	3680	2850
2	2550	615	2700	628	765	797	1900	1370	2800	1690	593	3060
3	2520	2180	2710	577	795	807	2040	343	2960	980	3630	3030
4	1810	1650	2790	201	641	790	1260	2790	2570	98	3060	1990
5	390	1630	2670	952	654	757	715	3140	2330	102	3080	917
6	1910	1690	1900	1270	576	797	2560	3190	1510	2480	2980	113
7	2480	1600	303	1190	363	678	2510	3190	100	2880	3010	47
8	2570	1200	2980	1370	250	401	2360	3100	2720	2710	3230	1930
9	2560	281	2970	805	564	828	2220	2590	2790	2930	128	1960
10	2290	1580	2950	667	528	809	2220	330	2860	2650	2710	1480
11	1290	280	2940	208	526	830	2030	3000	2900	1710	2560	1200
12	402	1640	2920	1020	720	801	1410	3070	3000	99	2560	651
13	2070	1810	2310	972	562	804	2940	3040	2650	2780	2370	102
14	2220	1640	249	939	1030	758	3020	3110	106	3080	1790	1270
15	2740	1210	2700	997	269	395	3130	2980	2270	3470	1870	1570
16	2500	282	2750	1050	268	1020	3190	1550	2110	3270	75	1410
17	2130	1780	2800	709	706	1130	2440	335	1690	1820	2870	1660
18	1340	1730	2820	221	754	1950	1980	1760	1830	1370	2610	1660
19	346	1680	2670	1010	697	1520	1430	1560	1990	1550	1740	494
20	2020	1710	2050	1050	820	1360	2780	1780	801	2220	1780	94
21	1990	1630	241	1110	1340	851	2390	1880	102	2010	2280	1480
22	2050	1130	2650	1150	323	415	2330	1750	2310	2250	2730	1450
23	1990	297	2580	931	886	790	2030	748	2890	2480	136	1270
24	1980	1680	2000	599	881	999	2570	321	2930	2720	2270	961
25	1520	1790	234	203	828	1090	2190	320	2940	2420	2650	771
26	328	1860	1930	866	888	1100	688	1590	2590	146	2670	340
27	2120	289	2030	1050	613	1140	3050	1730	1760	1930	2680	85
28	2130	1110	238	912	400	721	2720	1830	106	2270	2880	1460
29	2060	1050	2470	889	---	415	2750	1660	1610	2250	2850	1740
30	2110	304	2750	635	---	1170	2510	1320	1570	2460	132	1920
31	1990	---	2340	344	---	1210	---	1430	---	3540	2960	---
TOTAL	58916	38668	68355	24765	17929	27588	66903	58957	61325	63855	70564	38975
MEAN	1901	1289	2205	799	640	890	2230	1902	2044	2060	2276	1299
MAX	2740	2180	2980	1370	1340	1950	3190	3190	3000	3540	3680	3060
MIN	328	280	234	201	250	395	688	320	100	98	75	47
AC-FT	116900	76700	135600	49120	35560	54720	132700	116900	121600	126700	140000	77310
CAL YR 1986	TOTAL	1126584	MEAN	3087	MAX	9410	MIN	135	AC-FT	2235000		
WTR YR 1987	TOTAL	596800	MEAN	1635	MAX	3680	MIN	47	AC-FT	1184000		

SAN JOAQUIN RIVER BASIN

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1970 to current year.

INSTRUMENTATION.--Temperature recorder since November 1970.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1971-87): Maximum recorded, 29.0 °C, Sept. 27, Oct. 15, 1977; minimum recorded, 6.0 °C, Feb. 6-8, 10, 1971.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 24.0 °C, July 13; minimum recorded, 9.5 °C, Feb. 18-22, 24-27.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	13.5	13.0	13.0	12.0			---	---	11.0	10.0
2	---	---	13.5	13.0	13.0	12.5			---	---	11.0	10.0
3	---	---	13.5	13.0	13.0	12.5			---	---	11.0	10.0
4	---	---	13.5	13.0	13.0	12.5			---	---	10.5	10.0
5	---	---	13.5	13.0	13.5	13.0			---	---	11.0	10.0
6	---	---	13.5	12.5	13.0	12.5			---	---	11.0	10.5
7	---	---	13.5	12.5	13.0	12.5			---	---	11.0	10.0
8	---	---	13.5	12.5	13.0	13.0			---	---	11.0	10.0
9	---	---	13.5	12.5	13.0	12.5			---	---	11.0	10.0
10	---	---	13.5	12.5	13.0	12.5			---	---	11.0	10.0
11	---	---	13.5	12.5	13.0	12.5			---	---	11.0	10.5
12	---	---	13.5	12.5	13.0	12.5			---	---	11.0	10.5
13	---	---	13.5	12.5	13.0	12.5			---	---	11.5	10.5
14	---	---	13.5	12.5	13.0	13.0			---	---	11.0	10.0
15	---	---	13.0	12.5	13.0	12.5			---	---	11.0	10.5
16	---	---	13.0	12.5	13.0	12.5			---	---	11.0	10.5
17	---	---	13.0	12.5	13.0	12.0			---	---	11.5	10.5
18	---	---	13.0	12.5	13.0	12.5			10.5	9.5	11.0	10.5
19	---	---	13.5	13.0	---	---			10.5	9.5	11.5	10.5
20	---	---	13.5	13.0	---	---			10.5	9.5	11.0	10.5
21	---	---	13.5	13.0	---	---			10.5	9.5	11.0	10.5
22	---	---	13.0	12.5	---	---			10.5	9.5	11.5	10.5
23	---	---	13.0	12.5	---	---			11.0	10.0	11.0	10.5
24	---	---	13.0	12.5	---	---			10.5	9.5	11.5	11.0
25	---	---	13.0	12.5	---	---			11.0	9.5	12.0	10.5
26	---	---	13.0	12.5	---	---			10.5	9.5	12.0	10.5
27	---	---	13.0	12.5	---	---			11.0	9.5	12.0	10.5
28	13.5	13.0	13.0	12.0	---	---			11.0	10.0	11.5	10.5
29	13.5	13.0	13.0	12.5	---	---			---	---	11.5	11.0
30	14.0	13.0	13.0	12.0	---	---			---	---	12.0	11.5
31	14.0	13.0	---	---	---	---			---	---	12.0	11.0
MONTH	---	---	13.5	12.0	---	---			---	---	12.0	10.0

SAN JOAQUIN RIVER BASIN

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

SAN JOAQUIN RIVER BASIN

11290000 TUOLUMNE RIVER AT MODESTO, CA

LOCATION.--Lat 37°37'38", long 120°59'11", in SE 1/4 SW 1/4 sec.33, T.3 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on left bank at bridge on Ninth Street in Modesto and 0.2 mi downstream from Dry Creek.

DRAINAGE AREA.--1,884 mi².

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 and concrete control. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Modesto Irrigation District). Prior to July 11, 1947, at site 1,700 ft downstream at same datum; July 11, 1947, to Nov. 16, 1953, at site 1,000 ft downstream at same datum.

REMARKS.--Estimated daily discharges: July 1, 2. Records good. Flow regulated by reservoirs and powerplants above station. In addition to diversions into Modesto and Turlock Canals (stations 11289000 and 11289500), there are diversions for irrigation of about 1,300 acres between station above La Grange Dam and at Modesto. See REMARKS for station 11289650 Tuolumne River below La Grange Dam. See schematic diagram of Tuolumne River basin.

AVERAGE DISCHARGE.--47 years (water years 1896, 1941-87), 1,459 ft³/s, 1,057,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1895-96, 1941-87).--Maximum discharge observed, 57,000 ft³/s, Dec. 9, 1950, elevation, 69.19 ft; minimum, 56 ft³/s, Aug. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,490 ft³/s, Mar. 6, elevation, 48.21 ft; minimum daily, 151 ft³/s, July 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	997	1510	1100	2500	586	369	558	771	413	166	174	193
2	1270	1470	1620	666	485	457	722	543	333	164	158	195
3	1230	1440	1770	841	643	488	750	460	224	161	208	187
4	1190	1410	1750	807	751	497	744	428	211	152	168	190
5	1170	1410	1380	504	644	697	736	411	208	159	200	188
6	854	1390	1160	1080	486	3190	731	396	216	160	210	203
7	1060	1410	1080	1580	427	2790	732	418	214	155	234	194
8	1300	1400	867	1530	383	1040	736	426	208	151	217	184
9	1310	1400	2630	1590	375	747	752	422	191	159	207	178
10	1460	1390	2900	834	368	669	719	442	203	177	198	182
11	1520	1400	2950	716	372	623	725	408	204	165	185	179
12	1540	1410	2980	470	399	585	756	399	200	170	183	178
13	989	1420	2970	892	510	583	758	401	193	178	188	165
14	1030	1400	2480	900	1140	608	747	404	182	170	181	170
15	1520	1070	789	886	650	633	738	404	185	174	178	180
16	2180	1040	2660	966	475	685	741	418	182	197	190	174
17	2130	1040	2840	959	462	632	748	433	172	182	206	192
18	1240	1010	2950	749	420	572	762	417	175	181	201	190
19	989	1040	2960	469	392	546	776	412	194	175	210	186
20	935	1030	2820	750	384	525	773	429	204	183	215	200
21	925	1030	2260	827	379	555	765	443	193	155	200	190
22	911	1050	714	867	373	545	764	447	187	156	191	182
23	912	1050	2670	902	361	588	770	419	178	160	197	182
24	927	1020	2750	847	367	585	750	403	171	174	191	173
25	976	1020	2210	734	358	632	790	421	184	211	192	170
26	1100	1010	659	471	355	571	820	408	185	224	195	178
27	1450	1030	2050	706	354	540	824	424	165	228	190	167
28	1480	1030	2160	907	378	525	801	421	161	213	196	164
29	1490	1020	669	826	---	516	788	435	176	178	203	175
30	1500	1020	2500	848	---	507	790	424	168	175	198	185
31	1510	---	2860	829	---	516	---	434	---	156	202	---
TOTAL	39095	36370	64158	28433	13277	23016	22566	13521	6080	5409	6066	5474
MEAN	1261	1212	2070	917	474	742	752	436	203	174	196	182
MAX	2180	1510	2980	2500	1140	3190	824	771	413	228	234	203
MIN	854	1010	659	469	354	369	558	396	161	151	158	164
AC-FT	77540	72140	127300	56400	26330	45650	44760	26820	12060	10730	12030	10860
CAL YR 1986	TOTAL	761951	MEAN	2088	MAX	8830	MIN	278	AC-FT	1511000		
WTR YR 1987	TOTAL	263465	MEAN	722	MAX	3190	MIN	151	AC-FT	522600		

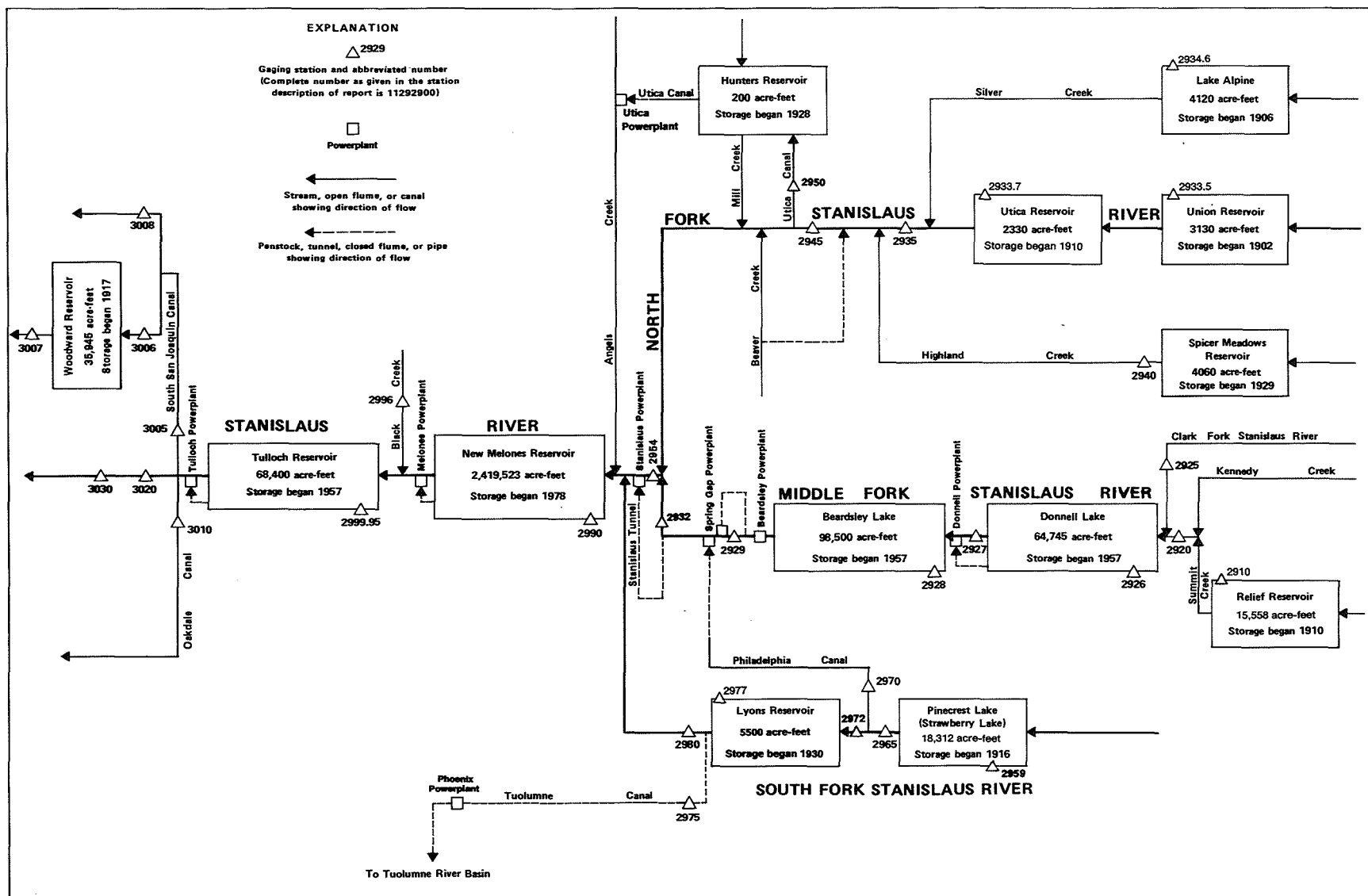


Figure 35. - Schematic diagram showing diversions and storage in Stanislaus River basin.

LOCATION.--Lat 38°16'52", long 119°43'57", in NW 1/4 SW 1/4 sec.13, T.5 N., R.20 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on upstream side of dam, 200 ft from left abutment of dam, 2.2 mi south of Kennedy Meadows, 3.6 mi southeast of Baker Station, and 7.0 mi southeast of Dardanelle.

PERIOD OF RECORD.--October 1986 to September 1987. Unpublished records for water years 1981-86 available in files of U.S. Geological Survey.

GAGE.--Nonrecording gage, observed approximately weekly in the summer months. Elevation of gage is 7,340 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam completed in 1910. Usable capacity, 15,558 acre-ft between elevations 7,198.63 ft, invert of outlet, and 7,338 ft, top of flashboards in spillway. The spillway crest is at an elevation of 7,330 ft, or gage sloping distance of 13.7 ft. Figures given herein, including extremes, represent total contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram for Stanislaus River basin.

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

Capacity table (sloping distance, in feet, and contents, in acre-ft)
(Based on survey by Pacific Gas & Electric Co. in 1942)

160	0	60	6,259
140	55	40	9,197
120	579	20	12,639
100	1,863	4	15,726
80	3,815		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY[illegible]

SAN JOAQUIN RIVER BASIN

11292000 MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CA

LOCATION.--Lat 38°17'51", long 119°44'25", in SW 1/4 NE 1/4 sec.11, T.5 N., R.20 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at upper end of Kennedy Meadows, 1.3 mi upstream from Deadman Creek, 1.6 mi downstream from Relief Reservoir, and 5.8 mi southwest of Dardanelle.

DRAINAGE AREA.--47.5 mi².

PERIOD OF RECORD.--October 1938 to current year. Records for water year 1946 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1960, published as "at Kennedy Meadows."

REVISED RECORDS.--WSP 1315-A: 1939(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,326.3 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Jan. 8-12, 15-17, Feb. 21, 24, 26. Low and medium flow regulated by Relief Reservoir (station 11291000) 1.6 mi upstream. No diversion upstream from station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--(unadjusted) 49 years, 137 ft³/s, 99,260 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,700 ft³/s, Nov. 20, 1950, gage height, 6.66 ft; maximum gage height, 6.67 ft, May 29, 1983; minimum daily, 7.1 ft³/s, Jan. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 678 ft³/s, May 17, gage height, 5.07 ft; minimum daily, 9.6 ft³/s, Jan. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	32	16	14	11	13	23	102	197	121	142	17
2	41	31	16	14	11	12	28	75	218	118	141	17
3	40	26	16	13	11	12	31	70	236	114	141	17
4	39	19	16	18	11	13	27	82	224	113	140	17
5	38	19	16	16	12	26	27	102	238	110	140	17
6	38	19	17	15	12	22	29	118	240	109	138	16
7	39	19	16	14	12	20	33	115	248	108	137	16
8	39	19	16	14	12	19	39	134	206	107	136	16
9	39	19	16	13	12	18	49	158	194	107	134	16
10	39	19	16	13	12	16	62	146	178	107	133	16
11	39	18	16	13	13	15	65	153	172	105	132	16
12	38	18	16	13	13	15	61	177	162	104	132	16
13	38	18	15	13	19	18	63	166	158	116	130	17
14	37	18	15	13	15	16	73	190	170	131	129	16
15	37	18	16	13	14	17	76	341	160	131	127	16
16	37	18	15	12	14	16	79	467	122	142	125	16
17	36	18	15	12	14	16	87	547	105	160	125	15
18	36	18	15	12	14	17	81	370	97	160	125	15
19	36	18	15	11	13	16	57	313	93	158	124	15
20	35	18	15	11	13	16	50	265	93	155	123	15
21	35	18	15	10	13	15	56	236	86	154	122	15
22	35	17	15	10	13	15	70	154	79	154	121	15
23	35	17	15	9.7	12	14	75	79	73	152	120	15
24	35	17	15	9.6	12	14	78	74	105	151	118	15
25	34	17	15	9.7	13	14	85	70	132	150	117	15
26	34	16	14	10	13	14	101	68	134	149	116	15
27	34	16	14	10	13	15	115	65	133	148	115	15
28	33	16	14	11	13	15	140	64	129	147	113	15
29	33	16	14	11	---	15	147	62	123	146	112	15
30	33	17	15	11	---	17	153	70	122	145	111	15
31	33	---	15	11	---	20	---	146	---	144	63	---
TOTAL	1136	569	475	380.0	360	501	2060	5179	4627	4116	3882	472
MEAN	36.6	19.0	15.3	12.3	12.9	16.2	68.7	167	154	133	125	15.7
MAX	41	32	17	18	19	26	153	547	248	160	142	17
MIN	33	16	14	9.6	11	12	23	62	73	104	63	15
AC-FT	2250	1130	942	754	714	994	4090	10270	9180	8160	7700	936
CAL YR 1986	TOTAL	66762.0	MEAN	183	MAX	1140	MIN	14	AC-FT	132400		
WTR YR 1987	TOTAL	23757.0	MEAN	65.1	MAX	547	MIN	9.6	AC-FT	47120		

SAN JOAQUIN RIVER BASIN

11292500 CLARK FORK STANISLAUS RIVER NEAR DARDANELLE, CA

LOCATION.--Lat 38°21'50", long 119°52'13", in NE 1/4 NE 1/4 sec.22, T.6 N., R.19 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.5 mi upstream from mouth and 2.6 mi northwest of Dardanelle.

DRAINAGE AREA.--67.5 mi².

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

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,507.3 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Estimated daily discharges: Periods with ice effect, Nov. 30 to Dec. 2, Dec. 9-12, 15-18, 21, 22, 24-26, 28-31, Jan. 4 to Feb. 1, Feb. 15-17, 21, 22, 24-28, Mar. 22. Records good except those for estimated daily discharges, which are poor. No regulation or diversion above station. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--37 years, 157 ft³/s, 113,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,350 ft³/s, Nov. 20, 1950, gage height, 11.88 ft, from rating curve extended above 1,300 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 9.8 ft³/s, Sept. 11-15, 26-30, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 11	2200	*640	*5.16				

Minimum daily, 15 ft³/s, Sept. 20-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	32	28	28	26	30	63	211	170	41	21	17
2	46	32	28	29	26	32	78	175	167	39	20	18
3	44	32	28	25	26	32	83	186	153	38	20	19
4	43	32	28	25	26	35	64	235	149	37	20	17
5	44	32	29	24	27	49	63	267	150	36	19	17
6	46	31	30	21	28	47	71	266	152	35	19	17
7	45	30	29	21	28	44	92	245	150	34	19	17
8	43	31	27	21	28	44	109	274	134	33	18	17
9	43	31	26	21	28	42	130	271	124	32	18	16
10	42	31	27	21	30	41	151	334	115	31	18	16
11	41	31	26	22	34	39	156	417	106	31	18	16
12	39	30	27	26	33	40	149	426	97	31	18	16
13	38	30	28	26	39	44	159	366	95	37	18	17
14	38	30	28	25	34	40	186	391	93	30	18	17
15	37	29	27	24	34	40	196	392	90	29	18	16
16	37	30	26	22	29	38	213	402	80	29	18	16
17	36	30	27	22	30	40	235	340	74	27	17	16
18	36	30	28	24	31	44	205	293	69	29	17	16
19	37	31	28	24	32	40	145	261	66	29	17	16
20	36	30	28	24	31	39	141	226	63	28	17	15
21	36	31	26	24	29	38	172	192	60	27	17	15
22	35	29	27	24	29	37	210	173	57	28	17	15
23	35	30	28	24	30	38	213	168	54	27	16	15
24	35	30	26	24	25	36	225	162	51	26	16	15
25	34	28	27	25	26	36	249	148	49	25	16	15
26	34	28	26	25	28	37	270	138	50	24	16	15
27	34	28	26	25	29	40	291	133	49	23	16	15
28	34	30	25	25	30	39	314	135	46	23	16	15
29	34	29	26	26	---	40	338	146	45	22	16	15
30	34	27	25	26	---	45	318	161	42	22	17	15
31	33	---	26	26	---	56	---	172	---	21	17	---
TOTAL	1200	905	841	749	826	1242	5289	7706	2800	924	548	482
MEAN	38.7	30.2	27.1	24.2	29.5	40.1	176	249	93.3	29.8	17.7	16.1
MAX	51	32	30	29	39	56	338	426	170	41	21	19
MIN	33	27	25	21	25	30	63	133	42	21	16	15
AC-FT	2380	1800	1670	1490	1640	2460	10490	15280	5550	1830	1090	956

CAL YR 1986	TOTAL	83456	MEAN	229	MAX	1320	MIN	25	AC-FT	165500
WTR YR 1987	TOTAL	23512	MEAN	64.4	MAX	426	MIN	15	AC-FT	46640

SAN JOAQUIN RIVER BASIN

11292600 DONNELL LAKE NEAR DARDANELLE, CA

LOCATION.--Lat 38°19'46", long 119°57'37" unsurveyed, T.6 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank in hoist house of Donnell Dam on Middle Fork Stanislaus River, 1.2 mi downstream from Niagara Creek, and 6.9 mi west of Dardanelle.

DRAINAGE AREA.--230 mi².

PERIOD OF RECORD.--October 1957 to current year. Prior to October 1960, published as Donnell's Reservoir near Dardanelle.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.84 ft above National Geodetic Vertical Datum of 1929 (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.--Lake is formed by concrete arch-type dam completed in 1957. Usable capacity, 64,745 acre-ft, between gage heights 4,720.0 ft, minimum operating head, and 4,917.0 ft, top of spillway gates. Lake is for power and conservation storage. Water passes through a 7.2-mi tunnel to a powerplant and down the Middle Fork Stanislaus River to Beardsley Lake (station 11292800). Records, including extremes, represent total contents at 2400 hours, of which 2,150 acre-ft is below minimum operating head. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 64,900 acre-ft, May 8, 1963, gage height, 4,917.3 ft; minimum since reservoir first filled, 2,220 acre-ft, Apr. 15, 1983, gage height, 4,720.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 62,700 acre-ft, July 7, gage height, 4,912.2 ft; minimum, 7,170 acre-ft, Sept. 4, gage height, 4,745.7 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Provided by Pacific Gas & Electric Co., from table dated Oct. 1, 1956)

4,720	2,150	4,740	5,830	4,780	16,200	4,850	38,700
4,725	2,850	4,750	8,220	4,790	19,100	4,880	49,800
4,730	3,730	4,760	10,800	4,800	22,100	4,917.3	64,900
4,735	4,730	4,770	13,400	4,820	28,400		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42800	24700	18800	13000	11700	8440	12700	39900	60100	59200	34600	9150
2	42000	24200	18400	13000	11500	8570	13200	40800	60400	58500	34300	8120
3	41100	24300	18100	13100	11300	8670	13800	41800	60700	57800	33600	7550
4	40600	24400	17600	13200	11200	8800	14300	42500	61000	57300	32400	7170
5	40700	24400	17100	13100	11100	9130	14700	43200	61300	57100	31200	7210
6	39900	24500	17100	12500	10900	9480	15200	44000	61700	56400	30100	7260
7	39000	24600	17200	12500	11000	9790	15800	44800	62700	55600	29000	7290
8	38200	24600	16700	12600	11000	10100	16300	44900	62600	54900	28600	7340
9	37300	24700	16200	12600	10900	10400	17200	47300	62100	53800	28800	7360
10	36400	24800	15800	12600	11000	10600	18300	48800	61900	52800	28000	7380
11	35900	24900	15200	12700	10900	10800	19400	50200	61700	52000	26800	7430
12	36000	24900	14800	12800	10700	11100	20000	51500	61400	51400	25600	7460
13	35100	25000	14800	12700	11300	11400	21100	52800	61900	50300	24400	7480
14	34200	25000	14900	12500	11500	11700	22400	53900	62600	49200	23200	7500
15	33400	25000	14400	12100	11700	11900	23600	55500	62500	48100	23400	7550
16	32500	25100	14100	11800	11800	11700	24400	58100	62300	47100	23600	7580
17	31600	24400	13900	11800	11400	11200	25800	60700	62100	46000	23000	7600
18	30900	23700	13700	11900	11100	10900	27100	61500	61800	45200	21800	7630
19	31000	23000	13600	11900	10800	10600	27900	61700	61500	44700	20600	7650
20	30300	22300	13700	11900	10400	10800	28300	61800	61800	44100	19400	7680
21	30000	21700	13700	11900	10400	11000	28900	61700	62100	43100	18200	7700
22	29600	21800	13400	12000	10500	11100	29600	61500	61800	42000	17700	7720
23	29100	21800	12700	12000	9920	10800	30300	61000	61300	40900	18000	7750
24	28400	21200	12800	12100	9460	11000	31000	60400	60900	39900	17000	7770
25	28500	20600	12800	12200	9000	11100	32400	59800	60600	39700	15800	7800
26	28600	20000	12800	12000	8440	11300	33800	59900	60300	39900	14500	7820
27	27900	20000	12900	11900	8270	11500	34700	59800	60700	39300	13300	7850
28	27200	19600	12900	11800	8340	11700	36100	59800	61000	38200	12000	7850
29	26500	19300	12700	11600	---	11900	37300	59600	60400	37100	11600	7850
30	25800	19300	12800	11600	---	12200	38700	59600	59900	36000	11700	7800
31	25100	---	12900	11600	---	12500	---	59800	---	34900	10600	---
MAX	42800	25100	18800	13200	11800	12500	38700	61800	62700	59200	34600	9150
MIN	25100	19300	12700	11600	8270	8440	12700	39900	59900	34900	10600	7170
a	4809.7	4790.7	4767.8	4763.1	4750.5	4766.4	4850.0	4905.1	4905.3	4839.3	4759.3	4748.3
b	-18700	-5800	-6400	-1300	-3260	+4160	+26200	+21100	+100	-25000	-24300	-2800

CAL YR 1986 b -3100

WTR YR 1987 b -36000

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

b Change in contents, in acre-feet.

11292700 MIDDLE FORK STANISLAUS RIVER AT HELLS HALF ACRE BRIDGE, NEAR PINECREST, CA

LOCATION.--Lat 38°14'50", long 120°02'01", in NW 1/4 NE 1/4 sec.31, T.5 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, on left bank 200 ft upstream from Donnell powerplant, 800 ft downstream from Hells Half Acre bridge, 1.1 mi upstream from Cow Creek, and 4.7 mi northwest of Pinecrest.

DRAINAGE AREA.--287 mi².

PERIOD OF RECORD.--February 1956 to current year. Prior to October 1965, published as Middle Fork Stanislaus River at Hells Half Acre bridge.

GAGE.--Water-stage recorder. Datum of gage is 3,418.31 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to Aug. 9, 1961, at site 1,600 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Jan. 16-18, period of ice effect. Records good. Flow regulated by Relief Reservoir since 1909, capacity, 15,600 acre-ft; by Donnell Lake (station 11292600); and by diversion around station through Donnell powerplant. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--31 years, 276 ft³/s, 200,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/s, Dec. 24, 1964, gage height, 13.64 ft in gage well, 14.2 ft outside, from floodmarks, from rating curve extended above 5,200 ft³/s on basis of slope-area measurement at gage height 12.20 ft; minimum daily, 3.3 ft³/s, Nov. 9, 10, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1905, 23 ft, Dec. 23, 1955, from floodmarks, at present site, discharge, 26,600 ft³/s by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 291 ft³/s, Feb. 13, gage height, 4.91 ft; minimum daily, 29 ft³/s, Sept. 5-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	38	38	36	36	41	101	142	66	52	41	32
2	44	38	38	36	36	41	111	121	65	52	41	31
3	43	38	38	40	36	41	124	112	63	52	41	30
4	43	39	38	41	36	43	104	109	62	51	41	30
5	43	39	38	37	35	76	102	106	62	51	41	29
6	42	39	39	37	35	120	106	102	62	50	40	29
7	42	39	38	36	35	98	124	97	65	50	40	29
8	42	39	37	35	35	84	133	96	69	50	40	29
9	41	40	37	35	36	79	142	114	65	49	40	29
10	41	39	36	35	38	75	156	106	63	49	40	29
11	41	39	36	35	45	69	159	99	61	48	39	29
12	41	39	36	35	48	70	151	95	60	48	39	29
13	41	39	36	35	201	98	145	89	59	48	38	29
14	41	40	36	35	110	92	155	84	58	48	38	29
15	40	40	36	34	78	86	155	81	61	47	38	29
16	40	40	35	34	63	79	153	82	61	46	38	29
17	40	40	35	34	57	81	157	80	60	46	38	29
18	40	40	35	34	52	95	147	79	59	46	37	29
19	40	40	36	34	48	87	123	78	57	46	37	29
20	39	40	36	34	46	77	119	86	56	45	37	29
21	39	40	35	34	44	76	126	92	56	45	37	29
22	40	39	35	34	44	73	131	85	56	45	36	29
23	39	39	35	35	44	77	129	78	55	44	36	29
24	39	39	34	38	42	73	128	75	54	44	36	29
25	39	39	34	38	42	73	127	74	54	44	35	30
26	39	38	34	37	41	74	132	74	53	43	35	30
27	40	38	34	36	40	79	137	75	53	43	35	30
28	39	38	34	41	40	77	132	72	53	43	34	30
29	39	40	34	38	---	78	127	70	53	42	33	49
30	39	38	34	37	---	86	152	69	53	42	33	33
31	39	---	34	36	---	96	---	68	---	41	33	---
TOTAL	1260	1173	1111	1116	1443	2394	3988	2790	1774	1450	1167	905
MEAN	40.6	39.1	35.8	36.0	51.5	77.2	133	90.0	59.1	46.8	37.6	30.2
MAX	45	40	39	41	201	120	159	142	69	52	41	49
MIN	39	38	34	34	35	41	101	68	53	41	33	29
AC-FT	2500	2330	2200	2210	2860	4750	7910	5530	3520	2880	2310	1800
CAL YR 1986	TOTAL	193836	MEAN 531	MAX 5340	MIN 34	AC-FT 384500						
WTR YR 1987	TOTAL	20571	MEAN 56.4	MAX 201	MIN 29	AC-FT 40800						

SAN JOAQUIN RIVER BASIN

11292800 BEARDSLEY LAKE NEAR STRAWBERRY, CA

LOCATION.--Lat 38°12'17", long 120°04'31", in SE 1/4 NW 1/4 sec.14, T.4 N., R.17 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, in hoist house of Beardsley Dam on Middle Fork Stanislaus River, 2.4 mi upstream from Spring Gap powerplant, 3.9 mi west of Strawberry, and 4.7 mi west of Pinecrest.

DRAINAGE AREA.--309 mi².

PERIOD OF RECORD.--June 1957 to current year. Prior to October 1960, published as Lake Hartley near Strawberry.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7.84 ft above National Geodetic Vertical Datum of 1929 (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.--Reservoir is formed by rockfill, earth-core dam completed in 1957. Capacity, 98,500 acre-ft between gage heights 3,145.0 ft, tunnel invert, and 3,398.0 ft, top of spillway gates. No dead storage. Reservoir is used for power and conservation storage. Water passes through Beardsley powerplant, is diverted at Beardsley afterbay to J.W. Southern powerplant at Sand Bar Flat on the Middle Fork Stanislaus River, and diverted again at Spring Gap to Stanislaus powerplant at the head of New Melones Reservoir (station 11299000). Records, including extremes, represent contents at 2400 hours. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 98,700 acre-ft, June 27, 1957, gage height, 3,398.2 ft; minimum since reservoir first filled, 3 acre-ft, Sept. 23, 1976, gage height, 3,154.4 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 76,900 acre-ft, Oct. 1, gage height, 3,366.5 ft; minimum, 27,400 acre-ft, Feb. 10, gage height, 3,277.9 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Provided by Pacific Gas & Electric Co., from table dated Oct. 3, 1956)

3,154	2	3,200	2,370	3,290	33,100
3,160	41	3,210	3,790	3,320	48,800
3,170	267	3,220	5,720	3,350	66,400
3,180	693	3,240	11,400	3,370	79,200
3,190	1,370	3,260	19,500	3,398	98,500

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76900	75400	50600	31700	27900	30300	30400	29300	44900	50800	51800	51600
2	76600	75400	50100	31500	28000	30100	30400	29000	45100	50700	51200	51700
3	76500	74600	49400	31400	28000	29900	30400	28600	45300	50700	51400	51200
4	75900	73500	49100	31300	27900	29700	30300	28600	45300	50500	51800	50600
5	74800	72300	48700	31200	28000	29600	30300	28900	46000	49800	52300	49600
6	74600	71200	47600	31700	28000	29700	30300	29000	46500	49700	52700	48500
7	74500	70000	46600	31500	27800	29600	30300	29000	46500	49700	53000	47500
8	74300	68900	46100	31300	27500	29500	30500	29200	47500	49700	52500	46400
9	74100	67700	45700	31100	27600	29000	30500	29300	48800	50000	51500	45500
10	73900	66600	45100	30900	27400	29300	30600	29400	49600	50300	51500	44500
11	73400	65500	44700	30700	27500	29200	30400	29600	50200	50200	51900	43500
12	72300	64300	44200	30400	27700	29100	30600	29800	50800	50100	52300	42400
13	72100	63200	43100	30200	27900	29100	30300	29800	50800	50400	52600	41400
14	72000	62200	42100	30000	28000	29000	30000	29900	50800	50700	53000	40400
15	71800	61100	41600	30200	27900	29000	29800	30100	51400	51000	51900	39400
16	71600	60000	41000	30100	27800	29200	30100	30100	52000	51400	50900	38400
17	71500	59600	40200	29900	28100	29900	29800	30100	52700	51600	50800	37400
18	71100	59200	39500	29700	28400	30400	29500	31200	53300	51700	51200	36500
19	70000	58800	38700	29400	28600	30900	29100	32500	53900	51500	51600	35500
20	70500	58400	37700	29400	29000	30800	29200	33900	53900	51400	51900	34500
21	70900	58000	36700	29200	28800	30700	29300	35400	53900	51700	52300	33500
22	71400	56900	36100	28900	29100	30600	29400	36700	53900	52000	51900	32600
23	72100	55800	35900	28700	29200	31100	29500	38000	53800	52300	50800	31700
24	72700	55400	35100	28600	29600	31000	29700	39300	53700	52700	50800	31000
25	72400	54900	34400	28400	30100	30900	29400	40600	53500	52100	51200	30300
26	72200	54500	33800	28400	30500	30800	29100	41200	53300	51000	51600	29900
27	72800	53500	33300	28400	30600	30700	29400	41900	52300	51000	52000	29400
28	73400	52800	32700	28500	30400	30600	29300	42500	51200	51200	52400	29000
29	73900	52300	32500	28500	---	30500	29400	43300	51000	51600	52000	28600
30	74500	51200	32100	28300	---	30400	29500	43900	50900	51900	51100	28100
31	75100	---	31900	28100	---	30300	---	44500	---	52200	51200	---
MAX	76900	75400	50600	31700	30600	31100	30600	44500	53900	52700	53000	51700
MIN	70000	51200	31900	28100	27400	29000	29100	28600	44900	49700	50800	28100
a	3363.8	3324.3	3287.5	3279.5	3284.4	3284.1	3282.5	3312.2	3323.8	3326.1	3324.3	3279.5
b	-1800	-23900	-19300	-3800	+2300	-100	-800	+15000	+6400	+1300	-1000	-23100

CAL YR 1986 b +1400

WTR YR 1987 b -48800

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

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11292900 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA

LOCATION.--Lat 38°11'36", long 120°05'53", in NW 1/4 NW 1/4 sec.22, T.4 N., R.17 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.5 mi downstream from Beardsley Afterbay Dam, 1.5 mi downstream from Beardsley Dam, and 5.7 mi west of Pinecrest.

DRAINAGE AREA.--316 mi².

PERIOD OF RECORD.--December 1956 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,044.7 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--No estimated daily discharges. Records good. Diversion from Beardsley Afterbay Dam, 0.5 mi upstream, to J.W. Southern powerplant, at Sand Bar Flat 3 mi downstream, began May 31, 1986. Flow regulated by Relief Reservoir, capacity, 15,600 acre-ft, Donnell Lake since April 1957 (station 11292600), and by Beardsley Lake since January 1957 (station 11292800). See schematic diagram of Stanislaus River basin. For records of combined discharge for river and powerplant, see following page.

COOPERATION.--Records of diversion to J.W. Southern powerplant provided by Oakdale-South San Joaquin Irrigation Districts.

AVERAGE DISCHARGE (includes diversion to J.W. Southern powerplant).--30 years (water years 1958-87), 669 ft³/s, 484,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,080 ft³/s, May 30, 1983, gage height, 12.30 ft; minimum daily, 3.0 ft³/s, Oct. 10, 11, 1958.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 500 ft³/s, Nov. 2, gage height, 5.23 ft; minimum daily, 25 ft³/s, Oct. 23.
Combined flow, maximum daily discharge, 595 ft³/s, Oct. 7; minimum daily, 25 ft³/s, Oct. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	142	141	139	141	138	136	93	63	62	66	66
2	143	292	141	139	141	138	136	51	65	62	66	66
3	144	282	141	140	141	138	136	65	66	62	65	66
4	144	143	141	138	141	138	137	65	65	62	65	66
5	144	143	141	139	141	138	137	66	64	62	65	66
6	144	143	141	139	141	138	136	66	63	62	64	66
7	145	143	141	139	141	138	136	66	65	62	65	66
8	145	143	141	139	141	138	138	65	63	62	64	64
9	144	143	141	139	138	137	141	63	66	61	65	66
10	146	143	139	139	137	137	139	63	62	62	67	64
11	146	143	140	139	139	136	143	63	59	63	67	66
12	144	142	141	138	139	137	147	63	58	61	67	64
13	143	142	140	144	138	138	147	64	62	63	67	65
14	143	141	140	145	136	138	139	64	59	62	65	65
15	143	143	139	140	137	138	136	63	62	61	67	65
16	146	143	139	140	136	137	143	68	62	61	65	65
17	146	143	139	139	139	138	148	70	64	64	63	65
18	146	143	139	139	140	138	156	66	67	63	65	64
19	146	143	139	139	140	137	157	63	64	62	65	64
20	144	143	139	140	139	138	152	65	66	62	67	65
21	101	143	139	141	139	138	150	63	64	62	67	65
22	27	142	139	140	139	138	152	66	65	63	67	65
23	25	143	140	139	139	138	147	62	62	62	66	65
24	83	143	140	140	139	138	148	63	61	61	67	65
25	145	143	139	139	138	138	152	65	61	61	67	65
26	140	143	139	139	138	138	152	67	61	65	67	65
27	142	143	139	140	138	137	150	63	61	65	67	66
28	144	141	139	141	138	136	157	64	62	66	66	66
29	144	142	139	141	---	138	157	64	62	66	66	66
30	143	143	139	141	---	138	159	66	62	66	66	65
31	143	---	139	141	---	137	---	65	---	65	66	---
TOTAL	4126	4569	4334	4335	3894	4267	4364	2020	1886	1943	2042	1957
MEAN	133	152	140	140	139	138	145	65.2	62.9	62.7	65.9	65.2
MAX	146	292	141	145	141	138	159	93	67	66	67	66
MIN	25	141	139	138	136	136	136	51	58	61	63	64
AC-FT	8180	9060	8600	8600	7720	8460	8660	4010	3740	3850	4050	3880

CAL YR 1986 TOTAL 276036 MEAN 756 MAX 4890 MIN 25 AC-FT 547500
WTR YR 1987 TOTAL 39737 MEAN 109 MAX 292 MIN 25 AC-FT 78820

SAN JOAQUIN RIVER BASIN

11292901 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF MIDDLE FORK STANISLAUS RIVER AND
J.W. SOUTHERN POWERPLANT BELOW BEARDSLEY, CA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	593	142	546	139	141	138	136	240	161	497	501	501
2	593	292	546	139	141	138	136	222	255	497	493	501
3	594	407	516	140	141	138	136	250	256	497	450	501
4	594	588	455	138	141	138	137	250	255	497	450	501
5	594	588	482	139	141	138	137	251	125	497	450	501
6	594	588	516	139	141	138	136	251	63	497	493	501
7	595	588	516	139	141	138	136	251	65	497	500	501
8	580	588	516	139	141	138	138	171	63	497	499	486
9	579	588	516	139	138	137	141	63	66	496	500	400
10	581	573	514	139	137	137	139	63	62	497	502	479
11	581	573	515	139	139	136	248	155	178	498	502	481
12	579	572	516	138	139	137	252	248	186	496	502	479
13	578	572	500	165	138	138	252	249	62	498	502	480
14	566	571	500	225	136	138	244	249	59	497	500	472
15	578	563	499	196	137	138	241	190	62	496	502	460
16	581	563	499	182	136	137	248	68	62	496	500	535
17	581	563	499	139	139	138	253	70	64	499	432	535
18	581	563	499	139	140	138	261	66	67	498	500	534
19	581	563	499	139	140	137	262	63	64	497	500	534
20	255	563	499	140	139	138	257	65	66	497	502	535
21	101	563	499	141	139	138	255	63	64	497	502	460
22	27	562	499	140	139	138	257	66	278	498	502	460
23	25	563	480	139	139	138	252	62	402	497	501	483
24	83	563	395	140	139	138	253	63	387	496	502	365
25	145	548	349	139	138	138	257	65	401	496	502	314
26	140	548	268	139	138	138	257	67	440	500	502	265
27	142	548	224	140	138	137	255	63	511	500	502	266
28	144	546	224	141	138	136	262	64	512	501	501	266
29	144	547	224	141	---	138	262	64	502	501	501	266
30	143	548	176	141	---	138	264	66	497	501	501	265
31	143	---	139	141	---	137	---	65	---	500	501	---
TOTAL	12595	16144	13625	4534	3894	4267	6464	4143	6235	15428	15297	13327
MEAN	406	538	440	146	139	138	215	134	208	498	493	444
MAX	595	588	546	225	141	138	264	251	512	501	502	535
MIN	25	142	139	138	136	136	136	62	59	496	432	265
AC-FT	24980	32020	27030	8990	7720	8460	12820	8220	12370	30600	30340	26430
CAL YR 1986	TOTAL	359532	MEAN 985	MAX 4890	MIN 25	AC-FT 713100						
WTR YR 1987	TOTAL	115953	MEAN 318	MAX 595	MIN 25	AC-FT 230000						

11293200 MIDDLE FORK STANISLAUS RIVER BELOW SAND BAR DIVERSION DAM, CA

LOCATION.--Lat 38°10'59", long 120°09'28", in NW 1/4 SE 1/4 sec.24, T.4 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 100 ft downstream from Sand Bar Diversion Dam and 8.5 mi west of Strawberry.

