

WATER RESOURCES DATA—CALIFORNIA, WATER YEAR 1999
VOLUME 3—SOUTHERN CENTRAL VALLEY BASINS AND THE GREAT BASIN
FROM WALKER RIVER TO TRUCKEE RIVER

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INTRODUCTION

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

This volume of the report includes records on surface water in the State. Specifically, it contains: (1) discharge records for 165 streamflow-gaging stations and 4 partial-record stations; (2) stage and content records for 39 lakes and reservoirs; and (3) water-quality records for 34 streamflow-gaging stations and 1 partial-record station. Records included for stream stages are only a small fraction of those obtained during the water year.

The series of annual reports for California began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format changed to include data on quantities of surface water, quality of surface and ground water, and ground-water levels. From the 1985 through the 1993 water years, 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 principal cities of the United States, or if not out of print, they may be purchased from U.S. Geological Survey, Information Services, Box 25286, Denver Federal Center, Denver, CO 80225-0046.

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-99-3." 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 on microfiche, by the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. For further ordering information, the Customer Inquiries telephone number is (703) 487-4650, between 8:30 a.m. and 5:30 p.m. Eastern Standard Time.

Additional information for ordering specific reports may be obtained from the District Office at the address given on the back of the title page or by telephone at (916) 278-3100.

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:

Calaveras County Water District, Simon Granville, General Manager.

California Department of Water Resources, David N. Kennedy, Director.

California State Water Resources Control Board, Winston H. Hickox, Secretary for Environmental Protection.

California Tahoe Conservancy, Dennis T. Machida, Executive Officer.

East Bay Municipal Utility District, Michael J. Wallis, Director of Operations and Maintenance.

Madera Irrigation District, Stephen H. Ottemoeller, General Manager-Chief Engineer.
San Luis and Delta–Mendota Water Authority, Daniel G. Nelson, Executive Director.
San Francisco, city and county, Hetch-Hetchy Water and Power, Lawrence T. Klein, General Manager.
Truckee River OAIP Committee, Jeff Boyer, Coordinator.
Tulare County Resource Management Agency, Mike Coffield, Director.
Turlock Irrigation District, Chris L. Kiriakou, Assistant General Manager–Energy Resources.
Woodbridge Irrigation District, Anders Christensen, Manager.

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

The following organizations aided in collecting records: Calaveras County Water District, Olcese Water District, Pacific Gas & Electric Co., Southern California Edison Co., Merced and Oakdale–South San Joaquin Irrigation Districts, Northern California Power Agency, and Utica Power Authority.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 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 human activities.

National Stream–Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation’s largest river basins—the Mississippi, the Columbia, the Colorado, and the Rio Grande. The network consists of 39 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water–Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world’s oceans and for determining global cycles of carbon, nutrients, and other chemicals.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to accomplish the following objectives: (1) provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites; (2) provide the mechanism to evaluate the effectiveness of the significant reduction in SO₂ emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred; (3) provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO₂ and NO_x scheduled to begin in 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at:

<http://nadp.nrel.colostate.edu/NADP>

The National Water–Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation’s ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 53 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation’s water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies.

Additional information about the NAWQA Program is available through the world wide web at:

http://wwwrvaes.er.usgs.gov/nawqa/nawqa_home.html

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1999 water year that began October 1, 1998, and ended September 30, 1999. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and contents data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station-Identification Numbers

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

Downstream-Order System

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station such as 11238600, which appears just to the left of the station name, includes the two-digit part number "11" plus the six-digit downstream-order number "238600." 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. 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 (fig. 1).

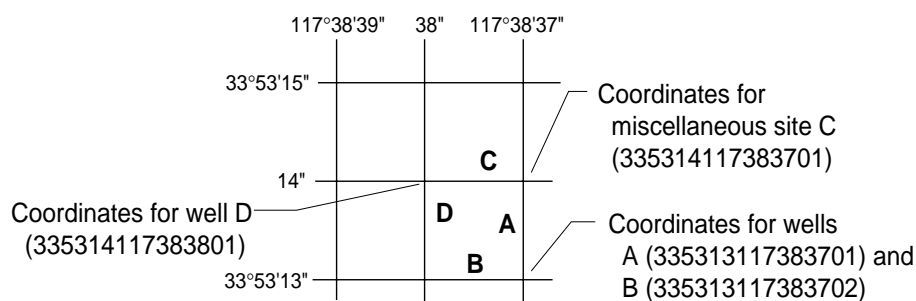


Figure 1. System for numbering miscellaneous sites (latitude and longitude).

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 stations for which data are given in this report are shown, by county, in figures 2 through 21.

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 relation 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 relation 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 digital recorders, data-collection platforms, or data loggers that sample stage values 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, Chapters A1 through A19, and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

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

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

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

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

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

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

Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

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

Station manuscript

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

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

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

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

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

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

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

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

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

separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

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

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

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

Occasionally the records of a discontinued gaging station may need revision. Because for these stations there would be no current or, possibly, 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-gaging stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Data table of daily mean values

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

Statistics of monthly mean data

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

Summary statistics

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

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes.

Selected streamflow duration curve statistics and runoff data also are given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

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

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second (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 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

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

Other Records Available

The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 20192, maintains an index of sites as well as an index of records of discharge collected by other agencies but not published by the U.S. Geological Survey. Information on records at specific sites can be obtained from that office upon request.

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

Records of Surface-Water Quality

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

Classification of Records

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

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape or stored electronically in a data logger. 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 2 through 21.

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 insitu 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 insitu water, carefully prescribed procedures are followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in "Techniques of Water-Resources Investigations," Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. All these references are listed in the section "Publications on Techniques of Water-Resources Investigations." Also, detailed information on collecting, treating, and shipping samples may be obtained from the District Office.

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

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

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

Historical and current (1999) dissolved trace-element concentrations are reported herein for water that was collected, processed, and analyzed by using either ultraclean or other than ultraclean techniques. If ultraclean techniques were used, then those concentrations are reported in nanograms per liter (ng/L). If other than ultraclean techniques were used, then those concentrations are reported in micrograms per liter ($\mu\text{g/L}$) and could reflect contamination introduced during some phase of the procedure.

Water Temperature

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

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

Sediment

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

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

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

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

Estimates of bed-load and total-sediment discharge are included for some stations. Computations of monthly bed-load discharges are based on the relation between instantaneous water discharge and corresponding bed-load discharge for the station. Values of bed-load discharge used in defining this relation are based on samples obtained by use of the Helley-Smith or BL 84 bed-load samplers or by modified-Einstein or Meyer-Peter Muller computation procedures. Application of the bed-load-transport relation at a station was made on a daily basis or subdivided-day basis. The bed-load samplers are designed to collect time-weighted samples for the sediment moving within 0.25 ft of the streambed. Sediment moving in this portion of the flow cannot be sampled with standard suspended-sediment samplers. Calibration of the bed-load samplers has not been completed, and a trap efficiency of 1.0 has been assumed applicable to these devices. Error sources in the theoretical methods, based on analysis of bed-material

characteristics, channel geometry, and associated hydraulic factors, are also undefined. In consequence, figures of bed-load discharge must be used with caution. They are estimates, at best, and are subject to revision.

Cross-Sectional Data

Cross-sectional surveys of water temperature, pH, specific conductance, dissolved oxygen, and suspended sediment are done at all NASQAN and Hydrologic Benchmark Stations during various seasons and surface-water discharges. Documentation of cross-section variation 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, biochemical-oxygen-demand (BOD) samples, indicator-bacteria samples, and daily specific-conductance samples are analyzed locally. All other samples are analyzed in the U.S. Geological Survey's National Water-Quality Laboratory in Arvada, Colorado. Methods used to analyze sediment samples and to compute sediment records are described in the Techniques of Water-Resources Investigations, Book 5, Chapter C1. Methods used by the U.S. Geological Survey laboratories are given in TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

Water Quality-Control Data

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental-sample data cannot be interpreted adequately because the errors associated with the sample data are unknown. The various types of QC samples collected by this District are described in the following section. Procedures have been established for the storage of water-quality-control data within the U. S. Geological Survey. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

Blank samples are collected and analyzed to ensure the environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this District are:

Field blank is a blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank is a blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank is a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank is a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank is a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank is a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank is a blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and

analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this District are:

Sequential sample is a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample is a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

Data Presentation

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

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

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

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

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

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

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

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

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

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

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

ACCESS TO USGS WATER DATA

The U.S. Geological Survey provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

<http://water.usgs.gov>.

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of additional data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices. (See address on the back of the title page.)

DEFINITION OF TERMS

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

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an “unfiltered” sample (formerly reported as alkalinity).

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, 325,851 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 measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

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.

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a “filtered” sample.

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

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters.

Cubic foot per second per square mile [CFSM, $(\text{ft}^3/\text{s})/\text{mi}^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

Inch (IN., in.) as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were uniformly distributed on it.

Aroclor is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type and the last two digits represent the weight percent of the hydrogen substituted chlorine.

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, while others perform an essential role in nature in the recycling of materials; for example, by 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. This group includes coliforms that inhabit the intestines of warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35°C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C plus or minus 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL 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. In the laboratory, they are defined as all the organisms that produce blue colonies within 24 hours when incubated at 44.5°C plus or minus 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found in the intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35°C plus or minus 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Enterococcus bacteria are commonly found in the feces of humans and other warm-blooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies

with black or reddish-brown precipitate after incubation at 41°C on mE agar and subsequent transfer to EIA medium. Enterococci include *Streptococcus faecalis*, *Streptococcus faecium*, *Streptococcus avium*, and their variants.

Escherichia coli (*E. coli*) are bacteria present in the intestine and feces of warm-blooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium. Their concentrations are expressed as number of colonies per 100 mL of sample.

Base flow is flow in a channel sustained by ground-water discharge in the absence of direct runoff.

Bed load is the sediment which moves along in essentially continuous contact with the streambed by rolling, sliding, and making brief excursions into the flow a few diameters above the bed.

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

Benthic organisms (invertebrates) are the group of animals inhabiting 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. They are useful as indicators of water quality.

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 microorganisms, 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 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. 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.

Biomass pigment ratio is an indicator of the total proportion of periphyton which are autotrophic (plants). This is also called the Autotrophic Index.

Bottom material: See Bed material.

Cells/volume (cells per volume) refers to the number of plankton cells or natural units counted using a microscope and grid or counting cell. Results are generally reported as cells or units per milliliter.

Cells volume (biovolume) 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 (for example, 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 (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

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

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

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 BOD 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 green pigments in plants.

Colloid is any substance with particles in such a fine state of subdivision dispersed in a medium (for example, water) that they do not settle out; but not in so fine a state of subdivision that they can be said to be truly dissolved.

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.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases the water level can rise above the ground surface, yielding a flowing well.

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.

Continuous-record station is a site that meets either of the following conditions:

1. Stage or streamflow are recorded at some interval on a continuous basis. The recording interval is usually 15 minutes, but may be less or more frequent.
2. Water-quality, sediment, or other hydrologic measurements are recorded at least daily.

Control designates a feature in the channel downstream from a gaging station that physically influences the water-surface elevation and thereby determines the stage-discharge relation at the station. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, 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 (CFS, cfs, ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

Cubic foot per second per day (CFS-DAY, cfs-day, cfs/d, or [(ft³/s)/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, 1.9835 acre-feet, 646,317 gallons, or 2,447 cubic meters.

Daily record is a summary of streamflow, sediment, or water-quality values computed from data collected with sufficient frequency to obtain reliable estimates of daily mean values.

Daily record station is a site for which daily records of streamflow, sediment, or water-quality values are computed.

Datum, as used in this report, is an elevation above mean sea level to which all gage height readings are referenced.

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or flow, is the volume of water (or more broadly, volume of fluid including solid- and dissolved-phase material), that passes a given point in a given period of time.

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

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

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

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.

Dissolved oxygen (DO) content of water in equilibrium with air is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved solids, with small temperature changes having the more significant offset. Photosynthesis and respiration may cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During that 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 0.4926 to reflect the change. Alternatively, alkalinity concentration (as mg/L CaCO₃) can be converted to carbonate concentration by multiplying by 0.60.

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 site on a stream is that area, measured in a horizontal plane, that has a common outlet at the site for its surface runoff. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth's surface that is occupied by a drainage system with a common outlet for its surface runoff (see "Drainage area").

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65°C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue.

Extractable-organic halides (EOX) are organic compounds which contain halogen atoms such as chlorine. These organic compounds are semi-volatile and extractable by ethyl acetate from air-dried stream-bottom sediments. The ethyl-acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the stream-bottom sediments.

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

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

Gage height (G.H.) is the water-surface elevation referenced to the 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 site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Ground-water level is the elevation of the water table or another potentiometric surface at a particular location.

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

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. *See NOAA web site:*

<http://www.co-ops.nos.noaa.gov/tideglos.html>

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

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the U.S. Geological Survey. Each hydrologic unit is identified by an 8-digit number.

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

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

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

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA web site:*

<http://www.co-ops.nos.noaa.gov/tideglos.html>

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.

Mean high tide is the average of all high tides over a specified period.

Mean lower low water (MLLW) is the average of the lower low water height of each tidal day observed over the National Tidal Datum Epoch. The National Tidal Datum Epoch is the specific 19-year period adopted by the National Ocean Service as the official time segment over which tide observations are taken and reduced to obtain mean values.

Mean low tide is the average of all low tides over a specified period.

Mean water level is the average of all tides over a specified period.

Measuring point (MP) is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental 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-adult or egg-nymph-adult.

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

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

Micrograms per kilogram (UG/KG, $\mu\text{g/kg}$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

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

Microsiemens per centimeter (US/CM, $\mu\text{S/cm}$) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

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

Miscellaneous site, or miscellaneous station, is a site where streamflow, sediment, and/or water-quality data are collected once, or more often on a random or discontinuous basis.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic-invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

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

National Geodetic Vertical Datum of 1929 (NGVD of 1929) 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. *See NOAA web site:*

<http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88>

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

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of Formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

Open or screened interval is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediments. May be reported as dissolved organic carbon (DOC), suspended organic carbon (SOC), or total organic carbon (TOC).

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area of 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.

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter Code is a 5-digit number used in the U.S. Geological Survey's computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, Sedigraph) determine fall diameter of particles in either 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 the recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024–0.004	Sedimentation
Silt004–.062	Sedimentation
Sand062–2.0	Sedimentation/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.

Periodic station is a site where stage, discharge, sediment, chemical, or other hydrologic measurements are made one or more times during a year, but at a frequency insufficient to develop a daily record.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they 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.

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 is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

Phytoplankton is the plant part of the plankton. They are usually microscopic, and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to 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 (*Cyanophyta*) are a group of 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.

Euglenoids (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark.

Fire algae (*Pyrrophyta*) are a group of algae that are free-swimming unicells characterized by a red pigment spot.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae 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 (PCB's) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Polychlorinated naphthalenes (PCN's) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCB's) and have been identified in commercial PCB preparations.

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 oxygen released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [$\text{mg C}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg C}/(\text{m}^3/\text{time})$] for phytoplankton. Carbon method defines 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.

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [$\text{mg O}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg O}/(\text{m}^3/\text{time})$] for phytoplankton. Oxygen method defines 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.

Radioisotopes are isotopic forms of an element that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight, but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

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 and 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.

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or non-exceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the non-exceedances of the $7Q_{10}$ occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

River mile is the distance of a point on a river measured in miles from the river's mouth along the low-water channel.

River mileage is the linear distance along the meandering path of a stream channel determined in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council.

Runoff in inches (IN., in.) is the depth, in inches, to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

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

http://www.co-ops.nos.noaa.gov/glossary/gloss_n.html#NGVD

Sediment is solid material that is transported by, suspended in, or deposited from water. It originates mostly from disintegrated rocks; it also includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the 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.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along or very close to the bed. In this report, bed load is considered to consist of particles in transit from the bed to an elevation equal to the top of the bed-load sampler nozzle (usually within 0.25 ft of the streambed).

Bed-load discharge (tons per day) is the quantity of sediment moving as bed load, reported as dry weight, that passes a cross section in a given time.

Suspended sediment is the sediment that 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). The entire sample is used for the analysis.

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

Suspended-sediment discharge (tons/day) is the quantity of sediment moving in suspension, reported as dry weight, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft³/s) x 0.0027.

Suspended-sediment load is a term that refers to material in suspension. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration.

Suspended total residue at 105°C concentration is the concentration of suspended sediment in the sampled zone expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). A small aliquot of the sample is used for the analysis.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, reported as dry weight, that passes a cross section in a given time.

Total sediment load or total load is a term that refers to the total sediment (bed load plus suspended-sediment load) that is in transport. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with total sediment discharge.

Seven-day 10-year low flow (7Q₁₀, 7Q₁₀) is the minimum flow averaged over 7 consecutive days that is expected to occur on average, once in any 10-year period. The 7Q₁₀ has a 10-percent chance of occurring in any given year.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Water ranges 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 a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 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.

Stable isotope ratio (per MILL/MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific waters, to evaluate mixing of different waters, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage: See “Gage height.”

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

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” as 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.

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.

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

Surface area of a lake or impoundment is that area encompassed by the boundary of the lake or impoundment as shown on U.S. Geological Survey topographic maps, or on other available maps or photographs. The computed surface areas reflect the water levels of the lakes or impoundments at the times when the information for the maps or photographs was obtained.

Surficial bed material is the top 0.1 to 0.2 ft of the bed material that is sampled 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. It is associated with 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 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 and 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 are 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 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. 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.

Synoptic Studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

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	<i>Hexagenia</i>
Species	<i>Hexagenia limbata</i>

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

Tons per day (T/DAY, tons/d) is the rate representing a mass of 1 ton of a constituent in streamflow passing a cross section in 1 day. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

Total is the total amount of a given constituent in a representative 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 both the dissolved and suspended phases of the sample. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, 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 suspended-sediment mixture and that the analytical method determines all the constituent in the sample.)

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total length (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total, recoverable is the amount of a given constituent that is in solution after a representative 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 and 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 are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Turbidity is a measurement of the collective optical properties of a water sample that cause light to be scattered and absorbed rather than transmitted in straight lines; the higher the intensity of scattered light, the higher the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU) or Formazin turbidity units (FTU) depending on the method and equipment used.

Volatile organic compounds (VOC's) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOC's are man-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens (U.S. Environmental Protection Agency, 1996).

Water level is the water-surface elevation or stage of the free surface of a body of water above or below any datum (see "Gage height"), or the surface of water standing in a well, usually indicative of the position of the water table or other potentiometric surface.

Water table is the surface of a ground-water body at which the water is at atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which is found the water table.

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, 1999, is called the "1999 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976.)

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.

Well is an excavation (pit, hole, tunnel), generally cylindrical in form and often walled in, drilled, dug, driven, bored, or jetted into the ground to such a depth as to penetrate water-yielding geologic material and allow the water to flow or to be pumped to the surface.

Wet weight refers to the weight of animal tissue or other substance including its contained water.

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

- 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 p.
- 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 p.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

- 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 p.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS-TWRI Book 2, Chapter D2. 1988. 86 p.

Section E. Subsurface Geophysical Methods

- 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 p.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS-TWRI Book 2, Chapter E2. 1990. 150 p.

Section F. Drilling and Sampling Methods

- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS-TWRI Book 2, Chapter F1. 1989. 97 p.

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

- 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 p.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS-TWRI Book 3, Chapter A2. 1967. 12 p.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS-TWRI Book 3, Chapter A3. 1968. 60 p.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS-TWRI Book 3, Chapter A4. 1967. 44 p.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS-TWRI Book 3, Chapter A5. 1967. 29 p.
- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS-TWRI Book 3, Chapter A6. 1968. 13 p.

- 3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A7. 1968. 28 p.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A8. 1969. 65 p.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI Book 3, Chapter A9. 1989. 27 p.
- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A10. 1984. 59 p.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI Book 3, Chapter A11. 1969. 22 p.
- 3-A12. *Fluorometric procedures for dye tracing, Revised*, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A12. 1986. 41 p.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A13. 1983. 53 p.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI Book 3, Chapter A14. 1983. 46 p.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI Book 3, Chapter A15. 1984. 48 p.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI Book 3, Chapter A16. 1985. 52 p.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS–TWRI Book 3, Chapter A17. 1985. 38 p.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI Book 3, Chapter A18. 1989. 52 p.
- 3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A19. 1990. 31 p.
- 3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A20. 1993. 38 p.
- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS–TWRI Book 3, Chapter A21. 1995. 56 p.

Section B. Ground-Water Techniques

- 3-B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS–TWRI Book 3, Chapter B1. 1971. 26 p.
- 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 p.
- 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 p.
- 3-B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS–TWRI Book 3, Chapter B4. 1990. 232 p.
- 3-B4. *Supplement 1. Regression modeling of ground-water flow—Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R.L. Cooley: USGS–TWRI Book 3, Chapter B4. 1993. 8 p.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS–TWRI Book 3, Chapter B5. 1987. 15 p.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI Book 3, Chapter B6. 1987. 28 p.
- 3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E.J. Wexler: USGS–TWRI Book 3, Chapter B7. 1992. 190 p.

Section C. Sedimentation and Erosion Techniques

- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS–TWRI Book 3, Chapter C1. 1970. 55 p.
- 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 p.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI Book 3, Chapter C3. 1972. 66 p.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

4-A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI Book 4, Chapter A1. 1968. 39 p.

4-A2. *Frequency curves*, by H.C. Riggs: USGS–TWRI Book 4, Chapter A2. 1968. 15 p.

Section B. Surface Water

4-B1. *Low-flow investigations*, by H.C. Riggs: USGS–TWRI Book 4, Chapter B1. 1972. 18 p.

4-B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI Book 4, Chapter B2. 1973. 20 p.

4-B3. *Regional analyses of streamflow characteristics*, by H.C. Riggs: USGS–TWRI Book 4, Chapter B3. 1973. 15 p.

Section D. Interrelated Phases of the Hydrologic Cycle

4-D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI Book 4, Chapter D1. 1970. 17 p.

Book 5. Laboratory Analysis

Section A. Water Analysis

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI Book 5, Chapter A1. 1989. 545 p.

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 p.

5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI Book 5, Chapter A3. 1987. 80 p.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greeson, editors: USGS–TWRI Book 5, Chapter A4. 1989. 363 p.

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 p.

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 p.

Section C. Sediment Analysis

5-C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI Book 5, Chapter C1. 1969. 58 p.

Book 6. Modeling Techniques

Section A. Ground Water

6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI Book 6, Chapter A1. 1988. 586 p.

6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S.A. Leake and D.E. Prudic: USGS–TWRI Book 6, Chapter A2. 1991. 68 p.

6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L.J. Torak: USGS–TWRI Book 6, Chapter A3. 1993. 136 p.

6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R.L. Cooley: USGS–TWRI Book 6, Chapter A4. 1992. 108 p.

6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L.J. Torak: USGS–TWRI Book 6, Chapter A5. 1993. 243 p.

6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler: USGS–TWRI Book 6, Chapter A6. 1996. 125 p.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

- 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 p.
- 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 p.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI Book 7, Chapter C3. 1981. 110 p.

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

- 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 p.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI Book 8, Chapter A2. 1983. 57 p.

Section B. Instruments for Measurement of Discharge

- 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 p.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

- 9-A1. *National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A1. 1998. 47 p.
- 9-A2. *National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A2. 1998. 94 p.
- 9-A3. *National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A3. 1998. 75 p.
- 9-A5. *National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A5. 1999. 149 p.
- 9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI Book 9, Chapter A6. 1998. Variously paginated.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, by D.N. Myers and F.D. Wilde: USGS–TWRI Book 9, Chapter A7.1. 1997. 49 p.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Five-Day Biological Oxygen Demand*, by G.C. Delzer and S.W. McKenzie: USGS–TWRI Book 9, Chapter A7.2. 1999. 28 p.
- 9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-Material Samples*, by D.B. Radtke: USGS–TWRI Book 9, Chapter A8. 1998. 48 p.
- 9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS–TWRI Book 9, Chapter A9. 1998. 60 p.

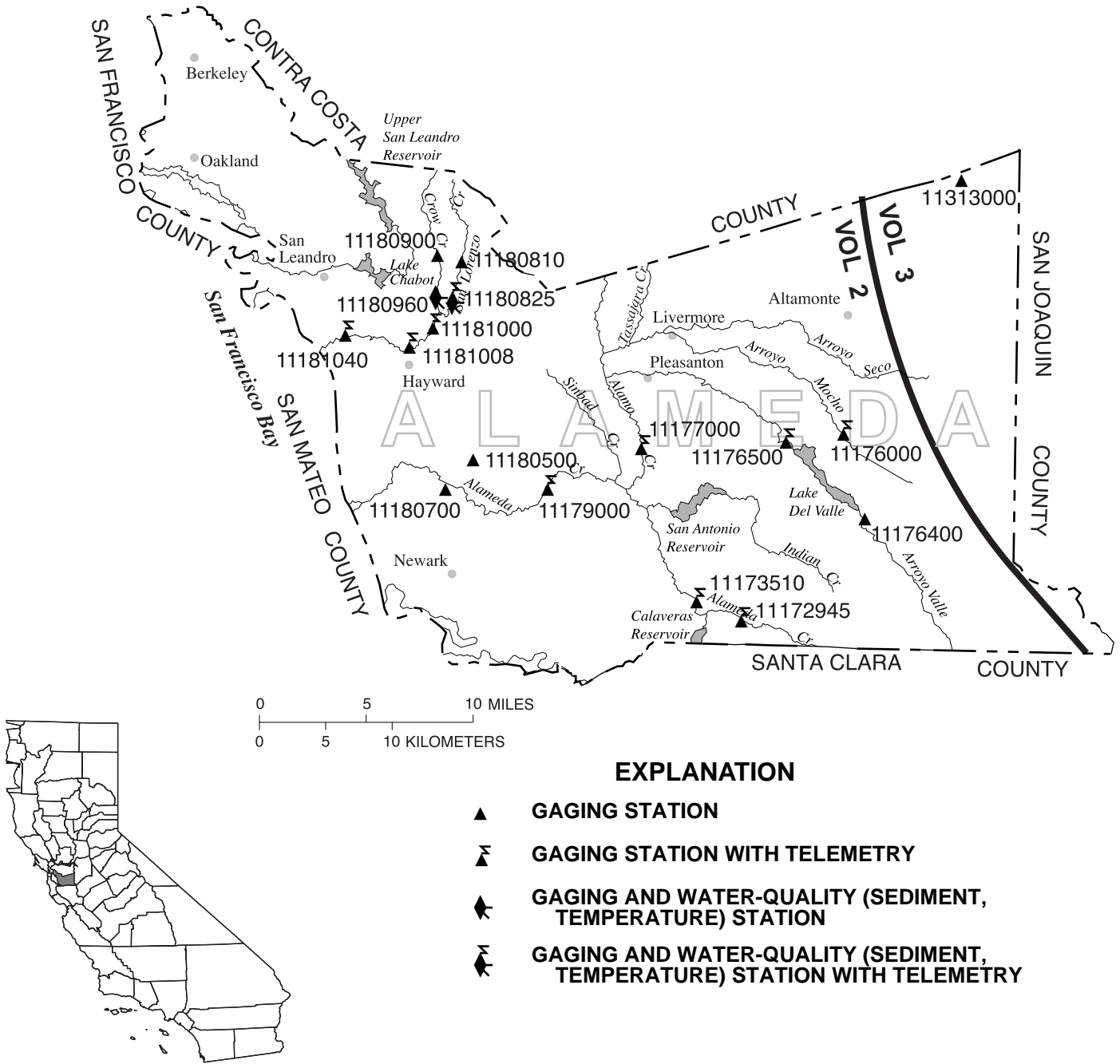


Figure 2. Location of discharge and water-quality stations in Alameda County.
 (NOTE: Records for stations 11172945 through 11181040 published in volume 2.)

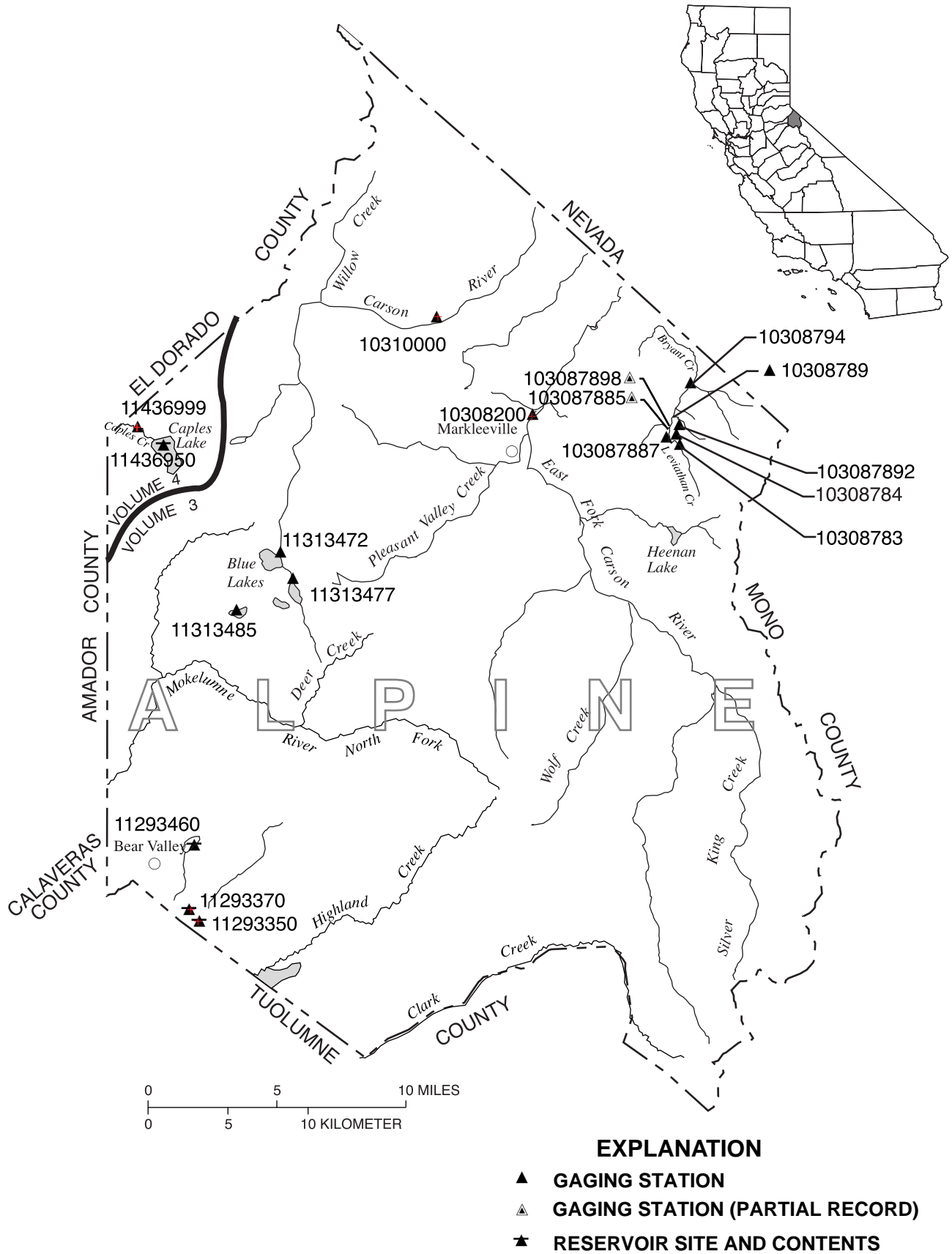


Figure 3. Location of discharge stations in Alpine County.
 (NOTE: Station 10297000 in Douglas County, Nevada, shown on Mono County map.
 Record for stations 11436950 and 11436999 published in volume 4.)

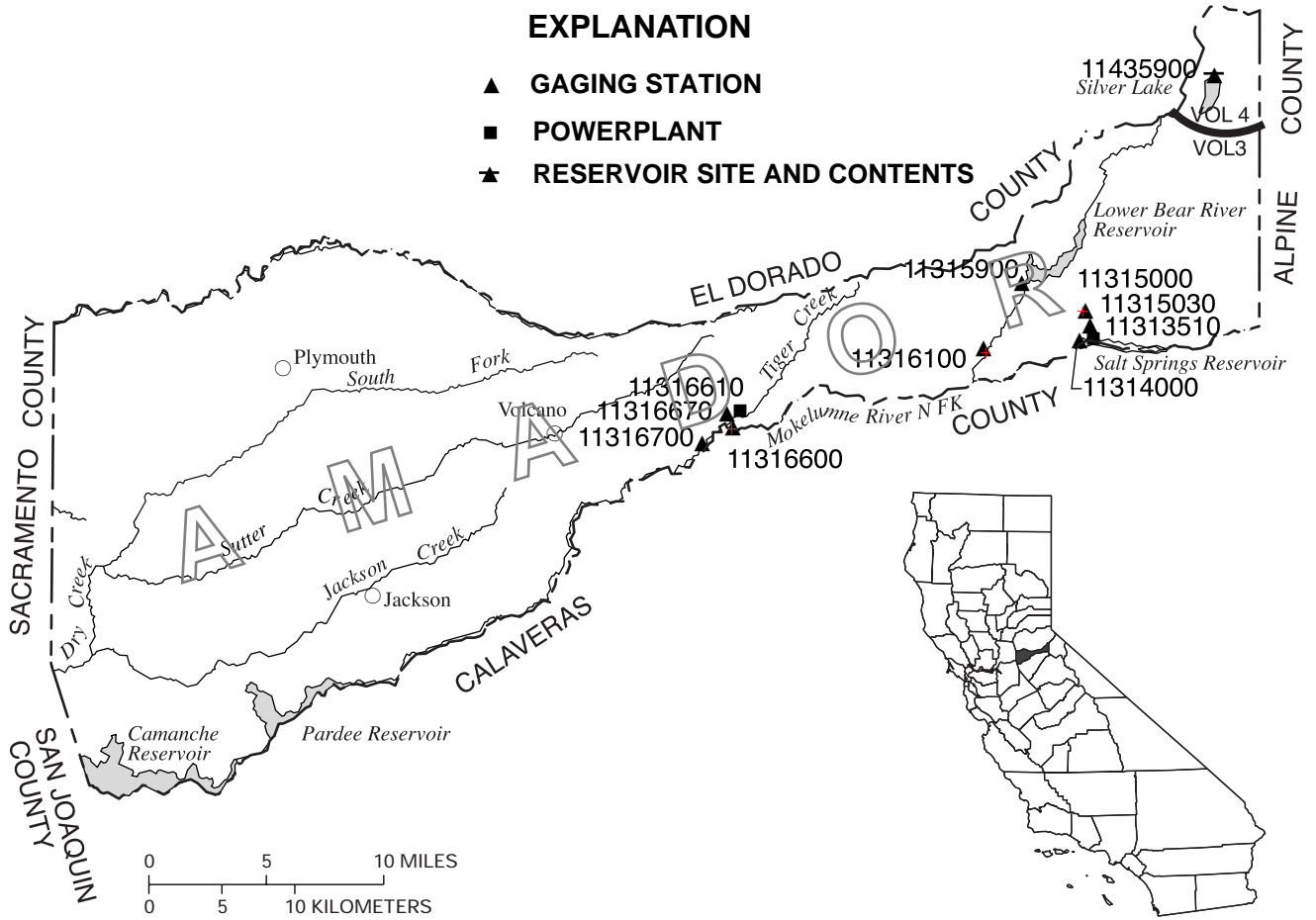


Figure 4. Location of discharge stations in Amador County.
 (NOTE: Record for station 11435900 published in volume 4.)

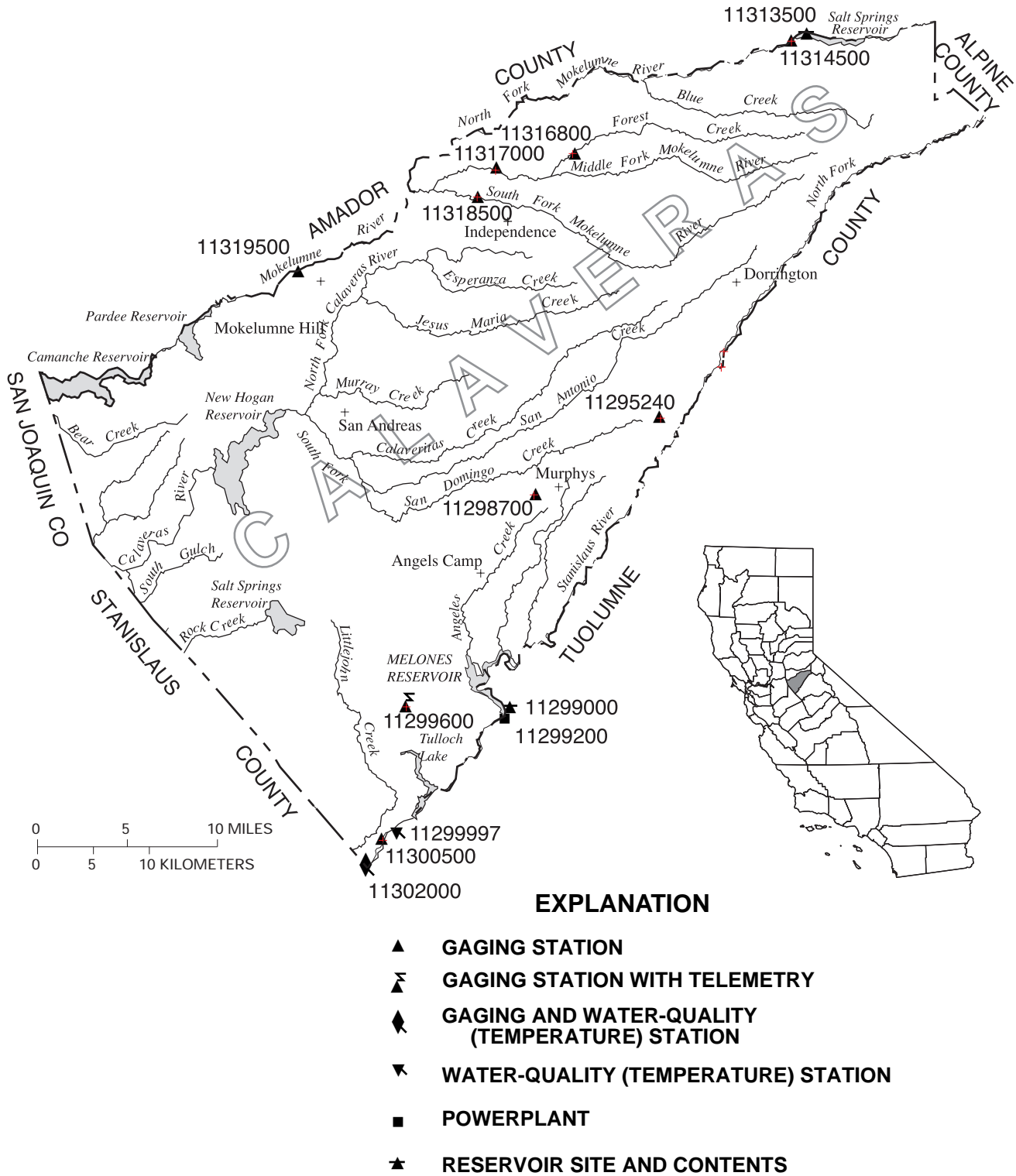


Figure 5. Location of discharge and water-quality stations in Calaveras County.

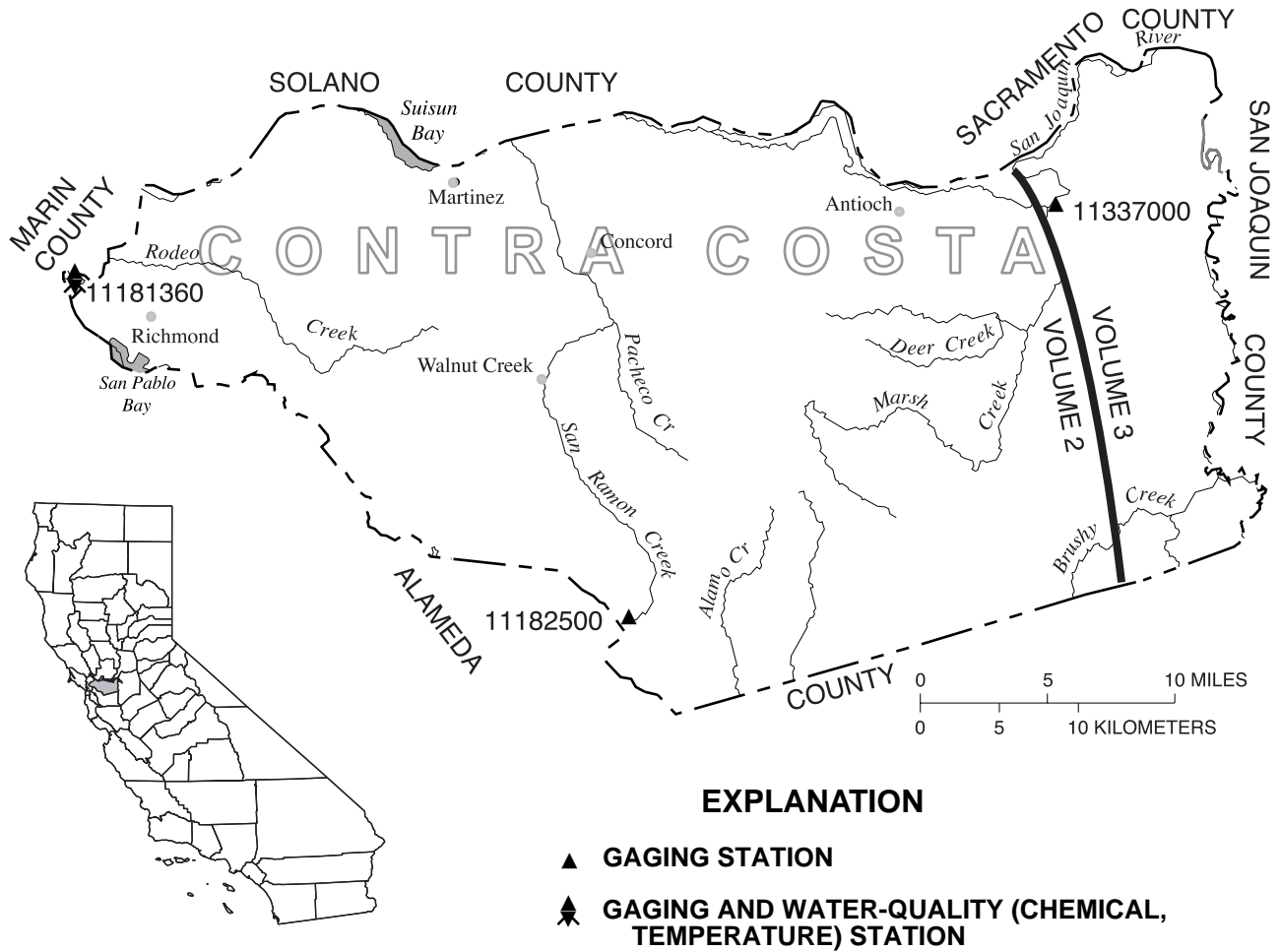
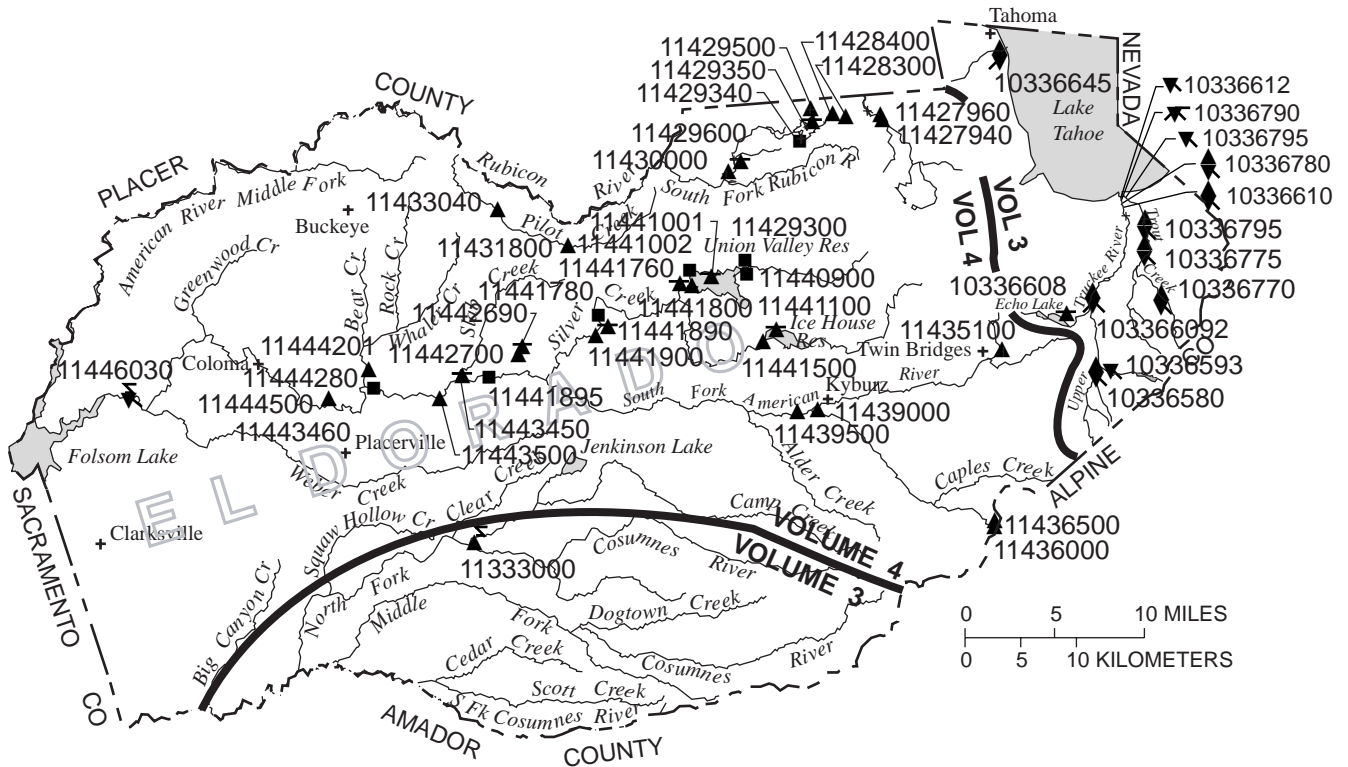


Figure 6. Location of discharge and water-quality stations in Contra Costa County.
 (NOTE: Records for stations 11181360 and 11182500 published in volume 2.)



EXPLANATION

- ▲ GAGING STATION
- ▲ GAGING STATION WITH TELEMTRY
- ◆ GAGING AND WATER-QUALITY (TEMPERATURE) STATION
- ◆ GAGING AND WATER-QUALITY (CHEMICAL) STATION
- ◆ GAGING AND WATER-QUALITY (TEMPERATURE, CHEMICAL) STATION
- ▼ WATER-QUALITY (TEMPERATURE) STATION
- ✖ WATER-QUALITY (CHEMICAL, SEDIMENT, TEMPERATURE) STATION
- ✖ WATER-QUALITY (TEMPERATURE) STATION WITH DATA COLLECTION PLATFORM
- POWERPLANT
- ★ RESERVOIR SITE AND CONTENTS

Figure 7. Location of discharge and water-quality stations in El Dorado County. (NOTE: Records for stations 11427940 through 11446030 published in volume 4.)

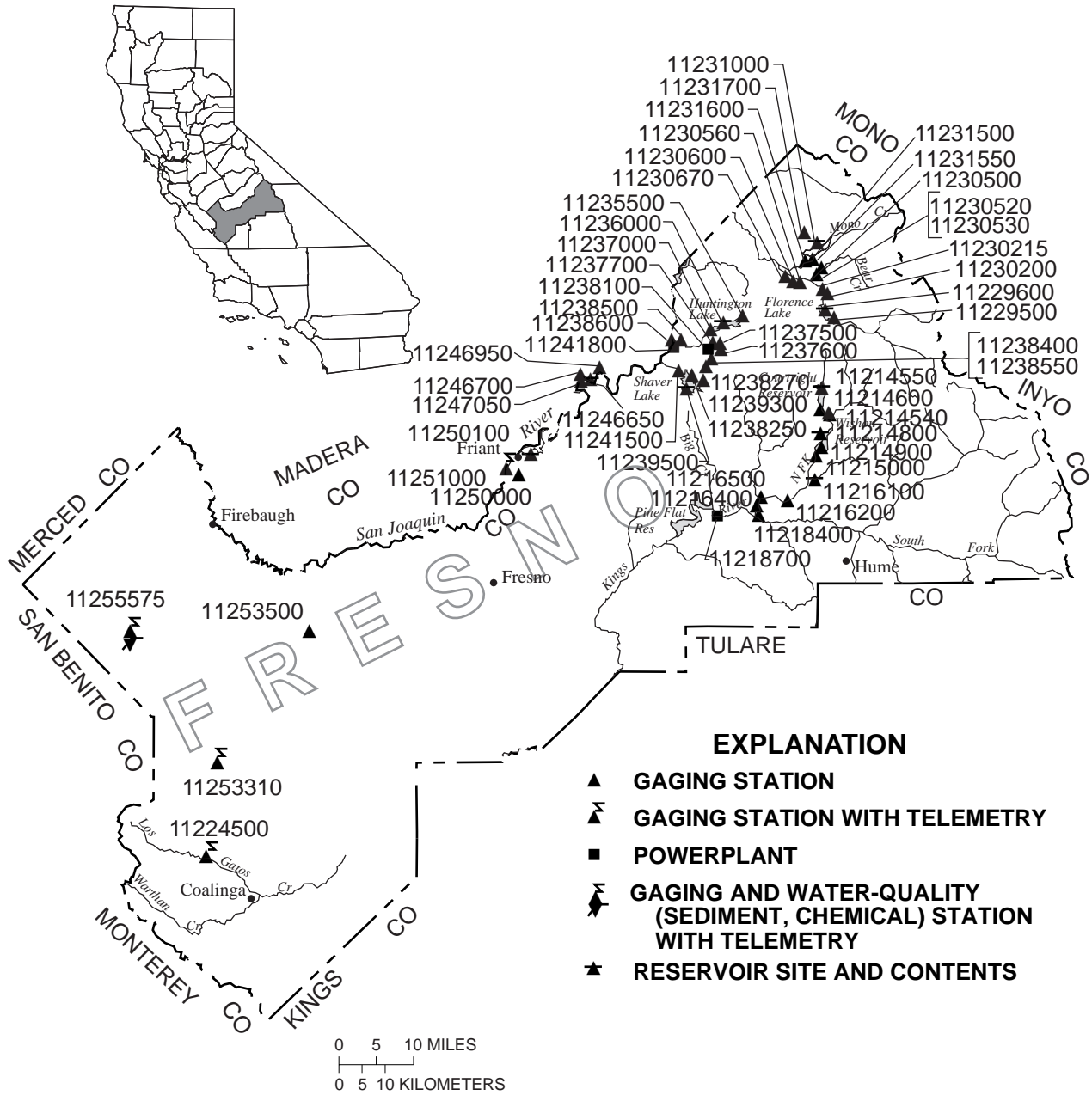
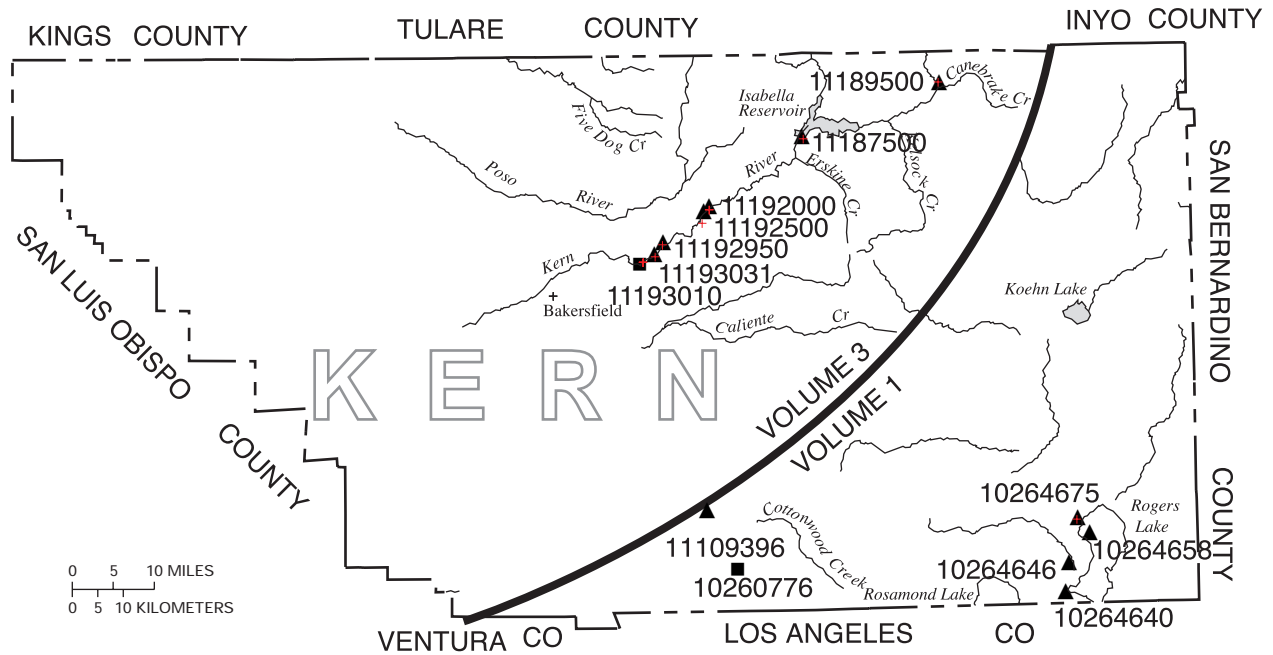


Figure 8. Location of discharge and water-quality stations in Fresno County.



EXPLANATION

▲ GAGING STATION

■ POWERPLANT

Figure 9. Location of discharge stations in Kern County.

(NOTE: Records for stations 10260776, 10264640 through 10264675, and 11109396 published in volume 1.)

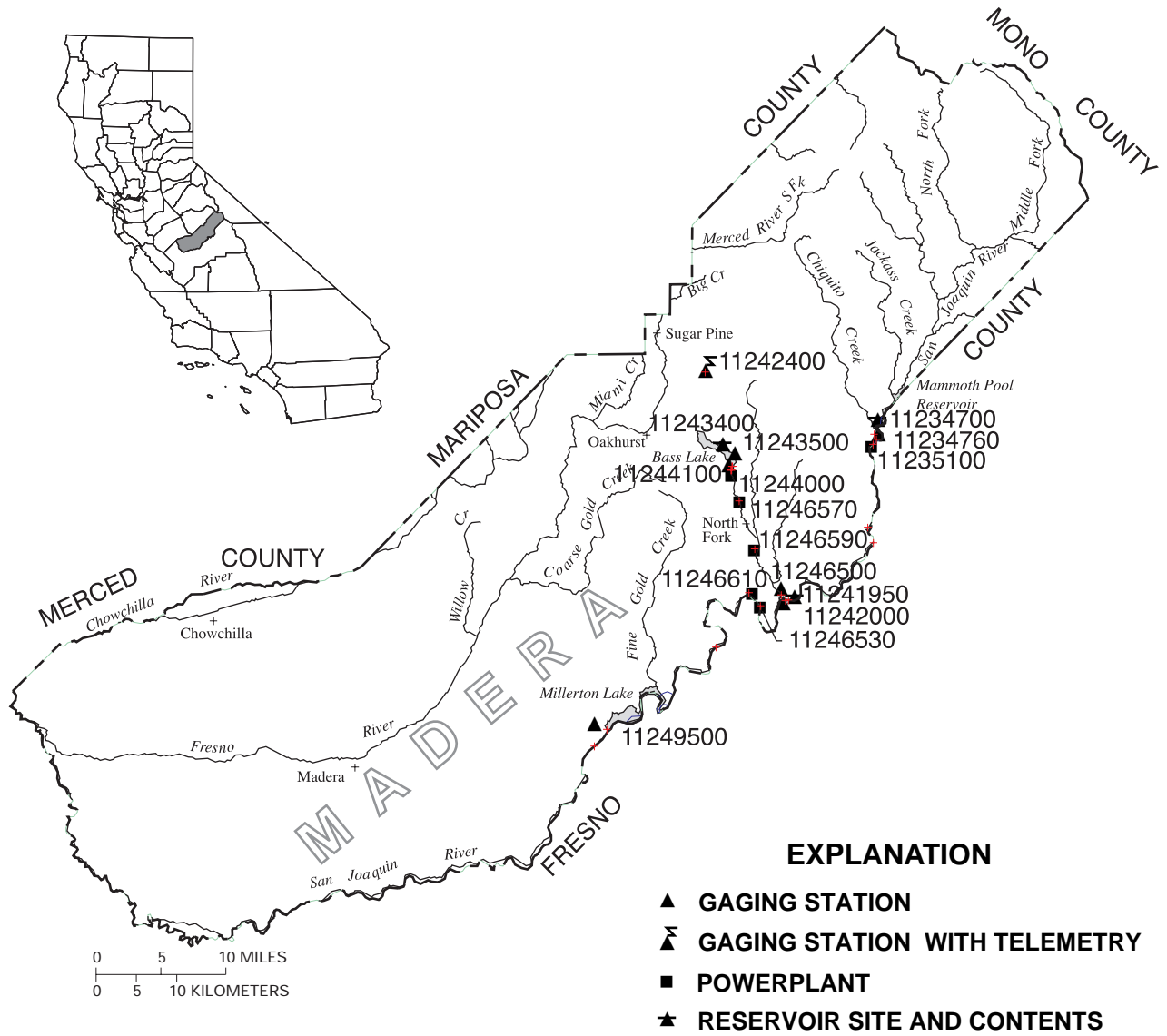


Figure 10. Location of discharge stations in Madera County.

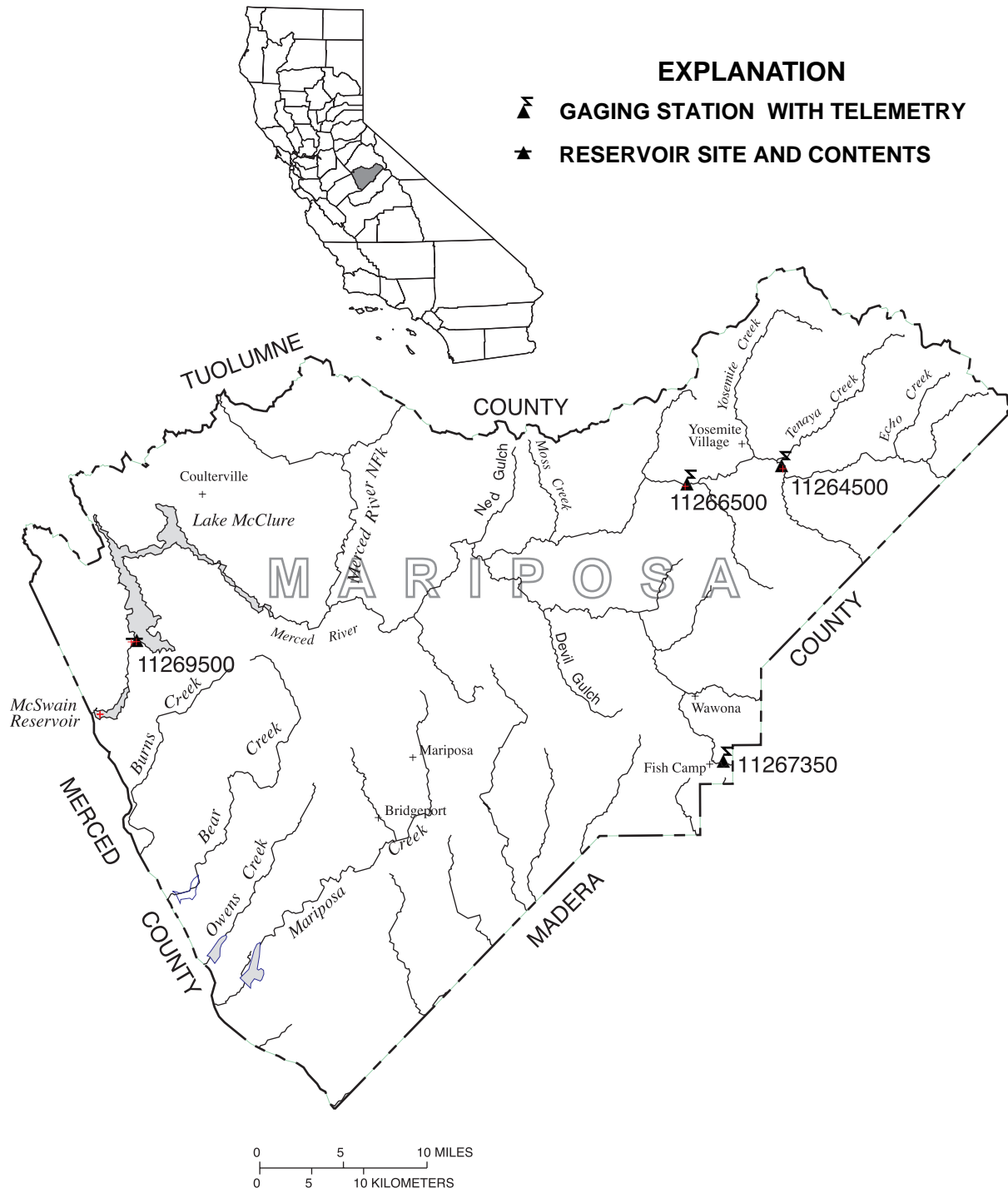


Figure 11. Location of discharge stations in Mariposa County.

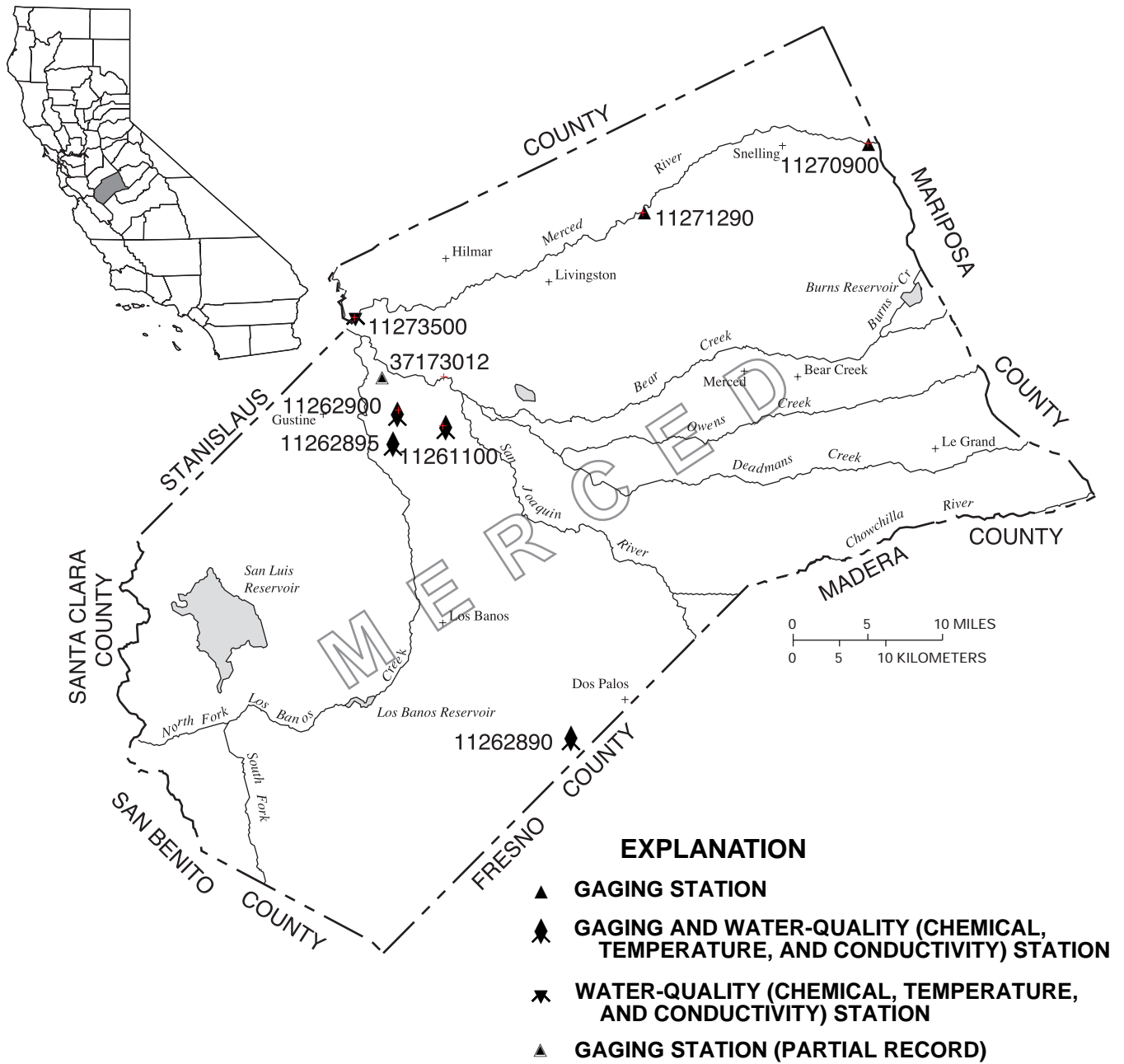


Figure 12. Location of discharge and water-quality stations in Merced County.

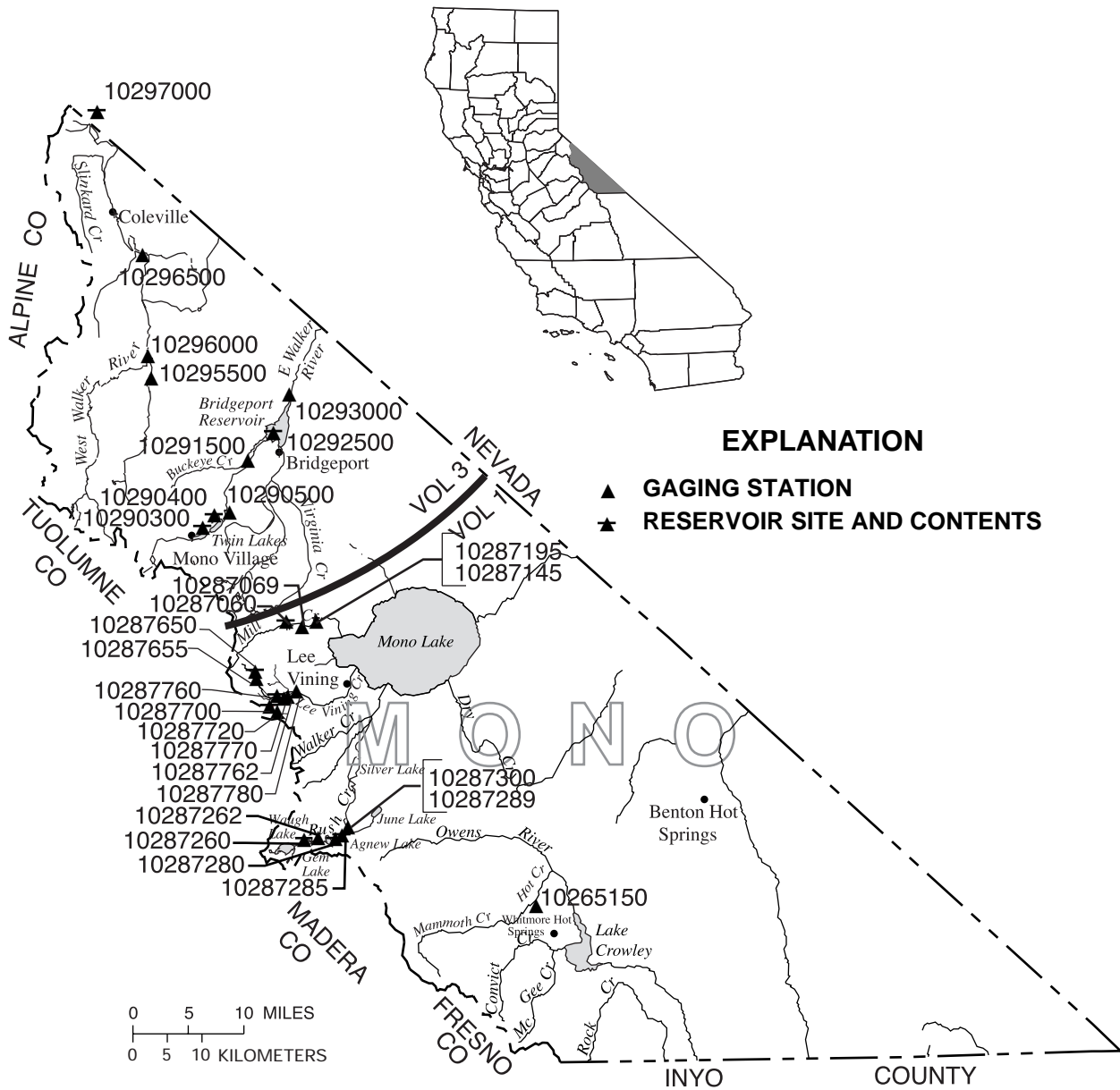


Figure 13. Location of discharge stations in Mono County.
 (NOTE: Records for stations 10265150 through 10287780 published in volume 1.
 Station 10297000 is actually located in Douglas County, Nevada.)

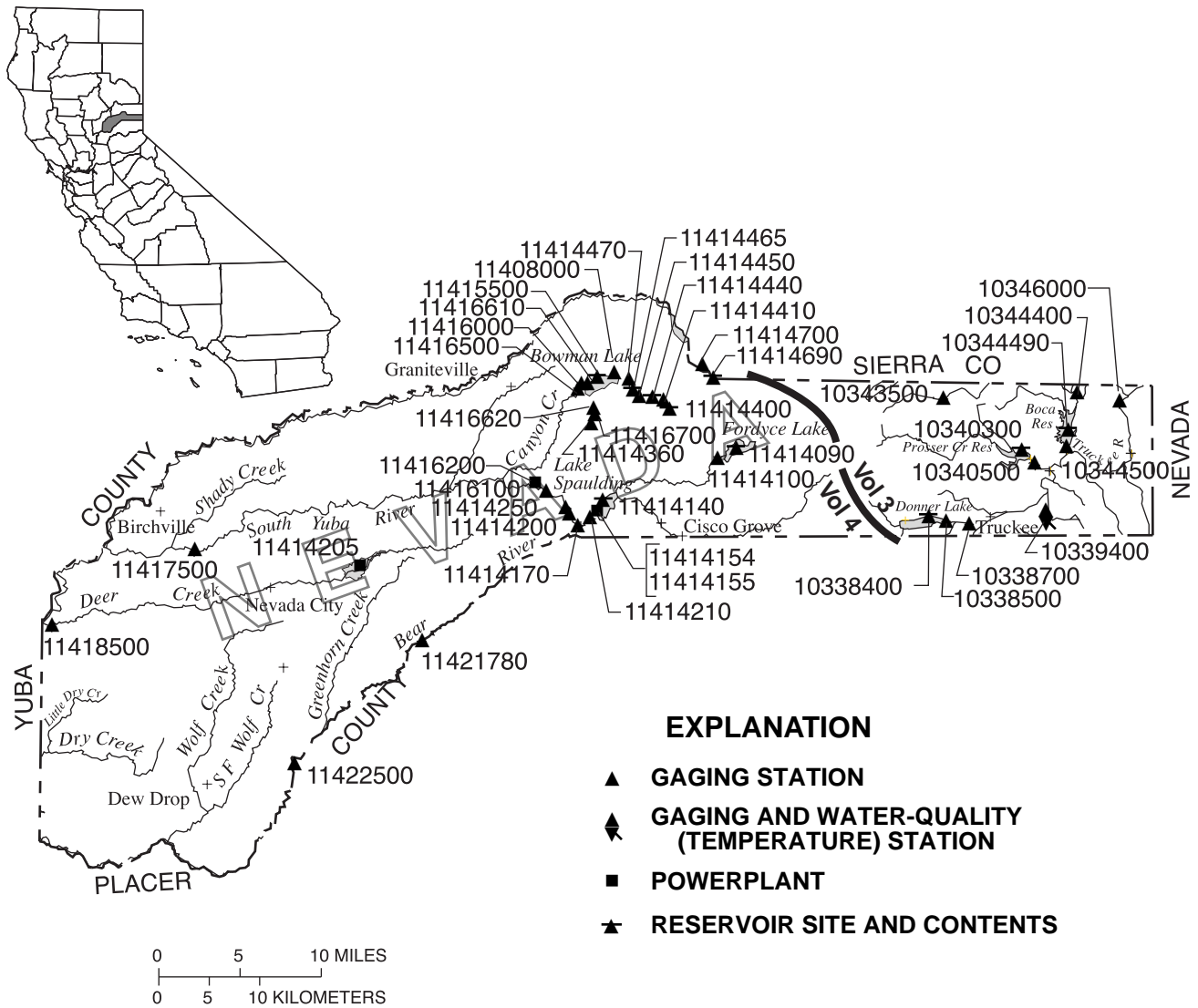


Figure 14. Location of discharge and water-quality stations in Nevada County.
(NOTE: Records for stations 11408000 through 11422500 published in volume 4.)

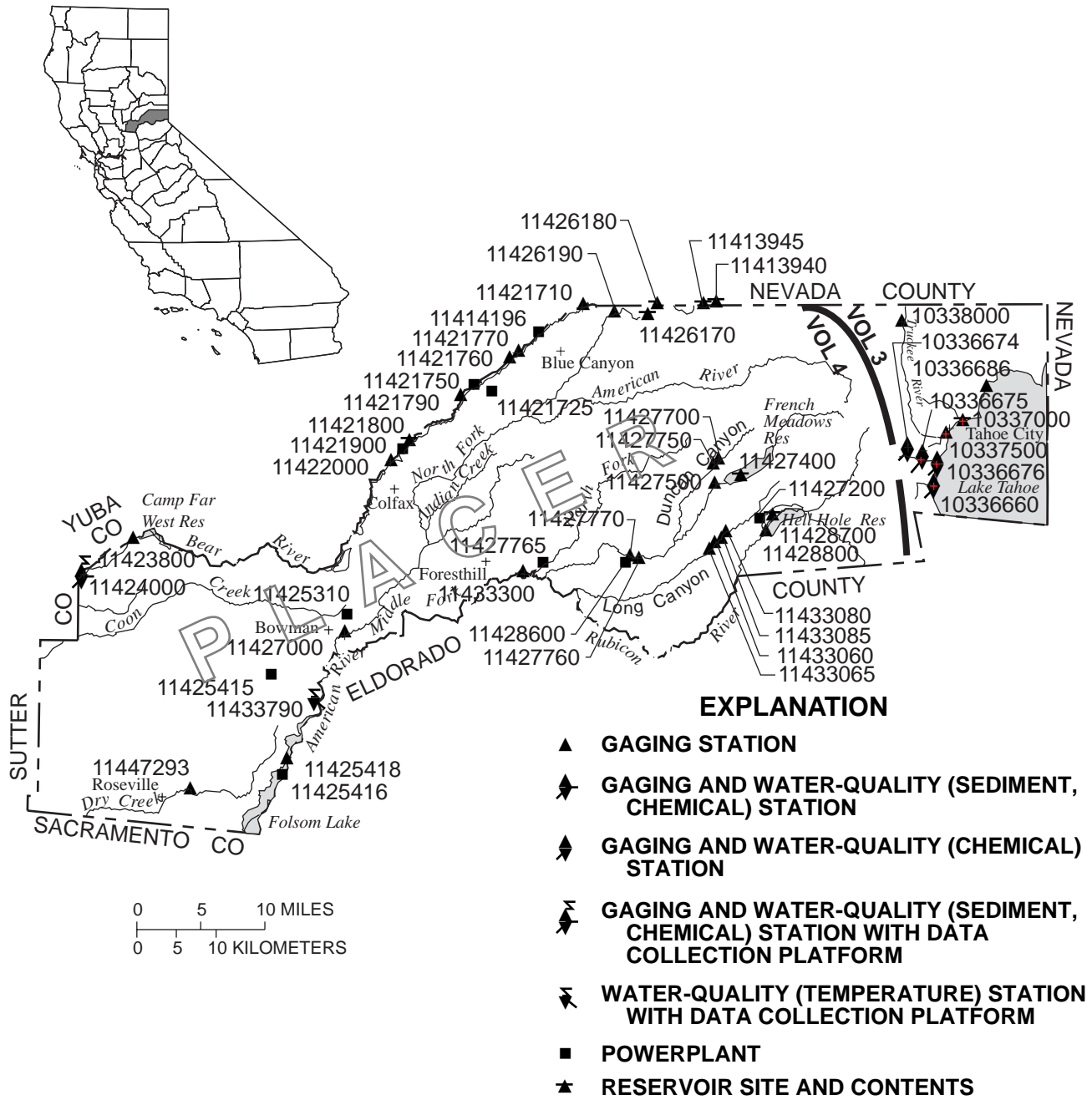


Figure 15. Location of discharge and water-quality stations in Placer County.
 (NOTE: Records for stations 11413940 through 11447293 published in volume 4.)

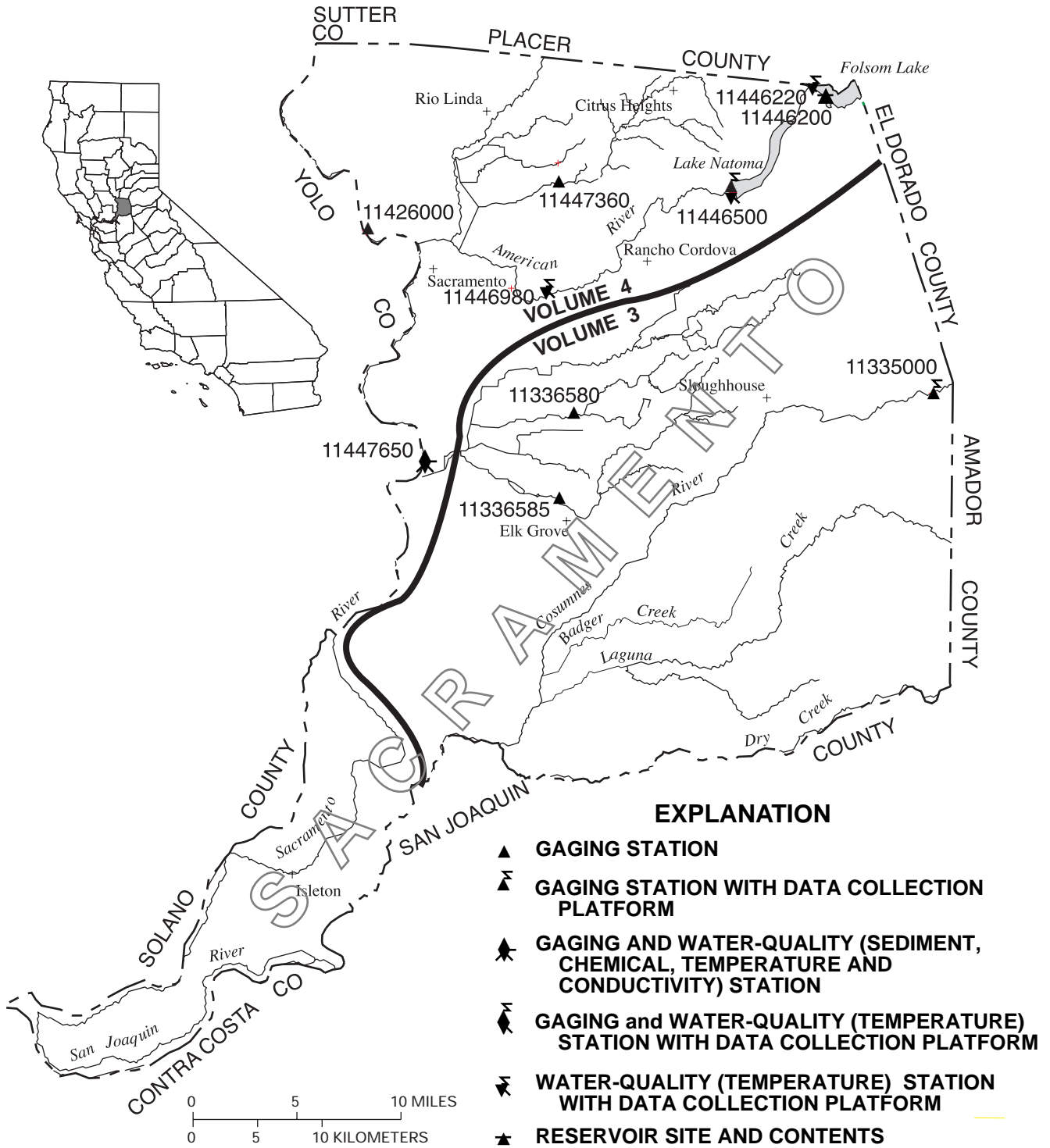


Figure 16. Location of discharge and water-quality stations in Sacramento County. (NOTE: Records for stations 11426000 through 11447650 published in volume 4.)

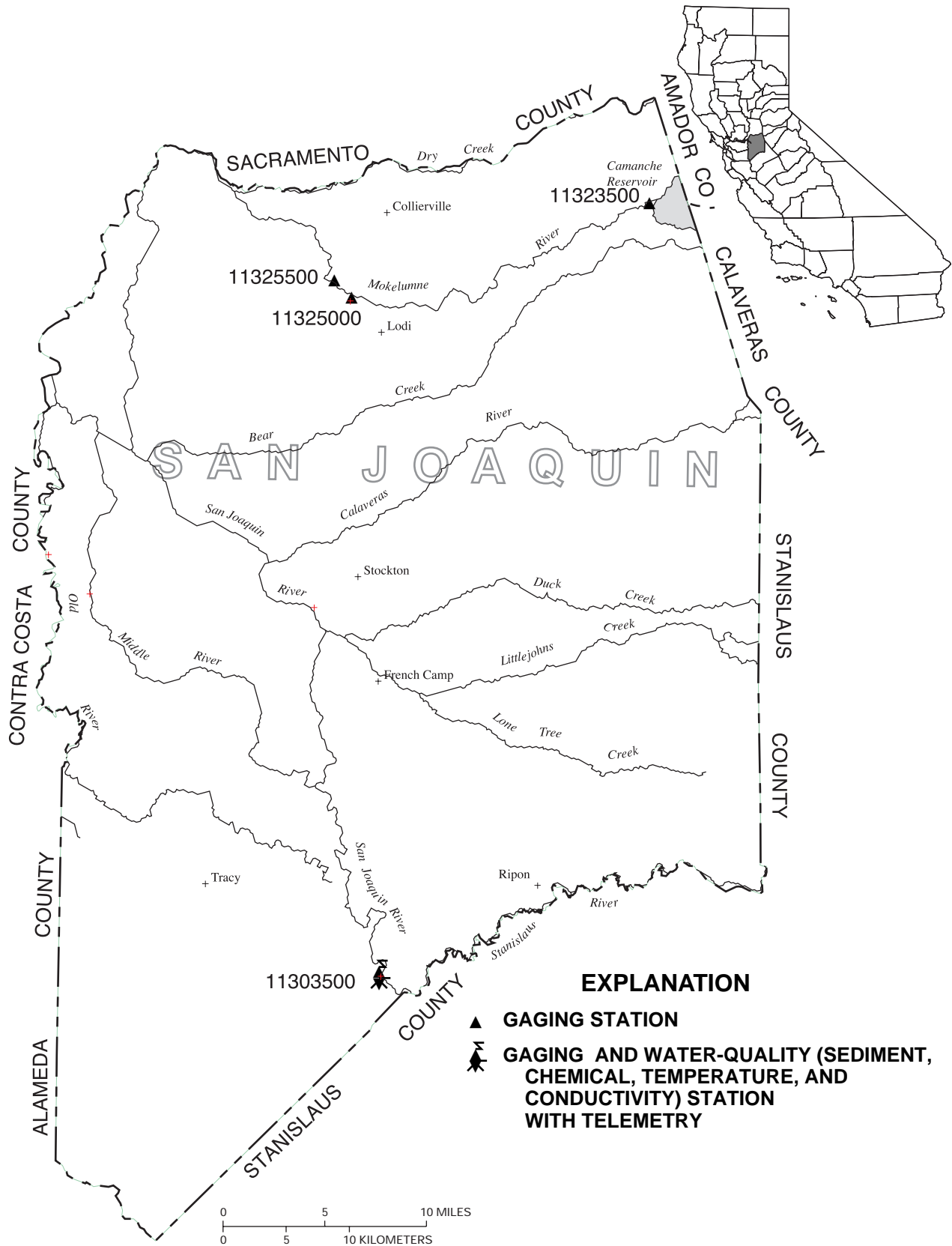


Figure 17. Location of discharge and water-quality stations in San Joaquin County.

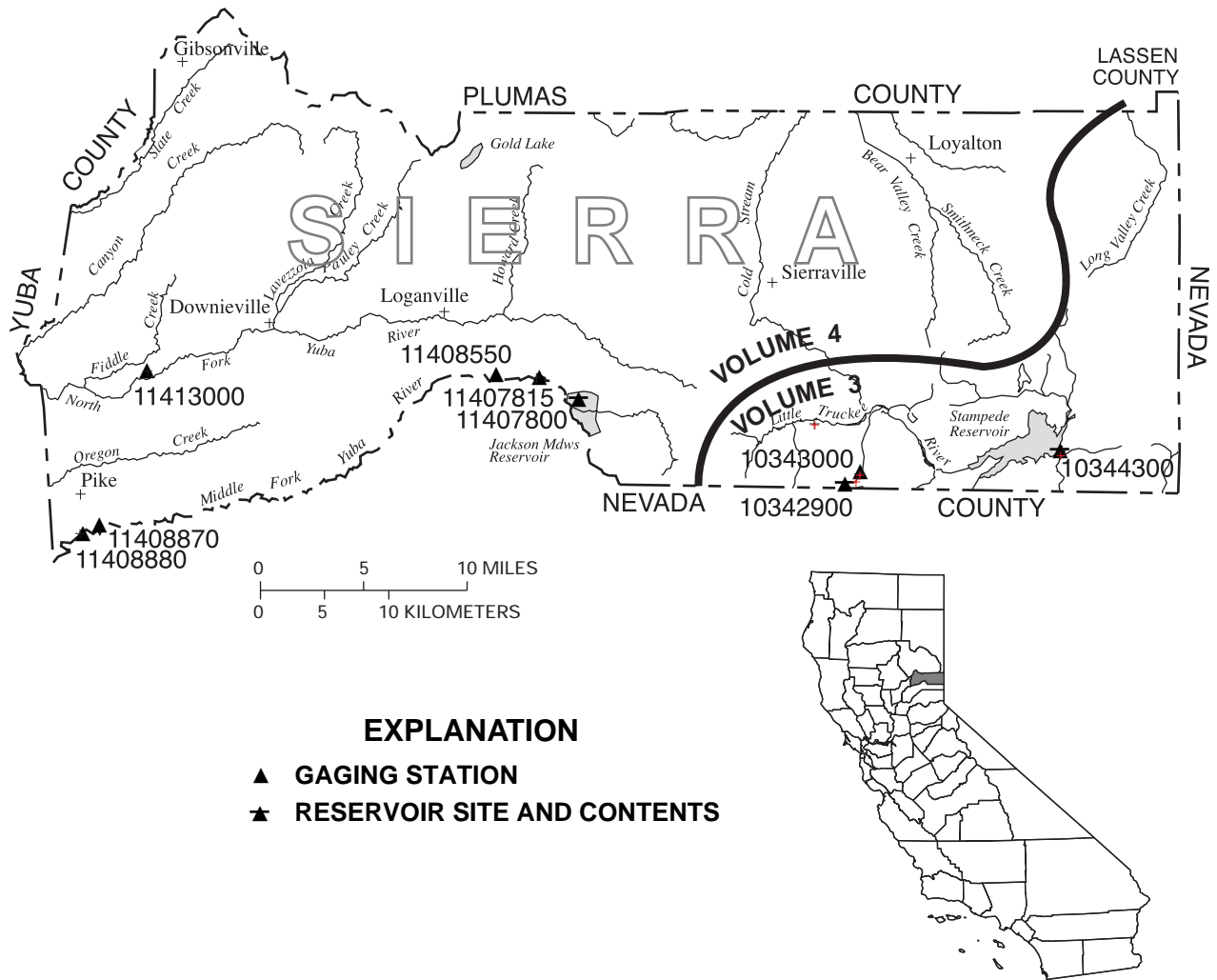


Figure 18. Location of discharge stations in Sierra County.
 (NOTE: Records for stations 11407800 through 11413000 published in volume 4.)

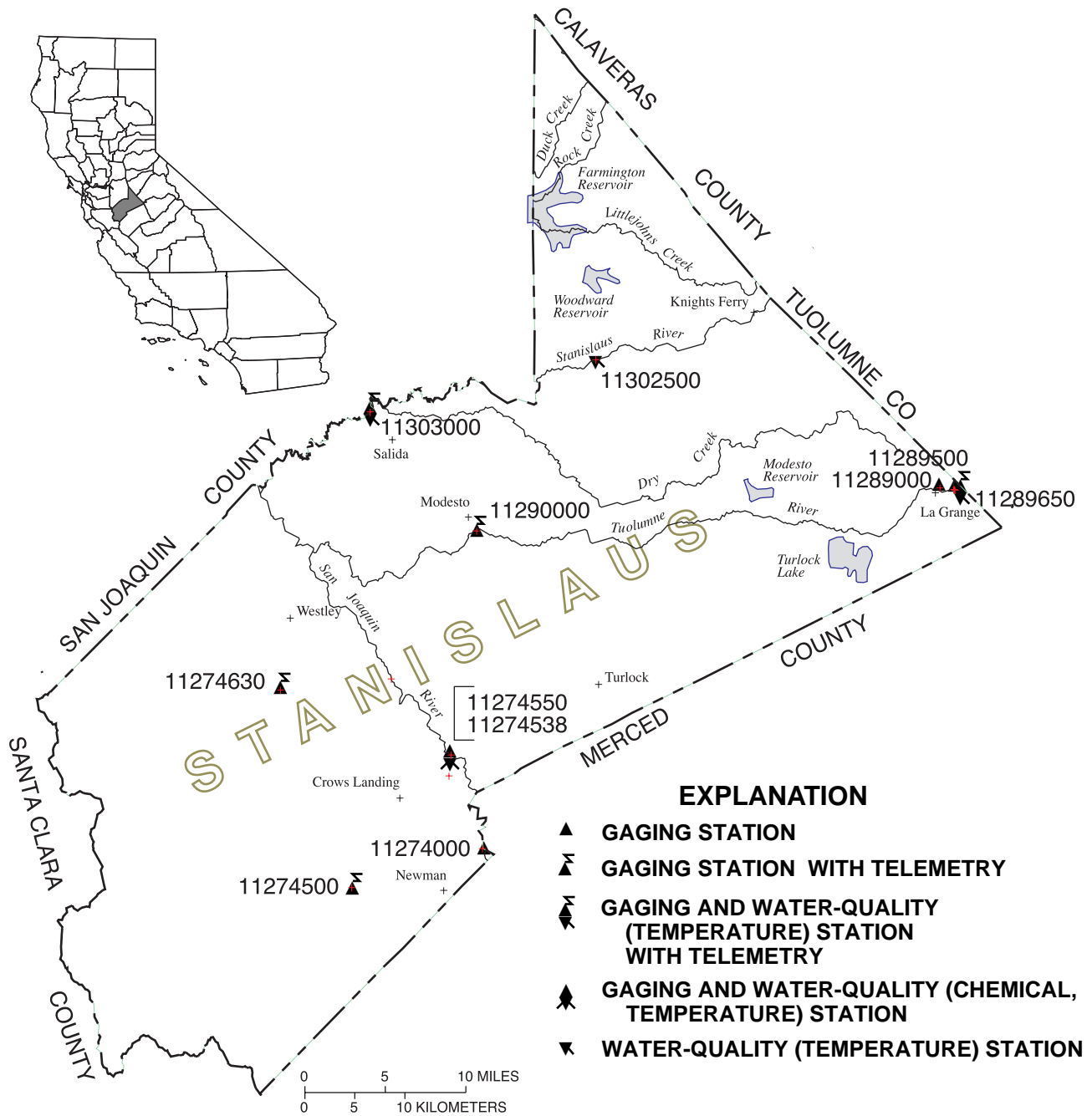


Figure 19. Location of discharge and water-quality stations in Stanislaus County.

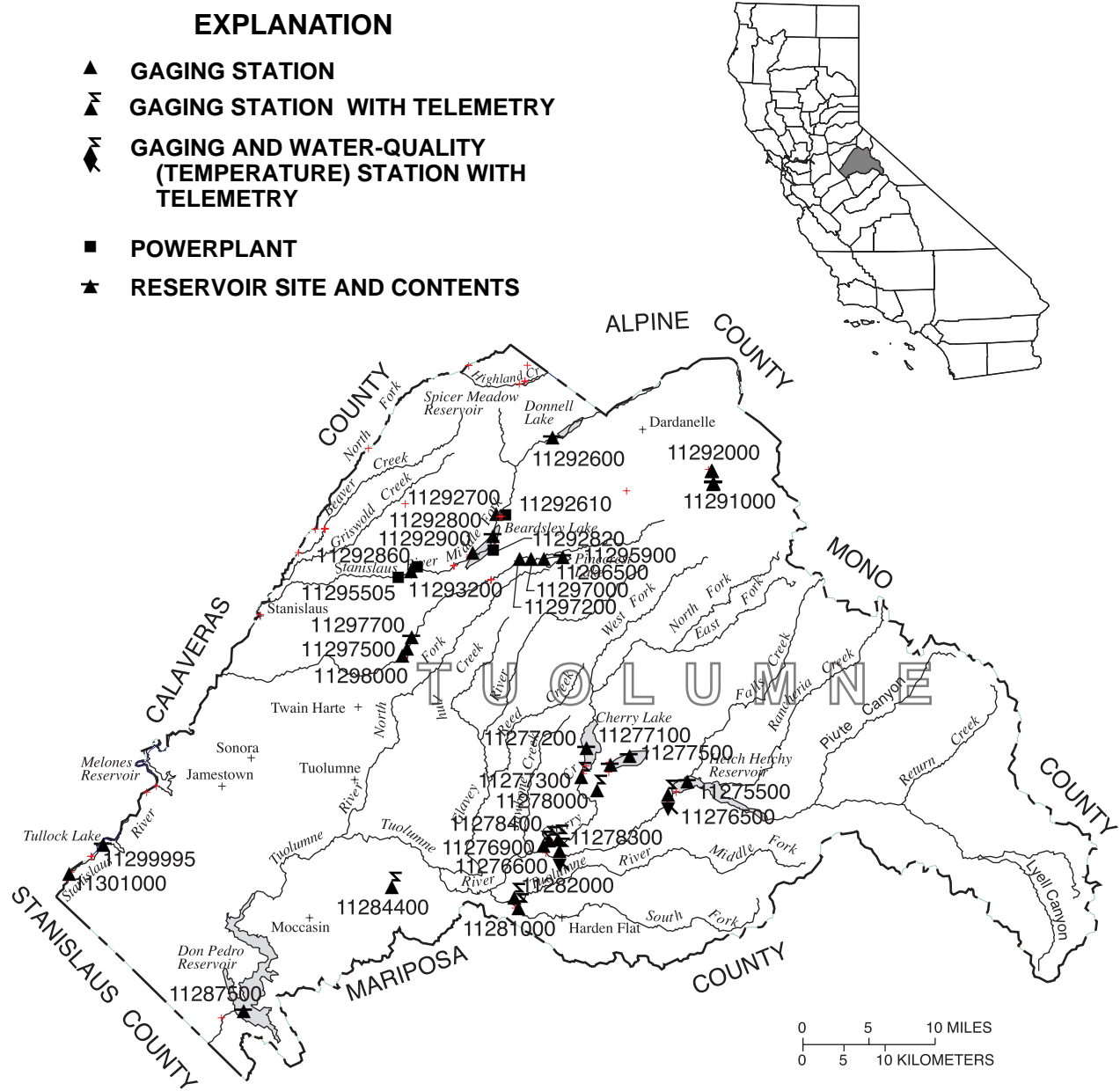


Figure 21. Location of discharge and water-quality stations in Tuolumne County.

SURFACE-WATER-DISCHARGE AND SURFACE-WATER-QUALITY RECORDS

Remark Codes

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

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
e	Estimated value.
>	Actual value is 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).
ND	Not detected.
&	Biological organism estimated as dominant.
*	Instantaneous streamflow at the time of cross-sectional measurements.
**	Partial sampled width.
1	Laboratory value.
2	Laboratory fixed-end point titration.
A	Samples collected by another agency.
N	Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.
V	Analyte was detected in both the environmental sample and the associated blanks.

Dissolved Trace-Element Concentrations

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

Change in National Trends Network procedures

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

WALKER LAKE BASIN

10290300 UPPER TWIN LAKE NEAR BRIDGEPORT, CA

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

DRAINAGE AREA.—29.5 mi².

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

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

REMARKS.—Contents regulated by dam at outlet. Figures given herein represent usable contents. Usable contents, 2,070 acre-ft between elevations 7,200 ft, natural rim, and 7,207 ft, spillway crest. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

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

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

EXTREMES FOR CURRENT YEAR.—Maximum contents observed, 2,710 acre-ft, July 1, elevation, 7,208.99 ft; minimum observed, 1,720 acre-ft, Nov. 2, elevation, 7,205.89 ft.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND TOTAL CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (ft)	Contents (acre-ft)	Change in contents (acre-ft)
September 30.....	7207.70	2,290	—
October 31.....	7206.00	1,750	-540
November 30.....	7206.89	2,030	+280
December 31.....	7207.21	2,140	+110
CALENDAR YEAR 1998.....	—	—	+40
January 31.....	7207.25	2,150	+10
February 28.....	7207.35	2,180	+30
March 31.....	7207.27	2,160	-20
April 30.....	7207.64	2,270	+110
May 31.....	7208.92	2,680	+410
June 30.....	7208.99	2,710	+30
July 31.....	7208.03	2,400	-310
August 31.....	7207.67	2,280	-120
September 30.....	7207.47	2,220	-60
WATER YEAR 1999.....	—	—	-70

NOTE.—Monthend elevations are interpolated from readings made during the year.

10290400 LOWER TWIN LAKE NEAR BRIDGEPORT, CA

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

DRAINAGE AREA.—38.9 mi².

PERIOD OF RECORD.—December 1961 to current year.

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

REMARKS.—Contents regulated by dam at outlet and by Upper Twin Lake. Figures given herein represent usable contents. Usable contents, 4,010 acre-ft between elevations 7,190 ft, natural rim, and 7,200 ft, spillway crest. One transarea diversion out of Tamarack Creek into Summers Creek. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

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

EXTREMES FOR CURRENT YEAR—Maximum contents observed, 5,130 acre-ft, June 1, elevation, 7,202.62 ft; minimum observed, 2,850 acre-ft, Sept. 30, elevation 7,197.12 ft.

MONTHEND ELEVATION AND CONTENTS, IN FEET ABOVE SEA LEVEL, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (ft)	Contents (acre-ft)	Change in contents (acre-ft)
September 30.....	7200.58	4,250	—
October 31.....	7200.53	4,230	-20
November 30.....	7199.95	3,990	-240
December 31.....	7200.38	4,170	+180
CALENDAR YEAR 1998.....	—	—	-80
January 31.....	7200.51	4,220	+50
February 28.....	7200.53	4,230	+10
March 31.....	7200.52	4,230	0
April 30.....	7200.86	4,370	+140
May 31.....	7202.55	5,100	+730
June 30.....	7202.32	5,000	-100
July 31.....	7201.17	4,500	-500
August 31.....	7199.18	3,670	-830
September 30.....	7197.12	2,850	-820
WATER YEAR 1999.....	—	—	-1400

NOTE.—Monthend elevations are interpolated from readings made during the year.

10290500 ROBINSON CREEK AT TWIN LAKES OUTLET, NEAR BRIDGEPORT, CA

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

DRAINAGE AREA.—39.1 mi².

PERIOD OF RECORD.—October 1953 to September 1975, May 1992 to September 1994 (irrigation season only), October 1994 to current year.

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

REMARKS.—No estimated daily discharges. Records good. Flow regulated by Upper and Lower Twin Lakes. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

REVISIONS.—WSP 1927: Drainage area.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,170 ft³/s, Jan. 3, 1997, gage height, 5.44 ft; no flow many days, some years.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 301 ft³/s, June 19, 20, gage height, 3.52 ft; minimum daily, 11.0 ft³/s, Dec. 4, 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	46	13	21	25	23	22	50	275	218	88	71
2	56	44	12	21	25	24	22	51	266	225	87	71
3	53	43	12	21	24	26	23	50	250	231	85	70
4	49	42	11	21	24	23	23	48	225	230	84	69
5	47	40	12	21	24	22	24	47	198	219	82	69
6	46	38	11	21	18	21	25	47	177	207	80	68
7	45	38	12	21	30	20	28	51	161	200	77	67
8	45	36	13	21	35	21	28	58	151	196	75	66
9	43	34	15	21	40	22	27	67	145	194	72	66
10	41	34	16	21	41	22	26	74	142	191	69	65
11	39	36	18	21	39	22	26	81	143	187	68	64
12	39	36	19	20	36	21	25	89	153	185	71	64
13	39	36	20	20	34	21	24	102	171	182	74	61
14	40	36	22	20	32	21	24	115	198	180	71	51
15	43	35	22	20	31	20	24	120	230	179	75	44
16	47	35	23	21	30	20	24	117	260	174	74	42
17	53	34	24	21	31	20	24	113	282	166	72	41
18	44	33	25	22	30	20	25	112	293	153	75	39
19	38	32	25	27	28	20	26	114	299	142	75	39
20	38	31	23	33	27	21	28	121	299	132	75	39
21	38	32	22	31	29	21	32	128	293	123	77	39
22	37	26	21	30	28	21	36	140	282	115	77	40
23	36	26	21	29	27	21	41	157	277	108	77	39
24	34	22	22	30	26	21	44	179	280	103	76	39
25	31	14	22	31	28	21	45	196	290	98	75	39
26	35	14	22	30	25	21	46	212	282	96	75	39
27	37	14	22	29	25	21	49	228	258	93	75	39
28	38	14	21	28	25	22	49	242	237	91	75	39
29	41	14	22	27	---	22	49	260	224	90	74	39
30	42	13	22	26	---	24	50	284	219	87	74	39
31	45	---	23	26	---	23	---	286	---	88	72	---
TOTAL	1315	928	588	752	817	668	939	3939	6960	4883	2356	1557
MEAN	42.4	30.9	19.0	24.3	29.2	21.5	31.3	127	232	158	76.0	51.9
MAX	56	46	25	33	41	26	50	286	299	231	88	71
MIN	31	13	11	20	18	20	22	47	142	87	68	39
AC-FT	2610	1840	1170	1490	1620	1320	1860	7810	13810	9690	4670	3090

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999, BY WATER YEAR (WY)

MEAN	21.8	9.43	7.86	17.0	16.7	17.4	46.4	107	193	167	98.7	52.2
MAX	42.4	30.9	36.1	166	63.4	44.8	79.4	187	349	400	199	89.0
(WY)	1999	1999	1997	1997	1963	1997	1959	1997	1969	1995	1995	1974
MIN	7.00	.67	.000	.000	.000	.000	22.3	59.1	68.2	62.0	35.1	15.9
(WY)	1995	1958	1954	1954	1954	1955	1975	1955	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1954 - 1999
ANNUAL TOTAL	32389	25702	
ANNUAL MEAN	88.7	70.4	64.9
HIGHEST ANNUAL MEAN			100 1995
LOWEST ANNUAL MEAN			33.8 1961
HIGHEST DAILY MEAN	391 Jul 11	299 Jun 19	998 Jan 3 1997
LOWEST DAILY MEAN	11 Dec 4	11 Dec 4	.00 Nov 3 1953
ANNUAL SEVEN-DAY MINIMUM	12 Dec 1	12 Dec 1	.00 Nov 3 1953
INSTANTANEOUS PEAK FLOW		301 Jun 19	1170 Jan 3 1997
INSTANTANEOUS PEAK STAGE		3.52 Jun 19	5.44 Jan 3 1997
ANNUAL RUNOFF (AC-FT)	64240	50980	47050
10 PERCENT EXCEEDS	302	196	165
50 PERCENT EXCEEDS	41	39	32
90 PERCENT EXCEEDS	21	21	.49

10291500 BUCKEYE CREEK NEAR BRIDGEPORT, CA

LOCATION.—Lat 38°14'20", long 119°19'30", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.04, T.4 N., R.24 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, on right bank at Buckeye Hot Springs, 0.6 mi downstream from Eagle Creek, and about 5.5 mi southwest of Bridgeport.

DRAINAGE AREA.—44.1 mi².

PERIOD OF RECORD.—November 1910 to September 1914 (fragmentary), October 1953 to September 1979, October 1995 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,900 ft above sea level, from topographic map. November 1910 to September 1914, non-recording gage at site 0.5 mi downstream at different datum.

REMARKS.—Records fair except for estimated daily discharges, which are poor. No regulation or diversion above station. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

REVISIONS.—WSP 1927: Drainage area.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,750 ft³/s, Jan. 2, 1997; gage height, 7.49 ft; minimum daily, 4.5 ft³/s, Jan. 12, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of June 21, 1911, reached an observed stage of 4.8 ft, discharge not determined, site and datum then in use.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 100 ft³/s and maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 29	0030	351	3.21	June 23	2345	369	3.27

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	30	29	21	e20	22	28	60	262	241	62	33
2	43	28	29	21	e20	22	27	64	242	244	59	32
3	40	29	29	e20	e20	25	26	58	187	229	57	31
4	39	28	22	e21	22	24	25	55	159	206	56	31
5	39	28	e22	21	21	23	25	63	143	185	57	30
6	38	26	e22	21	21	22	25	90	158	180	55	30
7	37	29	e23	21	34	21	24	120	175	187	51	29
8	35	28	e23	21	27	21	23	131	168	178	48	28
9	35	26	e23	e20	22	19	26	124	168	163	48	28
10	34	29	e24	21	26	28	24	119	179	160	51	29
11	34	29	e24	21	e20	22	23	141	206	168	51	28
12	34	27	e24	21	e20	22	23	186	228	155	46	28
13	33	29	26	20	e20	21	26	191	258	146	44	28
14	33	30	25	20	e20	22	31	150	283	146	43	27
15	33	30	25	21	e20	22	35	126	302	141	42	27
16	32	30	25	21	22	21	40	120	307	126	40	26
17	31	29	25	23	e20	23	49	135	303	112	39	26
18	32	26	25	24	22	26	59	167	316	103	39	32
19	31	26	24	25	21	27	71	172	305	96	40	31
20	31	27	24	19	22	25	75	183	296	91	38	29
21	31	28	e24	15	21	24	83	203	295	86	38	27
22	31	28	e23	22	e20	24	67	224	291	82	38	27
23	31	33	e23	23	20	25	56	259	308	78	36	27
24	32	30	e23	22	20	27	51	246	316	78	36	26
25	32	29	e23	e20	19	28	56	251	282	74	37	26
26	32	28	e23	e20	e19	33	71	265	246	71	44	25
27	32	27	e22	22	22	34	73	249	226	70	49	25
28	32	28	e22	e20	22	32	66	281	232	68	40	24
29	31	28	22	e20	---	32	58	290	237	67	37	24
30	31	32	22	e20	---	31	55	266	235	64	35	23
31	28	---	23	22	---	29	---	262	---	63	35	---
TOTAL	1054	855	743	649	603	777	1321	5251	7313	4058	1391	837
MEAN	34.0	28.5	24.0	20.9	21.5	25.1	44.0	169	244	131	44.9	27.9
MAX	47	33	29	25	34	34	83	290	316	244	62	33
MIN	28	26	22	15	19	19	23	55	143	63	35	23
AC-FT	2090	1700	1470	1290	1200	1540	2620	10420	14510	8050	2760	1660

e Estimated.

10291500 BUCKEYE CREEK NEAR BRIDGEPORT, CA

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1999, BY WATER YEAR (WY)

MEAN	23.4	22.4	22.5	25.0	22.0	25.9	50.6	140	209	133	53.5	30.2
MAX	41.4	44.4	52.2	158	55.8	70.6	115	322	432	399	115	65.6
(WY)	1957	1974	1965	1997	1997	1997	1997	1969	1911	1911	1967	1911
MIN	7.43	11.6	10.2	10.2	10.2	11.7	22.3	32.2	43.4	18.8	9.76	7.55
(WY)	1978	1962	1978	1960	1977	1977	1967	1977	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1911 - 1999	
ANNUAL TOTAL	30853		24852			
ANNUAL MEAN	84.5		68.1		61.8	
HIGHEST ANNUAL MEAN					114	
LOWEST ANNUAL MEAN					19.5	
HIGHEST DAILY MEAN	348	Jul 9	316	Jun 18	1050	Jan 2 1997
LOWEST DAILY MEAN	17	Feb 7	15	Jan 21	4.5	Jan 12 1963
ANNUAL SEVEN-DAY MINIMUM	18	Mar 4	20	Jan 20	5.5	Jan 11 1963
INSTANTANEOUS PEAK FLOW			369		2750	
INSTANTANEOUS PEAK STAGE			3.27		7.49	
ANNUAL RUNOFF (AC-FT)	61200		49290		44750	
10 PERCENT EXCEEDS	280		204		175	
50 PERCENT EXCEEDS	35		31		29	
90 PERCENT EXCEEDS	19		21		14	

10292500 BRIDGEPORT RESERVOIR NEAR BRIDGEPORT, CA

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

DRAINAGE AREA.—358 mi².

PERIOD OF RECORD.—March 1926 to current year. Month end contents only for some periods, published in WSP 1314.

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

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

REMARKS.—Reservoir is formed by earthfill, rock-faced dam. Storage began 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. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

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

EXTREMES FOR CURRENT YEAR.—Maximum contents, 42,820 acre-ft, Feb. 9, elevation, 6,460.12 ft; minimum 12,980 acre-feet, Sept. 30, elevation, 6,446.26 ft.

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

6,425	334	6,440	6,240	6,455	29,160
6,430	1,130	6,445	11,380	6,460	42,460
6,435	2,920	6,450	18,780	6,461	45,490

CORRECTION—The monthend elevations and change in contents were incorrectly published in last years WRD-NV-98-1. The correct figures are shown below.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
a	6449.54	6451.97	6454.27	6456.92	6458.71	6457.77	6454.89	6451.60	6457.98	6459.97	6457.07	6455.88
b	-790	+4530	+4960	+6430	+4820	-2580	-7240	-7110	+14910	+5660	-8070	-3020

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31720	36630	35380	35300	40300	40270	40270	35490	38620	42170	33700	21150
2	32050	36930	35300	35440	40390	40420	40120	35540	38870	42170	33220	20800
3	32260	37150	35200	35540	40500	40450	39920	35280	38930	42080	32710	20470
4	32540	37400	35040	35590	40590	40470	39860	35200	39100	41990	32180	20140
5	32760	37620	34930	35730	40680	40560	39740	35040	39210	41930	31620	19810
6	33300	37760	34750	35810	40740	40560	39690	34900	39180	41850	31090	19440
7	33500	37870	34560	35910	41930	40590	39740	34750	39150	41730	30630	19070
8	33750	37930	34510	36040	42490	40680	39720	34590	39100	41640	30200	18710
9	33960	37960	34450	36100	42490	40740	39690	34370	39100	41530	29790	18370
10	34080	38010	34400	36230	42260	40800	39720	34010	39150	41440	29590	18010
11	34220	38040	34320	36310	41930	40880	39740	33750	39230	41550	29350	17680
12	34380	38040	34320	36440	41640	40970	39770	33530	39180	41580	29070	17390
13	34430	37930	34220	36520	41440	41120	39740	33320	39100	41470	28770	17090
14	34480	37790	34350	36650	41030	41090	39600	32990	39180	41350	28420	16770
15	34510	37730	34400	36790	40820	41150	39480	32710	39350	41200	28170	16420
16	34560	37650	34430	36980	41000	41230	39320	32380	39800	41030	27830	16040
17	34590	37510	34450	37120	41000	41260	39010	32050	40180	40820	27410	15680
18	34640	37400	34510	37430	41000	41230	38760	31750	40650	40530	26910	15460
19	34690	37230	34510	37870	40770	41350	38480	31570	41180	40270	26490	15160
20	34770	37090	34380	38180	40620	41290	38210	31470	41610	39920	26090	14880
21	34900	36940	34320	38370	40270	41260	37730	31450	41820	39540	25630	14610
22	35060	36800	34300	38590	40150	41290	37290	31550	41820	39180	25190	14390
23	35220	36650	34240	38900	40120	41230	37010	31750	41880	38760	24680	14230
24	35360	36500	34300	39150	40150	41120	36680	32200	42110	38320	24370	14060
25	35510	36390	34400	39370	40120	41180	36420	32610	42110	37790	23990	13890
26	35650	36150	34510	39570	40210	41120	36150	33170	42080	37260	23620	13750
27	35830	35990	34640	39720	40180	40970	35830	33860	41960	36650	23330	13550
28	35990	35860	34770	39860	40450	40820	35620	34770	41990	36020	22910	13360
29	36070	35700	34910	40010	---	40530	35460	35830	41990	35360	22480	13170
30	36260	35570	35120	40090	---	40500	35460	36760	42110	34830	21970	13010
31	36360	---	35200	40180	---	40330	---	37790	---	34270	21560	---
MAX	36360	38040	35380	40180	42490	41350	40270	37790	42110	42170	33700	21150
MIN	31720	35570	34220	35300	40120	40270	35460	31450	38620	34270	21560	13010
a	6457.85	6457.55	6457.41	6459.22	6459.31	6459.27	6457.51	6458.37	6459.88	6457.06	6451.48	6446.28
b	+5080	-790	-370	+4980	+270	-120	-4870	+2330	+4320	-7840	-12710	-8550
CAL YR 1998	MAX 42820	MIN 18730	b	+7720								
WTR YR 1999	MAX 42490	MIN 13010	b	-18270								

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

b Change in contents, in acre-feet.

10293000 EAST WALKER RIVER NEAR BRIDGEPORT, CA

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

DRAINAGE AREA.—359 mi².

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

REVISED RECORDS.—WSP 1927: Drainage area.

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

REMARKS.—No estimated daily discharges. Records good. Diversions for irrigation of meadow pasturelands near Bridgeport. Flow regulated by Bridgeport Reservoir (station 10292500). These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,910 ft³/s, Jan. 4, 1997, gage height, 6.74 ft; minimum daily, 0.20 ft³/s, Nov. 2, 1955.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 738 ft³/s, June 24, 25, gage height, 5.03 ft; minimum daily, 20 ft³/s, Nov. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	36	211	51	72	130	140	130	272	345	348	275
2	39	21	186	51	77	117	140	130	410	416	336	247
3	39	20	172	51	77	109	139	126	425	441	320	223
4	38	22	172	51	77	109	139	129	359	439	330	216
5	38	28	172	51	84	103	139	155	360	405	342	220
6	38	62	172	52	88	99	135	172	359	387	340	231
7	38	84	157	52	99	100	128	181	359	376	318	229
8	33	91	134	52	179	100	119	206	328	340	289	228
9	35	105	134	52	282	100	107	225	284	312	279	227
10	62	128	134	52	309	100	107	239	263	312	255	226
11	80	153	134	52	309	99	107	259	296	312	227	216
12	80	178	134	52	308	99	107	259	438	313	218	203
13	93	204	134	53	307	99	121	267	504	313	218	203
14	112	212	113	53	307	99	139	294	556	314	218	216
15	112	213	101	53	258	99	152	313	520	313	218	235
16	112	212	101	53	200	96	170	312	427	314	231	235
17	112	213	101	53	183	102	226	312	428	314	261	234
18	112	212	101	53	215	117	265	312	429	314	274	233
19	107	212	101	53	265	126	265	297	431	314	263	233
20	94	212	101	54	283	125	278	278	432	315	249	232
21	73	212	101	54	283	125	297	278	619	314	263	223
22	48	212	101	54	230	125	311	278	633	303	283	202
23	61	212	86	54	185	125	318	272	586	289	267	181
24	80	212	77	54	146	125	297	246	679	314	237	168
25	80	212	61	54	130	125	251	246	727	349	236	168
26	80	211	51	54	130	133	240	247	632	364	269	168
27	80	212	51	61	130	150	226	226	585	386	289	168
28	80	211	51	65	130	172	213	176	460	394	289	168
29	72	211	51	65	---	172	180	149	392	384	288	168
30	60	211	51	65	---	154	149	174	352	349	287	166
31	57	---	51	65	---	133	---	223	---	348	286	---
TOTAL	2184	4734	3497	1689	5343	3667	5605	7111	13545	10703	8528	6342
MEAN	70.5	158	113	54.5	191	118	187	229	452	345	275	211
MAX	112	213	211	65	309	172	318	313	727	441	348	275
MIN	33	20	51	51	72	96	107	126	263	289	218	166
AC-FT	4330	9390	6940	3350	10600	7270	11120	14100	26870	21230	16920	12580

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
	61.1	301	1984	7.35	1931
	29.9	325	1983	1.10	1956
	38.6	398	1984	2.50	1960
	46.7	804	1997	.50	1950
	52.5	345	1997	.62	1950
	91.1	417	1983	5.39	1927
	178	721	1952	27.5	1961
	260	880	1938	57.5	1991
	315	1001	1938	36.0	1924
	305	797	1967	20.4	1924
	242	638	1983	13.3	1924
	156	406	1983	17.1	1977

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	101462		72948			
ANNUAL MEAN	278		200		148	
HIGHEST ANNUAL MEAN					443	
LOWEST ANNUAL MEAN					37.5	
HIGHEST DAILY MEAN	852	Jul 23	727	Jun 25	1880	Jan 4 1997
LOWEST DAILY MEAN	20	Nov 3	20	Nov 3	.20	Nov 2 1955
ANNUAL SEVEN-DAY MINIMUM	27	Jan 31	35	Oct 30	.20	Nov 2 1955
INSTANTANEOUS PEAK FLOW			738	Jun 24	1910	Jan 4 1997
INSTANTANEOUS PEAK STAGE			5.03	Jun 24	6.74	Jan 4 1997
ANNUAL RUNOFF (AC-FT)	201200		144700		107400	
10 PERCENT EXCEEDS	557		349		349	
50 PERCENT EXCEEDS	219		181		96	
90 PERCENT EXCEEDS	33		53		7.0	

10295500 LITTLE WALKER RIVER NEAR BRIDGEPORT, CA

LOCATION.—Lat 38°21'30", long 119°26'30", 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 September 1986, October 1995 to current year. Prior to October 1958, published as East Fork Walker River near Bridgeport.

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

GAGE.—Water-stage recorder. Elevation of gage is 6,790 ft above sea level, from topographic map. April to August 1910, nonrecording gage at site 1 mi upstream at different datum. Prior to Jan. 2, 1997, at same site, at datum 1.0 ft higher.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Small diversions above station. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,540 ft³/s, Jan. 2, 1997, gage height, 5.70 ft; minimum daily, 2.6 ft³/s, Aug. 16, 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)
May 28	2200	341	2.82	June 14	2200	308	2.72

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	25	25	e20	e19	30	28	64	248	165	43	25
2	36	23	26	e20	e20	31	27	67	231	178	39	24
3	34	24	24	e19	21	39	25	61	190	164	40	24
4	33	23	21	e19	20	34	27	56	165	147	42	23
5	33	22	e21	e19	20	29	24	65	147	148	44	23
6	33	21	e21	e19	19	27	24	88	143	138	40	22
7	32	24	e21	19	41	25	24	108	141	136	36	21
8	32	25	e21	20	29	24	21	116	134	134	36	21
9	31	22	21	24	22	21	25	102	130	121	35	22
10	30	23	e21	25	e22	27	27	104	134	116	41	23
11	30	23	21	20	e22	24	27	121	159	120	40	22
12	29	23	21	19	e23	25	28	146	187	116	39	22
13	29	25	20	19	e23	25	31	141	212	112	33	21
14	29	23	20	20	e23	27	33	132	241	107	31	21
15	29	22	22	21	e24	26	35	119	250	99	31	20
16	28	21	21	21	24	27	40	116	255	84	30	20
17	26	21	19	22	e24	28	49	129	257	80	29	20
18	26	22	19	22	e24	31	57	142	261	75	28	26
19	26	20	17	31	e23	31	63	146	249	71	29	26
20	26	21	e16	18	e23	27	70	155	233	63	27	23
21	26	21	e16	17	23	25	72	162	229	61	28	22
22	26	21	e16	22	e23	26	64	181	225	55	28	20
23	26	24	e15	21	23	27	55	215	236	55	24	20
24	28	21	e16	22	23	30	52	228	236	53	22	20
25	27	22	e16	23	20	33	55	246	203	51	24	19
26	29	21	e16	22	e23	35	67	253	172	52	31	19
27	27	20	e17	20	e25	33	68	251	159	49	35	19
28	26	21	e18	e19	28	31	62	290	167	46	28	19
29	26	22	e19	e19	---	30	57	278	165	43	26	19
30	26	25	20	e18	---	28	61	249	164	41	25	18
31	24	---	20	18	---	26	---	250	---	42	25	---
TOTAL	904	671	607	638	654	882	1298	4781	5923	2922	1009	644
MEAN	29.2	22.4	19.6	20.6	23.4	28.5	43.3	154	197	94.3	32.5	21.5
MAX	41	25	26	31	41	39	72	290	261	178	44	26
MIN	24	20	15	17	19	21	21	56	130	41	22	18
AC-FT	1790	1330	1200	1270	1300	1750	2570	9480	11750	5800	2000	1280

e Estimated.

10295500 LITTLE WALKER RIVER NEAR BRIDGEPORT, CA

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1999, BY WATER YEAR (WY)

MEAN	20.6	21.8	22.2	22.9	22.9	27.7	51.4	127	178	106	40.0	23.7
MAX	47.7	65.3	98.4	101	58.9	85.7	97.0	323	388	297	137	55.5
(WY)	1983	1951	1951	1997	1986	1986	1986	1969	1983	1967	1983	1983
MIN	6.79	9.84	9.10	9.26	11.0	10.8	20.9	16.5	36.6	9.48	5.41	4.95
(WY)	1978	1949	1949	1949	1977	1977	1976	1977	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1945 - 1999	
ANNUAL TOTAL	26882		20933			
ANNUAL MEAN	73.6		57.4		55.5	
HIGHEST ANNUAL MEAN					113	
LOWEST ANNUAL MEAN					13.9	
HIGHEST DAILY MEAN	338	Jul 10	290	May 28	730	May 16 1996
LOWEST DAILY MEAN	15	Dec 23	15	Dec 23	2.6	Aug 16 1977
ANNUAL SEVEN-DAY MINIMUM	16	Dec 20	16	Dec 20	3.0	Aug 11 1977
INSTANTANEOUS PEAK FLOW			341		2540	Jan 2 1997
INSTANTANEOUS PEAK STAGE			2.82		5.70	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	53320		41520		40180	
10 PERCENT EXCEEDS	222		160		148	
50 PERCENT EXCEEDS	36		27		26	
90 PERCENT EXCEEDS	21		20		13	

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

LOCATION.—Lat 38°22'47", long 119°26'57", in NE 1/4 SE 1/4 sec.9, T.6 N., R.23 E., Mono County, Hydrologic Unit 16050302, in Toiyabe National Forest, on left bank, 200 ft downstream from Little Walker River, 10 ft upstream from bridge on U.S. Highway 395, and 13 mi southeast of Coleville.

DRAINAGE AREA.—181 mi².

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

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

GAGE.—Water-stage recorder. Datum of gage is 6,591.39 ft above sea level. Prior to Oct. 1, 1939, at site, 125 ft downstream at datum 1.00 ft higher. Oct. 1, 1939, to Sept. 30, 1969, at present site and datum. Oct. 1, 1969, to July 10, 1987, at site 100 ft downstream at same datum. July 10, 1987, to Mar. 5, 1997, at site upstream 100 ft at same datum. Mar. 6, 1997, at site 150 ft downstream at datum 2.00 ft lower.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poore Lake, capacity, 1,200 acre-ft, 7 mi upstream. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,300 ft³/s, Jan. 2, 1997, gage height, 10.11 ft; minimum daily, 9.7 ft³/s, Sept. 11, 1997.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharges of 1,120 ft³/s and maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 12	2330	1,440	4.37	June 16	0215	2,290	5.31
May 29	0030	2,630	5.65				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	163	78	93	67	e65	88	147	327	1730	1180	210	87
2	143	70	e88	66	e65	93	142	394	1520	1200	199	85
3	125	71	e80	63	e65	112	134	352	1070	1110	190	82
4	118	69	79	e62	65	115	133	319	875	952	194	78
5	111	67	e80	e62	67	102	127	359	756	832	213	74
6	106	61	e81	e62	59	98	129	546	862	798	194	71
7	100	70	e82	61	121	95	123	772	970	846	179	71
8	95	73	e82	60	107	93	117	835	915	795	164	70
9	91	66	83	e60	e104	88	125	790	917	704	160	69
10	90	77	e82	61	e100	92	119	734	968	681	193	79
11	89	82	82	56	e80	91	122	867	1170	723	208	74
12	86	72	80	54	e70	89	121	1120	1340	673	171	71
13	83	83	77	e55	e60	92	128	1190	1560	634	154	69
14	82	86	76	e55	e59	96	149	941	1800	598	142	68
15	80	83	82	55	e65	92	164	793	1930	609	135	66
16	74	79	82	60	72	92	186	754	1960	549	137	65
17	69	79	83	61	91	101	236	852	1860	466	133	64
18	71	67	79	68	82	116	297	1030	1870	405	130	81
19	70	73	e74	97	79	126	377	1050	1810	367	132	94
20	70	73	e66	65	78	124	439	1140	1630	342	127	83
21	69	77	e64	45	72	116	498	1270	1600	318	124	75
22	70	76	e64	68	78	115	471	1450	1550	297	123	72
23	70	84	e64	e67	70	121	381	1720	1740	286	121	72
24	75	86	e64	e66	70	127	331	1790	1830	281	113	69
25	78	87	e64	e66	63	140	318	1950	1540	265	111	66
26	81	84	e64	e66	71	159	408	1970	1180	251	127	64
27	79	80	e65	e65	77	171	451	1800	1050	245	132	62
28	79	80	e65	e65	80	167	419	2130	1070	237	111	61
29	79	80	e66	e65	---	163	357	2100	1130	228	99	60
30	79	97	e66	e65	---	155	332	1760	1120	215	91	57
31	72	---	e68	e65	---	152	---	1710	---	212	90	---
TOTAL	2747	2310	2325	1953	2135	3581	7481	34815	41323	17299	4607	2159
MEAN	88.6	77.0	75.0	63.0	76.2	116	249	1123	1377	558	149	72.0
MAX	163	97	93	97	121	171	498	2130	1960	1200	213	94
MIN	69	61	64	45	59	88	117	319	756	212	90	57
MED	80	78	79	63	72	112	175	1030	1430	549	135	71
AC-FT	5450	4580	4610	3870	4230	7100	14840	69060	81960	34310	9140	4280

e Estimated.

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1999, BY WATER YEAR (WY)

MEAN	55.9	68.7	72.6	79.8	76.0	111	299	773	965	507	155	75.5
MAX	219	539	448	854	246	369	609	1655	2066	1864	663	246
(WY)	1983	1951	1951	1997	1963	1986	1997	1969	1983	1995	1983	1983
MIN	16.6	22.2	20.0	18.1	26.0	32.1	108	139	188	41.1	18.5	12.4
(WY)	1978	1978	1991	1977	1991	1977	1975	1977	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1938 - 1999	
ANNUAL TOTAL	160529		122735			
ANNUAL MEAN	440		336		268	
HIGHEST ANNUAL MEAN					537	
LOWEST ANNUAL MEAN					65.3	
HIGHEST DAILY MEAN	2340	Jun 16	2130	May 28	8660	Jan 2 1997
LOWEST DAILY MEAN	38	Jan 3	45	Jan 21	9.7	Sep 11 1977
ANNUAL SEVEN-DAY MINIMUM	46	Jan 6	57	Jan 9	10	Sep 5 1977
INSTANTANEOUS PEAK FLOW			2630	May 29	12300	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.65	May 29	10.11	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	318400		243400		193800	
10 PERCENT EXCEEDS	1530		1110		821	
50 PERCENT EXCEEDS	143		97		90	
90 PERCENT EXCEEDS	60		65		34	

10296500 WEST WALKER RIVER NEAR COLEVILLE, CA

LOCATION.—Lat 38°30'55", long 119°27'15", in NW 1/4 NE 1/4 sec.28, T.8 N., R.23 E., Mono County, Hydrologic Unit 16050302, in Toiyabe National Forest, on left bank, 0.4 mi downstream from Rock Creek, and 5 mi southeast of Coleville.

DRAINAGE AREA.—250 mi².

PERIOD OF RECORD.—October 1902 to July 1908 [published as West Fork of Walker River near Coleville, 1903, 1905–08 and as Walker River (West Fork) near Coleville, 1904], March 1909 to September 1910, June 1915 to March 1938, May 1957 to current year.

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

GAGE.—Water-stage recorder. Elevation of gage is 5,520 ft above sea level, from topographic map. See WSP 1927 for history of changes prior to July 25, 1964. July 26, 1964, to Jan. 2, 1997 (gage destroyed in 1997 flood), at several sites and datums 2,000 ft downstream from present location, when re-established Oct. 28, 1997, at new datum.

REMARKS.—No estimated daily discharges. Records fair. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poore Lake, capacity, 1,200 acre-ft, 17 mi upstream. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,500 ft³/s, Jan. 2, 1997, gage height, 10.23 ft; minimum daily, 14 ft³/s, several days July–September 1924 and Sept. 12, 1977.

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

		Discharge		Gage height				Discharge		Gage height	
Date	Time	(ft ³ /s)	(ft)	Date	Time	(ft ³ /s)	(ft)	Date	Time	(ft ³ /s)	(ft)
May 13	0145	1,580	7.46	June 15	0300	2,520	8.17				
May 29	0500	2,750	8.47								

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	163	84	113	82	62	108	149	339	1750	1230	217	100
2	146	77	113	81	66	115	155	396	1610	1250	205	96
3	131	80	120	76	70	126	150	366	1160	1160	195	92
4	122	76	88	80	70	127	142	333	916	989	198	87
5	116	75	86	83	67	111	142	354	779	849	216	83
6	111	71	92	80	66	107	143	501	868	804	200	79
7	106	75	84	85	114	101	140	760	1030	849	187	76
8	101	80	104	78	136	97	129	847	970	816	170	75
9	97	74	90	75	114	97	125	803	978	724	165	74
10	94	81	90	79	88	90	127	729	1020	690	188	81
11	94	89	97	82	101	101	139	861	1270	728	215	79
12	93	77	97	82	111	93	136	1180	1460	696	180	76
13	90	88	96	83	109	99	144	1340	1640	654	160	74
14	89	93	92	82	104	103	164	1030	1940	611	150	72
15	88	90	91	86	98	102	179	825	2050	616	145	70
16	83	88	94	92	99	101	203	768	1980	550	145	69
17	76	90	94	91	115	108	260	872	1840	469	140	69
18	79	76	94	99	110	120	308	1080	1860	420	136	79
19	77	84	86	126	102	134	367	1030	1810	385	136	99
20	77	83	67	107	95	135	410	1080	1640	357	132	87
21	78	88	70	73	99	127	478	1270	1610	335	130	80
22	79	89	83	87	93	125	464	1470	1560	310	127	76
23	78	93	83	94	93	132	384	1830	1730	292	126	78
24	80	101	81	82	91	136	343	1880	1840	291	118	75
25	85	99	99	85	91	149	325	2110	1620	273	115	73
26	87	98	94	84	83	164	396	2180	1250	260	122	70
27	86	96	87	80	98	180	440	1850	1090	253	149	68
28	86	96	88	65	103	175	422	2100	1110	243	127	67
29	85	95	85	69	---	172	374	2220	1190	235	114	68
30	85	108	86	69	---	165	350	1780	1170	225	105	66
31	79	---	90	68	---	160	---	1730	---	220	103	---
TOTAL	2941	2594	2834	2585	2648	3860	7688	35914	42741	17784	4816	2338
MEAN	94.9	86.5	91.4	83.4	94.6	125	256	1159	1425	574	155	77.9
MAX	163	108	120	126	136	180	478	2220	2050	1250	217	100
MIN	76	71	67	65	62	90	125	333	779	220	103	66
AC-FT	5830	5150	5620	5130	5250	7660	15250	71240	84780	35270	9550	4640

10296500 WEST WALKER RIVER NEAR COLEVILLE, CA

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 1999, BY WATER YEAR (WY)

MEAN	70.9	71.4	68.4	79.9	82.4	128	306	789	1003	539	170	84.9
MAX	299	214	270	905	280	403	636	1756	2055	2492	721	269
(WY)	1905	1974	1965	1997	1963	1986	1910	1969	1983	1907	1995	1907
MIN	21.5	25.4	28.7	26.9	32.0	42.1	118	149	106	26.9	17.4	16.1
(WY)	1978	1930	1960	1930	1929	1933	1975	1977	1924	1924	1924	1924

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1903 - 1999	
ANNUAL TOTAL	166065		128743			
ANNUAL MEAN	455		353		282	
HIGHEST ANNUAL MEAN					669	
LOWEST ANNUAL MEAN					74.5	
HIGHEST DAILY MEAN	2380	Jun 16	2220	May 29	9000	Jan 2 1997
LOWEST DAILY MEAN	40	Jan 3	62	Feb 1	14	Jul 24 1924
ANNUAL SEVEN-DAY MINIMUM	50	Jan 6	67	Jan 28	14	Aug 28 1924
INSTANTANEOUS PEAK FLOW			2750		May 29	
INSTANTANEOUS PEAK STAGE			8.47		May 29	
ANNUAL RUNOFF (AC-FT)	329400		255400		204600	
10 PERCENT EXCEEDS	1520		1160		855	
50 PERCENT EXCEEDS	152		111		98	
90 PERCENT EXCEEDS	76		76		38	

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 (shown on Mono County map), Hydrologic Unit 16050301, at outlet works of Topaz Lake on West Walker River, and 5.5 mi north of Topaz.

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

GAGE.—Water-stage recorder. Datum of gage is above sea level. 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 herein represent usable contents. There is 65,000 acre-ft of lake volume below the point of controllable storage. Water is used for irrigation in Walker River Irrigation District. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 60,680 acre-ft, July 3, 1980, July 10, 1995, elevation 5,000.92 ft, present datum; no usable contents at times in some years.

EXTREMES FOR CURRENT YEAR.—Maximum contents 59,210 acre-ft, July 2–4, elevation, 5,000.28 ft; minimum contents, 12,440 acre-ft, Sept. 30, elevation 4,975.57 ft.

4,968	490	4,980	19,760	4,995	47,540
4,970	3,580	4,985	28,310	5,000	58,570
4,975	11,520	4,990	37,360	5,001	60,870

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37190	38880	44820	49380	54820	57160	57610	47200	56260	58980	43640	24210
2	37320	39050	45090	49400	55020	56710	57390	46900	56710	59210	42740	23600
3	37400	39230	45320	49610	55130	56930	57390	46390	56710	59210	41820	23050
4	37530	39370	45510	49850	55360	57160	57390	45910	56930	58980	40950	22610
5	37670	39530	45660	49830	55580	57160	57160	45410	56930	58750	40080	22150
6	37780	39690	45830	50050	55580	57160	57390	45030	56930	58750	39330	21690
7	37900	39850	45950	50240	56030	57390	57390	44880	56930	58520	38580	21200
8	37960	40030	46120	50460	56710	57390	57390	44760	56930	58300	37920	20610
9	37960	40180	46270	50440	57160	57390	57160	44610	57390	58070	37260	20020
10	38000	40390	46430	50650	57390	57390	57160	44410	57840	57390	36670	19470
11	38040	40670	46560	50850	57390	57610	57160	44280	58070	56930	36080	18920
12	38080	40890	46770	50850	57840	57610	57390	44360	57840	56480	35600	18370
13	38060	41090	46880	51040	57840	57610	57160	44680	57840	56030	35170	17830
14	38110	41310	47050	51260	58070	57840	56930	44740	57610	55580	34710	17130
15	38150	41490	47180	51460	58300	57840	56710	44570	57390	55130	34160	16440
16	38170	41720	47340	51680	58300	57840	56480	44360	57390	54910	33560	15780
17	38150	41920	47510	51880	58520	57840	55810	44160	57610	54460	32840	15200
18	38130	42100	47680	52100	58520	57840	55360	44140	58070	54020	32030	14720
19	38110	42310	47830	52290	58520	58070	54690	44070	58070	53350	31280	14280
20	38150	42470	47980	52730	58300	58070	54020	44010	58070	52690	30640	13920
21	38230	42590	48050	52930	58070	58070	53350	44120	58070	52030	30020	13640
22	38310	42920	48130	53150	57840	58300	52910	44380	58070	51370	29440	13450
23	38370	42880	48170	53350	57610	58300	52250	45200	58300	50720	28870	13330
24	38370	43290	48220	53570	57390	58300	51590	46220	58520	50280	28380	13170
25	38410	43520	48320	53770	57390	58070	50720	47320	58520	49630	27940	13020
26	38430	43700	48500	54000	57390	58300	50280	48770	58300	48770	27540	12850
27	38480	43910	48710	54200	57160	58070	49630	50070	58070	48260	27070	12750
28	38490	44140	48710	54200	57160	58070	48990	51810	58070	47390	26640	12630
29	38540	44300	48950	54400	---	57840	48350	53570	58300	46410	26070	12540
30	38600	44590	49160	54620	---	57610	47830	54910	58750	45490	25410	12440
31	38680	---	49160	54820	---	57610	---	55810	---	44550	24810	---
MAX	38680	44590	49160	54820	58520	58300	57610	55810	58750	59210	43640	24210
MIN	37190	38880	44820	49380	54820	56710	47830	44010	56260	44550	24810	12440
a	4990.68	4993.60	4995.76	4998.34	4999.38	4999.58	4995.14	4998.78	5000.08	4993.58	4982.98	4975.57
b	+1610	+5910	+4570	+5660	+2340	+450	-9780	+7980	+2940	-14200	-19740	-12370

CAL YR 1998 MAX 60010 MIN 20190 b +29570
WTR YR 1999 MAX 59210 MIN 12440 b +24230

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

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

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

DRAINAGE AREA.—276 mi².

PERIOD OF RECORD.—August 1960 to current year.

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

REMARKS.—No estimated daily discharges. Records good. A few small diversions for irrigation above station. Flow slightly regulated by several small reservoirs, total capacity, about 5,000 acre-ft. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 18,900 ft³/s, Jan. 2, 1997, gage height, 11.78 ft; minimum daily, 12 ft³/s, Sept. 10–13, 23, 1997.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,300 ft³/s and maximum:

Discharge Gage height				Discharge Gage height			
Date	Time	(ft ³ /s)	(ft)	Date	Time	(ft ³ /s)	(ft)
Feb 7	1245	1,600	4.34	June 15	0030	2,170	4.89
May 28	2115	3,820	6.10				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	111	183	98	119	239	273	667	2060	1080	176	135
2	101	105	158	106	120	257	276	802	1900	1070	164	134
3	107	105	171	111	129	323	265	682	1530	1000	161	128
4	117	102	131	114	138	293	256	596	1320	904	176	106
5	118	100	123	110	133	245	258	647	1210	803	182	102
6	108	95	120	107	131	224	248	932	1350	753	172	101
7	101	101	114	102	797	208	236	1290	1410	730	172	106
8	104	103	129	98	507	199	220	1380	1350	689	166	104
9	104	99	125	94	549	191	204	1300	1320	637	165	113
10	103	104	117	106	295	173	212	1230	1360	600	204	118
11	105	113	123	108	232	184	228	1420	1480	579	213	108
12	106	99	121	97	223	177	271	1750	1610	558	175	103
13	106	108	123	97	210	193	365	1810	1740	519	158	91
14	107	115	120	97	200	211	441	1410	1880	476	154	89
15	102	115	116	103	186	206	442	1220	1930	454	149	86
16	102	110	117	130	189	208	473	1200	1920	425	157	85
17	103	114	116	116	334	237	573	1350	1870	386	154	75
18	94	96	118	212	255	284	705	1550	1830	345	147	81
19	99	103	115	291	217	314	883	1540	1770	309	140	94
20	101	102	95	285	198	297	964	1620	1690	285	137	82
21	101	109	81	174	201	265	1010	1720	1630	266	146	86
22	101	116	80	157	187	257	898	1930	1570	246	147	81
23	100	141	77	196	183	275	713	2180	1590	235	149	80
24	105	156	96	162	182	285	650	2310	1610	228	141	79
25	113	129	106	153	186	303	658	2530	1450	218	140	75
26	112	120	104	147	172	351	894	2640	1260	210	143	73
27	114	117	97	142	186	382	983	2650	1140	202	177	72
28	113	114	92	124	207	355	874	3030	1100	194	143	71
29	112	118	93	132	---	338	716	2740	1100	183	132	71
30	112	199	91	133	---	315	655	2180	1080	178	126	69
31	102	---	98	131	---	304	---	2170	---	181	127	---
TOTAL	3278	3419	3550	4233	6666	8093	15844	50476	46060	14943	4893	2798
MEAN	106	114	115	137	238	261	528	1628	1535	482	158	93.3
MAX	118	199	183	291	797	382	1010	3030	2060	1080	213	135
MIN	94	95	77	94	119	173	204	596	1080	178	126	69
AC-FT	6500	6780	7040	8400	13220	16050	31430	100100	91360	29640	9710	5550

CARSON RIVER BASIN

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

MEAN	81.6	112	137	202	213	292	549	1141	1026	415	149	91.3
MAX	346	476	718	1722	917	983	1121	2447	2996	1721	477	239
(WY)	1983	1984	1965	1997	1986	1986	1982	1969	1983	1995	1983	1983
MIN	24.0	32.6	41.4	44.2	43.9	58.7	183	197	135	58.0	33.0	18.0
(WY)	1978	1977	1991	1977	1991	1977	1977	1977	1992	1977	1977	1987

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	167922		164253			
ANNUAL MEAN	460		450		368	
HIGHEST ANNUAL MEAN					809	
LOWEST ANNUAL MEAN					83.7	
HIGHEST DAILY MEAN	2080	Jun 16	3030	May 28	12500	Jan 2 1997
LOWEST DAILY MEAN	72	Jan 6	69	Sep 30	12	Sep 10 1987
ANNUAL SEVEN-DAY MINIMUM	80	Jan 3	73	Sep 24	12	Sep 7 1987
INSTANTANEOUS PEAK FLOW			3820	May 28	18900	Jan 2 1997
INSTANTANEOUS PEAK STAGE			6.10	May 28	11.78	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	333100		325800		266600	
10 PERCENT EXCEEDS	1400		1410		982	
50 PERCENT EXCEEDS	172		177		148	
90 PERCENT EXCEEDS	101		98		51	

10308783 LEVIATHAN CREEK ABOVE LEVIATHAN MINE, NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°42'05", long 119°39'20", in SW 1/4 NE 1/4 sec.22, T.10 N., R.21 E., Alpine County, Hydrologic Unit 16050201, on right bank, 2 mi north of Highway 89, and 6.5 mi east of Markleeville.

DRAINAGE AREA.—4.16 mi².

PERIOD OF RECORD.—October 1998 to September 1999.

GAGE.—Water-stage recorder. Elevation of gage is 7,200 ft above sea level, from topographic map.