DRAINAGE AREA.--332 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1970, 1971, and 1976-85 available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder and sharp-crested weir since February 1986. Elevation of gage is 2,700 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 70 ft³/s. Flow regulated by Relief Reservoir and Donnell and Beardsley Lakes (stations 11291000, 11292600, and 11292800). Most of the water is diverted at Sand Bar Diversion Dam for use at Stanislaus powerplant. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	50	---	27	27	27	27	48	51	52	52	56
2	---	---	66	27	27	27	27	48	49	53	52	55
3	---	---	65	28	27	27	28	49	50	55	51	54
4	---	---	29	28	27	27	27	49	50	56	53	54
5	---	---	25	28	27	28	27	50	50	55	52	54
6	---	---	40	28	27	28	27	50	51	55	53	54
7	---	---	53	27	27	28	27	50	51	55	56	54
8	---	---	54	27	27	27	27	50	50	55	55	53
9	---	---	53	27	27	27	27	50	50	55	54	57
10	---	---	55	27	27	27	27	50	50	54	52	52
11	---	---	55	27	27	27	27	50	51	54	52	53
12	---	---	57	27	27	27	28	50	49	53	53	53
13	---	---	53	29	27	28	29	50	49	52	53	53
14	---	---	51	28	27	27	29	50	50	52	51	53
15	---	---	46	28	27	27	29	50	50	52	53	55
16	---	---	44	27	27	27	29	50	50	52	52	54
17	---	---	42	28	27	27	28	50	51	52	53	56
18	---	---	36	28	27	27	28	50	51	53	55	55
19	---	---	33	27	27	27	28	50	50	53	54	58
20	---	---	31	27	27	27	28	50	50	54	56	56
21	---	---	28	27	27	27	28	50	50	54	55	53
22	---	---	30	27	27	27	28	50	50	54	55	52
23	---	---	31	27	27	27	28	50	49	55	55	54
24	---	---	32	27	27	27	28	50	52	56	55	55
25	---	---	31	27	27	27	29	50	53	56	55	54
26	---	---	29	27	27	28	28	50	56	55	54	54
27	---	---	29	27	27	27	28	50	64	57	56	54
28	---	---	28	27	27	26	28	50	54	56	54	54
29	---	---	28	27	---	27	29	50	52	55	53	53
30	---	---	29	27	---	27	39	50	52	56	52	53
31	59	---	28	27	---	27	---	50	---	52	55	---
TOTAL	---	---	---	847	756	841	847	1544	1535	1678	1661	1625
MEAN	---	---	---	27.3	27.0	27.1	28.2	49.8	51.2	54.1	53.6	54.2
MAX	---	---	---	29	27	28	39	50	64	57	56	58
MIN	---	---	---	27	27	26	27	48	49	52	51	52
AC-FT	---	---	---	1680	1500	1670	1680	3060	3040	3330	3290	3220

SAN JOAQUIN RIVER BASIN

11293350 UNION RESERVOIR NEAR BIG MEADOWS, CA

LOCATION.--Lat 38°25'50", long 119°59'47", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of Union Dam on North Fork Stanislaus River and 6.4 mi east of Big Meadows.

DRAINAGE AREA, --13.8 mi².

PERIOD OF RECORD.--October 1986 to September 1987. Unpublished records for water years 1981-86 available in the files of U.S. Geological Survey.

GAGE.--Nonrecording gage, observed approximately weekly in the summer months. Elevation of gage is 6,823.4 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete and rock dam completed in 1902. Usable capacity, 3,130 acre-ft between gage heights -1.9 ft, invert of outlet, and 26.9 ft, crest of spillway. Figures given here represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram for Stanislaus River basin.

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

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1954)

0	4	20	1,756
5	81	25	2,754
10	359	27.6	3,283
15	938		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY[illegible]

SAN JOAQUIN RIVER BASIN

11293370 UTICA RESERVOIR NEAR BIG MEADOWS, CA

LOCATION.--Lat 38°26'26", long 120°00'08", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of Utica Dam on North Fork Stanislaus River, 1.2 mi upstream from Silver Creek, 2.6 mi southeast of Bear Valley, and 6.2 mi west of Big Meadows.

DRAINAGE AREA.--15.2 mi².

PERIOD OF RECORD.--October 1986 to September 1987. Unpublished records for water years 1981-86 available in the files of U.S. Geological Survey.

GAGE.--Nonrecording gage, observed approximately weekly in the summer months. Elevation of gage is 6,776.75 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete and rock dam completed in 1910. Usable capacity, 2,334 acre-ft between gage heights 0.7 ft, invert of outlet, and 42.5 ft, crest of spillway. Figures given here represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram for Stanislaus River basin.

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

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas and Electric Co. in 1954)

0.7	0	30	356
10	19	35	858
20	65	40	1,763
25	127	43	2,456

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	597	---	---	---	---	---	2334	---	---	---
2	1534	---	---	---	---	182	---	---	---	---	---	---
3	---	1300	---	---	---	---	---	---	---	---	1375	---
4	---	---	---	---	---	---	---	2334	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	1455	---	---	---	---	---	819	---	---	1474	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	291	---	---	---	---	---	2334	1514	---	1172
9	---	---	---	---	---	324	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	1300	---
11	---	---	---	---	---	---	---	2334	---	---	---	---
12	---	---	---	22	---	---	---	---	---	---	---	---
13	1355	---	---	---	---	---	1455	---	---	1474	---	---
14	---	---	---	---	---	---	---	---	---	---	---	1190
15	---	---	142	---	---	474	---	---	2334	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	106	---	---	---	---	---	1264	---
18	---	1208	---	---	---	---	---	2334	---	---	---	---
19	---	---	---	22	---	---	---	---	---	---	---	---
20	1282	---	---	---	---	---	2334	---	---	1494	---	---
21	---	---	---	---	---	---	---	---	---	---	---	1282
22	---	---	22	---	---	---	---	---	2310	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	947	---	---	---	---	---	---	2168	---	1190	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	1300	---	---	---	---	---	2334	---	---	1455	---	---
28	---	---	---	---	---	---	---	---	---	---	---	1122
29	---	---	22	---	---	---	---	2334	1873	---	---	---
30	---	---	---	---	---	577	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	1122	---

SAN JOAQUIN RIVER BASIN

11293460 LAKE ALPINE NEAR BIG MEADOWS, CA

LOCATION.--Lat 38°28'17", long 120°00'10", in NE 1/4 SW 1/4 sec.9, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of Lake Alpine Dam on Silver Creek and 7.2 mi northeast of Big Meadows.

DRAINAGE AREA.--5.34 mi².

PERIOD OF RECORD.--October 1986 to September 1987. Unpublished records for water years 1981-86 available in the files of U.S. Geological Survey.

GAGE.--Nonrecording gage, observed approximately weekly in the summer months. Elevation of gage is 7,260.07 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed on natural lake by concrete and rock dam completed in 1906. Usable capacity, 4,117 acre-ft between gage heights 0.0 ft, invert of outlet, and 42.07 ft, crest of spillway. Figures given here represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram for Stanislaus River basin.

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

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas and Electric Co. in 1948)

0	0	25	1,564
5	41	30	2,229
10	208	35	2,962
15	533	40	3,765
20	990	43	4,279

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1901	---			---	---	4105	---	---	---
2	3322	---	---	---			---	---	---	---	---	---
3	---	2691	---	---			---	---	---	---	3715	---
4	---	---	---	---			---	3419	---	---	---	---
5	---	---	---	---			---	---	---	---	---	---
6	3371	---	---	---			---	---	---	3934	---	---
7	---	---	---	---			---	---	---	---	---	---
8	---	---	1820	---			---	---	4122	---	---	3148
9	---	---	---	---			---	---	---	---	---	---
10	---	---	---	---			---	---	---	---	3648	---
11	---	---	---	---			---	3866	---	---	---	---
12	---	---	---	1440			---	---	---	---	---	---
13	3371	---	---	---			990	---	---	3883	---	---
14	---	---	---	---			---	---	---	---	---	2916
15	---	---	1875	---			---	---	4088	---	---	---
16	---	---	---	---			---	---	---	---	---	---
17	---	---	---	---			---	---	---	---	3598	---
18	---	2090	---	---			---	4071	---	---	---	---
19	---	---	---	1440			---	---	---	---	---	---
20	2825	---	---	---			2090	---	---	3850	---	---
21	---	---	---	---			---	---	---	---	---	2691
22	---	---	1692	---			---	---	4037	---	---	---
23	---	---	---	---			---	---	---	---	---	---
24	---	1954	---	---			---	---	4037	---	3516	---
25	---	---	---	---			---	---	---	---	---	---
26	---	---	---	---			---	---	---	---	---	---
27	2810	---	---	---			2810	---	---	3782	---	---
28	---	---	---	---			---	---	---	---	---	2602
29	---	---	1564	---			---	4105	3934	---	---	---
30	---	---	---	---			---	---	---	---	---	---
31	---	---	---	---			---	---	---	---	3451	---

SAN JOAQUIN RIVER BASIN

11293500 NORTH FORK STANISLAUS RIVER BELOW SILVER CREEK, CA

LOCATION.--Lat 38°26'22", long 120°00'53", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 270 ft downstream from Silver Creek and 5.6 mi northeast of Big Meadows.

DRAINAGE AREA.--27.8 mi².

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 1930: 1954(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,677.3 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Estimated daily discharges: Dec. 22-30, Mar. 20, 22, 23. Low and medium flow regulated by Union and Utica Reservoirs and Lake Alpine (stations 11293350, 11293370, and 11293460). No diversion upstream from station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--35 years, 82.3 ft³/s, 59,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,780 ft³/s, Dec. 24, 1964, gage height, 11.16 ft, from floodmarks, from rating curve extended above 700 ft³/s; minimum daily, 0.19 ft³/s, Oct. 14, 1982.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1950, reached a stage of 11.17 ft, from Pacific Gas & Electric Co. recorder chart, discharge, 2,790 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 267 ft³/s, Apr. 17, 18, gage height, 5.84 ft; minimum daily, 3.0 ft³/s, Oct. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	6.7	27	5.5	6.7	10	45	144	18	51	8.1	20
2	41	6.3	27	5.4	6.6	11	55	93	17	51	8.1	20
3	88	6.3	27	5.3	6.4	9.7	42	86	14	50	8.2	20
4	88	6.4	27	6.0	6.5	14	25	107	13	50	8.4	20
5	88	6.4	27	5.6	6.8	31	36	119	13	50	8.4	20
6	85	6.3	27	5.4	7.8	30	50	113	14	26	8.3	20
7	71	6.3	26	5.4	8.9	26	65	90	17	3.1	8.3	20
8	58	14	22	5.6	8.8	23	65	97	40	27	8.3	20
9	58	37	16	5.7	8.5	21	93	138	37	57	8.3	20
10	57	37	16	5.7	11	19	93	115	27	57	8.2	20
11	57	37	16	5.8	17	14	87	151	21	57	8.3	20
12	57	37	15	5.8	16	19	62	140	16	57	11	20
13	57	36	15	5.6	14	24	68	100	13	57	16	19
14	57	36	15	5.6	14	15	72	75	11	57	17	20
15	57	36	15	5.3	12	13	65	65	11	33	17	22
16	30	36	15	5.3	10	11	136	72	10	4.3	17	15
17	5.8	35	15	5.4	9.9	15	226	64	9.5	3.8	17	4.4
18	5.6	34	15	5.4	9.6	19	192	49	8.6	3.8	17	10
19	5.5	28	17	5.4	9.1	13	105	41	8.0	3.8	20	21
20	5.4	27	15	5.4	8.9	10	99	40	7.5	4.4	23	21
21	5.3	27	9.3	5.5	8.7	9.7	138	48	7.2	5.9	23	21
22	5.3	27	6.4	5.5	8.6	9.0	174	44	21	5.8	23	21
23	5.1	26	4.0	5.6	8.9	8.5	169	38	37	5.8	23	14
24	4.9	26	3.5	5.8	8.5	9.0	168	33	37	5.8	23	9.9
25	3.2	28	3.5	6.0	8.2	9.6	171	29	43	5.8	23	24
26	3.0	28	3.5	6.4	8.0	13	175	27	50	5.8	23	24
27	3.7	28	3.5	6.6	8.1	17	159	27	48	6.5	22	24
28	7.2	28	3.5	6.4	9.1	15	172	25	31	7.7	23	24
29	7.2	28	4.0	6.2	---	17	177	22	41	7.8	23	24
30	7.2	28	5.4	6.3	---	27	225	21	51	8.1	23	24
31	6.9	---	5.4	6.4	---	35	---	19	---	8.1	22	---
TOTAL	1040.3	748.7	447.0	177.3	266.6	517.5	3409	2232	691.8	776.3	496.9	582.3
MEAN	33.6	25.0	14.4	5.72	9.52	16.7	114	72.0	23.1	25.0	16.0	19.4
MAX	88	37	27	6.6	17	35	226	151	51	57	23	24
MIN	3.0	6.3	3.5	5.3	6.4	8.5	25	19	7.2	3.1	8.1	4.4
AC-FT	2060	1490	887	352	529	1030	6760	4430	1370	1540	986	1150

CAL YR 1986 TOTAL 43846.8 MEAN 120 MAX 1670 MIN 3.0 AC-FT 86970
WTR YR 1987 TOTAL 11385.7 MEAN 31.2 MAX 226 MIN 3.0 AC-FT 22580

SAN JOAQUIN RIVER BASIN

11294000 HIGHLAND CREEK BELOW SPICER MEADOWS RESERVOIR, CA

LOCATION.--Lat 38°23'24", long 120°00'22", in SW 1/4 NW 1/4 sec.9, T.6 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 1,800 ft downstream from Spicer Meadows Reservoir dam, 5.2 mi upstream from mouth, and 6.3 mi east of Big Meadow.

DRAINAGE AREA.--42.4 mi².

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 1930: 1953.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 6,340 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1952 to November 1986, at site 900 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 1 to Dec. 4, Dec. 9 to Jan. 8, Jan. 11 to Mar. 30, Aug. 14, 17-25, Sept. 1-30. Records fair except those for periods of estimated discharge, which are poor. Low and medium flows regulated by Spicer Meadows Reservoir 1,800 ft upstream, capacity, 4,060 acre-ft. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--35 years, 127 ft³/s, 92,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft³/s, Jan. 31, 1963, gage height, 11.88 ft, site and datum then in use, from rating curve extended above 1,200 ft³/s; no flow some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1950, reached a stage of 11.50 ft, site and datum then in use, from Pacific Gas & Electric Co. recorder chart, discharge, 8,800 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 772 ft³/s, Feb. 13, gage height, 4.73 ft, from crest-stage gage; minimum daily, 0.65 ft³/s, Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	4.9	3.2	4.3	8.4	18	63	309	6.1	4.7	55	2.8
2	5.0	4.9	3.0	5.7	8.5	19	121	292	5.6	5.3	47	3.0
3	5.0	4.9	3.0	8.0	10	20	298	273	4.8	3.2	44	2.5
4	5.0	4.6	3.3	8.6	9.6	20	288	173	8.1	3.5	23	2.4
5	5.0	4.6	3.4	6.6	8.9	60	267	84	24	6.0	26	2.4
6	5.0	4.5	3.7	6.8	8.4	250	125	89	34	81	34	2.3
7	5.2	4.3	3.8	7.4	8.6	60	77	151	81	54	29	2.3
8	5.2	2.1	3.8	8.4	9.0	47	80	244	93	27	18	2.3
9	5.0	2.3	3.7	8.7	9.7	42	199	245	114	4.2	18	2.1
10	4.9	2.7	3.3	8.6	13	39	250	246	86	6.5	21	2.3
11	4.6	2.9	3.5	8.5	20	26	314	326	65	16	19	2.3
12	4.8	3.0	3.9	8.2	26	15	362	358	59	14	10	2.2
13	5.0	3.0	3.6	8.4	600	400	345	237	57	10	2.9	2.1
14	4.6	3.0	3.6	7.7	200	67	341	175	61	4.3	2.4	2.0
15	4.8	3.0	3.5	6.6	80	56	336	302	50	23	2.8	2.2
16	12	3.0	3.3	5.2	31	45	330	234	45	49	3.0	2.3
17	12	3.2	3.3	8.0	29	30	332	228	53	48	2.3	2.3
18	6.6	3.7	3.3	8.0	27	70	323	150	53	18	2.2	2.2
19	5.4	5.2	3.3	7.6	23	45	290	99	54	4.3	1.6	2.2
20	5.2	3.7	8.0	6.8	21	32	136	100	53	3.9	2.4	1.8
21	5.1	3.6	8.6	7.0	20	37	58	122	52	4.9	2.2	1.2
22	4.6	3.7	7.7	7.2	19	36	223	151	28	5.5	2.1	.65
23	5.0	4.2	7.8	6.7	20	40	300	147	6.6	40	2.0	.75
24	5.3	3.7	6.4	8.0	16	36	295	145	6.3	60	1.9	1.6
25	6.0	3.0	5.3	9.3	18	37	291	143	6.4	30	1.8	1.6
26	6.0	3.9	4.5	8.8	15	38	294	113	6.8	12	1.1	1.6
27	5.6	3.9	4.8	8.6	17	42	300	62	6.4	6.3	1.9	1.7
28	5.4	3.4	4.4	11	17	42	302	36	3.9	45	1.4	1.4
29	5.0	3.6	3.8	10	---	40	308	24	2.9	69	1.3	1.7
30	5.0	3.3	3.5	9.2	---	43	318	6.8	3.9	70	1.3	2.2
31	5.0	---	3.2	8.6	---	45	---	6.5	---	67	2.3	---
TOTAL	173.3	109.8	133.5	242.5	1293.1	1797	7566	5271.3	1129.8	795.6	382.9	60.40
MEAN	5.59	3.66	4.31	7.82	46.2	58.0	252	170	37.7	25.7	12.4	2.01
MAX	12	5.2	8.6	11	600	400	362	358	114	81	55	3.0
MIN	4.6	2.1	3.0	4.3	8.4	15	58	6.5	2.9	3.2	1.1	.65
AC-FT	344	218	265	481	2560	3560	15010	10460	2240	1580	759	120

CAL YR 1986 TOTAL 72469.30 MEAN 199 MAX 2490 MIN 2.1 AC-FT 143700
WTR YR 1987 TOTAL 18955.20 MEAN 51.9 MAX 600 MIN .65 AC-FT 37600

SAN JOAQUIN RIVER BASIN

11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA

LOCATION.--Lat 38°14'38", long 120°17'24", in SW 1/4 NE 1/4 sec.35, T.5 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 700 ft upstream from intake of Utica Canal, 3.3 mi upstream from Beaver Creek, and 5.1 mi northeast of Avery.

DRAINAGE AREA.--163 mi².

PERIOD OF RECORD.--July 1914 to September 1925, November 1928 to current year. Yearly discharge only for some years, published in WSP 1315-A.

REVISED RECORDS.--WSP 1215: 1938(M). WSP 1515: 1915(M), 1932(M), 1936(M), 1938, 1940(M).

GAGE.--Water-stage recorder. Datum of gage is 3,388.3 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to September 1922, nonrecording gage at same site at datum 0.05 ft lower.

REMARKS.--No estimated daily discharges. Low and medium flows regulated by Union and Utica Reservoirs, Lake Alpine (stations 11293350, 11293370, and 11293460), and Spicer Meadows Reservoir, capacity, 4,060 acre-ft. No upstream diversions this year. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--70 years, 431 ft³/s, 312,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft³/s, Jan. 31, 1963, gage height, 15.00 ft, from floodmarks, from rating curve extended above 14,000 ft³/s on basis of slope-area measurement at gage height 13.8 ft; minimum daily, 5.5 ft³/s, Dec. 6, 7, 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,060 ft³/s, Apr. 17, gage height, 4.82 ft; minimum daily, 8.8 ft³/s, Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	17	37	14	27	54	262	850	60	59	62	26
2	25	17	36	21	28	58	355	666	55	59	61	26
3	52	17	36	25	32	59	577	601	50	58	58	25
4	92	16	37	27	29	63	511	556	44	58	51	25
5	92	16	39	21	28	289	487	378	41	58	31	25
6	92	16	44	21	28	442	457	365	55	58	28	24
7	86	16	41	19	30	273	388	331	77	85	31	24
8	75	17	38	17	32	191	449	453	116	47	31	29
9	68	17	36	15	33	179	538	575	160	54	34	30
10	67	43	27	18	41	161	741	554	146	64	31	24
11	67	46	26	26	67	129	772	613	108	63	29	24
12	67	46	27	26	82	136	811	662	95	71	27	24
13	68	45	26	26	464	563	749	564	84	70	21	30
14	67	45	26	22	217	280	805	279	79	69	20	30
15	67	45	26	22	120	217	799	459	78	65	21	24
16	66	45	25	18	87	188	826	374	68	56	21	25
17	48	45	25	25	83	167	968	373	60	58	21	25
18	22	45	25	25	74	206	929	327	58	58	21	15
19	17	44	27	23	65	170	701	194	56	39	21	8.8
20	17	38	32	22	60	128	582	191	53	17	21	16
21	16	38	28	23	58	145	461	242	53	12	25	24
22	15	38	23	23	57	139	662	269	51	11	25	24
23	16	39	21	22	58	155	836	252	49	12	25	23
24	16	38	18	26	49	139	824	235	49	28	25	22
25	16	37	14	29	55	146	824	223	48	68	25	14
26	16	40	13	28	46	147	833	211	53	40	25	15
27	15	40	14	28	51	168	799	171	61	18	25	26
28	14	38	13	35	51	166	832	111	58	17	24	26
29	14	39	12	32	---	162	817	99	42	40	25	26
30	18	38	13	28	---	184	951	85	51	65	26	26
31	18	---	12	27	---	235	---	66	---	64	27	---
TOTAL	1355	1021	817	734	2052	5739	20546	11329	2058	1541	918	705.8
MEAN	43.7	34.0	26.4	23.7	73.3	185	685	365	68.6	49.7	29.6	23.5
MAX	92	46	44	35	464	563	968	850	160	85	62	30
MIN	14	16	12	14	27	54	262	66	41	11	20	8.8
AC-FT	2690	2030	1620	1460	4070	11380	40750	22470	4080	3060	1820	1400

CAL YR 1986 TOTAL 250290.0 MEAN 686 MAX 13400 MIN 12 AC-FT 496500
WTR YR 1987 TOTAL 48815.8 MEAN 134 MAX 968 MIN 8.8 AC-FT 96830

SAN JOAQUIN RIVER BASIN

11295000 UTICA CANAL NEAR AVERY, CA

LOCATION.--Lat 38°14'25", long 120°17'25", in NW 1/4 SE 1/4 sec.35, T.5 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 1,100 ft downstream from diversion dam on North Fork Stanislaus River and 5 mi northeast of Avery.

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1970, 1976-85 available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder and wood control. Elevation of gage is 3,370 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Canal diverts from right bank of North Fork Stanislaus River to Utica powerplant of Pacific Gas & Electric Co.; tailrace empties into Angels Creek. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 89 ft³/s, May 24, 25, 1987; minimum daily, 6.3 ft³/s, Sept. 19, 1986.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	12	33	10	26	50	86	79	54	56	59	24
2	21	12	33	17	27	54	85	79	50	56	58	23
3	44	12	32	22	31	56	79	76	45	55	55	22
4	75	11	33	24	28	57	72	77	40	55	47	19
5	77	11	36	17	26	49	72	78	37	55	27	18
6	83	11	40	18	26	61	80	82	51	55	25	18
7	82	11	37	16	28	77	82	81	69	69	27	17
8	72	11	35	13	31	75	84	84	87	46	28	22
9	64	11	33	11	32	74	85	84	84	51	30	25
10	64	38	23	14	40	80	71	82	80	60	28	20
11	64	42	22	23	50	85	80	83	86	59	26	19
12	64	42	23	22	57	85	79	84	86	67	24	20
13	65	42	22	22	38	64	79	83	78	65	18	26
14	64	41	22	18	27	71	76	84	75	63	16	26
15	63	41	22	18	37	75	76	86	73	60	18	20
16	61	41	22	16	57	74	76	87	64	52	17	21
17	43	41	21	22	70	74	78	87	55	54	17	21
18	16	41	21	21	71	55	78	86	54	54	17	11
19	12	41	23	19	63	37	76	85	52	36	17	6.3
20	11	34	28	18	58	59	79	86	49	13	17	13
21	11	34	25	16	55	78	82	86	49	8.0	22	20
22	10	34	19	13	54	78	80	85	48	7.6	22	20
23	10	35	16	16	54	78	80	87	47	8.2	22	19
24	11	34	14	22	46	78	78	89	47	23	22	18
25	11	33	9.7	26	52	81	78	89	46	62	22	10
26	11	36	9.0	25	43	83	78	88	50	37	22	13
27	9.7	36	9.6	25	47	84	77	85	58	15	21	23
28	9.2	34	9.3	33	47	84	77	85	55	13	21	23
29	9.4	35	8.2	30	---	84	77	86	40	35	23	24
30	13	35	8.8	27	---	85	80	80	48	60	24	23
31	13	---	8.1	25	---	87	---	59	---	61	24	---
TOTAL	1186.3	892	697.7	619	1221	2212	2360	2572	1757	1410.8	816	584.3
MEAN	38.3	29.7	22.5	20.0	43.6	71.4	78.7	83.0	58.6	45.5	26.3	19.5
MAX	83	42	40	33	71	87	86	89	87	69	59	26
MIN	9.2	11	8.1	10	26	37	71	59	37	7.6	16	6.3
AC-FT	2350	1770	1380	1230	2420	4390	4680	5100	3490	2800	1620	1160

CAL YR 1986 TOTAL 20012.0 MEAN 54.8 MAX 88 MIN 8.1 AC-FT 39690
WTR YR 1987 TOTAL 16328.1 MEAN 44.7 MAX 89 MIN 6.3 AC-FT 32390

SAN JOAQUIN RIVER BASIN

11295400 STANISLAUS RIVER NEAR HATHAWAY PINES, CA

LOCATION.--Lat 38°08'29", long 120°22'19", in NW 1/4 SW 1/4 sec.6, T.3 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, on right bank 1,000 ft upstream from Stanislaus powerplant and 3.6 mi south of Hathaway Pines.

DRAINAGE AREA.--629 mi².

PERIOD OF RECORD.--July 1967 to current year.

REVISED RECORDS.--WDR CA-80-3: 1979.

GAGE.--Water-stage recorder. Datum of gage is 1,077.21 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Prior to Oct. 1, 1982, published at datum 47.21 ft higher.

REMARKS.--Estimated daily discharges: Oct. 1-6, Nov. 29 to Dec. 9. Records good, except those for periods of estimated daily discharges, which are poor. Many diversions above station for hydroelectric powerplants. Small diversions for domestic water supply. Stanislaus tunnel diverts from left bank of Middle Fork Stanislaus River 13.7 mi upstream from station in SE 1/4 sec.24, T.4 N., R.16 E., to Stanislaus powerplant 1,000 ft downstream from station. See schematic diagram of Stanislaus River basin. For records of combined discharge of river and tunnel, see following page.

COOPERATION.--Records of diversion to Stanislaus powerplant were provided by Pacific Gas & Electric Co.

AVERAGE DISCHARGE.--River only: 20 years, 932 ft³/s, 675,200 acre-ft/yr.
Combined river and powerplant: 20 years, 1,398 ft³/s, 1,013,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 46,200 ft³/s, Feb. 19, 1986, gage height, 23.5 ft, from outside high-water mark, from rating curve extended above 10,000 ft³/s on basis of computation of peak flow over a weir; minimum daily, 9.4 ft³/s, Aug. 7, 1977.
Combined flow, maximum discharge, 46,700 ft³/s, Feb. 19, 1986; minimum daily, 27 ft³/s, July 20, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 1,640 ft³/s, Feb. 13, gage height, 10.25 ft; minimum daily, 45 ft³/s, Jan. 17.
Combined flow, maximum discharge, 1,780 ft³/s, Feb. 13; minimum daily, 126 ft³/s, June 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	197	108	94	52	56	69	349	850	86	69	69	65
2	197	74	110	59	62	69	427	668	84	70	68	65
3	202	83	108	80	77	69	606	602	80	71	66	65
4	203	163	53	132	66	69	606	569	78	71	66	64
5	204	197	47	70	62	287	547	409	77	71	75	65
6	226	198	69	66	61	806	541	382	76	71	63	67
7	220	200	89	59	57	481	479	366	89	84	68	67
8	222	181	92	55	56	334	542	415	104	81	67	67
9	221	174	76	54	56	292	572	542	218	71	67	81
10	260	182	77	52	61	247	774	551	158	70	65	69
11	221	199	88	51	90	216	837	570	127	70	64	63
12	212	202	80	50	109	197	854	633	94	71	63	61
13	211	160	74	55	1060	735	750	567	86	71	62	62
14	202	161	73	52	489	509	808	328	83	71	62	62
15	217	155	68	51	264	440	803	406	80	71	62	62
16	266	155	77	47	178	388	790	380	80	70	64	65
17	220	157	69	45	128	387	922	369	80	69	65	65
18	216	150	67	54	105	420	913	348	78	74	66	65
19	220	151	62	53	94	405	698	245	78	72	66	68
20	220	145	86	51	87	310	614	205	75	76	66	70
21	235	132	79	53	80	250	459	242	74	75	66	64
22	154	151	71	56	76	245	588	264	74	75	67	62
23	135	133	68	59	83	299	781	263	77	75	68	61
24	135	120	69	61	110	324	764	244	87	77	67	61
25	232	117	56	72	115	245	758	234	74	75	68	61
26	238	113	52	65	106	237	769	227	74	74	69	60
27	234	108	52	64	109	254	746	199	82	73	68	60
28	242	104	52	73	83	262	772	150	82	79	68	60
29	239	99	49	66	---	250	740	109	77	78	66	60
30	217	100	61	64	---	267	883	98	73	81	64	59
31	244	---	57	59	---	319	---	88	---	76	64	---
TOTAL	6662	4372	2225	1880	3980	9682	20692	11523	2685	2282	2049	1926
MEAN	215	146	71.8	60.6	142	312	690	372	89.5	73.6	66.1	64.2
MAX	266	202	110	132	1060	806	922	850	218	84	75	81
MIN	135	74	47	45	56	69	349	88	73	69	62	59
AC-FT	13210	8670	4410	3730	7890	19200	41040	22860	5330	4530	4060	3820
CAL YR 1986	TOTAL	547816	MEAN	1501	MAX	23600	MIN	47	AC-FT	1087000		
WTR YR 1987	TOTAL	69958	MEAN	192	MAX	1060	MIN	45	AC-FT	138800		

SAN JOAQUIN RIVER BASIN

11295401 STANISLAUS RIVER NEAR HATHAWAY PINES, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF STANISLAUS RIVER AND STANISLAUS POWERPLANT AT STANISLAUS,
NEAR HATHAWAY PINES, CA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	714	259	585	171	170	182	522	1170	244	582	584	582
2	714	308	601	175	176	182	600	943	390	583	583	582
3	717	539	599	198	192	182	780	908	387	584	581	581
4	717	672	541	272	181	182	776	877	384	583	582	580
5	717	701	517	194	176	409	715	717	268	583	591	581
6	739	699	570	187	175	944	713	689	152	583	577	583
7	732	699	587	183	172	610	652	673	171	597	585	582
8	734	678	589	180	170	458	714	669	190	593	584	582
9	733	670	571	179	169	414	747	626	300	584	584	511
10	772	677	571	179	173	366	950	635	230	583	582	578
11	732	693	580	175	205	335	1070	755	295	584	583	572
12	723	695	571	196	223	315	1180	937	360	586	580	562
13	722	653	565	285	1200	876	1080	872	168	586	578	561
14	715	654	564	256	613	639	1130	634	185	586	578	558
15	728	648	559	246	382	563	1120	681	157	587	578	557
16	777	648	569	227	293	509	1110	470	126	586	580	591
17	731	650	561	166	245	513	1250	458	157	587	526	590
18	727	642	560	175	221	548	1250	436	163	590	579	590
19	731	643	556	170	210	531	1040	328	176	589	584	590
20	468	637	580	165	201	434	947	290	158	593	588	591
21	239	624	573	169	194	395	793	328	158	592	588	583
22	157	643	564	173	190	388	923	351	343	591	588	581
23	138	625	557	173	197	445	1110	346	537	591	588	578
24	136	612	493	176	224	469	1090	326	481	592	586	468
25	232	609	418	187	228	393	1100	319	489	589	587	427
26	238	605	357	179	218	407	1110	314	505	588	587	325
27	234	600	293	179	222	425	1080	285	596	588	586	316
28	242	596	292	195	196	436	1120	234	599	594	585	315
29	240	591	290	181	---	423	1090	192	592	593	583	317
30	287	592	269	179	---	440	1220	184	587	596	581	318
31	457	---	172	173	---	493	---	174	---	591	581	---
TOTAL	16943	18562	15674	5943	7216	13906	28982	16821	9549	18234	18027	15732
MEAN	547	619	506	192	258	449	966	543	318	588	582	524
MAX	777	701	601	285	1200	944	1250	1170	599	597	591	591
MIN	136	259	172	165	169	182	522	174	126	582	526	315
AC-FT	33610	36820	31090	11790	14310	27580	57490	33360	18940	36170	35760	31200
CAL YR 1986	TOTAL	728714	MEAN	1996	MAX	24100	MIN	136	AC-FT	1445000		
WTR YR 1987	TOTAL	185589	MEAN	508	MAX	1250	MIN	126	AC-FT	368100		

SAN JOAQUIN RIVER BASIN

11295900 PINECREST LAKE AT PINECREST, CA

LOCATION.--Lat 38°11'59", long 119°59'11", in NE 1/4 SW 1/4 sec.15, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on south side of intake tower, 400 ft upstream from dam on South Fork Stanislaus River, and 0.7 mi north of Pinecrest.

DRAINAGE AREA.--26.5 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1981-85 available in files of U.S. Geological Survey.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam, completed in 1916; storage began in 1916.

Capacity, 18,312 acre-ft between elevations 5,498.7 ft, outlet drain, and 5,617.5 ft, top of flash boards in spillway. Released water flows down South Fork Stanislaus River to diversion dam for Philadelphia Canal (station 11297000) for use at Spring Gap powerplant on Middle Fork Stanislaus River. Figures given here, including extremes, represent total contents. See schematic diagram of Stanislaus River basin.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 18,312 acre-ft, many days during May to July most years, elevation, 5,617.5 ft; minimum, 3,939 acre-ft, Jan. 21-25, 1987, elevation, 5,553.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,312 acre-ft, May 11 to June 12, elevation, 5,617.5 ft; minimum, 3,939 acre-ft, Jan. 21-25, elevation, 5,553.5 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated 1938 provided by Pacific Gas & Electric Co.)

5,498.7	0	5,520.0	792	5,550.0	3,534	5,580.0	8,576
5,500.0	53	5,530.0	1,558	5,560.0	4,738	5,600.0	13,537
5,510.0	278	5,540.0	2,475	5,570.0	6,395	5,617.5	18,312

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11868	8027	5421	4276	4010	4712	5606	14637	18312	17035	16186	14584
2	11767	7892	5373	4215	4022	4738	5640	14875	18312	17007	16155	14479
3	11666	7731	5325	4215	4034	4789	5872	15087	18312	16979	16074	14426
4	11565	7626	5293	4215	4046	4802	5746	15379	18312	16951	15940	14321
5	11439	7429	5262	4202	4058	4882	5764	15780	18312	16923	15753	14190
6	11313	7277	5231	4178	4070	5140	5891	16236	18312	16895	15753	14111
7	11187	7084	5200	4166	4070	5262	5871	16673	18312	16895	15726	14007
8	11062	6999	5170	4154	4070	5325	6040	17035	18312	16867	15699	13954
9	10962	6872	5140	4130	4070	5389	6195	17606	18312	16839	15673	13876
10	10862	6767	5110	4106	4082	5421	6436	18133	18312	16811	15646	13771
11	10763	6663	5080	4082	4118	5487	6663	18312	18312	16783	15619	13667
12	10639	6559	5051	4022	4178	5538	6935	18312	18312	16756	15592	13563
13	10540	6497	5022	4010	4361	5589	7169	18312	18133	16700	15566	13485
14	10417	6395	4979	4010	4361	5675	7472	18312	18045	16673	15539	13407
15	10294	6294	4951	3998	4361	5710	7781	18312	17927	16645	15512	13278
16	10147	6195	4910	3986	4510	5728	7728	18312	17927	16618	15486	13019
17	10026	6117	4869	3974	4573	5818	8669	18312	17868	16590	15459	12839
18	9904	6040	4829	3951	4586	5854	9186	18312	17780	16535	15459	12659
19	9759	5965	4789	3951	4611	5909	9447	18312	17693	16508	15432	12479
20	9639	5891	4738	3951	4623	5946	9759	18312	17577	16480	15406	12275
21	9519	5818	4699	3939	4636	5984	9880	18312	17319	16453	15379	12020
22	9400	5764	4661	3939	4649	5946	10270	18312	17347	16453	15352	11868
23	9281	5710	4623	3939	4674	5946	10738	18312	17262	16426	15326	11666
24	9115	5658	4573	3939	4687	5946	11062	18312	17205	16398	15299	11464
25	8950	5606	4510	3939	4738	5946	11514	18312	17205	16371	15273	11238
26	8809	5576	4473	3951	4712	5781	12020	18312	17176	16344	15166	11062
27	8692	5555	4448	3963	4712	5710	12556	18312	17148	16317	15060	10912
28	8576	5538	4423	3974	4712	5640	13097	18312	17120	16290	14954	10738
29	8460	5504	4386	3986	---	5606	13563	18312	17091	16263	14848	10565
30	8299	5471	4337	3998	---	5606	14269	18312	17063	16236	14795	10392
31	8140	---	4300	3998	---	5606	---	18312	---	16209	14663	---
MAX	11868	8027	5421	4276	4738	5984	14269	18312	18312	17035	16186	14584
MIN	8140	5471	4300	3939	4010	4712	5606	14637	17063	16209	14663	10392
a	5578.1	5565.0	5556.5	5554.0	5559.8	5565.8	5602.8	5617.5	5613.2	5610.1	5604.4	5587.6
b	-3830	-2669	-1171	-302	+714	+894	+8663	+4043	-1249	-854	-1546	-4271

CAL YR 1986 b -1934

WTR YR 1987 b -1578

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11296500 SOUTH FORK STANISLAUS RIVER AT STRAWBERRY, CA

LOCATION.--Lat 38°11'51", long 120°00'27", in SW 1/4 SW 1/4 sec.16, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.4 mi downstream from bridge on State Highway 108 at Strawberry, 0.6 mi downstream from Herring Creek, and 1.2 mi downstream from Pinecrest Lake.

DRAINAGE AREA.--44.8 mi².

PERIOD OF RECORD.--October 1911 to January 1917, August 1938 to current year. Monthly discharge only for October 1913 and yearly estimates for 1912-13, published in WSP 1315-A. Published as "near Confidence" 1911-13.

REVISED RECORDS.--WSP 1215: 1945(M). WSP 1515: 1916, 1943(M).