REMARKS.—Records fair except those below 0.5 ft³/s, which are poor.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 21 ft³/s, May 7, 1999, gage height, 4.40 ft; minimum daily, 0.08 ft³/s, several days in August and September 1999.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.19	e.20	.26	e.28	.47	.48	3.5	1.3	.32	.12	.09
2	---	.17	e.20	.26	e.29	.51	.58	3.2	1.2	.31	.12	.10
3	---	.19	e.20	.23	.30	.61	.56	3.8	1.4	.29	.12	.10
4	---	.18	e.20	.26	.29	.56	.49	3.9	1.6	.29	.12	.09
5	---	.16	.20	.26	.27	.46	.47	4.4	1.3	.28	.12	.09
6	---	.19	.26	.26	.27	.48	.45	10	1.1	.26	.12	.09
7	---	.20	e.25	.27	e.27	.47	.40	15	1.1	.24	.13	.08
8	---	.18	.25	.22	e.28	.45	.38	15	1.1	.23	.12	.09
9	---	.17	e.24	.23	.30	.43	e.38	13	.89	.23	.12	.09
10	---	.20	e.24	.25	e.29	.30	e.36	12	1.1	.22	.16	.13
11	---	.21	.24	.27	e.28	.43	.36	13	1.1	.20	.14	.11
12	---	.20	.24	.26	.28	.38	.40	13	.95	.21	.12	.10
13	---	.22	.25	.26	.29	.49	.55	11	.84	.20	.10	.10
14	---	.23	.24	.27	.29	.54	.87	9.2	.75	.18	.09	.10
15	---	.21	.23	.30	.22	.55	1.3	8.0	.70	.18	.09	.10
16	---	e.21	.23	.29	.29	.64	1.4	6.8	.69	.17	.09	.10
17	---	e.21	.24	.34	.32	.89	2.3	5.8	.64	.16	.09	.11
18	---	e.21	.24	.33	.30	1.2	3.7	5.2	.62	.16	.09	.17
19	---	e.21	.23	.34	.28	1.4	5.6	4.6	.60	.17	.08	.12
20	---	e.21	.23	.28	e.29	1.2	6.8	4.0	.54	.15	.08	.11
21	---	e.21	.24	.30	.29	1.0	7.8	3.6	.53	.14	.08	.11
22	.17	e.21	e.24	.30	.29	1.2	8.2	3.3	.54	.14	.09	.11
23	.15	e.21	e.24	.29	.29	1.4	5.9	3.2	.52	.13	.08	.12
24	.17	e.21	e.23	.23	e.29	1.2	4.8	3.1	.47	.13	.08	.12
25	.19	e.20	e.23	.28	e.28	1.2	4.7	2.6	.45	.13	.08	.11
26	.20	e.20	e.23	.27	.27	1.4	4.3	2.3	.42	.12	.10	.11
27	.18	e.20	e.23	.25	.35	1.5	4.4	2.1	.40	.12	.11	.11
28	.17	e.20	e.25	e.24	.39	1.4	3.5	1.9	.38	.12	.09	.11
29	.20	e.20	e.25	.24	---	1.2	2.7	1.7	.34	.12	.08	.11
30	.19	e.20	.27	.27	---	1.0	2.7	1.6	.32	.12	.08	.11
31	.19	---	.27	.27	---	.86	---	1.5	---	.12	.09	---
TOTAL	---	5.99	7.29	8.38	8.13	25.82	76.83	191.3	23.89	5.84	3.18	3.19
MEAN	---	.20	.24	.27	.29	.83	2.56	6.17	.80	.19	.10	.11
MAX	---	.23	.27	.34	.39	1.5	8.2	15	1.6	.32	.16	.17
MIN	---	.16	.20	.22	.22	.30	.36	1.5	.32	.12	.08	.08
AC-FT	---	12	14	17	16	51	152	379	47	12	6.3	6.3

e Estimated.

10308784 LEVIATHAN MINE ADIT DRAIN NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°42'15", long 119°39'28", in NW 1/4 NE 1/4 sec.22, T.10 N., R.21 E., Alpine County, Hydrologic Unit 16050201, 2.2 mi north of Highway 89 and 6.5 mi southeast of Markleeville.

PERIOD OF RECORD.—November 1998 to September 1999.

GAGE.—Water-stage recorder. Elevation of gage is 7,100 ft above sea level, from topographic map.

REMARKS.—Records fair.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 0.09 ft³/s, May 14, 1999, gage height, 9.82 ft; minimum daily, 0.04 ft³/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.04	.04	.04	.04	.04	.06	.07	.06	.05	.05
2	---	.04	.04	.04	.04	.04	.04	.07	.07	.06	.05	.05
3	---	.04	.04	.04	.04	.04	.04	.07	.07	.06	.05	.05
4	---	.04	.04	.04	.04	.04	.04	.07	.07	.06	.05	.05
5	---	.04	.04	.04	.04	.04	.04	.08	.07	.06	.05	.05
6	---	.04	.04	.04	.04	.04	.04	.08	.07	.06	.05	.05
7	---	.04	.04	.04	.04	.04	.04	.08	.07	.06	.05	.05
8	---	.04	.04	.04	.04	.04	.04	.08	.07	.06	.05	.05
9	---	.04	.04	.04	.04	.04	.04	.08	.07	.06	.05	.05
10	---	.04	.04	.04	.04	.04	.04	.08	.07	.06	.05	.05
11	---	.04	.04	.04	.04	.04	.04	.08	.07	.06	.05	.05
12	---	.04	.04	.04	.04	.04	.04	.08	.07	.05	.05	.05
13	---	.04	.04	.04	.04	.04	.04	.08	.07	.06	.05	.05
14	---	.04	.04	.04	.04	.04	.04	.08	.07	.06	.05	.05
15	---	.04	.04	.04	.04	.04	.04	.09	.07	.05	.05	.05
16	---	.04	.04	.04	.04	.04	.04	.09	.06	.05	.05	.05
17	---	.04	.04	.04	.04	.04	.04	.09	.06	.05	.05	.05
18	---	.04	.04	.04	.04	.04	.04	.09	.06	.05	.05	.05
19	---	.04	.04	.04	.04	.04	.04	.08	.06	.05	.05	.05
20	---	.04	.04	.04	.04	.04	.04	.08	.06	.05	.05	.05
21	---	.04	.04	.04	.04	.04	.04	.08	.06	.05	.05	.05
22	---	.04	.04	.04	.04	.04	.04	.08	.06	.05	.05	.05
23	---	.04	.04	.04	.04	.04	.05	.08	.06	.05	.05	.05
24	---	.04	.04	.04	.04	.04	.05	.08	.06	.05	.05	.05
25	---	.04	.04	.04	.04	.04	.05	.08	.06	.05	.05	.05
26	---	.04	.04	.04	.04	.04	.05	.08	.06	.05	.05	.04
27	---	.04	.04	.04	.04	.04	.06	.08	.06	.05	.05	.05
28	---	.04	.04	.04	.04	.04	.06	.08	.06	.05	.05	.05
29	---	.04	.04	.04	---	.04	.06	.08	.06	.05	.05	.05
30	---	.04	.04	.04	---	.04	.06	.07	.06	.05	.05	.04
31	---	---	.04	.04	---	.04	---	.07	---	.05	.05	---
TOTAL	---	---	1.24	1.24	1.12	1.24	1.32	2.45	1.95	1.68	1.55	1.48
MEAN	---	---	.040	.040	.040	.040	.044	.079	.065	.054	.050	.049
MAX	---	---	.04	.04	.04	.04	.06	.09	.07	.06	.05	.05
MIN	---	---	.04	.04	.04	.04	.04	.06	.06	.05	.05	.04
AC-FT	---	---	2.5	2.5	2.2	2.5	2.6	4.9	3.9	3.3	3.1	2.9

103087887 LEVIATHAN MINE POND 4 NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°42'34", long 119°39'41", in SE 1/4 SW 1/4 sec.15, T.10 N., R.21 E., Alpine County, Hydrologic Unit 16050201, 2.9 mi north of Highway 89 and 6.5 mi east of Markleeville.

PERIOD OF RECORD.—October 1998 to September 1999.

GAGE.—Water-stage recorder. Elevation of gage is 6,800 ft above sea level, from topographic map.

REMARKS.—Records good above 0.04 ft³/s and poor below.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 0.3431 ft³/s, Feb. 10, 1999, gage height, 6.62 ft; no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.0000	e.0001	.0001	e.0692	e.0861	.1036	.1308	.0164	.0009	.0003	.0001
2	---	.0000	e.0001	.0001	e.0861	e.0861	.1068	.1135	.0131	.0008	.0003	.0001
3	---	.0000	e.0001	.0001	e.0692	e.0960	.1194	.1007	.0328	.0008	.0003	.0001
4	---	.0000	e.0001	.0001	e.0692	.0805	.1413	.0900	.0442	.0008	.0003	.0001
5	---	.0000	.0001	.0001	e.0620	.0811	.1351	.0821	.0471	.0007	.0003	.0001
6	---	.0000	.0001	.0001	e.0772	.0741	.1979	.0767	.0439	.0007	.0003	.0000
7	---	.0000	.0001	.0001	e.2380	.0670	.2196	.0725	.0365	.0007	.0003	.0000
8	---	.0000	.0001	.0001	e.2752	.0684	.2082	.0640	.0297	.0006	.0002	.0000
9	---	.0000	.0001	.0001	e.2959	.1034	.1905	.0562	.0225	.0006	.0002	.0000
10	---	.0000	.0001	.0001	e.3431	.1050	.1508	.0521	.0202	.0006	.0002	.0000
11	---	.0000	.0001	.0001	e.2380	.0962	.1292	.0521	.0183	.0006	.0002	.0000
12	---	.0000	.0001	.0001	e.1750	.0802	.1161	.0506	.0153	.0006	.0002	.0000
13	---	.0000	.0001	.0001	e.1373	.0840	.1119	.0444	.0136	.0005	.0002	.0000
14	---	.0000	.0001	.0002	e.1163	.0850	.1137	.0397	.0107	.0005	.0002	.0000
15	---	.0000	.0001	.0002	e.0960	.0770	.1123	.0390	.0076	.0005	.0002	.0000
16	---	.0000	.0001	.0002	e.0960	.0777	.1099	.0390	.0071	.0005	.0002	.0000
17	.0000	.0000	.0001	.0002	e.1070	.0810	.1116	.0374	.0064	.0005	.0002	.0000
18	.0000	.0000	.0001	.0003	e.1070	.0884	.1123	.0372	.0044	.0004	.0002	.0000
19	.0000	.0000	.0001	.0006	e.0861	.0939	.1129	.0347	.0031	.0004	.0002	.0000
20	.0000	.0000	.0001	e.1620	e.0861	.0978	.1115	.0334	.0026	.0004	.0002	.0000
21	.0000	.0000	.0001	e.2041	e.0900	.0898	.1059	.0333	.0019	.0004	.0002	.0001
22	.0000	e.0000	.0001	e.1750	e.1264	.0878	.1150	.0325	.0019	.0004	.0002	.0000
23	.0000	e.0000	.0001	e.0772	e.0960	.0918	.1450	.0309	.0017	.0004	.0001	.0000
24	.0000	e.0000	.0001	e.0393	e.1070	.0940	.1520	.0297	.0015	.0004	.0001	.0000
25	.0000	e.0000	.0001	e.1070	e.1163	.0972	.1362	.0323	.0010	.0004	.0001	.0000
26	.0000	e.0000	.0001	e.1373	e.1070	.1037	.1204	.0341	.0010	.0003	.0001	.0000
27	.0000	e.0000	.0001	e.1264	e.0960	.0984	.1090	.0319	.0009	.0003	.0001	.0000
28	.0000	e.0000	.0001	e.1070	e.0861	.0864	.0941	.0251	.0009	.0003	.0001	.0000
29	.0000	e.0000	.0001	e.0960	---	.0863	.1013	.0208	.0009	.0003	.0001	.0000
30	.0000	e.0000	.0001	e.0960	---	.0775	.1346	.0208	.0009	.0003	.0001	.0000
31	.0000	---	.0001	e.0772	---	.1017	---	.0205	---	.0003	.0001	---
TOTAL	---	0.0000	0.0031	1.4075	3.6547	2.7235	3.9281	1.5580	0.4081	0.0159	0.0060	0.0006
MEAN	---	.000	.000	.045	.13	.088	.13	.050	.014	.001	.000	.000
MAX	---	.0000	.0001	.2041	.3431	.1050	.2196	.1308	.0471	.0009	.0003	.0001
MIN	---	.0000	.0001	.0001	.0620	.0670	.0941	.0205	.0009	.0003	.0001	.0000
AC-FT	---	.00	.01	2.8	7.2	5.4	7.8	3.1	.8	.03	.01	.00

e Estimated.

10308789 LEVIATHAN CREEK ABOVE ASPEN CREEK, NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°43'01", long 119°39'33", in NE 1/4 NW 1/4 sec.15, T.10 N., R.21 E., Alpine County, Hydrologic Unit 16050201, on right bank, 3.2 mi north of Highway 89, and 6.5 mi southeast of Markleeville.

DRAINAGE AREA.—7.07 mi².

PERIOD OF RECORD.—October 1998 to September 1999.

GAGE.—Water-stage recorder. Elevation of gage is 6,700 ft above sea level, from topographic map.

REMARKS.—Records fair except those below 0.5 ft³/s, which are poor.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 24 ft³/s, Apr. 28, gage height, 5.14 ft; minimum daily, 0.21 ft³/s, Aug. 21, 22, 1999.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.32	.53	.56	e.31	1.2	e2.4	11	5.0	.93	.49	.22
2	---	e.32	e.50	.65	e.35	1.3	2.2	13	4.4	.68	.48	.25
3	---	.31	e.45	e.70	e.40	2.0	e1.9	e12	4.8	.75	.46	.26
4	---	e.31	e.40	e.75	e.45	e1.2	e1.6	11	4.8	.67	.43	.26
5	---	e.31	.37	.67	e.60	e1.2	1.4	e12	4.2	.67	.44	.29
6	---	e.31	.39	.65	1.2	e1.0	e1.0	e15	3.6	.70	.37	.30
7	---	e.32	.37	.42	3.7	e1.0	.85	e17	3.1	.59	.37	.30
8	---	.32	.37	e.41	2.8	e.95	e.85	e16	2.8	.51	.36	.30
9	---	e.33	.36	e.40	e2.5	e.95	e.90	e12	2.6	.49	.34	.31
10	---	e.34	.37	e.39	e2.0	e2.6	e.85	10	2.4	.48	.29	.30
11	---	e.35	.35	e.39	e1.5	1.2	e.85	11	2.2	.46	.31	.30
12	---	e.36	.34	e.39	.99	e1.1	e1.0	10	2.0	.51	.32	.33
13	---	e.37	e.34	e.39	.88	e1.0	e2.0	7.9	1.8	.50	.32	.36
14	---	.39	e.34	e.40	.97	.88	e3.5	8.3	1.8	.56	.28	.35
15	---	e.39	e.35	e.42	e1.0	1.1	e4.5	7.9	1.7	.41	.28	.35
16	---	e.39	e.36	.44	.94	1.2	e5.5	7.7	1.6	.44	.29	.39
17	---	e.39	e.37	.53	1.1	1.9	e6.5	e7.2	1.5	.45	.28	.38
18	---	e.39	e.38	.66	.99	2.3	e7.5	e7.8	1.4	.41	.28	.33
19	---	e.39	e.39	e.60	e.95	2.4	e8.5	8.3	1.4	.45	.26	.37
20	---	e.39	e.40	e.55	e.90	1.6	e9.8	9.3	1.3	.42	.24	.41
21	---	.39	e.40	e.50	e.85	1.1	9.6	9.9	1.3	.48	.21	.63
22	---	.39	.40	e.44	e.80	1.2	6.4	9.2	1.3	.56	.21	.79
23	---	e.39	.38	e.40	e.70	1.6	7.3	9.4	e1.2	.63	.22	.83
24	.30	.40	.39	e.40	e.70	e2.5	7.8	8.4	e1.2	.60	.23	.85
25	.36	e.38	.39	e.40	e.70	e2.8	e9.6	8.6	1.0	.60	.24	.86
26	.35	e.36	.39	e.40	e.75	e3.2	e13	8.0	e1.0	.63	.24	.76
27	.32	.35	.38	e.40	.77	e3.0	e15	7.6	e1.0	.60	.24	.69
28	.31	.34	.40	e.40	.99	e2.8	13	7.0	e1.0	.60	.25	.65
29	.35	.40	.40	e.35	---	e2.6	e7.7	6.3	.97	.57	.28	.73
30	.34	e.40	.40	e.35	---	e2.6	8.4	5.6	.89	.53	.24	.77
31	e.32	---	.42	e.31	---	e2.4	---	5.9	---	.52	.22	---
TOTAL	---	10.80	12.08	14.72	30.79	53.88	161.40	300.3	65.26	17.40	9.47	13.92
MEAN	---	.36	.39	.47	1.10	1.74	5.38	9.69	2.18	.56	.31	.46
MAX	---	.40	.53	.75	3.7	3.2	15	17	5.0	.93	.49	.86
MIN	---	.31	.34	.31	.31	.88	.85	5.6	.89	.41	.21	.22
AC-FT	---	21	24	29	61	107	320	596	129	35	19	28

e Estimated.

103087892 ASPEN CREEK OVERBURDEN SEEP NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°43'45", long 119°39'11", in NE 1/4 SE 1/4 sec.15, T.10 N., R.21 E., Alpine County, Hydrologic Unit 16050201, 2.8 mi north of State Highway 89 and 2.1 mi east of Markleeville.

PERIOD OF RECORD.—November 1998 to September 1999.

GAGE.—Water-stage recorder. Elevation of gage is 7,100 ft above sea level, from topographic map.

REMARKS.—Records fair, including estimated daily discharges.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 0.19 ft³/s, Apr. 10, 1999, gage height, 9.81 ft; minimum daily, 0.02 ft³/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.03	.02	.02	.02	.09	e.06	e.03	.03	.03	.05
2	---	---	.03	.02	.02	.02	.09	e.06	e.03	.04	.04	.05
3	---	---	.03	.02	.02	.03	.12	e.05	e.03	.04	.03	.05
4	---	---	.03	.02	.02	.02	.12	e.05	e.03	.04	.03	.03
5	---	---	.03	.02	.02	.02	.12	e.05	e.03	.04	.02	.03
6	---	---	.03	.02	.02	.02	.13	.05	e.03	.04	.02	.03
7	---	.03	.03	.02	.03	.02	.14	e.05	e.03	.04	.02	.03
8	---	.03	.03	.02	.02	.02	.14	e.05	e.03	.04	.02	.03
9	---	.03	.03	.02	.02	.03	.15	e.05	e.03	.04	.02	.03
10	---	.03	.03	.02	.02	.02	.16	e.05	e.03	.04	.02	.03
11	---	.03	.03	.02	.02	.02	.15	e.05	e.03	.04	.02	.03
12	---	.03	.02	.02	.02	.02	.07	e.05	e.03	.04	.02	.03
13	---	.03	.02	.02	.02	.03	.09	e.05	e.03	.04	.02	.03
14	---	.03	.02	.02	.02	.03	.09	e.04	e.03	.04	.02	.03
15	---	.03	.02	.02	.02	.02	.09	e.04	e.03	.03	.02	.03
16	---	.03	.02	.02	.02	.03	e.10	.04	e.03	.03	.02	.03
17	---	.03	.02	.02	.02	.03	e.11	.04	e.02	.03	.03	.03
18	---	.03	.02	.03	.02	.03	e.10	e.04	e.02	.03	.03	.03
19	---	.03	.02	.02	.02	.03	e.08	e.04	e.02	.03	.04	.03
20	---	.03	.02	.02	.02	.03	e.07	e.04	e.02	.03	.05	.03
21	---	.03	.03	.02	.02	.03	e.07	e.04	e.02	.03	.06	.03
22	---	.03	.02	.02	.02	.03	e.07	e.04	e.02	.03	.06	.03
23	---	.03	.02	.02	.02	.03	e.06	e.04	e.02	.03	.06	.03
24	---	.03	.02	.02	.02	.04	e.06	e.04	e.02	.04	.06	.03
25	---	.02	.02	.02	.02	.04	e.06	e.04	e.02	.04	.06	.04
26	---	.02	.02	.02	.02	.08	.06	e.04	.02	.04	.05	.04
27	---	.02	.02	.02	.02	.07	.06	e.04	.02	.03	.05	.04
28	---	.02	.02	.02	.02	.09	e.06	e.04	.02	.03	.05	.04
29	---	.03	.02	.02	---	.10	e.06	e.03	.03	.03	.06	.04
30	---	.03	.02	.02	---	.10	e.06	e.03	.03	.03	.06	.04
31	---	---	.02	.02	---	.10	---	e.03	---	.03	.05	---
TOTAL	---	---	0.74	0.63	0.57	1.20	2.83	1.36	0.78	1.09	1.14	1.02
MEAN	---	---	.024	.020	.020	.039	.094	.044	.026	.035	.037	.034
MAX	---	---	.03	.03	.03	.10	.16	.06	.03	.04	.06	.05
MIN	---	---	.02	.02	.02	.02	.06	.03	.02	.03	.02	.03
AC-FT	---	---	1.5	1.2	1.1	2.4	5.6	2.7	1.5	2.2	2.3	2.0

e Estimated.

10308794 BRYANT CREEK BELOW CONFLUENCE, NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°44'12", long 119°38'39", in SW 1/4 SW 1/4 sec.2, T.10 N., R.21 E., Alpine County, Hydrologic Unit 16050201, on left bank, 4.4 mi north of Highway 89, and 7.5 mi northeast of Markleeville.

DRAINAGE AREA.—12.36 mi².

PERIOD OF RECORD.—November 1998 to September 1999.

GAGE.—Water-stage recorder. Elevation of gage is 6,300 ft above sea level, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 44 ft³/s, Apr. 19, 1999, gage height, 5.35 ft; minimum daily, 2.2 ft³/s, Dec. 4, 1998, July 23, 29, 30, 1999.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	2.9	e2.5	e2.8	7.2	6.8	24	9.5	3.3	2.4	2.6
2	---	---	3.0	e2.7	e2.7	7.4	6.5	24	9.3	3.2	2.3	2.7
3	---	---	2.8	2.8	3.7	9.1	6.1	22	10	3.2	2.4	2.7
4	---	---	2.2	e3.0	3.8	7.4	6.6	21	10	3.1	2.5	2.7
5	---	---	2.3	3.0	3.6	5.9	6.3	24	9.1	3.1	2.5	2.6
6	---	---	e2.3	3.0	3.6	5.4	6.2	28	8.4	3.0	2.6	2.5
7	---	3.2	e2.3	3.1	e12	5.0	6.4	29	8.0	2.9	2.7	2.3
8	---	3.1	e2.3	2.9	e7.0	4.8	5.9	29	7.6	2.9	2.6	2.6
9	---	3.1	e2.3	3.0	e5.0	4.1	7.0	26	7.4	2.8	2.7	2.6
10	---	3.1	e2.4	3.1	e5.0	6.2	5.8	25	7.2	2.8	3.3	2.7
11	---	3.2	e2.4	3.1	5.0	4.5	5.8	27	6.8	2.7	3.0	2.8
12	---	3.1	e2.4	3.1	4.5	4.4	8.0	27	6.5	2.7	2.6	2.7
13	---	3.4	e2.4	3.1	4.4	4.9	14	25	6.2	2.7	2.4	2.6
14	---	3.4	e2.4	3.1	4.3	5.3	16	22	5.9	2.6	2.4	2.6
15	---	3.2	2.4	3.4	4.1	5.3	15	20	5.8	2.5	2.4	2.6
16	---	3.2	e2.4	3.6	4.2	5.9	16	19	5.6	2.5	2.4	2.6
17	---	3.2	e2.4	3.7	5.8	7.4	19	18	5.4	2.4	2.4	2.6
18	---	2.9	e2.4	4.7	5.3	8.4	22	17	5.2	2.4	2.4	3.1
19	---	2.9	e2.4	e4.2	4.6	8.3	26	17	5.0	2.4	2.4	3.0
20	---	e2.8	e2.4	e4.0	e4.5	7.4	27	16	4.9	2.4	2.3	2.8
21	---	e2.8	e2.3	3.7	4.3	6.5	29	15	4.5	2.4	2.4	2.8
22	---	e2.8	e2.3	e3.5	4.5	6.9	25	15	4.5	2.3	2.5	2.9
23	---	e2.7	e2.3	e3.2	4.2	7.7	21	14	4.3	2.2	2.5	2.9
24	---	e2.7	e2.3	e3.2	4.5	8.4	21	13	4.1	2.3	2.3	2.7
25	---	e2.7	e2.3	e3.2	4.4	9.3	23	13	4.0	2.4	2.3	2.6
26	---	2.7	e2.3	e3.0	5.0	11	26	12	3.9	2.3	2.7	2.5
27	---	2.7	e2.3	e3.2	5.0	9.5	26	12	3.9	2.3	2.9	2.5
28	---	2.7	e2.3	e3.3	5.9	8.6	22	11	3.6	2.3	2.5	2.5
29	---	2.6	e2.3	e3.5	---	8.3	20	11	3.5	2.2	2.4	2.6
30	---	3.1	e2.3	e3.3	---	7.6	22	10	3.4	2.2	2.5	2.5
31	---	---	e2.3	e3.0	---	6.9	---	9.8	---	2.4	2.6	---
TOTAL	---	---	74.1	101.2	133.7	215.0	467.4	595.8	183.5	80.9	78.3	79.9
MEAN	---	---	2.39	3.26	4.78	6.94	15.6	19.2	6.12	2.61	2.53	2.66
MAX	---	---	3.0	4.7	12	11	29	29	10	3.3	3.3	3.1
MIN	---	---	2.2	2.5	2.7	4.1	5.8	9.8	3.4	2.2	2.3	2.3
AC-FT	---	---	147	201	265	426	927	1180	364	160	155	158

e Estimated.

10310000 WEST FORK CARSON RIVER AT WOODFORDS, CA

LOCATION.—Lat 38°46'11", long 119°49'58", 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, 3.8 mi downstream from Willow Creek, and at mi 21.17 from mouth.

DRAINAGE AREA.—65.4 mi².

PERIOD OF RECORD.—October 1900 to May 1907, 1910–11 (fragmentary), October 1938 to current year. January 1890 to March 1892, June 1907 to September 1920 (except parts of 1910–11), at site 0.7 mi downstream; records not equivalent owing to diversions for irrigation.

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

GAGE.—Water-stage recorder. Datum of gage is 5,754.5 ft above sea level. Prior to 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. January 1997 flood, channel changed course upstream and existing site unuseable. Gage moved 200 ft upstream March 1997 at same datum.

REMARKS.—Records fair except for estimated daily discharges, which are poor. One small diversion above station for irrigation. Flow slightly regulated by several small reservoirs, total capacity, about 1,500 acre-ft. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 8,100 ft³/s, Jan. 1, 1997, gage height, 15.36 ft (new site); minimum daily, 5.3 ft³/s, Sept. 2, 1997.

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

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge at 500 ft³/s and maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
April 26	2230	504	12.32	May 28	0015	1,110	13.21
May 12	2145	1,000	13.10	June 15	0215	528	12.37

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	37	54	32	40	50	74	299	602	199	57	48
2	38	36	50	31	43	51	69	365	566	199	55	51
3	36	34	51	31	40	56	67	253	443	188	54	42
4	36	33	40	31	41	56	64	214	351	170	58	40
5	35	32	42	31	40	52	62	290	312	147	57	39
6	34	32	41	30	38	51	64	392	357	134	55	38
7	34	34	e41	31	47	49	61	552	362	130	55	37
8	33	33	e39	30	47	48	52	586	321	126	53	37
9	32	32	38	30	44	44	62	515	305	116	54	37
10	33	34	39	30	39	52	60	495	305	112	63	38
11	32	35	39	30	52	47	58	597	335	109	61	41
12	31	32	39	30	45	45	59	722	371	111	54	38
13	31	35	39	31	44	47	70	671	406	116	51	37
14	32	37	38	31	43	49	88	505	439	130	49	37
15	31	36	37	35	43	48	97	429	453	108	48	40
16	31	36	37	38	43	49	109	425	461	100	55	40
17	31	36	37	38	51	54	139	495	420	92	56	29
18	31	33	37	49	49	60	182	556	394	86	55	29
19	31	34	35	46	46	65	247	537	382	81	54	30
20	31	33	32	38	48	64	310	554	346	79	50	29
21	30	35	e32	26	44	60	345	572	340	76	43	30
22	31	38	e33	39	44	59	305	651	328	73	43	28
23	30	48	e33	38	44	63	202	728	339	70	44	28
24	32	46	e34	38	44	66	179	759	339	69	42	28
25	35	42	e34	41	41	69	255	877	290	67	41	27
26	38	39	35	41	44	82	385	901	231	65	41	27
27	39	38	33	41	45	93	398	872	206	61	45	26
28	37	37	33	50	47	91	320	908	195	58	42	26
29	36	37	33	47	---	87	219	793	195	58	40	32
30	35	62	33	39	---	80	202	630	196	56	40	28
31	34	---	33	35	---	73	---	643	---	58	40	---
TOTAL	1042	1106	1171	1108	1236	1860	4804	17786	10590	3244	1555	1037
MEAN	33.6	36.9	37.8	35.7	44.1	60.0	160	574	353	105	50.2	34.6
MAX	42	62	54	50	52	93	398	908	602	199	63	51
MIN	30	32	32	26	38	44	52	214	195	56	40	26
AC-FT	2070	2190	2320	2200	2450	3690	9530	35280	21010	6430	3080	2060

e Estimated.

CARSON RIVER BASIN

10310000 WEST FORK CARSON RIVER AT WOODFORDS, CA

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1999, BY WATER YEAR (WY)

MEAN	27.5	40.4	47.8	54.5	58.0	78.8	207	382	265	109	49.4	31.3
MAX	79.1	321	347	621	258	283	502	924	996	525	223	120
(WY)	1983	1951	1951	1997	1963	1986	1907	1906	1983	1907	1907	1983
MIN	8.27	13.1	12.8	13.7	16.3	18.2	46.6	56.4	37.4	18.1	11.1	7.00
(WY)	1989	1991	1991	1961	1977	1977	1975	1977	1992	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1901 - 1999	
ANNUAL TOTAL	58292		46539			
ANNUAL MEAN	160		128		113	
HIGHEST ANNUAL MEAN					290	
LOWEST ANNUAL MEAN					26.1	
HIGHEST DAILY MEAN	866	Jun 7	908	May 28	5500	Jan 2 1997
LOWEST DAILY MEAN	20	Jan 4	26	Jan 21	5.3	Sep 2 1977
ANNUAL SEVEN-DAY MINIMUM	27	Jan 1	27	Sep 22	5.4	Sep 5 1977
INSTANTANEOUS PEAK FLOW			1110	May 28	8100	Jan 1 1997
INSTANTANEOUS PEAK STAGE			13.21	May 28	15.36	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	115600		92310		81650	
10 PERCENT EXCEEDS	499		388		302	
50 PERCENT EXCEEDS	55		47		47	
90 PERCENT EXCEEDS	33		31		17	

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA

LOCATION.—Lat 38°47'47", long 120°01'05", in NW 1/4 SW 1/4 sec.17, T.11 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, 0.25 mi upstream from bridge, 0.5 mi upstream of confluence of Big Meadow and Grass Lake Creeks, 0.5 mi west of State Highway 89, and 4.0 mi south of Meyers.

DRAINAGE AREA.—14.1 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—May 1990 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,490 ft above sea level, from topographic map. Prior to Oct. 1, 1991, at site 1,200 ft downstream at datum 2.54 higher.

REMARKS.—Records fair except for estimated daily discharges, which are poor. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,010 ft³/s, Jan. 2, 1997, gage height, 11.31 ft; minimum daily, 0.76 ft³/s, Sept. 1, 1990.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharges of 150 ft³/s and maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	1800	530	*8.91	June 14	2045	394	8.25

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	8.5	13	7.4	7.9	8.8	14	51	268	e84	13	6.5
2	8.2	7.1	10	7.3	7.7	9.0	14	64	232	e81	11	5.8
3	7.7	6.3	12	7.3	7.8	10	13	50	173	e80	11	5.6
4	7.5	6.0	13	7.0	8.2	10	13	43	146	e79	10	5.2
5	7.0	5.7	11	6.8	7.9	9.6	13	50	156	e76	9.6	4.8
6	6.6	5.3	11	6.8	7.2	9.3	12	83	199	e70	10	4.5
7	6.5	5.7	9.9	6.7	e7.4	9.0	12	117	199	e69	8.8	4.4
8	6.5	5.3	9.3	6.5	e7.5	8.7	12	112	183	e67	7.8	4.2
9	5.9	5.5	8.7	6.7	e7.7	9.4	12	101	181	e65	8.2	4.1
10	5.4	5.6	8.8	6.9	e8.0	8.7	11	100	199	64	28	4.7
11	5.3	6.0	9.0	6.9	e8.5	8.3	11	130	235	62	30	7.4
12	5.1	6.4	9.4	6.9	e9.0	8.1	11	160	258	60	20	5.4
13	4.8	6.0	10	6.8	8.0	8.4	12	141	295	58	17	4.9
14	4.7	6.5	10	6.8	7.6	8.7	18	129	297	54	15	4.3
15	4.7	6.5	9.8	8.5	7.3	8.5	22	122	305	48	13	3.7
16	4.8	6.3	9.6	11	7.9	8.7	27	127	290	41	12	3.4
17	4.4	6.6	9.7	12	e8.2	9.8	39	152	282	36	11	3.2
18	4.3	7.3	e9.7	14	e8.6	12	53	167	e274	35	9.9	3.9
19	4.0	8.2	e9.7	14	8.8	13	69	181	e216	31	9.3	5.3
20	3.8	7.0	e9.7	14	8.2	13	79	196	e159	27	8.7	4.9
21	3.7	6.2	e9.6	12	9.4	12	74	208	e160	25	8.6	4.9
22	4.0	7.7	e9.6	11	8.4	11	56	250	e161	23	8.3	4.7
23	3.9	12	e9.5	11	8.0	11	43	303	e154	22	8.9	4.8
24	4.6	11	e9.3	11	7.9	12	39	327	e148	21	8.2	4.5
25	5.3	8.6	e9.1	9.9	8.2	13	56	361	e119	19	7.6	4.7
26	5.9	8.0	9.0	9.2	7.8	17	78	395	e91	19	7.8	4.2
27	6.7	8.0	8.5	8.5	7.8	20	72	360	e77	19	11	3.9
28	6.6	7.9	8.1	8.2	8.3	19	60	350	e76	16	8.6	3.5
29	7.1	9.1	7.6	8.2	---	18	46	284	e78	14	7.6	3.3
30	6.8	20	7.5	8.2	---	16	41	253	e83	14	7.1	2.8
31	6.0	---	7.7	8.1	---	15	---	274	---	13	6.8	---
TOTAL	177.4	226.3	298.8	275.6	225.2	355.0	1032	5641	5694	1392	353.8	137.5
MEAN	5.72	7.54	9.64	8.89	8.04	11.5	34.4	182	190	44.9	11.4	4.58
MAX	9.6	20	13	14	9.4	20	79	395	305	84	30	7.4
MIN	3.7	5.3	7.5	6.5	7.2	8.1	11	43	76	13	6.8	2.8
AC-FT	352	449	593	547	447	704	2050	11190	11290	2760	702	273

e Estimated.

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

MEAN	3.38	6.43	10.2	20.2	13.1	22.3	51.0	136	137	55.9	11.2	4.05
MAX	5.72	20.7	37.4	120	39.2	41.3	102	216	329	220	45.9	10.4
(WY)	1999	1997	1997	1997	1996	1995	1997	1996	1995	1995	1995	1998
MIN	2.12	2.13	1.69	1.57	3.06	6.64	15.1	51.2	12.1	3.40	1.64	1.30
(WY)	1993	1991	1991	1991	1991	1991	1991	1992	1992	1994	1994	1991

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1990 - 1999	
ANNUAL TOTAL	19915.4		15808.6			
ANNUAL MEAN	54.6		43.3		40.7	
HIGHEST ANNUAL MEAN					72.3	
LOWEST ANNUAL MEAN					14.1	
HIGHEST DAILY MEAN	315	Jun 16	395	May 26	1130	Jan 2 1997
LOWEST DAILY MEAN	3.1	Jan 10	2.8	Sep 30	.76	Sep 1 1990
ANNUAL SEVEN-DAY MINIMUM	3.6	Jan 4	3.8	Sep 24	.97	Aug 29 1990
INSTANTANEOUS PEAK FLOW			530	May 26	2010	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.91	May 26	11.31	Jan 2 1997
INSTANTANEOUS LOW FLOW			2.0	Sep 30	2.0	Sep 30 1999
ANNUAL RUNOFF (AC-FT)	39500		31360		29490	
10 PERCENT EXCEEDS	191		155		124	
50 PERCENT EXCEEDS	12		9.6		9.0	
90 PERCENT EXCEEDS	5.9		5.2		2.1	

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1990 to current year.

PERIOD OF DAILY RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997 to current year, two times per hour.

REMARKS.—In November 1989, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature at probe with in 0.5°C.

Interruptions in water-temperature record due to loss of hydrologic communication with stream. Water-temperature data for September 1997 are unpublished but are available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 14.5°C, Aug. 12, 1998 (temperature presumably higher during period probe was out of water, Aug. 14 to Sept. 30); minimum, freezing point on many days during winter months.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 14.0°C, several days in June to August; minimum, freezing point, many days December to March

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)
OCT								
29...	1320	7.0	--	--	--	40	6.0	4.5
NOV								
30...	1300	24	--	--	--	28	2.5	1.0
DEC								
22...	1405	6.7	--	--	--	33	-7.0	.0
JAN								
22...	1340	12	--	--	--	33	2.5	1.5
FEB								
27...	1240	6.7	--	--	--	36	12.0	2.5
MAR								
24...	1410	12	--	--	--	32	9.5	3.0
APR								
16...	1140	25	--	--	--	25	12.0	1.5
21...	1640	67	--	--	--	20	8.0	2.5
MAY								
07...	1245	102	--	--	--	17	16.0	3.0
10...	1350	88	--	--	--	19	12.5	4.0
13...	1735	150	--	--	--	19	6.0	2.5
20...	1630	214	--	--	--	19	13.0	3.0
26...	1430	372	--	--	--	17	15.5	3.0
JUN								
03...	1520	152	593	99	10.4	21	3.5	3.0
09...	1510	147	--	--	--	21	14.5	6.5
14...	1255	211	--	--	--	19	23.5	7.0
21...	1415	224	--	--	--	19	21.5	9.0
JUL								
07...	1320	51	--	--	--	24	22.5	11.0
AUG								
19...	1430	5.4	--	--	--	38	23.0	12.5
SEP								
21...	1250	2.0	--	--	--	46	21.0	9.0

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)
OCT								
29...	.004	.06	.004	.010	.019	99	.02	1
NOV								
30...	.002	.15	.019	.006	.022	296	.33	5
DEC								
22...	.001	.09	.033	.008	.015	167	.02	1
JAN								
22...	.003	.08	.023	.007	.017	170	<.03	<1
FEB								
27...	.004	.08	.034	.008	.014	144	.02	1
MAR								
24...	.002	.09	.020	.005	.012	155	.03	1
APR								
16...	<.001	.09	.022	.003	.013	167	.14	2
21...	.002	.08	.021	.003	.019	215	2.0	11
MAY								
07...	<.001	.18	.017	.003	.014	144	1.4	5
10...	.001	.09	.018	.004	.015	117	1.2	5
13...	<.001	.09	.018	.004	.021	246	2.4	6
20...	.001	.08	.008	.004	.018	144	4.6	8
26...	.002	.11	.015	.003	.025	217	34	34
JUN								
03...	<.001	.06	.002	.004	.031	210	2.5	6
09...	.001	.06	.006	.005	.017	99	1.2	3
14...	<.001	.05	.003	.007	.020	117	4.0	7
21...	.002	.05	.004	.006	.019	125	3.0	5
JUL								
07...	.001	<.04	.005	.010	.025	96	.28	2
AUG								
19...	.004	.05	.019	.016	.034	87	.03	2
SEP								
21...	.004	.05	.025	.017	.032	77	.01	1

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

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	1.0	.5	.5
2	---	---	---	---	---	---	---	---	---	1.0	.0	.5
3	---	---	---	---	---	---	---	---	---	1.0	.5	.5
4	---	---	---	---	---	---	---	---	---	1.0	.0	.5
5	---	---	---	---	---	---	---	---	---	1.0	.5	.5
6	---	---	---	---	---	---	---	---	---	1.0	.5	.5
7	---	---	---	---	---	---	---	---	---	1.0	.5	.5
8	---	---	---	---	---	---	---	---	---	1.0	.5	.5
9	---	---	---	---	---	---	---	---	---	.5	.0	.5
10	---	---	---	---	---	---	---	---	---	1.0	.0	.5
11	---	---	---	---	---	---	.5	.5	.5	1.0	.5	.5
12	---	---	---	---	---	---	1.0	.5	.5	1.0	.5	.5
13	---	---	---	---	---	---	1.0	.5	.5	1.0	.5	.5
14	---	---	---	---	---	---	1.0	.5	.5	1.5	.5	1.0
15	---	---	---	---	---	---	1.0	.5	.5	1.0	.0	1.0
16	---	---	---	---	---	---	1.0	.5	.5	1.0	.0	.5
17	---	---	---	---	---	---	1.0	.5	.5	1.0	.5	.5
18	---	---	---	---	---	---	1.0	.5	.5	1.0	.0	.5
19	---	---	---	---	---	---	.5	.0	.5	.5	.0	.0
20	---	---	---	---	---	---	.0	.0	.0	.5	.0	.0
21	---	---	---	---	---	---	.0	.0	.0	.5	.0	.5
22	---	---	---	---	---	---	.0	.0	.0	1.0	.5	.5
23	---	---	---	---	---	---	.0	.0	.0	1.0	.0	.5
24	---	---	---	---	---	---	.5	.0	.0	.0	.0	.0
25	---	---	---	---	---	---	.5	.0	.0	.5	.0	.0
26	---	---	---	---	---	---	.5	.5	.5	.5	.5	.5
27	---	---	---	---	---	---	.5	.5	.5	.5	.0	.5
28	---	---	---	---	---	---	1.0	.5	.5	.5	.0	.0
29	---	---	---	---	---	---	1.0	.5	.5	.5	.0	.0
30	---	---	---	---	---	---	1.0	.5	.5	.5	.5	.5
31	---	---	---	---	---	---	1.0	.5	1.0	.5	.5	.5
MONTH	---	---	---	---	---	---	---	---	---	1.5	.0	.4
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	.5	.0	.5	2.0	.5	1.0	1.0	.5	.5	4.0	1.5	2.0
2	.5	.0	.5	2.0	.5	1.0	2.0	.5	1.0	2.0	.5	1.5
3	1.0	.5	.5	1.5	.5	1.0	1.0	.5	.5	1.0	.0	.5
4	1.0	.5	1.0	1.5	.5	1.0	2.0	.5	1.0	3.5	.0	1.5
5	1.0	.5	.5	1.5	.0	.5	1.0	.5	.5	4.5	.5	2.0
6	1.0	.0	.5	1.5	.5	1.0	1.0	.5	.5	4.0	.5	1.5
7	.5	.0	.0	1.5	.0	.5	2.0	1.0	1.0	4.0	.5	2.0
8	.5	.0	.0	1.0	.0	.5	1.0	.5	.5	4.0	1.0	2.0
9	.5	.0	.0	.5	.0	.0	.5	.5	.5	4.0	1.0	2.0
10	.5	.0	.0	.0	.0	.0	1.0	.5	.5	4.5	1.5	2.5
11	.5	.0	.0	1.0	.0	.5	1.5	1.0	1.0	4.5	1.0	2.5
12	.5	.5	.5	1.0	.0	.0	2.5	1.0	1.5	4.0	1.0	2.0
13	1.0	.5	.5	1.5	.0	.5	3.0	1.0	2.0	4.0	1.0	2.5
14	1.0	.5	.5	1.5	.5	.5	3.0	1.0	1.5	4.0	1.0	2.0
15	1.0	.5	.5	1.5	.0	1.0	3.0	1.0	2.0	4.0	.5	2.0
16	1.0	.5	1.0	2.0	.0	1.0	3.0	1.0	1.5	4.5	1.0	2.5
17	1.0	.5	1.0	2.0	.0	1.0	3.0	1.0	1.5	5.0	1.0	2.0
18	1.5	.0	1.0	2.0	.0	.5	3.0	.5	1.5	3.5	1.0	2.0
19	1.0	.5	.5	1.5	.5	1.0	3.0	.5	1.5	4.0	1.0	2.0
20	1.0	.0	.5	1.5	.5	1.0	3.0	1.0	1.5	4.0	1.0	2.0
21	.5	.0	.5	1.5	.0	.5	3.5	1.0	2.0	4.5	1.0	2.0
22	1.0	.5	.5	2.0	.0	.5	2.5	1.0	1.5	4.5	1.5	2.0
23	1.5	.5	1.0	2.5	.5	1.5	2.5	1.5	1.5	4.5	1.5	2.0
24	1.5	.5	1.0	2.5	1.0	2.0	4.0	1.0	2.5	4.0	1.5	2.5
25	1.0	.5	.5	3.0	1.5	2.0	4.5	1.0	2.5	5.0	2.0	3.0
26	1.0	.0	.5	3.0	1.0	1.5	2.5	1.0	1.5	4.5	2.0	2.5
27	2.0	1.0	1.0	2.5	1.0	1.5	3.0	1.0	2.0	5.5	2.0	3.0
28	1.5	1.0	1.0	2.5	1.0	1.5	1.5	.5	1.0	6.0	2.0	3.0
29	---	---	---	2.5	1.0	1.5	2.0	.5	1.5	5.0	2.0	3.0
30	---	---	---	2.5	.5	1.5	4.0	1.0	2.5	6.0	2.0	3.5
31	---	---	---	1.0	.5	.5	---	---	---	6.5	2.0	3.5
MONTH	2.0	.0	.6	3.0	.0	.9	4.5	.5	1.4	6.5	.0	2.2

10336580 UPPER TRUCKEE RIVER AT SOUTH UPPER TRUCKEE ROAD, NEAR MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	5.0	2.5	3.5	14.0	8.0	10.5	12.5	8.5	10.5	9.5	7.0	8.0
2	4.0	1.5	3.0	13.5	8.0	10.5	12.0	7.5	9.5	10.0	7.0	8.5
3	3.5	1.0	2.5	12.5	7.5	9.5	12.5	7.5	10.0	10.5	6.5	8.5
4	4.5	2.5	3.0	12.0	7.0	9.0	11.0	8.5	10.0	10.5	7.0	8.5
5	8.0	3.0	5.0	13.0	6.5	10.0	11.5	8.5	10.0	11.5	7.5	9.5
6	7.0	2.5	4.5	13.5	7.5	10.5	11.0	9.0	10.0	12.0	8.0	10.0
7	6.5	2.0	3.5	13.5	8.5	11.0	11.0	7.5	9.0	12.0	8.0	9.5
8	7.0	1.5	4.0	13.0	7.5	10.5	10.5	8.0	9.5	12.0	8.5	10.0
9	6.5	1.5	4.0	13.5	7.0	10.5	10.5	8.5	10.0	10.5	8.5	9.5
10	8.0	2.0	4.5	13.5	8.5	11.5	10.5	4.5	8.5	11.5	8.0	9.5
11	8.5	3.0	5.0	14.0	9.0	11.5	10.5	6.0	8.0	11.5	8.0	9.5
12	8.0	3.0	5.0	14.0	9.5	12.0	12.0	7.5	10.0	10.5	8.0	9.5
13	8.5	3.5	5.0	14.0	10.5	12.0	13.0	9.0	11.0	12.0	8.0	9.5
14	9.0	3.5	5.0	13.5	9.5	11.5	12.0	8.5	10.0	11.5	8.0	9.5
15	8.0	4.0	5.5	13.0	9.0	11.0	12.0	7.5	10.0	11.0	7.5	9.0
16	9.5	4.0	6.0	12.0	8.5	10.5	13.0	9.0	11.0	11.5	7.5	9.0
17	10.0	4.0	6.5	11.5	8.0	9.5	13.0	8.5	11.0	11.0	8.0	9.5
18	10.0	4.0	6.5	11.0	6.5	9.0	13.5	10.5	11.5	11.0	9.5	10.0
19	10.0	4.5	7.0	11.5	7.0	9.5	13.5	9.5	11.5	11.0	8.0	9.5
20	11.0	4.5	7.5	11.0	7.5	9.0	14.0	9.5	11.5	10.5	8.0	9.5
21	10.5	5.5	8.0	11.0	6.5	8.5	13.5	9.5	11.5	11.0	7.5	9.0
22	12.0	6.0	8.5	11.5	7.0	9.5	13.0	10.0	12.0	10.5	8.5	9.5
23	12.0	6.5	9.0	11.5	6.5	9.0	14.0	10.5	12.0	11.0	8.5	9.5
24	11.5	7.0	8.5	11.0	7.0	9.0	14.0	10.0	12.0	11.5	8.5	9.5
25	11.0	5.5	8.0	11.5	6.5	9.0	13.5	10.5	12.0	12.0	8.5	10.0
26	11.5	5.0	8.0	12.0	7.5	10.0	13.0	11.5	12.0	11.5	8.5	10.0
27	12.0	5.5	8.5	12.0	7.5	10.0	14.0	11.0	12.0	11.0	8.0	9.5
28	13.0	6.5	9.5	12.5	8.0	10.5	14.0	10.0	12.0	10.0	7.0	8.0
29	13.0	7.0	10.0	12.0	8.0	10.0	13.5	10.0	12.0	10.5	6.5	8.5
30	14.0	7.5	10.5	11.5	7.0	9.5	12.0	9.5	11.0	11.0	7.5	9.0
31	---	---	---	12.5	8.0	10.0	11.0	7.5	9.0	---	---	---
MONTH	14.0	1.0	6.2	14.0	6.5	10.1	14.0	4.5	10.6	12.0	6.5	9.3

10336593 GRASS LAKE CREEK NEAR MEYERS, CA

WATER-QUALITY RECORDS

LOCATION.—Lat 38°48'07", long 120°00'54", in SE 1/4 NW 1/4 sec.17, T.11 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on right bank, 50 ft upstream of Grass Lake Way, about 0.1 mi upstream from Upper Truckee River, and about 0.4 mi downstream of State Highway 89.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

PERIOD OF DAILY RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In September 1996, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor streamflows and water temperature within the Upper Truckee River–Trout Creek watershed. Records represent water temperature at probe within 0.5°C.

Water-temperature data for September 1997 were not published but are available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum, 14.5°C, Aug. 12, 13, 1998; minimum, freezing point on many days from December 1997 to April 1998.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 15.0°C, June 30, July 1, 12, 13; minimum, freezing point on many days from November to January, March to May.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.0	7.5	8.5	4.5	3.0	4.0	.5	.0	.5	1.0	.5	.5
2	8.5	7.0	7.5	3.0	1.5	2.5	1.5	.5	1.0	1.0	.5	.5
3	7.0	5.5	6.5	4.0	2.5	3.0	1.5	.0	1.0	1.0	.5	.5
4	6.0	4.0	5.0	4.0	2.0	3.0	.0	.0	.0	1.0	.5	.5
5	6.5	4.5	5.5	3.0	2.0	2.5	.0	.0	.0	1.0	.5	.5
6	7.0	4.5	6.0	2.0	1.0	1.5	.0	.0	.0	1.0	.5	1.0
7	7.0	5.0	6.0	2.0	1.0	1.5	.0	.0	.0	1.0	1.0	1.0
8	7.0	5.5	6.0	1.0	.5	1.0	.5	.0	.5	1.0	.5	.5
9	6.0	4.0	5.0	1.0	.0	.5	.5	.0	.5	.5	.5	.5
10	5.0	3.0	4.0	1.5	.5	1.0	1.0	.0	.5	1.0	.5	.5
11	5.5	3.0	4.5	2.0	1.0	1.5	1.0	1.0	1.0	1.0	.5	1.0
12	6.0	4.0	5.0	1.0	.0	.5	1.0	1.0	1.0	1.0	1.0	1.0
13	6.5	4.5	5.5	2.0	1.0	1.5	1.5	1.0	1.0	1.0	1.0	1.0
14	5.5	4.0	5.0	2.5	1.5	2.0	1.0	.5	.5	1.5	1.0	1.0
15	5.0	3.5	4.5	2.5	1.5	2.0	1.0	.5	1.0	1.5	1.0	1.5
16	4.0	2.5	3.0	2.5	1.0	2.0	1.5	1.0	1.0	1.0	1.0	1.0
17	4.0	2.0	2.5	2.5	.5	1.5	1.0	1.0	1.0	1.5	1.0	1.5
18	4.0	2.0	3.0	1.0	.5	.5	1.0	.5	1.0	1.5	.5	1.0
19	4.0	2.0	3.0	1.0	.0	.5	1.0	.0	.5	1.0	.5	.5
20	4.0	2.5	3.5	1.5	.0	1.0	.0	.0	.0	1.0	.0	.5
21	4.5	3.0	4.0	2.5	1.5	2.0	.0	.0	.0	.5	.0	.5
22	5.0	3.5	4.5	2.0	1.0	1.5	.0	.0	.0	1.0	.5	.5
23	5.0	3.0	4.0	2.5	.5	2.0	.0	.0	.0	1.0	.0	.5
24	5.0	3.5	4.5	1.0	.5	1.0	.0	.0	.0	.5	.0	.0
25	3.5	3.0	3.5	1.5	1.0	1.0	.5	.0	.0	.5	.0	.5
26	5.0	3.0	4.0	2.0	1.0	1.5	1.0	.5	.5	.5	.5	.5
27	5.0	3.5	4.0	2.5	1.5	2.0	1.0	.5	1.0	.5	.0	.5
28	5.5	4.0	4.5	2.0	1.0	1.5	1.0	1.0	1.0	.5	.0	.0
29	5.0	3.0	4.5	1.5	.5	1.0	1.0	.5	1.0	.5	.0	.5
30	3.0	2.0	2.5	2.0	.0	1.5	1.0	1.0	1.0	.5	.5	.5
31	4.0	1.5	3.0	---	---	---	1.0	1.0	1.0	1.0	.5	.5
MONTH	9.0	1.5	4.6	4.5	.0	1.6	1.5	.0	.6	1.5	.0	.7

10336608 ECHO LAKE NEAR PHILLIPS, CA

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

DRAINAGE AREA.—4.84 mi².

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

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

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

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 1,968 acre-ft, July 8, 9, 1997, gage height, 6.26 ft; minimum, no storage on several days in most years.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 1,932 acre-ft, July 13, gage height, 6.13 ft; minimum contents, no storage on many days.

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

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

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1086	81	130	0	0	114	123	195	500	1916	e1890	1831
2	991	66	99	0	0	114	120	216	506	1906	e1890	1831
3	958	57	155	0	0	144	120	238	429	1848	e1890	1828
4	910	45	123	0	0	120	93	213	340	1838	e1890	1825
5	873	42	114	0	0	111	127	199	295	1822	e1890	1822
6	827	60	102	0	0	102	127	206	319	1825	e1890	1812
7	762	78	81	0	0	93	123	244	376	1831	e1890	1812
8	774	66	75	0	0	93	141	271	402	1851	e1890	1809
9	780	57	105	0	15	111	117	283	415	1870	e1890	1805
10	787	60	96	0	0	96	105	280	415	1896	1890	1786
11	797	66	81	0	127	93	93	286	446	1900	1922	1779
12	768	60	72	0	96	90	90	343	533	1926	1919	1779
13	706	60	63	0	105	90	93	372	706	1932	1906	1760
14	655	36	57	0	96	87	96	346	892	1887	1896	1724
15	604	54	51	0	90	84	99	319	1106	1874	1893	1687
16	554	60	54	0	155	84	111	301	1329	1857	1893	1648
17	515	69	48	0	144	84	130	298	1499	1838	1883	1612
18	470	66	42	33	134	87	167	331	1674	e1890	1883	1576
19	426	60	45	63	127	87	199	356	1763	e1890	1880	1541
20	389	60	51	69	161	93	226	372	1851	e1880	1874	1508
21	359	6	51	51	216	93	250	395	1916	e1890	1874	1472
22	331	12	45	15	202	87	244	433	1922	e1890	1870	1445
23	301	75	48	27	179	90	223	482	1906	e1890	1867	1415
24	304	54	45	21	120	90	206	518	1909	e1890	1867	1382
25	304	36	36	0	144	90	192	551	1857	e1890	1864	1350
26	286	39	30	0	120	96	223	575	1825	e1890	1864	1316
27	274	27	18	0	105	120	226	584	1880	e1890	1857	1282
28	213	24	15	0	120	108	223	584	1919	e1890	1857	1243
29	155	69	15	0	---	130	209	524	1929	e1890	1870	1207
30	114	144	0	0	---	114	192	470	1919	e1890	1841	1154
31	87	---	0	0	---	134	---	470	---	e1890	1835	---
MAX	1086	144	155	69	216	144	250	584	1929	1932	1922	1831
MIN	87	6	0	0	0	84	90	195	295	1822	1835	1154
a	0.29	0.47	0.00	0.00	0.40	0.44	0.62	1.50	6.09		5.83	3.68
b	-1106	+57	-144	0	+120	+14	+58	+278	+1449	-29	-55	-681
c	788	0	0	0	0	0	0	0	0	0	0	581
CAL YR 1998				b -69	c 788							
WTR YR 1999	MAX 1932	MIN 0	b -39	c 1370								

e Estimated.

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

b Change in contents, in acre-feet.

c Release, in acre-feet, through Echo Lake Conduit, provided by Pacific Gas & Electric Co.

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA

LOCATION.—Lat 38°50'55", long 120°01'34", in NE 1/4 NE 1/4 sec.31, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, 500 ft downstream of U.S. Highway 50 bridge, 1 mi southwest of Meyers, and 7.5 mi upstream of Lake Tahoe.

DRAINAGE AREA.—34.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—June 1990 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,310 ft above sea level, from topographic map. June 1990 to Sept. 5, 1997, at present site, datum 3.00 ft higher.

REMARKS.—Records fair except for estimated daily discharges, which are poor. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,120 ft³/s, Jan. 2, 1997, gage height, 8.95 ft; minimum daily, 1.2 ft³/s, Dec. 22, 1990.

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)
April 20	2200	218	5.80	May 26	2130	1,230	8.09
May 12	2145	518	6.73	June 14	2115	610	6.95

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	24	58	25	26	39	52	127	556	236	33	13
2	30	21	46	24	26	39	50	152	491	227	32	13
3	19	18	51	24	26	e39	49	131	375	207	31	12
4	15	17	47	24	26	e39	48	118	285	176	31	12
5	14	15	44	24	26	39	48	123	264	151	31	12
6	13	15	43	24	e26	37	49	174	329	134	31	11
7	13	19	39	24	e26	35	47	251	333	121	30	11
8	13	18	37	23	e26	33	e47	254	299	113	29	11
9	13	16	33	23	e26	e35	e46	235	301	100	30	11
10	12	16	32	23	e27	37	45	226	317	94	40	11
11	12	17	31	23	e28	36	44	287	373	93	40	13
12	12	16	30	23	e32	35	43	376	388	92	29	11
13	12	16	30	23	35	36	46	361	415	91	25	11
14	12	17	29	23	32	37	55	303	454	90	22	10
15	12	17	28	26	30	36	62	260	473	82	20	10
16	12	17	28	35	33	36	72	253	445	73	19	10
17	12	19	28	37	e40	38	93	302	439	63	18	10
18	12	18	28	51	44	42	121	347	423	57	17	10
19	12	17	28	64	39	44	158	367	400	55	17	11
20	12	17	28	67	38	44	178	394	383	53	16	11
21	11	19	e28	56	e45	42	183	424	406	51	16	11
22	11	21	e28	47	47	42	152	510	439	49	15	10
23	11	28	e28	e47	43	44	120	606	460	45	16	10
24	12	35	e28	48	40	45	110	671	445	41	15	10
25	13	27	e27	40	39	49	135	802	354	40	14	9.9
26	14	24	27	36	35	58	182	921	274	39	14	9.7
27	16	23	27	33	33	61	179	793	209	38	17	9.5
28	27	22	26	32	33	59	152	770	210	36	15	9.3
29	37	28	25	30	---	57	119	666	232	35	13	9.3
30	29	56	25	29	---	55	111	558	238	34	13	9.2
31	23	---	25	28	---	e53	---	579	---	33	13	---
TOTAL	497	633	1012	1036	927	1321	2796	12341	11010	2749	702	321.9
MEAN	16.0	21.1	32.6	33.4	33.1	42.6	93.2	398	367	88.7	22.6	10.7
MAX	37	56	58	67	47	61	183	921	556	236	40	13
MIN	11	15	25	23	26	33	43	118	209	33	13	9.2
AC-FT	986	1260	2010	2050	1840	2620	5550	24480	21840	5450	1390	638

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

MEAN	9.45	18.1	24.2	59.2	42.2	70.0	119	301	272	106	21.4	12.5
MAX	22.6	78.5	96.4	328	125	132	206	569	709	452	78.6	37.5
(WY)	1996	1997	1997	1997	1996	1995	1997	1993	1995	1995	1995	1995
MIN	3.39	3.33	3.15	4.37	6.69	28.2	47.2	85.0	20.4	4.81	2.28	2.50
(WY)	1995	1991	1991	1991	1991	1994	1991	1992	1992	1994	1994	1994

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1990 - 1999

ANNUAL TOTAL	40876.3		35345.9					
ANNUAL MEAN	112		96.8		91.0			
HIGHEST ANNUAL MEAN					169		1995	
LOWEST ANNUAL MEAN					26.1		1994	
HIGHEST DAILY MEAN	700	Jun 7	921	May 26	2000	Jan 2	1997	
LOWEST DAILY MEAN	8.3	Jan 1	9.2	Sep 30	1.2	Dec 22	1990	
ANNUAL SEVEN-DAY MINIMUM	12	Oct 17	9.6	Sep 24	1.8	Dec 20	1990	
INSTANTANEOUS PEAK FLOW			1230		5120		Jan 2 1997	
INSTANTANEOUS PEAK STAGE			8.09		8.95		Jan 2 1997	
ANNUAL RUNOFF (AC-FT)	81080		70110		65960			
10 PERCENT EXCEEDS	355		322		261			
50 PERCENT EXCEEDS	35		35		27			
90 PERCENT EXCEEDS	15		12		4.7			

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1990 to current year.

WATER TEMPERATURE: September 1997 to current year.

PERIOD OF DAILY RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In November 1989, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature at probe within 0.5°C. Water-temperature data for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum, 17.5°C, Aug. 7, 30, 31, 1998; minimum, freezing point on many days from December 1997 to March 1998.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 17.0°C, July 13, 14, 26; minimum, freezing point, many days from November to May.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)
OCT								
29...	1225	32	--	--	--	36	6.0	6.5
NOV								
30...	1130	50	--	--	--	49	4.5	2.5
DEC								
22...	1320	20	--	--	--	57	-7.0	.0
JAN								
22...	1220	50	--	--	--	46	2.5	2.0
FEB								
27...	1100	32	--	--	--	70	6.0	2.5
MAR								
24...	1325	42	--	--	--	79	8.0	4.0
APR								
16...	1055	62	--	--	--	66	9.0	2.0
21...	1525	171	--	--	--	44	9.0	5.0
MAY								
07...	1140	204	--	--	--	38	16.0	3.5
10...	1235	190	--	--	--	37	13.0	4.0
13...	1625	295	--	--	--	33	7.5	5.0
20...	1520	354	--	--	--	29	16.0	5.5
26...	1315	688	--	--	--	22	23.5	5.5
JUN								
03...	1510	332	598	98	10.2	26	4.5	3.5
09...	1355	261	--	--	--	27	14.5	6.0
14...	1140	386	--	--	--	23	24.0	6.0
21...	1630	344	--	--	--	22	21.5	11.0
JUL								
07...	1245	124	--	--	--	30	23.0	13.0
AUG								
19...	1325	19	--	--	--	65	23.0	14.5
SEP								
21...	1215	12	--	--	--	85	20.5	11.5

PYRAMID AND WINNEMUCCA LAKES BASIN

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT								
29...	.003	.09	.014	.002	.011	96	.17	2
NOV								
30...	.002	.12	.020	.003	.015	271	.54	4
DEC								
22...	<.001	.10	.019	.003	.011	195	.11	2
JAN								
22...	.003	.06	.027	.002	.011	124	.14	1
FEB								
27...	.002	.09	.038	.004	.009	154	.17	2
MAR								
24...	.002	.09	.023	.002	.009	180	.11	1
APR								
16...	<.001	.08	.030	.005	.012	204	.33	2
21...	.002	.14	.026	.002	.019	274	3.2	7
MAY								
07...	.015	.14	.009	.001	.032	375	9.4	17
10...	.001	.09	.023	.002	.017	212	3.1	6
13...	<.001	.13	.016	.002	.029	387	13	16
20...	<.001	.11	.003	.002	.017	191	11	12
26...	.003	.28	.019	.003	.058	826	115	62
JUN								
03...	<.001	.06	.010	.003	.023	311	16	18
09...	.004	.05	.011	.003	.019	138	7.0	10
14...	.001	.10	.006	.005	.020	163	17	16
21...	<.001	.06	.007	.003	.015	218	5.6	6
JUL								
07...	.003	.06	.008	.006	.022	98	1.3	4
AUG								
19...	.002	.07	.011	.006	.023	148	.10	2
SEP								
21...	.002	.07	.009	.005	.024	171	.03	1

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

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.0	8.0	10.0	6.5	4.5	5.5	1.0	.0	.5	1.0	.0	.5
2	11.5	9.5	10.5	5.0	3.0	4.0	2.0	.5	1.5	1.0	.0	.5
3	10.0	7.5	8.5	5.5	3.5	4.5	2.0	.0	1.0	.5	.0	.5
4	9.0	5.5	7.5	5.5	3.0	4.0	.0	.0	.0	1.0	.0	.5
5	9.0	5.0	7.0	4.5	3.0	3.5	.0	.0	.0	1.0	.0	.5
6	9.5	5.5	7.5	3.5	1.0	2.0	.0	.0	.0	1.5	.0	1.0
7	9.5	5.5	7.5	2.5	.5	1.5	.5	.0	.0	2.0	.5	1.5
8	10.0	6.0	8.0	3.0	1.5	2.0	.5	.0	.5	1.0	.0	.5
9	9.5	5.5	7.5	3.0	1.0	2.0	.5	.0	.0	1.0	.0	.5
10	8.5	4.5	6.5	2.5	1.5	2.0	.5	.0	.5	1.0	.0	.5
11	9.0	4.5	6.5	3.0	1.0	2.0	1.0	.5	.5	2.5	.0	1.0
12	8.5	5.0	7.0	3.0	.5	1.5	1.5	.5	1.0	2.0	.5	1.5
13	9.5	6.0	7.5	3.5	1.0	2.0	2.0	.5	1.0	2.5	1.0	1.5
14	9.0	5.5	7.5	4.0	1.5	2.5	1.5	.5	1.0	3.0	1.0	2.0
15	8.5	5.5	7.0	4.0	2.0	3.0	1.5	.5	1.0	3.0	1.5	2.5
16	7.5	4.5	6.0	4.0	1.5	3.0	2.0	.5	1.5	2.0	1.0	1.5
17	7.0	3.5	5.0	3.0	1.0	2.0	2.0	.5	1.0	2.5	1.0	2.0
18	7.5	3.5	5.5	2.5	.5	1.5	1.5	.0	1.0	2.0	.0	1.0
19	7.5	3.5	5.5	2.0	.5	1.0	1.0	.0	.5	1.0	.0	.5
20	7.5	4.0	6.0	2.5	.5	1.5	.0	.0	.0	1.0	.0	.5
21	7.5	4.0	6.0	4.0	2.0	3.0	.0	.0	.0	1.0	.0	.5
22	8.0	4.5	6.0	3.0	.5	2.0	.0	.0	.0	2.0	.5	1.5
23	8.0	4.5	6.0	3.0	1.0	2.5	.0	.0	.0	2.0	.0	.5
24	7.0	4.5	6.0	2.5	1.0	2.0	.5	.0	.0	.5	.0	.0
25	5.5	4.0	5.0	3.0	1.5	2.0	.5	.0	.5	1.0	.0	.5
26	7.0	4.0	5.5	3.0	1.5	2.0	.5	.5	.5	1.5	.0	.5
27	7.0	4.0	5.5	3.0	2.0	2.5	1.0	.5	.5	.5	.0	.5
28	7.0	5.5	6.0	2.5	1.5	2.0	1.0	.5	.5	.5	.0	.5
29	7.0	5.0	6.0	2.0	.0	1.0	1.0	.0	.5	1.0	.0	.5
30	5.5	4.0	4.5	2.5	.0	1.5	1.5	.0	.5	1.0	.0	.5
31	5.5	3.0	4.5	---	---	---	2.0	1.0	1.5	1.0	.5	.5
MONTH	12.0	3.0	6.6	6.5	.0	2.4	2.0	.0	.5	3.0	.0	.9
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	.0	.5	4.5	2.0	3.0	2.5	.0	1.0	5.5	1.5	3.5
2	2.0	.0	1.0	4.0	1.0	2.5	4.0	.5	2.0	3.5	1.5	2.0
3	2.5	.5	1.5	3.0	1.5	2.5	2.0	.0	.5	2.0	.0	1.0
4	2.5	1.0	2.0	3.5	1.0	2.0	4.5	.0	1.5	5.5	.5	2.5
5	2.0	1.0	1.5	2.5	.5	1.5	2.0	.0	.5	6.5	1.0	3.5
6	1.5	.0	.5	3.5	1.5	2.5	2.0	.0	.5	6.5	1.0	3.0
7	.5	.0	.0	3.5	1.0	2.5	2.0	.5	1.0	5.5	.5	2.5
8	.5	.0	.5	2.0	1.0	1.5	1.0	.0	.0	5.5	.5	2.5
9	.0	.0	.0	1.0	.0	.5	1.0	.0	.0	5.5	1.0	3.0
10	.0	.0	.0	2.5	.0	1.0	1.5	.0	.5	5.0	1.5	3.0
11	.5	.0	.0	3.5	1.0	2.0	3.5	1.0	2.0	7.0	2.0	4.0
12	.5	.0	.5	4.0	.5	2.0	5.0	.5	2.5	6.0	2.0	3.5
13	2.0	.5	1.0	5.0	1.0	3.0	6.0	.5	3.0	5.5	1.5	3.0
14	2.0	.5	1.5	5.0	2.0	3.0	5.5	.5	3.0	5.5	1.5	3.0
15	2.5	.0	1.5	4.5	1.5	3.0	5.5	.5	3.0	5.5	1.0	3.0
16	2.0	1.0	1.5	5.5	1.5	3.5	5.5	.5	2.5	6.5	1.5	3.5
17	2.5	.5	1.5	5.5	1.5	3.5	5.5	1.0	3.0	7.5	1.5	4.0
18	2.0	.0	1.0	5.0	2.0	3.5	5.5	.5	2.5	5.5	2.0	3.5
19	2.0	.0	1.0	4.5	2.0	3.5	5.0	1.0	2.5	6.5	2.0	3.5
20	1.5	.0	.5	3.5	2.0	3.0	5.0	1.0	3.0	6.0	2.0	3.5
21	.5	.0	.0	4.0	1.5	3.0	5.0	1.0	2.5	7.0	2.0	4.0
22	2.0	.0	1.0	5.0	1.0	3.0	3.5	1.5	2.5	7.0	2.0	4.0
23	2.5	1.0	1.5	6.0	2.0	3.5	3.5	1.5	2.0	6.5	2.0	4.0
24	3.0	1.0	2.0	5.0	2.0	3.5	5.5	1.5	3.0	5.5	2.5	3.5
25	2.0	.0	1.0	6.5	2.5	4.0	6.5	1.5	3.5	7.0	2.5	4.5
26	3.0	.0	1.5	5.5	2.5	4.0	3.5	1.5	2.5	6.0	2.5	4.0
27	4.5	2.0	3.0	5.0	1.5	3.0	5.5	1.5	3.0	7.0	2.5	4.5
28	3.5	1.5	2.5	5.0	1.0	2.5	2.5	.5	1.5	7.0	2.5	4.5
29	---	---	---	4.0	1.0	2.5	3.0	.5	1.5	5.5	2.5	4.0
30	---	---	---	4.0	.5	2.5	6.0	1.5	3.5	7.5	3.0	5.0
31	---	---	---	1.5	.0	.5	---	---	---	7.5	3.0	5.0
MONTH	4.5	.0	1.1	6.5	.0	2.6	6.5	.0	2.0	7.5	.0	3.5

PYRAMID AND WINNEMUCCA LAKES BASIN

103366092 UPPER TRUCKEE RIVER AT HIGHWAY 50, ABOVE MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	6.5	3.5	4.5	15.0	11.0	13.0	---	---	---	12.5	8.0	10.5
2	5.0	2.5	4.0	15.0	11.0	13.0	---	---	---	11.0	8.0	10.0
3	3.5	2.0	3.0	14.0	10.0	12.0	---	---	---	13.5	7.5	10.5
4	5.0	2.5	3.5	13.0	9.5	11.5	---	---	---	14.0	8.0	11.0
5	9.0	4.0	6.0	14.0	9.0	11.5	---	---	---	15.0	8.5	11.5
6	8.0	4.0	6.0	14.5	10.0	12.5	---	---	---	15.5	9.0	12.0
7	7.5	2.5	5.0	15.0	10.5	13.0	---	---	---	15.5	9.0	12.0
8	7.5	2.5	5.0	15.0	10.5	12.5	---	---	---	15.5	9.5	12.5
9	7.5	2.5	5.0	15.0	10.0	12.5	---	---	---	13.0	10.0	12.0
10	8.5	3.0	5.5	16.0	11.0	13.5	---	---	---	13.5	9.0	11.5
11	9.0	4.0	6.0	16.0	12.0	14.0	13.5	6.5	9.5	14.5	9.5	12.0
12	9.0	4.0	6.5	16.5	12.5	14.5	15.0	9.0	12.0	14.5	9.5	12.0
13	10.5	4.5	7.0	17.0	13.5	15.0	---	---	---	15.0	9.5	12.0
14	10.5	4.5	7.0	17.0	13.0	14.5	---	---	---	15.0	9.0	12.0
15	10.0	5.0	7.0	16.5	12.0	14.5	---	---	---	14.5	9.0	11.5
16	11.0	5.0	7.5	16.0	11.5	13.5	---	---	---	15.0	9.0	12.0
17	11.5	5.5	8.0	15.5	10.5	13.0	---	---	---	14.0	9.0	11.5
18	11.0	5.5	8.0	15.0	9.5	12.5	---	---	---	13.0	11.0	12.0
19	11.5	6.5	8.5	15.5	10.0	12.5	---	---	---	14.5	9.0	11.5
20	12.0	6.5	9.0	15.0	10.0	12.5	16.5	10.5	13.5	14.0	9.5	11.5
21	11.5	7.5	9.5	15.0	9.5	12.0	16.5	10.5	13.5	14.0	9.0	11.5
22	12.5	8.0	10.5	16.0	10.0	13.0	15.5	11.0	13.0	13.0	9.5	11.5
23	13.5	9.0	11.0	15.5	10.5	13.0	16.0	10.5	13.0	14.0	9.5	11.5
24	13.0	9.5	11.0	15.5	10.0	12.5	16.5	10.5	13.5	14.5	9.0	11.5
25	12.0	8.5	10.0	16.0	10.0	13.0	16.5	11.0	13.5	15.0	9.5	12.0
26	12.0	7.5	10.0	17.0	11.0	13.5	14.0	12.0	13.0	15.0	9.5	12.0
27	12.5	7.5	10.0	16.5	11.0	---	15.5	11.0	13.0	14.0	9.0	11.5
28	13.5	8.5	11.0	---	---	---	16.5	11.0	13.5	13.0	8.0	10.0
29	14.0	9.5	12.0	---	---	---	16.5	11.0	13.5	12.5	7.5	10.0
30	15.0	10.0	12.5	---	---	---	14.0	11.0	12.5	13.0	8.0	10.0
31	---	---	---	---	---	---	14.5	8.5	11.0	---	---	---
MONTH	15.0	2.0	7.7	---	---	---	---	---	---	15.5	7.5	11.4

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA

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

DRAINAGE AREA.—54.9 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. Datum of gage is 6,229.04 ft above sea level. Prior to Apr. 26, 1984, at datum 2.00 ft higher. Prior to Oct. 19, 1993, at site 200 ft upstream at same datum.

REMARKS.—Records good except estimated daily discharges, which are fair. Two small dams may cause slight regulation at times. Some small diversions for domestic use upstream from station. Echo Lake conduit (station 11434500) diverts from Echo Lake (station 10336608), to South Fork American River Basin. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,480 ft³/s, Jan. 2, 1997, gage height, 9.95 ft; minimum daily, 0.70 ft³/s, Aug. 22 to Sept. 5, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 300 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 27	0600	1,020	6.44				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	26	e60	e34	e45	e82	96	186	654	287	31	14
2	45	25	e66	e33	e45	e93	87	237	619	278	30	14
3	31	21	e62	e34	44	e100	84	217	500	258	29	14
4	22	20	e54	e34	45	e102	89	188	403	230	e28	13
5	21	19	e54	e34	44	e96	80	181	351	203	e29	14
6	20	18	e52	e35	40	e90	92	228	406	184	e30	13
7	17	24	e48	e34	e53	e83	77	328	423	162	31	13
8	18	26	e45	e35	e62	e82	71	347	378	151	29	13
9	19	22	e44	e38	e74	e76	89	331	382	136	28	14
10	18	22	e42	e36	e75	e74	74	309	385	125	34	13
11	17	24	e41	e32	e64	70	72	357	432	122	57	14
12	17	22	e39	e29	e61	67	74	449	471	123	40	14
13	15	23	e38	26	e57	68	86	469	471	118	33	13
14	16	24	e37	27	e57	74	106	400	518	120	28	13
15	17	26	36	e33	e57	73	121	354	544	110	26	11
16	18	26	34	e36	e55	76	134	341	516	99	24	11
17	18	e26	33	e36	e61	86	168	375	507	84	23	11
18	18	e26	34	e43	e63	98	213	454	493	73	22	11
19	22	e26	e34	e46	e63	104	280	460	472	68	21	12
20	21	26	e34	e48	e61	97	300	506	446	64	20	12
21	18	28	e34	e47	e59	88	304	512	461	61	19	12
22	18	e35	e34	e47	e61	90	257	588	487	54	19	11
23	18	e41	e34	e47	e60	96	196	674	516	53	19	11
24	20	e43	e34	e46	e60	102	174	771	507	47	18	11
25	26	44	e35	e46	e59	112	199	819	440	45	18	11
26	24	38	e35	e46	e59	133	276	893	354	43	18	11
27	26	35	e35	e46	e63	137	281	903	277	39	20	10
28	29	35	e35	e46	e71	123	242	863	266	36	19	9.4
29	47	e45	e35	e45	---	116	191	825	285	34	18	9.4
30	36	e55	e35	e45	---	108	171	644	291	33	17	10
31	26	---	e35	e45	---	106	---	673	---	32	15	---
TOTAL	711	871	1268	1209	1618	2902	4684	14882	13255	3472	793	362.8
MEAN	22.9	29.0	40.9	39.0	57.8	93.6	156	480	442	112	25.6	12.1
MAX	47	55	66	48	75	137	304	903	654	287	57	14
MIN	15	18	33	26	40	67	71	181	266	32	15	9.4
AC-FT	1410	1730	2520	2400	3210	5760	9290	29520	26290	6890	1570	720

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1999, BY WATER YEAR (WY)

MEAN	15.8	41.8	52.4	70.0	71.2	112	167	312	272	96.0	22.4	13.8
MAX	72.1	225	218	484	307	305	300	567	795	448	102	55.3
(WY)	1983	1984	1982	1997	1986	1986	1982	1982	1983	1995	1983	1983
MIN	2.60	7.36	8.07	8.00	10.5	21.2	64.0	55.3	23.5	4.65	1.15	1.39
(WY)	1989	1991	1991	1991	1991	1977	1977	1977	1992	1994	1994	1988

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1972 - 1999	
ANNUAL TOTAL	53147		46027.8			
ANNUAL MEAN	146		126		107	
HIGHEST ANNUAL MEAN					203	
LOWEST ANNUAL MEAN					29.2	
HIGHEST DAILY MEAN	1260	Mar 24	903	May 27	3150	Jan 2 1997
LOWEST DAILY MEAN	15	Oct 13	9.4	Sep 28	.70	Aug 22 1994
ANNUAL SEVEN-DAY MINIMUM	17	Jan 1	10	Sep 24	.70	Aug 22 1994
INSTANTANEOUS PEAK FLOW			1020	May 27	5480	Jan 2 1997
INSTANTANEOUS PEAK STAGE			6.44	May 27	9.95	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	105400		91300		77180	
10 PERCENT EXCEEDS	407		404		295	
50 PERCENT EXCEEDS	50		46		41	
90 PERCENT EXCEEDS	19		17		8.0	

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.

SPECIFIC CONDUCTANCE: March 1981 to September 1983.

WATER TEMPERATURE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1992, September 1997 to current year.

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

PERIOD OF DAILY RECORD.—October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1992, September 1997 to current year.

SPECIFIC CONDUCTANCE: March 1981 to September 1983.

WATER TEMPERATURE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1992, September 1997 to current year.

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

INSTRUMENTATION.—Water-temperature recorder September 1997 to current year, two times per hour.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature at probe within 0.5°C.

Interruptions in record due to loss of hydrologic communication with stream and (or) instrument malfunction. Water-temperature data for September 1997 were not published but are available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum, 26.0°C, Aug. 18, 1982; minimum, freezing point on many days during winter months in most years.

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

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

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 20.5°C, Aug. 29; minimum, freezing point, many days November to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)
OCT									
28...	0950	24	607	102	10.0	7.4	80	9.5	6.2
NOV									
30...	1030	55	--	--	--	--	59	5.5	2.0
DEC									
22...	1130	34	--	--	--	--	70	-7.0	.0
JAN									
22...	1110	47	--	--	--	--	63	3.5	1.0
FEB									
26...	1630	59	--	--	--	--	91	5.0	2.0
MAR									
18...	1620	98	--	--	--	--	89	12.5	6.5
24...	1120	95	--	--	--	--	82	9.5	4.5
APR									
16...	0945	126	--	--	--	--	75	5.0	2.0
21...	1320	276	--	--	--	--	49	12.0	3.5
28...	1405	238	--	--	--	--	51	1.0	2.5
MAY									
07...	0910	330	--	--	--	--	40	10.0	2.5
10...	1700	284	--	--	--	--	53	13.5	7.5
13...	1440	418	--	--	--	--	34	10.5	6.0
20...	1400	470	--	--	--	--	30	15.5	6.0
26...	1100	926	--	--	--	--	22	16.5	6.0
JUN									
03...	1240	496	600	98	10.2	--	26	6.5	3.5
09...	0950	388	--	--	--	--	27	10.0	4.0
14...	0805	557	--	--	--	--	22	12.5	5.0
21...	1130	443	--	--	--	--	24	19.0	9.0
JUL									
07...	1100	166	--	--	--	--	32	22.5	13.0
AUG									
19...	1050	22	--	--	--	--	73	18.5	15.5
SEP									
21...	1000	13	--	--	--	--	91	14.5	12.0

PYRAMID AND WINNEMUCCA LAKES BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (0062-5)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT								
28...	.003	.11	.015	.004	.015	263	.06	1
NOV								
30...	.001	.32	.022	.009	.053	759	3.1	21
DEC								
22...	<.001	.14	.032	.003	.021	403	.28	3
JAN								
22...	.008	.25	.042	.005	.068	1030	3.8	30
FEB								
26...	.010	.18	.040	.006	.029	583	1.9	12
MAR								
18...	.001	.15	.021	.007	.028	666	2.9	11
24...	.003	.17	.023	.006	.023	466	1.5	6
APR								
16...	<.001	.17	.029	.004	.023	425	2.4	7
21...	.003	.19	.028	.003	.039	823	23	31
28...	.002	.10	.031	.002	.016	224	7.7	12
MAY								
07...	<.001	.22	.014	.003	.039	542	41	46
10...	.002	.12	.022	.003	.027	395	11	14
13...	<.001	.59	.016	.003	.048	1060	46	41
20...	.001	.20	.016	.003	.026	347	39	31
26...	.004	.24	.016	.010	.066	1230	110	44
JUN								
03...	<.001	.13	.006	.001	.032	514	25	19
09...	.002	.08	.013	.002	.021	225	21	20
14...	.002	.10	.004	.005	.055	507	48	32
21...	.004	.08	.007	.005	.027	492	105	88
JUL								
07...	.001	.13	.013	.006	.028	247	2.7	6
AUG								
19...	<.001	.08	.014	.005	.026	237	.24	4
SEP								
21...	.002	.06	.019	.004	.027	314	.14	4

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

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.5	10.0	12.0	8.0	5.0	6.5	1.0	.0	.5	.5	.0	.0
2	13.0	8.5	11.0	6.0	3.0	4.5	3.5	.0	1.5	.5	.0	.0
3	11.5	8.5	10.0	6.5	4.0	5.0	2.5	.0	1.5	.5	.0	.0
4	11.5	7.0	9.0	6.5	3.5	5.0	.5	.0	.0	.5	.0	.0
5	11.5	7.0	9.0	5.5	3.5	4.5	.0	.0	.0	.5	.0	.0
6	11.0	7.0	9.0	4.0	1.5	3.0	.0	.0	.0	.5	.0	.0
7	11.5	7.0	9.0	2.5	1.0	1.5	.0	.0	.0	1.0	.0	.0
8	11.5	8.0	9.5	2.5	.5	1.5	.5	.0	.0	.5	.0	.0
9	10.5	7.5	8.5	3.5	1.0	2.0	.5	.0	.0	.5	.0	.0
10	10.0	6.5	8.0	3.5	1.5	2.5	.5	.0	.0	.5	.0	.0
11	10.0	6.5	8.0	5.0	1.5	3.0	.5	.0	.0	1.0	.0	.0
12	9.5	7.0	8.0	3.5	.5	2.0	1.0	.0	.0	1.5	.0	.5
13	10.0	6.5	8.0	4.0	1.0	2.5	1.0	.0	.5	2.0	.0	1.0
14	10.0	7.5	8.5	5.0	1.5	3.5	1.0	.0	.5	2.0	.5	1.5
15	10.0	7.5	8.0	5.0	2.0	3.5	1.5	.0	.5	4.0	2.0	3.0
16	8.5	6.0	7.0	5.0	2.0	3.5	2.0	.0	1.0	2.0	1.0	1.5
17	7.5	4.5	6.0	3.5	1.5	2.5	2.0	.0	1.0	3.5	1.0	2.0
18	8.0	5.0	6.0	2.5	.0	1.5	1.5	.0	1.0	2.0	.0	1.0
19	8.0	5.0	6.0	2.5	.0	1.0	1.0	.0	.0	.5	.0	.0
20	8.5	5.0	6.5	2.5	.0	1.5	.0	.0	.0	.5	.0	.0
21	8.5	5.0	7.0	4.5	2.0	3.0	.0	.0	.0	.0	.0	.0
22	9.0	5.5	7.0	3.0	1.0	2.5	.0	.0	.0	2.5	.0	1.0
23	9.0	5.0	7.0	3.5	2.0	3.0	.0	.0	.0	1.0	.0	.5
24	7.5	5.0	6.5	3.0	.0	1.5	.0	.0	.0	.0	.0	.0
25	5.0	4.0	4.5	4.0	.5	2.5	.0	.0	.0	.5	.0	.0
26	8.0	4.0	6.0	3.5	1.0	2.5	.5	.0	.0	1.0	.0	.5
27	8.0	5.0	6.5	3.0	2.0	2.5	.5	.0	.0	1.5	.0	.5
28	9.0	6.5	7.0	3.0	1.5	2.5	.5	.0	.0	.5	.0	.0
29	7.0	5.5	6.5	2.0	.5	1.0	.5	.0	.0	.5	.0	.0
30	6.5	3.5	5.0	3.0	.0	1.5	.5	.0	.0	1.0	.0	.0
31	6.0	2.5	4.5	---	---	---	.5	.0	.0	.5	.0	.0
MONTH	13.5	2.5	7.6	8.0	.0	2.8	3.5	.0	.3	4.0	.0	.4
	FEBRUARY			MARCH			APRIL			MAY		
1	1.0	.0	.5	5.5	1.5	3.0	3.5	.0	1.5	8.5	3.5	6.0
2	1.5	.0	.5	5.0	.5	2.5	6.5	.5	3.5	6.5	3.0	4.5
3	3.0	.0	1.5	4.5	1.0	2.5	4.5	.0	1.5	4.0	1.0	3.0
4	4.0	1.0	2.5	4.0	.5	2.0	6.5	.0	2.5	8.5	1.0	4.5
5	3.5	.5	2.0	3.0	.0	1.5	3.5	.0	1.0	10.0	2.5	6.0
6	2.0	.0	.5	4.5	.5	2.5	3.0	.0	1.0	10.5	3.0	6.5
7	.5	.0	.0	5.0	.5	2.5	3.5	.5	1.5	9.0	2.5	5.5
8	.0	.0	.0	3.0	.5	1.5	2.0	.0	.5	8.5	1.5	5.0
9	.0	.0	.0	.5	.0	.0	3.5	.0	1.0	8.0	1.5	4.5
10	.0	.0	.0	2.0	.0	1.0	3.5	.0	1.5	7.5	2.0	4.5
11	---	---	---	5.5	.5	2.5	7.5	1.0	3.5	9.5	2.5	6.0
12	---	---	---	5.5	.0	2.5	8.5	1.0	4.5	8.5	2.5	5.0
13	---	---	---	6.5	1.0	3.5	9.0	2.0	5.5	8.0	1.5	4.5
14	---	---	---	6.0	1.0	3.5	9.0	2.0	5.5	7.5	1.5	4.0
15	---	---	---	6.0	1.5	3.5	8.5	1.5	5.0	8.0	1.5	4.5
16	---	---	---	7.0	1.0	4.0	8.0	2.0	5.0	8.5	2.0	5.0
17	---	---	---	7.0	1.0	4.0	9.0	2.5	5.5	9.0	2.0	5.5
18	1.5	.0	.5	6.5	1.5	4.0	8.5	1.5	5.0	8.0	2.0	5.0
19	1.5	.0	.5	5.0	2.0	3.5	8.5	2.0	5.0	8.5	2.0	5.0
20	1.0	.0	.5	4.0	2.0	3.0	9.0	1.5	5.0	8.0	2.5	5.0
21	.0	.0	.0	6.0	1.0	3.0	8.5	1.5	4.5	9.0	2.5	5.5
22	2.5	.0	.5	6.5	.5	3.5	5.5	2.0	3.5	9.0	2.5	5.5
23	4.5	.0	2.0	7.0	1.5	4.5	4.0	1.5	3.0	9.0	3.0	5.5
24	4.5	.5	2.0	6.0	2.0	4.0	9.0	2.0	5.0	7.5	3.5	5.5
25	2.0	.0	.5	7.5	2.5	4.5	10.0	2.5	6.0	10.0	3.5	6.5
26	2.0	.0	1.0	8.0	2.5	5.0	7.0	3.0	5.0	10.0	4.0	7.0
27	6.0	1.5	3.5	7.0	1.5	4.0	8.0	2.5	5.0	10.5	4.0	7.0
28	5.0	1.0	3.0	6.5	1.0	3.5	4.5	1.0	2.5	10.5	4.0	7.0
29	---	---	---	5.5	1.5	3.5	4.0	1.0	2.5	7.5	3.5	5.5
30	---	---	---	5.5	1.0	3.0	9.0	2.5	5.5	9.5	3.5	6.0
31	---	---	---	4.0	.0	1.5	---	---	---	9.0	4.0	6.5
MONTH	---	---	---	8.0	.0	3.0	10.0	.0	3.6	10.5	1.0	5.4

PYRAMID AND WINNEMUCCA LAKES BASIN

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.5	4.0	6.0	17.0	11.5	14.0	19.5	15.0	17.5	16.0	11.5	13.0
2	6.5	4.0	5.0	17.0	12.0	14.0	18.5	14.0	17.0	16.5	11.5	13.0
3	4.5	2.5	3.5	16.0	10.5	13.0	19.0	14.5	17.0	16.5	11.0	13.0
4	5.5	3.0	4.0	15.5	10.0	12.5	18.5	15.0	16.5	17.5	11.5	14.0
5	10.5	4.5	7.0	16.5	10.0	13.0	18.0	13.5	16.0	19.0	12.5	15.0
6	10.0	5.0	7.5	17.0	10.5	13.5	17.5	14.0	15.5	19.5	13.0	15.5
7	9.0	3.0	6.0	17.5	11.5	14.5	15.5	11.0	14.0	19.5	13.0	16.0
8	9.5	3.5	6.5	17.5	11.0	14.5	16.5	13.5	15.0	20.0	13.5	16.0
9	9.0	3.5	6.5	17.5	10.5	14.0	17.0	13.5	15.0	17.0	13.5	15.0
10	10.0	4.0	7.0	18.5	11.5	15.0	15.5	12.5	13.5	17.5	11.5	14.0
11	10.5	4.5	7.5	19.5	12.5	16.0	14.5	9.0	11.5	18.5	12.0	15.0
12	10.5	4.5	7.5	20.0	13.0	16.5	17.0	11.5	14.5	18.5	12.0	15.0
13	11.5	5.5	8.5	19.0	14.5	16.5	17.5	13.0	15.5	18.5	12.5	15.0
14	12.0	5.0	8.5	20.0	13.5	16.5	17.0	13.0	15.5	18.5	11.5	14.5
15	11.0	5.5	8.5	19.5	13.0	16.0	17.5	12.5	15.5	18.5	12.0	15.0
16	12.0	6.0	9.0	19.0	12.5	15.5	19.0	14.0	16.5	18.0	12.0	15.0
17	12.5	6.0	9.5	18.5	12.0	15.0	19.0	14.5	16.5	17.5	12.5	14.5
18	11.5	6.5	9.0	18.5	11.0	15.0	18.5	14.5	16.5	15.5	13.5	14.0
19	12.5	7.0	10.0	19.0	11.5	15.0	19.5	14.0	16.5	16.5	11.0	14.0
20	13.0	7.5	10.0	18.5	11.5	15.0	19.5	15.0	17.0	17.0	12.5	14.5
21	13.0	8.5	10.5	18.0	10.5	14.5	20.0	14.5	17.0	17.0	11.0	14.0
22	14.0	8.5	11.5	19.0	11.5	15.5	19.0	15.0	17.0	15.5	12.5	14.0
23	14.5	9.5	12.0	18.0	12.5	15.5	18.0	14.5	16.5	17.5	12.0	14.5
24	14.5	10.0	12.0	18.0	12.5	15.5	19.5	14.0	16.5	17.5	11.5	14.5
25	13.5	8.5	11.0	18.5	13.0	16.0	20.0	15.5	17.5	18.5	12.0	15.0
26	13.5	8.0	11.0	19.5	14.0	17.0	18.0	15.5	17.0	18.5	12.5	15.0
27	14.0	8.5	11.5	19.0	14.5	17.0	18.5	14.0	16.0	17.5	12.0	14.5
28	15.5	9.5	12.5	20.0	14.0	17.0	19.5	14.0	16.5	16.0	10.5	13.0
29	16.0	10.5	13.0	19.5	15.5	17.5	20.5	15.5	17.5	16.0	10.0	12.5
30	16.5	11.0	13.5	18.5	14.0	17.0	18.0	13.5	16.0	16.0	10.5	13.0
31	---	---	---	19.0	14.5	17.0	17.0	11.5	13.5	---	---	---
MONTH	16.5	2.5	8.9	20.0	10.0	15.3	20.5	9.0	15.9	20.0	10.0	14.4

10336612 UPPER TRUCKEE RIVER AT MOUTH, NEAR VENICE DRIVE, CA

LOCATION.—Lat 38°56'04", long 119°59'57", in NW 1/4 NW 1/4 sec.04, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, .25 mi upstream of mouth, and 1.0 mi west of South Lake Tahoe.

DRAINAGE AREA.—56.6 mi².

PERIOD OF RECORD.—September 1996 to current year.

WATER TEMPERATURE: September 1997 to current year.

PERIOD OF DAILY RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In September 1996, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor streamflows and water temperature within the Upper Truckee River–Trout Creek watershed. Records represent water temperature at probe within 0.5°C.

Water-temperature data for September 1997 were not published but are available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum, 21.5°C, Aug. 30–31, 1998; minimum, freezing point on many days during winter months.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 20.5°C, Aug. 1, 3, 21, 25, 29; minimum, freezing point, many days November to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13.5	11.0	12.0	7.5	5.0	6.0	.5	.0	.0	.5	.0	.0
2	12.5	9.5	11.5	5.5	2.5	4.0	3.0	.0	1.0	.5	.0	.0
3	11.5	9.0	10.0	6.5	3.5	4.5	3.0	.0	1.5	.5	.0	.0
4	11.0	7.5	9.5	6.0	3.5	4.5	.5	.0	.0	1.0	.0	.0
5	11.0	7.5	9.5	5.0	3.0	4.0	.5	.0	.0	1.0	.0	.0
6	11.0	7.5	9.5	4.0	1.5	2.5	.0	.0	.0	.5	.0	.0
7	10.0	7.5	9.5	2.0	1.0	1.5	.5	.0	.0	.5	.0	.5
8	11.5	8.0	10.0	2.0	.0	1.0	.5	.0	.0	.5	.0	.5
9	10.5	7.0	9.0	3.0	.5	1.5	.5	.0	.0	1.5	.0	.5
10	9.5	6.0	8.0	3.0	1.5	2.0	1.0	.0	.0	1.0	.0	.5
11	10.0	6.0	8.0	4.5	1.0	2.5	.5	.0	.0	.5	.0	.0
12	9.5	6.0	8.0	3.0	.5	2.0	.5	.0	.0	1.0	.0	.5
13	10.0	6.0	8.0	3.5	1.0	2.0	.5	.0	.0	1.5	.0	.5
14	9.5	6.0	8.0	5.0	2.0	3.0	.5	.0	.0	1.5	.5	1.0
15	9.5	6.5	8.0	4.5	2.0	3.5	1.0	.0	.5	3.5	1.5	2.5
16	8.5	5.5	7.0	5.0	2.5	3.5	1.5	.5	1.0	3.0	1.0	1.5
17	7.5	3.5	5.5	3.5	1.5	2.5	2.0	.5	1.5	3.5	1.5	2.0
18	7.5	3.5	5.5	2.0	.0	1.0	1.5	.5	1.0	2.5	.0	1.0
19	8.0	3.5	5.5	2.0	.0	1.0	.5	.0	.0	.5	.0	.0
20	7.0	4.5	6.0	2.5	.0	1.5	.5	.0	.0	.0	.0	.0
21	7.5	4.5	6.5	4.5	1.5	2.5	.5	.0	.0	.0	.0	.0
22	8.0	5.5	7.0	3.0	1.0	2.5	.5	.0	.0	2.0	.0	.5
23	8.0	5.0	6.5	3.5	2.0	2.5	.5	.0	.0	1.5	.0	.5
24	7.5	5.0	6.0	2.0	.0	1.5	.5	.0	.0	.5	.0	.0
25	5.0	3.5	4.0	3.5	.5	2.0	.5	.0	.0	.0	.0	.0
26	7.0	3.5	5.0	3.0	1.0	2.5	.5	.0	.0	.5	.0	.0
27	7.0	5.0	6.0	3.0	2.0	2.5	.5	.0	.0	1.0	.0	.5
28	7.5	5.5	6.5	2.5	1.5	2.0	.5	.0	.0	.5	.0	.0
29	6.5	5.5	6.0	2.0	.5	1.0	.5	.0	.0	.5	.0	.0
30	5.5	3.0	4.5	2.5	.0	1.5	.5	.0	.0	.5	.0	.5
31	5.5	2.5	4.0	---	---	---	.5	.0	.0	.5	.0	.0
MONTH	13.5	2.5	7.4	7.5	.0	2.5	3.0	.0	.2	3.5	.0	.4

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 sea level.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 797 ft³/s, Jan. 2, 1997, gage height, 7.86 ft (backwater from plugged culvert), from rating curve extended above 180 ft³/s on basis of computation of flow through culvert; minimum daily, 0.29 ft³/s, July 28, Aug. 15, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 100 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 12	2115	216	2.64	June 13	2130	146	2.26
May 26	2130	307	3.16				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	4.5	e13	4.1	9.3	16	e16	51	122	18	1.7	2.5
2	2.3	2.6	e7.4	4.1	e7.5	16	15	67	107	16	1.8	2.5
3	2.1	2.5	e10	3.7	6.9	17	15	52	62	14	1.9	2.3
4	2.4	2.5	e7.9	3.8	7.7	17	e13	41	44	13	1.6	2.0
5	2.5	2.1	e7.7	3.7	7.7	15	e12	41	49	11	1.3	2.0
6	2.5	2.0	e7.5	3.7	7.7	13	e12	61	88	9.0	2.0	1.9
7	2.3	3.3	e7.3	3.7	e9.5	13	e11	90	84	7.9	1.9	1.9
8	2.5	3.2	e7.1	4.1	e12	12	e11	99	71	7.2	1.6	1.8
9	2.7	e2.5	e6.9	4.1	e16	e10	e10	90	68	6.6	2.1	2.2
10	2.8	e2.5	e6.7	4.1	e16	e9.5	e10	81	75	6.0	2.8	2.4
11	3.2	e2.5	e6.5	4.1	e16	10	12	100	88	5.3	2.5	1.7
12	2.9	e2.5	e6.3	4.1	e15	e8.8	13	147	94	4.7	2.2	1.7
13	3.2	e2.5	e6.1	4.1	12	9.6	15	148	103	4.2	1.9	1.9
14	2.9	e2.5	e6.1	4.1	11	10	19	92	103	4.0	1.8	2.3
15	2.2	e2.5	e5.9	4.9	10	11	21	69	96	3.5	2.0	2.1
16	2.3	e2.5	e5.7	9.7	10	11	23	70	93	3.1	2.0	2.1
17	2.5	e3.2	e5.7	9.2	e15	11	29	95	82	3.1	1.9	2.1
18	2.2	e3.2	e5.7	e16	e12	13	39	123	76	2.7	1.8	2.1
19	2.4	e2.8	e5.7	e8.5	e11	15	45	127	68	2.5	1.7	2.1
20	2.5	e2.8	e5.7	e9.5	e10	15	53	141	59	2.6	1.7	2.1
21	2.2	e2.8	e5.9	e8.6	e9.5	14	58	148	54	2.4	1.7	2.1
22	2.1	e3.7	e5.8	e7.7	e9.0	14	53	158	50	2.0	1.9	2.1
23	1.8	e12	e5.7	e8.0	e8.5	14	45	169	48	1.9	2.1	1.8
24	3.0	e7.9	5.5	e8.5	e8.0	14	39	177	43	1.8	2.3	1.8
25	4.1	e5.0	5.5	e8.8	e8.0	15	45	207	34	1.7	2.4	1.8
26	3.9	e3.7	5.1	e9.1	e8.5	19	63	203	27	1.7	2.5	1.8
27	3.3	e3.2	4.8	10	9.5	22	63	179	23	1.9	2.5	1.6
28	3.1	e3.2	4.5	e10	11	21	54	161	21	1.7	2.3	1.6
29	3.0	e4.1	4.5	e10	---	20	42	120	21	1.6	2.0	1.6
30	2.9	e15	4.5	e9.0	---	18	39	113	19	1.8	2.1	1.6
31	2.8	---	4.4	9.2	---	e17	---	129	---	1.8	2.4	---
TOTAL	83.5	115.3	197.1	212.2	294.3	440.9	895	3549	1972	164.7	62.4	59.5
MEAN	2.69	3.84	6.36	6.85	10.5	14.2	29.8	114	65.7	5.31	2.01	1.98
MAX	4.1	15	13	16	16	22	63	207	122	18	2.8	2.5
MIN	1.8	2.0	4.4	3.7	6.9	8.8	10	41	19	1.6	1.3	1.6
AC-FT	166	229	391	421	584	875	1780	7040	3910	327	124	118

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

10336645 GENERAL CREEK NEAR MEEKS BAY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1999, BY WATER YEAR (WY)

MEAN	2.23	7.29	9.62	10.4	13.3	18.9	38.2	64.4	39.4	7.43	1.39	1.39
MAX	15.5	45.4	58.7	68.9	64.2	60.1	70.4	114	158	49.6	4.72	4.36
(WY)	1983	1982	1982	1997	1986	1986	1989	1999	1983	1983	1983	1983
MIN	.73	.84	.89	.90	.99	5.86	15.9	7.18	2.23	.49	.35	.39
(WY)	1993	1993	1991	1991	1991	1994	1991	1992	1992	1994	1994	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1980 - 1999	
ANNUAL TOTAL	9024.20		8045.9			
ANNUAL MEAN	24.7		22.0		17.8	
HIGHEST ANNUAL MEAN					34.7	
LOWEST ANNUAL MEAN					4.96	
HIGHEST DAILY MEAN	243	Jun 7	207	May 25	600	Jan 1 1997
LOWEST DAILY MEAN	.51	Aug 11	1.3	Aug 5	.29	Jul 28 1994
ANNUAL SEVEN-DAY MINIMUM	.71	Aug 7	1.7	Sep 24	.31	Aug 15 1994
INSTANTANEOUS PEAK FLOW			307	May 26	797	Jan 2 1997
INSTANTANEOUS PEAK STAGE			3.16	May 26	7.86	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	17900		15960		12920	
10 PERCENT EXCEEDS	82		73		52	
50 PERCENT EXCEEDS	7.0		7.2		3.5	
90 PERCENT EXCEEDS	1.7		1.9		.82	

10336645 GENERAL CREEK NEAR MEEKS BAY, CA—Continued

WATER-QUALITY RECORDS

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

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

WATER TEMPERATURE: October 1980 to September 1992.

SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1992.

PERIOD OF DAILY RECORD.—October 1980 to September 1982.

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

WATER TEMPERATURE: October 1980 to September 1992.

SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1992.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT OF SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)
OCT									
22...	1430	2.1	609	97	9.4	--	60	14.5	7.0
27...	1310	3.2	606	95	9.3	7.3	55	11.5	6.5
NOV									
20...	1325	2.8	613	99	11.0	--	51	5.0	2.0
23...	1725	12	--	--	--	--	44	2.5	2.5
23...	2240	12	--	--	--	--	38	- .5	.0
30...	1815	15	--	--	--	--	28	- .5	.0
DEC									
30...	1535	4.5	605	98	11.2	--	37	2.5	.5
JAN									
18...	1600	23	--	--	--	--	27	.0	.0
29...	1645	12	603	96	11.1	--	33	-1.5	.0
MAR									
02...	1200	16	607	99	11.2	--	32	9.5	1.0
30...	1220	18	601	101	11.0	--	29	1.0	2.0
APR									
19...	2150	53	--	--	--	--	23	2.0	1.0
20...	0750	51	--	--	--	--	22	.0	.5
30...	1705	40	603	100	10.1	--	23	10.0	5.0
MAY									
12...	2120	216	--	--	--	--	14	3.5	1.0
13...	1455	129	--	--	--	--	15	7.0	4.0
20...	0820	129	605	99	11.0	--	14	6.5	1.5
25...	1850	232	--	--	--	--	12	16.5	4.0
26...	1500	126	--	--	--	--	13	20.5	6.5
JUN									
02...	1910	87	599	98	10.2	--	13	.0	3.5
12...	2050	119	--	--	--	--	11	10.5	6.5
17...	2340	105	--	--	--	--	11	7.0	7.5
24...	1230	39	603	99	8.6	--	15	21.5	11.0
JUL									
16...	1630	2.8	601	95	7.2	--	41	19.5	17.0
AUG									
19...	1630	1.8	613	92	7.2	--	56	22.5	16.5
SEP									
22...	1740	2.1	609	93	7.9	--	61	15.5	12.5

PYRAMID AND WINNEMUCCA LAKES BASIN

10336645 GENERAL CREEK NEAR MEEKS BAY, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT								
22...	.004	.14	.005	.013	.023	217	.02	4
27...	.004	.09	.004	.012	.020	188	.01	1
NOV								
20...	.003	.05	.006	.010	.019	157	.05	6
23...	.003	.24	.015	.010	.078	1550	.97	30
23...	.003	.20	.021	.009	.058	868	1.3	39
30...	.003	.22	.030	.003	.049	700	.73	18
DEC								
30...	.002	.06	.015	.006	.013	95	.07	6
JAN								
18...	.002	.17	.026	.005	.019	196	.81	13
29...	.002	.08	.022	.006	.013	162	.10	3
MAR								
02...	.003	.08	.017	.005	.009	69	.13	3
30...	.003	.08	.018	.004	.009	59	.34	7
APR								
19...	.002	.12	.024	.001	.025	277	2.0	14
20...	.002	.15	.024	.001	.016	192	.96	7
30...	.002	.11	.014	.003	.012	95	1.1	10
MAY								
12...	.002	.50	.013	.002	.046	809	23	40
13...	.002	.14	.009	.001	.017	180	3.5	10
20...	.002	.09	.007	.002	.017	220	5.6	16
25...	.002	.17	.007	.002	.039	686	40	64
26...	.002	.13	.006	.001	.021	387	11	31
JUN								
02...	.002	.08	.005	.002	.013	153	2.6	11
12...	.001	.06	.004	.002	.016	264	7.4	23
17...	.002	.06	.003	.003	.012	105	1.7	6
24...	.002	.08	.004	.003	.013	82	.42	4
JUL								
16...	.003	.08	.007	.009	.027	125	.03	4
AUG								
19...	.001	.05	.007	.017	.038	154	.005	1
SEP								
22...	.002	.04	.006	.016	.037	176	.03	5

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA

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

DRAINAGE AREA.—11.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1960 to current year.

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

REMARKS.—Records fair, including estimated daily discharges. No known diversion or regulation upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,940 ft³/s, Jan. 1, 1997, gage height, 9.82 ft; maximum gage height, 9.90 ft, site and datum then in use, Dec. 22, 1964; minimum daily, 0.50 ft³/s, Sept. 24, 1968.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 200 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	1930	429	3.24	June 16	2100	281	2.73

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	e5.0	e18	e7.9	e13	e20	24	90	233	99	8.9	3.3
2	3.6	e4.8	e14	e7.9	e12	e20	23	104	208	93	8.5	3.2
3	3.6	e4.4	e15	e7.9	e12	e21	22	80	147	86	7.3	3.1
4	3.6	e4.2	e14	e8.5	e12	e21	21	64	127	71	7.1	3.0
5	3.7	e4.0	e13	e8.5	e12	e20	24	64	129	63	7.1	2.8
6	3.7	e3.8	e13	e8.5	e12	e17	22	89	145	62	8.1	2.5
7	3.9	e4.1	e12	e8.5	e14	e17	19	116	141	54	7.9	2.5
8	3.9	e4.1	e12	e9.9	e17	e16	20	113	133	50	7.3	2.5
9	3.8	e4.0	e12	e9.9	e21	14	25	104	129	46	7.5	2.8
10	3.8	4.1	e12	e9.8	e21	e14	20	102	138	44	8.7	2.6
11	3.7	4.2	e12	e9.7	e21	13	17	118	151	43	7.8	2.5
12	3.7	4.2	e11	e9.7	e19	14	19	143	163	41	7.2	2.4
13	3.8	4.2	e11	e9.7	e16	13	22	145	181	38	6.7	2.5
14	3.8	4.3	e11	e9.6	e14	14	26	118	192	38	6.5	2.4
15	3.7	4.4	e11	e11	e13	14	29	102	204	35	6.2	2.3
16	3.7	4.1	e11	e20	e13	14	32	101	202	31	6.0	2.2
17	3.8	e4.8	e10	e19	e18	15	43	119	188	28	5.7	2.2
18	3.9	e4.7	e10	e28	e15	17	63	136	184	24	5.5	2.3
19	3.8	e4.2	e9.7	e18	e13	19	85	146	170	22	5.1	2.3
20	3.8	e4.0	e9.4	e19	e13	18	100	155	160	21	4.8	2.2
21	3.7	e4.1	e9.2	e16	e12	17	102	164	157	19	4.7	2.2
22	3.7	e6.2	e8.8	e13	e12	18	85	183	158	18	4.8	2.2
23	3.8	e15	e8.8	e14	e11	19	66	204	162	16	4.6	2.2
24	4.3	e9.6	e8.8	e14	e11	19	63	228	170	14	4.3	2.1
25	4.2	e7.4	e8.7	e14	10	21	91	257	137	13	4.2	2.1
26	4.1	e6.2	e8.7	e14	e12	27	121	305	108	12	4.3	2.1
27	4.1	e6.1	e8.4	e14	e12	32	112	309	98	12	4.5	2.1
28	4.1	e7.2	e8.2	e14	e14	31	90	316	96	11	4.1	2.1
29	e4.0	e9.3	e8.1	e14	---	29	69	257	99	11	3.6	2.0
30	e3.9	e20	e8.1	e13	---	27	66	237	102	10	3.4	2.0
31	e3.8	---	e8.0	e13	---	28	---	231	---	9.7	3.4	---
TOTAL	118.6	176.7	334.9	394.0	395	599	1521	4900	4612	1134.7	185.8	72.7
MEAN	3.83	5.89	10.8	12.7	14.1	19.3	50.7	158	154	36.6	5.99	2.42
MAX	4.3	20	18	28	21	32	121	316	233	99	8.9	3.3
MIN	3.6	3.8	8.0	7.9	10	13	17	64	96	9.7	3.4	2.0
AC-FT	235	350	664	781	783	1190	3020	9720	9150	2250	369	144

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

MEAN	4.94	13.0	20.5	26.2	21.9	30.9	60.8	129	104	30.3	5.92	2.91
MAX	28.1	94.8	157	201	116	122	124	312	320	149	36.1	10.3
(WY)	1963	1984	1965	1997	1986	1986	1989	1969	1983	1983	1983	1982
MIN	1.31	1.68	1.90	2.00	2.27	3.82	13.6	29.7	7.20	3.11	1.51	1.21
(WY)	1978	1978	1977	1991	1991	1977	1975	1977	1992	1987	1994	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	17990.4		14444.4			
ANNUAL MEAN	49.3		39.6		37.6	
HIGHEST ANNUAL MEAN					73.4	
LOWEST ANNUAL MEAN					8.71	
HIGHEST DAILY MEAN	315	Jun 7	316	May 28	2000	Jan 1 1997
LOWEST DAILY MEAN	3.6	Sep 23	2.0	Sep 29	.50	Sep 24 1968
ANNUAL SEVEN-DAY MINIMUM	3.6	Sep 29	2.1	Sep 24	.54	Sep 23 1968
INSTANTANEOUS PEAK FLOW			429	May 26	2940	Jan 1 1997
INSTANTANEOUS PEAK STAGE			3.24	May 26	9.90	Dec 22 1964
ANNUAL RUNOFF (AC-FT)	35680		28650		27220	
10 PERCENT EXCEEDS	157		136		109	
50 PERCENT EXCEEDS	13		13		10	
90 PERCENT EXCEEDS	3.9		3.6		2.2	

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA—Continued

WATER-QUALITY RECORDS

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

SPECIFIC CONDUCTANCE: December 1980 to September 1983.

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

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

PERIOD OF DAILY RECORD.—October 1974 to June 1978, October 1979 to September 1992.

SPECIFIC CONDUCTANCE: December 1980 to September 1983.

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

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT OF SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)
OCT									
22...	1640	4.0	612	98	9.3	--	68	10.5	8.0
27...	1200	4.2	607	97	9.5	7.6	62	10.5	6.5
NOV									
20...	1035	4.0	621	100	11.4	--	65	3.0	1.5
23...	1620	15	--	--	--	--	60	1.5	3.5
23...	2135	15	--	--	--	--	53	.0	1.0
30...	1705	20	--	--	--	--	42	-.5	.0
DEC									
30...	1420	8.1	608	97	10.7	--	58	3.0	2.0
JAN									
18...	1455	28	--	--	--	--	45	.0	.0
29...	1530	14	608	98	10.8	--	55	.0	2.0
MAR									
02...	1025	20	602	103	11.4	--	56	2.5	1.5
29...	1745	29	604	100	10.5	--	55	2.0	3.5
APR									
19...	2035	109	622	98	11.2	--	43	1.5	1.5
20...	0700	91	--	--	--	--	47	-1.0	1.5
30...	1550	66	605	101	9.6	--	51	7.5	7.5
MAY									
12...	2020	188	--	--	--	--	36	4.5	1.5
13...	1400	134	--	--	--	--	41	6.5	6.0
20...	0710	145	600	98	10.8	--	37	2.0	1.5
25...	1755	304	--	--	--	--	29	15.5	4.0
26...	1350	299	--	--	--	--	31	16.0	6.5
JUN									
02...	1805	192	602	99	10.5	--	33	.0	3.0
12...	1955	204	--	--	--	--	28	12.5	5.0
17...	2250	211	--	--	--	--	26	7.5	4.0
24...	1125	145	606	101	9.5	--	29	20.5	8.0
JUL									
16...	1520	31	608	97	7.6	--	40	--	16.0
AUG									
19...	1525	5.1	613	96	7.2	--	59	23.0	18.5
SEP									
22...	1640	2.1	608	100	8.2	--	67	17.0	14.0

PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT								
22...	.001	.06	.004	.008	.016	119	.02	2
27...	.002	.06	.003	.007	.018	60	.02	2
NOV								
20...	.002	<.04	.005	.007	.015	66	.02	2
23...	.002	.05	.017	.009	.022	191	.53	13
23...	.001	.14	.028	.008	.047	634	1.3	33
30...	.002	.04	.078	.006	.046	532	2.1	39
DEC								
30...	.002	.06	.005	.005	.012	88	.15	7
JAN								
18...	.001	.10	.003	.004	.024	255	.91	12
29...	.001	<.04	.014	.006	.014	133	.15	4
MAR								
02...	.004	.04	.043	.005	.012	116	.16	3
29...	.004	.05	.039	.004	.014	122	.31	4
APR								
19...	.001	.27	.081	.001	.145	1900	39	132
20...	.003	.12	.096	.001	.033	426	6.4	26
30...	.003	.07	.061	.004	.019	183	2.0	11
MAY								
12...	.003	.69	.062	.003	.772	4070	140	275
13...	.002	.13	.078	.003	.041	582	14	38
20...	.003	.08	.052	.004	.045	479	15	38
25...	.003	>.40	.041	.002	.435	5390	322	392
26...	.002	.24	.045	.002	.142	2390	110	136
JUN								
02...	.003	.07	.031	.004	.029	477	17	32
12...	.002	.10	.029	.003	.046	635	28	51
17...	.002	.06	.030	.004	.035	399	21	36
24...	.003	.07	.014	.003	.015	154	3.5	9
JUL								
16...	.002	.05	.007	.002	.022	119	.25	3
AUG								
19...	.002	.04	.009	.011	.031	108	.01	1
SEP								
22...	.004	<.04	.005	.009	.031	94	.01	1

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

> Actual value is known to be greater than the value shown.

10336674 WARD CREEK BELOW CONFLUENCE, NEAR TAHOE CITY, CA

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

DRAINAGE AREA.—4.96 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1991 to current year.

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

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,220 ft³/s, Jan. 1, 1997, gage height, 8.85 ft, from crest stage gage; no flow for some days in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 50 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	1730	264	5.54	June 14	1830	182	5.19

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	e2.2	8.6	e1.9	6.3	e6.6	8.5	33	122	58	3.8	.79
2	1.2	e1.6	e6.2	e1.7	6.2	e4.7	8.2	38	95	55	3.5	.77
3	1.2	e1.5	e7.0	e1.7	6.3	e4.8	8.0	29	60	47	3.2	.75
4	1.2	e1.4	e6.0	e1.3	6.4	e4.2	7.7	24	45	39	2.9	.69
5	1.2	e1.3	e6.2	e1.5	6.2	e4.0	7.8	25	53	34	2.8	.66
6	1.1	e1.3	e6.1	e1.5	e6.3	e3.8	7.7	34	77	31	3.4	.61
7	1.1	e1.5	e5.6	e1.7	e7.2	e3.6	7.6	47	73	29	3.1	.58
8	1.1	e1.3	e5.5	e1.3	e7.0	e3.4	7.8	47	68	27	2.8	.55
9	e1.0	e1.1	e5.3	e1.5	e7.2	e3.2	7.2	45	67	24	2.9	.61
10	e1.0	e1.1	e5.1	e1.7	e7.2	e3.2	7.1	46	73	23	3.6	.62
11	e1.0	e1.1	e5.0	e1.7	e7.7	e3.4	7.1	59	87	23	3.0	.57
12	e1.0	e1.1	e4.6	e2.0	6.1	e3.8	7.6	78	92	22	2.5	.53
13	e1.0	e1.1	e4.6	e1.5	6.0	e4.2	9.0	74	108	21	2.2	.54
14	e1.0	e1.4	e4.3	e2.0	e5.7	e4.7	11	59	121	19	2.1	.52
15	e1.0	e1.3	e4.3	e2.8	e5.4	e5.2	11	50	119	17	1.9	.47
16	e1.1	e1.2	e4.2	e4.9	e5.1	e5.7	13	53	120	14	1.8	.46
17	e1.1	e1.3	e3.7	e5.8	e6.2	6.6	16	67	115	13	1.6	.45
18	e1.1	e1.2	e3.6	e6.0	e5.2	7.4	22	76	111	12	1.5	.47
19	e1.1	e1.1	e3.5	e7.9	e4.8	7.9	28	83	103	10	1.4	.50
20	1.2	e1.2	e3.1	e7.5	e4.6	7.5	32	88	97	9.5	1.3	.47
21	1.2	e1.1	e2.6	e7.0	e4.6	7.2	31	95	94	8.6	1.2	.45
22	1.2	e1.1	e2.8	e6.2	e4.1	7.0	26	108	98	8.1	1.2	.43
23	1.2	e4.6	e2.8	e5.7	e3.9	7.1	21	127	102	7.5	1.2	.44
24	1.9	e6.6	e2.4	e6.5	e3.3	7.1	22	149	97	6.9	1.0	.44
25	e3.1	e3.6	e2.8	6.9	e3.7	7.5	34	173	76	6.4	.96	.42
26	e2.9	e2.3	e2.6	6.7	e4.3	9.7	42	182	61	6.0	.96	.40
27	e2.5	e2.0	e2.4	6.6	e4.3	11	36	169	54	5.5	1.1	.40
28	e2.3	e1.9	e2.0	6.5	e5.4	11	30	158	54	5.1	.94	.40
29	e2.3	e2.8	e2.0	6.3	---	10	24	110	56	4.7	.83	.41
30	e1.9	e1.3	e2.2	6.4	---	9.7	23	113	58	e5.5	.81	.39
31	e1.8	---	e2.0	6.5	---	9.2	---	118	---	4.0	.80	---
TOTAL	44.3	65.3	129.1	129.2	156.7	194.4	523.3	2557	2556	595.8	62.30	15.79
MEAN	1.43	2.18	4.16	4.17	5.60	6.27	17.4	82.5	85.2	19.2	2.01	.53
MAX	3.1	13	8.6	7.9	7.7	11	42	182	122	58	3.8	.79
MIN	1.0	1.1	2.0	1.3	3.3	3.2	7.1	24	45	4.0	.80	.39
AC-FT	88	130	256	256	311	386	1040	5070	5070	1180	124	31

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1999, BY WATER YEAR (WY)

MEAN	.63	2.21	5.94	12.9	8.08	12.9	25.6	60.8	61.1	25.8	3.64	.70
MAX	1.43	9.82	27.2	68.8	32.5	26.9	43.1	93.5	127	88.7	16.0	1.94
(WY)	1999	1997	1997	1997	1996	1995	1997	1996	1998	1995	1995	1995
MIN	.11	.45	.69	.82	.95	5.85	16.2	20.5	3.67	.81	.025	.008
(WY)	1993	1996	1995	1992	1994	1994	1998	1992	1992	1994	1992	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1992 - 1999	
ANNUAL TOTAL	8363.4		7029.19			
ANNUAL MEAN	22.9		19.3		17.8	
HIGHEST ANNUAL MEAN					29.0	
LOWEST ANNUAL MEAN					5.56	
HIGHEST DAILY MEAN	166	Jun 7	182	May 26	720	Jan 2 1997
LOWEST DAILY MEAN	1.0	Sep 18	.39	Sep 30	.00	Aug 21 1992
ANNUAL SEVEN-DAY MINIMUM	1.0	Oct 9	.41	Sep 24	.00	Sep 9 1992
INSTANTANEOUS PEAK FLOW			264	May 26	1220	Jan 1 1997
INSTANTANEOUS PEAK STAGE			5.54	May 26	8.85	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	16590		13940		12890	
10 PERCENT EXCEEDS	88		70		59	
50 PERCENT EXCEEDS	5.0		5.1		4.3	
90 PERCENT EXCEEDS	1.2		.98		.38	

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1993 to current year.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT							
23...	1225	1.1	44	13.5	5.0	.001	.15
NOV							
19...	1255	1.1	45	3.5	1.5	.003	<.04
30...	1235	13	32	1.5	.5	.004	.04
DEC							
30...	1010	2.2	39	-.5	.5	.003	.06
JAN							
29...	1100	6.3	39	-5.0	.0	.003	.04
MAR							
01...	1440	4.7	39	5.5	.5	.006	.08
29...	1310	10	41	5.0	2.0	.004	<.04
APR							
19...	1650	29	37	11.0	1.0	.004	.06
30...	1120	21	38	--	2.0	.002	.04
MAY							
12...	1630	88	30	9.0	.5	.002	.27
13...	1005	66	33	--	1.0	.001	.08
20...	1040	73	32	10.0	1.5	.002	.08
25...	1440	185	25	18.5	1.5	.004	.17
26...	1050	121	28	15.5	2.0	.002	.04
JUN							
02...	1410	90	27	2.0	2.0	.002	.04
12...	1640	120	23	17.5	3.5	.002	.06
17...	1910	153	22	13.5	3.0	.002	.09
24...	0805	83	25	15.5	3.5	.003	.07
JUL							
16...	1210	14	30	19.0	10.0	.002	.04
AUG							
19...	1120	1.6	40	21.0	11.5	.004	<.04
SEP							
22...	1145	.46	43	18.0	10.5	.004	<.04

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT						
23...	.007	.001	.009	21	<.003	<1
NOV						
19...	.026	.004	.013	18	.003	1
30...	.071	.006	.022	113	.28	8
DEC						
30...	.030	.003	.010	30	.01	1
JAN						
29...	.033	.005	.010	15	.02	1
MAR						
01...	.042	.005	.012	88	.04	3
29...	.038	.003	.009	32	.05	2
APR						
19...	.067	.002	.019	93	.63	8
30...	.043	.003	.008	47	<.06	<1
MAY						
12...	.041	.004	.065	875	16	67
13...	.046	.003	.018	108	1.4	8
20...	.037	.004	.021	70	1.2	6
25...	.039	.005	.064	640	31	62
26...	.038	.005	.027	188	5.6	17
JUN						
02...	.026	.005	.016	68	1.9	8
12...	.022	.004	.027	171	5.2	16
17...	.026	.005	.027	175	7.0	17
24...	.019	.005	.014	100	1.3	6
JUL						
16...	.005	.002	.019	36	.04	1
AUG						
19...	.007	.005	.020	20	.004	1
SEP						
22...	.009	.005	.023	64	.001	1

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

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

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

DRAINAGE AREA.—8.97 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1991 to current year.

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

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,370 ft³/s, Jan. 1, 1997, gage height, 7.58 ft; maximum gage height, 8.23 ft, Jan. 10, 1995, backwater from ice; minimum daily, 0.30 ft³/s, Sept. 22, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 80 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	1530	e390	a5.93	June 16	1745	e210	a5.49

a Orifice buried.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.6	13	4.9	e8.0	e10	15	52	177	e72	6.3	2.5
2	2.8	3.1	9.4	e4.8	e7.5	11	10	64	153	e69	5.8	2.5
3	2.7	2.9	e8.9	5.0	7.0	11	9.5	45	102	e60	5.6	2.4
4	2.7	2.9	e8.3	5.0	7.2	10	12	36	80	e52	5.4	2.4
5	2.6	2.8	e7.7	4.9	6.9	9.4	11	39	85	e41	5.2	2.3
6	2.6	2.8	e7.3	4.9	8.0	8.9	9.3	55	111	e37	5.9	2.2
7	2.5	3.0	e7.0	4.7	e8.2	8.6	8.2	72	106	e34	5.6	2.2
8	2.5	3.0	6.7	4.8	e8.3	8.4	e8.2	77	100	e31	5.3	2.1
9	2.4	e3.0	6.3	4.8	e8.5	e9.0	e7.9	64	97	e26	5.4	2.3
10	2.3	3.0	e6.1	4.8	e8.9	e8.9	e7.6	73	101	e26	6.4	2.2
11	2.3	3.0	6.0	4.8	e9.3	7.9	7.5	104	116	e25	5.9	2.1
12	2.3	2.9	6.0	4.7	e10	8.1	e8.0	145	128	e24	5.2	2.0
13	2.2	3.2	6.1	4.7	11	8.0	e12	112	138	e22	4.8	2.0
14	2.3	3.7	5.8	4.8	8.3	8.3	e16	83	148	e20	4.6	2.0
15	2.3	3.7	5.6	5.9	7.5	8.0	e18	68	153	e17	4.3	1.9
16	2.2	3.6	5.7	7.0	7.7	7.9	e20	71	159	e18	4.0	1.9
17	2.2	3.8	6.0	e7.5	9.1	8.7	20	93	160	e16	3.8	1.8
18	2.2	3.6	e5.9	8.1	e8.9	9.9	27	109	143	e15	3.6	2.0
19	2.2	e3.6	e5.9	e10	e8.5	11	36	128	130	e13	3.4	2.0
20	2.2	e3.5	e5.9	e9.8	e8.2	10	44	139	123	e12	3.2	1.9
21	2.2	3.5	e5.8	e9.5	e8.0	9.7	46	157	118	e12	3.1	1.8
22	2.2	3.9	e5.8	e9.3	7.5	9.5	44	189	123	12	3.2	1.8
23	2.2	9.5	e5.7	e9.0	e7.4	9.8	38	196	128	11	3.2	1.8
24	2.7	8.7	e5.7	e8.8	7.3	9.9	38	226	121	10	3.0	1.8
25	2.8	5.9	e5.5	e8.6	e7.2	11	58	e270	97	9.5	2.8	1.8
26	2.9	5.3	5.2	e8.4	7.2	14	e85	e287	80	9.0	2.8	1.7
27	2.8	5.0	5.2	e8.2	7.1	16	61	266	72	8.3	3.1	1.7
28	2.7	4.8	5.1	e8.0	7.3	16	50	246	e68	7.7	2.7	1.7
29	2.8	5.4	5.1	e8.5	---	15	36	184	e70	7.3	2.6	1.7
30	2.8	20	5.1	e9.0	---	14	41	173	e72	7.1	2.5	1.7
31	2.6	---	5.1	7.4	---	14	---	176	---	6.8	2.5	---
TOTAL	77.2	136.7	198.9	210.6	226.0	321.9	804.2	3999	3459	730.7	131.2	60.2
MEAN	2.49	4.56	6.42	6.79	8.07	10.4	26.8	129	115	23.6	4.23	2.01
MAX	3.0	20	13	10	11	16	85	287	177	72	6.4	2.5
MIN	2.2	2.8	5.1	4.7	6.9	7.9	7.5	36	68	6.8	2.5	1.7
AC-FT	153	271	395	418	448	638	1600	7930	6860	1450	260	119

e Estimated.

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1999, BY WATER YEAR (WY)

MEAN	1.66	3.81	10.2	24.4	14.3	22.9	43.3	99.1	88.9	30.3	5.33	1.76
MAX	2.52	14.5	47.5	135	51.2	52.1	70.0	168	182	107	20.1	3.36
(WY)	1994	1997	1997	1997	1996	1995	1997	1996	1995	1995	1995	1995
MIN	.73	1.59	1.47	2.26	2.19	9.10	26.2	22.7	4.60	1.41	.44	.36
(WY)	1995	1998	1995	1992	1994	1994	1994	1992	1992	1994	1994	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1992 - 1999	
ANNUAL TOTAL	11958.9		10355.6			
ANNUAL MEAN	32.8		28.4		28.9	
HIGHEST ANNUAL MEAN					47.5	
LOWEST ANNUAL MEAN					7.69	
HIGHEST DAILY MEAN	266	Jun 7	287	May 26	1300	Jan 1 1997
LOWEST DAILY MEAN	1.7	Jan 8	1.7	Sep 26	.30	Sep 22 1994
ANNUAL SEVEN-DAY MINIMUM	1.7	Jan 5	1.7	Sep 24	.31	Sep 17 1994
INSTANTANEOUS PEAK FLOW			390		2370	
INSTANTANEOUS PEAK STAGE			5.93		8.23	
ANNUAL RUNOFF (AC-FT)	23720		20540		20920	
10 PERCENT EXCEEDS	103		101		93	
50 PERCENT EXCEEDS	6.0		7.7		6.2	
90 PERCENT EXCEEDS	2.6		2.3		1.4	

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1993 to current year.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT							
23...	1440	2.3	70	14.0	7.0	.002	.14
NOV							
19...	1505	3.6	64	-1.0	.5	.003	.04
30...	1505	25	44	.0	.0	.003	.14
DEC							
30...	1135	5.2	55	3.0	.5	.002	.05
JAN							
29...	1250	8.5	50	2.5	.0	.002	.05
MAR							
01...	1645	10	49	1.5	1.0	.003	.08
29...	1550	14	50	3.0	3.0	.002	<.04
APR							
19...	1820	42	45	9.0	2.0	.003	.08
30...	1300	42	47	10.0	5.0	.002	.06
MAY							
12...	1810	174	35	8.5	1.0	.002	.49
13...	1150	95	39	9.5	3.5	.002	.12
20...	1200	99	37	12.5	4.0	.002	.05
25...	1610	312	30	--	--	.003	.44
26...	1225	259	32	20.0	5.0	.003	.13
JUN							
02...	1555	136	33	4.0	3.5	.002	<.04
12...	1805	159	29	15.5	5.0	.001	.10
17...	2025	171	28	10.0	4.0	.003	.08
24...	0930	107	30	19.0	5.5	.001	.07
JUL							
16...	1340	18	38	21.5	14.0	.002	.04
AUG							
19...	1255	3.5	60	24.0	16.5	.005	.04
SEP							
22...	1320	1.8	74	18.5	13.0	.004	<.04

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT						
23...	.007	.015	.026	44	.01	1
NOV						
19...	.010	.013	.022	36	.05	5
30...	.058	.005	.040	281	1.8	27
DEC						
30...	.017	.009	.017	33	.04	3
JAN						
29...	.018	.008	.017	44	.05	2
MAR						
01...	.022	.007	.016	74	.24	9
29...	.019	.002	.013	28	.15	4
APR						
19...	.058	.002	.038	309	2.5	22
30...	.031	.004	.012	55	.23	2
MAY						
12...	.030	.005	.112	2210	66	141
13...	.032	.004	.022	166	3.1	12
20...	.011	.005	.019	97	2.1	8
25...	.028	.004	.153	1920	143	170
26...	.030	.005	.037	357	17	25
JUN						
02...	.018	.005	.021	116	2.9	8
12...	.015	.005	.028	232	8.2	19
17...	.017	.006	.033	217	10	22
24...	.003	.005	.015	64	1.4	5
JUL						
16...	.005	.004	.021	29	.05	1
AUG						
19...	.010	.014	.031	47	<.01	<1
SEP						
22...	.009	.017	.038	67	.01	3

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

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 sea level, from topographic map.

REMARKS.—Records good except for estimated days, which are fair. Minor diversion for local water supply upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,530 ft³/s, Jan. 1, 1997, gage height, 9.36 ft; no flow for many days during 1977–78, 1981, 1988, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 100 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	1815	396	6.09	June 16	1930	215	5.57

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	e3.6	17	e5.0	e12	e11	19	65	192	75	e6.8	2.6
2	2.9	e3.1	10	e5.0	e12	e12	16	e70	176	72	e6.5	2.5
3	2.8	3.0	e9.0	e5.0	e9.5	14	16	e50	116	63	6.1	2.5
4	2.7	2.8	e9.0	e5.0	e9.5	14	17	46	85	52	5.8	2.4
5	2.6	2.7	e8.8	e5.0	8.9	13	e15	46	90	44	5.6	2.3
6	2.5	2.7	e8.8	e5.0	8.7	12	e14	62	123	40	6.5	2.3
7	2.4	3.1	e8.6	e5.0	e8.9	12	13	86	117	37	6.2	2.2
8	2.3	2.9	e8.6	e5.0	e9.0	12	e13	88	107	34	5.6	2.1
9	2.3	2.8	e8.3	e5.0	e9.2	e11	e13	84	103	31	5.7	2.4
10	2.3	2.8	e8.3	e5.0	e9.6	e11	e13	84	108	29	7.1	2.5
11	2.3	2.9	e8.0	e5.0	e10	11	13	106	126	29	6.3	2.2
12	2.2	e2.9	e8.0	e5.0	e11	11	14	142	135	27	5.4	2.1
13	2.1	2.9	e7.8	e5.0	e12	11	17	138	152	26	4.9	2.1
14	2.1	3.5	e7.8	e5.0	e12	11	19	108	165	24	4.6	2.1
15	2.1	3.4	e7.4	e6.0	e12	11	20	91	169	21	4.3	2.0
16	2.0	3.2	e7.4	e8.0	e12	11	23	91	173	19	4.1	1.9
17	2.0	3.7	e7.1	e9.5	e11	12	29	115	163	17	3.9	1.9
18	2.1	3.2	e6.8	e12	11	14	38	131	156	16	3.7	1.9
19	2.0	3.8	e6.8	e11	11	15	51	140	147	14	3.5	2.0
20	2.0	3.4	e6.5	e10	9.9	14	60	151	137	13	3.3	1.9
21	2.0	3.0	e6.4	e9.5	e9.7	14	62	164	133	12	3.2	1.8
22	2.0	3.7	e6.4	e9.3	e9.5	14	53	186	135	12	3.2	1.8
23	2.0	10	e6.3	e9.0	9.4	14	44	209	139	11	3.2	1.7
24	2.9	11	e6.2	e8.8	e9.4	14	44	240	134	11	2.9	1.7
25	3.0	6.8	e6.1	e8.6	e9.3	15	64	270	107	10	2.8	1.6
26	3.0	5.8	e5.9	e8.4	e9.1	19	85	287	85	9.5	2.8	1.6
27	2.9	5.3	e5.7	e8.2	9.1	22	76	266	74	9.0	3.2	1.6
28	2.7	5.1	e5.1	e8.0	9.7	21	60	e244	71	8.5	2.8	1.5
29	2.8	6.0	e5.1	e10	---	20	49	e186	73	8.0	2.6	1.5
30	2.7	21	e5.1	e11	---	19	48	e174	75	e7.9	2.6	1.5
31	e2.5	---	e5.1	e12	---	e18	---	e180	---	e7.4	2.6	---
TOTAL	75.5	140.1	233.4	229.3	284.4	433	1018	4300	3766	789.3	137.8	60.2
MEAN	2.44	4.67	7.53	7.40	10.2	14.0	33.9	139	126	25.5	4.45	2.01
MAX	3.3	21	17	12	12	22	85	287	192	75	7.1	2.6
MIN	2.0	2.7	5.1	5.0	8.7	11	13	46	71	7.4	2.6	1.5
AC-FT	150	278	463	455	564	859	2020	8530	7470	1570	273	119

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1999, BY WATER YEAR (WY)

MEAN	3.23	11.1	12.9	18.0	15.4	21.6	42.1	92.1	78.5	23.8	4.14	1.85
MAX	22.4	73.9	92.5	144	77.7	80.3	89.2	177	265	123	26.9	7.93
(WY)	1983	1982	1982	1997	1982	1986	1989	1996	1983	1983	1983	1983
MIN	.15	1.06	.80	1.10	1.24	2.52	8.06	18.7	4.59	1.10	.003	.005
(WY)	1978	1978	1977	1991	1991	1977	1975	1977	1992	1994	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1973 - 1999	
ANNUAL TOTAL	13195.4		11467.0			
ANNUAL MEAN	36.2		31.4		27.1	
HIGHEST ANNUAL MEAN					59.0	
LOWEST ANNUAL MEAN					5.29	
HIGHEST DAILY MEAN	280	Jun 7	287	May 26	1390	Jan 1 1997
LOWEST DAILY MEAN	2.0	Oct 16	1.5	Sep 28	.00	Aug 4 1977
ANNUAL SEVEN-DAY MINIMUM	2.0	Oct 16	1.6	Sep 24	.00	Aug 4 1977
INSTANTANEOUS PEAK FLOW			396	May 26	2530	Jan 1 1997
INSTANTANEOUS PEAK STAGE			6.09	May 26	9.36	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	26170		22740		19620	
10 PERCENT EXCEEDS	113		111		78	
50 PERCENT EXCEEDS	7.2		9.3		7.0	
90 PERCENT EXCEEDS	2.7		2.3		.97	

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

WATER-QUALITY RECORDS

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

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

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

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

PERIOD OF DAILY RECORD.—October 1972 to June 1978, October 1979 to September 1992.

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

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

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT									
23...	1540	2.0	607	102	10.1	74	14.0	6.0	.002
NOV									
19...	1600	4.0	612	99	11.6	68	.0	.0	.002
23...	1505	12	--	--	--	62	1.0	1.0	.004
23...	2040	19	--	--	--	53	.0	.0	.002
30...	1610	24	--	--	--	48	.0	.0	.002
DEC									
30...	1235	5.1	608	97	11.3	60	3.0	.0	.002
JAN									
18...	1230	12	--	--	--	46	1.0	.0	<.001
29...	1345	10	612	99	11.6	54	2.0	.0	.001
MAR									
01...	1745	11	606	103	11.8	52	--	.5	.003
29...	1645	20	606	102	10.9	53	3.0	3.0	.004
APR									
19...	1915	63	612	100	11.4	47	5.0	1.0	.002
20...	0610	57	--	--	--	48	.5	1.0	.002
30...	1410	45	607	101	10.0	49	8.0	6.0	.002
MAY									
12...	1900	190	--	--	--	37	7.5	1.0	.001
13...	1240	119	--	--	--	41	10.0	4.5	.001
20...	0605	138	607	99	11.2	38	.5	1.0	.003
25...	1710	339	--	--	--	30	15.5	4.0	.002
26...	1310	248	--	--	--	33	6.0	6.0	.002
JUN									
02...	1655	163	600	99	10.2	34	1.5	4.0	.002
12...	1855	172	--	--	--	30	14.0	5.5	.001
17...	2200	200	--	--	--	29	8.0	4.0	.002
24...	1030	116	596	100	9.6	31	20.0	6.5	.003
JUL									
16...	1020	19	609	100	9.0	40	19.0	10.0	.003
AUG									
19...	1345	3.6	609	100	7.6	64	24.0	17.5	.004
SEP									
22...	1530	1.7	608	100	8.2	76	17.5	14.0	.003

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT							
23...	.05	.004	.011	.019	58	<.005	<1
NOV							
19...	.05	.005	.012	.019	59	.06	6
23...	.15	.022	.016	.041	313	.42	13
23...	.12	.055	.013	.040	328	1.0	20
30...	.12	.049	.004	.041	235	1.2	18
DEC							
30...	.05	.016	.009	.017	37	.06	4
JAN							
18...	.15	.022	.008	.027	180	.32	10
29...	.06	.002	.009	.018	57	.16	6
MAR							
01...	.07	.020	.008	.017	107	.21	7
29...	.13	.014	.006	.014	42	.38	7
APR							
19...	.14	.058	.002	.058	566	6.1	36
20...	.10	.067	.001	.023	148	1.8	12
30...	.09	.020	.005	.014	64	.61	5
MAY							
12...	.43	.031	.003	.169	2480	76	148
13...	.13	.025	.003	.026	237	5.1	16
20...	.05	.016	.005	.022	198	5.6	15
25...	.53	.030	.004	.320	3820	309	338
26...	.11	.026	.004	.059	792	29	44
JUN							
02...	.06	.016	.003	.024	144	3.5	8
12...	.07	.009	.004	.033	266	11	23
17...	.10	.014	.005	.029	212	7.0	13
24...	.07	.005	.005	.016	71	1.6	5
JUL							
16...	.04	.006	.004	.018	35	.05	1
AUG							
19...	.05	.009	.013	.034	64	.01	1
SEP							
22...	.04	.007	.013	.033	59	.01	2

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

10336686 CARNELIAN CREEK AT CARNELIAN BAY, CA

LOCATION.—Lat 39°13'37", long 120°04'50", in NE 1/4 NW 1/4 sec.22, T.16 N., R.17 E., Placer County, Hydrologic Unit 16050101, on right bank, 0.1 mi east of Carnelian Bay Post Office, at Highway 28.

DRAINAGE AREA.—2.93 mi².

PERIOD OF RECORD.—May to September 1999.

GAGE.—Water-stage recorder. Elevation of gage is 6,232 ft above sea level, from topographic map.

REMARKS.—Records fair except for flows below 0.2 ft³/s, which are poor. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 32 ft³/s, May 22, 1999, gage height, 1.94 ft; minimum daily, 0.10 ft³/s, several days in July and August 1999.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	6.1	3.9	.30	.10	.17
2	---	---	---	---	---	---	---	7.4	3.7	.25	.10	.16
3	---	---	---	---	---	---	---	6.2	3.3	.22	.10	.15
4	---	---	---	---	---	---	---	5.5	2.8	.16	.11	.15
5	---	---	---	---	---	---	---	7.2	2.4	.16	.10	.15
6	---	---	---	---	---	---	---	11	2.2	.17	.11	.14
7	---	---	---	---	---	---	---	15	1.9	.16	.10	.15
8	---	---	---	---	---	---	---	15	1.7	.15	.10	.15
9	---	---	---	---	---	---	---	14	1.6	.15	.10	.17
10	---	---	---	---	---	---	---	14	1.4	.13	.12	.16
11	---	---	---	---	---	---	---	17	1.3	.12	.12	.16
12	---	---	---	---	---	---	---	20	1.2	.11	.11	.15
13	---	---	---	---	---	---	---	18	1.1	.12	.11	.17
14	---	---	---	---	---	---	---	14	1.0	.15	.11	.17
15	---	---	---	---	---	---	---	12	1.0	.12	.10	.17
16	---	---	---	---	---	---	---	12	.94	.12	.10	.16
17	---	---	---	---	---	---	---	14	.87	.12	.11	.18
18	---	---	---	---	---	---	---	15	.82	.11	.15	.20
19	---	---	---	---	---	---	---	16	.75	.11	.14	.20
20	---	---	---	---	---	---	---	17	.68	.11	.14	.19
21	---	---	---	---	---	---	---	18	.66	.11	.14	.18
22	---	---	---	---	---	---	---	19	.64	.11	.15	.19
23	---	---	---	---	---	---	---	19	.61	.11	.15	.20
24	---	---	---	---	---	---	---	19	.57	.11	.15	.19
25	---	---	---	---	---	---	---	21	.52	.11	.15	.17
26	---	---	---	---	---	---	---	19	.48	.10	.15	.18
27	---	---	---	---	---	---	---	14	.44	.11	.15	.21
28	---	---	---	---	---	---	---	11	.41	.10	.15	.24
29	---	---	---	---	---	---	---	7.4	.41	.11	.15	.25
30	---	---	---	---	---	---	---	5.5	.34	.11	.15	.22
31	---	---	---	---	---	---	---	4.5	---	.10	.16	---
TOTAL	---	---	---	---	---	---	---	413.8	39.64	4.22	3.88	5.33
MEAN	---	---	---	---	---	---	---	13.3	1.32	.14	.13	.18
MAX	---	---	---	---	---	---	---	21	3.9	.30	.16	.25
MIN	---	---	---	---	---	---	---	4.5	.34	.10	.10	.14
AC-FT	---	---	---	---	---	---	---	821	79	8.4	7.7	11

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA

LOCATION.—Lat 38°51'48", long 119°57'26", in NE 1/4 NW 1/4 sec.26, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on right bank, 50 ft downstream from U.S. Forest Service Road 12N01, about 2.2 mi upstream from confluence of Saxon Creek, and 2.6 mi northeast of Meyers.