GAGE.--Water-stage recorder. Datum of gage is 5,235.1 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). October 1911 to January 1917, nonrecording gage at site 1 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Jan. 17 to Feb. 20. Low and medium flows regulated beginning in 1916 by Pinecrest Lake (station 11295900) 1.2 mi upstream. No diversion upstream from station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--54 years (water years 1912-16, 1939-87), 129 ft³/s, 93,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft³/s, Nov. 21, 1950, gage height, 9.25 ft, from rating curve extended above 1,100 ft³/s on basis of contracted-opening measurement of peak flow at bridge 0.3 mi downstream from station; minimum, 1.3 ft³/s, Nov. 22, 23, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 747 ft³/s, May 16, gage height, 4.70 ft; minimum daily, 3.7 ft³/s, Jan. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	64	20	22	4.8	4.2	68	96	86	14	12	50
2	65	64	20	14	4.6	4.8	69	78	84	14	37	50
3	64	74	20	10	4.6	5.1	67	89	78	14	65	49
4	64	75	20	16	4.5	5.5	59	108	69	14	65	49
5	65	75	19	16	4.3	13	61	120	61	14	40	49
6	65	74	20	16	4.3	15	67	121	57	14	12	49
7	65	64	20	17	4.3	12	71	108	76	14	12	50
8	65	50	19	18	4.3	10	91	132	83	14	12	49
9	65	44	19	17	4.5	9.7	104	137	59	14	12	49
10	64	45	19	17	5.0	9.3	112	144	55	14	12	49
11	64	46	19	16	6.6	8.7	111	346	63	14	12	49
12	65	35	19	16	7.1	9.3	111	387	64	14	12	49
13	65	47	19	16	12	12	116	338	62	14	12	49
14	65	48	19	17	10	10	129	296	61	13	12	49
15	65	47	20	17	9.0	9.9	114	283	39	13	12	79
16	65	47	23	14	8.6	9.2	104	370	47	13	12	106
17	66	47	23	10	8.4	9.5	111	502	65	13	12	105
18	65	47	23	8.0	8.0	10	92	242	64	13	12	105
19	65	38	23	6.0	7.6	9.9	64	183	67	13	11	105
20	65	28	23	5.7	6.6	22	86	145	67	13	11	104
21	65	25	23	3.7	4.6	33	117	179	67	13	11	103
22	65	26	23	3.8	4.7	33	116	175	66	13	11	103
23	66	26	23	4.0	4.7	33	106	135	37	13	11	102
24	66	26	23	4.8	4.3	33	111	99	17	12	11	102
25	66	26	23	4.9	4.6	52	119	93	17	12	31	90
26	66	22	23	4.7	4.8	62	125	88	16	12	48	86
27	66	17	23	4.7	4.7	63	123	82	16	12	49	90
28	65	18	23	5.7	4.0	64	122	80	16	12	49	91
29	65	19	22	5.3	---	64	134	80	16	12	49	90
30	65	19	23	5.3	---	66	148	87	15	12	49	90
31	64	---	22	5.0	---	69	---	92	---	12	50	---
TOTAL	2016	1283	658	340.6	165.5	771.1	3028	5415	1590	408	766	2240
MEAN	65.0	42.8	21.2	11.0	5.91	24.9	101	175	53.0	13.2	24.7	74.7
MAX	66	75	23	22	12	69	148	502	86	14	65	106
MIN	64	17	19	3.7	4.0	4.2	59	78	15	12	11	49
AC-FT	4000	2540	1310	676	328	1530	6010	10740	3150	809	1520	4440
CAL YR 1986	TOTAL	59010.7	MEAN	162	MAX	863	MIN	9.8	AC-FT	117000		
WTR YR 1987	TOTAL	18681.2	MEAN	51.2	MAX	502	MIN	3.7	AC-FT	37050		

SAN JOAQUIN RIVER BASIN

11297000 PHILADELPHIA CANAL NEAR STRAWBERRY, CA

LOCATION.--Lat 38°10'42", long 120°02'44", in NW 1/4 NW 1/4 sec.30, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 250 ft downstream from diversion dam on South Fork Stanislaus River and 2.8 mi southwest of Strawberry.

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,960 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--No estimated daily discharges. Canal diverts from right bank of South Fork Stanislaus River for power development at Spring Gap powerplant of Pacific Gas & Electric Co.; tailrace empties into Middle Fork Stanislaus River. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--48 years, 42.7 ft³/s, 30,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 66 ft³/s, June 16, 1984; no flow at times in some years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	60	1.5	.92	.31	.31	63	61	63	8.2	3.8	.21
2	60	61	1.5	.80	.31	.31	63	61	63	7.9	19	.21
3	60	61	1.5	4.7	.31	.31	62	62	62	7.7	59	.21
4	59	60	1.4	12	.31	.31	57	63	61	7.7	60	1.3
5	60	60	1.5	11	.31	13	58	63	56	7.3	38	.21
6	60	60	1.5	11	.31	16	63	63	51	7.4	3.2	.21
7	60	50	1.5	12	.31	12	63	63	62	6.9	3.1	.21
8	60	31	1.5	13	.31	8.6	62	63	61	6.9	3.0	.21
9	60	31	1.5	13	.31	7.4	61	62	54	6.8	3.0	1.5
10	59	30	1.4	13	.31	6.6	62	63	49	6.6	1.2	.21
11	60	30	1.4	12	.31	5.7	62	62	58	6.5	.31	.21
12	60	23	1.4	13	.31	5.8	62	61	60	5.2	.30	.21
13	60	31	1.4	13	6.6	9.3	62	62	58	5.1	.21	.21
14	60	31	1.4	6.2	2.4	5.9	61	62	57	5.7	.21	.21
15	60	31	1.2	1.9	.77	.31	62	62	38	5.5	.21	26
16	60	31	1.0	.31	.51	3.9	62	62	39	5.1	.21	60
17	60	31	.87	.31	.31	6.4	63	61	61	5.4	.21	60
18	60	31	.94	.31	.31	7.1	61	61	60	5.6	.21	60
19	60	24	.98	.31	.31	6.9	57	62	62	5.6	.21	59
20	60	13	.98	.31	.31	15	60	62	63	5.7	.21	58
21	60	9.5	.98	.31	.31	31	62	62	63	5.6	1.1	57
22	61	9.7	.98	.31	.31	31	62	62	62	4.7	2.2	57
23	61	9.3	.98	.31	.31	31	63	62	35	4.8	2.4	57
24	61	9.3	.98	.31	.31	31	63	62	10	4.3	2.4	56
25	61	9.4	.98	.31	.31	44	63	63	10	4.3	1.5	51
26	61	5.6	.96	.31	.31	59	63	62	9.9	4.4	.35	46
27	61	.98	.94	.31	.31	59	63	62	9.9	4.4	.21	50
28	60	.87	.94	.31	.31	61	63	62	9.6	4.5	.21	51
29	60	.77	.93	.31	---	61	63	62	9.3	4.2	.21	51
30	60	1.3	.93	.31	---	63	62	62	8.7	4.1	.21	51
31	60	---	.90	.31	---	63	---	63	---	3.9	.21	---
TOTAL	1864	836.72	36.87	142.48	17.72	665.15	1853	1925	1365.4	178.0	206.59	855.32
MEAN	60.1	27.9	1.19	4.60	.63	21.5	61.8	62.1	45.5	5.74	6.66	28.5
MAX	61	61	1.5	13	6.6	63	63	63	63	8.2	60	60
MIN	59	.77	.87	.31	.31	.31	57	61	8.7	3.9	.21	.21
AC-FT	3700	1660	73	283	35	1320	3680	3820	2710	353	410	1700

CAL YR 1986 TOTAL 17546.95 MEAN 48.1 MAX 61 MIN .02 AC-FT 34800
WTR YR 1987 TOTAL 9946.25 MEAN 27.3 MAX 63 MIN .21 AC-FT 19730

SAN JOAQUIN RIVER BASIN

11297200 SOUTH FORK STANISLAUS RIVER NEAR STRAWBERRY, CA

LOCATION.--Lat 38°10'40", long 120°02'45", in NW 1/4 NW 1/4 sec.30, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, on right bank 400 ft downstream from diversion dam and 2.8 mi southwest of Strawberry.

DRAINAGE AREA.--48.5 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1970, 1976-85 available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 4,915 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Jan. 15-25, Feb. 27, 28. No records computed above 50 ft³/s. Flow regulated by Pinecrest Lake (station 11295900). Most of the water is diverted at diversion dam 400 ft upstream to Philadelphia Canal (station 11297000). See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	5.7	16	20	3.9	5.2	8.5	38	26	6.6	6.9	42
2	7.1	5.3	16	15	4.0	5.3	8.4	19	24	6.5	11	42
3	6.6	14	16	3.5	4.1	5.4	9.0	26	20	6.5	7.6	42
4	7.1	17	16	3.2	4.1	5.8	4.5	42	13	6.3	6.9	41
5	7.7	17	17	3.3	4.0	6.1	4.6	---	8.2	6.4	7.9	42
6	7.3	16	17	3.5	4.0	3.9	6.1	---	6.9	6.3	7.5	42
7	7.1	16	17	3.7	4.1	4.3	10	44	15	6.4	7.3	42
8	6.9	20	16	3.3	4.2	4.1	28	---	26	6.2	7.1	42
9	6.7	14	16	3.0	4.5	3.9	40	---	7.9	6.3	7.2	41
10	6.8	16	16	3.3	5.0	3.8	48	---	7.3	6.3	9.1	42
11	6.5	16	16	3.2	6.7	3.9	47	---	7.1	6.4	9.9	42
12	6.6	12	16	2.5	6.9	4.1	47	---	6.8	7.5	10	42
13	7.0	17	16	2.9	16	5.7	50	---	7.0	7.5	9.3	42
14	6.8	17	16	7.9	7.9	6.4	---	---	6.9	7.1	9.8	42
15	6.6	16	17	12	7.0	11	---	---	6.6	7.1	10	42
16	6.6	17	21	9.2	5.8	6.9	40	---	6.7	7.3	10	42
17	7.5	17	20	7.7	6.3	4.3	47	---	6.8	6.9	10	42
18	7.5	16	20	6.0	5.9	4.9	36	---	6.6	6.8	9.5	42
19	7.3	16	21	3.4	5.6	4.5	9.8	---	6.9	6.7	9.7	42
20	7.3	16	21	5.6	5.4	5.3	23	---	7.2	6.5	9.6	42
21	6.7	16	20	3.0	5.5	4.7	---	---	6.9	6.6	8.4	42
22	6.6	16	20	6.5	5.4	4.7	---	---	6.8	6.9	7.3	42
23	7.9	16	20	4.0	5.4	4.6	41	---	7.8	6.9	7.2	42
24	7.7	17	20	5.1	5.8	4.3	45	39	7.1	7.1	6.8	42
25	7.5	16	20	4.2	5.5	7.9	---	31	6.7	7.0	22	37
26	7.3	16	20	4.2	3.9	5.2	---	28	6.6	6.8	40	37
27	7.1	14	20	4.2	3.9	6.0	---	22	6.6	6.9	42	37
28	7.1	15	20	5.1	5.9	5.7	---	20	6.4	6.7	42	37
29	6.9	17	20	4.3	---	5.6	---	20	6.3	6.8	41	36
30	6.8	16	20	4.3	---	6.1	---	26	6.6	6.7	42	36
31	6.5	---	20	4.1	---	8.5	---	31	---	6.8	42	---
TOTAL	218.4	460.0	567	171.2	156.7	168.1	---	---	290.7	208.8	477.0	1226
MEAN	7.05	15.3	18.3	5.52	5.60	5.42	---	---	9.69	6.74	15.4	40.9
MAX	7.9	20	21	20	16	11	---	---	26	7.5	42	42
MIN	6.5	5.3	16	2.5	3.9	3.8	---	---	6.3	6.2	6.8	36
AC-FT	433	912	1120	340	311	333	---	---	577	414	946	2430

SAN JOAQUIN RIVER BASIN

11297500 TUOLUMNE CANAL NEAR LONG BARN, CA

LOCATION.--Lat 38°05'35", long 120°10'03", in SE 1/4 SW 1/4 sec.24, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 300 ft downstream from intake, 350 ft downstream from Lyons Reservoir on South Fork Stanislaus River, 2 mi west of Long Barn, and 15 mi northeast of Sonora.

PERIOD OF RECORD.--October 1937 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,110.0 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to June 1938, at site 200 ft downstream at different datum.

REMARKS.--Estimated daily discharges: July 20-27. Canal diverts from left bank of South Fork Stanislaus River into Tuolumne River basin for power and domestic supply in vicinity of Sonora. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--50 years, 28.7 ft³/s, 20,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 59 ft³/s, May 11, 1975; no flow at times in some years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	16	15	15	15	13	42	25	27	35	34	36
2	20	16	15	15	15	13	42	25	26	35	34	36
3	20	16	15	15	15	13	42	26	25	35	34	37
4	20	16	15	15	15	13	42	26	26	35	34	37
5	20	16	15	15	15	13	42	26	26	38	34	37
6	20	16	15	15	15	14	42	26	25	38	34	37
7	20	16	15	15	15	13	42	27	26	38	34	37
8	20	16	15	15	15	13	42	26	27	38	34	37
9	20	16	15	15	15	13	42	26	27	38	34	37
10	20	16	15	15	15	13	42	27	26	38	34	37
11	20	16	15	15	15	13	42	27	26	39	34	37
12	20	16	15	15	14	13	43	36	25	38	36	36
13	4.9	16	15	15	14	13	43	43	26	38	36	34
14	0	16	15	15	14	13	43	46	27	38	37	34
15	0	16	15	15	14	13	44	47	29	38	37	34
16	0	16	15	15	13	13	45	48	31	38	37	34
17	16	16	15	15	13	13	45	48	30	38	37	33
18	31	16	15	15	13	13	45	47	31	38	37	31
19	30	16	15	15	13	13	45	47	31	38	37	30
20	9.9	16	15	16	13	20	44	47	31	38	37	30
21	0	15	15	15	13	24	45	47	31	38	37	30
22	0	15	15	15	13	23	46	46	31	38	37	31
23	19	15	15	15	13	23	47	47	32	36	37	31
24	22	15	15	15	13	23	47	47	34	35	37	30
25	18	15	15	15	13	23	47	46	35	35	36	30
26	18	15	15	15	13	32	48	35	35	35	36	30
27	17	15	15	15	14	39	47	27	35	35	36	30
28	16	15	15	16	14	40	40	26	35	34	36	30
29	16	15	15	16	---	41	29	27	35	34	36	30
30	16	15	15	15	---	41	27	28	35	34	36	30
31	16	---	15	15	---	40	---	27	---	34	36	---
TOTAL	490.8	470	465	468	392	617	1282	1099	886	1137	1105	1003
MEAN	15.8	15.7	15.0	15.1	14.0	19.9	42.7	35.5	29.5	36.7	35.6	33.4
MAX	31	16	15	16	15	41	48	48	35	39	37	37
MIN	0	15	15	15	13	13	27	25	25	34	34	30
AC-FT	974	932	922	928	778	1220	2540	2180	1760	2260	2190	1990

CAL YR 1986 TOTAL 10426.90 MEAN 28.6 MAX 51 MIN 0 AC-FT 20680
WTR YR 1987 TOTAL 9414.80 MEAN 25.8 MAX 48 MIN 0 AC-FT 18670

SAN JOAQUIN RIVER BASIN

11297700 LYONS RESERVOIR NEAR LONG BARN, CA

LOCATION.--Lat 38°05'38", long 120°09'59", in SW 1/4 NE 1/4 sec.24, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, on upstream side of dam near radial spill gates and 1.6 mi west of Long Barn.

DRAINAGE AREA.--66.8 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for 1981-85 water years are available in files of U.S. Geological Survey.

GAGE.--Nonrecording gage read five times weekly. Datum of gage is 4,134 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete arch dam completed in 1930; storage began in 1930. Usable capacity, 5,504 acre-ft between gage heights 0.0 ft, invert of outlet, and 86.0 ft, top of spillway gates. Dead storage, 4 acre-ft. Part of the released water is diverted to Tuolumne Canal (station 11297500) near the base of the dam. Figures given here, including extremes, represent total contents. See schematic diagram of Stanislaus River basin.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum observed contents, 6,225 acre-ft, July 3-5, 1986, gage height, 90.2 ft; minimum, 1,287 acre-ft, Apr. 8, 9, 1987, gage height, 49.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 6,183 acre-ft, May 23, gage height, 89.8 ft; minimum, 1,287 acre-ft, Apr. 8, 9, gage height, 49.8 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

(Based on survey by Pacific Gas & Electric Co. in 1930)

20.0	210	60.0	2,070
25.0	309	70.0	3,153
30.0	437	80.0	4,541
40.0	786	90.0	6,219
50.0	1,299	92.5	6,680

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2396	1826	1781	2023	1504	1525	1707	1850	6074	4790	2739	1410
2	2360	1806	1781	2023	1483	1518	1707	1976	6074	4706	2679	1429
3	2343	1781	1789	2051	1518	1497	1601	1967	6074	4650	2628	1450
4	2313	1806	1789	2060	1443	1497	1540	2005	6055	4571	2580	1470
5	2313	1756	1798	2060	1443	1497	1477	2005	6055	4626	2511	1483
6	2263	1768	1806	2060	1423	1497	1402	2116	5982	4466	2450	1497
7	2237	1756	1806	2023	1395	1707	1402	2116	5946	4404	2396	1511
8	2203	1773	1814	2023	1368	1723	1287	2223	5928	4331	2343	1547
9	2177	1773	1810	2005	1368	1723	1287	2396	5928	4269	2273	1567
10	2154	1773	1814	1939	1330	1731	1312	2464	5875	4182	2200	1585
11	2126	1773	1814	1913	1330	1731	1330	2649	5875	4120	2163	1596
12	2107	1773	1831	1900	1312	1731	1355	3238	5875	4048	2107	1624
13	2079	1773	1831	1876	1400	1731	1355	3944	5735	3974	2050	1647
14	2074	1756	1831	1831	1400	1806	1436	4301	5700	3974	1995	1670
15	2074	1764	1839	1819	1585	1839	1511	4675	5648	3835	1941	1700
16	2074	1770	1839	1822	1601	1839	1540	5051	5596	3765	1872	1723
17	2125	1764	1855	1789	1601	1922	1560	5735	5544	3697	1818	1723
18	2097	1764	1871	1764	1616	1922	1563	6037	5508	3614	1748	1773
19	2042	1764	1957	1734	1616	1986	1540	5875	5456	3561	1685	1757
20	2005	1764	1897	1700	1608	2005	1540	5893	5388	3483	1650	1831
21	2005	1764	1913	1707	1601	1995	1423	5964	5337	3400	1578	1855
22	2005	1764	1922	1690	1593	1995	1483	6055	5289	3353	1550	1875
23	2032	1764	1930	1662	1593	1995	1483	6183	5218	3275	1443	1922
24	1986	1764	1939	1647	1578	1995	1497	6164	5184	3200	1350	1942
25	1967	1764	1957	1624	1572	1995	1518	6128	5116	3165	1306	1976
26	1939	1781	1937	1608	1555	1995	1555	6110	5067	3104	1306	2005
27	1913	1787	1976	1592	1540	1939	1601	6110	5004	3050	1306	2023
28	1895	1781	1986	1578	1532	1897	1647	6110	4941	2982	1306	2031
29	1880	1781	2005	1564	---	1855	1647	6092	4941	2926	1324	2051
30	1862	1781	2005	1547	---	1806	1822	6092	4816	2867	1349	2051
31	1844	---	2023	1525	---	1757	---	6074	---	2807	1382	---
MAX	2396	1826	2023	2060	1616	2005	1822	6183	6074	4790	2739	2051
MIN	1844	1756	1781	1525	1312	1497	1287	1850	4816	2807	1306	1410
a	57.5	56.7	59.5	53.4	53.5	56.4	57.2	89.2	81.8	67.1	51.3	59.8
b	-591	-63	+242	-498	+7	+225	+65	+4252	-1258	-2009	-1425	+669

CAL YR 1986 b -1917

WTR YR 1987 b -384

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

b Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11298000 SOUTH FORK STANISLAUS RIVER NEAR LONG BARN, CA

LOCATION.--Lat 38°05'33", long 120°10'04", in NE 1/4 NW 1/4 sec.25, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 600 ft downstream from Lyons Dam, 1.9 mi west of Long Barn, and 15 mi northeast of Sonora.

DRAINAGE AREA.--66.9 mi².

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1215: 1938(M).

GAGE.--Water-stage recorder and masonry control. Datum of gage is 4,073.4 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--No estimated daily discharges. Flow regulated by Lyons Reservoir (station 11297700) 600 ft upstream and Pinecrest Lake (station 11295900). Tuolumne Canal (station 11297500) diverts at Lyons Dam. For other diversions, see schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--50 years, 86.2 ft³/s, 62,450 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,900 ft³/s, Nov. 21, 1950, gage height, 9.3 ft, from rating curve extended above 2,400 ft³/s, on basis of computation of peak flow over Lyons Dam; no flow at times in 1937-39, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 214 ft³/s, May 17, 18, gage height, 2.91 ft; minimum daily, 0.74 ft³/s, Oct. 14-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.0	2.3	2.2	2.2	2.2	2.1	1.9	2.6	2.4	2.4	2.4
2	2.1	2.1	2.2	2.2	2.3	2.2	2.0	2.1	2.5	2.4	2.4	2.4
3	2.1	2.2	2.2	2.4	2.4	2.2	2.1	2.2	2.4	2.4	2.5	2.4
4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.5	2.4
5	2.2	2.2	2.2	2.2	2.2	2.4	2.2	2.2	2.4	2.4	2.5	2.4
6	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.4	2.4	2.5	2.4
7	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.0	2.4	2.4	2.5	2.4
8	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.4	2.4
9	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.6	2.4	2.4
10	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.5	2.4	2.4
11	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.4
12	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.4	2.4	2.4	2.4
13	1.2	2.2	2.2	2.2	2.6	2.3	2.2	2.2	2.4	2.4	2.4	2.4
14	.74	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.4	2.4
15	.74	2.2	2.2	2.2	2.3	2.2	2.3	2.3	2.4	2.4	2.4	2.4
16	.74	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.4	2.4	2.4	2.4
17	1.7	2.2	2.2	2.2	2.2	2.2	2.2	110	2.4	2.4	2.4	2.4
18	2.5	2.2	2.2	2.2	2.2	2.2	2.2	208	2.4	2.4	2.4	2.4
19	2.4	2.2	2.2	2.2	2.2	2.2	2.2	114	2.4	2.4	2.4	2.4
20	2.4	2.2	2.2	2.2	2.2	2.2	2.2	31	2.4	2.4	2.4	2.4
21	2.2	2.2	2.2	2.2	2.2	2.2	2.2	18	2.4	2.4	2.4	2.4
22	2.2	2.2	2.2	2.2	2.2	2.2	2.2	22	2.4	2.3	2.4	2.4
23	2.0	2.2	2.2	2.2	2.2	2.2	2.2	35	2.4	2.3	2.4	2.4
24	2.2	2.2	2.2	2.2	2.2	2.2	2.2	15	2.4	2.4	2.4	2.4
25	2.4	2.1	2.2	2.2	2.2	2.2	2.2	3.2	2.4	2.3	2.4	2.4
26	2.3	2.0	2.2	2.4	2.2	2.2	2.2	2.8	2.4	2.4	2.4	2.4
27	2.2	2.0	2.2	2.4	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.4
28	2.2	2.0	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.4	2.4
29	2.2	2.2	2.2	2.0	---	2.2	2.2	2.3	2.3	2.4	2.9	2.4
30	2.2	2.3	2.2	2.1	---	2.2	2.1	2.4	2.3	2.4	2.8	2.4
31	2.0	---	2.2	2.2	---	2.2	---	2.5	---	2.4	2.4	---
TOTAL	62.72	65.1	68.3	68.4	62.5	68.6	65.6	606.3	72.1	74.4	75.8	72.0
MEAN	2.02	2.17	2.20	2.21	2.23	2.21	2.19	19.6	2.40	2.40	2.45	2.40
MAX	2.5	2.3	2.3	2.4	2.6	2.4	2.3	208	2.6	2.6	2.9	2.4
MIN	.74	2.0	2.2	2.0	2.2	2.2	2.0	1.9	2.3	2.3	2.4	2.4
AC-FT	124	129	135	136	124	136	130	1200	143	148	150	143

CAL YR 1986 TOTAL 52647.92 MEAN 144 MAX 2140 MIN .74 AC-FT 104400
WTR YR 1987 TOTAL 1361.82 MEAN 3.73 MAX 208 MIN .74 AC-FT 2700

SAN JOAQUIN RIVER BASIN

11299000 NEW MELONES RESERVOIR NEAR SONORA, CA

LOCATION.--Lat 37°57'02", long 120°30'49", in NW 1/4 SE 1/4 sec.11, T.1 N., R.13 E., Calaveras County, Hydrologic Unit 18040010, at right abutment of New Melones Dam on Stanislaus River, 0.1 mi downstream from the old Melones Dam, and 7.6 mi southwest of Sonora.

DRAINAGE AREA.--904 mi².

PERIOD OF RECORD.--1926 (year-end contents only, published in WSP 1315-A), June 1927 to current year. Prior to October 1970, published as Melones Reservoir at Melones Dam. October 1970 to September 1978, published as Melones Lake near Sonora.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Feb. 28, 1961, nonrecording gage, and Mar. 1, 1961, to Nov. 26, 1978, water-stage recorder at site on left side of old Melones Dam, at same datum.

REMARKS.--Reservoir is formed by earth- and rockfill dam completed in November 1978. Dam is downstream from the original concrete dam which was completed in December 1926. Usable capacity 2,420,000 acre-ft between elevations 543.0 ft, invert entrance to outlet tunnel, and 1,088.0 ft, gross pool elevation. No dead storage. When elevation is above 808.0 ft, water is released through a powerplant to Tulloch Reservoir where it is used for irrigation. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,400,000 acre-ft, July 8-10, 1983, elevation, 1,086.42 ft; minimum since reservoir first filled in July 1983, 1,440,000 acre-ft, Sept. 25, 1937, elevation, 996.60 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,947,000 acre-ft, Oct. 1, elevation, 1,047.45 ft; minimum, 1,440,000 acre-ft, Sept. 25, elevation, 996.60 ft.

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

(Provided by U.S. Army Corps of Engineers, dated September 1978)							
700	53,900	760	160,500	880	611,500	1,000	1,471,000
710	66,950	780	212,300	900	723,000	1,020	1,662,000
720	81,800	800	272,800	920	846,500	1,040	1,867,000
730	98,530	820	342,400	940	982,600	1,060	2,087,000
740	117,200	840	421,800	960	1,132,000	1,088	2,420,000
750	137,800	860	511,200	980	1,295,000		

 CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
 INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1947000	1934000	1943000	1919000	1884000	1865000	1848000	1779000	1708000	1595000	1517000	1465000
2	1946000	1934000	1943000	1918000	1884000	1863000	1845000	1778000	1706000	1591000	1515000	1464000
3	1946000	1934000	1942000	1919000	1884000	1861000	1842000	1776000	1703000	1589000	1512000	1463000
4	1945000	1933000	1942000	1920000	1884000	1859000	1841000	1774000	1700000	1587000	1509000	1462000
5	1945000	1934000	1942000	1919000	1883000	1861000	1840000	1772000	1700000	1585000	1506000	1461000
6	1944000	1934000	1943000	1919000	1883000	1864000	1838000	1770000	1692000	1583000	1504000	1460000
7	1942000	1934000	1943000	1918000	1883000	1864000	1836000	1767000	1688000	1581000	1500000	1459000
8	1941000	1935000	1943000	1917000	1883000	1864000	1833000	1763000	1683000	1579000	1497000	1458000
9	1940000	1937000	1943000	1917000	1883000	1864000	1831000	1761000	1678000	1577000	1494000	1457000
10	1939000	1937000	1943000	1916000	1881000	1864000	1827000	1759000	1674000	1574000	1491000	1456000
11	1937000	1937000	1942000	1915000	1881000	1863000	1824000	1757000	1669000	1571000	1489000	1455000
12	1936000	1938000	1940000	1913000	1881000	1863000	1821000	1755000	1664000	1568000	1486000	1453000
13	1935000	1938000	1939000	1912000	1885000	1864000	1818000	1753000	1660000	1565000	1483000	1452000
14	1934000	1938000	1940000	1911000	1886000	1866000	1815000	1751000	1655000	1563000	1480000	1450000
15	1935000	1938000	1938000	1909000	1887000	1868000	1812000	1749000	1650000	1558000	1480000	1447000
16	1935000	1939000	1937000	1907000	1888000	1868000	1809000	1747000	1645000	1555000	1480000	1445000
17	1936000	1940000	1937000	1904000	1886000	1866000	1806000	1746000	1641000	1552000	1478000	1444000
18	1936000	1940000	1936000	1902000	1885000	1865000	1804000	1744000	1637000	1550000	1477000	1444000
19	1936000	1940000	1935000	1900000	1884000	1864000	1801000	1741000	1632000	1547000	1476000	1443000
20	1936000	1940000	1935000	1898000	1884000	1862000	1799000	1739000	1628000	1545000	1474000	1443000
21	1937000	1940000	1935000	1895000	1880000	1861000	1797000	1735000	1624000	1543000	1473000	1442000
22	1937000	1941000	1933000	1891000	1879000	1860000	1795000	1732000	1621000	1540000	1473000	1442000
23	1937000	1942000	1932000	1889000	1876000	1860000	1793000	1728000	1618000	1538000	1472000	1441000
24	1937000	1943000	1932000	1888000	1875000	1859000	1791000	1725000	1615000	1535000	1471000	1441000
25	1936000	1943000	1930000	1887000	1872000	1857000	1789000	1722000	1611000	1533000	1470000	1440000
26	1936000	1942000	1929000	1886000	1870000	1856000	1786000	1720000	1609000	1530000	1470000	1441000
27	1935000	1943000	1927000	1885000	1868000	1855000	1784000	1717000	1606000	1528000	1469000	1441000
28	1935000	1942000	1926000	1884000	1866000	1854000	1783000	1715000	1604000	1527000	1468000	1442000
29	1935000	1942000	1924000	1884000	---	1853000	1781000	1713000	1601000	1525000	1467000	1443000
30	1934000	1943000	1922000	1884000	---	1851000	1780000	1713000	1598000	1522000	1467000	1443000
31	1934000	---	1920000	1884000	---	1850000	---	1710000	---	1519000	1466000	---
MAX	1947000	1943000	1943000	1920000	1888000	1868000	1848000	1779000	1708000	1595000	1517000	1465000
MIN	1934000	1933000	1920000	1884000	1866000	1850000	1780000	1710000	1598000	1519000	1466000	1440000
a	1046.21	1047.06	1044.98	1041.55	1039.94	1038.36	1031.70	1024.80	1013.48	1005.21	999.43	996.92
b	-14000	+8000	-23000	-36000	-18000	-16000	-70000	-70000	-112000	-79000	-53000	-23000
c	4007	2271	863	1164	1628	2657	5046	6410	7877	7981	7606	5502

CAL YR 1986 b +353000

WTR YR 1987 b -505000

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet. Evaporation figures are published as provided; not reviewed by U.S. Geological Survey.

SAN JOAQUIN RIVER BASIN

11299600 BLACK CREEK NEAR COPPEROPOLIS, CA

LOCATION.--Lat 37°57'40", long 120°36'51", in SE 1/4 SE 1/4, sec.2, T.1 N., R.12 E., Calaveras County, Hydrologic Unit 18040010, on left bank 100 ft upstream from O'Byrnes Ferry Road bridge, 1,300 ft upstream from Copper Creek, and 2.1 mi southeast of Copperopolis.

DRAINAGE AREA.--14.4 mi².

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

REVISED RECORDS.--WDR CA-86-3: 1984(M).

GAGE.--Water-stage recorder. Datum of gage is 746.13 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion above station. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft³/s, Feb. 19, 1986, gage height, 9.10 ft, from rating curve extended above 2,500 ft³/s on basis of contracted-opening measurement of peak flow; no flow at times each year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1200	234	3.71	Mar. 6	0330	*488	*4.15

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.06	.22	.22	.38	1.3	4.1	1.1	.09			
2	0	.07	.22	.27	1.6	1.3	3.7	.92	.07			
3	0	.07	.25	1.4	2.1	1.2	3.5	.90	.04			
4	0	.08	.23	2.0	.84	1.1	3.4	.81	.02			
5	0	.08	.29	.56	.65	134	3.0	.67	0			
6	0	.08	.34	.39	.52	162	2.8	.52	0			
7	0	.06	.27	.39	.46	20	2.6	.44	.05			
8	0	.07	.22	.35	.42	11	2.5	.38	.03			
9	0	.08	.19	.30	.39	8.2	2.3	.38	0			
10	0	.08	.19	.30	.39	6.9	2.3	.37	0			
11	0	.10	.19	.30	.89	6.1	2.4	.32	0			
12	0	.10	.19	.30	3.3	6.6	2.2	.24	0			
13	0	.10	.20	.26	82	9.0	2.0	.19	0			
14	0	.10	.22	.26	8.7	9.1	1.9	.19	0			
15	0	.11	.22	.25	13	10	1.8	.16	0			
16	0	.11	.19	.24	7.1	7.9	1.6	.14	0			
17	0	.12	.19	.28	4.8	6.9	1.5	.15	0			
18	.01	.13	.22	.30	3.6	6.1	1.5	.17	0			
19	.02	.13	.30	.34	3.0	5.5	1.4	.16	0			
20	.03	.16	.54	.32	2.5	4.9	1.4	.20	0			
21	.03	.19	.28	.32	2.7	10	1.3	.26	0			
22	.04	.20	.26	.34	2.6	8.0	1.2	.25	0			
23	.04	.19	.40	.38	2.2	26	1.1	.16	0			
24	.04	.19	.27	.52	1.9	17	1.0	.14	0			
25	.04	.21	.22	.47	1.7	11	.94	.14	0			
26	.04	.22	.22	.38	1.6	8.5	.90	.19	0			
27	.04	.20	.22	.38	1.4	7.3	.81	.17	0			
28	.04	.19	.22	.89	1.3	6.4	.74	.16	0			
29	.06	.34	.19	.61	---	5.6	.75	.13	0			
30	.06	.24	.19	.46	---	5.0	1.4	.12	0			
31	.06	---	.20	.39	---	4.6	---	.10	---	---	---	---
TOTAL	.55	4.06	7.55	14.17	152.04	528.5	58.04	10.23	.30	0	0	0
MEAN	.018	.14	.24	.46	5.43	17.0	1.93	.33	.010	0	0	0
MAX	.06	.34	.54	2.0	82	162	4.1	1.1	.09	0	0	0
MIN	0	.06	.19	.22	.38	1.1	.74	.10	0	0	0	0
AC-FT	1.1	8.1	15	28	302	1050	115	20	.6	0	0	0

CAL YR 1986	TOTAL	7053.11	MEAN	19.3	MAX	1400	MIN	0	AC-FT	13990
WTR YR 1987	TOTAL	775.44	MEAN	2.12	MAX	162	MIN	0	AC-FT	1540

SAN JOAQUIN RIVER BASIN

11299995 TULLOCH RESERVOIR NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°52'34", long 120°36'12", in Rancheria Del Rio Estanislao Grant, T.1 S., R.12 E., Tuolumne County, Hydrologic Unit 18040010, in center of Tulloch Dam on Stanislaus River, 1.9 mi upstream from Goodwin Dam, and 5.3 mi northeast of Knights Ferry.

DRAINAGE AREA.--980 mi².

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

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.--Reservoir is formed by gravity-type concrete dam completed in October 1957. Usable capacity, 56,840 acre-ft between elevations 431.0 ft, normal minimum water surface, and 511.0 ft, top of radial gates. Dead storage, 11,560 acre-ft. Reservoir is used for irrigation and power. Water passes down Stanislaus River, first passing through Tulloch powerplant at dam. Part of flow is diverted at Goodwin Dam to Oakdale Canal (station 11301000) and South San Joaquin Canal (station 11300500). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 69,500 acre-ft, Jan. 7, 1965, elevation, 512.0 ft; minimum, 4,580 acre-ft, Oct. 3, 1960, elevation, 404.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 66,100 acre-ft, July 3, elevation, 509.3 ft; minimum, 57,400 acre-ft, Nov. 9, elevation, 501.9 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Pacific Gas & Electric Co., dated October 1956)

404	4,580	430	11,100	475	33,100
411	6,020	445	16,400	490	45,300
420	8,200	460	23,600	512	69,500

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62800	58900	58200	58800	58100	58100	59100	62700	64000	65100	65400	65200
2	62800	58100	58500	58600	58400	57700	60200	62600	65000	65500	65400	65400
3	62300	58500	58700	58700	58500	57800	60900	62800	64400	66100	65200	65400
4	61600	59200	58700	57900	58600	57900	60700	62800	64400	65900	65400	65400
5	61100	59400	58800	57800	58700	59900	60000	62800	60200	65500	65500	65400
6	61300	59800	58800	58200	58700	58600	60200	62700	64000	64900	65500	65500
7	61500	59200	57600	58600	58700	58500	60100	63900	63400	64700	65400	65500
8	61500	58300	57600	58900	58200	58100	59600	65100	64300	64700	65500	65600
9	61400	57400	57600	59100	58500	58300	59400	65500	64500	64500	65500	65700
10	61400	57700	58100	58500	58600	58200	60100	65200	64500	64900	65600	65600
11	61500	58100	58400	58300	58700	58300	60600	65000	65100	65400	65400	64900
12	61500	58200	58500	58300	58700	58500	60300	65200	65700	65500	65400	65200
13	61600	58500	58700	58200	59100	58500	60400	65500	65500	65400	65400	65200
14	61700	58700	57700	58100	58400	58300	60400	65600	65500	65400	65200	64700
15	61000	58900	58200	58200	57800	57800	61500	65600	65600	65400	64900	65000
16	61000	58100	59100	58400	57800	57700	61500	64900	65900	65500	64300	65400
17	61100	58200	58900	58400	57600	57800	61900	63900	65600	65600	64500	65100
18	61600	58200	58700	58100	57700	57900	61600	63800	65900	65700	64700	64700
19	62000	58500	58600	57800	58100	58100	61600	63500	65700	65900	65000	64400
20	61100	58900	58500	57700	57800	58600	62100	63400	65700	65400	65500	64600
21	60300	59300	57800	57900	57800	58600	61500	63900	65600	65100	65400	64600
22	59400	59100	58400	58700	57900	58500	61500	64500	65400	65000	65200	64400
23	58600	58300	58300	58800	57900	58700	61400	65000	65100	65000	65200	64400
24	58900	58200	58200	58900	57900	58200	61400	64900	65400	65000	65200	64600
25	59200	58300	58300	58500	58200	58800	61500	64900	65700	64300	65400	64400
26	58300	59100	58300	58400	58600	58900	61500	65100	65100	65100	65400	63300
27	59100	57700	58500	58600	58600	59100	62300	65400	65100	65100	65500	62200
28	58800	58500	58500	59400	58400	58600	62100	64700	65100	65600	65700	61100
29	58900	59300	58700	59300	---	58500	62600	65900	65000	65200	65600	60300
30	58900	58100	58900	59100	---	58600	62700	63300	64900	65200	65500	59800
31	59100	---	58800	58700	---	58700	---	64100	---	65200	65400	---
MAX	62800	59800	59100	59400	59100	59900	62700	65900	65900	66100	65700	65700
MIN	58300	57400	57600	57700	57600	57700	59100	62600	60200	64300	64300	59800
a	503.4	502.5	503.2	503.1	502.8	503.1	506.5	507.7	508.3	508.6	508.7	504.0
b	-3900	-1000	+700	-100	-300	+300	+4000	+1400	+800	+300	+200	-5600

CAL YR 1986 b 0
WTR YR 1987 b -3200

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

SAN JOAQUIN RIVER BASIN

11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°52'34", long 120°36'15", in Rancheria del Rio Estanislao Grant, T.1 S., R.12 E., on Calaveras-Tuolumne County line, Hydrologic Unit 18040010, temperature recorder in south corner of Tulloch powerplant at downstream side of Tulloch Dam, 5.2 mi northeast of Knights Ferry.

DRAINAGE AREA.--980 mi².

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1972 to current year.

INSTRUMENTATION.--Temperature recorder since June 1972.

REMARKS.--Water temperature is affected by regulation from Tulloch Powerplant. Interruptions in record were due to malfunction of recording instruments.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1973-87): Maximum recorded, 27.5 °C, Aug. 30, 1977; minimum recorded, 5.0 °C, Jan. 13, 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 14.0 °C, many days in August and September; minimum recorded, 9.0 °C, several days in January.