DRAINAGE AREA.—7.40 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—May 1990 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,850 ft above sea level, from topographic map.

REMARKS.—Records fair except for estimated daily discharges, which are poor. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 166 ft³/s, June 27, 1995, gage height, 6.19 ft; minimum daily, 1.9 ft³/s, Dec. 21, 1990.

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)
May 28	1930	102	5.68	June 13	2000	86	5.53

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	7.1	e6.7	6.4	5.6	5.5	6.2	12	68	31	11	9.2
2	9.6	6.6	e6.7	6.3	5.7	5.5	6.0	12	63	30	e11	8.5
3	9.3	6.5	e6.6	6.1	5.7	5.6	6.3	11	54	28	e11	7.4
4	9.3	6.4	e6.6	6.0	5.7	5.4	5.9	11	45	27	e11	7.1
5	8.6	6.5	e6.6	6.2	5.5	5.4	5.9	13	47	27	e10	7.7
6	8.5	6.5	e6.5	6.1	5.5	5.4	5.9	17	53	28	10	7.8
7	8.5	6.9	e6.5	6.2	6.3	5.3	5.8	20	49	24	10	7.8
8	8.3	6.7	e6.5	6.2	6.0	5.2	5.9	22	46	21	10	7.6
9	8.3	6.7	e6.4	5.9	e6.0	e5.2	5.7	20	46	21	11	7.7
10	8.3	6.7	e6.4	6.1	e5.9	e5.2	5.6	20	49	20	12	8.1
11	8.1	6.7	6.4	6.1	e5.8	5.2	5.6	24	53	19	11	7.7
12	7.9	7.5	6.2	6.1	5.8	5.2	5.8	25	58	19	10	7.1
13	7.8	6.8	6.0	5.9	5.6	5.5	6.6	26	62	18	9.6	6.9
14	7.9	6.9	5.7	5.6	5.6	5.5	7.3	24	63	17	9.8	e6.8
15	8.0	6.8	5.7	6.0	5.6	5.4	7.6	23	65	16	9.6	e6.8
16	7.8	6.8	5.9	5.9	6.0	5.4	8.4	25	65	15	9.5	7.3
17	7.6	6.8	5.9	6.2	6.3	5.7	9.9	28	65	15	8.6	7.4
18	7.5	6.7	6.1	6.8	6.1	5.9	11	30	63	15	9.6	8.1
19	7.5	7.5	5.8	6.6	5.9	5.9	13	33	63	15	9.0	7.8
20	7.4	6.8	e5.8	5.7	5.9	5.8	13	35	59	14	9.4	6.7
21	7.2	6.7	e5.8	6.2	5.9	5.6	13	39	59	14	8.8	6.6
22	7.1	7.3	e5.8	6.1	5.7	5.7	11	46	60	14	9.4	6.3
23	7.0	8.2	e5.8	e6.1	6.0	5.8	9.8	56	57	15	8.6	6.6
24	7.1	7.4	e5.8	e5.8	6.0	5.8	9.5	62	56	13	9.1	6.6
25	7.2	7.1	6.0	e5.5	6.1	6.1	11	76	51	13	9.3	6.2
26	7.6	6.8	5.9	5.3	5.6	6.6	13	79	46	13	9.4	5.9
27	7.4	6.7	6.2	5.2	5.4	6.7	12	85	40	11	9.6	6.2
28	7.1	6.7	5.9	5.7	5.4	6.6	12	85	36	12	9.2	6.1
29	7.0	e6.7	6.2	5.5	---	6.5	10	74	34	11	9.2	6.0
30	6.8	e6.7	6.3	5.6	---	6.3	10	69	33	11	9.2	6.0
31	6.6	---	6.5	5.7	---	6.8	---	71	---	11	9.3	---
TOTAL	244.1	206.2	191.2	185.1	162.6	177.7	258.7	1173	1608	558	304.2	214.0
MEAN	7.87	6.87	6.17	5.97	5.81	5.73	8.62	37.8	53.6	18.0	9.81	7.13
MAX	9.8	8.2	6.7	6.8	6.3	6.8	13	85	68	31	12	9.2
MIN	6.6	6.4	5.7	5.2	5.4	5.2	5.6	11	33	11	8.6	5.9
AC-FT	484	409	379	367	323	352	513	2330	3190	1110	603	424

e Estimated.

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

MEAN	5.21	5.42	6.01	7.17	5.56	6.97	10.5	27.0	35.2	18.4	8.16	5.99
MAX	7.87	8.20	14.2	24.9	11.4	14.2	22.3	48.1	84.9	62.1	20.0	10.7
(WY)	1999	1997	1997	1997	1997	1997	1997	1997	1995	1995	1995	1998
MIN	2.91	2.93	2.63	2.59	2.65	3.25	5.18	8.81	4.10	3.60	3.36	3.32
(WY)	1993	1993	1993	1991	1991	1991	1991	1992	1992	1992	1994	1990

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1990 - 1999	
ANNUAL TOTAL	5595.1		5282.8			
ANNUAL MEAN	15.3		14.5		12.3	
HIGHEST ANNUAL MEAN					19.8	
LOWEST ANNUAL MEAN					4.48	
HIGHEST DAILY MEAN	78	Jun 19	85	May 27	130	Jun 28 1995
LOWEST DAILY MEAN	4.2	Apr 6	5.2	Jan 27	1.9	Dec 21 1990
ANNUAL SEVEN-DAY MINIMUM	4.3	Apr 6	5.2	Mar 6	2.4	Dec 17 1990
INSTANTANEOUS PEAK FLOW			102		166	
INSTANTANEOUS PEAK STAGE			5.68		6.19	
ANNUAL RUNOFF (AC-FT)	11100		10480		8890	
10 PERCENT EXCEEDS	46		42		28	
50 PERCENT EXCEEDS	8.0		7.2		6.3	
90 PERCENT EXCEEDS	4.7		5.7		3.2	

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1990 to current year.

WATER TEMPERATURE: September 1997 to current year.

PERIOD OF DAILY RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997 to current year, two times per hour.

REMARKS.—In November 1989, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature at probe within 0.5°C.

Interruptions in record due to loss of hydrologic communication with stream channel. Water-temperature records for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum, 13.0°C, July 12–14, 1999; minimum, freezing point on many days during winter months.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 13.0°C, July 12–14; minimum, freezing point, many days November to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)
OCT								
29...	1130	7.5	--	--	--	47	4.5	3.5
NOV								
25...	1005	6.9	--	--	--	46	.0	1.0
DEC								
18...	1235	5.9	--	--	--	47	4.0	1.0
JAN								
06...	1110	5.9	--	--	--	47	1.0	1.0
FEB								
26...	1200	5.4	--	--	--	49	5.0	1.0
APR								
02...	0925	5.0	--	--	--	48	-1.5	1.0
MAY								
10...	0955	18	--	--	--	31	6.5	2.0
26...	1615	79	--	--	--	20	19.5	4.5
JUN								
03...	1650	51	583	100	10.3	23	1.0	3.0
09...	1225	44	--	--	--	24	11.5	5.0
14...	1405	57	--	--	--	21	20.5	9.0
JUL								
07...	1445	22	--	--	--	30	23.0	11.5
AUG								
19...	1210	8.9	--	--	--	45	20.5	8.0
SEP								
21...	1440	6.2	--	--	--	50	21.0	8.5

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)
OCT								
29...	.003	.07	.003	.008	.017	89	<.02	<1
NOV								
25...	.002	.08	.003	.007	.014	78	<.02	<1
DEC								
18...	<.001	.05	.012	.009	.015	80	<.02	<1
JAN								
06...	.002	.05	.018	.010	.018	86	.03	2
FEB								
26...	.002	.07	.022	.010	.016	83	.20	14
APR								
02...	.002	.06	.022	.009	.016	94	.04	3
MAY								
10...	.002	.15	.016	.008	.022	236	.15	3
26...	.002	.27	.012	.009	.056	1390	11	52
JUN								
03...	<.001	.10	.004	.006	.026	269	1.8	13
09...	<.001	.06	.006	.007	.018	304	.72	6
14...	<.001	.07	.003	.008	.023	155	1.4	9
JUL								
07...	<.001	.07	.003	.010	.027	181	.35	6
AUG								
19...	.003	<.04	.006	.010	.024	100	.05	2
SEP								
21...	.002	.04	.005	.009	.025	100	.02	1

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

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.0	5.5	6.5	3.5	2.0	3.0	1.0	.0	.5	1.5	.5	1.0
2	6.5	5.0	6.0	2.5	.5	1.5	2.0	.5	1.5	1.5	.5	1.0
3	5.5	3.5	4.5	3.5	1.5	2.5	2.0	.0	1.5	1.0	.5	1.0
4	5.0	2.5	3.5	3.5	1.5	2.5	.0	.0	.0	1.5	.5	1.0
5	5.5	3.0	4.0	2.5	1.5	2.0	.0	.0	.0	1.5	1.0	1.0
6	6.0	3.0	4.5	1.5	.5	1.0	.0	.0	.0	2.0	.5	1.5
7	6.0	3.5	4.5	2.0	.5	1.0	.5	.0	.0	2.0	1.0	1.5
8	6.0	4.0	5.0	1.0	.0	.5	1.0	.5	1.0	1.5	1.0	1.0
9	5.5	2.5	4.0	1.0	.0	.5	1.0	.0	.5	1.5	.5	1.0
10	4.5	1.5	3.0	2.0	.5	1.0	1.5	.5	1.0	1.5	.5	1.0
11	5.0	2.0	3.5	2.0	.5	1.5	2.0	1.5	1.5	2.0	1.0	1.5
12	5.5	3.0	4.0	1.5	.0	.5	2.0	1.0	1.5	2.0	1.0	1.5
13	5.5	3.5	4.5	2.5	1.0	1.5	2.0	1.5	2.0	2.0	1.0	1.5
14	5.0	3.0	4.0	3.0	1.5	2.0	2.0	.5	1.0	2.0	1.0	1.5
15	4.0	2.5	3.5	3.0	1.5	2.0	2.0	1.0	1.5	2.5	1.5	2.0
16	3.5	2.0	2.5	3.0	1.0	2.0	2.5	1.5	2.0	2.0	1.0	1.5
17	3.5	1.0	2.0	2.5	.5	1.5	2.0	1.5	1.5	2.0	1.5	2.0
18	3.5	1.5	2.5	1.0	.0	.5	1.5	.5	1.0	2.0	.0	1.0
19	4.0	1.5	2.5	1.0	.0	.5	1.0	.0	.5	1.0	.0	.5
20	4.0	2.5	3.0	1.5	.0	1.0	.0	.0	.0	.5	.0	.0
21	5.0	2.5	3.5	2.5	1.5	2.0	.0	.0	.0	.5	.0	.0
22	4.5	3.0	3.5	2.0	1.5	2.0	.0	.0	.0	1.5	.5	1.0
23	4.5	2.5	3.5	2.5	.5	2.0	.0	.0	.0	1.5	.0	.5
24	4.5	3.0	3.5	1.5	.5	1.0	.5	.0	.0	.0	.0	.0
25	3.0	2.0	2.5	2.0	1.0	1.5	1.5	.5	1.0	1.0	.0	.5
26	4.5	3.0	3.5	2.0	1.0	1.5	1.5	1.0	1.5	1.0	.5	1.0
27	4.5	2.5	3.5	2.5	2.0	2.0	1.5	1.0	1.5	1.0	.0	.5
28	5.0	3.5	4.0	2.0	1.5	2.0	2.0	1.5	1.5	1.0	.0	.5
29	4.0	2.5	3.5	2.0	1.0	1.0	1.5	1.0	1.5	1.0	.0	.5
30	2.5	1.0	2.0	2.0	.0	1.5	2.0	1.0	1.5	1.5	.5	1.0
31	3.0	.5	2.0	---	---	---	2.0	1.0	1.5	1.5	1.0	1.0
MONTH	8.0	.5	3.6	3.5	.0	1.5	2.5	.0	.9	2.5	.0	1.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.0	.0	.5	3.0	2.0	2.0	1.5	.0	1.0	4.5	2.0	3.0
2	1.5	.0	.5	2.5	1.0	2.0	---	---	---	3.5	2.0	2.5
3	2.0	1.0	1.5	2.5	2.0	2.0	---	---	---	3.0	1.0	2.0
4	2.0	1.5	2.0	2.0	1.0	2.0	---	---	---	4.5	1.0	2.5
5	2.0	1.0	1.5	2.0	.5	1.0	---	---	---	5.5	1.5	3.0
6	1.5	.5	1.0	2.0	1.0	1.5	---	---	---	5.5	2.0	3.0
7	1.0	.0	.5	1.5	.5	1.5	---	---	---	5.0	2.0	2.5
8	.5	.0	.5	1.5	1.0	1.0	---	---	---	5.0	1.5	2.5
9	.5	.0	.0	1.0	.0	.5	---	---	---	4.5	1.0	2.5
10	.0	.0	.0	1.5	.0	.5	---	---	---	4.0	1.5	2.5
11	.5	.0	.0	1.5	1.0	1.5	---	---	---	5.5	2.0	3.0
12	1.5	.5	1.0	2.0	.0	1.0	---	---	---	4.5	1.5	2.5
13	1.5	1.0	1.5	2.5	1.5	2.0	---	---	---	5.0	1.5	2.5
14	2.0	1.0	1.5	2.5	1.5	2.0	---	---	---	4.5	1.0	2.5
15	1.5	.5	1.0	2.5	1.5	2.0	---	---	---	5.0	1.0	2.5
16	2.0	1.5	1.5	2.5	1.5	2.0	---	---	---	5.5	1.5	2.5
17	2.0	1.0	1.5	3.0	1.5	2.0	---	---	---	5.5	1.5	3.0
18	2.0	.5	1.5	3.0	1.5	2.5	---	---	---	4.5	1.5	2.5
19	1.5	.0	1.0	3.0	2.0	2.5	---	---	---	5.5	1.5	3.0
20	1.5	.5	1.0	2.5	2.0	2.0	3.5	2.0	2.5	5.0	2.0	3.0
21	1.0	.0	.5	2.5	1.0	2.0	3.5	1.5	2.5	6.0	2.0	3.0
22	2.0	1.0	1.5	2.5	.5	1.5	3.0	1.0	2.0	6.0	2.0	3.0
23	2.0	1.0	1.5	3.0	1.5	2.5	---	---	---	5.5	2.0	3.0
24	2.0	1.5	1.5	3.0	1.5	2.5	---	---	---	4.5	2.0	3.0
25	2.0	.5	1.0	3.5	2.0	2.5	---	---	---	6.0	2.0	3.0
26	2.0	.0	1.0	3.5	2.0	2.5	3.5	2.0	2.5	5.0	2.0	3.0
27	2.5	2.0	2.0	3.0	1.0	2.0	4.5	1.5	2.5	6.5	2.0	3.5
28	2.5	1.5	2.0	2.5	1.0	2.0	1.5	1.0	1.0	6.5	2.5	3.5
29	---	---	---	3.0	1.0	2.0	2.5	1.0	2.0	5.0	2.0	3.5
30	---	---	---	2.5	.5	1.5	---	---	---	7.0	2.5	4.0
31	---	---	---	1.0	.0	.5	---	---	---	7.0	2.5	4.0
MONTH	2.5	.0	1.1	3.5	.0	1.8	---	---	---	7.0	1.0	2.9

10336770 TROUT CREEK AT U.S. FOREST SERVICE ROAD 12N01, NEAR MEYERS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	6.0	2.5	4.0	12.5	7.5	10.0	11.5	7.0	9.0	7.5	3.5	5.5
2	5.0	2.0	3.5	12.0	8.0	9.5	11.0	6.0	8.5	8.0	4.0	6.0
3	3.5	1.5	2.5	11.5	7.0	9.0	11.0	6.0	8.5	8.5	3.5	6.0
4	4.0	2.5	3.0	11.0	6.5	8.5	9.5	6.5	8.0	9.0	4.0	6.5
5	8.0	3.0	5.0	11.5	6.5	9.0	11.0	6.5	8.5	9.5	4.5	7.0
6	7.5	3.0	4.5	12.0	6.5	9.0	8.5	7.0	8.0	10.0	5.0	7.5
7	7.0	2.0	4.0	12.0	8.0	10.0	10.0	5.5	7.5	10.0	4.5	7.0
8	7.5	2.0	4.0	12.0	7.0	9.5	9.5	6.0	8.0	10.0	5.0	7.5
9	7.0	1.5	4.0	12.0	6.5	9.0	9.5	6.5	8.0	9.0	5.0	7.0
10	8.0	2.0	5.0	11.5	7.5	9.5	8.5	7.0	7.5	9.0	5.0	7.0
11	8.5	3.0	5.5	12.5	8.0	10.0	9.5	5.5	7.5	9.5	5.0	7.0
12	9.0	3.0	5.5	13.0	8.5	10.5	10.5	6.0	8.5	9.5	5.0	7.5
13	9.5	3.5	6.0	13.0	9.5	11.0	10.5	6.5	8.5	9.0	4.5	7.0
14	10.0	3.5	6.5	13.0	8.5	10.5	10.0	5.5	7.5	9.0	4.5	6.5
15	8.0	4.0	6.0	12.0	8.0	10.0	10.0	5.0	7.5	8.5	3.5	6.0
16	10.0	4.0	7.0	11.5	7.5	9.5	10.5	6.0	8.5	9.0	4.0	6.5
17	11.0	4.5	7.5	11.5	7.0	9.0	11.0	6.5	8.5	9.0	4.0	6.5
18	10.0	4.0	7.0	11.0	6.0	8.5	11.0	7.5	9.0	8.0	6.0	7.0
19	10.5	5.0	7.5	11.5	7.0	9.0	11.5	7.0	9.0	9.0	4.5	6.5
20	11.0	4.5	7.5	11.0	6.5	8.5	11.5	6.5	9.0	8.5	4.5	6.5
21	10.5	6.0	8.0	11.0	6.0	8.5	11.0	6.5	8.5	8.5	4.0	6.5
22	12.0	6.0	8.5	11.5	6.0	8.5	11.0	7.5	9.0	9.0	5.5	7.0
23	11.5	6.0	9.0	11.5	6.5	8.5	11.0	7.5	9.0	9.0	5.5	7.0
24	11.0	6.5	8.5	11.0	6.5	8.5	11.5	6.5	9.0	9.0	4.5	7.0
25	10.5	5.0	7.5	11.5	6.0	8.5	12.0	7.0	9.5	9.5	4.5	7.0
26	10.5	4.5	7.0	12.0	7.0	9.5	10.5	8.0	9.0	9.0	4.5	7.0
27	11.0	4.5	7.5	11.5	6.5	9.0	10.5	7.5	9.0	8.0	3.5	6.0
28	11.5	5.5	8.5	11.0	7.0	9.0	11.0	6.0	8.5	7.5	2.5	5.0
29	11.5	6.5	9.0	12.0	7.0	9.0	11.5	6.5	8.5	9.0	3.5	6.0
30	12.5	7.0	9.5	11.5	6.5	9.0	9.5	5.0	7.5	9.0	4.0	6.5
31	---	---	---	11.5	7.0	9.0	8.5	3.5	5.5	---	---	---
MONTH	12.5	1.5	6.3	13.0	6.0	9.2	12.0	3.5	8.3	10.0	2.5	6.6

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA

LOCATION.—Lat 38°54'13", long 119°58'04", in SE 1/4 NE 1/4 sec.10, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, 200 ft upstream of Pioneer Trail Road, 0.6 mi upstream of confluence of Cold Creek, and 2.8 mi south of South Lake Tahoe.

DRAINAGE AREA.—23.7 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—June 1990 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,270 ft above sea level, from topographic map. Prior to May 1, 1992, at datum 0.12 ft higher.

REMARKS.—Records fair except for estimated daily discharges, which are poor. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 525 ft³/s, Jan. 2, 1997, gage height, 7.59 ft; minimum daily, 2.0 ft³/s, Dec. 22, 1990.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 100 ft³/s and maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 28	2245	183	3.77	June 14	2400	147	3.44

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e16	16	19	e12	17	22	26	51	135	72	22	15
2	e16	15	19	e12	17	22	23	55	130	67	21	16
3	e16	15	18	e11	17	25	21	51	115	63	21	15
4	e16	15	16	e11	17	25	22	47	105	59	22	15
5	e16	15	16	e11	15	24	21	51	102	55	22	15
6	e15	15	18	e11	15	22	21	60	108	52	21	15
7	e15	16	18	e13	e17	21	21	69	105	49	21	15
8	e15	15	18	e14	e20	20	18	70	101	46	20	15
9	e16	15	17	15	23	19	e18	67	100	44	21	15
10	e15	15	17	15	25	e19	e20	65	101	41	25	15
11	e16	15	17	15	e25	20	21	74	106	40	25	15
12	e15	16	17	14	25	e20	21	83	113	38	22	13
13	e15	17	17	14	23	20	23	83	119	36	20	13
14	e15	15	16	13	21	20	26	76	129	35	20	13
15	e16	16	16	14	21	20	28	71	133	33	19	13
16	e15	16	15	17	21	20	30	71	134	32	19	13
17	15	16	15	16	e21	21	35	76	135	31	18	13
18	15	16	15	20	e21	23	40	81	129	31	18	13
19	15	17	14	21	e21	24	45	82	128	30	18	14
20	15	18	14	22	e21	23	e48	86	127	29	17	13
21	14	15	e14	20	21	22	e48	90	124	28	17	13
22	14	16	e14	19	21	22	47	100	122	27	17	13
23	14	18	e14	16	20	23	39	112	123	26	17	13
24	15	18	e14	18	19	23	38	123	120	26	16	13
25	16	16	e14	19	19	24	46	141	108	26	16	12
26	17	15	e14	18	22	27	59	149	99	25	16	12
27	17	15	e14	16	19	27	58	153	91	24	17	12
28	16	15	e13	16	19	26	53	159	85	24	16	12
29	16	17	e13	17	---	25	46	150	80	23	15	12
30	16	17	e13	17	---	24	45	134	76	22	15	12
31	15	---	e13	17	---	23	---	139	---	22	15	---
TOTAL	478	476	482	484	563	696	1007	2819	3383	1156	589	408
MEAN	15.4	15.9	15.5	15.6	20.1	22.5	33.6	90.9	113	37.3	19.0	13.6
MAX	17	18	19	22	25	27	59	159	135	72	25	16
MIN	14	15	13	11	15	19	18	47	76	22	15	12
AC-FT	948	944	956	960	1120	1380	2000	5590	6710	2290	1170	809

e Estimated.

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

MEAN	9.45	10.3	12.3	19.7	16.1	23.0	32.6	62.8	70.4	38.7	14.8	10.2
MAX	15.4	18.7	34.2	87.8	38.2	42.0	54.9	107	158	142	35.8	19.0
(WY)	1999	1997	1997	1997	1997	1997	1996	1996	1995	1995	1995	1995
MIN	4.49	5.03	4.05	4.70	5.49	7.85	12.2	14.2	7.66	5.84	4.48	4.08
(WY)	1991	1991	1991	1991	1993	1992	1991	1992	1992	1992	1994	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1990 - 1999	
ANNUAL TOTAL	13188		12541			
ANNUAL MEAN	36.1		34.4		27.7	
HIGHEST ANNUAL MEAN					46.9	
LOWEST ANNUAL MEAN					7.71	
HIGHEST DAILY MEAN	141	Jun 22	159	May 28	457	Jan 2 1997
LOWEST DAILY MEAN	12	Jan 1	11	Jan 3	2.0	Dec 22 1990
ANNUAL SEVEN-DAY MINIMUM	13	Jan 1	12	Dec 31	2.8	Dec 21 1990
INSTANTANEOUS PEAK FLOW			183		525	
INSTANTANEOUS PEAK STAGE			3.77		7.59	
ANNUAL RUNOFF (AC-FT)	26160		24880		20050	
10 PERCENT EXCEEDS	97		94		70	
50 PERCENT EXCEEDS	18		20		14	
90 PERCENT EXCEEDS	14		14		5.0	

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1990 to current year.

WATER TEMPERATURE: September 1997 to current year.

PERIOD OF DAILY RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In November 1989, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature at probe within 0.5°C.

Interruptions in water-temperature record due to probe in ice and (or) instrument malfunction. Water-temperature data for September 1997 were not published but are available from U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum, 16.0°C, Aug. 30, 1998; minimum, freezing point on many days during winter months.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 15.0°C, July 13, 14, 29, Aug. 1; minimum, freezing point, many days November to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)
OCT								
29...	1015	15	--	--	--	49	6.0	4.0
NOV								
25...	1150	15	--	--	--	50	9.0	1.5
DEC								
18...	1410	16	--	--	--	50	8.0	1.0
JAN								
22...	1455	14	--	--	--	55	2.0	.5
FEB								
26...	1350	30	--	--	--	54	7.0	.5
MAR								
24...	1535	23	--	--	--	56	8.0	4.0
APR								
16...	1255	28	--	--	--	53	13.5	4.0
21...	1810	52	--	--	--	47	7.5	5.0
MAY								
07...	1055	57	--	--	--	41	14.0	3.5
10...	1810	57	--	--	--	42	11.0	6.0
14...	1045	74	--	--	--	38	8.0	3.0
20...	0815	84	--	--	--	34	7.0	2.5
26...	1435	139	--	--	--	28	17.5	6.0
JUN								
03...	1640	117	600	97	10.1	28	1.5	3.5
09...	1110	100	--	--	--	29	12.5	4.0
14...	0955	127	--	--	--	25	17.0	5.0
22...	1400	132	--	--	--	24	23.5	9.5
JUL								
07...	1535	51	--	--	--	31	25.0	13.0
AUG								
18...	1300	18	--	--	--	47	22.5	12.0
SEP								
21...	1550	13	--	--	--	53	21.0	12.0

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT								
29...	.002	.08	.004	.007	.016	165	<.04	<1
NOV								
25...	.001	.09	.003	.006	.014	209	.04	1
DEC								
18...	<.001	.07	.013	.008	.018	231	.04	1
JAN								
22...	.003	.13	.025	.010	.043	672	.38	10
FEB								
26...	.002	.21	.023	.010	.036	837	1.7	21
MAR								
24...	.003	.13	.015	.005	.022	368	.13	2
APR								
16...	.001	.07	.025	.006	.019	337	.46	6
21...	.001	.14	.022	.007	.039	689	2.4	17
MAY								
07...	<.001	.18	.015	.007	.040	814	3.1	20
10...	.002	.16	.016	.008	.032	608	1.8	12
14...	.001	.19	.015	.007	.037	657	3.2	16
20...	.001	.21	.006	.005	.047	626	4.1	18
26...	.002	.22	.014	.009	.057	1260	14	38
JUN								
03...	<.001	.10	.003	.005	.025	302	5.4	17
09...	.001	.11	.009	.006	.025	391	3.2	12
14...	<.001	.08	.003	.007	.025	242	7.9	23
22...	<.001	.08	.005	.008	.025	446	5.3	15
JUL								
07...	.001	.06	.004	.010	.032	317	.83	6
AUG								
18...	.001	.06	.004	.010	.027	205	.14	3
SEP								
21...	.003	.06	.006	.010	.028	193	.11	3

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

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	10.0	6.5	8.0	5.0	2.5	3.5	.5	.0	.0	---	---	---
2	9.5	6.0	7.5	3.0	1.0	2.0	1.0	.0	.5	---	---	---
3	7.5	5.0	6.0	4.0	1.0	2.5	2.0	.0	1.0	---	---	---
4	7.0	3.5	5.0	4.0	1.0	2.5	.5	.0	.0	---	---	---
5	7.0	3.5	5.0	3.5	1.0	2.0	.0	.0	.0	---	---	---
6	7.0	3.0	5.0	1.5	.5	1.0	.0	.0	.0	---	---	---
7	7.5	3.5	5.5	2.0	.0	1.0	.0	.0	.0	---	---	---
8	8.0	4.0	5.5	1.5	.0	1.0	.0	.0	.0	---	---	---
9	6.5	3.0	4.5	1.5	.0	.5	.0	.0	.0	---	---	---
10	5.5	2.0	4.0	1.5	.0	1.0	.5	.0	.0	---	---	---
11	6.5	2.0	4.0	2.0	.5	1.0	.5	.0	.0	---	---	---
12	6.0	2.5	4.0	1.0	.0	.0	.5	.0	.0	1.5	.0	.5
13	7.5	3.5	5.5	2.0	.0	1.0	.5	.0	.0	1.5	.5	.5
14	6.5	3.0	4.5	3.0	.5	1.5	.5	.0	.0	2.0	.0	1.0
15	6.0	3.0	4.5	3.0	.5	1.5	.5	.0	.5	2.5	.5	1.5
16	5.0	2.0	3.5	3.0	.5	2.0	1.0	.0	.5	1.5	.5	1.0
17	4.0	.5	2.0	2.0	.5	1.5	1.5	.0	.5	3.0	1.0	1.5
18	4.0	1.0	2.5	1.0	.0	.5	1.0	.0	.5	1.5	.0	.5
19	4.5	1.0	3.0	.5	.0	.0	1.0	.0	.5	.0	.0	.0
20	5.5	2.0	3.5	1.0	.0	.0	.0	.0	.0	.0	.0	.0
21	5.5	2.0	3.5	3.5	.5	2.0	.0	.0	.0	.0	.0	.0
22	6.0	3.0	4.0	2.5	.5	1.5	.5	.0	.0	.5	.0	.0
23	5.5	2.0	4.0	3.0	1.5	2.0	.0	.0	.0	.5	.0	.0
24	5.0	3.5	4.0	2.5	.5	1.5	.0	.0	.0	1.0	.0	.0
25	3.5	2.0	3.0	3.0	.5	1.5	.0	.0	.0	.5	.0	.0
26	6.0	3.0	4.0	2.5	.0	1.0	.0	.0	.0	.0	.0	.0
27	5.0	2.5	4.0	3.0	1.0	2.0	.0	.0	.0	.5	.0	.0
28	6.0	3.5	4.5	2.5	1.5	2.0	.0	.0	.0	.0	.0	.0
29	5.5	3.0	4.0	1.5	.0	.5	.0	.0	.0	.0	.0	.0
30	4.0	1.5	2.5	3.0	.0	1.5	---	---	---	.5	.0	.0
31	3.5	.5	2.0	---	---	---	---	---	---	.0	.0	.0
MONTH	10.0	.5	4.3	5.0	.0	1.4	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	.0	.0	.0	4.0	1.0	2.0	1.0	.0	.5	7.5	2.5	4.5
2	.5	.0	.0	3.5	.0	1.5	4.0	.0	1.5	5.5	2.5	3.5
3	.5	.0	.0	3.5	1.0	2.0	1.5	.0	.5	3.5	1.0	2.5
4	.5	.0	.0	3.0	.5	1.5	2.0	.0	.5	6.5	1.0	3.5
5	1.5	.0	.5	2.0	.0	.5	.5	.0	.0	7.5	1.5	4.5
6	1.0	.0	.5	3.5	.5	1.5	.5	.0	.0	8.5	2.0	5.0
7	.0	.0	.0	2.5	.5	1.5	1.5	.0	.5	8.0	2.5	4.5
8	.0	.0	.0	3.0	.0	1.0	.5	.0	.0	7.0	2.0	4.0
9	.0	.0	.0	.5	.0	.0	.5	.0	.0	6.5	1.5	4.0
10	.0	.0	.0	.5	.0	.0	1.0	.0	.0	6.0	2.0	4.0
11	.0	.0	.0	1.5	.0	.5	4.5	.5	2.0	8.5	2.5	5.0
12	.0	.0	.0	2.0	.0	.5	6.0	.5	2.5	7.0	3.0	4.5
13	.0	.0	.0	4.0	.0	1.5	6.5	.5	3.0	7.0	2.0	4.0
14	.0	.0	.0	4.0	1.0	2.0	6.5	1.0	3.0	6.5	1.5	4.0
15	.0	.0	.0	4.0	1.0	2.0	6.5	1.0	3.0	7.0	2.0	4.0
16	.0	.0	.0	4.5	.5	2.5	6.5	1.0	3.0	7.5	2.0	4.5
17	.0	.0	.0	4.5	.5	2.5	6.5	1.5	3.5	7.5	2.5	5.0
18	1.0	.0	.0	4.5	1.0	2.5	5.5	1.5	3.0	6.5	2.5	4.5
19	.5	.0	.0	4.0	1.5	2.5	6.5	1.5	3.5	8.0	2.5	5.0
20	.0	.0	.0	3.5	1.5	2.0	6.5	1.5	3.5	7.5	3.0	5.0
21	.0	.0	.0	4.0	.5	2.0	5.5	1.5	3.0	8.5	3.0	5.5
22	.5	.0	.0	4.0	.0	2.0	4.5	1.0	3.0	8.5	3.5	5.5
23	2.5	.0	1.0	4.5	1.0	2.5	3.5	1.5	2.5	8.5	3.5	5.5
24	3.0	.0	1.0	4.5	1.0	2.5	6.0	1.5	3.5	6.5	3.5	5.0
25	1.0	.0	.0	5.5	1.5	3.0	7.5	1.5	4.0	8.5	3.5	5.5
26	.5	.0	.5	5.5	1.5	3.0	5.0	2.0	3.5	7.5	3.5	5.5
27	4.0	.5	2.0	5.0	1.0	2.5	6.5	2.5	4.0	8.5	3.5	5.5
28	3.5	.5	1.5	4.5	.5	2.0	2.5	1.0	1.5	8.5	3.5	5.5
29	---	---	---	4.0	.5	2.0	3.0	1.0	2.0	6.0	3.5	4.5
30	---	---	---	3.5	.0	2.0	7.0	2.0	4.0	8.5	3.5	5.5
31	---	---	---	.5	.0	.0	---	---	---	8.0	3.5	5.5
MONTH	4.0	.0	.2	5.5	.0	1.7	7.5	.0	2.2	8.5	1.0	4.7

10336775 TROUT CREEK AT PIONEER TRAIL, NEAR SOUTH LAKE TAHOE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	6.5	4.0	5.0	12.5	8.5	10.5	15.0	9.0	11.5	10.0	5.0	7.5
2	6.0	3.5	4.5	12.5	8.5	10.5	14.5	7.5	10.5	10.0	5.5	7.5
3	4.0	2.0	3.0	12.0	8.0	10.0	14.0	8.0	10.5	11.5	5.0	8.0
4	4.5	3.0	3.5	11.5	8.0	9.5	12.0	8.5	10.0	12.0	5.5	8.5
5	8.5	4.0	6.0	12.0	7.0	9.5	13.5	8.5	10.5	12.5	6.0	9.0
6	8.5	4.0	6.0	12.5	7.5	10.0	12.5	9.0	10.5	13.0	6.5	9.5
7	7.5	2.5	5.0	13.5	9.0	11.0	12.5	7.0	9.5	13.0	6.5	9.5
8	7.5	2.5	5.0	13.0	8.5	10.5	11.5	7.5	9.5	13.5	7.0	10.0
9	7.0	2.5	5.0	13.0	7.5	10.5	11.5	8.0	9.5	10.5	7.5	9.0
10	8.5	3.0	6.0	13.5	9.0	11.0	10.5	8.5	9.0	11.5	7.0	9.0
11	8.5	4.0	6.5	14.5	9.5	11.5	11.0	7.0	9.0	13.0	7.0	9.5
12	9.0	4.0	6.5	14.5	10.0	12.0	14.0	7.5	10.0	13.0	7.0	9.5
13	9.5	4.5	7.0	15.0	11.0	12.5	14.5	8.5	11.0	12.5	7.0	9.5
14	10.0	5.0	7.5	15.0	10.0	12.0	13.5	7.5	10.0	13.0	6.5	9.5
15	8.5	5.5	7.0	14.5	9.5	12.0	13.0	6.5	9.5	12.5	6.5	9.0
16	10.0	5.5	7.5	14.0	9.0	11.5	14.0	7.5	10.5	12.0	6.5	9.0
17	10.0	5.5	8.0	13.5	8.0	10.5	14.5	8.0	10.5	11.0	6.5	9.0
18	9.5	5.0	7.5	13.0	7.5	10.0	14.5	8.5	11.0	10.5	8.5	9.5
19	10.0	6.0	8.0	13.5	8.0	10.5	14.5	8.0	11.0	12.5	7.0	9.5
20	10.0	5.5	8.0	13.5	7.5	10.0	14.5	8.0	11.0	11.0	7.0	9.0
21	10.0	6.5	8.5	13.0	7.0	9.5	14.5	8.0	11.0	12.0	6.5	9.0
22	11.0	6.5	9.0	14.0	7.5	10.5	13.0	8.5	10.5	11.0	7.5	9.0
23	11.0	7.0	9.5	14.0	8.0	10.5	14.0	8.5	11.0	13.0	8.0	9.5
24	11.0	7.0	9.0	13.5	7.5	10.5	14.5	8.0	11.0	12.5	7.0	9.5
25	10.0	6.0	8.0	14.0	7.5	10.5	14.5	8.5	11.5	12.0	7.0	9.5
26	9.5	5.0	7.5	14.5	8.5	11.5	12.0	10.0	11.0	12.0	7.5	9.5
27	10.0	5.5	8.0	14.5	8.5	11.0	14.0	9.0	11.0	11.0	6.5	8.5
28	11.0	6.5	9.0	14.5	8.5	11.5	14.5	8.5	11.0	9.5	5.5	7.5
29	11.5	7.5	9.5	15.0	9.0	11.5	14.5	8.5	11.0	9.5	5.0	7.0
30	12.0	7.5	10.0	14.0	8.0	11.0	13.5	8.0	10.5	10.0	6.0	8.0
31	---	---	---	14.5	8.5	11.5	12.0	5.5	8.5	---	---	---
MONTH	12.0	2.0	7.0	15.0	7.0	10.8	15.0	5.5	10.4	13.5	5.0	8.9

10336779 COLD CREEK AT MOUTH, CA

WATER-QUALITY RECORDS

LOCATION.—Lat 38°54'44", long 119°58'06", in SE 1/4 SE1/4 sec.03, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank, 600 ft upstream of mouth, about 0.5 mi downstream from Pioneer Trail Road, south of South Lake Tahoe.

DRAINAGE AREA.—12.8 mi².

PERIOD OF RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

PERIOD OF DAILY RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In September 1996, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor streamflows and water temperature within the Upper Truckee River–Trout Creek watershed. Records represent water temperature at probe within 0.5°C.

Interruptions in record due to instrument malfunction. Water-temperature data for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum, 14.0°C, July 17, 1998; minimum, freezing point on many days during winter months in most years.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 13.5°C, June 22, 23, 30, July 1, 11–14; minimum, freezing point, many days November to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.0	6.5	7.5	5.0	3.0	4.0	2.0	.0	1.0	2.0	.5	1.0
2	8.5	6.0	7.0	3.5	1.5	2.5	2.5	.5	1.5	1.5	.5	1.0
3	7.5	4.5	6.0	5.0	2.0	3.0	3.0	.0	1.5	1.5	.5	1.0
4	6.0	3.0	4.5	4.5	2.0	3.0	.5	.0	.0	2.0	.0	1.0
5	6.5	3.5	5.0	3.5	2.0	2.5	.0	.0	.0	2.0	.5	1.0
6	7.0	3.5	5.5	2.5	1.5	2.0	.0	.0	.0	2.5	.5	1.5
7	7.5	4.0	5.5	3.0	1.0	2.0	.0	.0	.0	3.0	1.0	2.0
8	7.5	4.5	5.5	3.0	1.0	1.5	1.5	.0	1.0	2.0	.5	1.0
9	6.0	3.0	4.5	2.5	.5	1.0	1.0	.0	.5	2.0	.0	1.0
10	5.0	2.5	4.0	3.0	1.0	1.5	1.5	.0	1.0	2.0	.5	1.0
11	6.0	2.5	4.5	3.5	1.0	2.0	2.5	1.0	1.5	2.5	1.0	1.5
12	6.0	3.0	5.0	2.5	.0	1.0	2.5	1.0	2.0	2.5	1.0	2.0
13	7.5	4.5	5.5	3.5	1.0	2.0	3.0	1.5	2.0	3.0	1.5	2.0
14	6.0	3.5	5.0	4.0	2.0	2.5	2.0	.5	1.5	3.0	1.0	2.0
15	6.0	3.5	4.5	4.0	1.5	2.5	2.5	.5	1.5	4.0	1.5	3.0
16	5.0	2.5	3.5	4.0	1.5	3.0	3.0	1.5	2.0	3.0	1.5	2.0
17	4.5	1.0	2.5	3.0	1.0	2.5	2.5	1.5	2.0	4.0	2.0	3.0
18	4.5	1.5	3.0	2.5	.5	1.0	2.0	.5	1.5	2.5	.5	1.5
19	5.0	2.0	3.5	2.0	.0	1.0	1.5	.0	1.0	1.5	.0	1.0
20	5.5	2.5	4.0	2.5	.0	1.5	.0	.0	.0	1.5	.0	.5
21	6.0	3.0	4.5	4.5	2.0	3.0	.0	.0	.0	2.0	.0	1.0
22	6.0	3.5	4.5	3.5	1.5	2.5	.0	.0	.0	2.5	1.0	1.5
23	5.5	3.0	4.5	4.0	2.0	3.0	.0	.0	.0	1.5	.0	.5
24	5.0	3.5	4.5	3.0	1.0	2.0	.0	.0	.0	.0	.0	.0
25	4.0	2.0	3.0	3.5	1.0	2.0	1.0	.0	.0	1.5	.0	1.0
26	5.5	3.5	4.5	3.0	1.0	2.0	2.0	1.0	1.5	2.0	.5	1.0
27	5.5	3.5	4.5	3.5	2.0	3.0	2.0	1.0	1.5	1.5	.0	.5
28	6.5	4.0	5.0	3.0	2.0	2.5	2.5	1.5	2.0	.5	.0	.0
29	6.0	3.0	4.0	2.5	.5	1.5	2.0	1.0	1.5	1.0	.0	.5
30	4.0	2.0	2.5	3.5	.0	2.0	2.5	1.0	2.0	2.0	.0	1.0
31	3.5	1.0	2.5	---	---	---	3.0	1.0	2.0	2.0	.5	1.5
MONTH	9.0	1.0	4.5	5.0	.0	2.2	3.0	.0	1.0	4.0	.0	1.2

10336779 COLD CREEK AT MOUTH, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	.0	.5	4.5	2.0	3.0	---	---	---	8.0	3.0	5.0
2	1.5	.0	.5	4.5	1.0	2.5	---	---	---	6.5	3.0	4.0
3	3.0	1.0	1.5	4.0	2.0	2.5	3.0	.0	1.0	5.5	2.0	3.5
4	3.5	1.5	2.5	4.0	1.0	2.5	5.0	.0	2.0	8.0	2.0	4.5
5	3.0	1.0	2.0	3.0	.0	1.5	2.0	1.0	1.5	9.0	2.5	5.0
6	2.0	.5	1.0	4.0	1.0	2.0	3.0	.0	1.5	9.0	3.0	5.0
7	1.5	.0	.5	4.0	1.0	2.0	2.5	1.0	1.5	8.5	3.0	5.0
8	1.5	.0	.5	3.5	1.0	1.5	1.5	.0	1.0	8.0	2.0	4.5
9	1.0	.0	.0	2.0	.0	.5	4.0	.5	1.5	7.5	2.0	4.5
10	.0	.0	.0	2.5	.0	1.0	4.0	.0	1.5	6.5	2.0	4.0
11	.0	.0	.0	3.5	1.0	2.0	6.0	2.0	3.5	9.0	3.0	5.5
12	2.0	.0	.5	3.5	.0	1.5	6.0	1.5	3.5	8.0	3.5	5.0
13	2.5	.5	1.5	5.0	1.0	2.5	7.5	1.5	4.0	8.0	2.5	4.5
14	2.5	1.0	1.5	5.0	1.5	3.0	7.5	2.0	4.0	7.5	2.0	4.0
15	2.0	.0	1.5	5.0	1.5	3.0	7.5	1.5	4.0	8.0	2.0	4.5
16	3.0	1.5	2.0	5.5	1.5	3.0	7.5	2.0	4.0	8.5	2.5	5.0
17	3.0	1.0	2.0	5.5	1.5	3.0	8.0	2.5	4.5	9.0	2.5	5.5
18	3.0	.5	1.5	5.5	1.5	3.0	6.5	2.0	4.5	7.5	3.0	5.0
19	2.0	.0	1.0	5.0	2.5	3.5	8.0	2.5	4.5	9.0	3.0	5.5
20	2.0	.0	1.0	4.0	2.5	3.0	7.5	2.5	4.5	8.5	3.0	5.5
21	1.5	.0	.5	5.0	1.5	2.5	6.5	2.5	4.0	9.5	3.5	6.0
22	3.0	1.0	2.0	5.0	1.0	2.5	6.0	2.0	3.5	9.5	4.0	6.0
23	3.5	1.0	2.0	6.0	2.0	3.5	4.5	2.0	3.0	10.0	4.0	6.5
24	3.5	1.0	2.0	---	---	---	8.0	2.5	4.5	8.5	4.5	6.0
25	2.0	.0	1.0	---	---	---	8.5	2.5	5.0	11.0	4.0	7.0
26	2.5	.0	1.0	---	---	---	5.5	3.0	4.0	10.0	4.5	7.0
27	4.5	2.0	3.0	---	---	---	8.0	2.5	4.5	11.0	4.0	7.0
28	4.0	1.5	2.5	---	---	---	3.0	1.5	2.0	11.0	4.0	7.0
29	---	---	---	---	---	---	5.5	1.5	3.0	7.5	4.0	5.5
30	---	---	---	---	---	---	8.5	3.0	5.0	11.0	4.0	7.0
31	---	---	---	---	---	---	---	---	---	10.5	4.0	7.0
MONTH	4.5	.0	1.3	---	---	---	---	---	---	11.0	2.0	5.4
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.5	4.5	6.5	13.5	8.0	11.0	12.5	8.5	10.5	9.0	5.0	7.0
2	7.0	4.0	5.5	13.0	8.0	10.5	12.0	7.0	9.5	9.5	5.5	7.5
3	4.5	2.0	3.5	12.0	7.5	10.0	11.5	7.5	9.5	10.0	5.5	7.5
4	5.5	3.0	4.0	11.5	7.0	9.5	11.0	8.0	9.5	10.5	6.0	8.0
5	10.0	4.5	7.0	12.5	6.5	9.5	12.0	8.0	10.0	11.0	6.5	8.5
6	10.0	4.5	7.0	13.0	7.0	10.0	11.0	9.0	9.5	12.0	7.0	9.0
7	9.0	3.0	6.0	13.0	8.0	10.5	10.5	7.0	9.0	11.5	7.0	9.0
8	9.0	3.0	6.0	12.5	7.5	10.5	10.5	7.5	9.0	12.0	7.5	9.5
9	8.5	3.0	6.0	12.5	6.5	10.0	10.5	8.0	9.0	10.0	7.5	9.0
10	10.0	3.5	7.0	13.0	8.0	10.5	10.0	8.5	9.0	10.5	7.0	9.0
11	10.5	4.5	7.5	13.5	8.5	11.0	10.0	6.5	8.5	12.0	7.5	9.5
12	11.0	5.0	8.0	13.5	9.0	11.5	12.0	7.5	9.5	12.0	7.5	9.5
13	12.0	5.5	8.5	13.5	10.0	12.0	12.0	8.0	10.0	11.5	7.5	9.0
14	12.5	5.5	9.0	13.5	9.0	11.5	11.5	7.0	9.5	11.5	7.0	9.0
15	10.5	6.0	8.5	13.0	8.0	11.0	11.0	6.5	9.0	11.0	6.5	8.5
16	12.0	5.5	8.5	12.0	7.5	10.0	12.0	7.5	10.0	11.0	6.5	8.5
17	12.5	6.0	9.0	11.5	7.0	9.5	12.5	8.0	10.0	10.5	7.0	8.5
18	11.5	5.5	8.5	11.5	6.5	9.5	13.0	9.0	10.5	10.0	8.5	9.0
19	12.5	6.5	9.0	12.0	7.5	10.0	12.5	8.0	10.5	11.5	7.0	9.0
20	12.5	6.0	9.0	11.5	7.0	9.5	13.0	8.0	10.5	10.5	7.5	9.0
21	12.0	7.0	9.5	11.0	6.0	9.0	12.5	8.0	10.5	11.0	7.0	9.0
22	13.5	7.0	10.0	12.0	7.0	10.0	12.0	8.5	10.5	10.5	8.0	9.0
23	13.5	7.5	10.5	12.0	7.0	10.0	12.5	8.5	10.5	12.0	8.0	9.5
24	12.5	7.0	10.0	11.0	7.0	9.5	13.0	8.0	10.5	11.5	7.5	9.0
25	11.5	6.0	8.5	12.0	7.0	10.0	12.5	8.5	10.5	11.5	7.5	9.5
26	11.5	4.5	8.0	12.5	8.0	10.5	11.0	9.5	10.5	11.5	7.5	9.0
27	12.0	5.0	8.5	12.0	7.5	10.5	12.0	9.0	10.5	10.5	6.5	8.5
28	12.5	6.5	9.5	12.0	8.0	10.5	12.5	8.5	10.5	9.5	5.5	7.5
29	13.0	7.0	10.0	12.5	8.5	10.5	12.5	8.5	10.5	9.5	5.5	7.5
30	13.5	7.5	10.5	12.0	7.0	10.0	12.0	8.0	9.5	10.0	6.5	8.0
31	---	---	---	12.5	8.5	10.5	10.0	5.5	7.5	---	---	---
MONTH	13.5	2.0	8.0	13.5	6.0	10.3	13.0	5.5	9.8	12.0	5.0	8.7

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA

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

DRAINAGE AREA.—36.7 mi².

PERIOD OF RECORD.—October 1960 to current year.

SPECIFIC CONDUCTANCE: March 1981 to September 1983.

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

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

GAGE.—Water-stage recorder. Datum of gage is 6,241.57 ft above sea level.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 535 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), and Jan. 2, 1997, gage height, 9.33 ft; minimum daily, 2.5 ft³/s, Sept. 7, 1988.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 100 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 29	0030	269	8.46				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	28	33	24	e26	34	40	73	205	117	45	29
2	30	27	32	e24	e26	34	35	79	196	113	44	29
3	29	26	31	e24	25	39	34	74	168	108	44	29
4	29	26	37	e24	25	39	41	70	148	102	45	28
5	29	25	e36	24	24	36	33	74	142	97	45	28
6	29	24	e34	23	23	33	33	85	149	92	43	28
7	29	26	e31	23	e31	31	32	97	144	88	42	27
8	28	26	e30	23	e38	30	29	98	138	85	41	26
9	28	26	e30	26	e49	29	37	94	135	82	e39	26
10	28	25	e29	25	e51	e29	38	91	136	79	e39	27
11	28	26	28	23	e39	29	32	99	142	77	e38	28
12	28	27	28	23	e36	31	32	113	150	75	e38	26
13	27	27	28	23	e34	29	37	114	159	73	e37	26
14	27	27	27	23	31	30	43	105	175	72	e37	26
15	28	27	27	25	e31	30	45	98	188	68	38	26
16	27	27	27	28	e30	30	49	99	193	66	38	26
17	28	27	27	28	e33	33	57	105	200	64	36	25
18	28	26	27	33	e34	36	65	112	203	62	35	26
19	28	26	25	34	e34	37	77	113	199	61	35	27
20	28	29	e25	36	e33	36	83	120	196	e60	34	26
21	28	27	e25	32	e31	34	82	125	192	e59	34	25
22	28	29	e25	31	31	34	75	140	186	57	33	25
23	27	31	e25	29	30	36	65	158	189	55	33	25
24	28	30	e25	e29	29	37	64	175	187	54	32	25
25	29	29	e25	e29	29	41	72	207	169	52	31	24
26	30	28	e25	28	e29	45	82	227	152	51	32	24
27	30	26	e25	e28	28	46	81	231	140	50	33	23
28	28	26	25	e28	29	43	76	240	132	49	31	23
29	28	29	24	e27	---	42	68	232	126	48	30	23
30	27	39	24	e26	---	40	66	202	121	e47	30	23
31	27	---	25	25	---	38	---	211	---	e46	30	---
TOTAL	877	822	865	828	889	1091	1603	4061	4960	2209	1142	779
MEAN	28.3	27.4	27.9	26.7	31.8	35.2	53.4	131	165	71.3	36.8	26.0
MAX	31	39	37	36	51	46	83	240	205	117	45	29
MIN	27	24	24	23	23	29	29	70	121	46	30	23
AC-FT	1740	1630	1720	1640	1760	2160	3180	8050	9840	4380	2270	1550

e Estimated.

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

MEAN	17.4	19.8	21.4	24.9	25.4	30.5	44.2	80.3	95.9	51.6	24.9	17.8
MAX	37.6	61.1	64.0	115	68.7	85.0	81.9	184	286	188	88.7	49.6
(WY)	1983	1984	1984	1997	1986	1986	1982	1969	1983	1995	1983	1983
MIN	5.19	7.43	8.18	8.00	8.02	11.0	15.7	14.2	10.9	5.21	3.43	3.71
(WY)	1989	1978	1991	1991	1991	1977	1988	1988	1988	1988	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	20932		20126			
ANNUAL MEAN	57.3		55.1		37.9	
HIGHEST ANNUAL MEAN					85.3 1983	
LOWEST ANNUAL MEAN					10.2 1977	
HIGHEST DAILY MEAN	210	Jun 22	240	May 28	501	Jan 2 1997
LOWEST DAILY MEAN	19	Jan 1	23	Jan 6	2.5	Sep 7 1988
ANNUAL SEVEN-DAY MINIMUM	19	Jan 1	24	Jan 2	3.0	Sep 9 1977
INSTANTANEOUS PEAK FLOW			269	May 29	535	Feb 1 1963
INSTANTANEOUS PEAK STAGE			8.46	May 29	11.14	Feb 1 1963
ANNUAL RUNOFF (AC-FT)	41520		39920		27430	
10 PERCENT EXCEEDS	136		135		86	
50 PERCENT EXCEEDS	33		32		23	
90 PERCENT EXCEEDS	23		25		9.0	

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1974, 1978, 1980–85, 1988, 1997 to current year.

PERIOD OF DAILY RECORD.—October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1985, October 1987 to September 1988, September 1997 to current year.

SPECIFIC CONDUCTANCE: March 1981 to September 1983.

WATER TEMPERATURE: September 1997 to current year.

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

INSTRUMENTATION.—Water-temperature recorder since September 1997 to current year, two times per hour.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water-temperature probe within 0.5°C. Interruptions in record due to loss of hydrologic with stream channel and (or) instrument malfunction. Water-temperature data for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 160 micromhos, Aug. 24, 1981; minimum recorded 14 micromhos, May 28, 1982.

WATER TEMPERATURE: Maximum, 20.5°C, July 25, 1988; minimum, freezing point on many days during winter months in most years.

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

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 15.5°C, Aug. 20, 24; minimum, freezing point, many days November to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.5	6.5	8.0	6.0	2.5	4.0	1.5	.0	.5	1.5	.0	.5
2	10.5	6.0	7.5	4.5	1.0	2.5	1.5	.0	1.0	1.0	.0	.0
3	9.0	4.5	6.5	5.5	1.5	3.0	2.0	.0	1.0	1.0	.0	.0
4	8.0	3.0	5.0	5.0	1.5	3.0	.0	.0	.0	1.0	.0	.0
5	8.5	3.0	5.0	4.0	1.5	2.5	.0	.0	.0	1.5	.0	.5
6	8.0	3.0	5.5	2.0	1.0	1.5	.0	.0	.0	1.0	.0	.5
7	9.0	3.5	5.5	2.5	.5	1.5	.0	.0	.0	2.0	.5	.5
8	9.0	4.0	6.0	2.5	.5	1.5	.0	.0	.0	2.0	.0	.5
9	7.5	2.5	5.0	3.0	.0	1.0	.5	.0	.0	1.5	.0	.5
10	6.5	2.0	4.0	2.5	.0	1.0	1.0	.0	.0	1.5	.0	.5
11	7.5	2.0	4.5	4.5	.5	1.5	1.5	.0	.5	2.0	.0	.5
12	6.5	2.5	4.5	2.5	.0	.5	1.5	.5	.5	2.0	.0	1.0
13	8.5	3.5	5.5	3.0	.0	1.5	2.0	.5	1.0	3.0	.5	1.0
14	7.5	3.0	5.0	4.5	1.0	2.0	1.0	.0	.5	3.0	.5	1.5
15	7.0	3.0	4.5	4.0	.5	2.0	2.0	.0	.5	3.5	1.0	2.5
16	6.0	2.0	3.5	4.0	1.0	2.0	2.5	.5	1.0	2.0	1.0	1.5
17	5.5	.5	2.5	3.0	.5	2.0	2.5	.5	1.0	3.5	1.5	2.0
18	5.5	1.0	3.0	2.0	.0	.5	2.0	.0	.5	2.0	.0	1.0
19	6.5	1.5	3.0	2.0	.0	.5	1.0	.0	.5	.5	.0	.0
20	6.5	2.0	4.0	1.5	.0	.5	.0	.0	.0	.5	.0	.0
21	6.5	2.0	4.0	4.5	1.0	2.5	.0	.0	.0	1.0	.0	.0
22	6.5	3.0	4.5	3.0	1.0	2.0	.0	.0	.0	2.0	.0	.5
23	7.0	2.0	4.0	3.5	1.5	2.5	.0	.0	.0	1.0	.0	.0
24	5.0	3.5	4.5	3.0	.5	1.5	.0	.0	.0	.0	.0	.0
25	3.5	2.0	3.0	4.0	.5	1.5	.0	.0	.0	.5	.0	.0
26	6.5	3.0	4.5	3.5	.0	1.5	.0	.0	.0	1.0	.0	.5
27	6.5	3.0	4.5	3.5	1.5	2.0	1.0	.0	.5	1.0	.0	.0
28	6.5	4.0	5.0	2.5	1.5	2.0	1.5	.5	.5	.0	.0	.0
29	6.0	2.5	4.0	1.5	.0	1.0	1.5	.0	.5	1.0	.0	.0
30	5.0	1.5	2.5	3.0	.0	1.5	1.5	.0	.5	1.0	.0	.0
31	4.5	.5	2.5	---	---	---	2.0	.5	1.0	1.0	.0	.5
MONTH	10.5	.5	4.5	6.0	.0	1.8	2.5	.0	.4	3.5	.0	.5

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	.0	.0	5.5	1.5	2.5	2.0	.0	.5	8.0	2.5	5.0
2	1.5	.0	.5	4.5	.0	2.0	5.5	.0	2.0	6.0	3.0	4.0
3	2.5	.0	.5	4.0	1.0	2.5	1.5	.0	.5	4.5	1.5	3.0
4	3.0	.5	1.0	4.0	.5	2.0	4.0	.0	1.5	8.0	1.5	4.0
5	3.0	.5	1.0	2.5	.0	1.0	1.0	.0	.5	9.0	2.0	5.0
6	1.0	.0	.5	4.5	.5	2.0	2.0	.0	.5	9.0	2.5	5.5
7	.0	.0	.0	5.0	.5	2.0	2.5	.0	1.0	8.5	2.5	5.0
8	.0	.0	.0	3.0	.0	1.0	1.0	.0	.0	8.0	2.0	4.5
9	.0	.0	.0	1.5	.0	.0	2.5	.0	.5	7.5	1.5	4.5
10	.0	.0	.0	1.5	.0	.5	2.0	.0	1.0	6.0	2.0	4.0
11	.0	.0	.0	4.0	.0	1.0	6.0	.5	2.5	9.0	3.0	5.5
12	.0	.0	.0	3.0	.0	1.0	7.5	.5	3.0	7.5	3.0	5.0
13	1.5	.0	.5	6.0	.0	2.5	8.0	.5	3.5	8.0	2.5	4.5
14	1.5	.0	.5	5.5	1.0	2.5	8.0	1.0	3.5	7.5	1.5	4.0
15	1.5	.0	.5	5.0	1.0	2.5	8.0	1.0	3.5	7.5	2.0	4.5
16	1.5	.5	.5	6.5	1.0	3.0	7.5	1.5	3.5	8.0	2.0	5.0
17	1.5	.5	.5	6.5	.5	3.0	8.0	1.5	4.0	8.5	2.5	5.0
18	1.5	.0	.5	6.5	1.0	3.0	6.5	1.5	3.5	7.5	2.5	5.0
19	1.0	.0	.0	4.5	1.5	3.0	8.0	2.0	4.0	9.0	2.5	5.5
20	.5	.0	.0	4.0	1.5	2.5	7.5	1.5	4.0	8.0	3.0	5.5
21	.5	.0	.0	5.5	.5	2.5	5.5	1.5	3.5	9.0	3.0	5.5
22	2.0	.0	.5	5.5	.0	2.5	5.5	1.5	3.0	9.0	3.5	6.0
23	3.5	.0	1.5	6.5	1.5	3.0	4.0	1.5	2.5	9.0	3.5	6.0
24	4.0	.0	1.5	5.5	1.5	3.0	7.5	1.5	4.0	7.5	4.0	5.5
25	1.0	.0	.5	7.0	1.5	3.5	8.5	2.0	5.0	9.5	4.0	6.0
26	1.5	.0	.5	7.0	1.5	3.5	5.0	2.5	4.0	8.5	4.0	6.0
27	5.0	1.0	2.5	6.5	1.0	3.0	7.5	2.5	4.5	9.5	3.5	6.0
28	4.5	.5	2.0	6.0	.5	2.5	3.0	1.5	2.0	9.5	3.5	6.0
29	---	---	---	5.0	.5	2.5	4.0	1.0	2.5	6.5	3.5	5.0
30	---	---	---	5.5	.0	2.5	8.5	2.0	4.5	9.5	3.5	6.0
31	---	---	---	1.5	.0	.5	---	---	---	9.0	4.0	6.5
MONTH	5.0	.0	.6	7.0	.0	2.2	8.5	.0	2.6	9.5	1.5	5.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.0	4.0	5.5	13.5	8.5	11.0	15.0	9.0	11.5	10.5	5.0	7.5
2	6.5	4.0	5.0	13.5	8.5	11.0	14.5	7.5	11.0	---	---	---
3	4.0	2.0	3.5	13.0	8.0	10.5	14.5	8.0	10.5	---	---	---
4	4.5	3.0	4.0	12.5	8.0	10.0	12.0	8.5	10.0	---	---	---
5	9.0	4.0	6.5	12.5	7.0	10.0	14.0	8.0	10.5	---	---	---
6	9.0	4.5	6.5	13.5	7.5	10.5	12.5	9.0	10.5	---	---	---
7	8.0	3.0	5.5	14.0	9.0	11.0	12.5	7.0	9.5	---	---	---
8	8.0	2.5	5.5	13.5	8.5	11.0	11.5	7.5	9.5	---	---	---
9	7.5	3.0	5.5	13.5	7.5	10.5	11.5	8.0	9.5	---	---	---
10	9.0	3.5	6.5	14.0	8.5	11.0	10.5	8.5	9.0	---	---	---
11	9.0	4.5	7.0	15.0	9.0	12.0	11.5	7.0	9.0	---	---	---
12	10.0	4.5	7.0	15.0	9.5	12.5	14.5	7.5	10.5	---	---	---
13	10.5	5.0	8.0	15.0	10.5	12.5	14.5	8.5	11.0	---	---	---
14	11.0	5.5	8.0	15.0	10.0	12.5	14.0	7.5	10.0	---	---	---
15	9.0	5.5	7.5	15.0	9.0	12.0	13.5	6.5	10.0	---	---	---
16	10.5	5.5	8.0	14.5	8.5	11.0	14.5	7.5	10.5	---	---	---
17	11.0	6.0	8.5	14.0	7.5	10.5	14.5	8.0	11.0	---	---	---
18	10.0	5.5	8.0	13.5	7.0	10.0	15.0	9.0	11.5	---	---	---
19	11.0	6.5	8.5	14.0	8.0	10.5	15.0	8.0	11.0	---	---	---
20	11.0	6.0	8.5	13.5	7.5	10.5	15.5	8.0	11.5	---	---	---
21	11.0	7.0	9.0	13.0	6.5	9.5	15.0	8.0	11.0	---	---	---
22	12.0	7.0	9.5	14.0	7.5	10.5	13.0	8.5	11.0	---	---	---
23	12.0	7.5	10.0	14.0	8.0	10.5	14.5	8.5	11.0	---	---	---
24	12.0	7.5	9.5	13.5	7.5	10.5	15.5	8.0	11.5	---	---	---
25	10.5	6.0	8.5	14.0	7.5	10.5	15.0	8.5	11.5	---	---	---
26	10.5	5.0	8.0	15.0	8.5	11.5	11.5	9.5	11.0	---	---	---
27	11.0	5.5	8.5	14.5	8.5	11.5	14.0	9.0	11.5	---	---	---
28	12.0	6.5	9.5	14.5	8.5	11.5	15.0	8.5	11.5	---	---	---
29	12.5	7.5	10.0	15.0	9.0	11.5	15.0	8.5	11.5	---	---	---
30	13.0	8.0	10.5	14.5	8.0	11.0	14.0	8.5	10.5	---	---	---
31	---	---	---	15.0	8.5	11.5	12.0	5.5	8.5	---	---	---
MONTH	13.0	2.0	7.5	15.0	6.5	11.0	15.5	5.5	10.6	---	---	---

10336790 TROUT CREEK AT SOUTH LAKE TAHOE, CA

LOCATION.—Lat 38°55'56", long 119°58'40", in SE 1/4 NW 1/4 sec.3, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on right bank, downstream side of U.S. Highway 50 bridge, 1.2 mi upstream from Lake Tahoe, and 1.4 mi southwest of South Lake Tahoe Post Office.

DRAINAGE AREA.—40.4 mi².

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

WATER TEMPERATURE: Instantaneous, October 1971 to June 1974, October 1988 to September 1992. Continuous: September 1997 to current year.

PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Instantaneous, October 1971 to June 1974, October 1988 to September 1992. Continuous: September 1997 to current year.

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

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Water-temperature records represent water temperature within 0.5°C. Interruptions in water-temperature record due to loss of hydrologic communication with stream and for instrument malfunction. Water-temperature data for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum, 22.0°C, July 8, 1990; minimum, freezing point on many days during winter months in most years.