DAY	TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987											
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	11.5	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.5	10.5	10.5
2	11.5	11.5	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.5	10.5	10.5
3	11.5	11.5	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.5	10.5	10.5
4	11.5	11.5	11.5	11.5	11.5	11.0	10.5	10.0	9.5	9.5	10.5	10.5
5	11.5	11.5	11.5	11.5	11.0	11.0	10.5	10.0	9.5	9.5	11.0	10.5
6	11.5	11.5	11.5	11.5	11.0	11.0	10.5	10.0	9.5	9.5	11.0	10.5
7	11.5	11.5	11.5	11.5	11.0	11.0	10.0	10.0	9.5	9.5	10.5	10.5
8	11.5	11.5	12.0	11.5	11.0	11.0	10.0	10.0	9.5	9.5	11.0	10.5
9	11.5	11.5	11.5	11.5	11.0	11.0	10.0	10.0	9.5	9.5	11.0	10.5
10	11.5	11.5	11.5	11.5	11.0	11.0	10.0	10.0	9.5	9.5	11.0	10.5
11	11.5	11.5	11.5	11.5	11.0	11.0	10.0	10.0	9.5	9.5	11.0	10.5
12	11.5	11.5	11.5	11.5	11.0	11.0	10.0	10.0	9.5	9.5	11.0	11.0
13	11.5	11.5	11.5	11.5	11.0	11.0	10.0	10.0	10.0	9.5	11.0	11.0
14	11.5	11.5	11.5	11.5	11.0	11.0	10.0	10.0	10.0	9.5	11.0	11.0
15	11.5	11.5	11.5	11.5	11.0	11.0	10.0	9.5	10.0	9.5	11.0	11.0
16	11.5	11.5	11.5	11.5	11.0	11.0	9.5	9.5	10.0	10.0	11.0	11.0
17	11.5	11.5	11.5	11.5	11.0	11.0	9.5	9.5	10.0	10.0	11.0	11.0
18	11.5	11.5	11.5	11.5	11.0	11.0	9.5	9.5	10.0	10.0	11.0	11.0
19	11.5	11.5	11.5	11.5	11.0	10.5	9.5	9.5	10.5	10.0	11.0	11.0
20	11.5	11.5	11.5	11.5	11.0	10.5	9.5	9.5	10.5	10.0	11.0	11.0
21	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.0	10.5	10.0	11.0	11.0
22	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.0	10.5	10.5	11.0	11.0
23	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.0	10.5	10.5	11.0	11.0
24	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.0	10.5	10.5	11.0	11.0
25	11.5	11.5	11.5	11.5	10.5	10.5	9.0	9.0	10.5	10.5	11.0	11.0
26	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.0	10.5	10.5	11.0	11.0
27	12.0	11.5	11.5	11.5	10.5	10.5	9.5	9.0	10.5	10.5	11.0	11.0
28	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.0	10.5	10.5	11.0	11.0
29	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.5	---	---	11.0	11.0
30	11.5	11.5	11.5	11.5	10.5	10.5	9.5	9.0	---	---	11.0	11.0
31	11.5	11.5	---	---	10.5	10.5	9.5	9.5	---	---	11.5	11.0
MONTH	12.0	11.5	12.0	11.5	11.5	10.5	10.5	9.0	10.5	9.5	11.5	10.5

SAN JOAQUIN RIVER BASIN

11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	11.0	11.5	11.5			---	---	13.5	13.5	14.0	14.0
2	11.5	11.0	11.5	11.5			---	---	14.0	13.5	14.0	14.0
3	11.5	11.0	11.5	11.5			---	---	14.0	13.5	14.0	14.0
4	11.5	11.0	11.5	11.5			---	---	14.0	13.5	14.0	14.0
5	11.5	11.0	11.5	11.5			---	---	14.0	14.0	14.0	14.0
6	11.5	11.0	11.5	11.5			---	---	14.0	14.0	14.0	14.0
7	11.5	11.5	11.5	11.5			---	---	14.0	14.0	14.0	14.0
8	11.5	11.5	11.5	11.5			---	---	14.0	14.0	14.0	14.0
9	11.5	11.5	12.0	11.5			---	---	14.0	14.0	14.0	14.0
10	11.5	11.5	12.0	11.5			12.5	12.5	14.0	14.0	14.0	14.0
11	11.5	11.5	12.0	11.5			12.5	12.5	14.0	14.0	14.0	14.0
12	11.5	11.5	12.0	11.5			13.0	12.5	14.0	14.0	14.0	14.0
13	11.5	11.5	12.0	11.5			13.0	13.0	14.0	14.0	14.0	14.0
14	11.5	11.5	12.0	12.0			13.0	13.0	14.0	14.0	14.0	14.0
15	11.5	11.5	12.0	12.0			13.0	13.0	14.0	14.0	14.0	14.0
16	11.5	11.5	12.0	12.0			13.0	13.0	14.0	14.0	14.0	14.0
17	11.5	11.5	12.0	12.0			13.0	13.0	14.0	14.0	14.0	14.0
18	11.5	11.5	12.0	12.0			13.0	13.0	14.0	14.0	14.0	14.0
19	11.5	11.5	12.0	12.0			13.0	13.0	14.0	14.0	14.0	14.0
20	11.5	11.5	12.0	12.0			13.0	13.0	14.0	14.0	14.0	13.5
21	11.5	11.5	12.0	12.0			13.0	13.0	14.0	14.0	14.0	13.5
22	11.5	11.5	12.0	12.0			13.5	13.0	14.0	14.0	14.0	13.5
23	11.5	11.5	12.0	12.0			13.5	13.0	14.0	14.0	13.5	13.5
24	11.5	11.5	12.0	12.0			13.5	13.0	14.0	14.0	13.5	13.5
25	11.5	11.5	12.0	12.0			13.5	13.5	14.0	14.0	---	13.5
26	11.5	11.5	12.0	12.0			13.5	13.5	14.0	14.0	---	13.5
27	11.5	11.5	12.0	12.0			13.5	13.5	14.0	14.0	---	13.5
28	11.5	11.5	12.0	12.0			13.5	13.5	14.0	14.0	---	13.5
29	11.5	11.5	12.0	12.0			13.5	13.5	14.0	14.0	---	13.5
30	11.5	11.5	12.0	12.0			13.5	13.5	14.0	14.0	---	13.5
31	---	---	---	---			13.5	13.5	14.0	14.0	---	---
MONTH	11.5	11.0	12.0	11.5			---	---	14.0	13.5	14.0	13.5

SAN JOAQUIN RIVER BASIN

11300500 SOUTH SAN JOAQUIN CANAL NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°51'16", long 120°38'14", in Rancheria del Rio Estanislao Grant, Calaveras County, Hydrologic Unit 18040010, on left bank 0.8 mi downstream from headgate at Goodwin Dam and 3.0 mi northeast of Knights Ferry.

PERIOD OF RECORD.--May 1914 to current year. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 334.18 ft above National Geodetic Vertical Datum of 1929 (levels by Oakdale Irrigation District). Prior to Mar. 12, 1915, nonrecording gage 100 ft downstream. Mar. 12, 1915, to July 1, 1921, nonrecording gage at present site and datum.

REMARKS.--Daily discharges for the water year determined to be the sum of daily discharges of South San Joaquin Main Canal below division point (station 11300600) and North Main Canal below division point (station 11300800). Records good. 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.

AVERAGE DISCHARGE.--73 years, 442 ft³/s, 320,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,320 ft³/s, Aug. 10-17, 1978; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	441	.03	5.4	396	9.3	2.0	461	684	274	995	1140	217
2	449	.03	4.7	225	16	2.0	420	681	274	955	1140	218
3	464	.02	14	.26	11	1.9	296	680	677	819	1140	218
4	482	.02	19	.23	3.8	1.9	296	678	1110	752	1140	218
5	482	.02	17	.06	3.4	23	297	677	1120	752	1140	347
6	483	.01	17	.02	3.3	13	514	676	1120	710	1140	549
7	468	4.1	17	2.0	3.3	2.7	810	645	1130	658	1140	550
8	460	11	17	11	3.3	2.0	847	625	1130	659	1140	551
9	465	6.8	18	18	3.3	1.6	961	625	1120	901	1140	551
10	475	6.6	16	245	3.3	.11	1040	626	1110	1080	1130	630
11	476	6.6	236	398	2.1	.06	1040	626	1110	1110	1120	849
12	476	6.6	422	476	2.2	.07	1080	625	1110	1110	1120	869
13	476	6.6	414	614	11	.05	1130	626	1110	1010	1120	865
14	476	6.6	414	738	1.8	.09	1130	626	1110	927	883	966
15	19	6.6	413	795	3.1	.05	1130	626	1110	928	268	1060
16	.07	6.6	184	795	1.6	.05	1130	627	1110	929	265	1020
17	.05	6.4	5.1	794	1.5	.37	1150	627	1100	835	266	247
18	72	6.4	9.7	793	1.6	1.6	1180	627	1110	786	267	246
19	141	6.6	145	816	1.7	.42	1180	627	1110	784	268	414
20	.17	6.2	394	842	1.7	.12	1170	688	1110	784	200	534
21	.05	6.3	400	842	1.8	.19	1140	723	1100	784	198	535
22	.03	6.1	400	841	1.8	.09	1140	725	1100	836	198	536
23	1.8	5.8	399	843	2.1	2.3	1160	725	1100	879	200	491
24	3.2	5.7	399	185	2.2	1.2	1170	725	993	879	199	336
25	3.3	8.8	399	126	2.1	1.0	1170	725	872	880	200	328
26	3.3	16	398	180	2.1	241	1180	630	873	880	201	280
27	3.0	16	398	181	2.1	463	745	443	873	880	210	245
28	.97	9.6	398	72	2.1	462	583	274	873	880	217	246
29	1.8	3.1	397	8.8	---	461	679	274	923	1000	218	224
30	.07	5.3	397	7.8	---	461	681	274	992	1130	218	98
31	.04	---	396	9.3	---	461	---	274	---	1140	218	---
TOTAL	6822.85	176.53	7162.9	11254.47	104.6	2606.87	26910	18714	29854	27652	19444	14438
MEAN	220	5.88	231	363	3.74	84.1	897	604	995	892	627	481
MAX	483	16	422	843	16	463	1180	725	1130	1140	1140	1060
MIN	.03	.01	4.7	.02	1.5	.05	296	274	274	658	198	98
AC-FT	13530	350	14210	22320	207	5170	53380	37120	59220	54850	38570	28640
CAL YR 1986	TOTAL	201048.68	MEAN 551	MAX 1210	MIN 0	AC-FT 398800						
WTR YR 1987	TOTAL	165140.22	MEAN 452	MAX 1180	MIN .01	AC-FT 327600						

SAN JOAQUIN RIVER BASIN

11300600 SOUTH SAN JOAQUIN MAIN CANAL BELOW DIVISION POINT, NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°49'54", long 120°40'24", in Rancheria del Rio Estanislao Grant, Stanislaus County, Hydrologic Unit 18040002, on left bank 600 ft downstream from division point and 0.85 mi north of Knights Ferry.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 325 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Canal diverts 600 ft upstream at division point which is 2.0 mi downstream from South San Joaquin Canal (station 11300500). Flow is used for irrigation in South San Joaquin Irrigation District. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--5 years, 390 ft³/s, 282,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 890 ft³/s, Apr. 19, 1983; no flow for many days each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286	0	2.1	396	9.1	2.0	461	351	15	738	854	20
2	287	0	.01	225	16	2.0	419	349	15	698	855	20
3	288	0	7.4	.23	11	1.9	296	348	419	562	856	20
4	290	0	5.6	.22	3.6	1.9	296	355	852	497	856	20
5	289	0	1.7	.05	3.2	21	296	363	864	497	856	244
6	290	0	1.7	.01	3.1	13	513	363	863	451	856	549
7	278	.04	1.6	2.0	3.1	2.7	808	336	866	392	858	549
8	270	0	1.6	11	3.1	2.0	805	316	867	392	858	548
9	270	0	1.6	18	3.1	1.4	821	316	865	635	859	548
10	273	0	8.3	245	3.1	0	845	316	866	816	863	629
11	274	0	233	398	1.9	0	843	316	868	838	866	847
12	274	0	418	476	1.9	0	836	315	859	838	867	866
13	274	0	410	614	10	0	831	316	849	742	868	862
14	274	0	410	738	1.8	0	831	316	850	658	633	858
15	8.3	0	409	795	3.0	0	829	316	849	658	11	865
16	.01	0	182	795	1.6	0	830	317	848	658	18	806
17	0	0	.12	794	1.5	0	829	317	846	564	19	4.0
18	72	0	0	786	1.6	0	829	317	847	515	19	2.1
19	137	0	142	682	1.7	0	830	317	846	515	19	330
20	.01	0	394	683	1.7	0	832	397	846	516	16	533
21	0	0	400	675	1.8	.01	833	446	842	516	16	532
22	0	0	400	657	1.8	0	828	457	841	566	16	532
23	0	0	399	664	2.1	2.0	828	457	841	610	17	487
24	0	0	399	37	2.2	1.1	830	457	737	610	17	333
25	0	5.1	399	1.1	2.1	.91	842	457	616	611	17	325
26	0	15	398	3.6	2.1	241	846	362	616	611	18	277
27	0	15	398	3.5	2.1	463	444	183	616	611	19	242
28	0	8.6	398	1.1	2.1	462	268	13	617	609	20	243
29	0	2.1	397	0	---	461	350	15	665	730	20	221
30	0	3.8	397	4.6	---	461	350	15	736	849	20	95
31	0	---	396	9.1	---	461	---	15	---	854	20	---
TOTAL	4134.32	49.64	7010.73	9714.51	101.4	2600.92	20299	9534	22127	19357	12107	12407.1
MEAN	133	1.65	226	313	3.62	83.9	677	308	738	624	391	414
MAX	290	15	418	795	16	463	846	457	868	854	868	866
MIN	0	0	0	0	1.5	0	268	13	15	392	11	2.1
AC-FT	8200	98	13910	19270	201	5160	40260	18910	43890	38390	24010	24610
CAL YR 1986	TOTAL	136220.96	MEAN 373	MAX 812	MIN 0	AC-FT 270200						
WTR YR 1987	TOTAL	119442.62	MEAN 327	MAX 868	MIN 0	AC-FT 236900						

SAN JOAQUIN RIVER BASIN

11300700 SOUTH SAN JOAQUIN MAIN CANAL BELOW WOODWARD RESERVOIR, NEAR OAKDALE, CA

LOCATION.--Lat 37°51'38", long 120°52'45", in Eight Square Leagues On Stanislaus River Grant, Stanislaus County, Hydrologic Unit 18040002, on left bank 500 ft downstream from Woodward Reservoir and 7.0 mi north of Oakdale.

PERIOD OF RECORD.--July 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 175 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from Woodward Reservoir for irrigation in South San Joaquin Irrigation District. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 934 ft³/s, July 15, 1984; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	362	8.5	7.8	400	.07	.07	364	711	352	483	713	487
2	362	8.5	7.8	255	.12	.07	121	682	347	421	626	422
3	361	8.5	7.8	8.9	.09	.07	274	584	527	402	631	399
4	361	8.5	7.8	8.8	.07	.08	301	538	582	382	621	339
5	360	8.5	7.8	8.8	.07	2.1	317	558	526	382	672	218
6	362	8.5	7.5	8.8	.07	2.3	565	523	420	429	642	192
7	387	8.5	7.4	34	.07	.18	712	521	394	583	585	278
8	387	8.5	7.4	0	.07	.12	812	508	432	660	596	376
9	391	8.4	7.4	0	.08	.11	820	486	311	703	639	393
10	418	8.1	7.2	74	.09	.10	784	456	339	702	770	385
11	417	8.1	7.3	40	.10	.10	742	447	333	604	714	399
12	417	8.1	49	192	.20	.10	718	425	368	498	648	393
13	416	8.1	19	332	1.8	.11	692	463	419	487	619	420
14	363	8.1	4.7	488	.12	.17	651	505	473	495	530	387
15	360	8.1	161	626	.14	.19	631	446	546	569	449	314
16	358	8.1	157	635	.10	.15	583	421	625	537	397	277
17	152	8.1	8.7	628	.09	.12	566	359	703	513	380	228
18	9.2	8.1	8.2	573	.08	.10	487	311	649	537	406	228
19	8.9	8.1	8.0	548	.08	.08	395	320	498	578	475	194
20	8.8	7.9	41	469	.07	.06	409	400	497	630	589	249
21	8.8	7.9	94	396	.08	.11	485	395	440	593	519	300
22	8.8	7.8	250	337	.08	.15	473	412	408	584	484	396
23	8.8	7.8	393	199	.08	.31	456	501	385	521	393	358
24	8.8	7.8	390	5.3	.07	.20	391	558	429	468	469	289
25	8.5	7.8	401	5.1	.07	1.9	413	608	510	421	417	283
26	8.5	7.8	400	3.3	.07	153	468	574	564	400	376	291
27	8.5	7.8	400	.57	.07	466	492	614	596	405	354	209
28	8.5	7.8	400	.09	.07	442	599	571	612	481	326	206
29	8.5	7.8	225	.07	---	442	675	488	620	596	387	184
30	8.5	7.8	400	.08	---	442	686	471	547	620	419	197
31	8.5	---	400	.07	---	443	---	419	---	636	502	---
TOTAL	6355.6	243.4	4292.8	6275.88	4.17	2397.05	16082	15275	14452	16320	16348	9291
MEAN	205	8.11	138	202	.15	77.3	536	493	482	526	527	310
MAX	418	8.5	401	635	1.8	466	820	711	703	703	770	487
MIN	8.5	7.8	4.7	0	.07	.06	121	311	311	382	326	184
AC-FT	12610	483	8510	12450	8.3	4750	31900	30300	28670	32370	32430	18430
CAL YR 1986	TOTAL	119770.51	MEAN 328	MAX 746	MIN 0	AC-FT 237600						
WTR YR 1987	TOTAL	107336.90	MEAN 294	MAX 820	MIN 0	AC-FT 212900						

SAN JOAQUIN RIVER BASIN

11300800 NORTH MAIN CANAL BELOW DIVISION POINT, NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°50'01", long 120°40'21", in Rancheria del Rio Estanislao Grant, Stanislaus County, Hydrologic Unit 18040002, on left bank at Parshall flume, 600 ft downstream from division point, and 1.0 mi north of Knights Ferry.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 310 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Canal diverts 600 ft upstream at division point which is 2.0 mi downstream from South San Joaquin Canal (station 11300500). Flow is used for irrigation in Oakdale Irrigation District. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--5 years, 170 ft³/s, 123,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 410 ft³/s, June 18, 19, 1984; no flow for many days in 1983 and 1986.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	.03	3.3	.03	.05	.01	.11	333	259	257	282	197
2	162	.03	4.7	.03	.06	.02	.14	332	259	257	280	198
3	176	.02	6.9	.02	.06	.02	.09	332	258	257	279	198
4	192	.02	13	.01	.05	.02	.09	323	259	255	279	198
5	193	.02	15	.01	.05	.88	.12	314	260	255	279	103
6	193	.01	15	.01	.05	.12	.24	313	259	259	279	.32
7	190	4.1	15	.01	.05	.01	.39	309	260	266	280	1.4
8	190	11	15	.01	.05	.01	41	309	260	267	280	2.5
9	195	6.8	16	.01	.05	.15	140	309	250	266	280	2.5
10	202	6.6	7.8	.02	.05	.04	199	310	239	268	262	1.2
11	202	6.6	2.7	.03	.05	.03	199	310	238	268	253	1.6
12	202	6.6	4.2	.03	.06	.03	242	310	248	269	253	2.9
13	202	6.6	4.1	.03	.40	.03	299	310	256	268	253	3.3
14	202	6.6	4.1	.03	.02	.04	298	310	257	269	250	108
15	11	6.6	4.1	.04	.03	.03	298	310	257	270	257	195
16	.06	6.6	2.2	.05	.02	.03	298	310	257	271	247	215
17	.05	6.4	5.0	.07	.02	.29	317	310	256	271	247	243
18	.05	6.4	9.7	6.7	.02	1.2	347	310	258	271	248	244
19	4.4	6.6	3.4	134	.01	.18	347	310	260	269	249	84
20	.16	6.2	.03	159	.01	.04	335	291	260	268	184	1.3
21	.05	6.3	.03	167	.01	.05	310	277	259	268	182	3.2
22	.03	6.1	.04	184	.01	.03	312	268	259	270	182	3.9
23	1.8	5.8	.03	179	.01	.07	331	268	256	269	183	3.5
24	3.2	5.7	.03	148	.01	.03	344	268	256	269	182	3.3
25	3.3	3.7	.03	125	.01	.03	332	268	256	269	183	3.3
26	3.3	1.0	.03	176	.01	.04	330	268	257	269	183	3.1
27	3.0	1.0	.03	177	.01	.05	301	260	257	269	191	3.0
28	.97	1.0	.03	71	.01	.05	315	261	256	271	197	3.0
29	1.8	1.0	.03	8.8	---	.05	329	259	258	272	198	3.0
30	.07	1.5	.03	3.1	---	.07	331	259	256	278	198	2.5
31	.04	---	.03	.05	---	.09	---	259	---	282	198	---
TOTAL	2689.28	126.93	151.57	1539.09	1.24	3.74	6596.18	9180	7680	8287	7298	2031.82
MEAN	86.8	4.23	4.89	49.6	.044	.12	220	296	256	267	235	67.7
MAX	202	11	16	184	.40	1.2	347	333	260	282	282	244
MIN	.03	.01	.03	.01	.01	.01	.09	259	238	255	182	.32
AC-FT	5330	252	301	3050	2.5	7.4	13080	18210	15230	16440	14480	4030
CAL YR 1986	TOTAL	64876.23	MEAN 178	MAX 407	MIN 0	AC-FT	128700					
WTR YR 1987	TOTAL	45584.85	MEAN 125	MAX 347	MIN .01	AC-FT	90420					

SAN JOAQUIN RIVER BASIN

11301000 OAKDALE CANAL NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°51'32", long 120°37'56", in SW 1/4 SE 1/4 sec.10, T.1 S., R.12 E., Tuolumne County, Hydrologic Unit 18040010, on left bank 0.3 mi downstream from headgate at Goodwin Dam and 3.4 mi northeast of Knights Ferry.

PERIOD OF RECORD.--May 1914 to current year. Records for water years 1933-36 incomplete; monthly and yearly estimates published in WSP 1315-A.

GAGE.--Water-stage recorder. Elevation of gage is 350 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 29, 1916, nonrecording gage at site 1,000 ft upstream at different datum. Apr. 29, 1916, to July 3, 1925, nonrecording gage and July 4, 1925, to Apr. 3, 1949, water-stage recorder at present site at datum 0.18 ft higher.

REMARKS.--Estimated daily discharges: Jan. 13-21, Jan. 28 to Mar. 5, Mar. 8-11, Sept. 24-30. Records good except those for periods of estimated daily discharges, which are poor. Canal diverts water from left bank of Stanislaus River at Goodwin Dam 0.3 mi upstream for irrigation in Oakdale Irrigation District. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--73 years, 170 ft³/s, 123,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 556 ft³/s, July 8-11, 1967; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	262	14	17	18		0	.01	445	378	385	376	311
2	270	14	17	18		0	.01	445	378	384	376	311
3	276	14	17	18		0	.01	446	378	384	386	311
4	276	15	17	18		0	.01	435	378	384	405	312
5	276	15	17	18		5.2	.01	415	379	384	405	189
6	294	15	17	13		9.4	.01	408	379	384	406	.92
7	332	15	17	7.8		9.3	.01	408	380	384	406	.01
8	367	16	18	7.5		8.2	.49	408	380	384	406	0
9	367	16	17	7.2		.02	150	407	375	397	406	0
10	367	17	17	6.0		.02	200	416	381	404	376	13
11	352	18	17	5.5		.02	201	425	373	404	362	21
12	341	18	17	5.3		.02	248	424	366	404	362	21
13	333	19	17	0		.01	330	424	366	404	363	21
14	326	19	17	0		.04	359	424	366	404	363	182
15	17	19	17	0		.01	359	424	376	403	362	327
16	8.3	19	17	0		.01	370	424	384	404	362	327
17	8.2	19	17	0		.01	406	424	383	405	363	327
18	8.2	19	18	35		.01	436	424	387	405	363	327
19	7.8	19	18	180		.01	438	424	384	405	361	140
20	6.9	19	18	210		.01	258	403	384	405	309	.01
21	6.2	19	18	270		.09	.04	392	383	406	309	0
22	5.5	18	18	275		.06	63	392	382	406	309	1.8
23	5.0	18	18	246		.13	426	392	382	405	309	5.2
24	4.6	18	18	180		.16	455	392	383	405	310	4.9
25	4.2	18	18	155		.11	456	392	383	405	311	4.9
26	3.9	18	0	225		.10	456	392	383	405	311	4.9
27	3.6	17	0	216		.06	456	383	383	406	310	4.9
28	3.5	17	0	67		.01	456	378	384	405	310	4.9
29	10	17	18	0	---	.01	457	378	389	390	310	4.9
30	15	17	19	0	---	.01	449	378	386	376	311	4.8
31	14	---	18	0	---	.01	---	378	---	376	311	---
TOTAL	4570.9	516	489	2201.3	0	33.04	7478.11	12700	11393	12302	10929	3182.14
MEAN	147	17.2	15.8	71.0	0	1.07	249	410	380	397	353	106
MAX	367	19	19	275	0	9.4	457	446	389	406	406	327
MIN	3.5	14	0	0	0	0	.01	378	366	376	309	0
AC-FT	9070	1020	970	4370	0	66	14830	25190	22600	24400	21680	6310
CAL YR 1986	TOTAL	81744.41	MEAN 224	MAX 522	MIN 0	AC-FT	162100					
WTR YR 1987	TOTAL	65794.49	MEAN 180	MAX 457	MIN 0	AC-FT	130500					

SAN JOAQUIN RIVER BASIN

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°51'06", long 120°38'13", in Rancheria del Rio Estanislao Grant, Calaveras County, Hydrologic Unit 18040010, on right bank 250 ft upstream from Owl Creek, 0.9 mi downstream from Goodwin Dam, and 2.9 mi northeast of Knights Ferry.

DRAINAGE AREA.--986 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1957 to current year. Records equivalent to those published as Stanislaus River at Knights Ferry, 1903-14, and as Stanislaus River near Knights Ferry, 1915-32, if adjusted for diversions in Stanislaus and San Joaquin Water Co.'s canal and Oakdale and South San Joaquin Canals.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 252.83 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by New Melones Reservoir (station 11299000) since 1978 and Tulloch Reservoir (station 11299995). South San Joaquin Canal (station 11300500) and Oakdale Canal (station 11301000) divert at Goodwin Dam. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--30 years, 813 ft³/s, 589,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft³/s, Dec. 24, 1964, gage height, 28.85 ft in gage well, 31.2 ft outside, from floodmarks; minimum daily, 0.12 ft³/s, Feb. 8, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 37.7 ft, from floodmarks, discharge, 62,900 ft³/s, by computation of flow over Goodwin Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,830 ft³/s, Mar. 6, gage height, 10.87 ft; minimum daily, 191 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	499	368	656	662	341	1250	952	708	608	603	331	394
2	477	396	651	555	340	1250	1260	708	611	473	328	393
3	474	394	642	445	343	1250	1250	708	614	499	323	392
4	485	401	651	442	342	1250	1250	696	666	496	438	447
5	503	401	652	440	343	1270	1250	692	745	494	432	437
6	506	402	651	441	343	1360	1300	698	720	498	431	432
7	506	403	652	431	343	918	1260	692	831	494	430	432
8	498	406	647	434	343	917	1250	696	852	495	426	432
9	505	405	648	431	490	903	1260	699	819	496	427	382
10	507	405	647	441	658	661	1250	701	884	495	429	382
11	504	409	676	450	660	658	1250	697	933	478	436	390
12	500	409	657	435	743	660	1250	662	950	484	435	389
13	508	403	658	437	933	653	1250	658	956	482	434	390
14	457	405	657	445	923	654	1140	659	955	459	435	392
15	425	406	656	445	926	653	1020	659	940	418	345	399
16	405	405	659	446	923	702	1040	658	861	437	343	390
17	407	404	875	447	922	1020	957	652	773	559	342	323
18	403	403	1020	447	924	1250	814	649	798	596	343	336
19	407	401	892	438	853	1250	808	648	804	599	344	334
20	411	401	661	441	888	1250	792	657	805	598	340	299
21	414	405	646	444	1230	1260	724	665	611	606	340	299
22	410	405	655	453	1250	1250	709	666	597	602	340	298
23	408	401	662	443	1250	1260	699	669	592	490	340	256
24	407	392	661	441	1250	1250	701	672	601	484	340	254
25	408	401	661	445	1250	1250	701	671	630	484	487	256
26	408	581	661	436	1250	986	703	668	627	484	505	261
27	408	647	661	437	1260	785	694	620	626	487	394	253
28	406	651	661	452	1250	803	695	612	627	384	395	245
29	402	661	661	445	---	801	700	612	620	398	395	193
30	397	666	660	445	---	803	706	610	609	332	396	191
31	396	---	661	443	---	803	---	606	---	333	395	---
TOTAL	13851	13237	21158	14037	22571	31030	29635	20668	22265	15237	12119	10271
MEAN	447	441	683	453	806	1001	988	667	742	492	391	342
MAX	508	666	1020	662	1260	1360	1300	708	956	606	505	447
MIN	396	368	642	431	340	653	694	606	592	332	323	191
AC-FT	27470	26260	41970	27840	44770	61550	58780	40990	44160	30220	24040	20370
CAL YR 1986	TOTAL	455950	MEAN	1249	MAX	6330	MIN	175	AC-FT	904400		
WTR YR 1987	TOTAL	226079	MEAN	619	MAX	1360	MIN	191	AC-FT	448400		

SAN JOAQUIN RIVER BASIN

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: February 1966 to current year.

INSTRUMENTATION.--Temperature recorder since February 1966.

REMARKS.--Temperature recorder located 2,300 ft upstream from gaging station. Water temperature is affected by regulation from Goodwin Dam. Interruptions in record were due to malfunction of recording instruments.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1967-87): Maximum recorded, 30.5 °C July 25, 1974; minimum recorded, 5.5 °C, Feb. 3, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 15.5 °C, Sept. 1; minimum recorded, 9.0 °C, Jan. 16, 18-21.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	12.5	12.5	12.0	11.5	10.5	10.5	10.0	9.5	12.0	11.5
2	---	---	12.5	12.0	11.5	11.5	10.5	10.5	10.0	10.0	12.0	11.5
3	12.5	12.0	12.5	12.0	11.5	11.5	10.5	10.5	10.0	9.5	12.0	11.5
4	12.5	12.0	12.5	12.0	11.5	11.5	10.5	10.5	10.0	10.0	12.0	11.5
5	13.0	12.0	12.5	12.0	11.5	11.5	10.5	10.5	10.0	10.0	11.5	11.5
6	13.0	12.0	12.5	12.0	11.5	11.5	10.5	10.5	10.5	10.0	12.0	11.5
7	13.0	12.5	12.5	12.0	11.5	11.5	10.5	10.0	10.5	10.0	12.0	12.0
8	13.0	12.5	12.0	12.0	11.5	11.5	10.0	10.0	10.5	10.0	12.0	12.0
9	13.0	12.5	12.0	12.0	11.5	11.5	10.0	10.0	10.5	10.5	12.0	11.5
10	13.0	12.5	12.0	12.0	11.5	11.5	10.0	10.0	10.5	10.5	12.0	12.0
11	13.0	12.5	12.0	12.0	11.5	11.5	10.0	10.0	10.5	10.5	12.5	12.0
12	13.0	12.5	12.0	12.0	11.5	11.5	10.0	10.0	10.5	10.5	12.5	12.0
13	13.0	12.5	12.0	12.0	11.5	11.5	10.0	10.0	10.5	10.5	12.5	12.0
14	12.5	12.5	12.0	12.0	11.5	11.0	10.0	9.5	10.5	10.5	12.5	12.0
15	13.0	12.5	12.0	12.0	11.0	11.0	10.0	9.5	10.5	10.5	12.0	12.0
16	12.5	12.5	12.0	12.0	11.0	11.0	9.5	9.0	10.5	10.5	12.0	12.0
17	12.5	12.5	12.0	12.0	11.0	11.0	9.5	9.5	11.0	10.5	12.0	12.0
18	12.5	12.5	12.0	12.0	11.0	11.0	9.5	9.0	11.0	10.5	12.0	12.0
19	13.0	12.5	12.0	12.0	11.0	11.0	9.5	9.0	11.0	10.5	12.0	11.5
20	13.0	12.5	12.0	12.0	11.0	11.0	9.5	9.0	11.0	11.0	12.0	11.5
21	12.5	12.5	12.0	12.0	11.0	11.0	9.5	9.0	11.0	11.0	12.0	12.0
22	12.5	12.5	12.5	12.0	11.0	10.5	9.5	9.5	11.5	11.0	12.0	11.5
23	12.5	12.5	12.0	12.0	11.0	11.0	9.5	9.5	11.5	11.0	12.0	12.0
24	12.5	12.5	12.0	12.0	11.0	10.5	9.5	9.5	11.5	11.0	12.5	11.5
25	12.5	12.5	12.0	12.0	10.5	10.5	10.0	9.5	11.5	11.0	12.5	11.5
26	12.5	12.5	12.0	11.5	10.5	10.5	10.0	9.5	11.5	11.0	12.5	12.0
27	12.5	12.5	11.5	11.5	10.5	10.5	10.0	9.5	11.5	11.0	12.5	11.5
28	13.0	12.5	11.5	11.5	10.5	10.5	9.5	9.5	11.5	11.5	12.5	11.5
29	13.0	12.5	11.5	11.5	10.5	10.5	9.5	9.5	---	---	12.5	11.5
30	13.0	12.5	12.0	11.5	10.5	10.5	10.0	9.5	---	---	12.5	12.0
31	12.5	12.5	---	---	10.5	10.5	10.0	9.5	---	---	12.5	12.0
MONTH	---	---	12.5	11.5	12.0	10.5	10.5	9.0	11.5	9.5	12.5	11.5

SAN JOAQUIN RIVER BASIN

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.5	12.0	12.5	12.0	14.0	13.0	14.5	13.5	15.0	14.0	15.5	14.5
2	12.5	12.0	13.0	12.0	14.0	13.0	14.5	13.5	15.0	14.0	15.0	14.5
3	12.5	12.0	13.0	12.0	14.0	13.5	14.0	13.5	15.0	14.0	15.0	14.5
4	12.5	12.0	13.0	12.0	14.0	13.5	14.0	13.5	15.0	14.0	15.0	14.5
5	12.5	12.0	13.0	12.0	14.5	14.0	14.0	13.5	15.0	14.5	14.5	14.0
6	12.5	12.0	13.0	12.0	14.0	14.0	14.5	13.5	15.0	14.0	14.5	14.0
7	13.0	12.5	13.5	12.5	15.0	14.0	14.5	13.5	15.0	14.0	14.5	14.0
8	13.0	12.5	13.5	12.5	14.5	14.0	14.5	13.5	15.0	14.0	14.5	14.0
9	13.5	12.5	13.5	12.5	14.5	13.5	14.5	13.5	15.0	14.0	14.5	14.0
10	13.5	13.0	13.0	12.5	14.5	13.5	14.5	14.0	15.0	14.0	14.5	14.0
11	13.0	13.0	13.0	12.5	14.5	14.0	14.5	14.0	15.0	14.0	14.5	14.0
12	13.5	12.5	13.0	12.5	14.5	14.0	14.5	14.0	15.0	14.0	14.5	14.0
13	13.5	12.5	13.0	12.5	14.5	14.0	15.0	14.0	15.0	14.0	14.5	14.0
14	13.5	12.5	13.5	12.5	14.5	13.5	14.5	14.0	15.0	14.0	14.5	14.0
15	13.5	12.5	13.5	12.5	14.5	13.5	14.5	14.0	15.0	14.0	14.5	14.0
16	13.5	12.5	13.0	12.5	14.5	13.5	14.5	14.0	15.0	14.5	14.5	14.0
17	13.0	12.5	13.0	12.5	14.0	13.5	14.5	13.5	15.0	14.5	14.5	14.0
18	13.0	12.5	13.5	12.5	14.5	13.5	14.5	13.5	15.0	14.5	14.5	14.0
19	13.0	12.5	13.0	12.5	14.5	13.5	14.5	14.0	15.0	14.5	14.5	14.0
20	13.0	12.0	13.0	12.5	14.0	13.5	14.5	14.0	14.5	14.5	14.5	14.0
21	12.5	11.5	13.5	12.5	14.0	13.5	14.5	14.0	15.0	14.5	14.5	14.0
22	12.5	11.5	13.5	12.5	14.0	13.5	14.5	14.0	15.0	14.5	14.5	14.0
23	13.0	12.0	13.5	12.5	14.0	13.5	14.5	14.0	15.0	14.5	14.5	14.0
24	13.0	12.0	13.5	12.5	14.0	13.5	14.5	14.0	15.0	14.5	15.0	14.0
25	13.0	12.0	13.0	12.5	14.0	13.5	14.5	14.0	15.0	14.5	15.0	14.5
26	13.0	12.5	13.5	12.5	14.0	13.5	14.5	14.0	15.0	14.5	15.0	14.0
27	13.0	12.5	13.5	12.5	14.0	13.5	14.5	14.0	15.0	14.5	15.0	14.0
28	12.5	12.0	13.5	13.0	14.0	13.5	14.5	14.0	15.0	14.5	15.0	14.5
29	12.5	12.0	13.5	13.0	14.0	13.5	14.5	14.0	15.0	14.5	15.0	14.5
30	12.5	12.0	13.5	13.0	14.5	13.5	14.5	14.0	15.0	14.5	15.0	14.5
31	---	---	14.0	13.0	---	---	15.0	14.0	15.0	14.5	---	---
MONTH	13.5	11.5	14.0	12.0	15.0	13.0	15.0	13.5	15.0	14.0	15.5	14.0

SAN JOAQUIN RIVER BASIN

11302500 STANISLAUS RIVER AT OAKDALE, CA

LOCATION.--Lat 37°46'38", long 120°51'07", in Eight Square Leaques on Stanislaus River Grant, Stanislaus County, Hydrologic Unit 18040002, on left bank at State Highway 120 bridge at Oakdale.

DRAINAGE AREA.--1,032 mi².

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: September 1985 to September 1987.

INSTRUMENTATION.--Water-temperature recorder since Aug. 28, 1985.

REMARKS.--Interruptions in record are due to malfunction of recording instruments.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum daily, 20.0 °C, Aug. 2-3, 1987; minimum daily, 7.5 °C, Jan. 16-19, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 20.0 °C, Aug. 2-3; minimum recorded, 7.5 °C, Jan. 16-19.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.5	13.0	13.0	11.5	10.5	10.0	10.0	10.0	11.0	9.5	12.0	10.5
2	14.0	12.5	12.5	11.5	11.0	10.0	10.5	10.0	10.5	10.0	12.0	11.0
3	14.0	12.5	12.5	11.5	11.0	10.0	10.5	10.0	11.0	10.0	12.0	11.0
4	14.0	12.5	12.5	11.5	11.0	10.5	10.5	10.0	11.0	9.5	11.5	11.0
5	14.5	12.5	12.5	11.5	11.0	10.0	10.5	9.5	11.0	9.5	12.0	11.0
6	14.5	13.0	12.5	11.0	11.5	11.0	10.5	10.0	11.0	10.0	12.5	12.0
7	14.5	13.0	11.5	11.0	11.0	10.5	10.0	9.5	11.5	10.0	13.0	11.5
8	14.5	13.0	12.0	10.5	10.5	10.0	9.5	8.5	11.5	10.5	12.5	11.5
9	14.5	13.0	11.5	10.5	10.5	9.5	9.5	8.5	11.5	11.0	12.5	11.0
10	14.5	13.0	12.0	10.5	10.5	10.0	9.5	9.0	11.5	10.5	12.5	11.0
11	14.0	13.0	12.0	10.5	10.0	10.0	9.5	9.0	12.0	11.0	13.5	11.5
12	14.0	12.5	12.0	10.5	10.0	10.0	9.5	9.0	11.5	11.0	13.5	12.0
13	14.0	12.5	12.0	10.5	10.5	10.0	9.0	8.5	11.5	10.5	13.5	12.5
14	14.0	12.5	12.0	11.0	10.5	10.0	9.0	8.0	11.5	10.5	13.0	12.0
15	14.0	12.5	12.0	11.0	10.5	10.0	9.0	8.0	11.5	10.5	12.5	11.0
16	14.0	12.5	11.5	10.5	10.5	9.5	8.5	7.5	11.0	10.0	13.0	11.0
17	14.0	12.5	11.5	11.0	10.5	9.5	8.5	7.5	11.0	9.5	13.5	11.0
18	14.0	12.5	12.0	11.5	10.5	10.0	8.5	7.5	11.5	9.5	12.5	11.5
19	13.5	12.5	12.5	11.5	11.0	10.0	8.5	7.5	11.0	9.5	12.5	11.0
20	13.5	12.5	12.5	12.0	10.5	10.0	9.0	8.0	11.5	9.5	12.5	11.0
21	13.5	12.5	12.5	12.0	10.0	9.5	9.0	8.0	10.5	9.5	12.0	11.5
22	13.5	12.5	12.0	11.0	10.5	10.0	9.0	8.0	11.5	10.0	12.5	11.0
23	13.5	12.5	11.5	10.5	10.5	10.0	9.5	9.0	11.0	10.0	12.0	11.5
24	14.0	12.5	11.5	10.5	10.5	9.5	10.0	9.0	11.0	10.0	13.0	11.0
25	14.0	12.5	11.5	10.5	10.5	10.0	10.5	9.5	11.5	10.5	13.5	11.0
26	14.0	12.5	11.0	10.0	10.0	9.5	10.5	9.0	11.5	10.0	13.5	11.5
27	14.5	13.0	11.0	10.0	10.0	10.0	10.5	10.0	11.5	10.0	13.5	11.5
28	14.0	13.0	11.0	10.0	10.0	10.0	10.5	9.5	11.5	10.5	13.5	11.0
29	14.0	13.0	11.0	10.5	10.0	9.5	10.0	9.5	---	---	14.0	11.5
30	14.0	13.0	11.0	10.0	10.0	10.0	10.0	10.0	---	---	14.0	12.0
31	13.5	12.0	---	---	10.0	9.5	10.5	9.5	---	---	14.0	12.0
MONTH	14.5	12.0	13.0	10.0	11.5	9.5	10.5	7.5	12.0	9.5	14.0	10.5

SAN JOAQUIN RIVER BASIN

11302500 STANISLAUS RIVER AT OAKDALE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

SAN JOAQUIN RIVER BASIN

11303000 STANISLAUS RIVER AT RIPON, CA

LOCATION.--Lat 37°43'47", long 121°06'34", in NW 1/4 SE 1/4 sec.29, T.2 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 15 ft downstream from railroad bridge, 1.1 mi southeast of Ripon, and 15 mi upstream from mouth.

DRAINAGE AREA.--1,075 mi².

PERIOD OF RECORD.--October 1940 to current year. April to September 1940 in reports of California Department of Water Resources.

GAGE.--Water-stage recorder. Datum of gage is 0.72 ft above National Geodetic Vertical Datum of 1929. October 1940 to Nov. 17, 1953, at site 100 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Oct. 12-15. Records good. Flow regulated by reservoirs and powerplants above station (see REMARKS for station 11302000). South San Joaquin and Oakdale Canals (stations 11300500 and 11301000) divert at Goodwin Dam 34 mi upstream. Diversions for irrigation of 57,250 acres in vicinity of Oakdale. See schematic diagram of Stanislaus River basin.