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

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

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 15.5°C, Aug. 19, 20; minimum, freezing point, many days November to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)
OCT								
29...	0940	30	--	--	--	48	8.5	4.5
NOV								
25...	1315	30	--	--	--	49	13.0	3.5
DEC								
18...	1535	30	--	--	--	50	6.0	2.0
JAN								
22...	1025	34	--	--	--	57	3.0	1.0
FEB								
17...	1025	34	--	--	--	90	4.5	1.0
26...	1515	30	--	--	--	62	5.5	2.0
MAR								
24...	1050	36	--	--	--	60	9.0	3.0
APR								
16...	0900	46	--	--	--	57	4.5	1.5
21...	1150	78	--	--	--	47	9.0	3.5
28...	1440	76	--	--	--	47	1.0	2.5
MAY								
07...	0815	94	--	--	--	40	9.5	2.5
10...	1545	88	--	--	--	44	15.0	6.5
14...	0950	105	--	--	--	39	7.5	2.5
20...	0900	116	--	--	--	35	10.0	3.0
26...	0920	220	--	--	--	29	15.0	5.0
JUN								
03...	1135	167	599	99	10.3	28	4.0	3.5
09...	0900	136	--	--	--	30	9.0	3.5
14...	0710	176	--	--	--	27	10.5	5.5
22...	1555	179	--	--	--	26	23.0	13.0
JUL								
07...	1030	90	--	--	--	31	22.0	10.0
AUG								
18...	1155	38	--	--	--	43	21.0	10.5
SEP								
21...	0920	26	--	--	--	50	13.5	7.0

10336790 TROUT CREEK AT SOUTH LAKE TAHOE, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE) (46568)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT								
29...	.003	.08	.007	.007	.018	235	.08	1
NOV								
25...	.003	.07	.014	.007	.018	349	.89	11
DEC								
18...	<.001	.06	.023	.008	.022	462	.57	7
JAN								
22...	.004	.13	.031	.008	.028	561	.73	8
FEB								
17...	.007	.21	.028	.010	.097	1670	4.1	45
26...	.005	.20	.031	.009	.041	973	1.9	24
MAR								
24...	.005	.13	.017	.006	.023	563	.58	6
APR								
16...	.001	.13	.030	.006	.022	517	1.6	13
21...	.002	.28	.030	.008	.065	1180	8.6	41
28...	.003	.13	.028	.005	.027	514	5.1	25
MAY								
07...	<.001	.29	.020	.007	.066	1170	7.4	29
10...	.002	.19	.021	.008	.039	806	3.8	16
14...	.001	.22	.019	.007	.046	871	6.8	24
20...	.002	.33	.021	.007	.043	1160	8.8	28
26...	.002	.31	.020	.014	.079	1420	23	39
JUN								
03...	<.001	.13	.003	.003	.034	1730	8.1	18
09...	.001	.08	.013	.006	.024	260	7.7	21
14...	<.001	.13	.003	.009	.046	543	12	25
22...	.002	.09	.004	.009	.033	486	6.8	14
JUL								
07...	.001	.13	.007	.010	.043	624	4.6	19
AUG								
18...	.001	.10	.010	.009	.033	420	.82	8
SEP								
21...	.002	.05	.013	.009	.031	274	.28	4

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

10336790 TROUT CREEK AT SOUTH LAKE TAHOE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.0	6.5	8.5	6.0	2.5	4.0	1.5	.0	.5	2.0	.0	.5
2	10.5	6.0	8.0	5.0	1.0	2.5	2.0	.0	1.0	1.5	.0	.0
3	9.0	5.0	6.5	5.5	1.5	3.0	2.0	.0	1.0	1.0	.0	.0
4	8.5	3.0	5.5	5.0	1.0	3.0	.5	.0	.0	1.0	.0	.0
5	8.5	3.0	5.5	4.0	1.0	2.5	.0	.0	.0	2.0	.0	.5
6	8.5	3.0	5.5	2.0	1.0	1.5	.0	.0	.0	1.5	.0	.5
7	9.0	3.5	6.0	2.5	.5	1.5	.0	.0	.0	2.5	.0	.5
8	9.5	4.0	6.5	3.0	.5	1.5	.0	.0	.0	2.0	.0	.5
9	8.0	3.0	5.5	3.0	.0	1.0	.0	.0	.0	1.5	.0	.0
10	7.5	2.0	4.5	2.5	.0	1.0	.0	.0	.0	2.0	.0	.0
11	8.0	2.0	4.5	5.0	.5	2.0	.0	.0	.0	1.5	.0	.5
12	7.5	2.5	5.0	3.0	.0	1.0	1.5	.0	.5	3.0	.0	1.0
13	9.0	3.5	6.0	3.0	.0	1.5	2.0	.0	.5	3.0	.0	1.0
14	8.0	3.0	5.5	4.5	.5	2.0	1.5	.0	.5	3.0	.0	1.5
15	7.0	3.0	5.0	4.0	.5	2.0	2.0	.0	.5	4.0	1.5	2.5
16	6.5	2.0	4.0	4.0	.5	2.5	3.0	.0	1.0	2.0	1.0	1.5
17	6.0	.5	3.0	3.0	1.0	2.0	3.0	.0	1.0	3.5	1.5	2.5
18	6.0	1.0	3.0	2.5	.0	1.0	2.0	.0	.5	2.0	.0	1.0
19	6.5	1.0	3.5	2.5	.0	.5	1.0	.0	.0	1.0	.0	.0
20	7.0	2.0	4.0	2.0	.0	.5	.0	.0	.0	.5	.0	.0
21	7.0	2.0	4.5	4.5	1.0	2.5	.0	.0	.0	.5	.0	.0
22	7.0	3.0	4.5	3.5	1.0	2.0	.0	.0	.0	2.5	.0	1.0
23	7.0	2.0	4.5	3.5	1.5	2.5	.0	.0	.0	.5	.0	.0
24	5.0	3.5	4.5	3.0	.5	1.5	.0	.0	.0	.0	.0	.0
25	4.0	3.0	3.5	4.0	.5	1.5	.0	.0	.0	.0	.0	.0
26	6.5	3.0	4.5	3.5	.0	1.5	.0	.0	.0	.5	.0	.0
27	6.5	3.0	4.5	3.5	1.0	2.0	.0	.0	.0	1.5	.0	.0
28	7.0	4.0	5.0	2.5	1.5	2.0	.0	.0	.0	.5	.0	.0
29	6.5	2.5	4.5	1.5	.0	1.0	.5	.0	.0	.0	.0	.0
30	5.5	1.5	3.0	3.0	.0	1.5	1.0	.0	.5	.0	.0	.0
31	5.0	.5	2.5	---	---	---	2.5	.0	1.0	1.0	.0	.0
MONTH	11.0	.5	4.9	6.0	.0	1.8	3.0	.0	.3	4.0	.0	.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	.0	.5	5.5	1.5	3.0	2.5	.0	1.0	8.0	3.0	5.5
2	1.5	.0	.0	5.0	.0	2.0	5.5	.0	2.5	6.0	3.0	4.5
3	3.0	.0	1.0	5.0	1.0	2.5	1.5	.0	.5	5.0	1.5	3.0
4	2.5	.0	1.0	4.0	.5	2.0	4.5	.0	1.5	8.5	1.0	4.5
5	3.0	.0	1.0	2.5	.0	1.0	1.0	.0	.5	9.0	2.0	5.5
6	1.0	.0	.5	4.5	.0	2.0	2.5	.0	.5	9.5	2.5	6.0
7	.0	.0	.0	5.0	.5	2.0	2.5	.0	1.0	9.0	2.5	5.5
8	.0	.0	.0	3.0	.0	1.5	1.0	.0	.0	8.5	2.0	5.0
9	.0	.0	.0	1.5	.0	.5	3.0	.0	1.0	8.0	2.0	4.5
10	.0	.0	.0	1.5	.0	.5	3.0	.0	1.0	6.5	2.0	4.5
11	.0	.0	.0	4.0	.0	1.5	6.5	.5	3.0	9.0	3.0	6.0
12	.0	.0	.0	3.5	.0	1.0	7.5	.5	3.5	8.0	3.5	5.5
13	.0	.0	.0	6.0	.0	2.5	8.5	1.0	4.0	8.0	2.5	5.0
14	.0	.0	.0	6.0	1.0	3.0	8.5	1.0	4.0	7.5	2.0	4.5
15	.5	.0	.0	5.5	1.0	3.0	8.5	1.0	4.0	8.0	2.0	4.5
16	1.5	.5	1.0	6.5	1.0	3.0	8.0	1.0	4.0	8.5	2.0	5.0
17	2.0	.5	1.0	6.5	.5	3.0	8.5	1.5	4.5	8.5	2.5	5.5
18	1.5	.0	.5	6.5	1.0	3.5	7.0	1.5	4.0	7.5	3.0	5.0
19	1.5	.0	.0	5.0	1.5	3.0	8.5	2.0	4.5	9.0	3.0	5.5
20	.5	.0	.0	4.0	1.5	2.5	8.0	2.0	4.5	8.5	3.0	5.5
21	.0	.0	.0	5.5	.5	2.5	6.0	1.5	3.5	9.5	3.5	6.0
22	2.0	.0	.5	6.0	.0	2.5	6.0	1.5	3.5	9.5	3.5	6.5
23	4.0	.0	1.5	6.5	1.0	3.5	4.5	1.5	3.0	9.5	3.5	6.5
24	4.0	.0	1.5	6.0	1.0	3.0	8.0	2.0	4.5	8.0	4.0	6.0
25	1.5	.0	.5	7.0	1.5	4.0	9.0	2.0	5.0	10.0	4.0	7.0
26	2.0	.0	.5	7.5	1.5	4.0	5.0	2.5	4.0	9.5	4.0	7.0
27	5.5	1.0	2.5	6.5	1.0	3.0	8.0	2.5	5.0	10.5	4.0	7.0
28	5.0	.5	2.5	6.5	.5	3.0	3.5	1.5	2.0	10.5	4.0	7.0
29	---	---	---	5.5	.5	3.0	4.0	1.0	2.5	7.5	4.0	6.0
30	---	---	---	5.5	.0	2.5	8.5	2.5	5.0	10.0	4.0	7.0
31	---	---	---	2.0	.0	.5	---	---	---	10.0	4.0	7.0
MONTH	5.5	.0	.6	7.5	.0	2.4	9.0	.0	2.9	10.5	1.0	5.6

10336795 TROUT CREEK NEAR MOUTH EAST, NEAR BELLEVUE/ELDORADO AVE, CA

LOCATION.—Lat 38°56'12", long 119°59'23", in NE1/4 NE1/4 sec.04, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on right bank, east channel, about 0.4 mi upstream from Lake Tahoe, and about 0.8 mi downstream of U.S. Highway 50.

DRAINAGE AREA.—41 mi².

PERIOD OF RECORD.—September 1997 to current year.

WATER TEMPERATURE: September 1997 to current year.

PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: September 1997 to current year.

INSTRUMENTATION.—Water-temperature recorder since September 1997, two times per hour.

REMARKS.—In September 1997, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor streamflows and water temperature within the Upper Truckee River–Trout Creek watershed. Records represent water temperature at probe within 0.5°C.

Interruptions in record due to loss of hydrologic communication with stream channel and instrument malfunction. Water-temperature records for September 1997 were not published but are available from the U.S. Geological Survey. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum, 17.5°C, Aug. 30, Sept. 5, 1998; minimum, freezing point on many days October 1997 to April 1998.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum, 16.5°C, July 12, Aug. 24, 28; minimum, freezing point, many days November to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	11.5	6.5	8.5	6.5	2.5	4.0	2.0	.0	.5	1.5	.0	.0
2	11.5	6.5	8.5	5.0	1.0	2.5	2.5	.0	1.0	1.0	.0	.0
3	9.5	5.0	7.0	6.0	1.5	3.0	2.0	.0	1.0	.5	.0	.0
4	9.0	3.5	5.5	5.5	1.5	3.0	.5	.0	.0	.5	.0	.0
5	9.5	3.5	6.0	4.5	1.0	2.5	.0	.0	.0	1.5	.0	.5
6	9.0	3.5	6.0	2.0	1.0	1.5	.0	.0	.0	1.0	.0	.5
7	9.5	3.5	6.5	3.0	.5	1.5	.0	.0	.0	3.0	.0	.5
8	10.0	4.0	6.5	3.5	.5	1.5	.5	.0	.0	2.5	.0	.5
9	8.5	3.0	5.5	3.5	.0	1.5	.5	.0	.0	1.0	.0	.0
10	8.0	2.0	5.0	2.5	.0	1.5	.5	.0	.0	1.5	.0	.5
11	8.5	2.0	5.0	4.5	.5	2.0	.5	.0	.0	2.0	.0	.5
12	7.5	2.5	5.0	3.5	.0	1.0	.5	.0	.0	3.0	.0	1.0
13	9.5	3.5	6.0	3.5	.0	1.5	1.5	.0	.5	3.5	.0	1.0
14	8.5	3.5	5.5	5.0	.5	2.5	2.0	.0	.5	3.0	.0	1.5
15	7.5	3.5	5.0	4.5	.5	2.5	2.5	.0	.5	4.0	1.5	2.5
16	7.0	2.0	4.0	4.5	.5	2.5	3.0	.0	1.0	2.5	1.0	1.5
17	6.5	.5	3.0	3.0	1.0	2.0	3.0	.0	1.0	4.0	1.5	2.5
18	6.5	1.0	3.0	2.5	.0	1.0	2.0	.0	.5	2.5	.0	1.0
19	7.0	1.0	3.5	3.0	.0	.5	.5	.0	.0	1.0	.0	.0
20	7.5	2.0	4.5	2.5	.0	.5	.0	.0	.0	.5	.0	.0
21	7.5	2.0	4.5	4.5	1.0	2.5	.0	.0	.0	.0	.0	.0
22	7.5	3.0	5.0	4.0	1.0	2.0	.0	.0	.0	2.0	.0	.5
23	7.5	2.5	4.5	3.5	1.5	2.5	.0	.0	.0	1.0	.0	.0
24	5.0	4.0	4.5	3.5	.5	2.0	.0	.0	.0	.0	.0	.0
25	4.0	3.0	3.5	4.5	.5	2.0	.0	.0	.0	.0	.0	.0
26	7.5	3.0	5.0	3.5	.0	1.5	.0	.0	.0	.0	.0	.0
27	7.0	3.0	5.0	3.5	1.0	2.0	.5	.0	.0	.0	.0	.0
28	7.0	4.0	5.0	2.5	1.5	2.0	.5	.0	.0	.0	.0	.0
29	7.0	2.5	4.5	1.5	.0	1.0	.5	.0	.0	.0	.0	.0
30	6.0	1.5	3.0	3.5	.0	1.5	.5	.0	.0	.0	.0	.0
31	5.0	.5	2.5	---	---	---	1.0	.0	.5	.5	.0	.0
MONTH	11.5	.5	5.0	6.5	.0	1.9	3.0	.0	.2	4.0	.0	.5

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 sea level. Prior to Oct. 1, 1957, nonrecording gages at several sites near outlet of lake at same datum except for water years 1907 and 1908, which were at a datum 5.5 ft higher. Oct. 1, 1957, to May 8, 1958, water-stage recorder on left wingwall of dam at outlet of lake at same datum. May 9, 1958, to Sept. 30, 1968, water-stage recorder on pier, 1,000 ft east of dam at lake outlet.

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

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

EXTREMES FOR CURRENT YEAR.—Maximum elevation, 6,228.93 ft, July 13; minimum, 6,227.49 ft, Jan. 12.

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

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

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.24	7.71	7.80	7.54	7.91	8.08	7.84	7.97	8.55	8.91	8.72	8.32
2	8.21	7.70	7.80	7.53	7.90	8.07	7.84	7.96	8.56	8.87	8.71	8.28
3	8.19	7.69	7.84	7.52	7.89	8.05	7.85	7.99	8.62	8.87	8.70	8.29
4	8.19	7.67	7.82	7.52	7.88	8.03	7.84	7.99	8.63	8.91	8.71	8.26
5	8.12	7.67	7.83	7.52	7.86	8.01	7.90	8.00	8.63	8.88	8.66	8.25
6	8.13	7.65	7.83	7.52	7.93	7.98	7.94	8.00	8.62	8.89	8.66	8.23
7	8.07	7.66	7.81	7.52	8.10	7.96	7.93	8.00	8.63	8.90	8.63	8.22
8	8.07	7.65	7.80	7.51	8.23	7.95	7.97	8.02	8.65	8.88	8.64	8.22
9	8.01	7.64	7.78	7.51	8.36	7.97	7.96	8.01	8.65	8.89	8.62	8.22
10	8.03	7.63	7.77	7.51	8.33	7.95	7.96	8.02	8.66	8.89	8.63	8.20
11	8.00	7.65	7.76	7.51	8.29	7.93	7.95	8.03	8.67	8.90	8.61	8.19
12	7.99	7.63	7.75	7.49	8.27	7.93	7.95	8.04	8.68	8.91	8.60	8.17
13	7.98	7.63	7.74	7.50	8.24	7.90	7.95	8.02	8.71	8.93	8.59	8.15
14	7.95	7.60	7.73	7.50	8.21	7.89	7.95	8.06	8.71	8.91	8.53	8.14
15	7.92	7.61	7.71	7.56	8.18	7.88	7.94	8.08	8.73	8.90	8.55	8.13
16	7.90	7.61	7.70	7.54	8.22	7.87	7.95	8.08	8.76	8.89	8.53	8.12
17	7.88	7.61	7.69	7.59	8.22	7.86	7.95	8.09	8.77	8.88	8.53	8.11
18	7.88	7.61	7.68	7.69	8.23	7.86	7.95	8.11	8.78	8.87	8.51	8.11
19	7.85	7.59	7.67	7.84	8.21	7.85	7.95	8.13	8.81	8.86	8.49	8.10
20	7.84	7.58	7.67	7.94	8.22	7.85	7.95	8.15	8.82	8.84	8.49	8.09
21	7.80	7.56	7.65	7.95	8.22	7.84	7.97	8.17	8.84	8.85	8.47	8.08
22	7.81	7.60	7.63	7.95	8.19	7.83	7.97	8.19	8.86	8.83	8.48	8.07
23	7.80	7.67	7.61	8.02	8.16	7.83	7.98	8.22	8.87	8.81	8.46	8.05
24	7.81	7.67	7.60	8.01	8.13	7.82	7.97	8.26	8.85	8.81	8.45	8.04
25	7.78	7.65	7.60	7.99	8.15	7.82	7.96	8.32	8.88	8.78	8.45	8.03
26	7.77	7.63	7.59	7.99	8.13	7.82	7.98	8.36	8.88	8.79	8.44	8.02
27	7.75	7.61	7.56	7.96	8.10	7.81	7.96	8.40	8.88	8.78	8.42	8.02
28	7.73	7.65	7.56	7.96	8.13	7.79	7.97	8.42	8.90	8.78	8.43	7.96
29	7.75	7.71	7.55	7.94	---	7.79	7.98	8.46	8.90	8.75	8.41	7.97
30	7.72	7.82	7.57	7.90	---	7.81	7.97	8.49	8.90	8.75	8.40	7.95
31	7.71	---	7.55	7.92	---	7.84	---	8.53	---	8.73	8.31	---
MEAN	7.93	7.65	7.70	7.71	8.14	7.90	7.94	8.15	8.75	8.85	8.54	8.13
MAX	8.24	7.82	7.84	8.02	8.36	8.08	7.98	8.53	8.90	8.93	8.72	8.32
MIN	7.71	7.56	7.55	7.49	7.86	7.79	7.84	7.96	8.55	8.73	8.31	7.95
a	573,400	586,900	554,000	599,300	625,100	589,400	605,600	674,400	719,700	698,800	647,200	603,100
b	-67,900	+13,500	-32,900	+45,300	+25,800	-35,700	+16,200	+68,800	+45,300	-20,900	-51,600	-44,100

CAL YR 1998 MEAN 8.13 MAX 9.05 MIN 6.84 b +86,700

WTR YR 1999 MEAN 8.12 MAX 8.93 MIN 7.49 b -38,200

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.

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."

WATER TEMPERATURE: June 1993 to September 1994.

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

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

REMARKS.—Records 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. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,690 ft³/s, Jan. 2, 1997, gage height, 9.59 ft; no flow for parts of many years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	334	201	193	226	622	1990	202	700	747	319	260	285
2	332	201	285	223	621	1990	201	700	747	317	260	285
3	332	193	342	229	619	1990	199	701	749	317	260	285
4	332	201	433	228	513	1980	198	700	750	317	273	283
5	340	201	480	208	391	1690	198	700	750	318	303	284
6	365	201	486	126	392	1270	198	701	750	270	302	284
7	362	202	528	76	575	1310	238	703	749	157	302	283
8	362	201	581	58	904	1310	337	705	748	86	303	282
9	361	202	594	57	1490	1310	380	705	748	81	303	282
10	361	203	593	57	1930	1310	388	705	748	80	281	283
11	361	204	591	57	1970	1310	390	707	678	79	268	285
12	361	202	589	57	2000	1070	390	710	621	79	268	284
13	360	201	587	58	1990	916	390	710	621	77	268	284
14	336	201	584	57	1980	913	391	710	621	76	267	285
15	305	202	584	58	1970	817	391	710	631	75	268	284
16	267	203	581	60	1970	644	443	710	636	137	277	284
17	245	201	579	60	1980	599	493	710	634	198	292	284
18	249	199	577	64	1980	600	496	715	633	205	293	283
19	245	175	576	61	1990	600	559	715	633	206	292	283
20	220	148	576	199	1970	600	658	717	633	208	292	274
21	201	149	577	474	1990	598	698	719	605	209	293	256
22	203	148	577	584	1980	598	698	720	533	239	292	252
23	201	153	573	778	1970	498	697	722	528	260	293	235
24	201	151	571	957	1960	397	697	725	528	260	292	209
25	203	151	569	953	1960	398	698	728	529	260	291	208
26	204	148	568	949	1960	367	701	731	529	260	291	208
27	203	148	568	948	1960	301	700	735	529	260	292	210
28	204	150	434	761	1980	299	698	741	496	260	291	207
29	207	151	308	623	---	299	696	743	429	260	290	208
30	200	154	308	622	---	260	698	745	365	260	289	175
31	200	---	270	620	---	203	---	747	---	260	287	---
TOTAL	8657	5445	15662	10488	43617	28437	14121	22190	18898	6390	8833	7834
MEAN	279	182	505	338	1558	917	471	716	630	206	285	261
MAX	365	204	594	957	2000	1990	701	747	750	319	303	285
MIN	200	148	193	57	391	203	198	700	365	75	260	175
AC-FT	17170	10800	31070	20800	86510	56400	28010	44010	37480	12670	17520	15540

PYRAMID AND WINNEMUCCA LAKES BASIN

10337500 TRUCKEE RIVER AT TAHOE CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1999, BY WATER YEAR (WY)

MEAN	181	197	234	242	301	264	181	169	239	274	312	267
MAX	413	1575	2209	2561	2375	2235	1806	1746	1673	1071	638	687
(WY)	1910	1983	1984	1997	1997	1986	1983	1958	1969	1983	1918	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1932	1927	1925	1925	1925	1925	1919	1919	1921	1931	1931	1931

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1909 - 1999	
ANNUAL TOTAL	183336		190572			
ANNUAL MEAN	502		522		236	
HIGHEST ANNUAL MEAN					1150	
LOWEST ANNUAL MEAN					.15	
HIGHEST DAILY MEAN	1780	Jun 20	2000	Feb 12	2630	Jan 3 1997
LOWEST DAILY MEAN	42	Feb 4	57	Jan 9	.00	Jan 4 1914
ANNUAL SEVEN-DAY MINIMUM	45	Jan 30	57	Jan 8	.00	Jan 23 1914
INSTANTANEOUS PEAK FLOW			2020	Feb 11	2690	Jan 2 1997
INSTANTANEOUS PEAK STAGE			7.92	Feb 11	9.59	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	363600		378000		171000	
10 PERCENT EXCEEDS	1180		929		486	
50 PERCENT EXCEEDS	341		340		143	
90 PERCENT EXCEEDS	149		175		.00	

10338000 TRUCKEE RIVER NEAR TRUCKEE, CA

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

DRAINAGE AREA.—553 mi².

PERIOD OF RECORD.—December 1944 to September 1961, June 1977 to September 1982, October 1992 to September 1995, October 1996 to current year. Monthly discharge only for some periods, published in WSP 1314.

SPECIFIC CONDUCTANCE: July 1977 to September 1982.

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

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

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

REMARKS.—Records good. Flow regulated by Lake Tahoe (station 10337000), operating capacity, 744,600 acre-ft. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 11,900 ft³/s, Jan. 2, 1997, gage height, 9.97 ft, from rating curve extended above 3,100 ft³/s on basis of slope-area measurements at gage heights 7.62 ft and 7.92 ft; minimum daily, 3.4 ft³/s, several days in August 1994.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	355	230	268	254	670	2110	335	1020	1340	566	276	290
2	351	222	340	242	665	2090	322	1060	1300	553	275	289
3	350	213	437	250	665	2120	314	1000	1170	520	274	288
4	350	216	494	250	603	2090	304	964	1080	485	277	287
5	352	216	533	246	444	1880	300	973	1080	460	314	286
6	378	217	539	163	442	1350	293	1050	1130	424	319	286
7	377	229	568	115	621	1380	310	1140	1120	313	317	286
8	377	229	617	80	967	1380	413	1140	1090	213	315	286
9	377	228	629	78	1450	1380	461	1110	1080	190	316	287
10	377	228	626	76	1950	1370	470	1100	1090	185	311	287
11	377	229	623	75	1990	1360	477	1160	1070	184	288	289
12	377	228	619	74	2040	1190	483	1290	1020	179	284	286
13	377	228	619	74	2030	1010	503	1280	1050	176	279	286
14	360	228	619	74	2010	1020	526	1180	1080	172	276	286
15	325	228	619	82	2000	950	541	1110	1090	158	276	286
16	299	228	619	108	2000	771	604	1100	1100	178	280	284
17	257	236	619	104	2060	718	723	1160	1070	250	297	283
18	265	230	619	218	2030	740	791	1220	1050	256	296	285
19	256	215	618	172	2010	757	919	1250	1030	254	295	284
20	245	174	612	250	2000	746	1060	1280	1000	252	295	282
21	220	176	612	534	2000	734	1110	1300	978	250	296	258
22	220	186	612	674	1990	729	1050	1370	910	265	295	255
23	220	260	612	825	1990	670	983	1430	902	289	295	250
24	225	235	607	1020	1980	539	969	1550	891	288	295	220
25	224	198	602	1020	1970	548	1040	1650	830	287	295	218
26	220	189	598	1010	1970	570	1120	1700	781	285	295	216
27	220	185	598	1000	1970	503	1100	1640	760	284	296	216
28	220	183	509	867	2020	488	1040	1560	734	281	295	215
29	221	193	337	680	---	476	966	1410	683	279	293	212
30	220	346	335	675	---	443	956	1350	629	278	290	199
31	220	---	311	675	---	354	---	1360	---	277	291	---
TOTAL	9212	6603	16970	11965	44537	32466	20483	38907	30138	9031	9096	7982
MEAN	297	220	547	386	1591	1047	683	1255	1005	291	293	266
MAX	378	346	629	1020	2060	2120	1120	1700	1340	566	319	290
MIN	220	174	268	74	442	354	293	964	629	158	274	199
AC-FT	18270	13100	33660	23730	88340	64400	40630	77170	59780	17910	18040	15830

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1999, BY WATER YEAR (WY)

MEAN	199	208	299	351	387	356	418	587	509	304	282	259
MAX	387	551	1483	3190	2537	1421	1734	2403	1843	635	492	453
(WY)	1948	1951	1997	1997	1997	1952	1958	1958	1998	1998	1959	1954
MIN	7.27	11.3	14.2	8.82	12.2	58.1	98.3	122	34.5	6.40	3.56	4.72
(WY)	1995	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1945 - 1999
ANNUAL TOTAL	232940	237390	
ANNUAL MEAN	638	650	352
HIGHEST ANNUAL MEAN			941
LOWEST ANNUAL MEAN			32.4
HIGHEST DAILY MEAN	2490	Jun 14	8900
LOWEST DAILY MEAN	92	Feb 1	74
ANNUAL SEVEN-DAY MINIMUM	95	Jan 26	76
INSTANTANEOUS PEAK FLOW			2140
INSTANTANEOUS PEAK STAGE			4.08
ANNUAL RUNOFF (AC-FT)	462000	470900	254900
10 PERCENT EXCEEDS	1320	1370	615
50 PERCENT EXCEEDS	377	437	240
90 PERCENT EXCEEDS	198	216	46

10338400 DONNER LAKE NEAR TRUCKEE, CA

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

DRAINAGE AREA.—14.0 mi².

PERIOD OF RECORD.—January 1989 to current year.

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

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 12,800 acre-ft, Jan. 2, 1997, elevation, 5,938.64 ft; minimum, 2,510 acre-ft, Jan. 24, 28–31, 1991, elevation, 5,927.23 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 9,490 acre-ft, July 1, elevation, 5,935.80 ft; minimum, 3,270 acre-ft, Jan. 11, elevation, 5,928.21 ft.

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

5,923.8	0	5,934	7,970
5,926.0	1,600	5,936	9,670
5,928.0	3,120	5,938	12,000
5,930.0	4,690	5,940	14,700
5,932	6,310		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6950	4660	3970	3350	3720	3870	3910	5090	8080	9490	9020	8480
2	6850	4640	3940	3340	3690	3890	3880	5200	8050	9440	8990	8450
3	6740	4590	4060	3320	3640	4000	3840	5210	7970	9440	8970	8420
4	6600	4510	4030	3330	3650	4000	3810	5140	7930	9460	8950	8380
5	6490	4390	3990	3320	3620	3970	3880	5100	7980	9440	8920	8350
6	6410	4260	3950	3320	3700	3930	3850	5140	8110	9420	8920	8350
7	6290	4330	3910	3320	3870	3880	3800	5280	8220	9400	8890	8340
8	6200	4120	3830	3310	4030	3870	3840	5370	8370	9400	8890	8340
9	6120	4030	3790	3300	4190	3880	3780	5410	8550	9360	8890	8370
10	6030	3970	3770	3290	4120	3830	3750	5430	8750	9360	8900	8330
11	5950	3910	3720	3270	4060	3790	3720	5540	8940	9340	8880	8270
12	5870	3800	3670	3280	3960	3720	3690	5760	9080	9330	8870	8220
13	5780	3730	3640	3280	3880	3690	3710	5860	9210	9340	8830	8160
14	5650	3670	3630	3280	3870	3670	3750	5960	9310	9330	8810	8110
15	5540	3610	3590	3350	3820	3670	3780	6070	9390	9310	8790	8070
16	5490	3550	3570	3430	3870	3660	3840	6210	9440	9250	8780	8000
17	5380	3580	3550	3500	3910	3680	3930	6420	9440	9230	8760	7930
18	5370	3550	3480	3780	3920	3710	4050	6650	9390	9210	8740	7870
19	5280	3510	3520	4000	3880	3750	4220	6880	9300	9200	8720	7780
20	5210	3480	3520	4140	3870	3740	4400	7100	9220	9190	8690	7740
21	5150	3480	3500	4130	3880	3750	4590	7370	9160	9170	8680	7630
22	5090	3480	3480	4120	3840	3740	4660	7680	9180	9160	8660	7520
23	5020	3690	3460	4190	3790	3720	4700	8040	9240	9140	8630	7390
24	5020	3710	3460	4100	3740	3750	4730	8650	9280	9120	8590	7230
25	4990	3630	3430	4040	3780	3760	4870	9040	9300	9110	8590	7060
26	4920	3580	3420	3970	3750	3810	5090	9050	9330	9100	8590	6910
27	4860	3560	3380	3920	3710	3850	5110	8880	9370	9100	8570	6740
28	4830	3520	3380	3880	3800	3880	5110	8720	9420	9080	8580	6590
29	4820	3660	3380	3830	---	3900	5090	8480	9470	9050	8560	6440
30	4760	3910	3330	3770	---	3940	5040	8250	9470	9040	8540	6330
31	4700	---	3340	3770	---	3960	---	8130	---	9030	8490	---
MAX	6950	4660	4060	4190	4190	4000	5110	9050	9470	9490	9020	8480
MIN	4700	3480	3330	3270	3620	3660	3690	5090	7930	9030	8490	6330
a	5930.01	5929.02	5928.30	5928.84	5928.88	5929.08	5930.45	5934.20	5935.78	5935.26	5934.63	5932.03
b	-2450	-790	-570	+430	+30	+160	+1080	+3090	+1340	-440	-540	-2160
CAL YR 1998	MAX 9530	MIN 3120	b +210									
WTR YR 1999	MAX 9490	MIN 3270	b -820									

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

10338500 DONNER CREEK AT DONNER LAKE, NEAR TRUCKEE, CA

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

DRAINAGE AREA.—14.3 mi².

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

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

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

REMARKS.—Records good, including estimated daily discharges. Flow completely regulated at dam at outlet of Donner Lake (station 10338400) since 1928. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 863 ft³/s, Jan. 2, 1997; gage height, 6.69 ft; no flow at times in many years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	26	52	18	42	52	62	112	215	24	4.7	6.1
2	62	26	51	17	39	56	59	119	206	24	4.6	6.1
3	61	25	56	17	36	63	58	120	167	24	4.4	6.1
4	60	24	58	16	36	64	56	120	108	24	4.4	6.1
5	55	68	56	16	34	62	57	116	76	24	4.4	6.1
6	50	80	54	16	28	59	58	116	76	24	5.2	6.1
7	50	73	51	15	48	57	55	121	55	23	5.8	6.1
8	49	65	48	15	57	52	54	128	24	17	5.6	6.1
9	48	57	44	14	74	56	53	132	11	13	5.6	12
10	44	51	40	14	76	55	51	137	9.0	13	5.6	16
11	43	47	37	14	71	52	49	143	22	12	5.2	16
12	41	42	35	14	65	49	47	151	54	9.9	5.2	20
13	39	38	34	14	60	47	47	149	63	8.5	5.2	25
14	39	34	32	14	56	46	48	106	68	8.5	4.8	25
15	38	31	30	15	53	44	51	82	80	8.5	4.6	25
16	37	29	29	19	51	44	54	84	88	8.5	4.8	25
17	36	28	28	22	57	44	59	86	105	8.1	5.1	25
18	35	26	28	35	57	46	67	89	113	7.6	6.1	25
19	33	25	e26	50	56	48	78	91	112	7.5	6.7	25
20	33	23	e25	66	53	50	81	95	111	7.5	6.6	25
21	33	22	e24	74	55	50	80	96	93	6.7	6.4	33
22	32	22	e23	71	52	50	88	100	56	5.9	6.3	50
23	31	26	e22	76	49	49	91	104	39	5.6	6.1	69
24	30	34	22	72	46	49	91	109	39	5.6	6.4	78
25	29	32	22	67	47	49	95	185	39	5.6	6.3	78
26	29	30	21	64	46	52	106	394	24	5.6	6.1	76
27	29	28	20	59	43	57	114	457	14	5.4	6.1	74
28	29	27	19	54	43	58	116	401	14	5.2	6.1	73
29	28	28	18	51	---	61	114	392	14	4.9	6.1	73
30	27	42	18	47	---	61	112	372	19	4.7	6.1	71
31	26	---	18	45	---	64	---	282	---	4.7	6.1	---
TOTAL	1240	1109	1041	1101	1430	1646	2151	5189	2114.0	356.5	172.7	987.8
MEAN	40.0	37.0	33.6	35.5	51.1	53.1	71.7	167	70.5	11.5	5.57	32.9
MAX	64	80	58	76	76	64	116	457	215	24	6.7	78
MIN	26	22	18	14	28	44	47	82	9.0	4.7	4.4	6.1
AC-FT	2460	2200	2060	2180	2840	3260	4270	10290	4190	707	343	1960

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1999, BY WATER YEAR (WY)

MEAN	29.6	27.6	31.3	33.9	32.7	37.4	52.8	87.5	47.8	12.4	7.99	25.2
MAX	85.7	195	214	284	198	182	144	243	244	67.2	52.7	99.1
(WY)	1973	1951	1951	1997	1986	1986	1940	1952	1983	1934	1932	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1930	1930	1930	1929	1929	1929	1929	1929	1929	1937	1936	1930

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1929 - 1999	
ANNUAL TOTAL	19710.0		18538.0			
ANNUAL MEAN	54.0		50.8		36.4	
HIGHEST ANNUAL MEAN					83.3 1982	
LOWEST ANNUAL MEAN					7.71 1977	
HIGHEST DAILY MEAN	258	Mar 25	457	May 27	820	Jan 2 1997
LOWEST DAILY MEAN	4.2	Aug 27	4.4	Aug 3	.00	Jan 1 1929
ANNUAL SEVEN-DAY MINIMUM	4.3	Aug 22	4.6	Jul 30	.00	Jan 1 1929
INSTANTANEOUS PEAK FLOW			494	May 26	863	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.59	May 26	6.69	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	39090		36770		26400	
10 PERCENT EXCEEDS	113		102		100	
50 PERCENT EXCEEDS	41		42		13	
90 PERCENT EXCEEDS	6.8		6.1		.00	

10338700 DONNER CREEK AT HIGHWAY 89, NEAR TRUCKEE, CA

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

DRAINAGE AREA.—29.1 mi².

PERIOD OF RECORD.—March 1993 to current year.

WATER TEMPERATURE: August 1993 to September 1994.

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

REMARKS.—Records good, except for estimated daily discharges, which are fair. About half the drainage area is regulated at dam at outlet of Donner Lake (station 10338400) 2.0 mi upstream. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, about 2,500 ft³/s, Jan. 2, 1997, gage height, 12.76 ft, backwater from debris, on the basis of the flood routing the peak discharge between Truckee River near Truckee and Truckee River above Prosser Creek; minimum daily, 2.3 ft³/s, Aug. 21, 22, 1994.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	DAILY MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	35	72	26	e59	109	104	217	503	128	14	9.2
2	74	33	65	25	e57	107	100	240	464	124	13	9.2
3	72	31	e68	24	e55	122	96	215	345	110	13	9.3
4	70	30	e70	23	e55	115	92	198	242	95	13	9.3
5	64	72	e66	23	e50	106	92	194	219	86	12	9.2
6	57	82	e63	23	e45	101	91	214	250	83	13	9.1
7	58	84	58	22	e60	96	86	254	212	80	13	9.1
8	56	63	55	21	e70	89	85	258	171	70	13	9.1
9	53	e60	e52	21	e100	e87	82	250	153	62	13	16
10	50	57	e50	21	e105	86	78	251	154	61	17	20
11	49	52	48	21	e100	82	78	282	182	61	14	20
12	47	46	46	20	e96	78	78	343	213	56	13	24
13	46	43	45	20	93	77	83	343	240	53	12	30
14	44	39	44	20	87	76	91	265	266	50	12	30
15	43	36	38	26	82	75	95	212	279	42	11	32
16	42	33	e37	39	82	75	104	213	293	37	11	31
17	e41	34	e36	41	102	77	121	231	300	33	11	31
18	40	31	35	e65	94	83	145	251	303	31	12	31
19	39	29	35	e70	90	89	181	270	295	29	12	31
20	39	26	34	e95	83	89	197	284	279	27	12	31
21	38	26	32	e100	83	88	199	297	260	24	12	39
22	37	30	32	e95	79	87	193	326	221	22	12	56
23	36	48	e32	e100	75	88	177	351	202	21	11	75
24	36	56	32	e95	72	89	178	428	197	20	11	83
25	35	e48	30	e90	73	92	205	552	167	19	11	81
26	34	38	30	e85	69	104	247	725	134	18	11	80
27	34	38	29	e80	68	114	246	e767	116	17	11	78
28	33	36	29	e75	76	114	220	713	117	17	10	77
29	34	40	28	e70	---	113	197	631	121	16	10	76
30	33	89	27	e65	---	111	192	602	124	15	9.7	74
31	32	---	27	e63	---	e115	---	539	---	14	9.3	---
TOTAL	1443	1365	1345	1564	2160	2934	4133	10916	7022	1521	372.0	1119.5
MEAN	46.5	45.5	43.4	50.5	77.1	94.6	138	352	234	49.1	12.0	37.3
MAX	77	89	72	100	105	122	247	767	503	128	17	83
MIN	32	26	27	20	45	75	78	194	116	14	9.3	9.1
AC-FT	2860	2710	2670	3100	4280	5820	8200	21650	13930	3020	738	2220

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1999, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999
MEAN	30.6	24.7	56.8	119	86.4	122	154
MAX	46.5	45.5	201	438	200	251	220
(WY)	1999	1999	1997	1997	1996	1995	1993
MIN	15.8	8.35	10.4	9.27	11.6	30.9	39.8
(WY)	1995	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1993 - 1999	
ANNUAL TOTAL	37588.0		35894.5			
ANNUAL MEAN	103		98.3		97.0	
HIGHEST ANNUAL MEAN					142	
LOWEST ANNUAL MEAN					25.9	
HIGHEST DAILY MEAN	590	Mar 24	767	May 27	2380	Jan 2 1997
LOWEST DAILY MEAN	7.9	Sep 2	9.1	Sep 6	2.3	Aug 21 1994
ANNUAL SEVEN-DAY MINIMUM	8.3	Aug 28	9.2	Sep 2	2.5	Aug 19 1994
INSTANTANEOUS PEAK FLOW			931		2500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			6.90		12.76	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	74560		71200		70280	
10 PERCENT EXCEEDS	267		244		263	
50 PERCENT EXCEEDS	63		65		55	
90 PERCENT EXCEEDS	16		14		8.4	

e Estimated.

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 November 1990, June 1993 to current year.

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

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

REMARKS.—Records good including estimated daily discharges. Flow is completely regulated by Martis Creek Lake since Oct. 7, 1971. See schematic diagram of Truckee River Basin.

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, 1.3 ft³/s, July 30, 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	16	53	15	25	65	70	83	145	18	13	13
2	14	16	33	14	24	66	71	83	141	17	13	14
3	13	15	41	14	24	69	71	83	94	16	8.9	13
4	13	15	e41	14	25	71	71	84	69	16	13	13
5	13	14	e30	15	25	71	70	84	61	16	18	13
6	13	14	e26	14	24	71	70	84	54	16	14	13
7	13	20	e22	15	57	71	69	85	49	15	14	13
8	13	20	e22	14	71	70	68	86	45	15	14	13
9	13	17	21	14	74	70	68	87	43	15	14	13
10	12	16	20	14	75	70	67	87	40	15	18	13
11	12	16	19	14	74	69	66	88	39	14	16	e12
12	12	16	18	14	73	69	66	88	37	15	15	e12
13	13	15	18	14	73	68	66	69	36	15	14	e12
14	14	15	20	14	72	67	65	128	35	15	13	e11
15	13	15	18	17	72	67	65	182	34	14	13	11
16	13	15	17	26	71	66	65	179	33	14	13	12
17	13	18	17	27	71	66	65	177	32	14	13	12
18	13	17	16	61	71	67	66	175	30	14	13	12
19	14	16	16	60	71	67	67	172	29	13	13	12
20	14	15	15	67	69	68	69	171	28	14	12	12
21	13	15	14	65	68	68	70	168	27	14	13	12
22	13	17	15	43	67	69	72	166	26	13	13	12
23	12	30	15	66	66	69	72	163	25	13	13	12
24	13	47	15	68	65	69	73	161	24	13	13	13
25	14	27	15	62	64	70	74	160	22	14	13	12
26	15	22	15	40	40	71	75	159	22	13	12	12
27	14	19	15	33	35	71	77	157	21	13	13	12
28	14	19	16	29	44	70	82	155	20	13	13	12
29	14	21	15	28	---	70	82	156	20	13	13	12
30	15	53	15	27	---	70	83	153	19	13	13	12
31	14	---	15	26	---	70	---	149	---	13	13	---
TOTAL	414	591	648	944	1590	2135	2115	4022	1300	446	416.9	370
MEAN	13.4	19.7	20.9	30.5	56.8	68.9	70.5	130	43.3	14.4	13.4	12.3
MAX	15	53	53	68	75	71	83	182	145	18	18	14
MIN	12	14	14	14	24	65	65	69	19	13	8.9	11
AC-FT	821	1170	1290	1870	3150	4230	4200	7980	2580	885	827	734

e Estimated.

10339400 MARTIS CREEK NEAR TRUCKEE, CA—Continued

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

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

SUMMARY STATISTICS

WATER YEARS 1959 - 1971

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1999, BY WATER YEAR (WY)

MEAN	9.13	17.0	21.7	31.2	36.7	48.6	53.7	60.5	37.9	15.3	10.5	9.36
MAX	20.8	80.0	95.5	214	149	181	139	219	169	75.0	76.0	40.2
(WY)	1983	1984	1982	1997	1986	1986	1982	1983	1983	1986	1995	1995
MIN	3.09	1.57	1.25	6.42	8.10	8.35	8.52	7.40	3.96	2.67	2.01	2.40
(WY)	1972	1978	1978	1978	1994	1974	1980	1994	1994	1994	1994	1994

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1972 - 1999

ANNUAL TOTAL	15207.3	14991.9	
ANNUAL MEAN	41.7	41.1	29.3
HIGHEST ANNUAL MEAN			74.5 1983
LOWEST ANNUAL MEAN			6.90 1977
HIGHEST DAILY MEAN	345 Apr 2	182 May 15	626 Mar 1 1986
LOWEST DAILY MEAN	7.8 Sep 4	8.9 Aug 3	.20 Nov 9 1977
ANNUAL SEVEN-DAY MINIMUM	10 Aug 29	12 Sep 11	.21 Nov 9 1977
INSTANTANEOUS PEAK FLOW		190 May 14	663 Feb 28 1986
INSTANTANEOUS PEAK STAGE		3.83 May 14	6.01 Apr 2 1974
ANNUAL RUNOFF (AC-FT)	30160	29740	21230
10 PERCENT EXCEEDS	89	79	73
50 PERCENT EXCEEDS	20	20	12
90 PERCENT EXCEEDS	12	13	4.5

10339400 MARTIS CREEK NEAR TRUCKEE, CA—Continued

WATER-QUALITY RECORDS

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

CHEMICAL DATA: Water years 1975–95.

WATER TEMPERATURE: Water years 1975 to current year.

SEDIMENT DATA: Water years 1975–95.

PERIOD OF DAILY RECORD.—October 1974 to current year.

WATER TEMPERATURE: October 1974 to current year.

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

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

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 25.5°C, July 11, 12, 1993; minimum recorded, 0.0°C, Feb. 16, 17, 1982, Jan. 11–13, 16, 1995, Feb. 10, 1999.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 20.0°C, July 11–16; minimum recorded, 0.0°C, Feb. 10.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

10339400 MARTIS CREEK NEAR TRUCKEE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

10340300 PROSSER CREEK RESERVOIR NEAR TRUCKEE, CA

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

DRAINAGE AREA.—50.3 mi².

PERIOD OF RECORD.—January 1963 to current year. January 1963 to September 1987 (monthend elevations and contents only). Prior to October 1976, published as "near Boca."

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

GAGE.—Nonrecording gage read most days. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

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

COOPERATION.—Gage readings and capacity table were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800 hours) FOR PERIOD OF RECORD.—Maximum contents, 33,719 acre-ft, May 19, 1996, elevation, 5,746.11 ft; minimum since reservoir first filled, 66 acre-ft, Oct. 10–12, 1983, elevation, 5,635.75 ft.

EXTREMES (at 0800 hours) FOR CURRENT YEAR.—Maximum contents observed, 28,520 acre-ft, July 3, elevation, 5,739.41 ft; minimum observed, 9,378 acre-ft, Apr. 5, elevation, 5,702.34 ft.

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

5,630	17	5,680	3,791	5,720	16,643
5,640	143	5,690	5,901	5,730	22,220
5,650	491	5,700	8,636	5,740	28,949
5,660	1,148	5,710	12,147	5,750	37,046
5,670	2,230				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13343	9918	10160	9761	9642	9960	9682	14791	21612	28404	25234	20092
2	13106	9960	10108	9777	9592	10123	9622	15140	22020	28469	25074	19874
3	12855	9977	10032	9790	9592	10174	9555	15429	22560	28520	24914	19654
4	12607	9987	10036	9804	9602	10264	9464	15615	22915	28513	24754	19435
5	12365	10001	9936	9817	9615	10119	9378	15716	23155	28445	24597	19212
6	12172	10022	9828	9831	9629	9922	9421	15852	23496	28367	24440	18990
7	11974	10057	9706	9848	9682	9696	9471	16174	23894	28280	24283	18770
8	11833	10102	9706	9858	9855	9451	9497	16583	24191	28178	24126	18548
9	11678	10140	9706	9872	10029	9477	9497	16922	24270	28064	23971	18326
10	11533	10171	9629	9878	10188	9497	9503	17204	24257	27935	23856	18122
11	11379	10140	9682	9891	10160	9536	9510	17546	24257	27806	23727	17915
12	11237	10071	9727	9905	10091	9542	9516	17788	24296	27685	23573	17698
13	11087	9994	9764	9888	9981	9549	9562	18127	24506	27549	23407	17484
14	10939	9918	9804	9865	9872	9565	9669	18320	24908	27429	23243	17281
15	10837	9845	9838	9848	9737	9595	9831	18298	25367	27379	23073	17055
16	10736	9774	9872	9878	9602	9622	10022	18190	25841	27309	22902	16831
17	10626	9797	9898	9932	9655	9662	10289	18095	26278	27211	22727	16643
18	10520	9824	9925	10057	9744	9737	10670	18111	26693	27098	22554	16418
19	10420	9845	9964	10164	9800	9872	11192	18169	26979	26979	22394	16209
20	10314	9858	9994	10157	9831	9885	11888	18277	27197	26873	22220	16003
21	10209	9878	10008	10143	9872	9878	12558	18375	27365	26755	22038	15794
22	10133	9912	10026	10088	9878	9845	13043	18418	27556	26637	21867	15591
23	10057	9960	9974	10040	9878	9834	13233	18494	27764	26513	21710	15372
24	9981	10181	9912	9908	9872	9851	13326	18666	27964	26389	21528	15158
25	9929	10230	9858	9764	9878	9891	13481	19261	28136	26250	21356	14949
26	9865	10181	9804	9777	9862	10001	13793	19688	28221	26112	21189	14735
27	9851	10105	9750	9780	9858	10036	14174	19960	28258	25997	21022	14526
28	9851	10029	9696	9754	9859	10026	14417	20235	28280	25841	20851	14317
29	9865	9946	9696	9730	---	9981	14530	20794	28301	25691	20677	14103
30	9891	9939	9716	9703	---	9918	14530	21075	28345	25543	20507	13894
31	9905	---	9744	9676	---	9811	---	21362	---	25387	20304	---
MAX	13343	10230	10160	10164	10188	10264	14530	21362	28345	28520	25234	20092
MIN	9851	9774	9629	9676	9592	9451	9378	14791	21612	25387	20304	13894
a	5703.92	5704.02	5703.44	5703.24	5703.78	5703.64	5715.59	5728.58	5739.17	5734.93	5726.78	5714.17
b	-3671	+34	-195	-68	+183	-48	+4719	+6832	+6983	-2958	-5083	-6410

CAL YR 1998 MAX 29298 MIN 9438 b -131
WTR YR 1999 MAX 28520 MIN 9378 b +318

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

b Change in contents, in acre-feet.

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; daily discharge in files of U.S. Geological Survey. Records for April 1889 to November 1890, published in the 11th and 12th Annual Reports, Part 2, have been found to be unreliable and should not be used.

WATER TEMPERATURE: Water years 1993–98.

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

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

REMARKS.—Records good, including estimated daily discharges. Flow regulated by Prosser Creek Reservoir (station 10340300) since Jan. 30, 1963. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Water years 1943–63, prior to construction of Prosser Creek Dam, maximum discharge, 4,560 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, 2,030 ft³/s, Jan. 3, 1997, gage height, 6.72 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	140	19	99	27	67	80	205	227	275	159	104	118
2	140	19	118	27	58	123	173	226	182	158	104	122
3	140	19	118	27	45	150	171	225	144	159	104	122
4	140	19	117	27	44	193	172	222	146	159	104	122
5	124	15	117	27	45	218	130	225	146	159	104	122
6	114	12	117	26	45	215	106	232	141	159	103	122
7	101	13	92	27	51	209	107	236	139	160	104	123
8	90	12	56	27	49	132	107	237	190	161	104	123
9	90	12	42	27	51	85	107	238	262	160	104	121
10	90	29	27	27	88	86	107	220	268	161	104	123
11	90	60	27	26	132	86	108	286	268	161	104	122
12	90	60	27	35	132	86	110	365	225	161	103	121
13	90	61	27	42	132	87	111	363	141	161	103	121
14	75	60	27	43	132	88	112	390	107	135	103	122
15	67	60	27	43	132	88	113	407	106	118	104	121
16	67	38	28	44	95	89	113	395	105	118	104	121
17	67	21	27	43	75	91	116	393	107	118	104	122
18	67	21	27	88	73	93	117	393	139	117	102	121
19	67	22	27	126	73	129	120	391	168	114	103	120
20	67	22	27	127	73	150	144	399	165	110	103	120
21	59	21	e27	126	74	150	209	431	165	108	104	119
22	54	22	48	135	74	151	260	468	167	108	103	119
23	54	23	61	146	74	152	263	469	172	109	104	117
24	54	40	62	144	74	152	263	470	168	108	104	115
25	54	73	61	96	74	154	264	506	174	108	102	115
26	41	79	61	66	74	205	264	556	157	108	101	116
27	24	79	61	67	75	248	266	520	160	107	100	116
28	19	78	47	66	77	248	270	384	162	107	100	114
29	19	79	27	67	---	248	246	300	165	106	101	115
30	19	82	27	66	---	245	229	302	159	105	107	113
31	19	---	27	67	---	245	---	303	---	105	113	---
TOTAL	2332	1170	1683	1932	2188	4676	5083	10779	5073	4087	3211	3588
MEAN	75.2	39.0	54.3	62.3	78.1	151	169	348	169	132	104	120
MAX	140	82	118	146	132	248	270	556	275	161	113	123
MIN	19	12	27	26	44	80	106	220	105	105	100	113
AC-FT	4630	2320	3340	3830	4340	9270	10080	21380	10060	8110	6370	7120

e Estimated.

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1962, BY WATER YEAR (WY)

MEAN	13.1	34.5	47.9	36.1	45.1	75.4	203	261	157	48.5	12.1	8.45
MAX	22.4	268	321	155	89.7	175	406	669	395	176	44.5	19.6
(WY)	1946	1951	1956	1956	1943	1943	1952	1952	1952	1952	1952	1952
MIN	6.63	8.62	9.81	10.0	11.0	20.0	94.5	106	55.9	10.0	3.79	3.90
(WY)	1961	1960	1960	1948	1948	1948	1955	1959	1947	1961	1961	1947

SUMMARY STATISTICS

WATER YEARS 1943 - 1962

ANNUAL MEAN	76.8	
HIGHEST ANNUAL MEAN	162	1952
LOWEST ANNUAL MEAN	38.1	1961
HIGHEST DAILY MEAN	3490	Dec 23 1955
LOWEST DAILY MEAN	2.7	Aug 24 1961
ANNUAL SEVEN-DAY MINIMUM	3.1	Aug 19 1947
INSTANTANEOUS PEAK FLOW	4560	Dec 23 1955
INSTANTANEOUS PEAK STAGE	11.00	Nov 20 1950
ANNUAL RUNOFF (AC-FT)	55620	
10 PERCENT EXCEEDS	212	
50 PERCENT EXCEEDS	27	
90 PERCENT EXCEEDS	7.0	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

MEAN	93.9	40.9	57.5	80.4	76.1	119	126	218	112	59.2	48.8	110
MAX	282	214	361	564	397	371	372	545	494	167	151	477
(WY)	1983	1982	1965	1997	1986	1986	1969	1983	1983	1985	1995	1983
MIN	5.41	6.84	5.32	7.96	17.5	27.1	21.7	17.2	8.39	6.33	2.55	1.96
(WY)	1989	1989	1989	1989	1991	1977	1977	1985	1966	1966	1994	1992

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1964 - 1999

ANNUAL TOTAL	44869		45802	
ANNUAL MEAN	123		125	95.3
HIGHEST ANNUAL MEAN				214
LOWEST ANNUAL MEAN				24.4
HIGHEST DAILY MEAN	918	Mar 26	556	May 26
LOWEST DAILY MEAN	12	Nov 6	12	Nov 6
ANNUAL SEVEN-DAY MINIMUM	15	Nov 3	15	Nov 3
INSTANTANEOUS PEAK FLOW			628	May 27
INSTANTANEOUS PEAK STAGE			4.92	May 27
ANNUAL RUNOFF (AC-FT)	89000		90850	69050
10 PERCENT EXCEEDS	188		245	223
50 PERCENT EXCEEDS	94		107	50
90 PERCENT EXCEEDS	27		27	9.4

10342900 INDEPENDENCE LAKE NEAR TRUCKEE, CA

LOCATION.—Lat 39°27'07", long 120°17'23", in NW 1/4 SW 1/4 sec.35, T.19 N., R.15 E., Sierra County, Hydrologic Unit 16050102, on right bank of outlet channel, 60 ft upstream from outlet gates, and 10.5 mi northwest of Truckee.

DRAINAGE AREA.—7.51 mi².

PERIOD OF RECORD.—November 1988 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sierra Pacific Power Co.).

REMARKS.—Lake levels regulated by an earthfill dam at the outlet constructed in 1939. Usable capacity, 17,300 acre-ft between elevations 6,921.0 ft, invert of outlet gate and 6,949.0 ft, normal maximum storage level. Water is used for irrigation and power development downstream. Records, including extremes, represent usable contents. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 17,700 acre-ft, Aug. 4, 1995, elevation, 6,949.51 ft; minimum, 4,750 acre-ft, Nov. 10, 11, 1988, elevation, 6,929.39 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 16,800 acre-ft, many days in June and July, maximum elevation, 6,948.35 ft, July 2, 3; minimum, 13,000 acre-ft, Apr. 15–18, minimum elevation, 6,942.70 ft, Apr. 17.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sierra Pacific Power Co., dated Nov. 5, 1941)

6,921	0	6,940	11,240
6,925	2,220	6,945	14,530
6,930	5,110	6,950	18,000
6,935	8,110		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15500	14500	14500	14300	14500	14500	13400	13300	16600	16800	16600	15900
2	15400	14500	14500	14300	14500	14500	13300	13300	16600	16800	16600	15900
3	15400	14500	14600	14200	14400	14500	13300	13300	16500	16800	16600	15900
4	15300	14400	14500	14200	14400	14500	13300	13300	16400	16800	16500	15900
5	15300	14400	14600	14200	14400	14400	13400	13300	16400	16800	16500	15800
6	15200	14400	14500	14200	14500	14400	13300	e13400	16400	16800	16500	15800
7	15200	14400	14500	14200	14600	14300	13300	e13400	16300	16800	16500	15800
8	15100	14400	14500	14100	14700	14300	13300	e13500	16300	16800	16500	15700
9	15100	14400	14500	14100	14900	14300	13300	e13600	16300	16700	16500	15700
10	15100	14400	14500	14100	14900	14300	13200	e13600	16300	16800	16500	15700
11	15000	14300	14500	14100	14800	14200	13200	13700	16400	16800	16500	15700
12	15000	14300	14500	14100	14800	14200	13100	13800	16400	16800	16500	15700
13	15000	14300	14500	14100	14800	14100	13100	13900	16500	16800	16400	15600
14	14900	14300	14500	14100	14800	14100	13100	14000	16600	16800	16400	15600
15	14900	14300	14400	14100	14800	14000	13000	14000	16600	16800	16400	15600
16	14800	14300	14400	14100	14800	14000	13000	14100	16600	16800	16400	15600
17	14800	14300	14400	14100	14900	13900	13000	14200	16700	16800	16300	15500
18	14800	14200	14400	14200	14900	13900	13000	14300	16600	16800	16300	15500
19	14800	14200	14400	14300	14800	13800	13100	14400	16600	16800	16300	15500
20	14700	14200	14400	14400	14800	13800	13100	14500	16600	16800	16200	15500
21	14700	14200	e14300	14500	14800	13700	13200	14700	16600	16800	16200	15400
22	14700	14200	e14300	14500	14800	13700	13100	14900	16600	16800	16200	15400
23	14700	14400	14400	14600	14700	13600	13200	15100	16600	16700	16200	15400
24	14600	14400	14400	14500	14700	13600	13100	15400	16600	16700	16100	15400
25	14600	14300	14400	14500	14700	13600	13200	15700	16600	16700	16100	15300
26	14600	14300	14300	14500	14600	13500	13200	16000	16600	16700	16100	15300
27	14600	14300	14300	14500	14600	13500	13200	16300	16700	16700	16100	15300
28	14600	14300	14300	14500	14600	13400	13300	16500	16700	16700	16000	15300
29	14600	14400	14300	14500	---	13400	13200	16600	16700	16600	16000	15200
30	14500	14500	14300	14500	---	13400	13200	16600	16800	16600	16000	15200
31	14500	---	14300	14500	---	13400	---	16600	---	16600	15900	---
MAX	15500	14500	14600	14600	14900	14500	13400	16600	16800	16800	16600	15900
MIN	14500	14200	14300	14100	14400	13400	13000	13300	16300	16600	15900	15200
a	6944.95	6944.97	6944.61	6944.93	6945.06	6943.29	6943.05	6947.98	6948.25	6948.02	6947.03	6945.99
b	-1000	0	-200	+200	+100	-1200	-200	+3400	+200	-200	-700	-700

CAL YR 1998 MAX 17600 MIN 12200 b +2100
WTR YR 1999 MAX 16800 MIN 13000 b -300

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

10343000 INDEPENDENCE CREEK NEAR TRUCKEE, CA

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

DRAINAGE AREA.—8.10 mi².

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

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

GAGE.—Water-stage recorder. Elevation of gage is 6,920 ft above sea level, from topographic map. July 1, 1904, to June 30, 1910, nonrecording gage 75 ft downstream from Independence Lake outlet; prior to July 1, 1904, nonrecording gage 600 ft downstream at approximately same datum.

REMARKS.—Records good. Flow regulated by Independence Lake (station 10342900) since 1939. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 325 ft³/s, Jan. 3, 1997, gage height, 6.17 ft; maximum gage height, 8.16 ft, Apr. 16, 1993, backwater from snow and ice; no flow Sept. 28 to Nov. 10, 1905, June 1, 1906.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	17	16	15	15	34	33	35	133	47	13	15
2	26	17	16	15	15	34	33	36	134	47	13	14
3	26	17	16	14	15	34	33	35	130	46	13	14
4	26	17	16	14	15	34	33	34	123	46	13	14
5	26	17	16	14	15	34	33	35	118	46	12	14
6	26	17	15	14	15	34	33	36	116	46	12	14
7	26	17	15	14	15	34	33	37	108	46	12	14
8	26	16	15	14	15	34	33	37	97	40	12	14
9	21	15	15	14	15	34	33	37	83	33	11	14
10	18	15	15	14	15	34	33	37	75	25	10	14
11	17	15	15	14	15	34	33	38	75	23	14	14
12	17	15	15	14	15	34	33	40	75	21	16	13
13	17	15	15	14	15	34	33	39	81	17	16	13
14	17	15	15	14	15	34	33	38	86	17	16	13
15	17	15	15	14	15	34	33	38	88	17	15	13
16	17	15	15	15	15	34	33	38	100	17	15	13
17	17	15	15	15	15	34	33	39	109	17	15	13
18	17	15	15	15	15	34	33	40	109	17	15	13
19	17	15	15	15	25	34	34	41	106	17	15	13
20	17	15	15	15	34	34	34	41	105	17	15	13
21	17	15	15	15	34	34	34	41	105	17	15	13
22	17	15	15	15	34	33	34	42	104	17	15	13
23	17	16	15	15	34	33	34	42	103	16	15	13
24	17	16	15	15	34	33	34	44	87	16	15	13
25	17	16	15	15	35	33	35	45	63	16	15	13
26	17	15	15	15	34	33	36	44	51	16	15	13
27	17	15	15	15	34	33	35	43	47	16	15	13
28	17	15	15	15	34	33	35	79	47	15	15	13
29	17	15	15	15	---	33	34	133	47	15	15	12
30	17	16	15	15	---	33	34	134	47	15	15	12
31	17	---	15	15	---	33	---	134	---	14	15	---
TOTAL	604	469	470	452	602	1044	1007	1532	2752	775	438	400
MEAN	19.5	15.6	15.2	14.6	21.5	33.7	33.6	49.4	91.7	25.0	14.1	13.3
MAX	26	17	16	15	35	34	36	134	134	47	16	15
MIN	17	15	15	14	15	33	33	34	47	14	10	12
AC-FT	1200	930	932	897	1190	2070	2000	3040	5460	1540	869	793

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	15.9	21.6	12.4	13.5	12.1	15.6	19.5	44.1	57.1	27.5	20.3	21.2
MAX	45.8	97.6	58.2	161	58.0	94.5	72.9	112	188	89.2	114	133
(WY)	1976	1984	1982	1997	1986	1996	1986	1982	1983	1983	1988	1973
MIN	.47	1.36	.70	1.04	1.07	1.45	1.50	1.51	2.09	1.78	2.05	.58
(WY)	1980	1989	1993	1993	1974	1977	1977	1977	1977	1977	1976	1979

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1968 - 1999

ANNUAL TOTAL	10525	10545										
ANNUAL MEAN	28.8	28.9								23.4		
HIGHEST ANNUAL MEAN										46.7		1983
LOWEST ANNUAL MEAN										7.63		1989
HIGHEST DAILY MEAN			93	Jun 29		134	May 30		295		Jan 4	1997
LOWEST DAILY MEAN			13	Jan 27		10	Aug 10		.02		Sep 26	1973
ANNUAL SEVEN-DAY MINIMUM			14	Jan 21		12	Aug 4		.02		Sep 26	1973
INSTANTANEOUS PEAK FLOW						136	Jun 2		325		Jan 3	1997
INSTANTANEOUS PEAK STAGE						4.31	Jun 2		8.16		Apr 16	1993
ANNUAL RUNOFF (AC-FT)	20880	20920							16950			
10 PERCENT EXCEEDS		79				46			63			
50 PERCENT EXCEEDS		17				17			11			
90 PERCENT EXCEEDS		14				14			2.1			

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA
(Hydrologic Benchmark Station)

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

DRAINAGE AREA.—10.5 mi².

PERIOD OF RECORD.—October 1953 to current year.

PRECIPITATION DATA: Water years 1990–96.

CHEMICAL DATA: Water years 1968–72, 1986–96.

WATER TEMPERATURE: Water years 1970–74.

SEDIMENT DATA: Water years 1968–75, 1981–96.

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

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

REMARKS.—Records good, including estimated daily discharges. No storage or diversion upstream from station. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,230 ft³/s, Jan. 1, 1997, gage height, 5.20 ft, from poor high-water mark on gage house. Rating curve extended above 160 ft³/s on basis of slope-area measurement at gage height 4.28 ft; minimum daily, 1.0 ft³/s, Sept. 13, 1960.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 50 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 24	2015	273	3.78				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	7.1	13	4.7	6.4	14	11	54	94	23	5.6	4.2
2	4.4	5.6	10	4.7	6.3	11	11	55	92	22	5.5	4.2
3	4.4	5.3	14	4.7	6.2	12	10	47	78	20	5.4	4.2
4	4.4	5.0	10	4.8	6.3	11	10	46	68	18	5.3	4.1
5	4.4	4.9	e9.0	4.8	6.2	9.7	9.7	54	66	17	5.2	4.1
6	4.4	4.9	8.1	4.8	6.0	9.1	9.3	72	65	15	6.1	3.9
7	4.4	5.4	8.3	4.7	8.6	8.7	8.9	80	57	14	5.7	3.8
8	4.3	5.3	7.4	4.5	8.3	8.3	8.7	76	52	14	5.6	3.8
9	4.2	5.0	6.8	4.5	8.6	8.1	8.3	71	50	13	6.8	4.6
10	4.3	5.0	6.6	4.4	8.2	7.8	8.3	71	47	12	9.3	4.8
11	4.2	5.0	6.3	4.5	8.6	7.5	8.4	87	46	12	6.5	4.3
12	4.0	5.0	6.0	4.4	6.8	7.4	9.4	103	45	11	5.8	3.9
13	3.9	5.2	6.0	4.3	6.8	7.6	12	97	44	11	5.4	3.8
14	4.0	5.4	6.0	4.5	6.6	7.8	13	81	44	11	5.2	3.8
15	4.1	5.6	5.8	4.9	6.4	7.5	15	73	44	10	5.1	3.7
16	4.2	5.7	5.6	7.0	6.5	7.5	17	72	43	9.5	4.9	3.6
17	4.1	5.9	5.6	6.8	9.7	8.0	22	81	42	8.8	4.8	3.6
18	4.2	5.4	5.5	17	8.4	9.2	28	90	40	8.5	4.7	3.8
19	4.2	5.0	5.5	10	7.5	9.9	38	92	39	8.1	4.6	3.9
20	4.1	5.1	5.5	10	7.3	9.7	44	94	37	7.7	4.5	3.7
21	4.1	5.3	e5.7	9.3	6.8	9.1	47	97	36	7.4	4.4	3.7
22	4.1	6.6	e5.5	8.3	6.6	9.2	41	102	34	7.2	4.2	3.6
23	4.1	18	e5.4	8.1	6.5	9.8	33	108	35	6.9	4.3	3.7
24	6.0	12	e5.2	7.7	6.5	10	36	138	34	6.9	4.3	3.8
25	6.1	8.5	5.1	7.3	6.5	12	49	169	32	6.8	4.2	3.7
26	5.5	7.3	5.0	7.0	6.3	15	58	154	29	6.6	4.3	3.6
27	5.1	6.8	5.0	6.7	6.3	15	54	145	27	6.4	4.5	3.6
28	5.1	6.6	5.0	e7.3	8.6	14	44	136	26	6.1	4.3	3.5
29	5.3	8.7	4.9	e7.0	---	14	35	114	25	6.0	4.1	3.5
30	5.3	25	4.8	6.6	---	13	39	106	24	5.8	4.1	3.5
31	5.1	---	4.8	6.6	---	12	---	99	---	5.8	4.2	---
TOTAL	140.6	211.6	207.4	201.9	199.8	314.9	738.0	2864	1395	337.5	158.9	116.0
MEAN	4.54	7.05	6.69	6.51	7.14	10.2	24.6	92.4	46.5	10.9	5.13	3.87
MAX	6.1	25	14	17	9.7	15	58	169	94	23	9.3	4.8
MIN	3.9	4.9	4.8	4.3	6.0	7.4	8.3	46	24	5.8	4.1	3.5
AC-FT	279	420	411	400	396	625	1460	5680	2770	669	315	230

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA—Continued
(Hydrologic Benchmark Station)

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999, BY WATER YEAR (WY)

MEAN	3.48	5.15	7.31	8.78	8.31	10.8	24.6	45.0	26.4	7.50	3.20	2.78
MAX	11.9	27.7	44.0	87.3	51.0	50.1	51.6	117	142	37.4	11.8	7.56
(WY)	1963	1984	1965	1997	1963	1986	1986	1969	1983	1983	1983	1983
MIN	1.46	1.83	2.03	1.81	2.54	2.74	6.13	3.45	1.82	1.36	1.20	1.11
(WY)	1995	1993	1977	1962	1994	1962	1975	1988	1992	1994	1994	1960

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1954 - 1999	
ANNUAL TOTAL	6329.2		6885.6			
ANNUAL MEAN	17.3		18.9		12.8	
HIGHEST ANNUAL MEAN					30.0	
LOWEST ANNUAL MEAN					2.65	
HIGHEST DAILY MEAN	89	Jun 7	169	May 25	800	Jan 1 1997
LOWEST DAILY MEAN	3.9	Aug 30	3.5	Sep 28	1.0	Sep 13 1960
ANNUAL SEVEN-DAY MINIMUM	4.0	Aug 29	3.6	Sep 24	1.1	Sep 9 1960
INSTANTANEOUS PEAK FLOW			273		1230	Jan 1 1997
INSTANTANEOUS PEAK STAGE			3.78		5.20	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	12550		13660		9260	
10 PERCENT EXCEEDS	55		54		34	
50 PERCENT EXCEEDS	6.1		6.9		4.5	
90 PERCENT EXCEEDS	4.3		4.2		1.9	

10344300 STAMPEDE RESERVOIR NEAR TRUCKEE, CA

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

DRAINAGE AREA.—136 mi².

PERIOD OF RECORD.—August 1969 to current year. August 1969 to September 1977 (monthend elevations and contents only). October 1977 to September 1987 (daily contents). Prior to October 1976, published as "near Boca."

GAGE.—Nonrecording gage read most days. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

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

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

EXTREMES (at 0800 hours) 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 hours) FOR CURRENT YEAR.—Maximum contents observed, 224,332 acre-ft, June 24, elevation, 5,948.07 ft; minimum observed, 200,752 acre-ft, Sept. 30, elevation, 5,940.97 ft.

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

5,850	27,915	5,880	60,185	5,910	115,865	5,940	197,630
5,860	36,470	5,890	76,008	5,920	140,141	5,950	231,005
5,870	47,090	5,900	94,535	5,930	167,355	5,960	267,386

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	205998	204728	206194	204111	204630	204435	204468	208256	220307	223373	210397	204858
2	205868	204760	206063	204078	204630	204500	204338	208454	220816	223168	210133	204663
3	205770	204760	205933	204143	204760	204695	204305	208651	221292	222894	209968	204468
4	205704	204695	205900	204143	204890	204858	204078	208815	221428	222485	209770	204273
5	205639	204695	205542	204143	204793	204760	203916	208914	221258	222144	209638	204111
6	205574	204663	205248	204176	204695	204630	204078	209144	221122	221837	209473	203948
7	205509	204706	204858	204241	205248	204468	203981	209572	221054	221428	209243	203786
8	205476	204749	204858	204241	205248	204305	203916	210265	220918	220952	209012	203624
9	205411	204793	204793	204176	205737	204500	203786	210794	220715	220477	208881	203462
10	205411	204793	204728	204176	205607	204370	203657	211224	220443	219968	208881	203300
11	205346	204760	204695	204241	205183	204370	203657	211655	220070	219460	208749	203106
12	205281	204728	204695	204273	205118	204208	203430	211887	220002	218953	208552	202944
13	205281	204695	204728	204208	205086	204305	203333	212617	220138	218446	208388	202783
14	205216	204695	204695	204208	205086	204403	203365	212983	220545	217906	208191	202589
15	205216	204695	204500	204305	204955	204435	203527	213016	221054	217367	207961	202395
16	205151	204695	204500	204533	204858	204435	203819	212950	221531	216728	207797	202266
17	205053	204858	204468	204663	205053	204500	204241	212817	222007	216056	207633	202137
18	204988	204825	204468	204955	204858	204565	204923	212883	222485	215386	207502	202040
19	204955	204793	204468	205346	204630	204598	205835	213016	222894	214784	207305	201911
20	204858	204825	204468	205900	204403	204663	207044	213249	223202	214216	207142	201750
21	204793	204890	204273	205868	204435	204728	208125	213516	223510	213716	206880	201653
22	204760	204858	204241	205476	204176	204663	208716	213649	223749	213249	206749	201524
23	204695	204955	204111	205574	204176	204695	208585	213949	223989	212783	206618	201428
24	204695	205379	204111	204825	204143	204760	208322	214450	224332	212385	206422	201299
25	204760	205607	204078	204468	204241	204760	208125	215922	224263	212019	206226	201235
26	204793	205639	204111	204370	204241	204825	208158	216862	224195	211688	206063	201202
27	204760	205574	204078	204273	204208	204825	208289	217704	224023	211456	205933	201074
28	204793	205607	204046	204305	204208	204793	208388	218513	223818	211158	205704	200913
29	204728	205607	204046	204370	---	204760	208322	219257	223681	210893	205542	200784
30	204760	205835	204143	204533	---	204695	208322	219697	223544	210695	205411	200752
31	204695	---	204176	204633	---	204663	---	219968	---	210529	205086	---
MAX	205998	205835	206194	205900	205737	204858	208716	219968	224332	223373	210397	204858
MIN	204695	204663	204046	204078	204143	204208	203333	208256	220002	210529	205086	200752
a	5942.19	5942.54	5942.03	5942.18	5942.04	5942.18	5943.30	5946.79	5947.84	5943.97	5942.31	5940.97
b	-1368	+1140	-1659	+457	-425	+455	+3659	+11646	+3576	-13015	-5443	-4334

CAL YR 1998 MAX 235176 MIN 183229 b +20947
WTR YR 1999 MAX 224332 MIN 200752 b -5311

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

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 sea level (U.S. Bureau of Reclamation Benchmark). June 1903 to October 1910, nonrecording gages at different sites and datums.