AVERAGE DISCHARGE.--47 years, 1,043 ft³/s, 755,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,500 ft³/s, Dec. 24, 1955, gage height, 63.25 ft; minimum daily, 0.11 ft³/s, Aug. 4-6, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 12, 1938, reached a stage of 64.4 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,210 ft³/s, Mar. 7, gage height, 45.50 ft; minimum daily, 275 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	938	534	686	1100	485	1230	1270	840	671	677	472	534
2	929	537	687	1100	439	1230	1200	821	661	659	438	492
3	908	543	697	830	463	1230	1280	816	657	576	491	460
4	881	538	698	610	441	1230	1280	831	671	563	445	451
5	875	529	698	562	429	1270	1260	815	707	584	497	494
6	841	529	707	558	420	1810	1260	776	836	550	513	492
7	777	526	706	551	417	1840	1280	780	814	544	511	479
8	799	528	701	512	398	1180	1260	790	899	554	496	475
9	794	529	699	515	392	1070	1260	791	934	552	504	479
10	803	523	693	494	462	1010	1320	836	911	555	493	420
11	811	520	679	612	607	821	1330	840	951	555	508	428
12	830	523	746	528	636	765	1320	773	1000	581	521	447
13	822	527	933	513	790	748	1310	755	1010	576	530	418
14	815	526	948	499	1160	732	1300	725	1040	542	559	425
15	807	525	963	510	1030	729	1230	752	1030	550	530	433
16	642	519	969	542	986	726	1150	767	1010	521	472	451
17	660	513	809	533	966	754	1130	778	955	505	453	470
18	668	505	869	525	956	992	1100	747	865	578	438	400
19	581	503	1030	523	952	1180	1020	720	905	602	425	416
20	565	503	961	520	893	1200	1060	723	933	636	427	407
21	564	504	1020	523	922	1220	1020	728	921	642	431	372
22	556	504	1070	512	1140	1240	891	745	804	641	408	344
23	550	503	1090	534	1190	1260	841	761	705	662	456	364
24	549	502	1100	534	1210	1300	849	748	678	589	463	339
25	549	499	1090	505	1210	1280	843	765	668	559	446	332
26	548	495	1100	504	1220	1260	832	739	678	554	488	333
27	547	573	1100	522	1220	1260	853	743	667	578	516	343
28	545	656	1100	533	1230	1270	846	736	665	535	468	338
29	544	670	1090	575	---	1270	806	725	675	500	444	301
30	540	681	952	522	---	1280	814	677	673	486	460	275
31	539	---	1080	495	---	1280	---	668	---	439	484	---
TOTAL	21777	16067	27671	17896	22664	35667	33215	23711	24594	17645	14787	12412
MEAN	702	536	893	577	809	1151	1107	765	820	569	477	414
MAX	938	681	1100	1100	1230	1840	1330	840	1040	677	559	534
MIN	539	495	679	494	392	726	806	668	657	439	408	275
AC-FT	43190	31870	54890	35500	44950	70750	65880	47030	48780	35000	29330	24620
CAL YR 1986	TOTAL	513374	MEAN	1407	MAX	6620	MIN	304	AC-FT	1018000		
WTR YR 1987	TOTAL	268106	MEAN	735	MAX	1840	MIN	275	AC-FT	531800		

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA
(National stream-quality accounting network station)

LOCATION.--Lat 37°40'34", long 121°15'55", in El Pescadero Grant, San Joaquin County, Hydrologic Unit 18040003, on left bank 12 ft downstream from Durham Ferry highway bridge, 2.6 mi downstream from Stanislaus River, and 3.2 mi northeast of Vernalis.

DRAINAGE AREA.--13,536 mi², includes about 2,100 mi² in James Bypass.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1922 to current year (1922-23 and 1925-29, low-water records only).

REVISED RECORDS.--WSP 831: 1936. WSP 931: 1940. WSP 1930: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929. See WSP 2130 for history of changes prior to Nov. 30, 1967.

REMARKS.--Estimated daily discharges: Apr. 2-7. Records good. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals, and diversions for irrigation; low flows consist mainly of return flow from irrigated areas.

AVERAGE DISCHARGE.--59 years (water years 1924, 1930-87), 4,759 ft³/s, 3,448,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge recorded, 79,000 ft³/s, Dec. 9, 1950, elevation, 32.81 ft, present datum, including flow through breaks in levee; maximum elevation, 34.55 ft, Jan. 27, 1969; minimum discharge, 19 ft³/s, Aug. 10, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,410 ft³/s, Mar. 7, elevation, 15.04 ft; minimum daily, 1,330 ft³/s, Sept. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3840	3350	2640	4480	1990	2480	3190	2410	2180	1680	1510	1740
2	3860	3280	2990	3910	1720	2480	3170	2510	2070	1730	1650	1770
3	4040	3230	3180	2750	1700	2540	3310	2410	1980	1710	1650	1690
4	3950	3190	3350	2540	1860	2610	3370	2380	1930	1650	1540	1650
5	3930	3160	3270	2320	1880	2780	3350	2280	1910	1750	1420	1640
6	3850	3110	2950	2060	1740	3590	3320	2180	1970	1780	1500	1790
7	3490	3030	2760	2550	1590	6000	3250	2000	2190	1670	1480	1840
8	3620	3000	2660	2750	1500	5220	3180	2000	2260	1600	1510	1830
9	3680	3010	2880	2770	1410	4370	3130	2080	2280	1610	1640	1800
10	3760	3020	4100	2580	1390	4010	3100	2190	2220	1560	1680	1660
11	3850	3020	4280	2170	1480	3710	3080	2300	2160	1540	1650	1590
12	3940	2990	4370	2050	1590	3410	3090	2220	2110	1610	1670	1510
13	3910	2960	4510	1810	1880	3260	3100	2130	2090	1620	1680	1620
14	3520	2940	4460	2090	2450	3120	3040	2090	2110	1580	1670	1700
15	3730	2850	3780	2070	2940	3040	2940	2030	2140	1450	1690	1710
16	4130	2650	3080	2060	2790	3000	2790	2050	2010	1410	1750	1630
17	4420	2610	4260	2190	2760	3050	2720	2090	1980	1390	1690	1590
18	4460	2620	4350	2120	2700	3180	2760	2220	1900	1350	1670	1580
19	3980	2570	4610	1950	2590	3340	2710	2120	1880	1530	1600	1530
20	3720	2540	4630	1720	2440	3360	2760	2050	1960	1670	1510	1550
21	3560	2490	4300	1920	2290	3320	2690	2120	2010	1660	1490	1630
22	3490	2500	3770	1950	2350	3370	2580	2170	2010	1680	1560	1510
23	3480	2500	3190	2000	2460	3380	2440	2180	1890	1640	1630	1420
24	3450	2470	4340	2130	2450	3480	2400	2260	1840	1710	1680	1430
25	3420	2440	4380	2140	2460	3510	2420	2290	1850	1780	1650	1330
26	3410	2430	3800	2020	2460	3470	2430	2260	1730	1850	1680	1350
27	3500	2510	3100	1860	2470	3430	2490	2220	1710	1860	1690	1440
28	3610	2570	3920	2110	2470	3400	2470	2130	1760	1720	1700	1480
29	3510	2600	3680	2200	---	3370	2390	2030	1820	1670	1660	1490
30	3460	2610	3070	2110	---	3310	2340	2020	1750	1620	1750	1400
31	3410	---	4230	2080	---	3260	---	2090	---	1510	1780	---
TOTAL	115980	84250	114890	71460	59810	105850	86010	67510	59700	50590	50430	47900
MEAN	3741	2808	3706	2305	2136	3415	2867	2178	1990	1632	1627	1597
MAX	4460	3350	4630	4480	2940	6000	3370	2510	2280	1860	1780	1840
MIN	3410	2430	2640	1720	1390	2480	2340	2000	1710	1350	1420	1330
AC-FT	230000	167100	227900	141700	118600	210000	170600	133900	118400	100300	100000	95010
CAL YR 1986	TOTAL	2760080	MEAN	7562	MAX	36600	MIN	1740	AC-FT	5475000		
WTR YR 1987	TOTAL	914380	MEAN	2505	MAX	6000	MIN	1330	AC-FT	1814000		

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

CHEMICAL DATA: Water years 1951 to current year.

BIOLOGICAL DATA: Water years 1974-81.

SPECIFIC CONDUCTANCE: Water years 1951-63, 1973-81, June 1985 to current year.

WATER TEMPERATURE: Water years 1951 to current year.

SEDIMENT DATA: Water years 1957 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: March 1951 to May 1963.

SPECIFIC CONDUCTANCE: March 1951 to May 1963, January 1973 to October 1981, June 1985 to current year.

WATER TEMPERATURE: March 1951 to current year.

SUSPENDED-SEDIMENT DISCHARGE: November 1956 to current year.

INSTRUMENTATION.--Conductivity recorder January 1973 to October 1981. Temperature recorder October 1961 to September 1963, and since December 1972. Mini-monitor recorder since June 1985.

REMARKS.--Mean daily specific-conductance records January 1973 to October 1981, furnished by U.S. Bureau of Reclamation. Maximum and minimum specific-conductance values, June 1985 to current year, are available in files of U.S. Geological Survey. Interruptions in record were due to malfunction of recording instruments.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,350 microsiemens, Aug. 11, 1961; minimum daily, 60 microsiemens, June 21, 1953.

WATER TEMPERATURE: Maximum recorded, 30.0 °C, July 7, 1970, July 30, 1977; minimum recorded, 3.0 °C, Jan. 24, 1962.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,590 mg/L, Dec. 25, 1964; minimum daily mean, 9 mg/L, Jan. 4, 1960, Nov. 18, 1961.

SEDIMENT LOAD: Maximum daily, 54,100 tons, Dec. 25, 1964; minimum daily, 2 tons, Aug. 10, 1961.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 28.0 °C, July 14, 15; minimum recorded, 4.0 °C, Jan. 17.

SEDIMENT CONCENTRATION: Maximum daily mean, 237 mg/L, Mar. 7; minimum daily mean, 19 mg/L, Jan. 12.

SEDIMENT LOAD: Maximum daily, 3,840 tons, Mar. 7; minimum daily, 105 tons, Jan. 12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1986												
18...	1300	2690	516	7.5	13.0	765	7.2	9.0	85	670	230	130
JAN , 1987												
16...	1330	2090	644	7.8	6.5	770	8.3	11.3	91	K13	K33	150
MAR												
09...	1345	4330	526	7.6	15.0	770	27	7.9	78	--	--	120
MAY												
18...	1230	2260	627	8.0	22.0	765	32	9.7	111	K370	78	150
JUL												
13...	1230	1660	795	7.9	25.0	765	40	8.4	102	2400	230	180
SEP												
21...	1215	1670	767	8.0	21.0	760	18	9.1	103	1400	1600	190
DATE		HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	CAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L CACO3)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3
NOV												
18...	46	27	14	59	50	2	2.1	98	0	80	79	
JAN												
16...	51	32	16	76	53	3	2.9	116	0	95	95	
MAR												
09...	45	27	13	63	52	3	4.6	90	0	74	76	
MAY												
18...	40	34	16	71	50	3	2.8	111	0	91	90	
JUL												
13...	56	41	19	88	51	3	3.8	153	0	125	125	
SEP												
21...	57	41	20	92	51	3	3.9	162	0	133	133	

See footnote at end of table.

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 18...	70	68	0.10	15	309	300	0.42	0.020	1.30	0.070	0.080	0.80
JAN 16...	100	82	<0.10	16	390	380	0.53	0.040	1.60	0.440	0.420	1.5
MAR 09...	89	63	0.10	15	330	320	0.45	0.080	1.80	0.440	0.390	2.9
MAY 18...	88	85	<0.10	15	387	370	0.53	0.030	1.50	<0.010	0.020	1.5
JUL 13...	110	100	0.20	18	449	460	0.61	0.040	1.90	0.020	0.030	0.90
SEP 21...	98	100	0.20	19	462	450	0.63	0.020	1.60	0.030	<0.010	0.80

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 18...	0.130	0.080	0.070	<10	1	53	<0.5	1	<1	<3	1	16
JAN 16...	0.300	0.210	0.200	--	--	--	--	--	--	--	--	--
MAR 09...	0.490	0.400	0.350	80	2	46	<0.5	<1	<1	<3	4	71
MAY 18...	0.320	0.140	0.140	<10	2	44	<0.5	<1	<1	<3	10	18
JUL 13...	0.310	0.160	0.130	--	--	--	--	--	--	--	--	--
SEP 21...	0.210	0.170	0.120	<10	2	61	<0.5	<1	<1	<3	2	19

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 18...	<5	10	38	<0.1	<10	<1	1	<1	300	<6	9
JAN 16...	--	--	--	--	--	--	--	--	--	--	--
MAR 09...	<5	9	19	<0.1	<10	<1	2	<1	300	<6	17
MAY 18...	<5	13	14	<0.1	<10	3	1	<1	390	<6	31
JUL 13...	--	--	--	--	--	--	--	--	--	--	--
SEP 21...	<5	8	22	<0.1	<10	<1	2	<1	480	<6	3

K Results based on colony count outside the acceptable range (non-ideal colony count).
 < Actual value is known to be less than the value shown.

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDED (MG/L)	SED. TOTAL, SIEVE DIAM. % FINER THAN .062 MM
MAR										
09...*	1220	317	523	7.5	15.0	770	8.0	79	134	80
09...*	1230	263	524	7.6	15.0	770	7.8	77	148	76
09...*	1235	221	524	7.6	15.0	770	7.8	77	134	84
09...*	1240	181	526	7.6	15.0	770	7.8	77	146	78
09...*	1245	141	528	7.6	15.0	770	7.8	77	90	94
JUL										
13...*	1205	141	805	7.9	25.0	765	8.6	100	110	99
13...*	1215	178	800	7.9	25.0	765	8.7	101	110	98
13...*	1225	223	789	7.9	25.0	765	8.7	101	112	98
13...*	1240	271	788	7.9	25.0	765	8.8	102	115	98
13...*	1255	315	789	8.0	25.0	765	8.8	102	113	98

* Instantaneous streamflow at the time of cross-sectional measurements: Mar. 9, 4,330 ft³/s; July 13, 1,660 ft³/s.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	17.0	14.0	12.5	9.0	10.0	8.5	11.5	8.5	12.5	9.0
2	---	---	17.0	13.5	11.5	9.0	10.0	9.0	10.5	9.5	13.5	10.0
3	---	---	16.5	12.5	12.0	9.0	10.0	9.5	11.5	9.0	14.5	11.0
4	---	---	16.5	12.5	11.0	9.5	12.0	9.5	12.5	7.5	13.5	10.5
5	---	---	16.5	12.5	11.0	10.0	13.0	9.5	13.5	8.5	11.5	10.5
6	---	---	15.0	12.0	12.5	9.5	10.5	9.0	12.0	7.5	14.0	11.0
7	---	---	14.0	11.0	12.5	9.5	12.5	9.5	12.5	9.0	14.0	11.0
8	18.5	14.0	14.0	11.0	11.5	8.5	11.0	7.5	12.5	10.0	13.5	11.5
9	19.0	14.0	13.5	10.0	11.0	8.0	10.5	8.0	12.5	10.5	15.0	11.5
10	18.5	14.0	13.5	10.0	10.0	8.0	8.5	7.5	14.0	11.0	14.0	11.5
11	18.0	13.5	14.0	9.5	10.0	8.0	8.5	7.5	14.0	11.5	15.5	12.0
12	17.5	13.0	14.0	9.5	10.0	7.0	8.5	7.5	14.0	10.5	16.5	13.0
13	18.0	13.0	14.0	9.5	10.0	7.0	11.0	7.0	14.0	11.0	16.5	13.0
14	19.0	13.5	13.5	10.0	10.0	7.5	10.5	7.0	13.0	10.5	15.0	11.5
15	19.5	13.5	14.0	10.5	7.5	6.5	9.5	6.0	13.5	10.0	14.5	11.5
16	18.0	14.0	14.0	10.0	11.0	6.5	8.5	5.0	13.0	10.0	15.0	11.5
17	17.5	13.0	12.5	6.0	11.0	7.0	8.5	4.0	13.0	9.5	15.5	11.5
18	18.0	13.0	16.5	7.5	11.0	7.5	8.5	4.5	13.0	9.5	14.5	12.0
19	18.5	13.0	17.0	11.0	11.0	8.5	10.5	5.5	12.5	9.0	14.0	10.5
20	19.0	13.5	15.5	5.5	12.0	9.0	10.0	6.0	12.0	8.5	13.0	9.5
21	17.5	14.0	16.0	12.0	11.0	7.5	9.5	6.0	11.0	8.5	12.5	8.5
22	18.5	15.5	15.5	12.5	10.0	7.5	8.5	6.5	12.0	8.0	13.5	10.0
23	17.0	15.5	15.5	12.5	11.5	8.5	10.5	7.0	11.5	8.5	13.0	9.0
24	18.5	15.5	15.0	11.5	11.0	7.5	10.0	8.0	11.0	7.0	13.5	10.0
25	19.5	15.5	14.5	11.5	10.0	7.5	12.5	9.0	11.5	8.5	14.5	11.0
26	20.5	15.5	13.5	10.0	9.0	7.0	10.5	9.0	11.5	8.0	16.0	11.0
27	19.5	16.0	14.0	10.0	9.5	7.5	10.5	9.5	12.0	8.0	16.0	12.5
28	17.5	16.5	11.5	10.5	9.5	8.0	11.5	9.0	12.5	9.0	16.0	12.0
29	18.0	15.0	13.0	10.0	10.0	7.5	12.0	9.0	---	---	16.5	12.0
30	18.5	15.5	12.5	10.0	9.0	7.5	12.0	9.0	---	---	17.5	13.0
31	17.5	15.0	---	---	9.5	8.0	12.5	9.0	---	---	18.0	14.0
MONTH	---	---	17.0	5.5	12.5	6.5	13.0	4.0	14.0	7.0	18.0	8.5

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

TEMPERATURE (DEG C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	3840	66	684	3350	50	452	2640	30	214
2	3860	64	667	3280	48	425	2990	32	258
3	4040	62	676	3230	49	427	3180	49	421
4	3950	60	640	3190	48	413	3350	70	633
5	3930	57	605	3160	46	392	3270	54	477
6	3850	53	551	3110	50	420	2950	41	327
7	3490	52	490	3030	41	335	2760	33	246
8	3620	54	528	3000	38	308	2660	32	230
9	3680	59	586	3010	38	309	2880	38	295
10	3760	55	558	3020	41	334	4100	81	897
11	3850	55	572	3020	42	342	4280	88	1020
12	3940	56	596	2990	41	331	4370	85	1000
13	3910	49	517	2960	48	384	4510	80	974
14	3520	44	418	2940	43	341	4460	64	771
15	3730	45	453	2850	38	292	3780	48	490
16	4130	55	613	2650	36	258	3080	46	383
17	4420	59	704	2610	38	268	4260	64	736
18	4460	60	723	2620	41	290	4350	61	716
19	3980	58	623	2570	46	319	4610	63	784
20	3720	58	583	2540	49	336	4630	50	625
21	3560	58	557	2490	43	289	4300	50	581
22	3490	57	537	2500	37	250	3770	37	377
23	3480	63	592	2500	36	243	3190	32	276
24	3450	60	559	2470	36	240	4340	50	586
25	3420	56	517	2440	36	237	4380	47	556
26	3410	55	506	2430	34	223	3800	33	339
27	3500	59	558	2510	36	244	3100	29	243
28	3610	59	575	2570	36	250	3920	48	508
29	3510	54	512	2600	33	232	3680	37	368
30	3460	57	532	2610	32	226	3070	26	216
31	3410	56	516	---	---	---	4230	39	445
TOTAL	115980	---	17748	84250	---	9410	114890	---	15992
JANUARY			FEBRUARY			MARCH			
1	4480	44	532	1990	32	172	2480	38	254
2	3910	39	412	1720	30	139	2480	33	221
3	2750	32	238	1700	31	142	2540	35	240
4	2540	35	240	1860	39	196	2610	35	247
5	2320	29	182	1880	35	178	2780	38	285
6	2060	27	150	1740	34	160	3590	117	1130
7	2550	50	344	1590	32	137	6000	237	3840
8	2750	89	661	1500	34	138	5220	128	1800
9	2770	44	329	1410	36	137	4370	127	1500
10	2580	27	188	1390	37	139	4010	112	1210
11	2170	21	123	1480	41	164	3710	106	1060
12	2050	19	105	1590	57	245	3410	105	967
13	1810	22	108	1880	114	579	3260	99	871
14	2090	28	158	2450	144	953	3120	91	767
15	2070	27	151	2940	147	1170	3040	92	755
16	2060	29	161	2790	108	814	3000	93	753
17	2190	28	166	2760	98	730	3050	78	642
18	2120	26	149	2700	84	612	3180	88	756
19	1950	26	137	2590	63	441	3340	70	631
20	1720	25	116	2440	55	362	3360	61	553
21	1920	29	150	2290	50	309	3320	55	493
22	1950	35	184	2350	47	298	3370	56	510
23	2000	32	173	2460	45	299	3380	50	456
24	2130	37	213	2450	39	258	3480	50	470
25	2140	37	214	2460	38	252	3510	57	540
26	2020	35	191	2460	34	226	3470	64	600
27	1860	35	176	2470	32	213	3430	64	593
28	2110	39	222	2470	34	227	3400	52	477
29	2200	37	220	---	---	---	3370	53	482
30	2110	33	188	---	---	---	3310	50	447
31	2080	36	202	---	---	---	3260	48	422
TOTAL	71460	---	6783	59810	---	9690	105850	---	23972

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	3190	52	448	2410	79	514	2180	91	536
2	3170	53	454	2510	79	535	2070	89	497
3	3310	56	500	2410	74	482	1980	88	470
4	3370	51	464	2380	72	463	1930	89	464
5	3350	50	452	2280	90	554	1910	89	459
6	3320	57	511	2180	82	483	1970	100	532
7	3250	54	474	2000	78	421	2190	98	579
8	3180	52	446	2000	93	502	2260	102	622
9	3130	51	431	2080	84	472	2280	103	634
10	3100	58	485	2190	90	532	2220	109	653
11	3080	66	549	2300	92	571	2160	115	671
12	3090	64	534	2220	87	521	2110	109	621
13	3100	60	502	2130	86	495	2090	105	593
14	3040	54	443	2090	92	519	2110	92	524
15	2940	55	437	2030	86	471	2140	90	520
16	2790	59	444	2050	86	476	2010	86	467
17	2720	64	470	2090	84	474	1980	88	470
18	2760	60	447	2220	90	539	1900	96	492
19	2710	58	424	2120	92	527	1880	96	487
20	2760	55	410	2050	95	526	1960	93	492
21	2690	57	414	2120	128	733	2010	96	521
22	2580	55	383	2170	95	557	2010	103	559
23	2440	58	382	2180	87	512	1890	113	577
24	2400	59	382	2260	85	519	1840	112	556
25	2420	65	425	2290	88	544	1850	115	574
26	2430	68	446	2260	84	513	1730	115	537
27	2490	69	464	2220	80	480	1710	127	586
28	2470	67	447	2130	82	472	1760	133	632
29	2390	78	503	2030	83	455	1820	132	649
30	2340	87	550	2020	82	447	1750	128	605
31	---	---	---	2090	88	497	---	---	---
TOTAL	86010	---	13721	67510	---	15806	59700	---	16579
JULY			AUGUST			SEPTEMBER			
1	1680	117	531	1510	132	538	1740	86	404
2	1730	113	528	1650	127	566	1770	81	387
3	1710	112	517	1650	110	490	1690	76	347
4	1650	126	561	1540	116	482	1650	69	307
5	1750	133	628	1420	118	452	1640	83	368
6	1780	133	639	1500	119	482	1790	78	377
7	1670	131	591	1480	128	511	1840	78	388
8	1600	121	523	1510	148	603	1830	69	341
9	1610	133	578	1640	152	673	1800	64	311
10	1560	136	573	1680	124	562	1660	68	305
11	1540	128	532	1650	114	508	1590	64	275
12	1610	120	522	1670	102	460	1510	61	249
13	1620	116	507	1680	117	531	1620	67	293
14	1580	116	495	1670	118	532	1700	73	335
15	1450	124	485	1690	110	502	1710	76	351
16	1410	121	461	1750	100	473	1630	72	317
17	1390	125	469	1690	99	452	1590	63	270
18	1350	106	386	1670	102	460	1580	51	218
19	1530	108	446	1600	97	419	1530	58	240
20	1670	124	559	1510	89	363	1550	52	218
21	1660	120	538	1490	86	346	1630	53	233
22	1680	104	472	1560	86	362	1510	44	179
23	1640	111	492	1630	91	400	1420	41	157
24	1710	108	499	1680	92	417	1430	39	151
25	1780	129	620	1650	87	388	1330	39	140
26	1850	139	694	1680	81	367	1350	41	149
27	1860	139	698	1690	82	374	1440	41	159
28	1720	133	618	1700	75	344	1480	42	168
29	1670	116	523	1660	77	345	1490	52	209
30	1620	110	481	1750	84	397	1400	53	200
31	1510	128	522	1780	76	365	---	---	---
TOTAL	50590	---	16688	50430	---	14164	47900	---	8046
YEAR	914380		168599						

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT						
21...	1115	3540	15.5	56	535	83
22...	1412	3490	18.0	62	584	83
NOV						
21...	0945	2490	13.5	34	229	79
DEC						
16...	1515	3120	10.5	40	337	63
JAN						
16...	1330	2090	6.5	29	164	86
22...	1400	1970	8.0	26	138	85
FEB						
19...	1400	2500	12.0	103	695	93
MAR						
09...	1345	4330	15.0	130	1520	83
25...	1315	3490	14.0	63	594	78
APR						
23...	1200	2430	19.0	80	525	90
MAY						
18...	1230	2270	22.0	100	613	94
JUN						
17...	1515	2050	21.5	132	731	96
JUL						
13...	1230	1660	25.0	113	506	98
21...	1330	1680	22.0	127	576	97
AUG						
17...	1300	1670	23.5	111	500	95
21...	1410	1510	23.0	100	408	95
SEP						
21...	1215	1670	21.0	54	243	94

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
MAY								
18...	1230	22.0	5	2270	--	0	5	54

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM
MAY			
18...	91	98	100

SAN JOAQUIN RIVER BASIN

11308600 CALAVERAS RIVER ABOVE NEW HOGAN LAKE, NEAR SAN ANDREAS, CA

LOCATION.--Lat 38°11'48", long 120°43'18", in NW 1/4 SW 1/4 sec. 13, T.4 N., R.11 E., Calaveras County, Hydrologic Unit 18040011, on right bank 600 ft below confluence of the North and South Forks of the Calaveras River, and 2.3 mi west of San Andreas.

DRAINAGE AREA.--307 mi².

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1970 to current year.

INSTRUMENTATION.--Temperature recorder since October 1970.

REMARKS.--Interruptions in record were due to extreme low-flow conditions.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 31.5 °C, Aug. 8, 9, 1978; minimum recorded, 2.0 °C, Jan. 7, 1973, Jan. 4, 1976, Jan. 17-19, 21, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded (more than 20-percent missing record), 27.0 °C, May 15; minimum recorded, 2.0 °C, Jan. 17-19, 21.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

SAN JOAQUIN RIVER BASIN

11308600 CALAVERAS RIVER ABOVE NEW HOGAN LAKE, NEAR SAN ANDREAS, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	13.0	19.0	16.0								
2	15.5	13.5	19.5	15.5								
3	15.5	14.0	21.0	15.5								
4	15.5	13.0	22.5	16.5								
5	16.0	13.0	23.5	17.5								
6	16.5	13.5	24.0	18.5								
7	17.5	14.5	24.5	19.0								
8	18.0	15.0	24.5	19.5								
9	19.0	15.0	25.0	20.0								
10	18.5	16.0	26.0	20.0								
11	19.0	16.5	26.5	20.5								
12	18.0	14.5	26.5	20.0								
13	18.5	14.5	25.0	20.0								
14	19.5	15.5	26.5	19.0								
15	20.0	16.0	27.0	20.0								
16	20.0	16.0	26.0	20.0								
17	20.0	16.5	24.5	16.0								
18	19.0	16.0	25.0	15.5								
19	18.5	14.5	24.5	16.0								
20	18.5	14.0	22.0	17.0								
21	20.0	15.0	23.0	16.0								
22	19.5	15.5	23.0	16.0								
23	20.0	16.0	23.0	16.0								
24	20.5	16.0	22.5	15.0								
25	21.0	16.0	20.5	15.5								
26	21.5	17.0	20.5	15.5								
27	23.0	18.0	22.5	14.0								
28	21.0	19.0	22.5	15.0								
29	21.0	17.5	23.5	16.0								
30	19.5	17.5	24.0	15.0								
31	---	---	26.5	17.0								
MONTH	23.0	13.0	27.0	14.0								

SAN JOAQUIN RIVER BASIN

11308700 NEW HOGAN LAKE NEAR VALLEY SPRINGS, CA

LOCATION.--Lat 38°09'01", long 120°48'45", in SW 1/4 SW 1/4 sec.31, T.4 N., R.11 E., Calaveras County, Hydrologic Unit 18040011, in control house at New Hogan Dam on the Calaveras River, 3.0 mi south of Valley Springs.

DRAINAGE AREA.--362 mi².

PERIOD OF RECORD.--December 1963 to current year. Prior to October 1971, published as "New Hogan Reservoir."

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

REMARKS.--Reservoir is formed by an earthfill dam and four earthfill dikes. Storage began Dec. 20, 1963. Total capacity, 317,055 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 ft³/s at Bellota. Records, including extremes, show contents at 2400 hours.

COOPERATION.--Records provided by U.S. Army Corps of Engineers; not reviewed by U.S. Geological Survey and not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 278,798 acre-ft, May 15-16, 1982, elevation, 703.75 ft; minimum since initial season of normal operation, 9,360 acre-ft, Oct. 27, 1964, elevation, 576.81 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 144,191 acre-ft, Apr. 5, elevation, 663.31 ft; minimum, 59,230 acre-ft, Sept. 30, elevation, 624.44 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by U.S. Army Corps of Engineers, from 1978 survey)

545	588	600	26,851
550	1,117	610	38,252
555	1,892	630	68,795
560	2,960	650	110,300
570	6,149	670	163,134
580	11,013	700	264,177
590	17,835	713	317,123

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135318	130868	127291	125333	123794	128931	144109	135530	120079	103743	86596	69588
2	135134	130738	127189	125282	123970	128931	144137	135028	119634	103220	86084	69101
3	134975	130609	127087	125536	124071	128905	144164	134580	119142	102699	85553	68634
4	134817	130480	126985	125637	124096	128854	144164	134106	118576	102224	84983	68168
5	134658	130247	127010	125662	124071	131517	144191	133607	118012	101661	84395	67704
6	134501	130040	126933	125688	124020	134922	144164	133162	117499	101166	83709	67296
7	134343	129833	126882	125637	123995	135741	144109	132665	116962	100605	83106	66853
8	134185	129704	126781	125587	123970	136191	144082	132090	116427	100025	82546	66465
9	134027	129549	126705	125536	123920	136537	144000	131569	115893	99424	81948	66061
10	133817	129421	126628	125460	123894	136775	143836	131024	115336	98803	81372	65694
11	133660	129266	126501	125409	124071	136962	143672	130480	114709	98206	80799	65344
12	133476	129163	126424	125333	124398	137201	143454	129963	114083	97545	80247	64961
13	133345	129008	126322	125308	124752	137707	143236	129446	113460	96952	79698	64580
14	133188	128905	126271	125206	127342	138429	142963	128880	112814	96449	79171	64217
15	133031	128777	126196	125080	128007	139716	142583	128315	112194	95882	78607	63873
16	132847	128674	126094	124954	128469	140416	142229	127725	111624	95252	78064	63598
17	132690	128546	126043	124827	128752	140848	141822	127163	111103	94646	77524	63204
18	132534	128443	125992	124752	128828	141145	141361	126577	110607	94020	77005	62812
19	132403	128366	126018	124600	128880	141361	140956	126018	110135	93376	76507	62455
20	132247	128289	125992	124499	128931	141524	140632	125536	109594	92755	75973	62133
21	132116	128212	125916	124398	128931	141714	140281	125080	109031	92201	75441	61862
22	131960	128110	125891	124247	128983	141931	139851	124575	108517	91648	74835	61492
23	131778	128059	125891	124222	129008	142392	139393	124096	108027	91098	74271	61173
24	131648	127956	125840	124121	128983	142963	138937	123618	107492	90591	73765	60838
25	131491	127879	125789	124045	129008	143318	138482	123166	106935	90065	73260	60538
26	131362	127802	125738	123894	128983	143617	137948	122765	106380	89541	72739	60288
27	131232	127674	125713	123894	128983	143754	137494	122365	105803	89081	72184	60006
28	131154	127546	125587	123945	128957	143891	136882	121941	105252	88602	71631	59742
29	131128	127521	125536	123920	---	143946	136351	121517	104770	88041	71098	59477
30	131076	127393	125460	123894	---	144054	135953	120996	104267	87544	70605	59230
31	130998	---	125384	123869	---	144109	---	120524	---	87049	70078	---
MAX	135318	130868	127291	125688	129008	144109	144191	135530	120079	103743	86596	69588
MIN	130998	127393	125384	123869	123794	128854	135953	120524	104267	87049	70078	59230
a	658.36	656.96	656.17	655.57	657.57	663.28	660.25	654.23	647.40	639.47	630.71	624.44
b	-4505	-3605	-2009	-1515	+5088	+15152	-8156	-15429	-16257	-17218	-16971	-10848
c	964	541	183	162	316	532	921	1180	1365	1390	1236	910

CAL YR 1986 b +26205
WTR YR 1987 b -76273

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

SAN JOAQUIN RIVER BASIN

11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CA

LOCATION.--Lat 38°08'53", long 120°49'26", in NW 1/4 NE 1/4 sec.1, T.3 N., R.10 E., Calaveras County, Hydrologic Unit 18040011, on right bank at county road bridge, 0.5 mi upstream from Cosgrove Creek, 0.8 mi downstream from New Hogan Dam, and 3.0 mi south of Valley Springs.

DRAINAGE AREA.--363 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 519.8 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Auxiliary nonrecording gage 300 ft downstream at different datum used May 1, 1962, to Jan. 26, 1963.

REMARKS.--Estimated daily discharges: Jan. 2-6. Records good. Flow regulated by New Hogan Lake (station 11308700). Some seepage of North Fork Stanislaus River water enters basin from diversion canals and reservoirs, normally not over 1.5 ft³/s. Small diversions above station for irrigation.

AVERAGE DISCHARGE.--(adjusted for change in contents and evaporation from New Hogan Lake).--26 years, 251 ft³/s, 181,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft³/s, Jan. 22, 1980, gage height, 10.52 ft; no flow many days in 1961-65, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 401 ft³/s, Aug. 20, gage height, 1.99 ft; minimum daily, 20 ft³/s, Mar. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	58	52	46	49	50	52	214	206	216	231	249
2	76	60	54	51	50	48	52	249	206	231	243	241
3	75	59	52	58	49	48	52	260	216	213	255	229
4	74	78	51	58	51	50	52	260	234	214	263	223
5	71	105	58	56	52	50	52	241	241	234	265	215
6	71	102	63	56	51	39	61	226	241	237	301	212
7	71	96	54	56	51	29	69	245	241	242	280	211
8	71	82	49	56	49	28	77	260	241	259	271	198
9	76	80	50	50	48	22	91	260	242	270	276	183
10	76	75	56	48	46	21	120	260	249	273	260	176
11	76	71	63	49	46	21	117	260	274	274	260	165
12	77	71	62	53	47	34	117	255	281	290	258	169
13	75	71	62	52	38	31	139	260	272	265	249	171
14	78	64	56	64	26	24	177	259	273	243	256	163
15	74	59	53	71	27	23	217	255	274	240	264	154
16	77	61	52	71	26	22	210	255	259	249	255	163
17	78	61	51	71	25	22	214	255	239	255	247	178
18	76	60	55	71	41	22	214	255	213	275	243	181
19	76	61	59	72	51	34	206	242	206	286	231	155
20	76	56	56	78	51	49	191	223	218	265	250	145
21	76	53	57	80	51	54	200	214	238	252	265	146
22	76	52	56	80	51	52	215	218	223	249	295	145
23	76	52	56	80	51	53	225	215	213	236	295	152
24	76	52	53	80	51	33	248	207	223	225	266	163
25	76	52	49	80	51	20	259	202	242	236	251	142
26	76	52	49	74	46	21	262	187	241	225	257	128
27	67	52	49	71	45	39	269	175	245	202	280	132
28	33	52	51	66	50	51	269	187	239	211	285	127
29	21	49	48	63	---	52	267	201	218	230	273	127
30	21	49	46	55	---	52	239	229	206	234	260	117
31	43	---	46	49	---	52	---	221	---	230	260	---
TOTAL	2140	1945	1668	1965	1270	1146	4933	7250	7114	7561	8145	5160
MEAN	69.0	64.8	53.8	63.4	45.4	37.0	164	234	237	244	263	172
MAX	78	105	63	80	52	54	269	260	281	290	301	249
MIN	21	49	46	46	25	20	52	175	206	202	231	117
AC-FT	4240	3860	3310	3900	2520	2270	9780	14380	14110	15000	16160	10230

CAL YR 1986	TOTAL	133851	MEAN	367	MAX	6920	MIN	16	AC-FT	265500	MEAN	a	419	AC-FT	a	303600
WTR YR 1987	TOTAL	50297	MEAN	138	MAX	301	MIN	20	AC-FT	99760	MEAN	a	45.8	AC-FT	a	33180

a Adjusted for change in contents and evaporation from New Hogan Lake. Evaporation adjustments used as provided; not reviewed by U.S. Geological Survey.

SAN JOAQUIN RIVER BASIN

11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-66, 1971 to current year.

CHEMICAL DATA: Water years 1964-66.

WATER TEMPERATURE: Water year 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1970 to current year.

INSTRUMENTATION.--Temperature recorder since October 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 24.0 °C Aug. 10, 28-29, 1977; minimum recorded, 5.5 °C Dec. 17, 1971, Jan. 1, 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 16.5 °C Sept. 28-30; minimum recorded, 7.5 °C Jan. 31.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

SAN JOAQUIN RIVER BASIN

11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

SAN JOAQUIN RIVER BASIN

11313000 DELTA-MENDOTA CANAL AT TRACY PUMPING PLANT, NEAR TRACY, CA

LOCATION.--Lat 37°47'49", long 121°35'03", in SW 1/4 SW 1/4 sec.31, T.1 S., R.4 E., Alameda County, Hydrologic Unit 18040003, at Tracy pumping plant at intake to canal, 6 mi southeast of Byron, and 10 mi northwest of Tracy.

PERIOD OF RECORD.--June 1951 to current year. Prior to October 1959, published as "near Tracy."

GAGE.--Water-stage recorder on forebay, pressure gages on pump discharge lines, and operating time of pumps. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Discharge computed from records of operation of pumps. Water is diverted from Sacramento-San Joaquin Delta by way of Old River and a dredged channel to the Tracy pumping plant where it is lifted 200 ft into canal. Water, less intermediate diversions, flows into Mendota Pool on San Joaquin River to replace water diverted at Friant Dam. The canal is a part of the Central Valley Project.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation; rounded to U.S. Geological Survey standards.