REMARKS.—Records good, including estimated daily discharges. Flow regulated by Independence Lake (station 10342900) since 1939 and Stampede Reservoir (station 10344300) since 1969. There is one transbasin diversion to Sierra Valley. See schematic diagram of Truckee River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 13,300 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	50	171	44	46	146	379	628	753	346	99	103
2	69	48	205	44	50	164	334	629	710	346	100	102
3	65	46	208	44	45	171	331	570	713	346	101	102
4	64	47	232	44	77	217	330	524	712	346	101	102
5	55	49	258	44	104	269	294	523	710	346	101	102
6	48	49	245	44	105	266	259	525	710	345	102	102
7	48	49	172	44	154	263	258	524	709	344	101	102
8	48	50	88	44	232	221	257	522	708	344	102	102
9	48	50	87	44	260	182	254	519	707	344	101	102
10	48	49	84	44	278	179	254	517	706	344	106	102
11	48	50	85	44	221	179	257	518	643	344	104	102
12	48	50	85	44	133	152	262	579	550	344	103	102
13	48	50	85	44	133	133	269	673	446	342	100	102
14	47	50	85	44	132	137	276	707	399	341	100	102
15	47	50	85	45	131	138	281	705	398	341	100	102
16	47	50	85	46	133	141	289	703	398	339	100	88
17	47	50	85	45	184	160	299	702	398	339	100	77
18	47	48	85	71	234	206	305	702	396	339	100	77
19	47	47	85	104	233	242	311	703	394	318	101	77
20	47	47	85	149	233	252	397	703	394	265	102	77
21	47	46	85	268	232	249	608	760	394	248	103	77
22	47	47	77	296	173	249	798	803	394	246	103	77
23	47	50	73	412	115	255	831	803	397	217	102	77
24	48	51	70	387	115	287	830	772	397	195	103	62
25	50	67	70	221	115	338	835	769	396	195	103	48
26	50	83	70	109	115	428	840	803	397	168	103	48
27	50	83	68	69	115	464	803	800	396	147	104	48
28	50	83	56	e46	117	455	738	797	369	138	103	48
29	50	84	46	e46	---	453	670	797	349	112	103	47
30	50	109	44	e46	---	449	626	796	349	102	103	47
31	49	---	44	46	---	443	---	796	---	99	103	---
TOTAL	1579	1682	3303	3022	4215	7888	13475	20872	15392	8630	3157	2506
MEAN	50.9	56.1	107	97.5	151	254	449	673	513	278	102	83.5
MAX	75	109	258	412	278	464	840	803	753	346	106	103
MIN	47	46	44	44	45	133	254	517	349	99	99	47
AC-FT	3130	3340	6550	5990	8360	15650	26730	41400	30530	17120	6260	4970

e Estimated.

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1968, BY WATER YEAR (WY)

MEAN	76.0	83.5	123	87.3	131	170	399	543	310	78.1	29.8	25.8
MAX	394	630	725	264	835	374	855	1304	1045	433	180	76.5
(WY)	1963	1951	1965	1956	1963	1967	1952	1952	1967	1967	1940	1959
MIN	13.5	13.0	11.6	9.45	22.0	39.0	106	171	45.7	6.06	4.45	5.93
(WY)	1962	1940	1960	1962	1948	1948	1961	1961	1954	1949	1949	1948

SUMMARY STATISTICS

WATER YEARS 1939 - 1968

ANNUAL MEAN	170
HIGHEST ANNUAL MEAN	321 1952
LOWEST ANNUAL MEAN	58.9 1961
HIGHEST DAILY MEAN	8810 Feb 1 1963
LOWEST DAILY MEAN	3.0 Nov 30 1954
ANNUAL SEVEN-DAY MINIMUM	4.0 Jul 17 1949
INSTANTANEOUS PEAK FLOW	13300 Feb 1 1963
INSTANTANEOUS PEAK STAGE	9.00 Feb 1 1963
ANNUAL RUNOFF (AC-FT)	123200
10 PERCENT EXCEEDS	454
50 PERCENT EXCEEDS	70
90 PERCENT EXCEEDS	13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1999, BY WATER YEAR (WY)

MEAN	75.0	42.7	74.7	108	84.6	140	310	559	348	177	118	56.9
MAX	503	132	711	1089	400	418	923	1371	1733	1301	573	359
(WY)	1974	1975	1984	1997	1996	1996	1986	1969	1983	1983	1975	1971
MIN	.56	.75	2.85	16.7	10.6	13.8	25.6	30.6	28.1	24.1	1.65	.47
(WY)	1970	1970	1970	1980	1970	1970	1970	1988	1988	1981	1969	1969

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1969 - 1999

ANNUAL TOTAL	76903	85721	
ANNUAL MEAN	211	235	175
HIGHEST ANNUAL MEAN			427 1983
LOWEST ANNUAL MEAN			53.4 1992
HIGHEST DAILY MEAN	881 Jun 14	840 Apr 26	2590 Jan 12 1997
LOWEST DAILY MEAN	31 Jan 1	44 Dec 30	.30 Sep 16 1969
ANNUAL SEVEN-DAY MINIMUM	31 Jan 3	44 Dec 30	.31 Sep 15 1969
INSTANTANEOUS PEAK FLOW		844 Apr 22	13300 Feb 1 1963
INSTANTANEOUS PEAK STAGE		2.45 Apr 22	9.00 Feb 1 1963
ANNUAL RUNOFF (AC-FT)	152500	170000	126800
10 PERCENT EXCEEDS	535	671	497
50 PERCENT EXCEEDS	91	115	47
90 PERCENT EXCEEDS	33	47	27

10344490 BOCA RESERVOIR NEAR TRUCKEE, CA

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

DRAINAGE AREA.—172 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 most days. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 8, 1938. Usable capacity, 40,868 acre-ft between elevations 5,521 ft, outlet sill, and 5,605 ft, top of spillway gates. Elevation of spillway (gate open) is 5,589.01 ft. Dead contents, 241 acre-ft. Records, including extremes, represent usable contents at 0800 hours. Water is used for irrigation in the State of Nevada and for power development. See schematic diagram of Truckee River Basin.

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

EXTREMES (at 0800 hours) 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 hours) FOR CURRENT YEAR.—Maximum contents observed, 39,984 acre-ft, June 30, elevation, 5,604.09 ft; minimum, 29,437 acre-ft, Jan. 18, elevation, 5,592.36 ft.

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

5,540	2,356	5,570	13,768
5,545	3,513	5,580	20,002
5,550	4,970	5,590	27,488
5,555	6,725	5,600	36,128
5,560	8,778	5,605	40,868

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37623	33707	31568	32789	32815	33000	32370	34970	35990	39955	38036	35469
2	37492	33662	31682	32780	32859	33061	32353	35278	36220	39906	37942	35360
3	37351	33609	31789	32780	32842	33053	32283	35551	36811	39849	37839	35251
4	37202	33556	31962	32772	32886	32842	32179	35661	37389	39781	37745	35115
5	37062	33511	32083	32763	32886	32719	32101	35716	37660	39723	37651	34988
6	36886	33432	32240	32763	32929	32772	32127	35853	37632	39791	37613	34862
7	36719	33414	32300	32553	33123	32780	32083	36009	37604	39810	37585	34735
8	36534	33414	32405	32257	33114	32772	32023	36119	37707	39656	37548	34609
9	36377	33405	32440	31902	33273	32833	31971	36229	37876	39262	37520	34475
10	36192	33396	32483	31629	32737	32780	31884	36340	38046	38956	37538	34376
11	36018	33405	32509	31299	32222	32745	31833	36432	38216	38661	37529	34286
12	35844	33388	32544	30970	32405	32684	31772	36432	38367	38414	37510	34197
13	35679	33379	32579	30634	32448	32728	31789	36395	38519	38225	37492	34107
14	35506	33379	32605	30326	32483	32798	31850	36312	38680	38084	37398	34045
15	35342	33370	32640	30003	32509	32859	31945	36266	38842	37923	37314	33973
16	35215	33352	32675	29749	32536	32947	32075	36211	39042	37764	37211	33911
17	35088	33326	32710	29495	32632	33061	32257	36156	39243	37595	37090	33849
18	34970	33246	32745	29437	32632	33096	32492	36101	39444	37604	36979	33769
19	34862	33167	32780	29858	32702	33079	32772	36036	39473	37707	36858	33689
20	34744	33009	32824	30207	32719	33053	33105	35981	39512	37792	36746	33609
21	34618	32807	32859	30668	32807	32982	33370	35908	39540	37801	36635	33529
22	34501	32597	32886	31273	32824	32921	33229	35771	39569	37886	36524	33449
23	34394	32396	32894	31971	32649	32894	33317	35670	39608	37961	36432	33379
24	34286	32292	32894	32144	32710	32903	33388	35579	39656	38018	36321	33299
25	34197	32092	32903	32353	32798	32956	33467	35369	39665	38074	36211	33167
26	34098	31953	32912	32500	32868	32991	33556	35278	39694	38178	36110	33035
27	33982	31807	32921	32579	32877	32965	33671	35297	39723	38235	36009	32903
28	33875	31699	32912	32632	32886	32903	34027	35306	39887	38282	35908	32754
29	33849	31577	32877	32684	---	32815	34385	35460	39935	38291	35807	32614
30	33778	31533	32833	32737	---	32710	34385	35643	39984	38225	35697	32483
31	33724	---	32798	32789	---	32553	---	35816	---	38131	35579	---
MAX	37623	33707	32921	32789	33273	33096	34385	36432	39984	39955	38036	35469
MIN	33724	31533	31568	29437	32222	32553	31772	34970	35990	37595	35579	32483
a	5597.34	5594.81	5596.29	5596.28	5596.39	5596.01	5598.08	5599.66	5604.09	5602.15	5599.40	5595.93
b	-4011	-2191	+1265	-9	+97	-333	+1832	+1431	+4168	-1853	-2552	-3096
CAL YR 1998	MAX 39704	MIN 18491	b +14340									
WTR YR 1999	MAX 39984	MIN 29437	b -5252									

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

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

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

DRAINAGE AREA.—173 mi².

PERIOD OF RECORD.—April to October 1890 (monthly discharge only), January 1911 to September 1915, January 1939 to current year. Prior to October 1976 published as "at Boca." Monthly discharge only for January 1939 to September 1957, published in WSP 1734.

WATER TEMPERATURE: Water years 1993-98.

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

GAGE.—Water-stage recorder. Elevation of gage is 5,500 ft above sea level, from topographic map. Jan. 1, 1911, to Sept. 30, 1915, nonrecording gage at site 650 ft downstream at different datum. January 1939 to September 1957, records computed from daily log of rated settings of needle valve in dam, and from computed flow over spillway.

REMARKS.—Records good. Flow regulated by Boca Reservoir (station 10344490) since 1938, Independence Lake (station 10342900) since 1939, and Stampede Reservoir (station 10344300) since 1969. There is one transmountain diversion to Sierra Valley of about 6,000 acre-ft per year. See schematic diagram of Truckee River Basin.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	70	156	48	30	185	513	551	673	369	145	151
2	133	70	156	48	30	245	442	552	474	368	145	150
3	133	70	156	48	29	356	442	553	428	368	144	158
4	133	70	179	47	64	395	442	553	492	368	144	162
5	133	79	203	47	85	351	381	527	685	335	124	162
6	133	72	203	110	86	326	343	512	723	313	112	162
7	133	52	118	184	169	325	343	513	693	381	112	162
8	133	52	68	215	263	275	343	514	614	492	112	162
9	133	52	68	214	481	247	342	515	614	518	108	157
10	133	52	68	213	587	247	342	516	614	493	105	147
11	133	52	68	212	320	247	341	543	584	477	105	143
12	132	52	68	212	85	190	341	620	451	451	105	142
13	132	52	68	212	85	158	341	721	334	424	123	136
14	131	52	68	212	85	158	341	764	292	413	134	133
15	113	52	68	212	85	158	341	764	292	412	140	133
16	102	68	68	194	85	158	342	764	292	411	152	120
17	102	86	68	154	134	208	343	766	292	360	152	113
18	102	86	68	71	162	302	343	766	344	300	152	113
19	102	106	68	1.0	162	354	344	767	375	268	152	113
20	102	158	68	1.2	162	363	439	767	375	244	152	113
21	102	158	68	1.0	163	364	754	840	375	213	152	113
22	101	158	68	1.0	163	363	913	883	375	201	151	112
23	101	158	68	259	129	363	913	882	375	179	151	112
24	102	158	68	344	112	387	914	882	375	166	151	112
25	102	157	68	158	112	456	914	882	375	151	151	112
26	101	156	68	87	129	581	916	845	375	127	151	112
27	101	156	68	48	139	631	805	817	342	119	151	112
28	85	156	68	31	140	631	637	777	320	119	151	112
29	86	156	67	31	---	630	581	715	320	128	151	112
30	79	156	67	30	---	630	551	716	348	145	151	112
31	70	---	55	30	---	630	---	717	---	145	151	---
TOTAL	3511	2972	2788	3675.2	4276	10914	15347	21504	13221	9458	4280	3953
MEAN	113	99.1	89.9	119	153	352	512	694	441	305	138	132
MAX	133	158	203	344	587	631	916	883	723	518	152	162
MIN	70	52	55	1.0	29	158	341	512	292	119	105	112
AC-FT	6960	5890	5530	7290	8480	21650	30440	42650	26220	18760	8490	7840

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1915, BY WATER YEAR (WY)

MEAN	22.8	38.1	29.2	83.4	75.5	196	721	790	582	169	36.5	26.3
MAX	34.2	58.4	39.3	283	173	558	1367	1260	1211	435	66.3	35.7
(WY)	1915	1913	1914	1914	1914	1914	1914	1911	1911	1911	1911	1912
MIN	14.1	28.4	23.2	20.5	28.4	56.3	106	379	212	50.7	20.1	14.4
(WY)	1914	1915	1912	1913	1912	1912	1912	1912	1913	1912	1915	1915

SUMMARY STATISTICS

WATER YEARS 1911 - 1915

ANNUAL MEAN	193	
HIGHEST ANNUAL MEAN	387	1914
LOWEST ANNUAL MEAN	94.7	1912
HIGHEST DAILY MEAN	2360	Apr 15 1914
LOWEST DAILY MEAN	.00	Sep 26 1911
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 26 1911
ANNUAL RUNOFF (AC-FT)	140100	
10 PERCENT EXCEEDS	800	
50 PERCENT EXCEEDS	49	
90 PERCENT EXCEEDS	16	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1969, BY WATER YEAR (WY)

MEAN	89.7	106	144	156	160	132	264	426	315	159	146	120
MAX	303	611	856	649	606	442	808	1647	974	389	408	414
(WY)	1968	1951	1951	1965	1963	1967	1952	1952	1967	1967	1958	1952
MIN	.000	.12	.20	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1940	1967	1960	1939	1939	1939	1939	1939	1939	1939	1939	1939

SUMMARY STATISTICS

WATER YEARS 1939 - 1969

ANNUAL MEAN	190	
HIGHEST ANNUAL MEAN	435	1952
LOWEST ANNUAL MEAN	65.8	1961
HIGHEST DAILY MEAN	5520	Dec 24 1955
LOWEST DAILY MEAN	.00	Jan 1 1939
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1 1939
INSTANTANEOUS PEAK FLOW	8800	Dec 24 1955
ANNUAL RUNOFF (AC-FT)	137700	
10 PERCENT EXCEEDS	430	
50 PERCENT EXCEEDS	107	
90 PERCENT EXCEEDS	.02	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1999, BY WATER YEAR (WY)

MEAN	107	74.5	91.9	121	92.3	133	283	500	320	211	158	109
MAX	441	327	568	1296	433	522	975	1148	1788	1131	585	418
(WY)	1972	1984	1984	1997	1997	1996	1986	1985	1983	1983	1975	1971
MIN	.000	.020	.11	.001	1.60	.13	.39	.31	2.63	.75	13.6	.55
(WY)	1995	1991	1978	1995	1995	1995	1988	1988	1977	1981	1984	1970

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1970 - 1999

ANNUAL TOTAL	76256.18	95899.2	
ANNUAL MEAN	209	263	184
HIGHEST ANNUAL MEAN			470
LOWEST ANNUAL MEAN			55.6
HIGHEST DAILY MEAN	1270	May 16	916
LOWEST DAILY MEAN	.50	Jan 9	1.0
ANNUAL SEVEN-DAY MINIMUM	.60	Feb 23	30
INSTANTANEOUS PEAK FLOW			920
INSTANTANEOUS PEAK STAGE			4.20
ANNUAL RUNOFF (AC-FT)	151300	190200	133200
10 PERCENT EXCEEDS	518	624	486
50 PERCENT EXCEEDS	111	158	85
90 PERCENT EXCEEDS	.73	68	.54

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.

WATER-DISCHARGE RECORDS

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

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, 1993–98.

WATER TEMPERATURE: Water years 1964–81, 1993–98.

SUSPENDED SEDIMENT: Water years 1974, 1978.

REVISED RECORDS.—WSP 1714: Drainage area. WDR CA-88-3: 1906–07 (monthly runoff).

GAGE.—Water-stage recorder. Datum of gage is 5,153.21 ft above sea level (U.S. Bureau of Reclamation benchmark). See WSP 2127 for history of changes prior to Aug. 26, 1957.

REMARKS.—Records good except for estimated daily discharges, which are fair. Flow regulated by Lake Tahoe and Donner, Martis Creek, and Independence Lakes, and Prosser Creek, Stampede, and Boca Reservoirs (stations 10337000, 10338400, 10339380, 10342900, 10340300, 10344300, and 10344490), and by several powerplants. See schematic diagram of Truckee River Basin.

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, 37 ft³/s, Sept. 15, 1933.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	754	430	719	413	844	2550	1390	2270	3150	1420	625	633
2	741	419	731	389	834	2620	1230	2390	2830	1400	624	634
3	737	411	843	399	817	2830	1220	2300	2460	1350	620	633
4	734	396	897	397	827	2870	1190	2230	2300	1280	617	637
5	721	425	949	396	687	2760	1100	2200	2390	1200	654	634
6	727	459	951	389	674	2190	1010	2280	2520	1130	654	631
7	713	442	852	404	950	2210	989	2430	2470	1100	654	635
8	699	438	811	393	1440	2080	1090	2500	2340	1080	649	640
9	698	418	801	384	2120	1990	1140	2450	2380	1070	646	641
10	692	418	774	383	2740	1960	1150	2410	2370	1020	662	641
11	688	460	769	382	2560	1950	1150	2550	2370	1000	617	636
12	686	448	767	386	2450	1780	1170	2880	2210	967	606	635
13	684	447	765	396	2430	1490	1220	2980	2070	929	610	637
14	676	445	766	394	2410	1510	1280	2880	2040	892	616	628
15	611	441	760	404	2390	1480	1310	2800	2080	837	609	626
16	587	429	756	447	2360	1270	1370	2780	2090	810	617	618
17	531	441	754	405	2490	1260	1560	2840	2090	860	635	610
18	543	427	752	542	2500	1400	1690	2950	2140	809	636	613
19	526	430	751	531	2470	1540	1910	2980	2180	767	633	615
20	525	439	737	566	2450	1570	2220	3040	2120	733	630	613
21	483	435	e725	802	2470	1550	2610	3140	2090	697	629	594
22	471	460	e750	932	2440	1540	2730	3330	1980	678	629	603
23	468	519	e755	1310	2360	1520	2630	3440	1940	696	632	619
24	476	621	755	1720	2290	1380	2590	3640	1920	678	629	603
25	488	548	754	1450	2290	1470	2680	3960	1820	662	625	591
26	468	530	751	1290	2270	1720	2850	4190	1700	639	627	588
27	447	516	749	1220	2280	1790	2750	4160	1600	623	639	584
28	421	512	710	1110	2350	1750	2500	3850	1540	620	632	587
29	421	521	521	876	---	1720	2310	3500	1490	618	625	582
30	414	723	502	864	---	1690	2200	3310	1470	631	624	573
31	398	---	490	856	---	1580	---	3270	---	629	630	---
TOTAL	18228	14048	23367	20830	55193	57020	52239	91930	64150	27825	19535	18514
MEAN	588	468	754	672	1971	1839	1741	2965	2138	898	630	617
MAX	754	723	951	1720	2740	2870	2850	4190	3150	1420	662	641
MIN	398	396	490	382	674	1260	989	2200	1470	618	606	573
AC-FT	36160	27860	46350	41320	109500	113100	103600	182300	127200	55190	38750	36720

e Estimated.

PYRAMID AND WINNEMUCCA LAKES BASIN

10346000 TRUCKEE RIVER AT FARAD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1999, BY WATER YEAR (WY)

MEAN	384	422	539	605	669	811	1286	1748	1286	662	512	466
MAX	982	2469	3596	6115	3254	4073	3887	5674	5214	2921	1084	1482
(WY)	1972	1984	1984	1997	1997	1986	1952	1952	1983	1983	1975	1983
MIN	51.0	55.6	80.4	77.7	85.3	142	369	349	142	53.9	53.9	47.3
(WY)	1978	1991	1991	1991	1933	1933	1977	1934	1931	1931	1931	1933

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1909 - 1999	
ANNUAL TOTAL	445522		462879			
ANNUAL MEAN	1221		1268		775	
HIGHEST ANNUAL MEAN					2443	
LOWEST ANNUAL MEAN					184	
HIGHEST DAILY MEAN	4480	Jun 14	4190	May 26	13400	Dec 23 1955
LOWEST DAILY MEAN	376	Feb 9	382	Jan 11	37	Sep 15 1933
ANNUAL SEVEN-DAY MINIMUM	388	Jan 21	388	Jan 8	40	Sep 9 1933
INSTANTANEOUS PEAK FLOW			4570	May 26	17500	Nov 21 1950
INSTANTANEOUS PEAK STAGE			7.58	May 26	14.50	Nov 21 1950
ANNUAL RUNOFF (AC-FT)	883700		918100		561800	
10 PERCENT EXCEEDS	2660		2550		1740	
50 PERCENT EXCEEDS	754		802		506	
90 PERCENT EXCEEDS	407		444		200	

10346000 TRUCKEE RIVER AT FARAD, CA—Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.— April to September 1999.

INSTRUMENTATION.—Recording-weighing gage since Apr. 14, 1999.

EXTREMES FOR PERIOD OF RECORD.—Maximum recorded daily precipitation, 0.31 in., Aug. 9, 1999; no precipitation for many days.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.03	.00	.00	.00	.00
2	---	---	---	---	---	---	---	.00	.10	.00	.00	.00
3	---	---	---	---	---	---	---	.06	.14	.00	.00	.00
4	---	---	---	---	---	---	---	.00	.11	.00	.00	.00
5	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
6	---	---	---	---	---	---	---	.00	.07	.00	.17	.00
7	---	---	---	---	---	---	---	.00	.00	.00	.00	.01
8	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
9	---	---	---	---	---	---	---	.00	.00	.00	.31	.03
10	---	---	---	---	---	---	---	.00	.00	.00	.12	.00
11	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
12	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
13	---	---	---	---	---	---	---	.00	.00	.00	.03	.00
14	---	---	---	---	---	---	.04	.00	.00	.00	.00	.03
15	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
16	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
17	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
18	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
19	---	---	---	---	---	---	.00	.00	.00	.03	.00	.00
20	---	---	---	---	---	---	.00	.00	.00	.00	.00	.06
21	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
22	---	---	---	---	---	---	.03	.00	.00	.00	.04	.00
23	---	---	---	---	---	---	.00	.00	.00	.00	.03	.00
24	---	---	---	---	---	---	.00	.00	.04	.00	.00	.00
25	---	---	---	---	---	---	.00	.07	.00	.00	.00	.00
26	---	---	---	---	---	---	.03	.00	.00	.00	.00	.00
27	---	---	---	---	---	---	.03	.00	.00	.00	.00	.00
28	---	---	---	---	---	---	.21	.00	.00	.00	.00	.00
29	---	---	---	---	---	---	.27	.00	.00	.00	.00	.00
30	---	---	---	---	---	---	.11	.00	.00	.00	.03	.00
31	---	---	---	---	---	---	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	---	---	0.16	0.46	0.03	0.73	0.13

BUENA VISTA LAKE BASIN

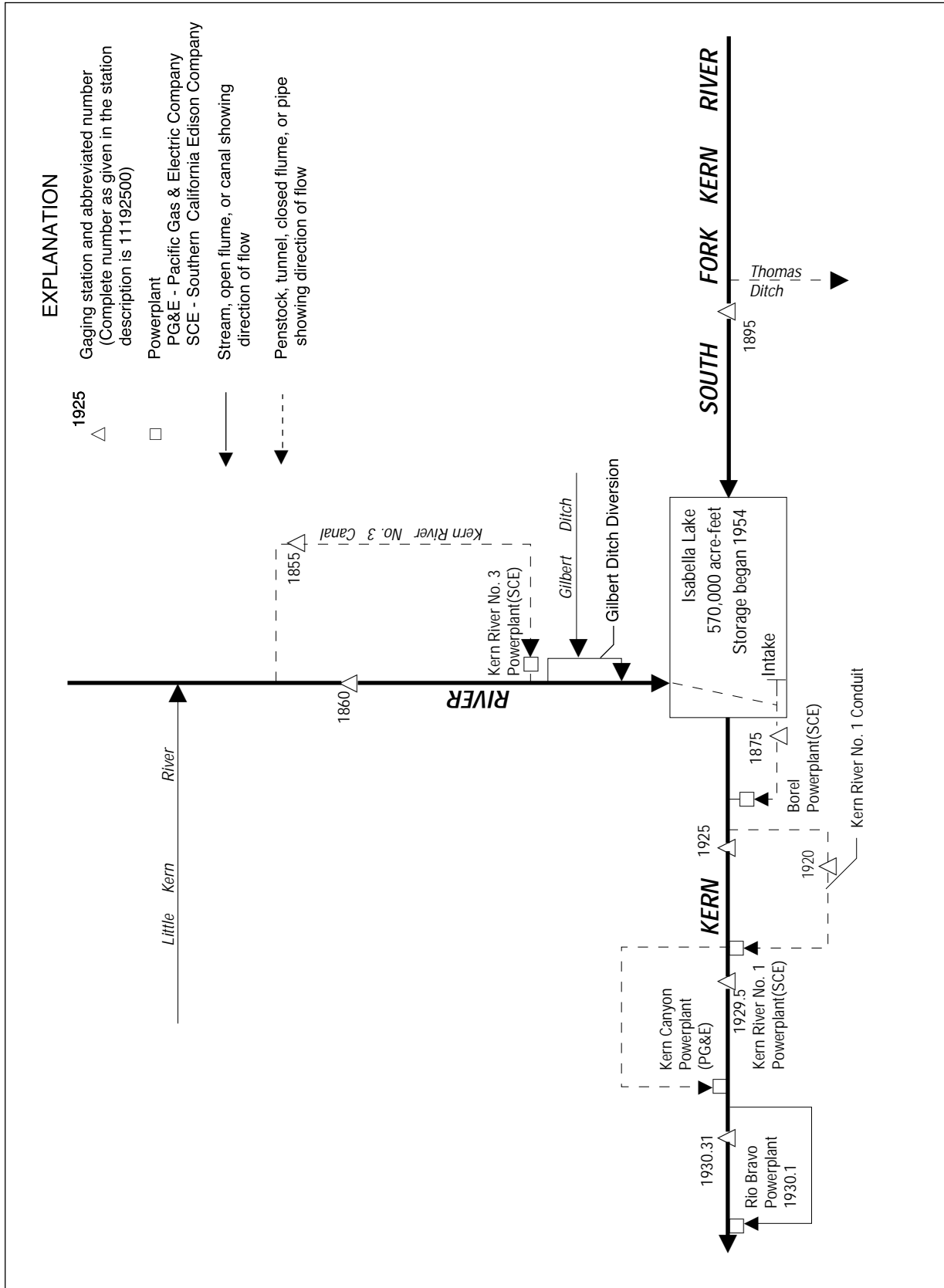


Figure 23. Diversions and storage in Kern River Basin.

PACIFIC SLOPE BASINS IN CALIFORNIA
 BUENA VISTA LAKE BASIN

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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 sea level, from topographic map. Prior to Apr. 1, 1913, at site 1.4 mi downstream at different datum. Apr. 1 to Sept. 14, 1913, nonrecording gage, and Sept. 15, 1913, to Sept. 30, 1967, water-stage recorder, at site 1.2 mi downstream at different datum.

REMARKS.—Since 1921, Kern River No. 3 Canal (station 11185500) 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. For records of combined discharge of river and canal, see station 11186001. See schematic diagram of Kern 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.—River only: Maximum discharge, 60,000 ft³/s, Dec. 6, 1966, gage height, 22.77 ft, site and datum then in use, from floodmarks, from rating curve extended above 6,000 ft³/s on basis of computed flow over dam at gage height 17.55 ft (basic data for computation provided by Southern California Edison Co.) and slope-area measurement of peak flow; no flow for many days in 1924 and 1925.

Combined river and diversion: Maximum discharge, 60,000 ft³/s, Dec. 6, 1966; minimum daily, 76 ft³/s, Dec. 22, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	61	50	45	45	81	104	104	998	143	129	187
2	90	50	46	45	45	79	104	115	934	134	129	184
3	90	49	44	45	46	78	104	107	693	128	128	186
4	90	50	44	44	44	80	104	109	486	129	128	181
5	89	51	43	43	44	81	104	109	346	131	126	171
6	88	50	43	43	45	80	104	205	319	135	126	166
7	87	50	43	43	46	79	104	379	381	138	125	164
8	85	50	45	45	46	79	103	534	432	138	125	161
9	87	50	45	45	45	80	103	627	455	138	128	159
10	85	52	45	47	44	78	103	566	476	138	131	161
11	87	52	45	46	45	77	103	639	531	138	131	162
12	88	50	45	240	45	77	103	918	585	136	134	160
13	86	49	44	268	45	78	105	1220	623	136	131	159
14	84	49	43	156	44	78	123	1030	698	136	133	157
15	87	50	43	45	44	78	506	759	722	138	132	157
16	87	49	44	45	46	78	562	641	672	135	135	157
17	91	49	45	44	43	80	155	655	616	134	135	156
18	90	54	44	44	43	79	105	856	614	135	133	161
19	90	50	45	44	43	79	165	960	622	139	170	178
20	89	51	44	49	43	79	241	957	604	140	183	176
21	92	49	46	44	44	77	304	988	500	140	184	165
22	90	50	73	46	42	77	351	925	361	145	185	169
23	89	50	49	45	45	78	245	939	336	145	186	203
24	91	50	47	45	49	79	163	975	349	141	186	215
25	89	50	48	45	49	79	118	1010	343	138	188	197
26	86	50	46	44	46	79	150	1180	259	138	207	185
27	89	50	46	42	46	79	221	1280	176	138	219	177
28	89	51	47	46	47	79	215	1280	126	140	218	171
29	89	52	46	45	---	79	141	1300	116	156	204	166
30	89	52	45	45	---	79	109	1120	116	134	195	164
31	89	---	45	45	---	81	---	984	---	130	190	---
TOTAL	2741	1520	1428	1918	1259	2444	5222	23471	14489	4264	4854	5155
MEAN	88.4	50.7	46.1	61.9	45.0	78.8	174	757	483	138	157	172
MAX	92	61	73	268	49	81	562	1300	998	156	219	215
MIN	84	49	43	42	42	77	103	104	116	128	125	156
AC-FT	5440	3010	2830	3800	2500	4850	10360	46550	28740	8460	9630	10220

PACIFIC SLOPE BASINS IN CALIFORNIA
BUENA VISTA LAKE BASIN

11186000 KERN RIVER NEAR KERNVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	57.8	51.1	128	184	157	279	616	1520	1688	784	223	111
MAX	197	197	2488	2619	967	1480	2631	5874	6819	3482	1583	538
(WY)	1983	1997	1967	1997	1986	1986	1969	1969	1983	1983	1983	1982
MIN	2.01	1.36	.98	2.01	1.51	1.84	1.93	6.68	7.22	2.66	12.5	2.70
(WY)	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1963

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1961 - 1999
ANNUAL TOTAL	402764	68765	
ANNUAL MEAN	1103	188	484
HIGHEST ANNUAL MEAN			1727
LOWEST ANNUAL MEAN			3.65
HIGHEST DAILY MEAN	7120	Jun 17	1300
LOWEST DAILY MEAN	43	Dec 5	42
ANNUAL SEVEN-DAY MINIMUM	44	Dec 3	43
INSTANTANEOUS PEAK FLOW			1540
INSTANTANEOUS PEAK STAGE			5.67
ANNUAL RUNOFF (AC-FT)	798900	136400	350900
10 PERCENT EXCEEDS	3530	545	1560
50 PERCENT EXCEEDS	194	103	80
90 PERCENT EXCEEDS	49	45	28

PACIFIC SLOPE BASINS IN CALIFORNIA
 BUENA VISTA LAKE BASIN

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11186001 KERN RIVER NEAR KERNVILLE, CA—Continued

KERN RIVER AND KERN RIVER NO. 3 CANAL NEAR KERNVILLE

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	481	371	410	308	335	394	391	660	1580	665	282	187
2	476	365	392	304	335	407	380	694	1510	670	270	184
3	467	359	371	300	350	413	408	688	1270	645	259	186
4	453	357	368	295	359	422	379	691	1060	593	254	181
5	440	352	339	297	347	408	402	692	921	536	253	171
6	427	348	336	298	334	393	393	789	893	492	248	166
7	414	346	319	293	363	382	383	964	955	478	245	164
8	406	386	358	290	479	367	374	1120	1010	481	238	161
9	400	371	350	287	496	373	384	1210	1030	503	224	159
10	395	353	340	287	469	358	397	1150	1050	552	213	161
11	387	420	342	289	405	359	405	1220	1100	636	213	162
12	381	394	347	280	427	345	385	1500	1160	628	214	160
13	377	397	344	271	411	354	395	1810	1190	546	206	159
14	374	403	344	272	396	360	455	1620	1270	642	202	157
15	374	403	335	284	377	356	532	1340	1290	547	199	157
16	376	394	333	300	376	353	584	1230	1240	498	198	157
17	383	394	335	301	377	361	625	1240	1160	456	193	156
18	373	378	333	299	407	364	666	1440	1160	420	190	161
19	369	356	329	304	405	373	750	1550	1190	395	193	178
20	365	352	313	535	400	376	825	1540	1170	377	185	176
21	362	357	268	481	388	368	885	1570	1070	356	185	165
22	365	361	296	384	369	365	930	1510	930	333	185	169
23	363	360	305	387	373	374	826	1520	905	319	186	203
24	361	360	299	415	370	380	747	1560	918	309	186	215
25	394	353	321	466	378	403	702	1600	913	301	188	197
26	401	347	328	413	370	404	730	1760	829	291	207	185
27	409	342	323	355	370	414	798	1870	746	280	219	177
28	396	352	314	354	390	419	793	1870	696	271	218	171
29	387	362	315	373	---	421	716	1890	681	272	204	166
30	387	372	313	366	---	429	692	1700	668	279	195	164
31	379	---	313	368	---	427	---	1570	---	284	190	---
TOTAL	12322	11065	10333	10456	10856	11922	17332	41568	31565	14055	6642	5155
MEAN	397	369	333	337	388	385	578	1341	1052	453	214	172
MAX	481	420	410	535	496	429	930	1890	1580	670	282	215
MIN	361	342	268	271	334	345	374	660	668	271	185	156
AC-FT	24440	21950	20500	20740	21530	23650	34380	82450	62610	27880	13170	10220

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

MEAN	250	270	368	476	526	715	1140	2087	2238	1207	523	315
MAX	634	715	2696	3161	1524	2075	3235	6475	7401	4059	2175	934
(WY)	1983	1984	1967	1997	1980	1986	1969	1969	1983	1983	1983	1978
MIN	106	112	109	121	120	181	333	373	303	133	114	100
(WY)	1962	1991	1991	1991	1991	1977	1976	1977	1976	1961	1990	1990

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1961 - 1999

ANNUAL TOTAL	578802	183271	
ANNUAL MEAN	1586	502	844
HIGHEST ANNUAL MEAN			2264
LOWEST ANNUAL MEAN			228
HIGHEST DAILY MEAN	7700	Jun 17	1890
LOWEST DAILY MEAN	268	Dec 21	156
ANNUAL SEVEN-DAY MINIMUM	304	Dec 20	158
ANNUAL RUNOFF (AC-FT)	1148000	363500	611300
10 PERCENT EXCEEDS	4120	1110	2150
50 PERCENT EXCEEDS	778	374	391
90 PERCENT EXCEEDS	347	193	159

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 and concrete-lined channel with Ogee weir and AVM in syphon pipe 6 mi downstream. Elevation of gage is 2,540 ft above sea level, from topographic map. Prior to Apr. 29, 1952, at site 4 mi upstream at different datum.

REMARKS.—Canal diverts from right bank of Kern River 5.5 mi upstream from Isabella Dam and above South Fork Kern River. When contents of Isabella Reservoir are above 110,000 acre-ft, diversion is at the dam. Canal is used to supply Borel Powerplant of Southern California Edison Co., 6 mi downstream from station, at which point water is returned to the Kern River. See schematic diagram of Kern River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 634 ft³/s, Mar. 13, 14, 1952; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	569	574	.00	441	501	464	377	444	568	579	571	573
2	567	574	.00	426	523	524	382	525	570	577	573	573
3	560	572	.00	413	579	516	362	547	570	577	574	573
4	562	568	150	365	577	508	367	517	569	579	574	531
5	563	576	509	314	575	496	369	515	516	580	573	445
6	560	570	504	314	574	399	380	515	496	581	574	515
7	560	568	481	314	574	413	391	546	565	579	573	569
8	560	565	463	314	576	431	402	564	583	580	575	569
9	563	568	445	311	576	419	392	563	583	578	575	575
10	565	570	434	311	575	424	393	563	582	579	574	573
11	563	568	429	312	578	466	395	551	582	579	574	573
12	560	568	419	311	576	432	395	578	582	576	574	573
13	560	567	420	311	575	382	394	579	582	574	573	570
14	563	565	426	311	546	382	398	579	581	574	574	556
15	561	568	467	316	508	381	403	553	582	571	575	537
16	562	491	492	319	498	383	395	522	580	568	575	554
17	563	332	494	318	478	384	395	552	581	571	575	565
18	563	332	497	334	495	385	394	562	580	572	576	555
19	565	334	473	365	503	387	388	560	581	571	576	554
20	563	331	441	410	510	388	447	576	582	572	577	555
21	560	331	420	477	524	389	471	557	580	574	576	557
22	562	334	408	492	556	391	473	503	580	574	578	158
23	562	332	364	492	575	391	484	524	578	573	578	.00
24	561	331	341	492	571	411	502	569	575	569	577	.00
25	563	335	361	493	576	438	535	560	573	571	568	.00
26	560	335	390	494	557	388	576	561	575	571	569	.00
27	560	334	390	494	539	360	542	561	578	571	567	.00
28	568	332	397	495	583	364	498	560	581	571	569	.00
29	574	331	425	498	---	390	519	557	579	570	569	.00
30	574	74	441	503	---	417	491	564	578	571	567	.00
31	574	---	441	501	---	400	---	566	---	573	568	---
TOTAL	17470	13430	11922.00	12261	15378	12903	12910	16993	17192	17805	17771	11803.00
MEAN	564	448	385	396	549	416	430	548	573	574	573	393
MAX	574	576	509	503	583	524	576	579	583	581	578	575
MIN	560	74	.00	311	478	360	362	444	496	568	567	.00
AC-FT	34650	26640	23650	24320	30500	25590	25610	33710	34100	35320	35250	23410

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1999, BY WATER YEAR (WY)

MEAN	248	241	267	306	386	463	507	519	537	487	396	301
MAX	588	584	576	584	590	611	605	607	614	605	607	586
(WY)	1979	1984	1951	1984	1984	1985	1984	1989	1989	1985	1952	1993
MIN	.000	.000	.000	.000	.000	.000	.000	.000	9.23	2.25	.000	.000
(WY)	1973	1946	1973	1952	1951	1973	1990	1914	1914	1990	1972	1931

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1910 - 1999	
ANNUAL TOTAL	169648.80		177838.00			
ANNUAL MEAN	465		487		387	
HIGHEST ANNUAL MEAN					585	
LOWEST ANNUAL MEAN					106	
HIGHEST DAILY MEAN	617	Apr 21	583	Feb 28	634	Mar 13 1952
LOWEST DAILY MEAN	.00	Jan 1	.00	Dec 1	.00	Oct 23 1910
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Sep 23	.00	May 24 1912
ANNUAL RUNOFF (AC-FT)	336500		352700		280700	
10 PERCENT EXCEEDS	604		578		587	
50 PERCENT EXCEEDS	571		557		447	
90 PERCENT EXCEEDS	.00		334		126	

11189500 SOUTH FORK KERN RIVER NEAR ONYX, CA

LOCATION.—Lat 35°44'15", long 118°10'22", unsurveyed, T.25 S., R.35 E., Kern County, Hydrologic Unit 18030002, on left bank 0.8 mi north of State Highway 178, 1.6 mi upstream from Canebrake Creek, and 5 mi northeast of Onyx.

DRAINAGE AREA.—530 mi².

PERIOD OF RECORD.—September 1911 to August 1914, January 1919 to September 1942, October 1947 to June 1994, July 1995 to current year. Yearly estimate for water year 1927 (incomplete) and monthly discharges for incomplete water years 1914, 1919, 1926, 1928, 1929, published in WSP 1315-A.

REVISED RECORDS.—WSP 1151: 1948(M). WSP 1445: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 2,900 ft above sea level, from topographic map. Sept. 12, 1911, to Aug. 31, 1914, nonrecording gage, and Jan. 23, 1919, to Apr. 17, 1936, water-stage recorder, 140 ft upstream at datum 2.88 ft lower. Apr. 18, 1936, to September 1942, and October 1947 to Feb. 8, 1967, at datum 6.88 ft higher. Feb. 9, 1967, to May 31, 1972, at datum 2.00 ft higher.

REMARKS.—Records poor including estimated daily discharges.. Lowell and Thomas Ditches divert upstream from station for irrigation downstream of station, combined capacity, 7 ft³/s. See schematic diagram of Kern River Basin.

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, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 22	1815	279	5.21				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	63	77	57	66	e33	99	140	61	15	4.1	4.9
2	56	61	81	56	70	e54	102	142	58	14	4.0	5.0
3	53	60	76	61	77	e70	97	134	58	14	7.1	5.1
4	50	60	72	54	e74	e104	85	122	e57	13	8.4	9.7
5	50	60	66	55	e74	e95	78	116	e49	13	7.2	12
6	50	59	56	55	e62	e83	77	125	e42	10	9.5	12
7	50	57	46	52	e66	118	79	136	e42	10	11	12
8	50	60	49	54	e91	121	73	140	e42	10	11	12
9	50	67	e64	56	e108	112	72	135	e42	10	11	12
10	50	59	e60	54	e79	104	74	128	e57	11	11	12
11	49	69	e57	51	e66	95	85	124	e72	16	11	12
12	46	74	e54	43	e54	90	97	126	e94	32	11	13
13	43	65	57	44	e37	84	100	130	e94	29	10	14
14	44	69	60	47	e37	79	119	121	e94	44	9.8	13
15	45	74	65	52	e37	76	158	110	e94	36	9.5	13
16	46	74	65	53	e33	73	177	105	e72	31	9.3	7.0
17	46	73	66	51	e33	78	181	101	e42	27	8.9	2.9
18	46	71	67	55	e45	84	190	98	e27	25	5.0	3.0
19	46	65	63	58	e37	78	209	96	22	23	2.3	3.3
20	43	59	67	59	e33	74	234	98	21	21	1.5	3.4
21	41	58	68	59	e29	74	245	96	20	20	1.0	4.1
22	46	65	65	58	e29	84	250	90	20	15	1.1	4.9
23	48	69	57	88	e29	91	222	87	19	12	1.1	5.8
24	49	68	41	83	e29	88	178	82	19	12	1.1	11
25	51	65	31	54	e29	76	157	90	18	11	1.1	14
26	54	64	38	57	e29	77	144	91	23	9.9	1.2	13
27	58	62	43	70	e29	79	157	87	25	7.1	1.4	12
28	68	66	51	91	e29	87	161	83	24	4.9	3.8	12
29	69	71	58	71	---	98	148	83	19	4.6	5.2	11
30	67	68	58	58	---	94	139	75	16	4.4	5.0	11
31	65	---	54	54	---	99	---	66	---	4.3	4.9	---
TOTAL	1585	1955	1832	1810	1411	2652	4187	3357	1343	509.2	189.5	280.1
MEAN	51.1	65.2	59.1	58.4	50.4	85.5	140	108	44.8	16.4	6.11	9.34
MAX	69	74	81	91	108	121	250	142	94	44	11	14
MIN	41	57	31	43	29	33	72	66	16	4.3	1.0	2.9
AC-FT	3140	3880	3630	3590	2800	5260	8300	6660	2660	1010	376	556

e Estimated.

11189500 SOUTH FORK KERN RIVER NEAR ONYX, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1999, BY WATER YEAR (WY)

MEAN	24.6	36.6	58.3	67.0	97.1	165	357	442	178	51.1	24.4	19.4
MAX	98.9	143	942	500	448	686	1583	2896	1311	349	184	90.2
(WY)	1984	1984	1967	1997	1980	1978	1969	1969	1983	1983	1983	1978
MIN	1.00	8.92	12.4	14.0	17.3	24.1	23.4	9.52	1.00	.19	.20	.10
(WY)	1962	1930	1949	1931	1961	1961	1961	1961	1924	1961	1934	1961

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1912 - 1999	
ANNUAL TOTAL	143063		21110.8			
ANNUAL MEAN	392		57.8		127	
HIGHEST ANNUAL MEAN					605	
LOWEST ANNUAL MEAN					11.5	
HIGHEST DAILY MEAN	2390	Apr 30	250	Apr 22	14000	Dec 6 1966
LOWEST DAILY MEAN	31	Dec 25	1.0	Aug 21	.00	Sep 1 1934
ANNUAL SEVEN-DAY MINIMUM	42	Sep 19	1.1	Aug 21	.00	Jul 23 1961
INSTANTANEOUS PEAK FLOW			279	Apr 22	28700	Dec 6 1966
INSTANTANEOUS PEAK STAGE			5.21	Apr 22	18.90	Dec 6 1966
ANNUAL RUNOFF (AC-FT)	283800		41870		92360	
10 PERCENT EXCEEDS	1190		106		298	
50 PERCENT EXCEEDS	118		56		42	
90 PERCENT EXCEEDS	50		9.1		7.5	

11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CA

LOCATION.—Lat 35°31'15", long 118°40'34", in NE 1/4 SE 1/4 sec.6, T.28 S., R.31 E., Kern County, Hydrologic Unit 18030003, on left bank 1.0 mi southwest of Democrat Springs and 2.1 mi upstream from Cow Creek.

DRAINAGE AREA.—2,258 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 sea level.

REMARKS.—Kern River No. 1 Conduit (station 11192000) 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 downstream from station. Flow regulated by Isabella Lake 22 mi upstream beginning in 1954. Many diversions upstream from station for irrigation. For records of combined discharge of river and conduit, see station 11192501. See schematic diagram of Kern 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.—River only, prior to regulation by Isabella Lake in 1954: Maximum discharge, 40,000 ft³/s, Nov. 19, 1950, gage height, 30.7 ft, from rating curve extended above 8,700 ft³/s on basis of computation of peak flow over dam (basic data for computation provided by Southern California Edison Co.); minimum daily, 0.7 ft³/s, Nov. 17–19, 1951. Since regulation by Isabella Lake: Maximum discharge, 10,100 ft³/s, Dec. 6, 1966, gage height, 18.55 ft; no flow May 26–28, 1977. Combined flow, prior to regulation by Isabella Lake: Maximum discharge, 40,000 ft³/s, Nov. 19, 1950; minimum daily, 123 ft³/s, Sept. 22, 1951. Since regulation by Isabella Lake: Maximum discharge, 10,100 ft³/s, Dec. 6, 1966; minimum daily, 10 ft³/s, Dec. 17, 1968.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1130	783	258	82	278	177	e39	73	e374	913	757	377
2	e1100	818	231	80	273	151	e29	131	e431	941	974	373
3	e1020	919	224	57	432	207	e19	186	e379	974	1030	399
4	e1020	1080	198	54	443	231	24	168	323	959	1040	257
5	e1020	1120	160	51	443	201	194	142	207	1060	1050	116
6	e1170	1170	148	55	443	65	e21	149	109	886	961	166
7	e1230	1210	135	52	445	62	39	166	216	934	776	283
8	e1260	1150	107	39	464	87	42	e216	378	945	708	287
9	e1230	1230	91	37	476	91	34	e253	740	1010	799	332
10	e1160	1270	73	35	474	68	e33	e241	838	987	845	386
11	e1070	1330	71	35	454	124	37	e197	843	873	811	412
12	e1040	1330	61	27	447	115	55	215	834	950	748	311
13	e1040	1340	62	24	415	47	49	e301	815	894	649	335
14	e1060	1210	65	25	237	42	e41	e267	930	954	416	280
15	e1120	1210	90	24	170	44	e40	e186	1030	1040	430	226
16	e1160	1220	127	18	169	44	47	168	1060	1090	868	378
17	e1080	1280	126	19	140	43	44	218	984	1090	848	328
18	e1100	1260	125	21	147	43	e31	177	1120	936	691	219
19	e1210	1240	122	23	165	42	e31	201	854	854	511	217
20	e1280	1310	91	113	163	43	e87	193	525	806	415	213
21	e1280	1300	73	262	174	44	e113	144	548	812	365	212
22	e1260	1270	60	276	202	43	e117	104	644	831	312	254
23	e1190	1410	40	259	239	44	e129	214	815	667	466	176
24	e1070	1430	17	260	234	45	e146	251	833	510	531	166
25	e1000	1320	17	314	233	104	e192	253	808	461	563	70
26	e1010	1090	37	308	232	63	253	e320	650	561	503	67
27	e967	812	44	278	188	21	e207	e299	637	649	363	134
28	923	788	47	265	224	17	147	e284	711	894	316	163
29	889	737	64	269	---	e44	169	e270	771	990	569	195
30	850	749	91	273	---	76	e131	e319	850	1030	689	152
31	816	---	83	280	---	e50	---	348	---	857	603	---
TOTAL	33755	34386	3138	3915	8404	2478	2540	6654	20257	27358	20607	7484
MEAN	1089	1146	101	126	300	79.9	84.7	215	675	883	665	249
MAX	1280	1430	258	314	476	231	253	348	1120	1090	1050	412
MIN	816	737	17	18	140	17	19	73	109	461	312	67
AC-FT	66950	68200	6220	7770	16670	4920	5040	13200	40180	54260	40870	14840

e Estimated.

11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	340	257	147	183	316	535	785	1056	1565	1524	1097	485
MAX	1455	1298	1052	1967	2046	3289	5306	5512	6446	5712	3435	2115
(WY)	1984	1983	1984	1967	1997	1969	1969	1983	1983	1983	1967	1983
MIN	.53	.18	.13	.16	2.19	2.37	1.94	1.69	50.5	57.6	53.1	50.4
(WY)	1978	1977	1977	1977	1977	1961	1961	1977	1961	1961	1961	1981

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	653723		170976			
ANNUAL MEAN	1791		468		693	
HIGHEST ANNUAL MEAN					2837	
LOWEST ANNUAL MEAN					23.7	
HIGHEST DAILY MEAN	4410	Jun 22	1430	Nov 24	6640	Jun 7 1969
LOWEST DAILY MEAN	17	Dec 24	17	Dec 24	.00	May 26 1977
ANNUAL SEVEN-DAY MINIMUM	33	Jan 1	22	Jan 13	.01	May 16 1977
INSTANTANEOUS PEAK FLOW			1440		10100	
INSTANTANEOUS PEAK STAGE			10.00		18.55	
ANNUAL RUNOFF (AC-FT)	1297000		339100		501900	
10 PERCENT EXCEEDS	3870		1100		2000	
50 PERCENT EXCEEDS	1260		280		262	
90 PERCENT EXCEEDS	127		43		2.0	

11192501 KERN RIVER NEAR DEMOCRAT SPRINGS, CA—Continued

KERN RIVER AND KERN RIVER NO. 1 CONDUIT NEAR DEMOCRAT SPRINGS,

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1510	1160	631	454	652	542	e401	462	e765	1290	1120	740
2	e1480	1190	605	452	646	499	e393	520	e822	1320	1350	738
3	e1400	1290	599	427	802	542	e381	575	e770	1360	1400	761
4	e1400	1450	571	423	797	590	385	557	714	1340	1400	613
5	e1390	1490	529	421	807	566	415	533	598	1440	1420	473
6	e1550	1540	515	425	806	430	e402	540	500	1270	1330	526
7	e1600	1570	505	417	812	429	420	557	607	1320	1140	625
8	e1640	1510	478	404	794	453	423	e607	769	1320	1080	649
9	e1610	1600	462	402	776	454	415	e644	1130	1390	1160	698
10	e1530	1640	446	400	774	430	e414	e632	1230	1360	1220	742
11	e1450	1700	444	400	782	486	420	e588	1230	1250	1180	777
12	e1410	1700	431	392	814	479	439	606	1220	1330	1110	675
13	e1410	1710	431	391	782	412	433	e692	1210	1270	1020	700
14	e1430	1580	431	390	604	408	e424	e658	1320	1330	784	644
15	e1490	1580	457	390	537	396	e424	e577	1420	1410	799	588
16	e1530	1590	498	390	536	391	431	559	1450	1460	1240	610
17	e1450	1650	499	391	507	408	428	609	1380	1460	1210	717
18	e1470	1630	502	393	514	408	e415	568	1510	1310	1060	606
19	e1580	1610	495	396	532	407	e416	592	1240	1230	878	604
20	e1650	1680	460	484	530	408	e473	584	916	1180	775	604
21	e1660	1670	436	630	541	409	e499	535	939	1190	713	603
22	e1640	1640	427	648	569	408	e503	493	1030	1200	667	645
23	e1560	1780	406	631	606	409	e515	602	1200	1040	820	569
24	e1440	1810	364	632	601	410	e532	642	1220	882	884	559
25	e1370	1690	361	686	599	466	e578	644	1200	833	921	463
26	e1380	1450	399	677	597	425	639	e711	1040	932	866	448
27	e1330	1170	408	647	553	383	e594	e690	1020	1020	724	528
28	1290	1150	409	634	589	380	536	e675	1100	1260	676	559
29	1260	1100	425	640	---	e409	558	e661	1150	1360	932	591
30	1220	1120	453	647	---	440	e520	e710	1230	1400	1050	548
31	1190	---	452	654	---	e412	---	739	---	1230	966	---
TOTAL	45320	45450	14529	15368	18459	13689	13826	18762	31930	38987	31895	18603
MEAN	1462	1515	469	496	659	442	461	605	1064	1258	1029	620
MAX	1660	1810	631	686	814	590	639	739	1510	1460	1420	777
MIN	1190	1100	361	390	507	380	381	462	500	833	667	448
AC-FT	89890	90150	28820	30480	36610	27150	27420	37210	63330	77330	63260	36900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1999, BY WATER YEAR (WY)

MEAN	580	486	408	474	635	853	1099	1392	1922	1838	1398	743
MAX	1835	1689	1432	2338	2439	3644	5695	5922	6850	6110	3824	2501
(WY)	1984	1983	1984	1967	1997	1969	1969	1983	1983	1983	1967	1983
MIN	116	127	131	154	152	221	260	256	311	400	334	127
(WY)	1962	1991	1991	1991	1991	1961	1961	1961	1961	1961	1961	1990

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1955 - 1999

ANNUAL TOTAL	790938	306818	
ANNUAL MEAN	2167	841	988
HIGHEST ANNUAL MEAN			3173
LOWEST ANNUAL MEAN			246
HIGHEST DAILY MEAN	4810	Jun 22	1810
LOWEST DAILY MEAN	361	Dec 25	361
ANNUAL SEVEN-DAY MINIMUM	396	Dec 23	391
ANNUAL RUNOFF (AC-FT)	1569000	608600	715500
10 PERCENT EXCEEDS	4270	1470	2220
50 PERCENT EXCEEDS	1640	649	614
90 PERCENT EXCEEDS	504	410	204

e Estimated.

11192950 KERN RIVER BELOW KERN CANYON POWERHOUSE DIVERSION DAM, NEAR BAKERSFIELD, CA
(Formerly published as Kern River Fishwater Release at Kern Canyon Powerhouse Diversion Dam, near Bakersfield.)

LOCATION.—Lat 35°27'37", long 118°46'43", in SE 1/4 SE 1/4 sec.29, T.28 S., R.30 E., Kern County, Hydrologic Unit 18030003, Sequoia National Forest, on right bank 100 ft downstream of diversion dam, 16.4 mi northeast of Bakersfield.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—October 1987 to June 1995, October 1995 to September 1996 (low-flow records only to 35 ft³/s), October 1996 to current year. Prior to October 1, 1993, at site 100 ft upstream and did not include leakage through diversion dam radial gates. Bypass flow would enter the main channel immediately downstream from the gage.

GAGE.—Water-stage recorder. Elevation of gage is 975 ft above sea level, from topographic map.

REMARKS.—Flow regulated at diversion dam 100 ft upstream from gage. See schematic diagram of Kern River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 4,770 ft³/s, July 3, 1998, gage height, 7.61 ft; minimum daily, 6 ft³/s, Dec. 18, 1988.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1080	1270	255	31	31	619	30	30	51	599	421	57
2	1090	1300	38	31	31	532	30	30	99	627	675	46
3	1030	1360	38	31	124	589	30	30	149	686	736	71
4	959	1490	35	31	149	624	30	30	39	644	743	32
5	1050	1520	33	31	146	589	101	31	31	800	762	31
6	1120	1350	32	31	145	294	30	31	31	565	658	32
7	1140	1020	31	31	150	34	30	31	32	621	448	32
8	1210	950	31	32	174	33	30	31	49	645	371	31
9	1180	1050	31	32	187	57	30	32	410	709	463	220
10	1150	1100	31	32	196	30	30	33	517	702	520	91
11	1030	1160	31	32	166	30	30	31	532	543	479	100
12	1020	1170	31	36	157	30	30	31	535	748	427	40
13	998	1190	40	32	150	30	30	36	490	567	332	33
14	1000	1040	354	31	31	30	67	31	625	632	103	32
15	1080	1040	477	31	30	30	30	31	742	746	81	32
16	1210	1040	451	31	31	30	30	31	816	804	532	50
17	1130	1120	49	31	31	30	30	31	696	827	522	185
18	1070	1100	31	31	31	30	30	31	855	629	375	263
19	1200	1080	31	31	31	30	30	31	665	534	190	32
20	1300	1160	31	32	248	30	30	31	235	474	90	32
21	1300	1160	31	100	533	30	31	32	243	479	32	32
22	1310	1110	31	32	599	30	30	31	306	521	28	35
23	1260	1280	107	31	656	31	30	31	498	361	114	31
24	1190	1300	31	32	657	31	30	33	523	194	183	31
25	1080	1210	31	67	653	31	30	31	521	132	227	31
26	1120	935	31	32	652	31	30	32	347	232	183	31
27	1110	623	31	31	594	31	30	40	309	302	45	33
28	1090	569	31	31	622	31	30	31	396	567	31	31
29	1060	535	31	31	---	31	30	31	446	689	226	32
30	1280	545	31	31	---	31	30	31	527	761	361	31
31	1300	---	31	32	---	30	---	54	---	550	284	---
TOTAL	35147	32777	2498	1081	7205	4039	1009	1001	11715	17890	10642	1760
MEAN	1134	1093	80.6	34.9	257	130	33.6	32.3	390	577	343	58.7
MAX	1310	1520	477	100	657	624	101	54	855	827	762	263
MIN	959	535	31	31	30	30	30	30	31	132	28	31
AC-FT	69710	65010	4950	2140	14290	8010	2000	1990	23240	35480	21110	3490

11192950 KERN RIVER BELOW KERN CANYON POWERHOUSE DIVERSION DAM, NEAR BAKERSFIELD, CA—Continued
 (Formerly published as Kern River Fishwater Release at Kern Canyon Powerhouse Diversion Dam, near Bakersfield.)

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	152	138	149	162	272	255	243	439	621	610	420	190
MAX	1134	1093	1212	630	1234	1634	1543	3378	4191	3375	2667	1442
(WY)	1999	1999	1997	1998	1998	1997	1998	1998	1998	1998	1998	1998
MIN	11.5	12.3	14.6	15.6	12.3	12.4	11.2	9.87	10.5	11.2	12.8	12.0
(WY)	1989	1988	1989	1991	1988	1988	1988	1988	1988	1988	1988	1988

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1988 - 1999	
ANNUAL TOTAL	658225		126764			
ANNUAL MEAN	1803		347		730	
HIGHEST ANNUAL MEAN					1631	
LOWEST ANNUAL MEAN					24.8	
HIGHEST DAILY MEAN	4520	Jul 5	1520	Nov 5	4520	Jul 5 1998
LOWEST DAILY MEAN	31	Jan 1	28	Aug 22	6.0	Dec 18 1988
ANNUAL SEVEN-DAY MINIMUM	31	Jan 1	30	Mar 10	9.5	May 20 1988
INSTANTANEOUS PEAK FLOW			1680	Oct 22	4770	Jul 3 1998
INSTANTANEOUS PEAK STAGE			5.03	Oct 22	7.61	Jul 3 1998
ANNUAL RUNOFF (AC-FT)	1306000		251400		528700	
10 PERCENT EXCEEDS	4020		1090		1060	
50 PERCENT EXCEEDS	1300		67		29	
90 PERCENT EXCEEDS	84		30		13	

11193031 KERN RIVER AT RIO BRAVO POWERPLANT, NEAR BAKERSFIELD, CA

LOCATION.—Lat 35°25'49", long 118°49'18", in NE 1/4 SW 1/4 SW 1/4 sec.1, T.29 S., R.29 E., Kern County, Hydrologic Unit 18030012, on left bank at diversion to Rio Bravo Powerplant and 15.5 mi northeast of Bakersfield.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—October 1989 to current year.

GAGE.—Water-stage recorder and broad-crested weir; water-stage recorder, Parshall flume and drain gate. Datum of gage is 678.17 ft above sea level.

REMARKS.—Flow regulated by Isabella Lake, capacity 570,000 acre-ft. Flow at this station has three components which are combined for publication: flow over a broad-crested weir (station 11193020), flow through a Parshall flume (station 11193030) and bypass flow through a sand ejector and drain gate in dam (station 11193032). Water is diverted upstream from weir through a channel to Rio Bravo Powerplant (station 11193010), returning to Kern River about 1 mi downstream. See schematic diagram of Kern River Basin.

COOPERATION.—Records provided by Rio Bravo Hydro Project, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge (combined), 5,160 ft³/s, Feb. 23, 1998; minimum daily, 46 ft³/s, Feb. 22, 1996.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	76	82	70	70	128	79	73	83	98	84	54
2	71	71	73	71	69	75	81	91	87	67	112	75
3	70	156	73	71	131	99	86	82	107	77	90	65
4	69	510	73	71	156	80	79	84	70	56	73	66
5	70	556	73	71	149	89	178	77	68	141	87	57
6	70	579	73	71	126	82	150	87	69	61	58	63
7	70	609	73	72	110	88	124	72	71	83	61	70
8	69	337	74	72	87	112	123	104	84	70	81	66
9	69	1150	73	72	79	116	126	92	205	522	67	192
10	69	1490	72	72	105	93	123	162	86	404	81	73
11	106	1580	71	72	73	94	121	101	65	59	64	65
12	105	1620	71	105	69	89	133	83	55	91	64	56
13	76	1010	72	94	68	73	118	118	60	54	98	71
14	71	133	301	72	54	76	105	101	80	71	75	77
15	71	133	539	72	56	72	96	80	125	106	58	79
16	74	132	605	72	58	77	86	72	164	107	139	94
17	81	130	439	72	68	79	80	74	83	124	72	115
18	74	124	88	73	82	81	87	81	164	63	91	82
19	73	133	70	73	95	82	80	71	104	55	67	79
20	75	137	70	81	108	77	80	73	68	56	82	77
21	82	137	69	125	160	79	85	80	88	68	94	76
22	85	137	69	84	151	78	90	74	109	78	76	85
23	80	239	82	71	154	81	82	73	129	72	75	79
24	77	323	69	72	161	77	85	105	88	79	85	81
25	74	271	69	241	144	90	73	104	87	71	89	88
26	75	130	69	72	139	79	83	103	75	99	77	76
27	71	79	70	67	116	72	90	133	69	84	65	81
28	71	71	70	68	132	67	76	89	107	111	61	91
29	71	71	70	68	---	82	90	79	105	72	93	78
30	71	86	70	68	---	80	86	82	108	91	97	71
31	80	---	70	69	---	84	---	106	---	54	57	---
TOTAL	2342	12210	3842	2504	2970	2631	2975	2806	2863	3244	2473	2382
MEAN	75.5	407	124	80.8	106	84.9	99.2	90.5	95.4	105	79.8	79.4
MAX	106	1620	605	241	161	128	178	162	205	522	139	192
MIN	69	71	69	67	54	67	73	71	55	54	57	54
AC-FT	4650	24220	7620	4970	5890	5220	5900	5570	5680	6430	4910	4720
a	78020	77070	24310	27410	34430	23400	22600	32020	57300	69700	58670	33220

a Diversion, in acre-feet, through Rio Bravo Powerplant, provided by Rio Bravo Hydro Project.

11193031 KERN RIVER AT RIO BRAVO POWERPLANT, NEAR BAKERSFIELD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	123	187	225	170	373	388	406	597	804	645	678	241
MAX	258	407	759	348	1762	1639	2014	2009	2705	1943	2665	586
(WY)	1990	1999	1997	1995	1997	1997	1995	1998	1998	1998	1995	1998
MIN	60.5	63.1	57.8	58.8	59.2	59.8	49.5	51.5	51.6	52.1	63.1	61.0
(WY)	1994	1996	1998	1998	1994	1994	1991	1991	1991	1991	1994	1993

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1990 - 1999	
ANNUAL TOTAL	343346		43242			
ANNUAL MEAN	941		118		416	
HIGHEST ANNUAL MEAN					1056	
LOWEST ANNUAL MEAN					106	
HIGHEST DAILY MEAN	3370		1620		3870	
LOWEST DAILY MEAN	52		54		46	
ANNUAL SEVEN-DAY MINIMUM	52		62		47	
INSTANTANEOUS PEAK FLOW			1870		5160	
ANNUAL RUNOFF (AC-FT)	681000		85770		301000	
TOTAL DIVERSION (AC-FT) a	863400		538100		461100	
10 PERCENT EXCEEDS	2590		140		1420	
50 PERCENT EXCEEDS	376		80		117	
90 PERCENT EXCEEDS	59		68		55	

a Diversion, in acre-feet, through Rio Bravo Powerplant, provided by Rio Bravo Hydro Project.

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 sea level, from topographic map. October 1942 to September 1946, at site 3,800 ft downstream; October 1946 to September 1953, at site 4,300 ft downstream; and October 1971 to November 1978, at site 4,000 ft downstream, all at different datums.

REMARKS.—Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,720 ft³/s, Feb. 23, 1998, gage height, 4.53 ft from rating curve extended above 646 ft³/s on basis of slope area measurement; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 30 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 30	1130	33	1.04	Feb. 1	0030	38	0.88
Nov. 11	1415	35	1.00	Feb. 9	2245	67	1.12
Jan. 20	1700	34	1.05	Apr. 9	0430	48	0.94
Jan. 26	1800	63	1.09				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	19	12	e11	32	17	15	19	7.1	e2.3	e.38	.00
2	6.6	18	14	e11	26	17	14	17	7.8	e2.2	e.37	.00
3	7.3	19	11	11	24	17	15	17	9.0	e2.1	e.45	.00
4	7.0	18	14	e11	24	17	15	17	9.0	e1.9	e.44	.00
5	6.4	16	11	e11	22	16	14	17	9.2	e2.4	e.42	.00
6	5.6	16	10	e11	21	16	22	16	8.2	e2.1	e.39	.00
7	4.9	14	8.8	e11	21	16	28	15	7.3	e1.4	e.59	.00
8	4.6	14	7.5	e10	33	15	27	15	6.9	e1.9	e.78	.00
9	5.4	15	7.0	e10	38	16	37	15	6.9	e1.8	e.52	.00
10	6.2	11	6.9	e9.6	40	16	35	15	6.5	e2.0	e.63	.00
11	6.9	24	6.4	e9.1	28	15	34	14	6.2	e1.8	e.61	.00
12	6.3	19	6.1	e8.6	25	14	32	14	6.1	e2.1	e.62	.00
13	6.4	12	6.1	e7.9	23	14	29	14	6.1	e1.3	e.57	.00
14	6.9	10	6.9	e7.4	21	14	29	13	6.2	e1.1	e.47	.00
15	8.3	8.4	7.3	e7.3	20	14	30	13	4.7	e1.0	e.34	.00
16	8.2	8.0	e7.5	e7.8	20	15	30	13	e4.3	e.91	e.21	.00
17	7.8	7.7	e7.8	8.0	19	13	28	12	e4.0	e.86	e.08	.00
18	7.5	9.0	e8.0	8.0	19	13	27	11	e3.5	e.82	.00	.00
19	7.2	7.4	e8.3	8.2	19	13	27	11	e3.3	e.80	.00	.00
20	6.7	6.8	e8.6	21	19	13	27	11	e2.8	e.76	.00	.00
21	6.8	6.4	e8.9	25	22	13	26	11	3.5	e.74	.00	.00
22	5.9	6.0	e9.1	11	19	13	25	9.6	e3.3	e.70	.00	.00
23	5.9	5.9	e9.4	7.8	18	13	25	8.6	e3.0	e.67	.00	.00
24	6.4	6.2	e9.7	13	18	14	23	7.9	e3.0	e.62	.00	.00
25	8.6	7.4	e10	45	19	14	22	8.1	e3.0	e.60	.00	.00
26	8.0	7.0	e10	57	19	15	20	7.7	e2.8	e.57	.00	.00
27	7.3	6.9	e10	43	18	14	20	7.3	e2.4	e.55	.00	.00
28	6.7	7.3	e10	30	17	13	20	7.0	e2.8	e.53	.00	.00
29	6.8	13	e11	27	---	13	19	6.9	e2.5	e.50	.00	.00
30	21	12	e11	27	---	12	19	7.0	e2.5	e.47	.00	.00
31	23	---	e11	29	---	15	---	7.0	---	e.42	.00	---
TOTAL	238.9	350.4	285.3	514.7	644	450	734	377.1	153.9	37.92	7.87	0.00
MEAN	7.71	11.7	9.20	16.6	23.0	14.5	24.5	12.2	5.13	1.22	.25	.000
MAX	23	24	14	57	40	17	37	19	9.2	2.4	.78	.00
MIN	4.6	5.9	6.1	7.3	17	12	14	6.9	2.4	.42	.00	.00
AC-FT	474	695	566	1020	1280	893	1460	748	305	75	16	.00

e Estimated.

11199500 WHITE RIVER NEAR DUCOR, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.57	2.51	6.13	14.3	21.4	34.8	24.3	13.1	5.47	1.35	.40	.32
MAX	8.05	20.6	36.5	97.0	155	260	165	87.9	58.8	20.6	8.30	5.36
(WY)	1984	1984	1984	1997	1998	1943	1998	1998	1998	1998	1983	1998
MIN	.000	.000	.000	.084	.76	1.79	.85	.19	.000	.000	.000	.000
(WY)	1943	1943	1948	1949	1991	1977	1977	1992	1950	1947	1943	1943

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1943 - 1999

ANNUAL TOTAL	19607.6		3794.09			
ANNUAL MEAN	53.7		10.4		10.5	
HIGHEST ANNUAL MEAN					52.0	
LOWEST ANNUAL MEAN					.58	
HIGHEST DAILY MEAN	833	Feb 23	57	Jan 26	1320	Mar 9 1943
LOWEST DAILY MEAN	3.1	Jan 1	.00	Aug 18	.00	Oct 1 1942
ANNUAL SEVEN-DAY MINIMUM	4.3	Aug 29	.00	Aug 18	.00	Oct 1 1942
INSTANTANEOUS PEAK FLOW			67		2720	
INSTANTANEOUS PEAK STAGE			1.12		4.53	
ANNUAL RUNOFF (AC-FT)	38890		7530		7590	
10 PERCENT EXCEEDS	127		23		23	
50 PERCENT EXCEEDS	19		8.2		2.2	
90 PERCENT EXCEEDS	5.6		.00		.00	

11200800 DEER CREEK NEAR FOUNTAIN SPRINGS, CA

LOCATION.—Lat 35°56'30", long 118°49'19", in SE 1/4 NE 1/4 sec.10, T.23 S., R.29 E., Tulare County, Hydrologic Unit 18030005, on left bank 1.0 mi upstream from Pothole Creek, 6.3 mi northeast of Fountain Springs, and 12 mi east of Terra Bella.

DRAINAGE AREA.—83.3 mi².

PERIOD OF RECORD.—August 1968 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 980 ft above sea level, from topographic map.