AVERAGE DISCHARGE.--36 years, 2,425 ft³/s, 1,757,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,940 ft³/s, Aug. 11, 1969; no flow many days in some years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4010	3900	4040	4050	4010	4000	3800	3030	2920	4490	4480	4580
2	4000	3540	4060	4060	4020	4010	4120	3040	3170	4280	4550	4200
3	4020	3460	4050	4060	3980	4000	4150	3030	3340	4310	4580	4040
4	3990	3300	4050	4040	4060	4020	4140	3030	3260	4520	4600	4140
5	4030	3320	4060	3990	4020	4030	3960	3030	3240	4460	4600	4370
6	4000	3300	4030	3980	4020	4040	4100	3040	3230	4230	4590	4460
7	4030	3320	4030	3970	4030	3560	4060	3040	3260	3920	4610	4450
8	4030	3300	4000	3980	4040	3200	4070	3710	3250	3930	4590	4300
9	4060	3290	4000	3990	4040	2790	4030	3890	3300	4310	4580	4470
10	4050	3290	3990	3990	4060	1760	4030	3240	3220	4550	4550	4490
11	4050	3270	4010	3970	4040	1760	4040	2990	3250	4540	4540	4490
12	4030	3280	3980	3990	4050	1740	4010	3250	3260	4510	4560	4480
13	4010	3280	4000	3990	4050	1740	4290	3300	3250	4480	4560	4250
14	3990	3310	4010	3980	4020	1740	4470	3890	3250	4530	4560	4060
15	3980	3620	4020	3990	4040	1730	4540	4090	3210	4570	4560	4080
16	4010	4020	3980	3980	4040	1730	4540	4100	3100	4550	4530	4270
17	4000	3970	4020	3980	4020	1730	4560	4120	3190	4570	4590	4500
18	3990	4040	4000	3980	4020	1730	4530	4060	3180	4550	4630	4260
19	4000	4040	4020	3980	4010	1740	4560	4110	2740	4560	4600	4250
20	4000	4020	4000	3970	4010	1730	4480	3600	2610	4610	4590	4270
21	4000	4040	3980	3960	4020	1750	4610	2650	2610	4560	4610	4270
22	4000	4010	3960	3950	4030	1740	4410	2420	2610	4580	4560	4180
23	4020	4000	4000	4030	4040	1750	4650	2510	2620	4590	4540	4070
24	4030	4000	3950	4030	4050	1740	4580	2530	2620	4560	4500	4180
25	3930	4000	3980	4020	4040	1740	4410	1920	2630	4570	4560	4210
26	3980	4010	3970	4050	4040	1740	4620	1710	2570	4530	4550	4240
27	3960	4010	3990	4040	4020	1740	4580	1700	2460	4520	4530	4260
28	4020	3960	3990	4050	4020	1740	4580	1710	2520	3820	4570	4240
29	4040	3940	3990	4030	---	1740	4600	1710	2890	4190	4530	4240
30	3740	3950	4060	4020	---	2250	4620	2020	3180	4600	4580	4190
31	4020	---	4110	4030	---	3040	---	2440	---	4510	4570	---
TOTAL	124020	110790	124330	124130	112840	73750	130140	92910	89940	137500	141550	128490
MEAN	4001	3693	4011	4004	4030	2379	4338	2997	2998	4435	4566	4283
MAX	4060	4040	4110	4060	4060	4040	4650	4120	3340	4610	4630	4580
MIN	3740	3270	3950	3950	3980	1730	3800	1700	2460	3820	4480	4040
AC-FT	246000	219800	246600	246200	223800	146300	258100	184300	178400	272700	280800	254900
CAL YR 1986	TOTAL	1326516	MEAN	3634	MAX	4610	MIN	186	AC-FT	2631000		
WTR YR 1987	TOTAL	1390390	MEAN	3809	MAX	4650	MIN	1700	AC-FT	2758000		

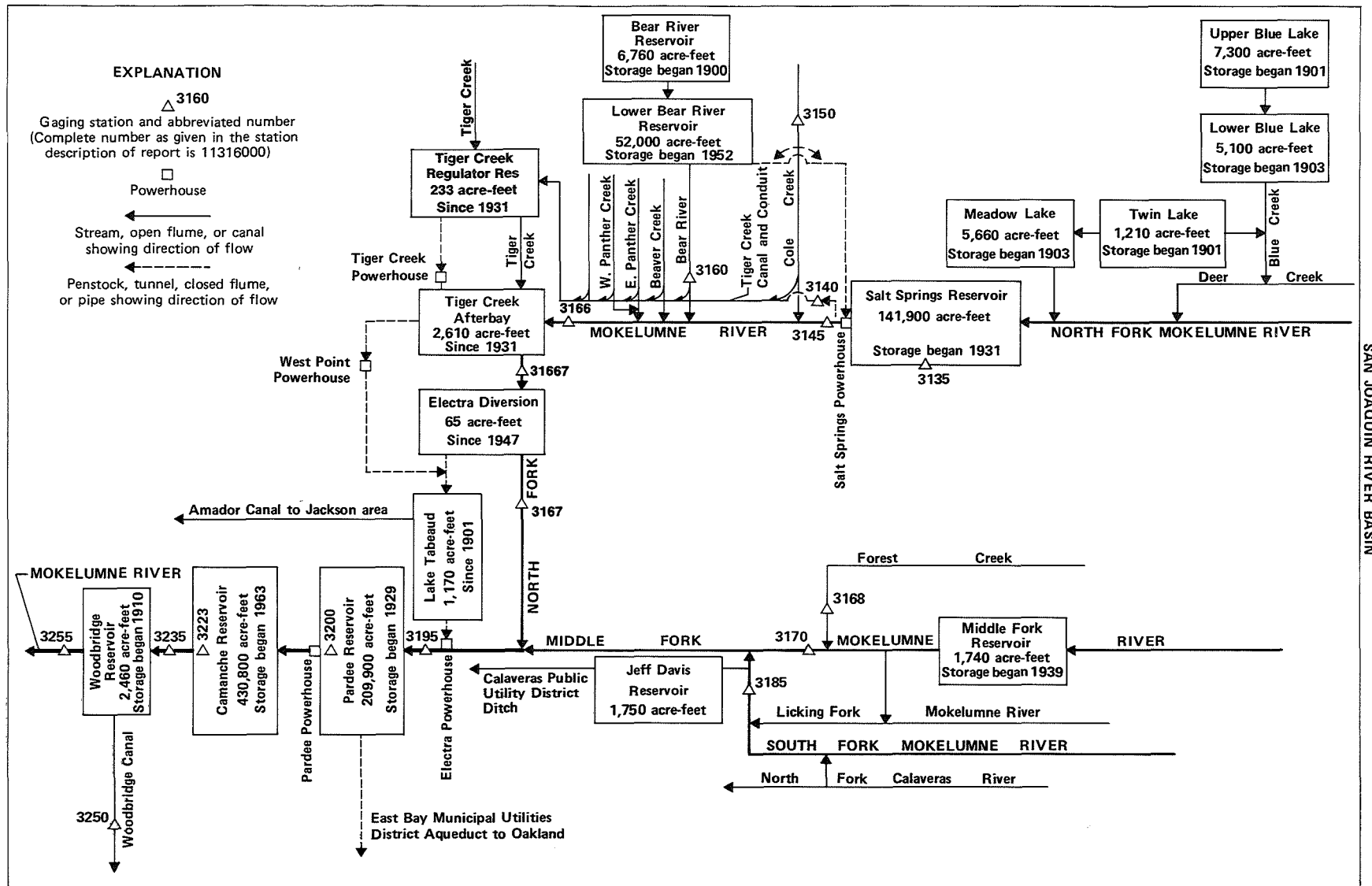


Figure 36. - Schematic diagram showing diversions and storage in Mokelumne River basin.

SAN JOAQUIN RIVER BASIN

11313500 SALT SPRINGS RESERVOIR NEAR WEST POINT, CA

LOCATION.--Lat 38°29'55", long 120°12'52", in NW 1/4 SE 1/4 sec.33, T.8 N., R.16 E., Calaveras County, Hydrologic Unit 18040012, Eldorado National Forest, near center of Salt Springs Dam on North Fork Mokelumne River, 1.8 mi upstream from Cole Creek, and 18 mi northeast of West Point.

DRAINAGE AREA.--169 mi².

PERIOD OF RECORD.--March 1931 to current year. Prior to October 1964, records published as usable contents.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam, completed in 1931; storage began in March 1931. Capacity, 141,857 acre-ft between elevations 3,667.75 ft, outlet drain, and 3,958.0 ft, top of radial gates. Storage of 1,860 acre-ft available for release to river only. Water is released through Salt Springs powerplant just downstream from dam and discharged into Tiger Creek powerplant conduit (station 11314000). Figures given here, including extremes, represent total contents at 1400 hours. See schematic diagram of Mokelumne River basin.

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

EXTREMES (AT 1400) FOR PERIOD OF RECORD.--Maximum contents, 141,857 acre-ft, several days during June or July of most years, elevation, 3,958.0 ft; no contents at times in 1932-33, 1945, 1962.

EXTREMES (AT 1400) FOR CURRENT YEAR.--Maximum contents, 95,452 acre-ft, Oct. 2, elevation, 3,905.8 ft; minimum, 9,640 acre-ft, Mar. 4, elevation, 3,749.4 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)							
(Based on table provided by Pacific Gas & Electric Co., dated October 1964)							
3,700.0	1,251	3,720.0	3,519	3,740.0	7,324	3,800.0	28,017
3,705.0	1,679	3,725.0	4,324	3,750.0	9,799	3,850.0	54,852
3,710.0	2,199	3,730.0	5,229	3,760.0	12,689	3,900.0	90,786
3,715.0	2,812	3,735.0	6,230	3,780.0	19,632	3,958.0	141,857

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 1400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95208	80013	53915	25697	12001	9746	13963	56497	90310	80920	61751	41707
2	95452	78959	52802	24702	11776	9693	14389	57203	90151	80315	61348	41112
3	95370	78060	51520	23767	11539	9666	14889	58499	90151	79636	60544	40468
4	95208	77314	50544	22973	11305	9640	15398	60212	89834	79184	59946	39882
5	94883	76720	49360	22153	11045	9666	15810	62292	89597	78734	59352	39564
6	94478	76127	49064	21468	10845	10342	15984	64407	89359	78135	58761	39194
7	94073	75389	48828	20794	10620	10732	16158	66137	89202	77463	58044	38773
8	93751	74434	48298	20170	10397	10959	16829	67889	88886	76868	57396	38406
9	93187	73484	47308	19556	10123	11102	17776	70019	88807	76275	56753	37885
10	92785	72539	46328	19139	9906	11131	18950	72321	88650	75684	56115	37316
11	92303	71960	45303	18614	9852	11131	20209	75242	88413	74654	55481	36751
12	92223	71238	44403	18059	9852	11334	21910	78584	88020	73556	54852	36292
13	91903	70735	44068	17876	10369	11835	23051	80996	88020	72684	54226	35886
14	91583	70091	43846	17876	10817	11835	24573	82979	88020	72032	53481	35331
15	91185	69663	43458	17802	10902	12319	26313	84517	87863	71454	52618	34830
16	90627	68596	42523	17475	10959	12442	28200	86067	87393	70807	51701	34234
17	90310	67749	41598	16684	10902	12567	30142	87002	86690	70305	50975	33888
18	89755	66836	40736	16054	10845	12814	31897	87785	86067	69663	50194	33348
19	89359	65859	39299	15707	10760	12876	33104	88099	85445	68951	49657	32474
20	88807	64958	38668	15535	10648	13160	34283	88492	85523	68172	49005	31944
21	88178	64064	37834	15364	10452	13255	35431	89123	85678	67537	48474	31276
22	87785	63039	36905	15092	10259	13382	36853	89518	85600	66979	47598	30707
23	87315	61886	35633	14722	10150	13446	38511	89676	85213	66486	46845	30142
24	86690	61012	34681	14323	10041	13542	40095	89755	84903	65929	46042	29536
25	85600	60212	33544	13930	10014	13639	42305	89755	84362	65166	45530	29072
26	84517	59550	32329	13542	9987	13639	44459	89755	83977	64407	44964	29072
27	83746	58434	31276	13128	9987	13703	46730	89676	83977	63712	44403	29072
28	83055	57396	30236	12720	9852	13768	49064	89676	83208	63243	43790	28842
29	82443	56306	29165	12908	---	13768	51459	89518	82290	62699	43458	28474
30	81832	55103	28017	12596	---	13542	54977	89834	81604	62224	43127	28154
31	81072	---	26801	12227	---	13735	---	90151	---	61684	42359	---
MAX	95452	80013	53915	25697	12001	13768	54977	90151	90310	80920	61751	41707
MIN	81072	55103	26801	12227	9852	9640	13963	56497	81604	61684	42359	28154
a	3887.5	3850.4	3797.3	3758.5	3750.2	3763.3	3850.2	3899.2	3888.2	3860.5	3828.7	3800.3
b	-14705	-25969	-28302	-14574	-2375	+3883	+41242	+35174	-8547	-19920	-19325	-14205

CAL YR 1986 b -1216

WTR YR 1987 b -67623

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

SAN JOAQUIN RIVER BASIN

11314000 TIGER CREEK POWERPLANT CONDUIT BELOW SALT SPRINGS DAM, CA

LOCATION.--Lat 38°29'45", long 120°13'11", in SE 1/4 SW 1/4 sec.33, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 1,000 ft downstream from Salt Springs Dam and powerplant and 18 mi northeast of West Point.

PERIOD OF RECORD.--June 1931 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,700 ft above National Geodetic Vertical Datum of 1929, from topographic map. Auxiliary nonrecording gages in stilling wells upstream and downstream from control.

REMARKS.--No estimated daily discharges. Conduit conveys water of North Fork Mokelumme River from tailrace of Salt Springs powerplant to forebay of Tiger Creek powerplant. Since December 1952, records include Bear River and Cole Creek diversion to Salt Springs No. 2 powerplant (station 11313510). See schematic diagram of Mokelumme River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--56 years, 365 ft³/s, 264,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 577 ft³/s, June 22, 1945; no flow at times in many years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	399	555	536	535	200	101	101	351	223	551	53	537
2	359	558	537	534	152	100	101	192	390	551	524	517
3	407	559	537	536	126	100	101	1.6	383	455	550	548
4	454	560	537	402	125	100	101	8.8	301	303	554	484
5	510	561	383	300	125	101	101	6.3	304	303	554	400
6	518	555	102	299	125	101	101	0	304	468	555	400
7	498	556	104	299	124	100	101	0	304	547	555	401
8	486	556	377	299	125	100	101	0	303	542	555	429
9	485	557	535	300	125	100	99	0	252	542	554	509
10	485	557	535	298	125	100	99	0	302	542	554	548
11	486	557	534	299	125	100	102	0	302	543	550	505
12	486	555	233	299	125	101	100	0	178	541	545	403
13	501	555	152	146	110	102	99	0	100	541	545	401
14	509	336	152	301	98	100	100	0	101	538	513	488
15	509	495	249	303	100	100	100	172	277	535	454	548
16	495	540	538	302	100	100	102	302	400	528	452	545
17	486	534	536	300	100	100	102	300	404	478	509	544
18	513	508	537	300	101	101	102	299	401	401	542	515
19	544	535	495	298	100	101	102	300	250	400	536	451
20	551	488	240	300	100	101	100	270	.28	438	530	450
21	551	518	451	300	101	101	255	301	0	519	504	505
22	550	537	509	298	100	100	351	301	321	512	451	543
23	550	536	536	255	100	101	351	301	501	509	451	540
24	555	536	535	202	100	101	354	301	502	469	485	539
25	557	536	535	201	53	100	353	301	502	402	516	358
26	553	536	535	200	101	99	349	301	295	400	512	.50
27	554	536	536	200	101	100	350	301	182	462	514	0
28	560	537	538	200	101	100	352	286	500	496	506	223
29	561	537	538	200	---	100	350	226	533	491	160	400
30	560	536	537	200	---	261	352	101	550	490	212	400
31	557	---	536	199	---	101	---	101	---	438	497	---
TOTAL	15789	16022	13635	9105	3168	3273	5432	5023.7	9365.28	14935	14992	13131.50
MEAN	509	534	440	294	113	106	181	162	312	482	484	438
MAX	561	561	538	536	200	261	354	351	550	551	555	548
MIN	359	336	102	146	53	99	99	0	0	303	53	0
AC-FT	31320	31780	27050	18060	6280	6490	10770	9960	18580	29620	29740	26050
a	11650	5020	0	3060	0	0	3920	0	3070	8520	9760	11580

CAL YR 1986 TOTAL 158826,30 MEAN 435 MAX 563 MIN 0 AC-FT 315000 MEAN a 169 AC-FT a 122200
WTR YR 1987 TOTAL 123871,48 MEAN 339 MAX 561 MIN 0 AC-FT 245700 MEAN a 78.1 AC-FT a 56570

a Inflow, in acre-feet, through Salt Springs No. 2 powerplant, provided by Pacific Gas & Electric Co.

SAN JOAQUIN RIVER BASIN

11314500 NORTH FORK MOKELUMNE RIVER BELOW SALT SPRINGS DAM, CA

LOCATION.--Lat 38°29'37", long 120°13'12", in NE 1/4 NW 1/4 sec.4, T.7 N., R.16 E., Calaveras County, Hydrologic Unit 18040012, Stanislaus National Forest, on left bank 0.5 mi downstream from Salt Springs Dam, 1.3 mi upstream from Cole Creek, and 18 mi northeast of West Point.

DRAINAGE AREA.--170 mi².

PERIOD OF RECORD.--September 1926 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "above Moore Creek" 1926-30.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,590 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 12, 1928, at site 100 ft upstream and Sept. 12, 1928, to Sept. 23, 1940, at present site at datum 2.0 ft higher.

REMARKS.--No estimated daily discharges. Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 0.5 mi upstream. Water is imported from Bear River and Cole Creek to Salt Springs No. 2 powerplant (station 11313510) upstream from the station since December 1952. Then most of the water bypasses station through Tiger Creek powerplant conduit (station 11314000). See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (combined flow of North Fork Mokelumne River and Tiger Creek powerplant conduit minus Bear River and Cole Creek diversion).--61 years, 484 ft³/s, 350,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s, Nov. 21, 1950, gage height, 17.20 ft, from rating curve extended above 3,900 ft³/s on basis of computations of flow over dam and discharge through powerplant; minimum daily, 0.3 ft³/s, Mar. 31, Apr. 1, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 117 ft³/s, May 26, gage height, 2.45 ft; minimum daily, 16 ft³/s, Nov. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	21	21	23	20	19	24	23	23	22	25	23
2	35	16	21	21	20	19	23	25	23	22	24	24
3	34	21	22	22	19	19	23	26	23	23	24	23
4	34	21	22	22	19	18	22	36	23	23	23	23
5	34	22	25	22	19	19	22	29	23	23	23	24
6	33	21	24	21	19	19	22	27	23	23	23	24
7	33	21	22	21	19	19	23	28	23	23	23	24
8	33	21	21	21	19	19	23	24	23	22	23	23
9	36	20	21	21	19	19	23	25	26	22	23	23
10	37	20	21	21	19	19	24	24	23	23	23	23
11	34	20	21	21	20	19	24	23	22	23	23	23
12	33	20	18	21	20	19	23	23	26	23	23	23
13	34	21	22	21	21	19	23	24	23	23	23	23
14	34	21	22	22	20	19	23	25	23	23	24	23
15	33	23	23	21	20	19	23	24	23	23	23	23
16	33	21	22	22	20	19	25	23	23	24	23	23
17	33	22	22	21	20	19	25	23	23	23	23	23
18	33	22	21	20	20	19	25	23	22	23	23	23
19	33	21	26	21	20	18	25	23	25	23	23	23
20	33	23	33	21	19	18	24	26	28	23	23	23
21	33	24	24	21	19	19	23	24	25	23	23	24
22	33	23	24	21	19	19	23	23	26	23	23	24
23	33	23	22	20	19	20	23	23	24	23	23	24
24	35	21	22	20	19	21	23	23	23	23	23	23
25	39	21	23	20	22	23	24	23	23	23	23	24
26	32	21	23	20	19	23	24	50	26	23	23	25
27	35	23	22	20	19	23	24	52	26	23	23	24
28	36	22	22	20	19	23	23	24	23	24	23	25
29	33	21	23	20	---	23	23	59	23	23	23	24
30	33	22	22	20	---	24	23	23	23	23	24	24
31	32	---	23	20	---	24	---	22	---	25	23	---
TOTAL	1050	639	700	648	547	619	702	850	713	713	719	705
MEAN	33.9	21.3	22.6	20.9	19.5	20.0	23.4	27.4	23.8	23.0	23.2	23.5
MAX	39	24	33	23	22	24	25	59	28	25	25	25
MIN	32	16	18	20	19	18	22	22	22	22	23	23
AC-FT	2080	1270	1390	1290	1080	1230	1390	1690	1410	1410	1430	1400

CAL YR 1986 TOTAL 161734 MEAN 443 MAX 3760 MIN 16 AC-FT 320800
WTR YR 1987 TOTAL 8605 MEAN 23.6 MAX 59 MIN 16 AC-FT 17070

11315000 COLE CREEK NEAR SALT SPRINGS DAM, CA

LOCATION.--Lat 38°31'09", long 120°12'42", in SW 1/4 NE 1/4 sec.28, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 200 ft downstream from bridge, 0.3 mi upstream from diversion dam, 1.4 mi north of Salt Springs Dam, 3.2 mi upstream from mouth, and 6.5 mi southwest of Mokelumne Peak.

DRAINAGE AREA.--21.0 mi².

PERIOD OF RECORD.--July 1927 to November 1942, October 1943 to current year. Prior to October 1958, published as Cold Creek near Mokelumne Peak. October 1958 to September 1960, published as "near Mokelumne Peak."

REVISED RECORDS.--WSP 1515: 1928, 1930-31, 1938(M), 1944, 1947. WSP 1930: Drainage area.

GAGE.--Water-stage recorder and concrete control since Oct. 30, 1974. Elevation of gage is 5,920 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 30, 1974, at site 0.4 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Feb. 11-22, 27, 28, Mar. 1-9. Occasional pumping upstream from station for domestic use in summer-home tract began in September 1961. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--59 years, 65.7 ft³/s, 47,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,140 ft³/s, Dec. 23, 1964, gage height, 10.21 ft, site and datum then in use, from rating curve extended above 900 ft³/s on basis of slope-area measurement at gage height 9.69 ft, site and datum then in use; no flow many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 919 ft³/s, May 11, gage height, 3.88 ft, from rating curve extended above 480 ft³/s on basis of routing downstream discharge at old site at gage height 3.87 ft; minimum daily, 0.03 ft³/s, Aug. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	.45	.51	.63	5.3	30	76	111	23	.97	.16	.13
2	11	.42	.50	.75	6.9	31	96	78	20	.87	.17	.11
3	5.7	.36	.51	.73	5.5	33	89	107	18	.80	.11	.10
4	4.6	.34	.50	.81	5.5	52	55	147	16	.75	.09	.09
5	5.3	.34	.58	.90	6.0	48	60	160	14	.69	.08	.14
6	9.7	.33	.78	1.4	7.8	44	79	141	13	.64	.05	.14
7	7.9	.31	.73	1.3	12	39	113	120	20	.58	.06	.14
8	6.2	.32	.70	1.3	16	36	122	147	20	.53	.06	.12
9	4.9	.34	.61	1.3	12	35	145	144	14	.59	.06	.08
10	3.7	.34	.55	1.1	17	34	165	133	11	.66	.03	.08
11	3.0	.34	.54	1.6	33	27	180	283	8.7	.86	.04	.07
12	2.4	.34	.51	2.6	28	33	153	215	7.3	1.5	.04	.08
13	1.9	.33	.50	5.1	42	52	162	127	6.0	.41	.07	.09
14	1.5	.33	.52	3.5	34	33	187	107	5.2	.38	.09	.10
15	1.3	.34	.51	2.6	28	30	188	95	5.0	.34	.10	.10
16	1.1	.34	.51	2.4	27	27	193	96	8.0	.32	.10	.08
17	1.1	.34	.48	2.6	28	32	204	71	5.7	.30	.08	.08
18	1.0	.34	.48	2.5	24	47	151	58	4.3	.29	.09	.08
19	.95	.46	.49	2.7	20	32	81	49	3.6	.31	.08	.08
20	.92	.44	.52	2.7	18	28	94	54	3.2	.29	.08	.08
21	.90	.76	.66	2.7	17	22	147	82	2.8	.28	.06	.08
22	.83	.61	.60	2.6	16	23	172	65	2.5	.81	.07	.07
23	.80	.50	.63	2.4	15	21	170	48	2.2	1.1	.08	.07
24	.74	.46	.61	2.3	17	22	180	40	1.9	.53	.08	.07
25	.68	.49	.65	2.8	21	20	198	34	1.6	.27	.18	.07
26	.64	.48	.65	3.4	20	23	182	31	1.4	.26	.22	.07
27	.61	.46	.66	5.7	24	32	202	33	1.3	.21	.07	.07
28	.57	.45	.65	12	29	32	212	30	1.2	.19	.07	.07
29	.55	.52	.62	8.0	---	33	232	27	1.2	.16	.08	.07
30	.53	.51	.57	6.2	---	43	218	26	1.1	.14	.07	.07
31	.51	---	.57	5.1	---	62	---	25	---	.15	.09	---
TOTAL	96.53	12.39	17.90	91.72	535.0	1056	4506	2884	243.2	16.18	2.71	2.68
MEAN	3.11	.41	.58	2.96	19.1	34.1	150	93.0	8.11	.52	.087	.089
MAX	15	.76	.78	12	42	62	232	283	23	1.5	.22	.14
MIN	.51	.31	.48	.63	5.3	20	55	25	1.1	.14	.03	.07
AC-FT	191	25	36	182	1060	2090	8940	5720	482	32	5.4	5.3
CAL YR 1986	TOTAL	34235.40	MEAN	93.8	MAX	1600	MIN	.11	AC-FT	67910		
WTR YR 1987	TOTAL	9464.31	MEAN	25.9	MAX	283	MIN	.03	AC-FT	18770		

SAN JOAQUIN RIVER BASIN

11316000 BEAR RIVER NEAR SALT SPRINGS DAM, CA

LOCATION.--Lat 38°29'36", long 120°17'18", in NE 1/4 NW 1/4 sec.2, T.7 N., R.15 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 200 ft upstream from diversion to Tiger Creek powerplant conduit and highway bridge, 1.5 mi upstream from mouth, and 4 mi west of Salt Springs Dam.

DRAINAGE AREA.--48.0 mi².

PERIOD OF RECORD.--October 1951 to September 1987 (discontinued).

GAGE.--Water-stage recorder and broad-crested weir. Elevation of gage is 3,727 ft above National Geodetic Vertical Datum of 1929, from photogrammetric map.

REMARKS.--Estimated daily discharges: July 20-31, Aug. 4-26, Sept. 1-3. Flow regulated since 1900 by Bear River Reservoir, capacity, 6,760 acre-ft, and since December 1952 by Lower Bear River Reservoir 4 mi upstream, capacity, 49,100 acre-ft. Water diverted for power since December 1952 from Lower Bear River Reservoir through tunnel to Salt Springs powerplant No. 2 (station 11313510) on North Fork Mokelumne River. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--36 years, 55.7 ft³/s, 40,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s, Dec. 24, 1964, gage height, 10.11 ft in gage well, 11.8 ft from flood profile, from rating curve extended above 560 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 0.53 ft³/s, Sept. 7, 13, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1950 reached a stage of 11.2 ft, from floodmarks, discharge, 10,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 202 ft³/s, Feb. 13, gage height, 1.98 ft; minimum daily, 2.0 ft³/s, Sept. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	4.9	3.1	4.3	5.8	7.7	20	7.9	4.8	3.1	4.8	2.2
2	5.5	4.8	3.0	5.6	5.9	7.7	21	7.2	4.6	3.1	4.7	2.2
3	5.4	3.3	3.0	7.4	6.7	7.8	23	17	4.5	3.1	3.0	2.2
4	5.3	3.3	3.0	7.3	5.9	8.3	20	33	4.4	3.0	2.6	2.1
5	5.3	3.3	3.4	6.6	5.7	29	20	13	4.3	3.0	2.6	2.3
6	5.3	3.2	4.3	6.2	5.8	32	19	6.3	4.4	3.0	2.5	2.3
7	5.2	3.1	3.2	3.9	5.9	22	19	6.4	4.4	2.9	2.5	2.3
8	5.2	3.1	3.0	3.7	5.9	21	18	6.3	4.2	2.9	2.5	2.2
9	5.2	3.1	3.0	3.7	6.1	19	18	6.7	4.1	2.9	2.5	2.2
10	5.2	3.1	3.0	3.9	7.7	17	18	6.8	4.0	2.9	2.5	2.2
11	5.1	3.1	3.0	3.9	16	17	17	7.0	3.9	3.0	2.5	2.2
12	5.4	3.1	4.0	4.2	13	24	16	6.3	3.9	2.9	2.5	2.2
13	5.4	3.2	4.2	6.3	111	46	15	6.1	4.0	2.9	2.5	2.2
14	5.4	3.1	4.1	6.0	29	30	14	6.0	3.9	2.9	2.5	2.2
15	5.3	3.1	4.1	4.9	20	26	13	6.0	4.6	2.8	2.5	2.2
16	5.3	3.0	4.0	5.9	16	24	12	6.0	4.0	2.8	2.5	2.1
17	5.3	3.0	3.0	5.2	13	24	11	5.9	3.8	2.8	2.5	2.1
18	5.3	3.0	2.9	5.2	11	35	11	5.8	3.7	2.8	2.5	2.1
19	5.3	3.4	3.5	5.1	10	25	10	5.6	4.1	2.8	2.4	2.1
20	5.3	3.1	4.5	5.0	9.6	22	9.6	6.0	5.5	2.8	2.4	2.0
21	5.2	4.6	3.3	4.9	9.2	21	9.1	6.3	5.5	2.7	2.4	2.0
22	5.2	3.2	3.0	4.9	8.8	19	8.8	6.0	5.1	2.7	2.4	2.1
23	5.1	3.1	3.3	5.0	9.1	20	8.3	5.7	3.4	2.7	2.4	2.1
24	5.1	3.0	3.0	7.4	8.7	18	7.9	5.4	3.4	2.7	2.3	2.1
25	5.1	3.0	2.9	7.7	9.3	18	7.6	5.4	3.3	2.7	2.3	2.3
26	5.1	3.0	2.9	6.2	8.9	18	7.4	5.5	3.5	2.7	2.3	5.6
27	5.0	3.0	2.9	6.1	7.5	19	7.2	5.5	5.1	2.7	4.5	5.7
28	5.0	3.0	2.9	8.1	7.6	18	7.1	5.4	4.9	2.6	5.0	5.7
29	5.0	4.2	2.9	6.3	---	18	6.9	5.2	3.2	2.6	4.5	5.3
30	5.1	3.3	2.9	6.1	---	19	10	5.1	3.1	2.6	4.6	2.1
31	5.0	---	2.9	5.9	---	20	---	5.0	---	2.7	4.5	---
TOTAL	162.1	99.7	102.2	172.9	379.1	652.5	404.9	231.8	125.6	87.8	92.2	78.6
MEAN	5.23	3.32	3.30	5.58	13.5	21.0	13.5	7.48	4.19	2.83	2.97	2.62
MAX	5.5	4.9	4.5	8.1	111	46	23	33	5.5	3.1	5.0	5.7
MIN	5.0	3.0	2.9	3.7	5.7	7.7	6.9	5.0	3.1	2.6	2.3	2.0
AC-FT	322	198	203	343	752	1290	803	460	249	174	183	156

CAL YR 1986 TOTAL 36806.2 MEAN 101 MAX 1010 MIN 2.9 AC-FT 73010
WTR YR 1987 TOTAL 2589.4 MEAN 7.09 MAX 111 MIN 2.0 AC-FT 5140

SAN JOAQUIN RIVER BASIN

11316600 NORTH FORK MOKELUMNE RIVER ABOVE TIGER CREEK, NEAR WEST POINT, CA

LOCATION.--Lat 38°26'48", long 120°29'21", in SW 1/4 NE 1/4 sec.24, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 0.4 mi upstream from Tiger Creek and Tiger Creek powerplant, 3.9 mi northeast of West Point, 18.3 mi downstream from Salt Springs Dam, and at mile 106.4.

DRAINAGE AREA.--333 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1970-85 available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,337.50 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--No estimated daily discharges. Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 18.3 mi upstream. Some water is diverted through Tiger Creek powerplant conduit (station 11314000). Additional water is diverted out of the Bear River and several smaller tributaries into Tiger Creek powerplant conduit. All the water enters the North Fork Mokelumne River at Tiger Creek powerplant (station 11316610) 0.4 mi downstream. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft³/s, Feb. 19, 1986, gage height, 8.98 ft, from rating curve extended above 7,700 ft³/s; minimum daily, 30 ft³/s, Aug. 6, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 644 ft³/s, Feb. 13, gage height, 3.76 ft; minimum daily, 30 ft³/s, Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	59	54	56	52	57	82	99	55	41	43	44
2	76	50	53	66	54	57	83	88	55	39	39	41
3	72	47	53	78	63	57	92	90	53	39	38	40
4	66	52	53	85	55	57	85	118	52	38	33	36
5	64	51	53	70	52	96	82	103	50	39	33	38
6	65	51	59	64	50	141	80	89	51	38	30	40
7	64	50	56	61	50	96	81	81	53	38	31	39
8	63	51	54	56	50	84	83	80	52	38	32	39
9	63	51	54	55	50	81	84	83	50	37	33	38
10	66	49	52	59	56	76	87	89	52	37	33	38
11	64	50	52	55	84	75	90	93	50	38	34	38
12	62	50	53	54	71	76	92	139	50	37	34	39
13	61	49	50	57	388	172	89	84	52	36	34	41
14	63	53	54	65	166	122	90	77	50	37	35	40
15	62	65	55	60	117	121	92	73	52	36	37	41
16	61	51	56	56	101	108	93	71	52	35	37	39
17	62	51	54	91	86	96	99	66	50	33	35	38
18	61	51	53	116	75	106	105	65	48	37	37	38
19	61	52	55	93	69	101	91	62	47	38	38	38
20	62	51	69	93	67	90	86	62	50	37	37	38
21	61	56	60	96	64	93	85	69	53	37	38	38
22	61	56	57	87	63	87	87	64	50	38	37	38
23	61	54	57	58	63	92	88	61	49	37	36	37
24	61	53	54	64	61	89	89	59	48	36	36	37
25	64	52	53	69	66	86	89	57	46	37	39	39
26	64	52	54	57	61	85	95	57	45	36	38	39
27	59	51	54	56	59	85	91	102	46	35	38	47
28	64	53	52	73	58	82	92	61	48	36	38	44
29	62	57	52	63	---	82	92	72	45	36	39	44
30	61	54	53	56	---	83	105	71	41	35	38	37
31	61	---	53	55	---	82	---	56	---	36	42	---
TOTAL	1972	1572	1691	2124	2251	2815	2679	2441	1495	1147	1122	1183
MEAN	63.6	52.4	54.5	68.5	80.4	90.8	89.3	78.7	49.8	37.0	36.2	39.4
MAX	76	65	69	116	388	172	105	139	55	41	43	47
MIN	59	47	50	54	50	57	80	56	41	33	30	36
AC-FT	3910	3120	3350	4210	4460	5580	5310	4840	2970	2280	2230	2350
a	30260	32420	27460	18280	7690	9160	12020	10230	18410	29140	28750	25200
CAL YR 1986	TOTAL	290425	MEAN 796	MAX 8170	MIN 47	AC-FT 576100	MEAN a 409	AC-FT a 296200				
WTR YR 1987	TOTAL	22492	MEAN 61.6	MAX 388	MIN 30	AC-FT 44610	MEAN a 344	AC-FT a 249000				

a Diversion, in acre-feet, to Tiger Creek powerplant, provided by Pacific Gas & Electric Co.

SAN JOAQUIN RIVER BASIN

11316670 NORTH FORK MOKELUMNE RIVER BELOW TIGER CREEK RESERVOIR, NEAR WEST POINT, CA

LOCATION.--Lat 38°26'25", long 120°30'14", in SE 1/4 SE 1/4 sec.23, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, on right bank 500 ft downstream from Tiger Creek Reservoir Dam and 3.1 mi northeast of West Point.

DRAINAGE AREA.--357 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1982-84 available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,220 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 50 ft³/s. Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 20 mi upstream. Most of the water is diverted at Tiger Creek Reservoir to West Point powerplant. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	16	12	12	12	12	12	12	18	12	12	12
2	22	12	12	12	12	12	12	12	12	12	12	12
3	21	12	13	12	12	12	12	11	12	12	12	12
4	21	12	13	12	12	12	12	13	12	12	12	12
5	21	12	13	12	12	12	12	13	13	12	12	12
6	21	12	13	12	12	12	12	---	13	12	12	12
7	21	12	13	12	12	12	12	---	13	12	12	12
8	21	12	13	12	12	13	12	---	13	12	12	12
9	21	12	13	12	12	13	12	---	13	12	12	12
10	22	12	13	12	12	13	12	---	13	12	12	12
11	22	12	13	12	12	12	14	---	13	12	12	12
12	22	12	13	12	12	12	13	---	12	12	12	12
13	22	12	13	12	---	12	12	---	12	12	12	12
14	22	22	13	12	12	12	12	---	12	12	12	12
15	22	12	13	12	12	12	12	13	12	12	12	12
16	22	12	13	12	12	12	12	12	12	12	12	12
17	22	11	13	12	11	12	12	12	12	12	12	12
18	22	11	13	12	11	12	12	12	12	12	12	12
19	22	11	24	12	12	12	12	12	12	12	12	12
20	22	11	---	12	12	12	12	---	12	12	12	12
21	22	11	12	12	12	12	12	12	12	12	12	12
22	22	11	12	12	12	12	12	12	12	12	12	12
23	22	11	12	12	12	12	12	12	26	12	12	12
24	22	11	12	12	12	12	12	12	12	12	12	12
25	22	11	12	12	12	12	12	12	12	12	12	12
26	22	11	12	12	12	12	11	12	12	12	12	12
27	22	11	12	12	12	12	12	12	12	12	12	12
28	22	11	12	12	12	12	12	12	12	12	12	12
29	22	12	12	12	---	12	12	12	12	12	12	12
30	22	12	12	12	---	12	12	12	12	12	12	12
31	22	---	12	12	---	12	---	12	---	12	12	---
TOTAL	675	362	---	372	---	375	362	---	387	372	372	360
MEAN	21.8	12.1	---	12.0	---	12.1	12.1	---	12.9	12.0	12.0	12.0
MAX	22	22	---	12	---	13	14	---	26	12	12	12
MIN	21	11	---	12	---	12	11	---	12	12	12	12
AC-FT	1340	718	---	738	---	744	718	---	768	738	738	714

SAN JOAQUIN RIVER BASIN

11316700 NORTH FORK MOKELUMNE RIVER BELOW ELECTRA DIVERSION DAM, NEAR WEST POINT, CA

LOCATION.--Lat 38°25'15", long 120°32'56", in SW 1/4 NE 1/4 sec.33, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, on right bank 300 ft downstream from Electra Diversion Dam and 2.0 mi northwest of West Point.

DRAINAGE AREA.--365 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1982-84 available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder and sharp-crested weir since March 1987. Elevation of gage is 1,980 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 30 to Nov. 2, Jan. 12 to Mar. 12, Sept. 18-21. No records computed above 25 ft³/s. Flow regulated since 1931 by numerous reservoirs and diversions upstream. Most of the water is diverted at Electra Diversion Dam to Electra powerplant. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	11	10	12	13	13	11	11	10	11	12	11
2	16	10	10	12	13	13	11	11	10	11	13	10
3	16	10	10	12	13	13	11	10	13	11	14	10
4	16	9.8	10	12	13	13	11	10	12	11	13	10
5	16	10	10	11	13	13	11	11	12	11	11	11
6	16	11	10	11	13	13	11	11	12	11	11	11
7	16	11	9.9	11	13	13	11	10	11	11	13	11
8	16	11	9.9	11	13	13	11	11	11	11	15	11
9	16	10	9.7	9.8	13	13	10	11	11	11	13	11
10	16	10	10	11	13	13	10	11	11	12	11	11
11	15	10	11	10	13	13	10	11	12	12	12	11
12	15	10	11	10	13	13	10	11	11	12	12	11
13	15	10	11	10	13	13	11	11	11	12	12	11
14	15	24	11	10	13	12	11	11	12	12	11	11
15	15	13	11	10	13	11	11	11	12	12	11	11
16	15	11	11	9.0	13	11	11	12	12	12	11	11
17	15	11	11	9.0	13	11	11	11	12	12	11	11
18	15	11	11	9.0	13	11	11	11	12	12	11	11
19	15	11	11	8.0	13	11	11	11	11	12	11	11
20	15	11	12	8.0	13	11	11	11	11	12	11	11
21	15	11	11	8.0	13	11	11	10	11	12	11	11
22	15	11	13	13	13	11	11	12	11	12	11	11
23	15	11	13	13	13	11	---	12	12	12	11	12
24	16	11	12	13	13	11	9.3	11	11	12	11	12
25	16	11	12	13	13	11	12	11	11	12	11	12
26	16	10	12	13	13	11	11	11	11	12	11	12
27	16	10	12	13	13	11	10	11	11	12	12	12
28	16	10	12	13	13	11	11	11	11	12	11	12
29	16	10	12	13	---	11	11	11	11	12	11	12
30	16	10	12	13	---	11	11	11	11	12	11	12
31	16	---	12	13	---	11	---	11	---	12	11	---
TOTAL	483	330.8	343.5	343.8	364	368	---	340	340	363	361	335
MEAN	15.6	11.0	11.1	11.1	13.0	11.9	---	11.0	11.3	11.7	11.6	11.2
MAX	16	24	13	13	13	13	---	12	13	12	15	12
MIN	15	9.8	9.7	8.0	13	11	---	10	10	11	11	10
AC-FT	958	656	681	682	722	730	---	674	674	720	716	664

SAN JOAQUIN RIVER BASIN

11316800 FOREST CREEK NEAR WILSEYVILLE, CA

LOCATION.--Lat 38°24'12", long 120°26'45", in SW 1/4 NW 1/4 sec.4, T.6 N., R.14 E., Calaveras County, Hydrologic Unit 18040012, on left bank 1.0 mi downstream from Lion Creek, 1.8 mi upstream from mouth, and 4 mi northeast of Wilseyville.

DRAINAGE AREA.--20.8 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 2,950 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records poor. No regulation. Minor diversions above station for irrigation and domestic use. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--27 years, 25.0 ft³/s, 18,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,020 ft³/s, Feb. 19, 1986, gage height, 8.12 ft, from rating curve extended above 500 ft³/s on basis of slope-area measurement at gage height 7.41 ft; minimum daily, 0.11 ft³/s, Aug. 14, 1977.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	0600	*133	*3.99				
Minimum daily, 0.35 ft ³ /s, Aug. 31.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	4.3	4.5	5.3	4.4	9.3	14	8.8	4.4	2.3	.79	.45
2	5.1	4.6	4.5	6.2	4.9	9.1	14	8.2	4.2	2.2	1.1	.62
3	5.0	4.6	4.4	12	6.7	9.0	16	7.8	3.6	2.1	.54	.82
4	5.0	4.4	4.2	8.3	5.0	9.1	14	7.5	3.3	1.7	.50	.72
5	4.8	4.4	4.7	6.0	4.5	33	13	7.1	3.0	2.0	.52	.91
6	4.5	4.2	5.7	5.0	4.3	35	13	6.8	3.7	2.1	.54	.97
7	4.3	4.4	5.1	4.5	4.1	22	13	6.7	4.0	2.0	.57	.77
8	4.2	4.6	4.4	4.0	4.0	18	13	6.6	3.8	1.7	.63	.85
9	4.1	4.7	4.2	4.1	4.1	16	12	6.6	3.6	1.8	.65	.84
10	4.3	4.7	4.1	4.3	5.3	14	12	6.5	3.5	1.7	.60	.86
11	4.3	4.6	4.1	4.1	17	14	12	7.2	3.6	1.1	.61	.82
12	4.2	4.6	4.2	4.2	10	17	12	6.4	3.8	1.5	.52	.92
13	4.4	4.4	4.2	4.1	91	41	12	5.6	3.3	1.5	.65	.88
14	4.4	4.2	4.2	3.8	30	29	11	5.1	3.1	1.3	.63	1.1
15	4.3	4.2	4.2	4.2	25	33	11	5.1	3.6	1.2	.65	1.2
16	4.1	4.3	4.0	4.9	18	27	10	4.7	3.4	1.0	.68	1.0
17	4.4	4.3	4.0	4.9	14	24	10	4.9	3.1	1.7	.59	1.0
18	4.8	4.3	4.0	5.2	13	27	9.7	4.9	3.0	2.7	.55	1.0
19	4.9	4.5	4.9	4.4	12	23	9.6	4.9	2.8	1.6	.66	.99
20	4.9	4.6	6.2	4.0	11	20	9.2	5.2	2.5	2.0	.90	1.0
21	4.8	6.5	4.5	4.3	11	20	8.9	5.8	2.3	2.2	.82	1.0
22	4.7	5.0	4.6	3.8	10	18	8.6	5.8	2.2	2.3	.83	.98
23	4.6	4.7	4.7	3.9	10	22	8.5	4.6	3.0	2.4	.76	.86
24	4.7	4.6	4.2	6.1	9.8	20	8.2	4.5	2.8	2.0	.76	.94
25	4.6	4.5	4.1	6.1	9.7	18	7.6	4.9	2.5	1.2	.74	.97
26	4.5	4.2	4.1	4.6	9.4	17	6.6	5.4	2.3	2.1	.55	.91
27	4.4	4.2	4.0	4.3	9.4	16	6.5	5.4	2.5	1.9	.49	.99
28	4.5	4.2	3.8	7.9	9.4	15	6.6	4.8	1.9	1.5	.49	1.0
29	4.6	5.9	4.0	6.1	---	15	7.0	4.7	2.1	1.1	.60	1.0
30	4.6	4.8	3.8	5.1	---	15	8.5	4.8	2.3	1.2	.47	.99
31	4.5	---	4.0	4.7	---	14	---	4.6	---	.97	.35	---
TOTAL	141.5	137.5	135.6	160.4	367.0	619.5	317.5	181.9	93.2	54.07	19.74	27.36
MEAN	4.56	4.58	4.37	5.17	13.1	20.0	10.6	5.87	3.11	1.74	.64	.91
MAX	5.1	6.5	6.2	12	91	41	16	8.8	4.4	2.7	1.1	1.2
MIN	4.1	4.2	3.8	3.8	4.0	9.0	6.5	4.5	1.9	.97	.35	.45
AC-FT	281	273	269	318	728	1230	630	361	185	107	39	54

CAL YR 1986	TOTAL	14096.20	MEAN	38.6	MAX	1250	MIN	2.5	AC-FT	27960
WTR YR 1987	TOTAL	2255.27	MEAN	6.18	MAX	91	MIN	.35	AC-FT	4470

SAN JOAQUIN RIVER BASIN

11317000 MIDDLE FORK MOKELUMNE RIVER AT WEST POINT, CA

LOCATION.--Lat 38°23'23", long 120°31'32", in SE 1/4 NE 1/4 sec.10, T.6 N., R.13 E., Calaveras County, Hydrologic Unit 18040012, on right bank 200 ft downstream from highway bridge, 0.6 mi south of West Point, and 4.5 mi upstream from South Fork Mokelumne River.

DRAINAGE AREA.--68.4 mi².

PERIOD OF RECORD.--October 1911 to current year. Monthly discharge only for October 1911, published in WSP 1315-A.

REVISED RECORDS.--WSP 1515: 1919-20, 1927-28(M), 1936(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,450 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 6, 1926, nonrecording gage at site 1,200 ft upstream at different datum. Oct. 6, 1926, to Aug. 18, 1928, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: June 5-17. Records good except those for estimated daily discharges, which are poor. Flow slightly regulated by Middle Fork Reservoir, capacity, 1,740 acre-ft, 6 mi above station, since January 1940. Several small diversions above station. At times water diverted 4 mi above station to South Fork Mokelumne River via Middle Fork ditch, capacity, 10 ft³/s, and Licking Fork Mokelumne River. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--76 years, 64.9 ft³/s, 47,020 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,920 ft³/s, Feb. 19, 1986, gage height, 9.19 ft, from rating curve extended above 3,100 ft³/s; no flow many days in 1931 and Sept. 9, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1630	*187	*2.91				

Minimum daily, 0.90 ft³/s, Aug. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	19	12	12	10	34	44	23	13	9.7	6.0	2.2
2	30	19	11	18	11	33	43	15	10	9.5	5.4	2.8
3	30	18	11	24	17	22	48	13	9.4	9.8	5.5	2.9
4	30	17	11	21	23	21	44	17	6.3	9.7	5.8	2.6
5	31	15	12	17	12	58	41	19	8.0	10	5.4	3.8
6	32	17	12	16	13	109	39	19	8.0	10	3.9	4.2
7	31	17	12	14	21	65	29	26	8.0	10	3.3	4.3
8	32	17	12	13	21	53	28	21	8.0	9.6	3.8	4.0
9	31	17	11	12	20	48	32	12	8.0	10	4.1	3.7
10	33	17	11	11	22	49	31	19	8.0	11	4.0	3.4
11	22	17	11	10	34	48	31	33	8.0	13	4.6	3.4
12	21	18	11	15	19	37	52	32	8.0	15	4.5	3.9
13	23	16	11	35	143	102	50	31	8.0	15	4.7	3.9
14	27	16	11	25	87	95	27	28	8.0	15	5.6	3.7
15	27	16	11	11	70	104	22	16	8.0	18	5.5	4.0
16	26	16	11	8.7	58	84	23	6.3	8.0	16	3.1	3.9
17	24	15	11	9.7	47	71	29	5.7	8.0	16	.90	3.8
18	22	11	11	9.2	42	71	28	11	7.9	16	2.1	3.7
19	20	11	13	11	37	68	17	9.3	8.5	16	3.5	3.7
20	22	11	15	17	34	64	24	8.9	8.8	14	5.0	3.6
21	23	13	12	18	31	66	27	10	8.6	14	5.7	3.5
22	23	12	12	16	36	41	21	11	8.5	15	3.9	3.4
23	21	12	12	13	36	61	21	9.0	10	14	4.3	3.2
24	20	11	11	13	24	69	22	12	12	6.0	4.5	3.2
25	17	11	11	13	24	66	37	11	12	3.8	5.1	3.0
26	15	11	11	13	23	63	23	18	13	4.1	5.2	2.7
27	16	11	11	15	30	62	15	16	13	4.2	3.3	2.8
28	19	11	11	19	22	60	22	13	13	5.4	1.9	3.0
29	18	15	11	14	---	51	17	12	25	5.8	1.3	2.9
30	16	13	11	11	---	46	21	9.8	20	6.0	1.7	2.7
31	16	---	11	10	---	45	---	9.0	---	6.0	2.1	---
TOTAL	748	440	355	464.6	967	1866	908	496.0	303.0	337.6	125.70	101.9
MEAN	24.1	14.7	11.5	15.0	34.5	60.2	30.3	16.0	10.1	10.9	4.05	3.40
MAX	33	19	15	35	143	109	52	33	25	18	6.0	4.3
MIN	15	11	11	8.7	10	21	15	5.7	6.3	3.8	.90	2.2
AC-FT	1480	873	704	922	1920	3700	1800	984	601	670	249	202

CAL YR 1986 TOTAL 47470.80 MEAN 130 MAX 3610 MIN 9.8 AC-FT 94160
WTR YR 1987 TOTAL 7112.80 MEAN 19.5 MAX 143 MIN .90 AC-FT 14110

SAN JOAQUIN RIVER BASIN

11318500 SOUTH FORK MOKELUMNE RIVER NEAR WEST POINT, CA

LOCATION.--Lat 38°22'06", long 120°32'40", in SE 1/4 SE 1/4 sec.16, T.6 N., R.13 E., Calaveras County, Hydrologic Unit 18040012, on right bank 500 ft upstream from highway bridge, 2.4 mi southwest of West Point, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--75.1 mi².

PERIOD OF RECORD.--October 1933 to current year.

REVISED RECORDS.--WSP 1315-A: 1934(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,950 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1933 to Sept. 19, 1957, at site 1,100 ft downstream at different datum.

REMARKS.--Estimated daily discharges: Jan. 11 to Feb. 19, Mar. 10-18. Records good except those for estimated daily discharges, which are fair. 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.

AVERAGE DISCHARGE.--54 years, 86.7 ft³/s, 62,810 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,300 ft³/s, Feb. 19, 1986, gage height, 12.48 ft, from rating curve extended above 2,700 ft³/s on basis of slope-area measurement of peak flow; no flow Aug. 6, 7, Aug. 12 to Sept. 26, 1934.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	Unknown	*263	*3.97				

Minimum daily, 1.4 ft³/s, Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	12	12	15	8.4	16	44	25	12	5.3	2.7	1.5
2	15	12	9.3	19	9.5	16	43	22	12	4.9	2.6	2.1
3	11	11	9.0	40	13	15	47	20	11	4.6	2.5	2.0
4	13	7.0	9.8	46	13	16	43	19	10	4.6	2.4	1.8
5	14	6.9	14	24	12	50	40	18	11	4.7	2.3	1.7
6	14	9.8	15	20	12	166	39	17	11	4.8	2.2	2.0
7	12	9.1	16	17	11	86	38	17	11	4.5	2.0	2.3
8	7.7	10	12	16	11	62	38	17	11	4.1	1.9	2.5
9	6.8	13	13	15	12	52	36	17	9.4	4.1	1.9	2.3
10	6.5	11	10	14	15	46	35	15	9.2	4.0	2.0	2.4
11	6.7	8.0	7.5	13	17	50	35	21	8.8	4.0	2.1	2.3
12	7.0	6.9	7.6	13	13	44	34	17	8.4	3.7	2.0	2.2
13	7.6	9.1	7.9	13	190	54	32	16	7.8	3.8	1.9	2.3
14	10	12	7.8	12	90	110	31	15	7.7	3.8	2.0	2.5
15	12	13	7.8	12	65	140	30	14	7.1	4.0	2.1	2.7
16	12	12	7.8	14	54	100	27	13	8.2	3.4	2.1	2.4
17	11	11	7.4	16	45	76	26	13	7.8	2.9	2.0	2.4
18	11	7.4	7.8	16	35	73	26	13	7.2	3.4	2.2	2.2
19	12	7.5	10	15	28	67	24	13	6.9	3.7	2.0	2.1
20	12	7.7	18	14	25	58	24	14	6.8	3.4	2.0	2.1
21	12	9.4	11	13	23	61	23	16	6.9	3.7	2.3	2.2
22	12	9.2	12	14	22	55	21	16	6.8	4.0	2.1	1.9
23	12	8.3	15	12	21	70	21	15	6.3	4.5	1.9	1.9
24	12	7.6	14	15	20	64	20	14	6.0	4.2	2.1	1.9
25	13	7.7	14	14	22	57	20	13	5.8	3.8	2.0	2.0
26	13	7.3	13	13	16	53	19	14	5.6	3.6	2.1	2.1
27	13	7.1	13	14	17	51	20	14	5.2	3.7	2.1	2.2
28	13	7.1	13	15	16	49	19	13	5.3	3.4	1.8	2.4
29	13	14	13	12	---	46	19	12	5.6	3.6	1.7	2.3
30	12	14	13	10	---	45	23	12	5.3	2.8	1.5	2.1
31	12	---	13	9.0	---	45	---	12	---	2.7	1.4	---
TOTAL	355.3	288.1	353.7	505.0	835.9	1893	897	487	243.1	121.7	63.9	64.8
MEAN	11.5	9.60	11.4	16.3	29.9	61.1	29.9	15.7	8.10	3.93	2.06	2.16
MAX	17	14	18	46	190	166	47	25	12	5.3	2.7	2.7
MIN	6.5	6.9	7.4	9.0	8.4	15	19	12	5.2	2.7	1.4	1.5
AC-FT	705	571	702	1000	1660	3750	1780	966	482	241	127	129

CAL YR 1986	TOTAL	53305.1	MEAN	146	MAX	5780	MIN	2.6	AC-FT	105700
WTR YR 1987	TOTAL	6108.5	MEAN	16.7	MAX	190	MIN	1.4	AC-FT	12120

SAN JOAQUIN RIVER BASIN

11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CA

LOCATION.--Lat 38°18'46", long 120°43'09", in SW 1/4 SW 1/4 sec.1, T.5 N., R.11 E., Calaveras County, Hydrologic Unit 18040012, on downstream side of bridge 1.2 mi northwest of Mokelumne Hill and 8 mi downstream from confluence of North and South Forks of Mokelumne River.

DRAINAGE AREA.--544 mi².

PERIOD OF RECORD.--January to June 1901, May 1903 to December 1904, October 1927 to current year. Yearly estimate only for water year 1928 (incomplete), published in WSP 1315-A. Published as "at Electra" 1901, 1903-4.

CHEMICAL DATA: Water year 1980. Water years 1971-79 in files of California Department of Water Resources. WATER TEMPERATURE: Water years 1961-79 (daily record).

REVISED RECORDS.--WSP 1445: 1903-4, 1928(M), 1936(M), 1938(M), 1940(M), 1943(M), 1945(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 584.88 ft above National Geodetic Vertical Datum of 1929 (levels by California Division of Highways). Jan. 1 to June 30, 1901, and May 11, 1903, to Dec. 31, 1904, nonrecording gage at site 3 mi upstream at different datum. Nov. 10, 1927, to Aug. 26, 1952, water-stage recorder at site 40 ft upstream at datum 5.00 ft higher. Aug. 27, 1952, to Oct. 14, 1977, at present site at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Salt Springs Reservoir (station 11313500) beginning in 1931, several smaller reservoirs, and four powerplants. Diversion above station for irrigation and domestic use. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--61 years (water years 1904, 1928-87), 1,012 ft³/s, 733,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,700 ft³/s, Dec. 3, 1950, gage height, 23.5 ft, present datum; minimum observed, 5 ft³/s, Aug. 13-15, 17, 18, 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,470 ft³/s, Feb. 13, gage height, 9.61 ft; minimum daily, 19 ft³/s, Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	380	650	702	668	277	228	349	503	274	580	188	537
2	558	648	600	648	267	242	303	475	504	686	371	563
3	588	581	682	780	185	355	307	243	429	614	600	547
4	587	685	540	670	234	274	389	119	440	263	562	602
5	590	636	604	480	205	358	245	57	354	364	602	420
6	591	615	221	371	265	618	310	68	346	415	582	450
7	590	678	148	373	197	370	371	197	227	607	563	397
8	584	560	338	448	203	342	300	146	410	529	592	448
9	584	695	713	299	207	245	234	137	329	591	545	487
10	582	566	607	406	244	384	312	91	331	642	573	508
11	583	622	637	364	326	297	251	81	374	460	589	599
12	564	625	334	311	347	413	317	214	267	732	597	484
13	577	658	210	336	1050	866	285	126	132	582	506	404
14	583	651	249	437	1010	502	261	132	96	573	687	407
15	587	419	163	404	454	660	287	133	362	554	431	662
16	587	597	665	370	334	343	298	380	354	581	500	558
17	586	707	597	312	396	450	313	369	490	580	428	520
18	602	552	650	431	282	500	249	399	464	431	562	648
19	646	551	624	414	202	394	318	435	359	435	663	440
20	674	553	342	392	295	412	295	257	153	488	510	500
21	642	722	546	310	163	448	343	501	25	534	597	502
22	680	601	662	397	263	394	501	368	143	472	439	493
23	516	679	636	422	247	399	342	383	391	587	459	629
24	724	637	626	286	227	399	683	427	711	532	550	562
25	591	617	572	356	173	343	464	342	481	429	512	530
26	657	589	665	254	194	281	539	338	479	480	547	169
27	656	696	584	305	220	355	504	527	95	339	488	19
28	632	592	619	305	243	470	486	410	501	613	612	44
29	696	597	696	409	---	319	429	252	598	537	323	380
30	601	605	557	359	---	430	596	176	532	481	121	403
31	663	---	589	268	---	372	---	181	---	503	428	---
TOTAL	18681	18584	16378	12585	8710	12463	10881	8467	10651	16214	15727	13912
MEAN	603	619	528	406	311	402	363	273	355	523	507	464
MAX	724	722	713	780	1050	866	683	527	711	732	687	662
MIN	380	419	148	254	163	228	234	57	25	263	121	19
AC-FT	37050	36860	32490	24960	17280	24720	21580	16790	21130	32160	31190	27590

CAL YR 1986	TOTAL	597226	MEAN	1636	MAX	22700	MIN	148	AC-FT	1185000
WTR YR 1987	TOTAL	163253	MEAN	447	MAX	1050	MIN	19	AC-FT	323800

SAN JOAQUIN RIVER BASIN

11320000 PARDEE RESERVOIR NEAR VALLEY SPRINGS, CA

LOCATION.--Lat 38°15'25", long 120°50'59", in NW 1/4 SW 1/4 sec.26, T.5 N., R.10 E., Amador County, Hydrologic Unit 18040012, at Pardee Dam on the Mokelumne River, 4.5 mi north of Valley Springs.

DRAINAGE AREA.--578 mi².

PERIOD OF RECORD.--October 1961 to current year. March 1929 to September 1930 (lake elevation only), October 1930 to September 1933, published in reports of U.S. Geological Survey. October 1933 to September 1961, in files of East Bay Municipal Utility District.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District).

REMARKS.--Reservoir is formed by a curved concrete gravity dam, completed in 1929. Storage began Mar. 9, 1929. Usable capacity, 194,100 acre-ft between elevations 393.50 ft, diversion tunnel invert, and 567.65 ft, spillway crest. Dead storage, 15,800 acre-ft. Water is released from reservoir for municipal use in the area on the east side of San Francisco Bay. Small intermittent diversions are made to Jackson Valley Irrigation District. Records, including extremes, represent total contents at 0800 hours. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records provided by East Bay Municipal Utility District; not reviewed by U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 219,300 acre-ft, Dec. 23, 1955, Feb. 19, 1986, elevation, 571.72 ft; minimum, 47,000 acre-ft, Mar. 25, 1977, elevation, 454.98 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 208,300 acre-ft, Sept. 26, elevation, 566.92 ft; minimum, 170,400 acre-ft, Dec. 16, elevation, 548.81 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by East Bay Municipal Utility District, from 1930 survey)

450	43,400	480	69,200	510	105,700	540	153,800	570	215,300
460	50,900	490	80,100	520	120,400	550	172,700	580	239,100
470	59,500	500	92,930	530	136,500	560	193,200		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189700	174400	172800	177200	182600	184000	191600	194100	190600	190100	196700	203500
2	188600	173300	173100	177700	182300	183900	191700	194400	190500	190600	196300	203800
3	187600	172400	173000	178500	182400	183800	191700	194600	190900	191100	196300	204000
4	187000	172500	173100	179700	182200	183800	191600	194300	191100	191500	196800	204100
5	186900	172600	173400	180300	182100	183800	191800	193900	191300	191200	197100	204200
6	187100	172600	173100	180500	181900	185000	191700	193400	191400	191100	197500	203900
7	186300	172600	172200	180600	181700	185800	191700	193000	191500	191200	197800	203900
8	185500	173300	172000	180700	181500	185800	191700	192700	191300	191600	198200	203900
9	184600	173700	171600	180900	181300	185900	191600	192300	191400	192000	198500	204000
10	183800	174200	171500	180900	181100	185900	191500	192000	191300	192300	199000	204200
11	183100	174100	171700	181000	181100	186100	191400	191500	191200	192900	199400	204500
12	183000	174100	171800	181200	181200	186100	191300	191100	191300	193100	199700	204900
13	183500	174200	171500	181200	181900	186600	191300	190900	191000	193500	200000	205000
14	183100	174400	171000	181300	184100	187500	191300	190500	190500	194000	200400	204900
15	182800	174200	170800	181500	185200	188200	191200	190100	189900	194200	200700	205200
16	182400	173500	170400	181400	185400	188800	191100	189700	189900	194500	200700	205500
17	181500	173600	170800	181500	185600	188900	191000	189900	189800	194900	200900	205800
18	180500	173600	171100	181500	185600	189100	191000	190000	190100	195100	201000	206200
19	179800	173400	171400	181700	185600	189500	190900	190100	190200	195300	201500	206600
20	180200	173300	171800	181800	185500	189700	190800	190300	190100	195200	201800	206600
21	179600	173200	171700	181900	185300	190000	190800	190200	189600	195300	202200	206800
22	178900	173300	172100	181900	185100	190300	190900	190400	188900	195600	202700	207000
23	178300	173400	172500	182100	185000	190400	191100	190500	188500	195300	202800	207400
24	177400	173700	172900	182300	184900	190700	191400	190700	188800	195300	202700	207700
25	177100	173800	173400	182200	184700	190900	191800	190800	189200	195700	203000	208000
26	176900	173800	174100	182300	184400	191000	192200	190700	189400	195700	203500	208300
27	177400	173500	174700	182200	184200	191000	192600	190900	189500	195800	203500	207600
28	176300	173000	175300	182300	184100	191100	192900	191200	189100	195800	203900	206900
29	175400	173000	175800	182400	---	191200	193300	191300	189300	196200	204100	206300
30	175300	172800	176000	182400	---	191400	193600	191100	189800	196400	203800	206600
31	175000	---	176500	182500	---	191600	---	190900	---	196600	203300	---
MAX	189700	174400	176500	182500	185600	191600	193600	194600	191500	196600	204100	208300
MIN	175000	172400	170400	177200	181100	183800	190800	189700	188500	190100	196300	203500
a	551.16	550.05	551.91	554.89	555.67	559.27	560.20	558.94	558.41	561.58	564.67	566.15
b	-15300	-2200	+3700	+6000	+1600	+7500	+2000	-2700	-1100	+6800	+6700	+3300
c	467	304	78	101	203	416	850	1172	1365	1372	1307	1101
d	18532	17701	18286	18436	16698	18631	18117	18839	20285	20032	22088	22468

CAL YR 1986 b -800
WTR YR 1987 b +16300

a Elevation, in feet NGVD, 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.

SAN JOAQUIN RIVER BASIN

11322300 CAMANCHE RESERVOIR NEAR CLEMENTS, CA

LOCATION.--Lat 38°13'31", long 121°01'17", in NE 1/4 SE 1/4 sec.6, T.4 N., R.9 E., San Joaquin County, Hydrologic Unit 18040005, at Camanche Dam on the Mokelumne River, 4.3 mi northeast of Clements.

DRAINAGE AREA.--621 mi².

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

REVISED RECORDS.--WDR CA-85-3: 1984.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 18, 1963. Usable capacity, 430,300 acre-ft between elevations 104.00 ft, invert of emergency valve release, and 235.50 ft, spillway crest. Dead storage, 534 acre-ft. Camanche Reservoir provides holdover storage to meet downstream water requirements and flood control on the Mokelumne River. Records, including extremes, represent total contents at 0800 hours. Prior to July 1, 1984, records, including extremes, represent total contents at 2400 hours. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records provided by East Bay Municipal Utility District; not reviewed by U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 439,100 acre-ft, Feb. 22, 1986, elevation, 236.57 ft; minimum since reservoir first filled, 118,400 acre-ft, Sept. 30, 1987, elevation, 180.67 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 336,400 acre-ft, Oct. 1, elevation, 222.33 ft; minimum, 118,400 acre-ft, Sept. 30, elevation, 180.67 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by East Bay Municipal Utility District, from 1964 survey)

120	4,970	170	82,600
130	13,600	190	156,200
140	25,000	220	320,900
150	38,900	235.5	430,900
160	57,100	240	465,900

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	336400	317100	297300	275700	256400	251200	245200	229900	208300	184200	159300	136000
2	336000	316900	296800	275000	256100	250900	244900	229300	207600	183400	158500	135400
3	335900	316800	296300	274100	256200	250700	244600	228700	206900	182600	157700	134700
4	335800	315400	296000	273800	255900	250500	244200	228300	206100	181600	156900	133900
5	335400	314400	295700	272900	255600	250600	243900	227800	205400	180800	156200	133200
6	333800	313000	295400	272100	255300	251200	243200	227400	204500	180000	155600	132400
7	333700	311600	294900	271300	255100	251000	243100	226600	203700	179300	154800	131800
8	333500	309800	293800	270400	254900	250900	242900	226100	203000	178500	153800	131100
9	333300	308000	293200	269400	254700	250500	242400	225500	202400	177700	153200	130400
10	333200	306400	292900	268500	254600	250400	242100	224700	201700	176800	152400	129700
11	332800	305500	292400	267800	254500	250200	241600	224000	201000	176000	151600	129100
12	331900	304800	291800	266900	254200	249900	241000	222900	200100	175200	150800	128400
13	330600	303900	291100	266100	254800	250100	240600	222200	199500	174300	150000	127700
14	329900	303400	290800	265400	255400	249800	240200	221500	198500	173600	149200	127100
15	329200	303000	289400	264500	255200	249500	239800	220600	197700	172800	148300	126600
16	328500	302900	288700	263800	255000	249200	239300	219800	196800	171900	147600	126000
17	327600	302700	288100	263000	254700	249000	238800	219100	195900	171000	146900	125500
18	327300	302400	287500	262800	254400	248800	238000	218300	195100	170000	146100	125000
19	326600	302200	286800	261800	254100	248400	237300	217500	194200	169100	145300	124400
20	325300	301700	286100	261000	253800	248000	236500	216700	193300	168200	144500	123900
21	324800	301400	285400	260400	253600	247800	235900	216100	192500	167200	143700	123300
22	324400	300700	284400	259800	253100	247800	235100	215400	191700	166500	142900	122800
23	323900	300100	283900	259400	252800	247400	234800	214700	190800	166100	142200	122200
24	323200	299600	283100	259000	252600	247100	234300	214000	190100	165600	141400	121700
25	322600	299000	282100	258700	252300	247000	233600	213400	189300	164800	140700	121100
26	321800	298700	280900	258300	251900	246900	233100	212600	188500	164000	140000	120500
27	319900	298200	280000	257900	251700	246500	232400	211800	187700	163100	139300	119900
28	319800	298500	279000	257800	251500	246200	231900	211300	186800	162300	138600	119400
29	319600	298100	277900	257700	---	245900	231300	210600	186000	161500	138000	118900
30	318800	297800	277700	257100	---	245700	230600	209800	185100	160500	137400	118400
31	317600	---	276800	256600	---	245500	---	209100	---	160100	136600	---
MAX	336400	317100	297300	275700	256400	251200	245200	229900	208300	184200	159300	136000
MIN	317600	297800	276800	256600	251500	245500	230600	209100	185100	160100	136600	118400
a	219.50	216.42	213.03	209.63	208.74	207.70	205.04	201.02	196.27	190.88	185.35	180.67
b	-19000	-19800	-21000	-20200	-5100	-6000	-14900	-21500	-24000	-25000	-23500	-18200
c	2359	1751	474	825	1090	1704	2659	3539	3732	3414	3145	2139

CAL YR 1986 b -7800

WTR YR 1987 b -218200

a Elevation, in feet NGVD, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet.

SAN JOAQUIN RIVER BASIN

11323500 MOKELUMNE RIVER BELOW CAMANCHE DAM, CA

LOCATION.--Lat 38°13'14", long 121°02'19", in NW 1/4 NW 1/4 sec.7, T.4 N., R.9 E., San Joaquin County, Hydrologic Unit 18040005, on left bank 0.7 mi downstream from Murphy Creek, 1.0 mi downstream from Camanche Dam, and 3.4 mi northeast of Clements.

DRAINAGE AREA.--627 mi².

PERIOD OF RECORD.--October 1904 to current year. Monthly discharge only for some periods, published in WSP 1315-A and 1735. Prior to October 1961, published as "near Clements."

CHEMICAL DATA: Water years 1906-7, 1965-66. Published as "at Clements" in 1906.

WATER TEMPERATURE: Water years 1962-76.

SEDIMENT DATA: Water years 1956-70. Prior to 1962 water year, published as "near Clements."

REVISED RECORDS.--WSP 751: Drainage area. WSP 881: 1905-9 (yearly summaries only). WSP 1445: 1911, 1917(M), 1925(M).

GAGE.--Water-stage recorder. Datum of gage is 82.71 ft above National Geodetic Vertical Datum of 1929. See WSP 1930 for history of changes prior to Oct. 1, 1961.

REMARKS.--Estimated daily discharges: Jan. 1-7, Jan. 26 to Feb. 4, Feb. 8-10. Records good except those for periods of estimated discharges, which are fair. Flow regulated by Camanche Reservoir (station 11322300) 1 mi upstream beginning December 1963, Salt Springs Reservoir (station 11313500) beginning March 1931, Pardee Reservoir (station 11320000) beginning March 1929, several small reservoirs, and four powerplants. East Bay Municipal Utility District aqueducts, maximum capacity 511 ft³/s with Pardee Reservoir full, are the largest of several diversions above the station. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--24 years (water years 1905-28), 1,111 ft³/s, 804,300 acre-ft/yr; 59 years (water years 1929-87), 836 ft³/s, 605,700 acre-ft/yr, adjusted for change in contents in and evaporation from Camanche Reservoir since 1963. Storage and diversion by East Bay Municipal Utility District began in March 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,800 ft³/s, Nov. 21, 1950, gage height, 24.40 ft, site and datum then in use; no flow on several days in 1924.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 896 ft³/s, Oct. 19-22, gage height, 4.98 ft; minimum daily, 130 ft³/s, Feb. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	682	874	481	490	198	143	147	263	326	370	335	311
2	688	874	482	460	200	143	147	263	325	370	333	311
3	690	874	483	460	182	143	146	265	341	373	332	308
4	690	874	484	448	155	141	146	280	354	375	331	301
5	690	879	488	440	143	217	146	294	348	375	334	301
6	694	879	490	440	139	195	146	310	347	370	338	301
7	687	879	489	440	139	146	148	333	347	370	337	301
8	682	874	491	433	130	142	150	335	346	372	337	300
9	688	874	492	409	136	140	188	338	347	371	337	300
10	690	778	491	392	136	143	210	338	344	372	338	296
11	690	694	492	392	136	143	210	337	368	373	338	286
12	690	694	491	391	142	148	211	337	364	373	346	283
13	690	584	492	390	201	157	211	338	364	372	353	281
14	691	484	493	389	144	150	214	336	364	377	344	279
15	770	484	494	391	150	147	244	334	365	374	341	274
16	879	480	494	360	140	144	266	334	369	368	334	270
17	884	471	495	339	137	144	265	333	370	366	335	270
18	884	471	480	337	135	144	267	334	370	372	333	269
19	896	473	494	338	132	143	266	335	371	374	340	271
20	896	474	497	308	131	144	262	341	370	375	336	270
21	896	477	499	291	135	145	262	329	372	374	338	268
22	894	477	504	292	138	145	263	315	368	374	341	265
23	889	478	500	273	139	148	264	309	365	369	342	266
24	889	479	494	254	138	147	264	306	369	369	330	265
25	887	479	494	250	139	147	265	306	367	370	311	263
26	882	478	494	210	139	148	264	306	369	370	311	260
27	886	473	499	190	142	147	264	304	369	369	311	261
28	884	478	494	205	144	147	264	315	369	345	310	257
29	834	477	489	196	---	148	263	324	369	332	311	240
30	874	478	489	206	---	148	263	327	371	334	310	218
31	874	---	484	196	---	146	---	326	---	337	311	---
TOTAL	24540	18742	15233	10610	4120	4633	6626	9845	10788	11385	10278	8346
MEAN	792	625	491	342	147	149	221	318	360	367	332	278
MAX	896	879	504	490	201	217	267	341	372	377	353	311
MIN	682	471	480	190	130	140	146	263	325	332	310	218
AC-FT	48680	37170	30210	21040	8170	9190	13140	19530	21400	22580	20390	16550

CAL YR 1986	TOTAL	516147	MEAN	1414	MAX	5750	MIN	195	AC-FT	1024000	MEAN	a	1451	AC-FT	a	1050800
WTR YR 1987	TOTAL	135146	MEAN	370	MAX	896	MIN	130	AC-FT	268100	MEAN	a	106	AC-FT	a	76630

a Adjusted for change in contents and evaporation from Camanche Reservoir.

SAN JOAQUIN RIVER BASIN

11325000 WOODBRIDGE CANAL AT WOODBRIDGE, CA

LOCATION.--Lat 38°09'07", long 121°18'00", in NE 1/4 SE 1/4 sec.34, T.4 N., R.6 E., San Joaquin County, Hydrologic Unit 18040005, on right bank at Woodbridge, at point of diversion from Woodbridge Reservoir.

PERIOD OF RECORD.--April 1926 to current year.

GAGE.--Water-stage recorder. Datum of gage is 32.18 ft above National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District). Prior to Mar. 15, 1931, water-stage recorder at site 0.2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records fair. Discharge computed from records of gate openings and effective head as shown by differential recorder. Canal diverts from Woodbridge Reservoir on Mokelumne River for irrigation south and west of Woodbridge. See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE.--61 years, 130 ft³/s, 94,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 482 ft³/s July 8, 1953; no flow at times in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57						0	199	208	260	208	180
2	56						0	199	211	259	206	185
3	56						0	186	223	256	208	185
4	44						0	184	228	243	212	185
5	39						0	183	238	239	218	185
6	41						30	180	237	234	218	180
7	47						51	191	225	236	217	176
8	52						72	196	225	243	222	166
9	54						87	203	228	248	223	165
10	54						99	203	252	249	217	165
11	59						115	200	242	245	205	160
12	58						112	197	248	241	205	154
13	56						113	204	248	239	212	149
14	59						138	205	253	241	217	147
15	58						167	208	232	243	223	144
16	59						182	206	228	241	211	142
17	58						189	211	223	236	206	147
18	57						186	209	229	222	206	146
19	55						173	213	227	214	202	147
20	54						174	214	218	225	193	148
21	54						169	211	227	236	185	150
22	54						168	214	228	240	187	149
23	52						177	217	232	231	190	150
24	44						186	212	238	214	188	151
25	35						188	214	240	209	185	159
26	33						174	216	252	201	190	157
27	17						178	209	258	208	194	147
28	0						194	207	259	218	191	159
29	0						202	206	253	221	179	163
30	0						196	214	254	215	173	128
31	0	---			---		---	214	---	209	173	---
TOTAL	1362	0	0	0	0	0	3720	6325	7064	7216	6264	4769
MEAN	43.9	0	0	0	0	0	124	204	235	233	202	159
MAX	59	0	0	0	0	0	202	217	259	260	223	185
MIN	0	0	0	0	0	0	0	180	208	201	173	128
AC-FT	2700	0	0	0	0	0	7380	12550	14010	14310	12420	9460

CAL YR 1986	TOTAL	30450.00	MEAN 83.4	MAX 303	MIN 0	AC-FT 60400
WTR YR 1987	TOTAL	36720.00	MEAN 101	MAX 260	MIN 0	AC-FT 72830

SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA
(National stream-quality accounting network station)

LOCATION.--Lat 38°09'31", long 121°18'09", in NW 1/4 NE 1/4 sec.34, T.4 N., R.6 E., San Joaquin County, Hydrologic Unit 18040005, on right bank at Woodbridge, 0.4 mi downstream from county highway bridge, and 0.5 mi downstream from dam and canal intake of Woodbridge Irrigation District.

DRAINAGE AREA.--661 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to current year (low-water records only 1924-25).

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 14.9 ft above National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District). See WSP 2130 for history of changes prior to July 26, 1968.

REMARKS.--Estimated daily discharges: Dec. 19 to Jan. 5. Records good except for estimated daily discharges, which are fair. Concerning regulation and diversions see REMARKS for Mokelumne River below Camanche Dam (station 11323500). Between Woodbridge and Camanche Dam there are many additional diversions for irrigation, including Woodbridge Canal (station 11325000). Nearest diversion is 0.5 mi upstream See schematic diagram of Mokelumne River basin.

AVERAGE DISCHARGE (since start of diversion through East Bay Municipal Utility District aqueduct).--58 years (water years 1929-87), 629 ft³/s, 455,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft³/s, Nov. 22, 1950, gage height, 29.58 ft, from rating curve extended above 6,200 ft³/s on basis of contracted-opening measurement of peak flow; minimum daily, 0.23 ft³/s, Nov. 15, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,850 ft³/s, Oct. 27, gage height, 13.89 ft; minimum daily, 7.8 ft³/s, May 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	589	876	470	428	160	79	85	12	53	40	31	42
2	589	878	469	430	185	93	69	9.3	34	43	31	59
3	589	877	470	445	162	89	70	7.8	24	55	31	53
4	593	873	470	430	149	91	75	8.1	27	62	32	46
5	595	875	479	415	130	192	74	16	31	58	32	37
6	595	875	473	420	120	205	71	24	32	52	32	46
7	592	880	471	411	118	135	40	25	50	40	36	71
8	587	885	470	406	116	103	26	39	54	35	36	56
9	585	886	472	402	111	80	25	38	44	41	33	55
10	587	883	472	370	116	90	25	30	29	37	32	64
11	588	717	472	353	120	494	25	45	28	34	32	59
12	588	675	472	353	134	254	44	43	31	43	32	42
13	593	661	471	355	213	152	60	33	35	57	33	67
14	580	524	466	354	176	138	36	26	40	43	35	58
15	593	485	466	356	137	125	17	26	48	34	39	40
16	677	478	459	361	130	91	13	35	51	34	56	33
17	725	476	462	316	118	52	16	35	58	43	54	32
18	742	470	458	300	99	24	23	29	45	65	39	31
19	744	470	452	300	67	28	34	20	69	66	49	31
20	751	471	450	299	53	28	54	40	69	46	70	31
21	742	471	448	266	25	23	51	45	64	34	62	31
22	743	471	448	254	45	28	42	33	68	46	57	30
23	747	471	460	279	49	80	31	20	49	54	61	29
24	764	471	455	229	33	88	23	13	41	70	75	29
25	786	471	450	214	30	96	15	17	44	76	48	29
26	772	472	445	208	35	96	25	42	46	76	41	52
27	1200	468	440	183	41	94	30	34	40	76	46	58
28	983	470	437	184	56	93	25	24	36	57	60	49
29	871	471	434	169	---	92	16	24	47	42	59	36
30	863	472	431	180	---	93	12	30	46	32	55	29
31	869	---	428	165	---	93	---	52	---	31	48	---
TOTAL	21822	18923	14220	9835	2928	3419	1152	875.2	1333	1522	1377	1325
MEAN	704	631	459	317	105	110	38.4	28.2	44.4	49.1	44.4	44.2
MAX	1200	886	479	445	213	494	85	52	69	76	75	71
MIN	580	468	428	165	25	23	12	7.8	24	31	31	29
AC-FT	43280	37530	28210	19510	5810	6780	2280	1740	2640	3020	2730	2630
CAL YR 1986	TOTAL	449456.0	MEAN	1231	MAX	5240	MIN	151	AC-FT	891500		
WTR YR 1987	TOTAL	78731.2	MEAN	216	MAX	1200	MIN	7.8	AC-FT	156200		

SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

CHEMICAL DATA: Water years 1951 to current year.

BIOLOGICAL DATA: Water years 1975-81.

SPECIFIC CONDUCTANCE: Water years 1952-58, 1975-77.

WATER TEMPERATURE: Water years 1951-58, 1961-1986.

SEDIMENT DATA: Water years 1975-83.

PERIOD OF DAILY RECORD.--

CHEMICAL DATA: March 1951 to September 1958.

SPECIFIC CONDUCTANCE: March 1951 to September 1958, October 1974 to September 1977.

WATER TEMPERATURE: March 1951 to September 1958, November 1960 to September 1986.

REMARKS.--Unpublished records of specific conductance of daily samples available in files of U.S. Geological Survey.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

						BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)				
DEC 10...	1030	471	41	7.2	10.0	765	1.7	10.3	91
MAR 11...	1125	1000	50	7.0	14.0	765	5.5	10.4	100
JUN 09...	1120	44	43	7.7	19.0	765	2.4	9.0	97
SEP 16...	1045	26	51	7.3	19.0	760	1.1	9.3	101
DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO
DEC 10...	K270	120	15	0	3.9	1.3	2.1	22	0.2
MAR 11...	K54	K12	19	0	5.0	1.6	2.6	21	0.3
JUN 09...	K15	K25	15	0	4.2	1.2	2.1	21	0.2
SEP 16...	160	K20	19	0	5.0	1.6	2.6	22	0.3
DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L CACO3)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
DEC 10...	0.80	19	16	16	3.0	1.4	<0.10	9.6	37
MAR 11...	1.4	24	20	20	3.6	1.7	<0.10	11	42
JUN 09...	1.0	25	20	22	2.4	<0.10	<0.10	9.1	44
SEP 16...	1.0	30	24	25	3.8	1.3	0.10	10	36

See footnotes at end of table.

SAN JOAQUIN RIVER BASIN

1325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
DEC 10...	32	0.05	<0.010	0.150	<0.010	<0.010	0.20	0.020
MAR 11...	39	0.06	<0.010	<0.100	<0.010	0.010	0.50	0.060
JUN 09...	--	--	<0.010	<0.100	0.020	<0.010	1.1	0.040
SEP 16...	41	0.05	<0.010	<0.100	0.020	0.020	0.80	<0.010
DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC, DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
DEC 10...	0.010	<0.010	<10	<1	15	0.9	1	<1
MAR 11...	0.020	0.020	80	<1	25	<0.5	<1	<1
JUN 09...	0.010	<0.010	<10	<1	16	<0.5	<1	<1
SEP 16...	<0.010	<0.010	<10	<1	20	<0.5	<1	<1
DATE	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM, DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY, DIS- SOLVED (UG/L AS HG)	
DEC 10...	<3	1	12	<5	5	3	<0.1	
MAR 11...	<3	2	69	<5	<4	9	0.9	
JUN 09...	<3	3	16	<5	<4	8	<0.1	
SEP 16...	<3	3	36	<5	<4	10	0.1	
DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	
DEC 10...	<10	<1	<1	<1	42	<6	7	
MAR 11...	<10	<1	<1	<1	54	<6	11	
JUN 09...	<10	<1	<1	<1	42	<6	7	
SEP 16...	<10	1	<1	<1	52	<6	3	

K Results based on colony count outside the acceptable range (non-ideal count).
 < Actual value is known to be less than the value shown.

SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR										
11...*	1115	14	50	7.0	14.0	765	10.4	100	7	98
11...*	1120	24	51	7.2	14.0	765	10.4	100	7	94
11...*	1124	40	51	7.2	14.0	765	10.5	101	5	98
11...*	1130	59	50	7.1	14.0	765	10.5	101	6	100
11...*	1135	72	49	7.1	14.5	765	10.4	102	8	96
JUN										
09...*	1110	9.0	44	7.6	19.0	765	9.0	97	a	a
09...*	1115	17	43	7.6	19.0	765	9.1	98	a	a
09...*	1119	22	43	7.7	19.0	765	9.0	97	a	a
09...*	1125	28	43	7.7	19.0	765	8.9	96	a	a
09...*	1130	34	43	7.7	19.0	765	8.9	96	a	a

* Instantaneous streamflow at the time of cross-sectional measurements: Mar. 11, 1,000 ft³/s; June 9, 44 ft³/s.
a Composited sediment sample values: Suspended sediment, 6 mg/L; suspended-sediment sieve diameter finer than 0.062 millimeter, 90 percent.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC						
10...	1030	471	10.0	8	10	83
MAR						
11...	1125	1000	14.0	7	19	97
JUN						
09...	1120	44	19.0	6	0.71	90
SEP						
16...	1045	26	19.0	4	0.28	--

SAN JOAQUIN RIVER BASIN

11329500 DRY CREEK NEAR GALT, CA

LOCATION.--Lat 38°14'53", long 121°13'33", in NE 1/4 NE 1/4 sec.32, T.5 N., R.7 E., San Joaquin County, Hydrologic Unit 18040005, on left bank of main channel 35 ft downstream from county road bridge, 2 mi downstream from Coyote Creek, and 4 mi east of Galt.

DRAINAGE AREA.--324 mi².

PERIOD OF RECORD.--October 1926 to September 1933, October 1944 to September 1987 (discontinued). Monthly figures only for some periods, published in WSP 1315-A.

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

GAGE.--Water-stage recorder. Datum of gage is 42.83 ft above National Geodetic Vertical Datum of 1929 (levels by East Bay Municipal Utility District). Dec. 4, 1926, to Sept. 30, 1933, at site 4 mi downstream at different datum. Oct. 1, 1944, to Sept. 30, 1945, on left bank at datum 13.00 ft higher. Oct. 1, 1945, to June 14, 1966, on right bank and June 15, 1966, to Dec. 4, 1978, on left bank, both at datum 10.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair except for those below 50 ft³/s, which are poor. Many small diversions above station for irrigation. Total storage of many small reservoirs, 1,000 acre-ft.

AVERAGE DISCHARGE.--50 years, 136 ft³/s, 98,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,300 ft³/s, Feb. 17, 1986, gage height, 26.02 ft, from rating curve extended above 16,000 ft³/s; no flow for many days in each year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 6	0815	*2,330	*18.28				

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6			0	.99	13	79	.09	2.4	0		
2	4.9			0	.74	13	74	0	.04	0		
3	.31			0	45	12	69	0	0	0		
4	.75			60	27	11	61	0	0	0		
5	.73			51	9.0	360	44	0	0	0		
6	.56			19	4.0	1720	31	0	.32	0		
7	.02			14	2.0	473	27	0	1.1	0		
8	0			9.9	2.0	205	24	0	.80	0		
9	0			5.9	1.2	130	23	0	2.1	0		
10	0			4.5	.60	97	20	0	.94	0		
11	0			4.1	.49	89	18	0	0	0		
12	14			3.5	9.1	81	18	0	0	0		
13	7.9			3.2	1030	419	18	0	0	0		
14	1.2			2.6	645	260	16	0	1.3	0		
15	.14			2.1	384	309	15	0	.30	0		
16	0			2.1	330	246	14	0	.01	0		
17	0			2.1	151	172	11	0	0	0		
18	0			.75	96	137	7.8	0	0	0		
19	0			.12	66	117	5.9	0	0	0		
20	0			.15	46	103	6.3	0	0	.46		
21	0			0	36	109	7.4	0	0	.34		
22	0			0	37	159	6.5	0	0	.07		
23	0			0	32	218	1.5	0	0	0		
24	0			0	27	311	.53	0	0	0		
25	0			0	23	202	3.8	4.6	0	0		
26	0			0	20	154	3.1	2.0	0	0		
27	0			0	18	132	.41	.05	0	0		
28	0			0	14	118	.03	.22	0	0		
29	0			12	---	111	.41	0	0	0		
30	0			8.4	---	101	.41	0	0	0		
31	0	---		3.0	---	90	---	.09	---	0		---
TOTAL	34.11	0	0	208.42	3057.12	6672	606.09	7.05	9.31	.87	0	0
MEAN	1.10	0	0	6.72	109	215	20.2	.23	.31	.028	0	0
MAX	14	0	0	60	1030	1720	79	4.6	2.4	.46	0	0
MIN	0	0	0	0	.49	11	.03	0	0	0	0	0
AC-FT	68	0	0	413	6060	13230	1200	14	18	1.7	0	0

CAL YR 1986	TOTAL	130550.35	MEAN	358	MAX	18900	MIN	0	AC-FT	258900
WTR YR 1987	TOTAL	10594.97	MEAN	29.0	MAX	1720	MIN	0	AC-FT	21020

SAN JOAQUIN RIVER BASIN

11333000 CAMP CREEK NEAR SOMERSET, CA

LOCATION.--Lat 38°39'26", long 120°39'46", in SW 1/4 SW 1/4 sec.4, T.9 N., R.12 E., El Dorado County, Hydrologic Unit 18040013, on right bank 0.2 mi upstream from mouth, 1.3 mi northeast of Somerset, and 5.6 mi south of Camino.

DRAINAGE AREA.--62.6 mi².

PERIOD OF RECORD.--February to May 1924 (published as "near Pleasant Valley"), October 1954 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,820 ft above National Geodetic Vertical Datum of 1929, from topographic map. Feb. 1 to May 31, 1924, nonrecording gage at site 0.2 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 2 to Dec. 17. Records good except those for period of estimated daily discharges, which are fair. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft. Water is released from Jenkinson Lake through Camino conduit for irrigation and domestic supply in North Fork Cosumnes and South Fork American River basins. Some water is released from Jenkinson Lake for irrigation downstream from station. Footnoted adjustments provided by U.S. Bureau of Reclamation; not reviewed by U.S. Geological Survey.

AVERAGE DISCHARGE (adjusted for change in contents, evaporation, and diversion from Jenkinson Lake).--33 years (water years 1955-87), 88.6 ft³/s, 64,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,680 ft³/s, Feb. 16, 1982, gage height, 14.50 ft, from rating curve extended above 5,000 ft³/s; no flow Aug. 7-18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 94 ft³/s, Mar. 13, gage height, 3.13 ft; minimum daily, 1.1 ft³/s, Aug. 30, 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	7.1	6.4	7.9	7.2	7.8	8.4	6.4	3.7	3.0	2.2	1.2
2	9.5	6.0	6.0	11	7.6	7.7	8.1	5.5	3.5	2.8	2.0	1.2
3	9.1	5.9	5.8	20	13	7.4	8.1	5.3	3.5	2.9	1.9	1.3
4	8.8	5.8	5.7	19	8.6	7.3	7.6	5.2	3.3	2.9	2.1	1.3
5	8.6	5.8	6.1	9.0	7.6	16	7.1	5.0	3.3	2.7	1.7	1.4
6	8.3	5.7	7.1	7.4	7.1	17	7.0	4.8	3.4	2.9	1.7	1.4
7	8.1	5.7	6.7	7.1	6.8	11	6.8	4.7	3.9	3.2	1.6	1.4
8	8.0	5.7	6.4	6.6	6.6	10	6.6	4.7	3.9	2.9	1.6	1.5
9	8.0	5.6	6.1	6.4	6.6	11	6.4	6.0	4.0	3.0	2.1	1.4
10	8.0	5.6	5.9	6.4	6.6	9.1	6.2	4.9	3.7	3.2	2.5	1.4
11	8.0	5.6	5.9	6.8	12	9.2	6.1	4.6	5.1	3.2	2.5	1.4
12	7.8	5.5	5.9	6.4	9.7	15	6.0	4.4	5.3	3.2	2.6	1.4
13	7.8	5.5	5.8	6.9	4.5	63	5.9	4.4	5.1	2.8	2.9	1.5
14	7.8	5.4	5.8	6.1	26	34	5.8	4.4	5.3	2.7	3.0	1.7
15	7.8	5.4	5.7	6.0	25	34	5.6	4.1	4.7	2.4	2.4	1.8
16	7.8	5.4	5.7	4.3	22	25	5.5	4.1	4.2	2.0	1.5	1.8
17	7.7	5.3	5.9	7.1	14	18	5.5	4.1	4.0	2.0	1.5	1.7
18	8.1	5.3	6.4	7.6	10	16	5.5	4.2	5.0	2.0	1.5	1.6
19	8.3	5.7	9.4	6.6	8.7	15	5.7	4.3	5.4	2.4	1.5	1.6
20	8.3	6.1	11	6.4	7.6	12	5.9	5.5	5.3	2.3	1.5	1.5
21	8.3	7.5	7.2	6.3	7.0	13	5.7	5.8	5.0	2.5	1.5	1.4
22	8.1	6.8	7.1	6.6	6.9	12	5.7	5.0	4.7	2.6	1.5	1.3
23	8.0	6.1	7.7	6.8	6.8	17	5.6	4.6	4.5	2.6	1.5	1.3
24	7.8	6.0	6.7	10	6.6	18	5.5	4.3	4.2	2.5	1.5	1.2
25	7.8	5.8	6.6	10	6.1	14	5.5	4.2	3.9	2.5	1.4	1.2
26	7.8	5.7	6.6	7.6	5.7	13	5.4	4.3	3.7	2.5	1.4	1.3
27	7.5	5.6	6.6	7.0	5.7	12	5.3	4.6	3.6	2.3	1.4	1.3
28	7.5	5.5	6.4	16	7.1	11	5.2	4.4	3.4	2.3	1.3	1.4
29	7.5	8.2	6.3	12	---	9.9	4.9	4.2	3.4	2.2	1.2	1.4
30	7.5	7.5	6.3	8.7	---	9.3	6.2	4.1	3.2	2.2	1.1	1.4
31	7.5	---	6.3	7.8	---	8.9	---	3.8	---	2.2	1.1	---
TOTAL	251.1	178.8	203.5	263.8	309.6	483.6	184.8	145.9	125.2	80.9	55.2	42.7
MEAN	8.10	5.96	6.56	8.51	11.1	15.6	6.16	4.71	4.17	2.61	1.78	1.42
MAX	10	8.2	11	20	45	63	8.4	6.4	5.4	3.2	3.0	1.8
MIN	7.5	5.3	5.7	4.3	5.7	7.3	4.9	3.8	3.2	2.0	1.1	1.2
AC-FT	498	355	404	523	614	959	367	289	248	160	109	85
a	-2044	-1427	-907	-477	+1411	+3524	+695	-1484	-2744	-3050	-2644	-2264
b	2051	1565	1262	1252	838	827	1381	2729	3274	3557	3278	2533
c	104	48	15	3	16	92	132	152	212	225	213	135

CAL YR 1986 TOTAL 42048.9 MEAN 115 MAX 5640 MIN 5.3 AC-FT 83400 MEAN d 157 AC-FT d 113800
WTR YR 1987 TOTAL 2325.1 MEAN 6.37 MAX 63 MIN 1.1 AC-FT 4610 MEAN d 26.4 AC-FT d 19090

a Change in contents, in acre-feet, in Jenkinson Lake.

b Diversion, in acre-feet, from Jenkinson Lake.

c Evaporation, in acre-feet, from Jenkinson Lake.

d Adjusted for change in contents, evaporation, and diversion from Jenkinson Lake.

SAN JOAQUIN RIVER BASIN

11333500 NORTH FORK COSUMNES RIVER NEAR EL DORADO, CA

LOCATION.--Lat 38°35'20", long 120°50'38", in NE 1/4 SW 1/4 sec.35, T.9 N., R.10 E., El Dorado County, Hydrologic Unit 18040013, on downstream side of left abutment of county road bridge, 0.8 mi north of Nashville, 2.6 mi upstream from mouth, and 6 mi south of El Dorado.

DRAINAGE AREA.--205 mi².

PERIOD OF RECORD.--August 1911 to December 1941, October 1948 to September 1987 (discontinued).

REVISED RECORDS.--WSP 1315-A: 1914(M), 1925(M), 1928(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 840 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1933, nonrecording gage at site 1.5 mi upstream at different datum. October 1933 to December 1941, water-stage recorder at site 1,000 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Feb. 5-10, Feb. 14 to Mar. 6, June 12 to Sept. 30. Records poor. 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 Camp Creek near Somerset (station 11333000). Numerous small diversions above station for irrigation and domestic use.

AVERAGE DISCHARGE.--69 years, 209 ft³/s, 151,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,800 ft³/s, Dec. 23, 1955, gage height, 14.8 ft, from rating curve extended above 7,500 ft³/s on basis of slope-area measurement of peak flow; no flow for part of 1924, 1926, 1931, 1933-34, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1930	*1,200	*5.79				

Minimum daily, 1.9 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	27	29	25	35	42	83	93	26	13	3.8	2.3
2	25	24	25	36	37	41	83	70	25	12	3.8	2.3
3	24	21	24	53	67	40	89	59	24	11	3.7	2.2
4	23	21	22	80	67	110	89	56	23	11	3.6	2.2
5	22	21	28	30	47	150	81	51	23	11	3.5	2.3
6	22	21	34	29	42	320	78	46	22	11	3.3	2.4
7	21	22	30	29	41	132	78	45	21	12	3.2	2.4
8	21	23	26	28	40	106	78	42	21	11	3.1	2.4
9	22	24	24	28	39	103	77	44	20	10	3.1	2.5
10	21	23	22	27	39	93	77	43	20	10	3.4	2.4
11	21	23	23	27	95	91	79	56	21	9.6	3.6	2.4
12	21	23	22	26	141	114	79	53	22	9.4	3.6	2.4
13	22	23	22	26	690	594	75	42	21	9.2	3.7	2.5
14	22	23	22	25	420	331	77	41	21	8.8	3.8	2.6
15	22	23	22	25	370	338	85	41	20	8.7	3.8	2.7
16	22	23	21	25	220	224	82	40	19	8.2	3.7	2.7
17	22	22	20	25	140	164	80	39	19	7.4	3.5	2.6
18	25	22	20	27	110	146	79	37	20	7.2	3.4	2.5
19	26	24	25	25	90	145	76	36	21	7.4	3.3	2.5
20	25	26	39	25	78	128	69	35	21	7.6	3.1	2.4
21	25	31	33	24	70	123	67	34	20	7.4	3.0	2.4
22	24	37	26	23	64	118	68	34	19	6.8	3.1	2.3
23	24	29	26	22	58	126	68	33	18	6.2	3.0	2.3
24	24	26	29	20	52	140	67	32	17	5.6	2.9	2.2
25	24	26	25	24	48	113	67	31	16	5.2	2.9	2.2
26	24	25	24	23	45	104	68	30	15	4.9	2.8	2.1
27	24	23	24	22	44	98	64	30	15	4.6	2.7	2.0
28	24	22	24	41	43	92	61	29	14	4.4	2.6	2.0
29	24	32	23	43	---	88	64	28	14	4.2	2.4	2.0
30	26	41	23	38	---	86	74	27	13	3.9	2.4	1.9
31	29	---	24	36	---	84	---	27	---	3.8	2.4	---
TOTAL	727	751	781	937	3232	4584	2262	1304	591	252.5	100.2	70.1
MEAN	23.5	25.0	25.2	30.2	115	148	75.4	42.1	19.7	8.15	3.23	2.34
MAX	29	41	39	80	690	594	89	93	26	13	3.8	2.7
MIN	21	21	20	20	35	40	61	27	13	3.8	2.4	1.9
AC-FT	1440	1490	1550	1860	6410	9090	4490	2590	1170	501	199	139
CAL YR 1986	TOTAL	129244.0	MEAN	354	MAX	11100	MIN	12	AC-FT	256400		
WTR YR 1987	TOTAL	15591.8	MEAN	42.7	MAX	690	MIN	1.9	AC-FT	30930		

SAN JOAQUIN RIVER BASIN

11335000 COSUMNES RIVER AT MICHIGAN BAR, CA

LOCATION.--Lat 38°30'01", long 121°02'39", in NW 1/4 SE 1/4 sec.36, T.8 N., R.8 E., Sacramento County, Hydrologic Unit 18040013, on downstream side of midstream pier of highway bridge at Michigan Bar, 5.5 mi southwest of Latrobe, and 12 mi downstream from confluence of North and Middle Forks of Cosumnes River.

DRAINAGE AREA.--536 mi².

PERIOD OF RECORD.--October 1907 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1953-80.

WATER TEMPERATURE: Water years 1963-79.

SEDIMENT DATA: Water years 1958-74.

REVISED RECORDS.--WSP 331: 1911-12. WSP 1315-A: 1908-9, 1911(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 168.09 ft above National Geodetic Vertical Datum of 1929. Prior to July 10, 1930, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good except those for August and September, which are poor. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft. See REMARKS for Camp Creek near Somerset (station 11333000) for diversion out of basin. Numerous small diversions above station for irrigation and domestic use.

AVERAGE DISCHARGE.--80 years, 504 ft³/s, 365,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,100 ft³/s, Feb. 17, 1986, gage height, 14.76 ft, from rating curve extended above 34,000 ft³/s on basis of area-velocity study of peak flow; no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1907 reached a stage of 16.3 ft, discharge unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	2245	*1,950	*5.40				

Minimum daily, 0.10 ft³/s, Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	38	52	48	82	97	227	180	45	12	4.6	.98
2	54	39	50	51	84	96	221	169	43	11	4.3	1.0
3	49	38	47	77	135	94	220	144	39	11	3.8	.59
4	46	37	45	231	144	93	237	130	36	11	3.5	.45
5	43	36	45	186	110	545	219	121	34	10	3.5	.38
6	42	36	49	112	90	1450	203	114	33	9.8	3.3	.10
7	39	35	52	88	80	634	195	109	32	9.6	2.8	.15
8	39	34	52	76	74	395	194	102	30	9.7	2.4	.53
9	39	35	50	68	71	327	196	100	28	9.6	2.0	.55
10	38	36	48	62	69	282	195	104	27	9.0	1.6	.24
11	38	36	45	58	80	263	200	97	25	8.3	1.7	.94
12	38	36	45	57	159	287	203	122	22	7.5	1.7	1.3
13	38	36	44	56	1040	1380	201	102	22	7.1	1.4	1.5
14	38	36	45	56	1160	1030	190	92	22	6.9	1.2	2.1
15	38	36	45	55	668	1150	187	79	21	6.9	1.2	2.6
16	38	36	45	50	584	840	184	72	21	6.7	1.0	2.8
17	38	37	45	44	348	591	178	66	22	6.2	.92	2.1
18	39	37	45	41	250	473	177	63	26	5.4	1.1	2.4
19	39	37	46	53	201	463	176	60	23	4.7	1.3	2.3
20	40	38	54	59	171	412	162	57	21	4.3	1.1	2.8
21	40	40	75	54	151	375	151	57	20	4.2	1.0	2.4
22	40	43	72	51	141	381	145	67	20	4.2	1.1	2.7
23	39	47	64	51	135	415	146	70	19	4.2	1.0	2.9
24	39	47	62	54	127	485	145	63	19	4.4	1.0	2.3
25	39	44	60	60	120	388	142	57	18	4.8	1.3	2.8
26	39	42	55	84	113	333	141	54	17	5.2	1.6	2.5
27	39	41	52	77	103	297	142	53	15	5.3	1.1	2.0
28	38	40	50	87	100	279	134	52	13	5.5	1.2	2.1
29	38	42	50	143	---	257	135	51	12	5.5	1.2	2.2
30	38	45	48	123	---	241	140	50	12	5.0	1.0	2.1
31	38	---	48	95	---	232	---	47	---	4.9	.85	---
TOTAL	1262	1160	1585	2407	6590	14585	5386	2704	737	219.9	56.77	49.81
MEAN	40.7	38.7	51.1	77.6	235	470	180	87.2	24.6	7.09	1.83	1.66
MAX	62	47	75	231	1160	1450	237	180	45	12	4.6	2.9
MIN	38	34	44	41	69	93	134	47	12	4.2	.85	.10
AC-FT	2500	2300	3140	4770	13070	28930	10680	5360	1460	436	113	99
CAL YR 1986	TOTAL	345531.00	MEAN	947	MAX	34400	MIN	18	AC-FT	685400		
WTR YR 1987	TOTAL	36742.48	MEAN	101	MAX	1450	MIN	.10	AC-FT	72880		

SAN JOAQUIN RIVER BASIN

11336580 MORRISON CREEK NEAR SACRAMENTO, CA

LOCATION.--Lat 38°29'55", long 121°27'06", in SW 1/4 SE 1/4 sec.32, T.8 N., R.5 E., Sacramento County, Hydrologic Unit 18020109, on right bank 750 ft upstream from Florin Road, 1.6 mi upstream from Elder Creek, and 3.8 mi south of State Capitol Building in Sacramento.

DRAINAGE AREA.--53.4 mi².

PERIOD OF RECORD.--July 1959 to September 1987 (discontinued).

REVISED RECORDS.--WDR CA-72-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7.60 ft above National Geodetic Vertical Datum of 1929. 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.

REMARKS.--Estimated daily discharges: June 18 to Aug. 7. Records fair below 100 ft³/s and poor above. Periods of estimated record are poor. No regulation or diversion above station. Summer flow is sustained by wastewater from domestic and industrial use.

AVERAGE DISCHARGE.--28 years, 21.3 ft³/s, 15,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,730 ft³/s, Feb. 17, 1986, gage height, 10.40 ft; no flow at times in 1960, 1962, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 2	1600	485	4.22	Mar. 5	1015	498	4.27
Feb. 13	0400	*1130	*6.30				

Minimum daily, 1.0 ft³/s, Nov. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	4.8	3.9	9.2	7.9	5.1	5.9	4.8	6.2	6.0	5.6	6.1
2	8.7	4.7	4.4	5.8	161	5.1	4.5	4.3	6.2	6.0	5.4	7.0
3	5.9	5.1	4.6	90	60	5.7	5.5	4.8	6.3	6.0	5.6	7.0
4	5.5	5.0	4.8	16	12	5.5	5.3	5.4	5.8	5.9	5.5	6.5
5	5.7	5.1	21	10	7.5	269	4.8	6.0	5.8	5.9	5.3	6.2
6	6.5	4.7	4.5	30	6.2	190	5.3	6.3	6.6	5.9	5.4	6.2
7	7.2	4.5	4.5	10	5.2	36	5.3	6.8	6.7	5.9	5.4	6.1
8	7.2	5.0	5.8	7.4	5.0	17	5.3	6.9	6.8	5.9	5.3	6.4
9	7.3	4.6	5.6	6.7	5.4	13	5.1	6.1	6.9	5.7	5.3	6.8
10	7.2	4.9	5.6	5.0	14	12	4.9	5.8	7.1	5.8	6.0	6.5
11	5.6	5.3	4.7	4.4	77	14	4.5	6.0	7.3	5.7	5.8	6.6
12	3.5	5.0	4.6	4.9	159	51	4.9	6.0	7.3	5.8	6.3	6.6
13	4.2	5.0	5.6	4.9	445	70	5.1	6.2	7.3	5.9	5.8	6.8
14	4.5	4.8	4.7	5.1	57	62	5.4	6.3	6.9	5.8	4.9	6.1
15	4.0	4.5	4.8	4.6	95	50	5.3	6.5	7.5	5.7	4.4	6.0
16	4.9	4.1	4.5	5.0	35	22	5.6	6.2	8.4	5.8	5.3	6.0
17	14	5.3	4.7	4.6	12	15	5.0	5.9	8.3	5.9	6.0	6.0
18	6.4	5.5	8.9	4.6	7.9	12	4.4	5.4	7.7	5.7	6.1	6.1
19	3.7	5.1	18	5.1	6.0	9.9	4.0	6.5	7.2	5.9	5.7	6.0
20	4.9	4.7	8.9	5.6	5.8	8.5	4.4	6.5	7.0	5.8	5.6	5.7
21	4.2	4.5	4.3	5.7	6.4	23	5.3	7.0	6.8	5.7	5.7	5.9
22	3.3	4.0	24	6.2	5.4	12	5.9	7.2	6.6	5.7	5.4	6.2
23	4.2	2.8	5.9	24	5.5	64	5.6	6.4	6.6	5.6	5.2	6.0
24	4.2	1.2	4.4	32	5.6	35	5.5	6.9	6.4	5.6	5.6	5.5
25	4.2	1.1	2.0	9.4	5.6	17	5.6	7.2	6.4	5.5	5.6	5.6
26	5.0	1.4	3.8	8.0	5.3	12	5.5	7.5	6.3	5.6	5.5	5.3
27	4.9	1.0	4.2	14	5.1	9.7	6.0	7.6	6.2	5.5	5.6	5.2
28	5.1	1.8	3.6	62	5.0	7.5	6.0	7.7	6.1	5.6	5.6	5.5
29	5.0	11	4.2	17	---	6.7	5.4	6.8	6.1	5.4	5.5	5.5
30	4.7	3.3	4.0	35	---	6.6	13	5.3	6.0	5.6	5.5	5.3
31	5.0	---	4.8	14	---	6.3	---	5.8	---	5.5	5.8	---
TOTAL	201.7	129.8	199.3	466.2	1227.8	1072.6	164.3	194.1	202.8	178.3	171.7	182.7
MEAN	6.51	4.33	6.43	15.0	43.9	34.6	5.48	6.26	6.76	5.75	5.54	6.09
MAX	35	11	24	90	445	269	13	7.7	8.4	6.0	6.3	7.0
MIN	3.3	1.0	2.0	4.4	5.0	5.1	4.0	4.3	5.8	5.4	4.4	5.2
AC-FT	400	257	395	925	2440	2130	326	385	402	354	341	362
CAL YR 1986	TOTAL	16421.1	MEAN	45.0	MAX	1830	MIN	1.0	AC-FT	32570		
WTR YR 1987	TOTAL	4391.3	MEAN	12.0	MAX	445	MIN	1.0	AC-FT	8710		

SAN JOAQUIN RIVER BASIN

11337000 CONTRA COSTA CANAL NEAR OAKLEY, CA

LOCATION.--Lat 37°59'44", long 121°42'03", in NW 1/4 NE 1/4 sec.25, T.2 N., R.2 E., Contra Costa County, Hydrologic Unit 18040003, at pumping plant No. 1, 0.7 mi east of Oakley, and 2.6 mi northwest of Knightsen.

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

GAGE.--Recording flowmeters on pumps. Prior to Jan. 1, 1953, water-stage recorder at site 3.2 mi downstream at datum 121.72 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Water is diverted from Sacramento-San Joaquin Delta by way of Old River, Rock Slough, and a dredged channel. A series of four pumps lift the water 115 ft into the canal. Water is used for municipal, agricultural, and industrial purposes. The canal is a part of the Central Valley Project.

COOPERATION.--Records of daily discharge were provided by U.S. Bureau of Reclamation.

AVERAGE DISCHARGE.--37 years, 107 ft³/s, 77,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 291 ft³/s, July 15, 16, 1984; minimum daily, 1.0 ft³/s, Jan. 19, 26, 1983, Feb. 29, 1984, Jan. 8, 1985.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	120	176	129	119	126	112	225	238	250	229	249
2	151	127	178	130	124	143	126	222	243	250	271	248
3	151	116	174	126	130	146	126	223	243	252	264	246
4	151	134	175	119	130	151	114	224	250	260	257	251
5	152	135	178	126	127	152	113	235	242	260	256	244
6	140	134	178	124	126	149	131	254	244	250	246	248
7	145	130	180	123	130	146	168	251	246	230	244	251
8	147	126	190	121	127	147	171	253	249	232	244	251
9	153	130	176	122	121	149	169	250	245	232	250	238
10	148	132	154	117	119	144	178	257	244	238	247	232
11	136	132	147	125	117	147	175	248	243	237	250	219
12	140	128	148	120	120	145	182	254	243	236	244	211
13	139	136	133	114	113	145	162	251	235	246	238	214
14	128	127	140	114	111	143	183	252	234	239	236	212
15	135	126	139	115	112	142	186	243	232	247	234	212
16	130	126	141	112	114	145	206	243	239	247	225	213
17	129	125	143	108	116	140	206	239	239	246	227	215
18	126	126	142	110	94	140	200	236	241	245	228	218
19	117	152	143	121	62	131	206	243	238	240	225	204
20	121	175	140	123	65	127	220	225	238	244	221	209
21	116	178	145	128	65	122	224	231	238	242	236	216
22	126	179	140	122	65	119	221	232	248	233	234	215
23	124	182	129	117	84	122	221	221	243	247	231	219
24	125	185	122	116	109	115	217	229	251	246	234	216
25	115	187	123	116	109	118	211	235	249	243	233	218
26	123	188	106	128	103	114	211	237	251	241	225	210
27	123	178	115	126	111	114	216	236	248	251	233	207
28	128	178	117	126	116	113	220	235	247	253	236	214
29	127	171	131	127	---	113	223	233	256	256	240	215
30	125	173	137	123	---	101	224	231	249	262	244	216
31	131	---	133	125	---	94	---	238	---	256	244	---
TOTAL	4157	4436	4573	3753	3039	4103	5522	7386	7306	7611	7426	6731
MEAN	134	148	148	121	109	132	184	238	244	246	240	224
MAX	155	188	190	130	130	152	224	257	256	262	271	251
MIN	115	116	106	108	62	94	112	221	232	230	221	204
AC-FT	8250	8800	9070	7440	6030	8140	10950	14650	14490	15100	14730	13350
CAL YR 1986	TOTAL	56136	MEAN 154	MAX 253	MIN 10	AC-FT	111300					
WTR YR 1987	TOTAL	66043	MEAN 181	MAX 271	MIN 62	AC-FT	131000					

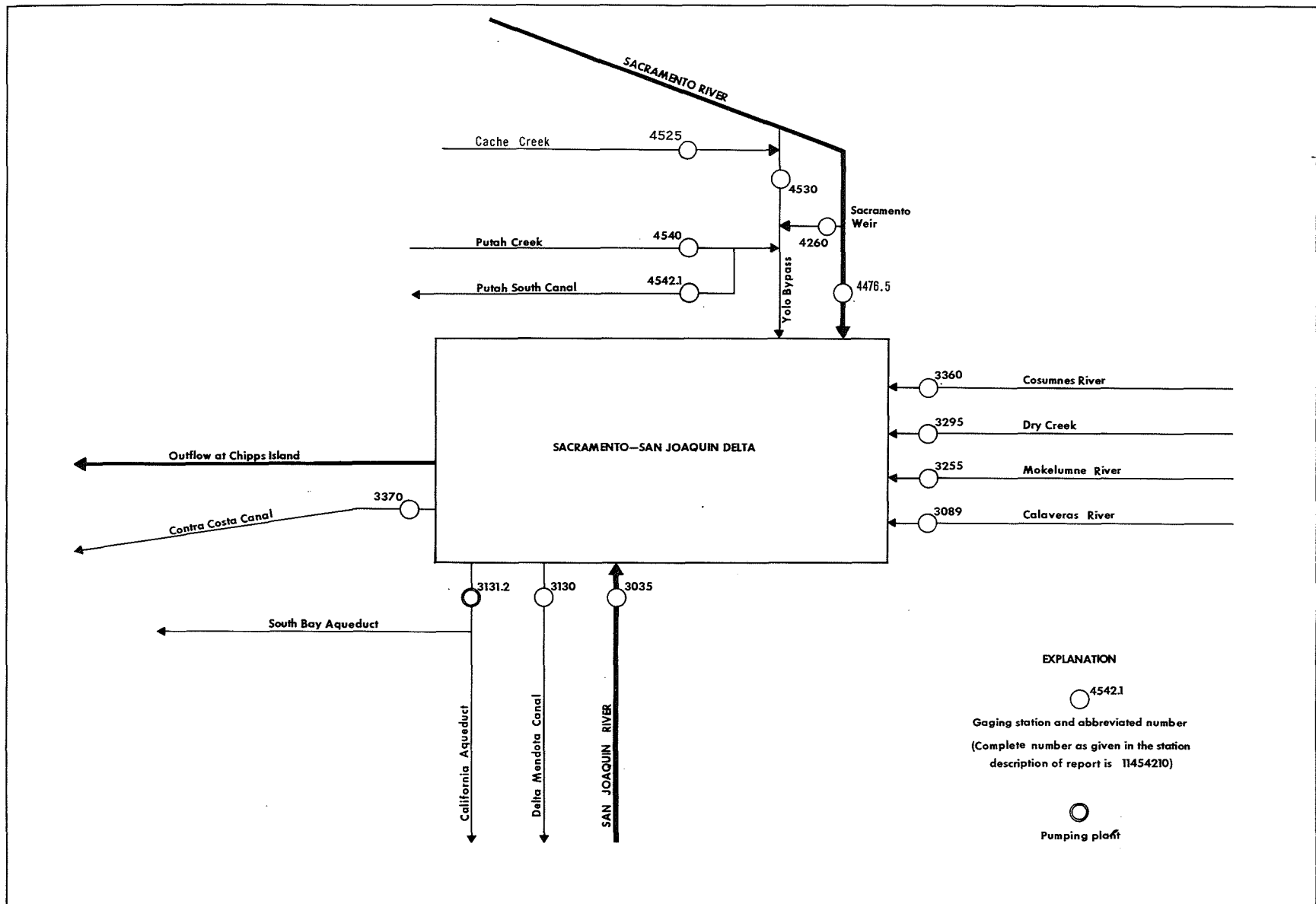


Figure 37. - Schematic diagram showing principal inflows and diversions, Sacramento-San Joaquin Delta.

SACRAMENTO-SAN JOAQUIN DELTA, INFLOWS AND DIVERSIONS

LOCATION.--See schematic diagram of inflows and diversions, Sacramento-San Joaquin Delta.

PERIOD OF RECORD.--October 1971 to current year. Data for periods prior to October 1971 can be obtained from published records for stations tabulated below.

COOPERATION.--Records for Delta-Mendota, Contra Costa, and Putah South Canals provided by U.S. Bureau of Reclamation; California Aqueduct and Sacramento Weir spill provided by California Department of Water Resources.

SUMMARY OF PRINCIPAL INFLOWS AND DIVERSIONS IN THE
SACRAMENTO-SAN JOAQUIN DELTA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Inflows, in thousands of acre-feet												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Month Apr.	May	June	July	Aug.	Sept.	Water year
11303500 SAN JOAQUIN RIVER NEAR VERNALIS												
230	167.1	227.9	141.7	118.6	210	170.6	133.9	118.4	100.3	100	95.01	1814
11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM												
4.24	3.86	3.31	3.90	2.52	2.27	9.78	14.38	14.11	15	16.16	10.23	99.76
11325500 MOKELUMNE RIVER AT WOODBRIDGE												
43.28	37.53	28.21	19.51	5.81	6.78	2.28	1.74	2.64	3.02	2.75	2.70	156.3
11329500 DRY CREEK NEAR GALT												
.07	0	0	.41	6.06	13.23	1.20	.01	.02	0	0	0	21.02
11335000 COSUMNES RIVER AT MICHIGAN BAR												
2.50	2.30	3.14	4.77	13.07	28.93	10.68	5.36	1.46	.44	.11	.10	72.88
11426000 SACRAMENTO WEIR SPILL												
0	0	0	0	0	0	0	0	0	0	0	0	0
11447650 SACRAMENTO RIVER AT FREEPORT												
949.7	754.5	806.1	809.9	966.6	1327	703.7	614.6	599.1	931.1	887.8	691.7	10040
11453000 YOLO BYPASS NEAR WOODLAND[1]												
0	0	0	0	0	11.37	0	0	0	0	0	0	11.37
11454000 PUTAH CREEK NEAR WINTERS												
17.51	15.65	11.37	8.30	6.55	7.09	26.23	41.54	41.14	41.07	39.07	29.59	285.1
TOTAL												
1247	980.9	1080	988.5	1119	1607	924.5	811.5	776.9	1091	1046	829.3	12500
Diversions, in thousands of acre-feet												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Month Apr.	May	June	July	Aug.	Sept.	Water year
11313000 DELTA-MENDOTA CANAL												
246	219.7	246.6	246.2	223.8	146.3	258.2	184.3	178.4	272.1	280.7	254.9	2757
11313120 CALIFORNIA AQUEDUCT (DELTA PUMPING PLANT)												
207.9	180.8	188.1	132.3	151.2	189.6	153.3	122.9	119	265.1	305.2	272.2	2288
11337000 CONTRA COSTA CANAL												
8.24	8.80	9.07	7.44	6.03	8.14	10.95	14.65	14.50	15.09	14.73	13.35	131
11454210 PUTAH SOUTH CANAL												
15.16	13.15	9.48	6.23	4.54	4.42	21.97	37.22	36.24	34.34	33.26	25.69	241.7
TOTAL												
477.3	422.4	453.2	392.2	385.6	348.5	444.4	359.1	348.1	586.6	633.9	566.1	5418

¹Flow not computed below 1,000 ft³/s.

NOTE.--Minor inflow streams and diversions are not included.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the U.S. Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at miscellaneous sites are given in separate tables.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage station is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for the current year is given. Information on some lower floods may have been obtained but is not published here. The years given in the period of record represent water years for which the annual maximum has been obtained.

Annual maximum discharge at crest-stage partial-record stations during water years 1986-87

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Date	Annual maximum	
						Gage height (feet)	Discharge (ft ³ /s)
Tulare Lake Basin							
11205680	Frazier Creek near Strathmore, CA	Lat 36°08'33", long 118°57'17", in NE 1/4 SE 1/4 sec.32, T.20 S., R.28 E., Tulare County, Hydrologic Unit 18030012, at culvert on county road J28, 5.9 mi east of Strathmore.	3.05	1974-87	2-13-86 2-13-87	6.56 4.48	49 1.7
11205690	Lewis Creek near Lindsay, CA	Lat 36°11'11", long 118°59'46", in NW 1/4 NE 1/4 sec.13, T.20 S., R.27 E., Tulare County, Hydrologic Unit 18030012, at culvert on Road 258, 0.2 mi downstream from unnamed tributary, and 7.0 mi southeast of Lindsay.	21.5	1969a, 1974-87	2-19-86 2-13-87	24.52 21.67	508 42
11210970	Antelope Creek at Woodlake, CA	Lat 36°25'42", long 119°06'22", in SE 1/4 SE 1/4 sec.13, T.17 S., R.26 E., Tulare County, Hydrologic Unit 18030012, at culverts on two separate channels at Cajon Avenue and 1.1 mi northwest of town of Woodlake.	19.2	1969a, 1974-87	2-19-86 2-13-87	12.03 (b)	253 c11
11212000	Sand Creek near Orange Cove, CA	Lat 36°37'36", long 119°14'48", in SW 1/4 NW 1/4 sec.15, T.15 S., R.25 E., Tulare County, Hydrologic Unit 18030012, on right bank 3.8 mi east of Orange Cove.	31.6	1944-54, 1956d, 1967d, 1969d, 1971-84d, 1985-87	2-13-86 2-13-87	4.16 3.31	242 94

a Published as a miscellaneous measurement.

b Unknown.

c Estimated.

d Computed as continuous record.

Annual maximum discharge at crest-stage partial-record stations during water year 1986
(NOT PREVIOUSLY PUBLISHED)

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Date	Annual maximum	
						Gage height (feet)	Discharge (ft ³ /s)
San Joaquin River Basin							
11336030	Badger Creek at Riley Road, near Galt, CA	Lat 38°20'21", long 121°17'48", in San Jon de Los Moquelumnes Land Grant, T.6 N., R.6 E., Sacramento County, Hydrologic Unit 18040005, at bridge on Riley Road, 2.3 mi upstream from U.S. Highway 99, and 5.9 mi north of Galt.	13.0	1972-86	2-17-86	40.90	1,160
11336040	NF Badger Creek at Riley Road, near Galt, CA	Lat 38°21'06", long 121°17'48", San Jon de Los Moquelumnes Land Grant, T.6 N., R.6 E., Sacramento County, Hydrologic Unit 18040005, at bridge on Riley Road, 2.4 mi upstream from U.S. Highway 99, and 6.8 mi north of Galt.	12.6	1972-86	2-17-86	41.40	1,040
11336050	Willow Creek at McKenzie Road, near Galt, CA	Lat 39°19'08", long 121°18'01", in San Jon de Los Moquelumnes Land Grant, T.5 N., R.6 E., Sacramento County, Hydrologic Unit 18040005, at bridge on McKenzie Road, 1.5 mi upstream from U.S. Highway 99, and 4.5 mi north of Galt.	2.95	1972-86	2-17-86	39.40	215
11336070	Cosummes River at State Highway 104, near Galt, CA	Lat 38°17'27", long 121°22'45", in San Jon de Los Moquelumnes Land Grant, T.5 N., R.5 E., Sacramento County, Hydrologic Unit 18040005, at State Highway 104 crossing and 5.0 mi northwest of [B]t.	Not determined	1972-86	-----	*	----
11336530	Laguna Creek at McKenzie Road, near Galt, CA	Lat 38°18'46", long 121°18'01" in San Jon de Los Moquelumnes Land Grant, T.5 N., R.6 E., Sacramento County, Hydrologic Unit 18040005, at bridge on McKenzie Road, 1.2 mi upstream from U.S. Highway 99, and 4.1 mi north of Galt.	117	1972-86	2-17-86	39.80	7,920
11336550	Skunk Creek at McKenzie Road, near Galt, CA	Lat 38°17'57", long 121°18'01", in San Jon de Los Moquelumnes Land Grant, T.5 N., R.6 E., Sacramento County, Hydrologic Unit 18040005, at bridge on McKenzie Road, 1.6 mi upstream from U.S. Highway 99, and 3.1 mi north of Galt.	11.7	1972-86	2-17-86	39.32	----
11336560	Deadman Gulch at Christenson Road, near Galt, CA	Lat 38°16'44", long 121°21'11", in San Jon de Los Moquelumnes Land Grant, T.5 N., R.6 E., Sacramento County, Hydrologic Unit 18040005, at bridge on Christenson Road, 2.6 mi downstream from U.S. Highway 99, and 2.6 mi northwest of Galt.	8.82	1972-86	2-17-86	26.50	400

a Published as a miscellaneous measurement.

* Destroyed due to construction of new road bridges.

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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