REMARKS.—Records good. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,790 ft³/s, Jan. 3, 1997, gage height, 10.32 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, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 21	0500	262	4.73

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	21	31	21	e61	41	34	41	23	9.3	4.1	3.6
2	21	21	31	21	e51	41	32	38	23	9.0	4.4	3.3
3	22	21	29	20	49	40	32	38	27	8.7	5.4	3.7
4	21	20	38	20	50	42	34	37	26	7.6	5.2	3.6
5	21	21	31	20	48	40	33	37	25	9.4	5.0	2.6
6	19	22	30	20	45	39	36	35	22	8.3	4.8	2.0
7	17	22	28	19	53	38	38	35	22	5.4	6.8	3.1
8	17	29	27	19	103	36	40	34	22	7.4	4.1	3.3
9	18	28	27	19	97	37	52	32	21	7.1	5.3	2.8
10	18	25	26	19	92	37	50	33	21	7.9	6.3	2.9
11	16	42	26	19	70	35	53	32	20	7.1	6.1	3.1
12	17	34	25	19	64	34	49	32	18	8.9	6.2	1.6
13	17	28	27	19	60	34	47	32	17	8.1	5.7	1.6
14	17	25	27	18	57	33	54	31	19	7.3	4.7	2.8
15	19	24	27	18	54	33	66	31	17	6.4	3.4	3.3
16	19	24	25	19	52	34	67	29	17	6.4	3.8	3.2
17	19	25	25	19	50	32	62	30	16	6.5	4.5	3.1
18	15	26	24	19	51	32	57	29	14	5.0	4.6	3.3
19	17	24	23	19	50	31	54	29	13	4.8	3.5	2.3
20	16	24	23	114	49	31	50	29	11	5.7	3.7	2.7
21	16	23	24	156	52	32	48	29	14	5.9	3.7	4.6
22	15	23	24	61	48	31	48	29	13	6.5	1.9	4.2
23	15	23	22	47	47	34	47	26	12	4.6	2.1	4.5
24	15	23	23	52	45	37	43	28	12	5.6	3.3	4.2
25	20	24	23	e79	46	34	41	28	12	4.6	2.7	4.6
26	23	23	23	e83	46	36	40	26	11	5.4	2.4	2.9
27	20	22	23	e62	43	33	40	24	9.5	5.7	3.1	3.2
28	19	23	23	e51	42	32	40	24	11	4.6	2.9	4.4
29	20	34	22	51	---	31	40	23	10	5.1	1.3	2.6
30	24	29	22	54	---	31	44	21	9.9	5.1	2.5	3.2
31	22	---	22	61	---	36	---	23	---	4.8	3.4	---
TOTAL	576	753	801	1238	1575	1087	1371	945	508.4	204.2	126.9	96.3
MEAN	18.6	25.1	25.8	39.9	56.2	35.1	45.7	30.5	16.9	6.59	4.09	3.21
MAX	24	42	38	156	103	42	67	41	27	9.4	6.8	4.6
MIN	15	20	22	18	42	31	32	21	9.5	4.6	1.3	1.6
AC-FT	1140	1490	1590	2460	3120	2160	2720	1870	1010	405	252	191

e Estimated.

11200800 DEER CREEK NEAR FOUNTAIN SPRINGS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.20	13.8	24.6	57.6	77.8	84.0	71.0	45.0	24.8	10.2	4.56	3.78
MAX	23.5	62.8	145	440	364	443	318	211	153	66.9	32.1	20.1
(WY)	1984	1984	1997	1997	1998	1983	1998	1998	1998	1998	1983	1998
MIN	.77	3.35	4.88	6.69	4.65	8.38	4.12	2.96	.71	.000	.000	.000
(WY)	1978	1991	1991	1991	1991	1977	1977	1992	1992	1972	1972	1972

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	45268		9281.8			
ANNUAL MEAN	124		25.4		35.0	
HIGHEST ANNUAL MEAN					143	
LOWEST ANNUAL MEAN					4.29	
HIGHEST DAILY MEAN	1770	Feb 23	156	Jan 21	2080	Jan 3 1997
LOWEST DAILY MEAN	15	Oct 18	1.3	Aug 29	.00	Jun 24 1972
ANNUAL SEVEN-DAY MINIMUM	16	Oct 18	2.5	Aug 23	.00	Jun 30 1972
INSTANTANEOUS PEAK FLOW			262	Jan 21	3790	Jan 3 1997
INSTANTANEOUS PEAK STAGE			4.73	Jan 21	10.32	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	89790		18410		25380	
10 PERCENT EXCEEDS	284		50		79	
50 PERCENT EXCEEDS	55		23		12	
90 PERCENT EXCEEDS	19		3.7		.97	

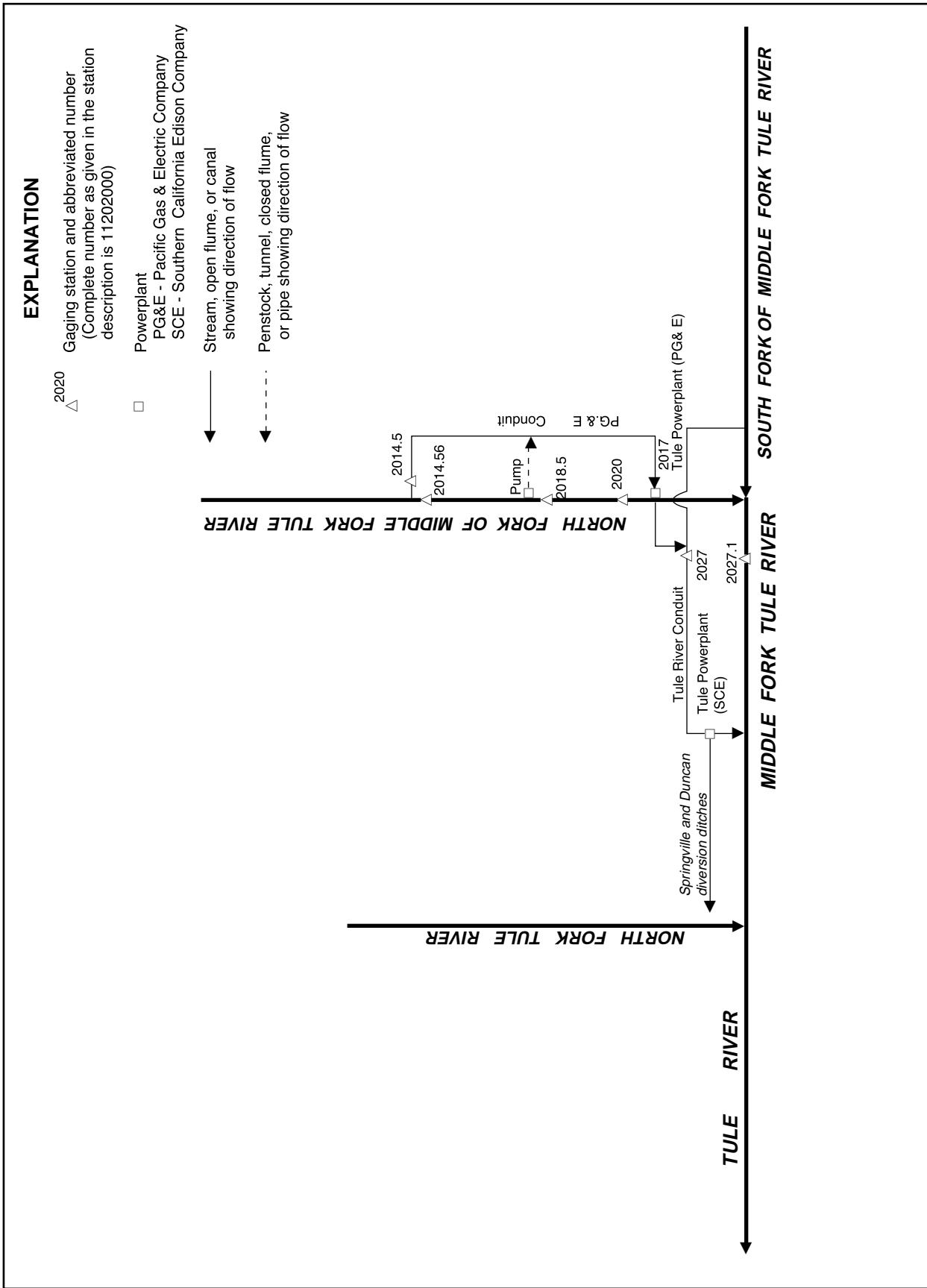


Figure 24. Diversions and storage in Tule River Basin.

11201450 PACIFIC GAS & ELECTRIC CO. TULE RIVER CONDUIT BELOW DIVERSION DAM, NEAR SPRINGVILLE, CA

LOCAT ION.—Lat 36°11'32", long 118°39'24", in SW 1/4 SE 1/4 sec. 7, T.20 S., R.31 E., Tulare County, Hydrologic Unit 18030006, on left bank 75 ft downstream from diversion dam and 11 mi east of Springville.

PERIOD OF RECORD.—October 1994 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 4,040 ft above sea level, from topographic map.

REMARKS.—Water is returned to river 3.6 mi downstream after passing through Tule River Powerplant (station 11201700). See schematic diagram of Tule 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, 63 ft³/s, many days in 1995, minimum daily, 0.17 ft³/s, Aug. 8, 1996.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	14	22	12	18	26	24	42	40	12	5.8	e2.8
2	18	14	17	12	18	27	23	42	39	11	5.1	e2.8
3	19	14	17	12	19	27	22	42	37	11	4.6	e2.7
4	18	14	17	12	19	27	22	39	33	11	5.1	e2.6
5	6.2	14	16	11	18	25	21	43	32	11	5.0	e2.6
6	6.2	14	16	11	17	24	22	52	30	10	5.0	e2.5
7	9.9	15	15	11	31	23	22	60	29	9.8	5.1	e2.4
8	8.7	18	15	11	36	21	21	61	28	9.5	5.0	e2.4
9	8.6	15	15	11	42	22	21	61	26	9.5	4.8	e2.3
10	9.7	15	15	11	35	21	22	59	25	10	4.9	e2.2
11	9.7	19	15	11	29	20	22	60	24	11	5.0	e2.2
12	7.1	16	15	11	27	19	22	62	23	10	4.7	e2.1
13	11	17	15	11	26	20	27	59	22	9.2	4.3	e2.1
14	15	16	15	11	25	20	41	57	21	9.9	4.0	e2.0
15	15	15	14	11	24	20	52	56	20	9.2	4.0	e2.0
16	15	15	14	13	23	20	57	53	20	8.4	3.8	e1.9
17	15	15	14	12	25	20	58	54	19	8.2	3.6	e1.9
18	15	15	14	12	27	21	58	58	18	7.9	3.6	e1.8
19	14	14	14	13	26	22	60	58	18	7.7	3.4	e1.8
20	14	14	14	30	26	22	61	59	17	7.5	3.1	e1.7
21	14	14	13	32	25	21	60	58	17	7.1	3.1	e1.7
22	14	14	13	26	23	20	59	55	16	7.0	2.9	e1.6
23	13	14	13	25	23	23	53	53	15	6.8	2.9	e1.6
24	14	14	13	30	24	22	46	55	15	6.8	2.8	e1.5
25	18	14	13	29	25	24	43	58	15	6.7	2.8	e1.4
26	16	13	13	24	23	23	44	59	14	6.4	3.0	e1.4
27	16	13	13	20	24	24	49	57	14	6.3	e3.2	e1.3
28	15	14	13	19	25	24	47	56	13	6.2	e3.1	e1.2
29	15	15	13	19	---	25	44	52	13	6.2	e3.0	e1.1
30	15	15	13	19	---	26	44	46	12	6.1	e3.0	e1.0
31	15	---	12	19	---	26	---	42	---	5.9	e2.9	---
TOTAL	418.1	443	451	511	703	705	1167	1668	665	265.3	122.6	58.6
MEAN	13.5	14.8	14.5	16.5	25.1	22.7	38.9	53.8	22.2	8.56	3.95	1.95
MAX	19	19	22	32	42	27	61	62	40	12	5.8	2.8
MIN	6.2	13	12	11	17	19	21	39	12	5.9	2.8	1.0
AC-FT	829	879	895	1010	1390	1400	2310	3310	1320	526	243	116

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999
MEAN	6.64	11.0	19.1	28.3	44.6
MAX	13.5	20.0	50.0	55.0	58.5
(WY)	1999	1997	1997	1997	1997
MIN	3.35	4.05	6.46	16.5	25.1
(WY)	1995	1995	1995	1999	1999

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1995 - 1999
ANNUAL TOTAL	13677.1	7177.6	
ANNUAL MEAN	37.5	19.7	31.8
HIGHEST ANNUAL MEAN			37.8
LOWEST ANNUAL MEAN			19.7
HIGHEST DAILY MEAN	61	Feb 22	63
LOWEST DAILY MEAN	6.2	Oct 5	1.0
ANNUAL SEVEN-DAY MINIMUM	8.4	Oct 5	1.3
ANNUAL RUNOFF (AC-FT)	27130	14240	23010
10 PERCENT EXCEEDS	59	46	61
50 PERCENT EXCEEDS	39	15	25
90 PERCENT EXCEEDS	14	3.0	5.0

e Estimated.

11201456 NORTH FORK OF MIDDLE FORK TULE RIVER BELOW DIVERSION DAM, NEAR SPRINGVILLE, CA

LOCATION.—Lat 36°11'33", long 118°39'25", in SW 1/4 SE 1/4 sec. 7, T.20 S., R.31 E., Tulare County, Hydrologic Unit 18030006, on left bank 375 ft downstream from diversion dam, 0.3 mi upstream from Hossack Creek, and 11 mi east of Springville.

DRAINAGE AREA.—30.9 mi².

PERIOD OF RECORD.—October 1994 to current year (low-flow records only).

GAGE.—Water-stage recorder and sharp-crested V-notch weir in concrete control. Elevation of gage is 4,000 ft above sea level, from topographic map.

REMARKS.—No records computed above 80 ft³/s. Most of the flow is diverted at the diversion dam to Pacific Gas and Electric Co. Tule River Conduit (station 11201450). Water is returned to river 3.6 mi downstream after passing through Tule River Powerplant (station 11201700). See schematic diagram of Tule River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	4.9	5.0	4.6	4.7	5.0	4.9	5.8	7.2	7.5	7.1	7.4
2	4.7	4.9	4.8	4.6	4.7	5.0	4.9	5.8	7.1	7.5	7.5	7.7
3	4.6	4.9	4.8	4.6	4.8	5.0	4.9	5.8	8.3	7.5	7.7	8.3
4	4.6	4.9	4.8	4.6	4.8	5.0	4.9	5.7	8.7	7.4	7.2	9.0
5	16	4.9	4.8	4.6	4.7	4.9	4.9	5.8	8.6	7.4	7.1	9.0
6	15	4.9	4.8	4.6	4.7	4.9	4.9	7.6	8.5	7.3	7.2	9.0
7	10	4.9	4.7	4.6	5.2	4.9	4.9	11	7.9	7.3	7.4	9.0
8	11	5.1	4.7	4.6	5.3	4.9	4.9	14	7.4	7.3	7.3	9.0
9	11	4.9	4.7	4.6	5.9	4.9	4.9	12	7.2	7.3	7.2	9.0
10	10	5.1	4.7	4.6	5.2	4.8	4.9	8.4	7.5	7.3	7.3	9.0
11	9.6	5.3	4.7	4.6	5.0	4.8	4.9	12	7.5	7.0	7.2	9.0
12	12	5.0	4.7	4.6	5.0	4.8	4.9	20	7.3	7.1	7.3	9.0
13	8.2	5.0	4.7	4.6	4.9	4.8	5.1	28	7.2	7.4	7.2	9.0
14	4.9	5.0	4.7	4.6	4.9	4.8	6.1	24	7.4	7.7	7.2	9.0
15	4.9	5.0	4.7	4.6	4.9	4.8	11	15	7.5	7.7	7.2	9.0
16	4.8	4.9	4.7	4.7	4.9	4.8	11	12	7.5	7.5	7.1	8.3
17	4.8	5.0	4.7	4.7	4.9	4.8	9.2	11	7.4	7.3	7.1	7.9
18	4.7	4.9	4.7	4.7	5.0	4.9	9.3	10	7.4	7.2	7.1	8.1
19	4.8	4.9	4.7	4.7	5.0	4.9	12	9.8	7.3	7.2	7.2	8.1
20	4.8	4.8	4.6	---	5.0	4.9	13	10	7.2	7.3	7.3	8.7
21	4.7	4.7	4.6	21	5.0	4.8	11	9.0	7.2	7.5	7.3	9.0
22	4.7	4.8	4.6	4.9	4.9	4.9	9.4	7.6	7.2	7.4	7.2	9.0
23	4.7	4.8	4.6	4.9	4.9	4.9	6.2	7.3	7.1	7.3	7.2	9.0
24	4.7	4.8	4.6	5.0	4.9	4.9	5.9	7.7	7.4	7.3	7.2	8.9
25	5.3	4.7	4.6	5.0	4.9	5.0	5.8	10	7.3	7.3	7.2	8.8
26	4.7	4.7	4.6	4.9	4.9	4.9	5.8	11	7.3	7.3	7.2	9.5
27	4.7	4.7	4.6	4.8	4.9	4.9	6.0	8.3	7.2	7.2	7.3	9.4
28	4.7	4.7	4.6	4.7	4.9	4.9	5.9	7.8	7.5	7.2	7.2	9.2
29	5.0	4.9	4.6	4.7	---	5.0	5.8	7.2	7.6	7.2	7.1	8.9
30	5.0	4.8	4.6	4.8	---	5.0	5.8	7.0	7.6	7.2	7.3	9.0
31	4.9	---	4.6	4.8	---	5.0	---	7.3	---	7.2	7.2	---
TOTAL	208.2	146.8	145.3	---	138.8	151.8	203.1	323.9	225.5	227.3	224.3	263.2
MEAN	6.72	4.89	4.69	---	4.96	4.90	6.77	10.4	7.52	7.33	7.24	8.77
MAX	16	5.3	5.0	---	5.9	5.0	13	28	8.7	7.7	7.7	9.5
MIN	4.6	4.7	4.6	---	4.7	4.8	4.9	5.7	7.1	7.0	7.1	7.4
AC-FT	413	291	288	---	275	301	403	642	447	451	445	522

11201850 NORTH FORK OF MIDDLE FORK TULE RIVER BELOW DOYLE SPRINGS DIVERSION, NEAR SPRINGVILLE, CA

LOCATION.—Lat 36°11'19", long 118°40'01", unsurveyed, in T.20 S., R.31 E., Tulare County, Hydrologic Unit 18030006, on right bank 600 ft downstream from diversion, 0.2 mi upstream from Meadow Creek, and 10 mi east of Springville.

DRAINAGE AREA.—34.1 mi².

PERIOD OF RECORD.—October 1994 to current year (low-flow records only).

GAGE.—Water-stage recorder and broad-crested weir in concrete control. Elevation of gage is 3,740 ft above sea level, from topographic map.

REMARKS.—No records computed above 5 ft³/s. Pacific Gas and Electric Co. pumps up to 5 ft³/s from river at Doyle Springs Diversion to Tule River Conduit (station 11201450); water is returned to river 2.6 mi downstream after passing through Tule River Powerplant (station 11201700). See schematic diagram of Tule River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with the Federal Energy Regulatory Commission project.

NOTE.—No daily discharges below 5 ft³/s for the 1999 water year.

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

LOCATION.—Lat 36°10'29", long 118°41'41", unsurveyed, in T.20 S., R.30 E., Tulare County, Hydrologic Unit 18030006, on right bank 1.2 mi upstream from mouth, 2.2 mi downstream from Hossack Creek, and 7.4 mi northeast of Springville.

DRAINAGE AREA.—39.3 mi².

PERIOD OF RECORD.—October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-A. January 1909 to December 1912 at site 2 mi upstream, records not equivalent. Prior to October 1954, records for river and Pacific Gas & Electric Co. Conduit published separately; combined flow only, October 1954 to September 1960. Prior to October 1982, combined flow consisted of river and conduit. October 1982 to present, combined flow consists of river and Pacific Gas & Electric Co. Tule River Powerplant near Springville (station 11201700).

REVISED RECORDS.—WSP 1445: 1951. WSP 1930: Drainage area. WDR CA-91-3: Adjusted data for 1990.

GAGE.—Water-stage recorder. Concrete control on river since Aug. 6, 1958. Rectangular weir and concrete control on river since July 10, 1991. Elevation of gage is 2,920 ft above sea level, from topographic map.

REMARKS.—Pacific Gas and Electric Co. Conduit diverts 2.5 mi upstream from station; water is returned to river 1.1 mi downstream after passing through Tule River Powerplant (11201700). See schematic diagram of Tule River Basin. For records of combined discharge of river and powerplant, see station 11202001.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 16,900 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; minimum daily, 0.06 ft³/s Nov. 2, 1979.

Combined flow: Maximum discharge, 16,900 ft³/s, Dec. 6, 1966; minimum daily, 5.0 ft³/s, Oct. 1, 1987.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	9.5	11	8.6	12	9.2	8.9	10	9.9	8.8	8.3	7.7
2	9.7	9.5	11	8.4	11	9.3	8.8	10	10	8.7	8.4	8.3
3	10	9.5	11	8.3	11	9.2	8.8	11	11	8.7	8.8	9.7
4	11	9.4	11	8.3	11	9.6	8.7	10	12	8.8	8.4	12
5	22	9.2	9.9	8.3	11	9.2	8.6	10	11	8.9	8.3	12
6	25	9.3	10	8.3	9.9	9.0	9.1	11	11	8.8	8.5	12
7	20	9.6	9.5	8.3	16	8.9	9.5	15	10	8.8	8.6	12
8	20	11	9.5	8.3	17	8.9	10	20	9.5	8.8	8.5	12
9	21	10	9.5	8.3	22	9.2	9.7	18	9.4	8.8	8.5	12
10	20	10	9.5	8.3	18	8.9	10	13	9.4	8.9	8.4	12
11	19	12	9.5	8.2	15	8.7	11	16	9.4	8.7	8.1	12
12	21	11	9.5	7.9	14	8.6	10	25	9.3	8.8	8.0	12
13	18	9.9	9.5	8.0	13	8.6	10	32	9.2	8.7	7.9	12
14	14	9.5	9.5	7.8	12	8.5	12	27	9.2	9.0	7.8	12
15	11	9.5	9.4	7.8	11	8.8	16	20	9.2	8.9	7.7	12
16	9.4	9.5	9.1	8.2	11	8.9	18	16	9.1	8.6	7.7	11
17	9.2	11	8.9	8.0	11	8.7	16	15	9.0	8.5	7.6	8.8
18	9.1	11	8.9	8.0	10	8.6	15	14	8.9	8.4	7.6	8.7
19	8.9	9.5	8.9	8.2	10	8.5	21	14	8.9	8.3	7.5	8.7
20	8.9	9.4	9.1	8.4	10	8.7	24	14	8.8	8.3	7.4	10
21	8.8	9.2	8.9	52	11	8.5	22	14	8.7	8.4	7.4	12
22	8.8	9.2	8.9	17	9.9	8.4	21	12	8.7	8.6	7.4	13
23	8.9	9.3	8.8	12	9.7	9.2	15	11	8.6	8.5	7.4	12
24	9.1	9.5	8.8	15	9.4	8.8	11	11	8.7	8.3	7.4	12
25	11	10	8.8	14	9.7	8.9	11	13	8.7	8.4	7.4	13
26	10	9.2	8.9	13	9.5	8.8	10	15	8.7	8.3	7.5	14
27	9.3	9.3	8.7	12	9.3	8.8	11	12	8.7	8.3	7.4	14
28	9.2	12	8.6	11	9.3	8.7	11	12	8.8	8.3	7.4	13
29	9.6	13	8.6	12	---	8.6	11	11	8.9	8.3	7.4	12
30	10	12	8.6	12	---	8.8	11	10	8.8	8.5	7.4	12
31	9.7	---	8.6	13	---	9.3	---	10	---	8.5	7.5	---
TOTAL	401.6	302.0	290.4	422.5	333.7	274.8	379.1	452	281.5	266.6	243.6	343.9
MEAN	13.0	10.1	9.37	13.6	11.9	8.86	12.6	14.6	9.38	8.60	7.86	11.5
MAX	25	13	11	84	22	9.6	24	32	12	9.0	8.8	14
MIN	8.8	9.2	8.6	7.8	9.3	8.4	8.6	10	8.6	8.3	7.4	7.7
AC-FT	797	599	576	838	662	545	752	897	558	529	483	682

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.41	12.6	26.9	30.0	28.0	34.6	50.9	83.0	49.8	12.8	4.69	3.78
MAX	19.1	362	786	353	182	337	229	381	316	136	16.2	22.7
(WY)	1953	1951	1967	1997	1986	1943	1969	1969	1983	1998	1996	1952
MIN	.53	.76	.73	.81	.80	1.21	1.13	1.03	.61	.34	.32	.31
(WY)	1965	1963	1991	1991	1991	1977	1977	1992	1992	1961	1964	1961

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1940 - 1999	
ANNUAL TOTAL	26867.2		3991.7			
ANNUAL MEAN	73.6		10.9		28.1	
HIGHEST ANNUAL MEAN					129	1967
LOWEST ANNUAL MEAN					1.25	1961
HIGHEST DAILY MEAN	408	Jun 16	84	Jan 20	13300	Dec 6 1966
LOWEST DAILY MEAN	7.5	Jan 1	7.4	Aug 20	.06	Nov 2 1979
ANNUAL SEVEN-DAY MINIMUM	7.9	Jan 1	7.4	Aug 19	.20	Aug 24 1964
INSTANTANEOUS PEAK FLOW			139	Jan 20	16900	Dec 6 1966
INSTANTANEOUS PEAK STAGE			4.02	Jan 20	13.83	Dec 6 1966
ANNUAL RUNOFF (AC-FT)	53290		7920		20370	
10 PERCENT EXCEEDS	227		15		80	
50 PERCENT EXCEEDS	23		9.4		5.2	
90 PERCENT EXCEEDS	9.2		8.3		.80	

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

NORTH FORK OF MIDDLE FORK TULE RIVER AND PACIFIC GAS & ELECTRIC CO. TULE RIVER POWERPLANT, NEAR SPRINGVILLE

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	30	41	27	36	42	40	61	58	23	18	14
2	34	30	34	27	33	43	39	61	56	22	18	14
3	34	30	33	26	33	45	38	62	57	22	17	9.7
4	33	29	36	26	36	45	36	58	50	21	17	12
5	27	29	32	26	36	42	8.6	59	49	25	17	12
6	25	29	32	26	39	39	38	71	48	25	18	12
7	20	30	30	25	59	38	40	82	44	25	18	12
8	20	37	32	25	59	38	38	86	43	25	18	12
9	21	31	32	25	75	38	37	83	43	22	17	12
10	20	31	30	25	61	33	39	78	40	23	17	12
11	19	38	30	25	50	36	43	81	39	23	17	12
12	21	33	31	25	50	33	39	90	38	22	17	12
13	18	34	32	25	48	33	41	97	37	22	16	12
14	14	32	32	24	44	38	49	91	37	23	16	12
15	20	30	30	24	44	34	78	84	37	22	16	12
16	29	32	29	25	42	36	84	79	34	20	16	11
17	29	33	29	24	42	36	83	72	34	20	16	8.8
18	30	30	29	24	45	37	79	80	32	20	15	8.7
19	29	29	29	24	44	39	85	79	33	19	15	8.7
20	29	30	29	84	44	38	91	79	30	19	14	10
21	29	29	28	63	44	36	89	79	30	19	14	12
22	29	29	29	49	43	36	88	77	29	19	14	13
23	28	28	28	43	36	39	76	70	28	19	14	12
24	28	29	28	54	39	38	67	70	28	18	14	12
25	31	28	28	52	44	40	64	76	28	19	14	13
26	30	29	28	42	39	39	61	80	28	18	15	14
27	31	28	28	38	38	38	71	77	27	18	14	14
28	30	29	28	36	42	40	67	75	26	18	7.4	13
29	30	32	27	38	---	41	64	74	26	18	7.4	12
30	32	32	27	38	---	38	64	62	24	18	14	12
31	31	---	26	39	---	41	---	58	---	18	14	---
TOTAL	835	920	937	1054	1245	1189	1736.6	2331	1113	645	474.8	355.9
MEAN	26.9	30.7	30.2	34.0	44.5	38.4	57.9	75.2	37.1	20.8	15.3	11.9
MAX	34	38	41	84	75	45	91	97	58	25	18	14
MIN	14	28	26	24	33	33	8.6	58	24	18	7.4	8.7
AC-FT	1660	1820	1860	2090	2470	2360	3440	4620	2210	1280	942	706

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

MEAN	17.8	28.2	49.7	55.7	61.8	75.7	105	141	95.3	41.4	22.2	18.2
MAX	44.3	375	794	417	241	381	296	445	384	202	72.3	42.6
(WY)	1983	1951	1967	1997	1980	1943	1969	1969	1983	1998	1983	1983
MIN	8.66	10.5	11.9	13.3	12.5	16.7	21.8	25.1	16.4	10.1	8.99	8.63
(WY)	1962	1962	1991	1961	1991	1977	1977	1977	1992	1961	1977	1961

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1940 - 1999

ANNUAL TOTAL	43278	12836.3		
ANNUAL MEAN	119	35.2	59.3	
HIGHEST ANNUAL MEAN			157	1983
LOWEST ANNUAL MEAN			15.1	1977
HIGHEST DAILY MEAN	476	Jun 16	97	May 13
LOWEST DAILY MEAN	14	Oct 14	7.4	Aug 28
ANNUAL SEVEN-DAY MINIMUM	19	Oct 8	10	Sep 14
INSTANTANEOUS PEAK FLOW			139	Jan 20
ANNUAL RUNOFF (AC-FT)	85840	25460	16900	Dec 6 1966
10 PERCENT EXCEEDS	294		42960	
50 PERCENT EXCEEDS	72		137	
90 PERCENT EXCEEDS	29		30	
			29	
			14	
			13	

11202710 MIDDLE FORK TULE RIVER BELOW INTAKE, ABOVE SPRINGVILLE, CA

LOCATION.—Lat 36°09'41", long 118°42'31", unsurveyed, T.20 S., R.30 E., Tulare County, Hydrologic Unit 18030006, Sequoia National Forest, on right bank 700 ft downstream from confluence of North Fork Middle Fork Tule River and South Fork Middle Fork Tule River, and 6.5 mi northeast of Springville.

DRAINAGE AREA.—85.3 mi².

PERIOD OF RECORD.—October 1988 to September 1990, October 1991 to current year.

REVISED RECORD.—WDR CA-95-3: 1993(M).

GAGE.—Water-stage recorder and V-notch sharp-crested weir in concrete control on river; water-stage recorder and metal flume for conduit diversion. Elevation of gage is 2,370 ft above sea level, from topographic map.

REMARKS.—Southern California Edison Co.'s Tule River Conduit (station 11202700) diverts from the right bank of Middle Fork Tule River upstream from station. Flow from this conduit passes through Tule River Powerplant of Southern California Edison Co. Diversions are made from powerplant tailrace ditch to Springville Diversion and Duncan Diversion Ditches. Remaining water is returned to the Tule River 1.5 mi upstream from confluence of Middle and North Forks. See schematic diagram of Tule River Basin. For records of combined discharge of river and conduit, see station 11202711.

COOPERATION.—Records collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only; maximum discharge, 19,400 ft³/s, Jan. 2, 1997, gage height, 11.82 ft; minimum daily, 4.8 ft³/s, Oct. 3, 1996.

Combined flow, maximum daily discharge, 6,030 ft³/s, Jan. 3, 1997; minimum daily, 6.5 ft³/s, Dec. 12, 1991.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	24	47	21	46	47	44	73	66	14	e12	11
2	34	24	36	20	42	49	41	73	64	14	e12	11
3	34	24	36	19	41	50	41	72	63	14	e12	11
4	34	23	39	18	43	51	39	68	60	14	e12	10
5	30	23	33	18	41	48	39	71	56	14	e12	16
6	28	23	32	18	39	45	40	84	52	14	e12	30
7	26	25	28	17	75	44	42	98	48	14	e12	20
8	25	40	28	17	110	41	45	107	45	14	e12	11
9	25	33	27	16	124	42	42	104	42	13	e11	11
10	25	30	26	16	103	40	47	97	40	13	e11	11
11	24	43	26	16	77	38	48	98	38	14	e11	11
12	23	35	27	16	71	35	45	107	36	13	e11	11
13	23	33	28	16	65	36	49	117	34	13	11	11
14	23	31	30	15	61	36	73	110	33	13	11	11
15	27	30	25	14	57	36	99	100	30	13	11	11
16	26	28	24	20	54	37	109	92	28	13	11	11
17	24	32	24	19	53	37	108	88	25	13	11	11
18	24	30	24	18	56	37	102	90	26	13	11	11
19	23	27	23	19	54	40	108	91	26	13	11	11
20	23	25	23	187	53	40	112	91	24	13	11	11
21	22	23	22	160	55	38	110	89	35	13	11	11
22	21	23	23	72	49	36	109	84	51	13	11	11
23	21	23	22	60	47	43	94	81	35	13	11	11
24	22	26	22	74	45	42	81	81	21	13	11	11
25	37	25	22	85	48	44	73	84	18	13	11	11
26	34	24	23	65	47	44	76	87	17	12	11	11
27	31	24	22	52	45	43	85	82	16	12	e11	11
28	28	29	22	47	47	44	80	80	18	e12	e11	11
29	28	34	22	47	---	44	74	76	12	e12	e11	11
30	31	32	22	47	---	46	75	69	12	e12	e11	11
31	27	---	22	51	---	46	---	64	---	e12	11	---
TOTAL	837	846	830	1280	1648	1299	2130	2708	1071	406	349	362
MEAN	27.0	28.2	26.8	41.3	58.9	41.9	71.0	87.4	35.7	13.1	11.3	12.1
MAX	37	43	47	187	124	51	112	117	66	14	12	30
MIN	21	23	22	14	39	35	39	64	12	12	11	10
AC-FT	1660	1680	1650	2540	3270	2580	4220	5370	2120	805	692	718

e Estimated.

11202710 MIDDLE FORK TULE RIVER BELOW INTAKE, ABOVE SPRINGVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	19.5	24.3	38.1	133	92.6	108	129	162	135	58.6	19.1	16.1
MAX	40.9	94.4	236	976	241	239	303	390	614	303	69.7	41.8
(WY)	1998	1997	1997	1997	1998	1995	1998	1998	1998	1998	1998	1998
MIN	6.30	6.04	5.75	6.41	8.21	15.5	32.9	22.6	12.1	11.2	10.8	10.4
(WY)	1997	1995	1995	1994	1990	1992	1990	1992	1992	1994	1996	1996

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1989 - 1999	
ANNUAL TOTAL	70717		13766			
ANNUAL MEAN	194		37.7		77.9	
HIGHEST ANNUAL MEAN					199 1998	
LOWEST ANNUAL MEAN					15.6 1990	
HIGHEST DAILY MEAN	871	Feb 23	187	Jan 20	6030	Jan 3 1997
LOWEST DAILY MEAN	21	Oct 22	10	Sep 4	4.8	Oct 3 1996
ANNUAL SEVEN-DAY MINIMUM	22	Dec 23	11	Aug 29	5.1	Oct 2 1996
INSTANTANEOUS PEAK FLOW			279	Jan 20	19400	Jan 2 1997
INSTANTANEOUS PEAK STAGE			3.73	Jan 20	11.82	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	140300		27300		56460	
10 PERCENT EXCEEDS	525		81		206	
50 PERCENT EXCEEDS	114		28		23	
90 PERCENT EXCEEDS	24		11		6.6	

11202711 MIDDLE FORK TULE RIVER BELOW INTAKE, ABOVE SPRINGVILLE, CA—Continued

MIDDLE FORK TULE RIVER BELOW INTAKE AND
SOUTHERN CALIFORNIA EDISON CO.'S TULE RIVER CONDUIT ABOVE SPRINGVILLE,
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	60	84	56	83	84	80	110	94	45	e32	26
2	71	60	72	55	79	86	77	110	94	44	e32	27
3	71	60	71	54	78	87	77	109	99	43	e32	26
4	70	59	75	53	80	88	75	103	96	43	e32	25
5	65	59	69	53	78	85	75	107	92	42	e32	31
6	64	59	68	53	76	82	76	121	88	41	e32	44
7	62	61	64	52	112	81	78	133	84	40	e34	34
8	61	76	64	52	148	78	81	140	81	40	e34	25
9	61	68	63	51	162	79	78	137	78	39	e32	24
10	61	65	62	51	141	77	83	132	76	41	e32	25
11	60	79	62	51	114	75	84	134	74	41	e33	25
12	58	71	63	51	106	72	82	143	72	42	e33	25
13	59	69	64	51	100	73	86	153	70	39	31	25
14	59	67	66	50	96	73	110	146	69	40	30	25
15	63	66	61	49	92	73	136	136	66	39	30	25
16	61	64	60	56	89	74	146	128	64	37	29	24
17	59	68	60	55	88	74	144	123	61	36	28	24
18	59	66	60	54	91	74	139	125	61	35	28	24
19	58	63	59	55	89	76	145	126	59	35	28	25
20	57	61	59	220	88	76	149	126	57	35	27	25
21	57	60	58	193	90	74	147	124	55	34	27	24
22	56	60	59	106	84	72	146	119	51	34	26	27
23	56	59	58	95	83	79	131	116	52	34	26	27
24	56	62	58	110	82	78	118	116	53	34	26	26
25	72	61	58	121	85	80	110	119	54	34	26	25
26	69	59	59	101	84	80	113	122	53	33	26	25
27	66	58	58	88	82	79	122	116	52	33	e27	25
28	63	63	58	83	84	80	118	114	49	e32	e25	24
29	63	70	58	83	---	80	111	110	48	e32	e25	23
30	66	68	58	84	---	82	112	104	45	e33	e25	23
31	63	---	58	88	---	83	---	99	---	e32	26	---
TOTAL	1937	1921	1946	2374	2664	2434	3229	3801	2047	1162	906	783
MEAN	62.5	64.0	62.8	76.6	95.1	78.5	108	123	68.2	37.5	29.2	26.1
MAX	72	79	84	220	162	88	149	153	99	45	34	44
MIN	56	58	58	49	76	72	75	99	45	32	25	23
AC-FT	3840	3810	3860	4710	5280	4830	6400	7540	4060	2300	1800	1550

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
MEAN	30.8	42.3	60.2	161	126	144	165	197	166	82.1	37.5	30.2
MAX	62.5	121	266	999	275	276	337	420	650	340	106	77.8
(WY)	1999	1997	1997	1997	1997	1995	1998	1998	1998	1998	1998	1998
MIN	18.2	22.7	21.4	28.5	34.7	48.2	69.6	53.3	26.6	19.2	15.8	14.8
(WY)	1989	1990	1990	1992	1990	1992	1990	1992	1992	1990	1990	1992

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1989 - 1999	
ANNUAL TOTAL	82908		25204			
ANNUAL MEAN	227		69.1		103	
HIGHEST ANNUAL MEAN					224	
LOWEST ANNUAL MEAN					34.0	
HIGHEST DAILY MEAN	897	Feb 23	220	Jan 20	6030	Jan 3 1997
LOWEST DAILY MEAN	53	Jan 1	23	Sep 29	6.5	Dec 12 1991
ANNUAL SEVEN-DAY MINIMUM	55	Jan 1	24	Sep 15	13	Oct 5 1992
ANNUAL RUNOFF (AC-FT)	164400		49990		74930	
10 PERCENT EXCEEDS	544		118		243	
50 PERCENT EXCEEDS	149		63		51	
90 PERCENT EXCEEDS	59		27		20	

e Estimated.

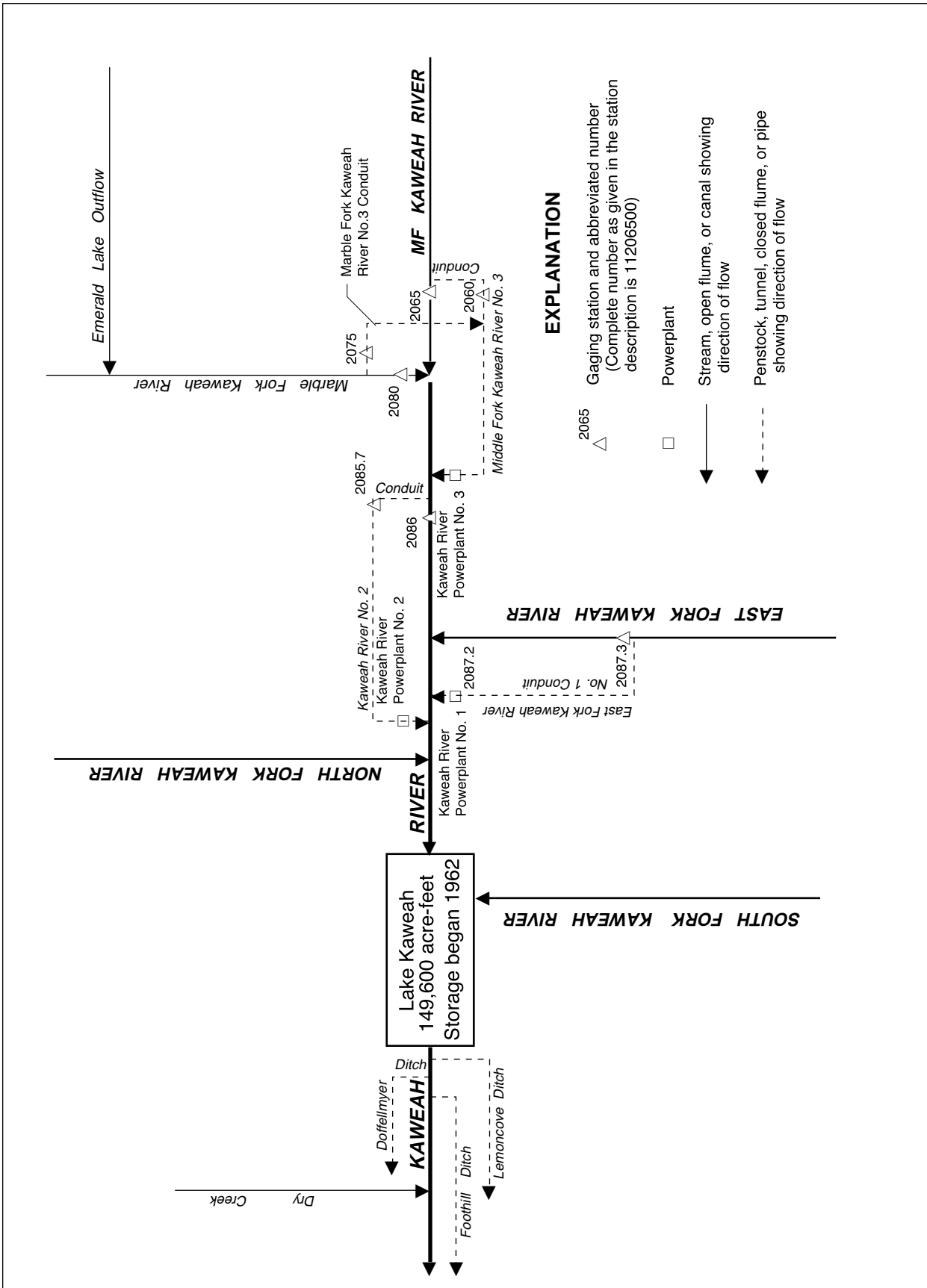


Figure 25. Diversions and storage in Kaweah River Basin.

11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA

LOCATION.—Lat 36°30'48", long 118°47'27", unsurveyed, T.16 S., R.29 E., Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on right bank, 0.5 mi southeast of Potwisha Camp, and 0.7 mi upstream from confluence with Marble Fork Kaweah River.

DRAINAGE AREA.—102 mi².

PERIOD OF RECORD.—July 1949 to current year. Monthly discharge only for water years 1956–57, published in WSP 1735. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

CHEMICAL ANALYSES: June to September 1980.

SPECIFIC CONDUCTANCE: October 1979 to September 1981.

WATER TEMPERATURE: October 1979 to September 1981.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder and rectangular flume on river; water-stage recorder and concrete-lined channel for conduit diversion. Elevation of gage is 2,100 ft above sea level, from topographic map. Prior to October 1955, at datum 0.70 ft higher.

REMARKS.—Middle Fork Kaweah River No. 3 Conduit (station 11206000) diverts from left bank of Middle Fork Kaweah River, 0.1 mi upstream from station. Flow from this conduit joins with that of Marble Fork Kaweah River No. 3 Conduit, and passes through Kaweah River No. 3 Powerplant of Southern California Edison Co. Water is returned to Kaweah River 2.7 mi downstream from confluence of Marble and Middle Forks. For records of combined discharge of river and diversion to Middle Fork Kaweah No. 3 Conduit, see station 11206501. See schematic diagram of Kaweah River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 46,800 ft³/s, Dec. 23, 1955, gage height, 29.0 ft, from floodmarks, datum then in use, on basis of slope-area measurement of peak flow; minimum daily, 0.1 ft³/s, Nov. 12–15, 1949. Combined flow, maximum discharge, 46,800 ft³/s, Dec. 23, 1955; minimum daily, 7.0 ft³/s, Sept. 16, 17, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	12	69	e11	e42	e78	118	141	321	70	15	e12
2	14	12	30	e11	e66	e85	114	143	265	72	15	e11
3	13	12	26	e11	e75	e100	111	147	214	64	15	e11
4	12	12	27	e12	e80	e105	107	133	178	54	15	e11
5	11	12	20	e18	e70	e85	106	158	166	44	e15	e12
6	11	12	18	e18	e60	e75	108	251	178	38	e15	e11
7	11	12	15	e17	e67	e70	107	334	193	35	e16	e12
8	11	19	e14	e17	e89	e66	106	372	207	34	e15	e11
9	11	12	e15	e17	e108	e63	105	336	211	33	e15	e12
10	11	15	e15	e17	e84	e62	109	310	214	33	e15	e12
11	11	29	e14	e17	e70	e61	112	372	223	30	e16	e11
12	11	16	e14	e17	e63	e60	79	474	218	29	e15	e11
13	11	17	e15	e16	e58	e70	88	485	238	29	e15	e11
14	11	24	e15	e16	e54	e83	156	400	273	46	e15	e12
15	11	26	e15	e15	e52	e76	211	340	251	35	e13	e12
16	11	24	e14	e14	e50	e80	232	323	226	27	e13	e12
17	11	25	e12	e13	e57	e86	230	375	202	22	e13	e11
18	11	17	e12	e12	e68	96	237	410	198	20	e12	e11
19	11	13	e12	e12	e59	102	269	399	193	19	e12	e12
20	11	12	e12	e24	e58	100	293	412	181	18	e12	e11
21	12	12	e12	e75	e53	99	292	410	160	17	e12	e11
22	11	12	e13	e21	e52	98	264	403	136	17	e11	e12
23	11	12	e13	e17	e52	119	191	402	131	16	e11	e12
24	12	12	e14	e66	e54	114	161	455	125	16	e11	e12
25	12	12	e12	e27	e64	118	151	470	111	16	e11	e11
26	12	12	e12	e25	e58	123	165	487	103	16	e11	e12
27	12	12	e11	e29	e64	122	197	471	88	15	e12	e11
28	12	16	e12	e27	e76	126	183	435	80	15	e11	e11
29	17	17	e11	e23	---	129	156	413	77	15	e12	e11
30	18	24	e11	e21	---	132	149	357	75	15	e12	e11
31	12	---	e11	e17	---	132	---	342	---	15	e12	---
TOTAL	371	474	516	653	1803	2915	4907	10960	5436	925	413	343
MEAN	12.0	15.8	16.6	21.1	64.4	94.0	164	354	181	29.8	13.3	11.4
MAX	18	29	69	75	108	132	293	487	321	72	16	12
MIN	11	12	11	11	42	60	79	133	75	15	11	11
AC-FT	736	940	1020	1300	3580	5780	9730	21740	10780	1830	819	680

e Estimated.

11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.4	26.7	57.2	96.0	107	139	238	435	404	184	49.8	23.1
MAX	125	145	732	743	489	504	630	1178	1271	786	354	157
(WY)	1983	1983	1967	1997	1986	1986	1982	1969	1983	1983	1983	1982
MIN	.92	1.07	1.08	.36	.60	12.8	64.3	78.6	27.1	1.07	2.43	1.56
(WY)	1962	1962	1962	1961	1961	1961	1976	1977	1976	1961	1962	1962

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	98748		29716			
ANNUAL MEAN	271		81.4		148	
HIGHEST ANNUAL MEAN					417	
LOWEST ANNUAL MEAN					25.2	
HIGHEST DAILY MEAN	1280	Jun 16	487	May 26	10500	Dec 6 1966
LOWEST DAILY MEAN	11	Oct 5	11	Oct 5	.30	Dec 27 1960
ANNUAL SEVEN-DAY MINIMUM	11	Oct 5	11	Oct 5	.30	Dec 27 1960
INSTANTANEOUS PEAK FLOW			706		46800	
INSTANTANEOUS PEAK STAGE			6.54		29.00	
ANNUAL RUNOFF (AC-FT)	195900		58940		107300	
10 PERCENT EXCEEDS	836		234		436	
50 PERCENT EXCEEDS	135		24		35	
90 PERCENT EXCEEDS	12		11		10	

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

MIDDLE FORK KAWEAH RIVER AND MIDDLE FORK KAWEAH RIVER NO. 3 CONDUIT NEAR POTWISHA CAMP,

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	51	125	e42	e67	e78	118	193	378	122	35	e21
2	65	48	85	e37	e66	e85	114	195	322	124	35	e22
3	63	47	81	e33	e75	e100	111	200	270	116	34	e21
4	62	45	82	e34	e80	e105	107	186	234	105	33	e21
5	59	44	75	e44	e70	e85	106	211	222	94	e32	e21
6	55	43	73	e43	e60	e75	108	304	234	87	e32	e19
7	52	46	69	e41	e68	e70	107	387	250	84	e35	e20
8	50	69	e69	e41	e90	e66	106	426	264	83	e33	e18
9	49	57	e70	e40	e110	e63	105	390	268	83	e31	e18
10	49	58	e69	e40	e85	e62	109	364	271	83	e30	e18
11	47	80	e68	e39	e70	e61	112	426	280	80	e36	e17
12	45	66	e68	e39	e63	e60	109	529	275	78	e32	e17
13	44	67	e69	e38	e58	e70	140	540	295	78	e29	e17
14	44	75	e70	e37	e54	e83	209	455	294	99	e27	e17
15	46	77	e67	e36	e52	e76	264	395	280	87	e25	e17
16	47	75	e65	e46	e50	e80	285	378	281	78	e24	e17
17	45	76	e62	e42	e57	e86	283	430	257	70	e22	e16
18	43	67	e61	e41	e68	96	290	466	252	64	e21	e19
19	42	61	e59	e50	e59	102	322	455	247	60	e20	e18
20	40	58	e57	e80	e58	100	345	468	234	56	e20	e17
21	40	56	e51	e130	e53	99	344	466	213	53	e19	e17
22	39	58	e58	e74	e52	98	316	460	188	50	e18	e24
23	38	60	e55	e70	e52	119	242	459	183	47	e18	e25
24	41	61	e60	e120	e54	114	212	512	177	45	e17	e21
25	56	59	e58	e81	e64	118	202	527	162	44	e17	e20
26	52	56	e57	e79	e58	123	216	544	154	42	e17	e20
27	48	54	e54	e82	e64	122	249	528	139	39	e20	e19
28	47	65	e53	e80	e76	126	235	492	132	37	e19	e19
29	56	69	e51	e76	---	129	208	470	129	36	e20	e18
30	67	77	e47	e73	---	132	201	414	127	36	e20	e17
31	55	---	e45	e69	---	132	---	399	---	35	e19	---
TOTAL	1552	1825	2033	1777	1833	2915	5875	12669	7012	2195	790	571
MEAN	50.1	60.8	65.6	57.3	65.5	94.0	196	409	234	70.8	25.5	19.0
MAX	67	80	125	130	110	132	345	544	378	124	36	25
MIN	38	43	45	33	50	60	105	186	127	35	17	16
AC-FT	3080	3620	4030	3520	3640	5780	11650	25130	13910	4350	1570	1130

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1999, BY WATER YEAR (WY)

MEAN	32.8	50.5	98.0	127	145	182	284	482	450	215	73.0	40.6
MAX	177	201	743	746	540	556	683	1225	1318	839	395	202
(WY)	1983	1983	1956	1997	1986	1986	1982	1969	1983	1998	1983	1982
MIN	9.58	11.1	12.2	18.9	17.2	40.4	124	139	75.6	25.1	13.7	8.93
(WY)	1991	1960	1991	1991	1991	1977	1976	1977	1976	1961	1990	1990

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1955 - 1999	
ANNUAL TOTAL	117169		41047			
ANNUAL MEAN	321		112		182	
HIGHEST ANNUAL MEAN					468	
LOWEST ANNUAL MEAN					53.5	
HIGHEST DAILY MEAN	1330	Jun 16	544	May 26	10500	Dec 6 1966
LOWEST DAILY MEAN	38	Oct 23	16	Sep 17	7.0	Sep 16 1990
ANNUAL SEVEN-DAY MINIMUM	40	Oct 18	17	Sep 11	7.1	Sep 11 1990
INSTANTANEOUS PEAK FLOW					46800	
ANNUAL RUNOFF (AC-FT)	232400		81420		131500	
10 PERCENT EXCEEDS	894		284		482	
50 PERCENT EXCEEDS	188		67		86	
90 PERCENT EXCEEDS	54		21		18	

e Estimated.

11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA

LOCATION.—Lat 36°31'08", long 118°48'03", in NE 1/4 SW 1/4 sec. 23, T.16 S., R.29 E., Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on left bank 0.1 mi north of Potwisha Camp, 0.3 mi upstream from confluence with Middle Fork Kaweah River, and 7.9 mi northeast of Three Rivers.

DRAINAGE AREA.—51.4 mi².

PERIOD OF RECORD.—March 1950 to current year. Monthly discharge only for March 1950, published in WSP 1315-A. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

CHEMICAL ANALYSES: June to September 1980.

SPECIFIC CONDUCTANCE: October 1979 to September 1981.

WATER TEMPERATURE: October 1979 to September 1981.

REVISED RECORDS.—WP1930: Drainage area.

GAGE.—Water-stage recorder on river; water-stage recorder and concrete control for conduit diversion. Elevation of gage is 2,150 ft above sea level, from topographic map.

REMARKS.—Marble Fork Kaweah River No. 3 Conduit (station 11207500) diverts from left bank of Marble Fork 0.3 mi upstream from station. Water is returned to Kaweah River 2.7 mi downstream from confluence of Marble and Middle Forks. For records of combined discharge of river and conduit, see station 11208001. See schematic diagram of Kaweah River Basin.

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

EXTREMES FOR 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; minimum daily, 0.10 ft³/s at times in 1961–64. Combined flow, maximum discharge, 12,500 ft³/s, Dec. 23, 1955; minimum daily, 0.82 ft³/s, Oct. 4, 5, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.5	37	8.9	4.3	49	54	66	183	12	7.6	5.5
2	2.1	2.5	3.0	8.9	19	54	50	68	141	9.4	7.6	4.1
3	2.9	2.5	1.8	8.9	29	54	49	75	105	9.4	7.6	1.6
4	3.5	2.5	2.3	8.4	31	57	47	77	89	9.4	7.6	2.4
5	3.6	2.2	1.6	8.0	29	50	46	112	87	9.2	7.6	2.9
6	3.7	1.9	1.6	8.0	27	45	47	201	98	8.9	7.6	2.9
7	3.7	1.9	1.6	8.0	39	42	46	260	109	8.9	7.6	2.8
8	3.8	2.0	1.6	8.0	52	39	45	277	117	7.7	7.6	2.8
9	2.9	1.9	1.6	7.9	70	39	44	249	115	6.3	7.6	2.8
10	2.0	1.9	2.0	7.6	53	36	46	238	109	6.8	7.6	3.1
11	1.9	2.0	2.4	7.6	48	37	47	291	114	8.5	7.6	3.6
12	2.0	1.8	2.3	7.6	46	35	32	357	109	12	7.6	3.8
13	2.2	1.7	2.3	7.5	43	38	34	335	117	99	7.3	3.9
14	2.2	1.7	2.5	7.1	40	39	63	272	134	59	6.7	3.3
15	2.3	1.7	2.5	7.1	38	38	90	239	116	20	6.6	3.0
16	2.3	1.7	2.5	7.3	37	39	106	244	93	7.3	6.7	3.0
17	2.3	1.8	2.4	7.1	41	39	112	263	79	6.9	6.7	2.9
18	2.2	1.7	2.3	7.1	47	43	118	256	74	7.6	6.7	2.9
19	2.2	1.7	2.3	6.7	42	47	150	237	70	7.6	6.3	3.0
20	2.2	1.8	2.3	26	42	43	154	253	60	7.6	5.7	3.0
21	2.2	2.0	2.3	7.0	41	40	159	257	47	7.7	6.4	2.7
22	2.2	2.1	2.3	4.8	38	43	148	255	35	8.0	6.7	4.7
23	2.3	2.2	2.2	5.7	38	50	95	248	34	8.0	6.6	9.3
24	2.2	2.6	2.2	14	40	49	77	289	32	8.0	6.3	3.8
25	2.6	2.7	2.2	4.6	43	56	71	311	25	8.0	6.4	2.6
26	2.7	2.7	2.3	4.5	40	54	88	331	18	7.6	6.4	2.5
27	2.7	2.7	2.3	4.9	41	56	115	295	12	7.6	6.4	2.5
28	2.7	3.1	2.3	4.6	47	60	101	255	14	7.6	6.2	2.5
29	2.7	3.2	2.2	4.5	---	64	76	237	16	7.6	6.2	2.5
30	2.5	3.6	4.0	4.4	---	54	69	205	15	7.4	6.4	2.6
31	2.5	---	9.1	4.2	---	55	---	201	---	7.3	6.6	---
TOTAL	79.5	66.3	111.3	236.9	1105.3	1444	2379	7254	2367	408.3	214.5	99.0
MEAN	2.56	2.21	3.59	7.64	39.5	46.6	79.3	234	78.9	13.2	6.92	3.30
MAX	3.8	3.6	37	26	70	64	159	357	183	99	7.6	9.3
MIN	1.9	1.7	1.6	4.2	4.3	35	32	66	12	6.3	5.7	1.6
AC-FT	158	132	221	470	2190	2860	4720	14390	4690	810	425	196

11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.16	10.2	30.2	43.7	47.3	64.7	139	286	258	101	20.1	9.49
MAX	60.5	72.5	385	417	259	278	396	812	799	578	135	103
(WY)	1983	1983	1956	1997	1986	1986	1982	1969	1998	1998	1983	1978
MIN	.38	.39	.44	.15	.17	.92	32.7	46.5	9.58	.57	.83	.38
(WY)	1963	1963	1962	1961	1961	1961	1975	1977	1976	1961	1962	1962

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1955 - 1999	
ANNUAL TOTAL	61395.6		15765.1			
ANNUAL MEAN	168		43.2		84.7	
HIGHEST ANNUAL MEAN					235 1969	
LOWEST ANNUAL MEAN					10.9 1961	
HIGHEST DAILY MEAN	1030	Jun 16	357	May 12	5700	Dec 23 1955
LOWEST DAILY MEAN	1.6	Sep 2	1.6	Dec 5	.10	Jan 10 1961
ANNUAL SEVEN-DAY MINIMUM	1.7	Nov 13	1.7	Nov 13	.10	Jan 10 1961
INSTANTANEOUS PEAK FLOW			755 Jul 13		12500 Dec 23 1955	
INSTANTANEOUS PEAK STAGE			5.67 Jul 13		13.40 Dec 23 1955	
ANNUAL RUNOFF (AC-FT)	121800		31270		61390	
10 PERCENT EXCEEDS	642		116		255	
50 PERCENT EXCEEDS	50		7.6		13	
90 PERCENT EXCEEDS	2.2		2.2		1.7	

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

MARBLE FORK KAWEAH RIVER AND MARBLE FORK KAWEAH RIVER CONDUIT NO. 3 AT POTWISHA CAMP, CA

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	20	87	24	30	49	54	112	224	36	12	6.2
2	28	20	49	23	30	54	50	113	182	33	12	6.3
3	27	20	45	23	29	54	49	108	145	31	12	5.5
4	26	18	41	22	31	57	47	99	130	29	11	5.5
5	24	18	36	22	29	50	46	128	131	26	11	5.5
6	23	18	34	22	27	45	47	216	143	24	11	5.3
7	22	18	30	21	39	42	46	268	154	23	11	5.1
8	21	32	32	21	52	39	45	279	163	22	11	5.0
9	20	23	30	20	70	39	44	250	161	21	11	4.9
10	20	23	28	20	53	38	46	238	155	21	11	5.0
11	20	31	28	20	48	37	47	291	160	22	11	5.3
12	18	28	29	20	46	35	46	357	155	29	11	5.5
13	18	29	30	20	43	38	58	335	163	117	10	5.6
14	17	32	30	19	40	39	94	272	151	84	9.1	5.2
15	18	35	28	19	38	38	131	239	140	43	8.7	5.0
16	18	34	28	22	37	39	150	244	142	29	8.7	5.0
17	18	34	28	22	41	39	156	285	127	25	8.4	4.8
18	18	29	29	23	47	43	163	301	122	23	8.3	4.8
19	17	26	28	25	42	47	196	282	118	22	7.8	5.2
20	17	25	25	72	42	43	199	298	107	20	7.0	5.1
21	16	24	22	48	41	40	203	302	93	19	6.9	4.7
22	16	25	25	37	38	43	194	300	79	18	6.7	6.9
23	16	26	25	40	38	50	139	293	78	17	6.6	12
24	16	30	22	60	40	49	120	332	76	16	6.3	6.6
25	23	28	23	46	43	56	114	354	67	16	6.4	5.7
26	21	26	23	40	40	54	133	374	58	15	6.4	5.6
27	21	25	23	35	41	56	163	338	49	14	6.4	5.5
28	21	29	22	35	47	60	148	298	45	13	6.2	5.3
29	22	30	22	36	---	64	122	280	43	13	6.2	5.0
30	24	35	23	33	---	67	115	248	40	12	6.4	4.9
31	22	---	24	33	---	64	---	244	---	12	6.6	---
TOTAL	638	791	949	923	1142	1468	3165	8078	3601	845	274.1	168.0
MEAN	20.6	26.4	30.6	29.8	40.8	47.4	106	261	120	27.3	8.84	5.60
MAX	30	35	87	72	70	67	203	374	224	117	12	12
MIN	16	18	22	19	27	35	44	99	40	12	6.2	4.7
AC-FT	1270	1570	1880	1830	2270	2910	6280	16020	7140	1680	544	333

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1999, BY WATER YEAR (WY)

MEAN	13.2	22.0	44.5	59.6	69.2	91.4	168	316	285	121	31.5	17.6
MAX	88.8	103	385	419	295	315	426	840	840	621	184	134
(WY)	1983	1983	1956	1997	1986	1986	1982	1969	1983	1998	1983	1978
MIN	2.02	2.77	2.61	5.25	6.67	16.9	57.2	78.4	24.9	4.09	2.43	1.40
(WY)	1962	1991	1991	1991	1991	1977	1975	1977	1976	1961	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1955 - 1999

ANNUAL TOTAL	72654	22042.1		
ANNUAL MEAN	199	60.4	103	1969
HIGHEST ANNUAL MEAN			257	1977
LOWEST ANNUAL MEAN			24.7	1977
HIGHEST DAILY MEAN	1070	Jun 16	374	May 26
LOWEST DAILY MEAN	10	Jun 19	4.7	Sep 21
ANNUAL SEVEN-DAY MINIMUM	17	Oct 18	4.9	Sep 15
ANNUAL RUNOFF (AC-FT)	144100		43720	74830
10 PERCENT EXCEEDS	682		162	285
50 PERCENT EXCEEDS	77		30	35
90 PERCENT EXCEEDS	23		6.6	5.2

11208600 KAWEAH RIVER BELOW NO. 2 CONDUIT, NEAR HAMMOND, CA

LOCATION.—Lat 36°29'04", long 118°50'06", in NW 1/4 NW 1/4 sec. 37, T.17 S., R.29 E., Tulare County, Hydrologic Unit 18030007, on right bank 0.4 mi upstream of confluence with East Fork Kaweah River, 1.9 mi northeast of Hammond, and 5.2 miles northeast of Three Rivers.

DRAINAGE AREA.—342 mi².

PERIOD OF RECORD.—October 1993 to current year.

GAGE.—Water-stage recorders on river and conduit diversion. Elevation of gage is 1,360 ft above sea level, from topographic map.

REMARKS.—Kaweah River No. 2 conduit (station 11208570) diverts up to 130 ft³/s from right bank of river near diversion dam. Water is returned to Kaweah River 3.8 mi downstream of diversion and 1.9 mi upstream of confluence with North Fork Kaweah River. For records of combined discharges of river and conduit, see station 11208601. See schematic diagram of Kaweah River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 29,000 ft³/s, Jan. 2, 1997; minimum daily, 5.5 ft³/s, for several days in December 1994.

Combined flow, maximum daily discharge, 9,810 ft³/s, Jan. 2, 1997; minimum daily 12 ft³/s, Oct. 23, 24, 1996.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	12	166	16	52	85	97	220	550	73	21	24
2	87	12	106	22	54	137	89	221	438	72	21	24
3	84	12	87	22	55	135	86	225	330	62	21	23
4	82	12	89	22	64	106	77	196	268	50	21	23
5	78	12	74	21	54	90	79	240	254	38	21	23
6	75	12	69	21	47	76	81	420	273	29	21	23
7	71	12	63	21	95	67	83	583	305	25	21	24
8	68	22	75	21	139	56	80	652	349	24	21	23
9	68	13	70	21	216	58	77	587	356	23	21	17
10	66	12	65	21	150	51	79	531	324	22	21	14
11	65	29	63	21	116	47	86	646	342	20	21	14
12	61	15	64	21	116	40	77	824	328	24	21	14
13	59	15	66	21	106	50	102	836	363	86	21	14
14	60	18	65	21	93	53	208	684	360	98	21	14
15	63	26	40	21	84	50	317	584	326	71	21	14
16	64	22	28	22	79	76	363	556	329	30	26	14
17	62	22	28	22	84	55	374	646	282	22	27	15
18	59	16	27	22	100	65	380	711	273	21	24	17
19	57	12	25	24	87	79	456	675	268	20	24	17
20	56	12	23	198	87	70	493	706	245	20	25	17
21	54	12	18	126	91	64	501	705	208	20	25	16
22	53	12	23	70	71	66	476	690	171	20	25	19
23	52	12	20	73	64	93	321	682	163	20	25	22
24	54	12	19	127	66	88	264	782	155	20	24	17
25	72	12	20	99	73	101	244	822	136	20	24	18
26	65	12	21	94	64	101	268	864	118	20	23	18
27	59	12	19	71	66	100	344	824	101	19	24	18
28	58	12	16	65	80	108	312	738	90	19	24	17
29	41	28	15	66	---	113	249	703	85	20	24	16
30	30	57	15	63	---	114	227	606	81	21	24	16
31	14	---	15	68	---	121	---	586	---	21	25	---
TOTAL	1927	499	1494	1523	2453	2515	6890	18745	7871	1050	708	545
MEAN	62.2	16.6	48.2	49.1	87.6	81.1	230	605	262	33.9	22.8	18.2
MAX	90	57	166	198	216	137	501	864	550	98	27	24
MIN	14	12	15	16	47	40	77	196	81	19	21	14
AC-FT	3820	990	2960	3020	4870	4990	13670	37180	15610	2080	1400	1080

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1999, BY WATER YEAR (WY)

MEAN	23.0	35.6	67.5	271	230	295	450	801	873	508	99.8	28.4
MAX	62.2	152	271	1250	439	521	633	1051	2009	1571	254	90.1
(WY)	1999	1997	1997	1997	1996	1995	1996	1996	1998	1998	1998	1998
MIN	11.8	5.70	5.93	20.1	32.1	81.1	230	451	250	11.7	11.2	8.05
(WY)	1996	1995	1995	1994	1994	1999	1999	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1994 - 1999	
ANNUAL TOTAL	189112		46220			
ANNUAL MEAN	518		127		307	
HIGHEST ANNUAL MEAN					512	
LOWEST ANNUAL MEAN					99.2	
HIGHEST DAILY MEAN	2590		Jun 16		864	
LOWEST DAILY MEAN	12		Sep 24		12	
ANNUAL SEVEN-DAY MINIMUM	12		Nov 1		12	
INSTANTANEOUS PEAK FLOW					1260	
ANNUAL RUNOFF (AC-FT)	375100		91680		222400	
10 PERCENT EXCEEDS	1700		361		857	
50 PERCENT EXCEEDS	218		62		90	
90 PERCENT EXCEEDS	17		16		11	

11208601 KAWEAH RIVER BELOW NO. 2 CONDUIT, NEAR HAMMOND, CA—Continued

KAWEAH RIVER BELOW NO. 2 CONDUIT AND KAWEAH RIVER NO. 2 CONDUIT, NEAR HAMMOND

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	70	196	68	109	160	182	287	635	156	50	27
2	91	68	134	66	112	168	174	289	521	156	50	28
3	88	67	121	65	113	170	170	295	412	145	47	26
4	86	65	123	65	122	186	161	269	350	132	46	26
5	83	64	109	64	112	170	163	316	337	119	44	25
6	79	63	104	65	106	155	165	507	357	109	44	25
7	74	65	93	64	156	145	167	668	390	104	46	26
8	71	96	102	63	204	133	164	738	419	103	45	25
9	71	80	95	61	283	135	161	672	421	101	42	21
10	69	76	91	61	213	128	163	615	409	101	40	20
11	68	108	91	61	181	124	170	732	428	97	45	19
12	64	89	92	60	181	116	160	911	414	105	42	19
13	62	91	94	60	171	128	186	921	450	165	38	19
14	63	97	96	58	157	131	283	770	446	186	35	18
15	66	107	87	58	148	127	381	669	411	123	34	18
16	67	103	83	70	142	135	430	641	414	102	33	17
17	65	104	82	67	148	134	440	733	367	90	31	17
18	62	93	82	68	165	146	446	796	359	84	30	20
19	60	83	80	75	151	161	523	761	354	77	29	19
20	59	79	77	257	151	151	560	794	330	73	30	19
21	57	77	68	180	155	145	568	791	291	70	28	18
22	56	78	77	124	139	147	543	773	254	67	28	24
23	55	80	72	127	138	176	386	766	246	64	28	31
24	57	83	72	183	140	170	328	867	238	62	26	24
25	79	79	74	154	147	184	308	905	220	61	26	22
26	74	75	75	149	137	184	334	947	203	58	26	22
27	67	73	73	126	140	184	413	905	185	55	28	21
28	66	82	70	122	156	193	381	822	173	54	27	20
29	72	92	70	125	---	198	317	790	167	52	27	19
30	91	96	68	121	---	199	295	692	163	52	26	19
31	74	---	70	126	---	207	---	671	---	51	27	---
TOTAL	2190	2483	2821	3013	4277	4890	9122	21313	10364	2974	1098	654
MEAN	70.6	82.8	91.0	97.2	153	158	304	688	345	95.9	35.4	21.8
MAX	94	108	196	257	283	207	568	947	635	186	50	31
MIN	55	63	68	58	106	116	160	269	163	51	26	17
AC-FT	4340	4930	5600	5980	8480	9700	18090	42270	20560	5900	2180	1300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1999, BY WATER YEAR (WY)

MEAN	42.9	74.1	121	322	298	372	523	879	949	579	143	61.6
MAX	70.6	192	341	1283	514	600	710	1124	2076	1649	334	162
(WY)	1999	1997	1997	1997	1996	1995	1996	1996	1998	1998	1998	1998
MIN	22.6	30.7	46.6	44.6	86.4	158	304	532	324	55.5	20.8	19.7
(WY)	1997	1994	1994	1994	1994	1999	1999	1994	1994	1994	1994	1994

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1994 - 1999	
ANNUAL TOTAL	211503		65199			
ANNUAL MEAN	579		179		364	
HIGHEST ANNUAL MEAN					575	
LOWEST ANNUAL MEAN					142	
HIGHEST DAILY MEAN	2660		947		9810	
LOWEST DAILY MEAN	55		17		12	
ANNUAL SEVEN-DAY MINIMUM	58		18		14	
ANNUAL RUNOFF (AC-FT)	419500		129300		263600	
10 PERCENT EXCEEDS	1770		434		936	
50 PERCENT EXCEEDS	294		103		165	
90 PERCENT EXCEEDS	73		28		30	

11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA

LOCATION.—Lat 36°27'06", long 118°47'18", in NW 1/4 sec. 14, T.17 S., R.29 E., Tulare County, Hydrologic Unit 18030007, 1.9 mi downstream of Grunigen Creek confluence and 8.2 mi east of Three Rivers.

DRAINAGE AREA.—85.8 mi².

PERIOD OF RECORD.—May 1952 to September 1955, October 1957 to September 1978, October 1993 to current year. Prior to October 1962, combined, only.

CHEMICAL ANALYSES: July 1968 to September 1971.

WATER TEMPERATURE: August 1968 to September 1976.

SEDIMENT DATA: August 1968 to September 1971.

GAGE.—Water-stage recorder and acoustic-flow meter on river; water-stage recorder and Parshall flume for conduit diversion. Elevation of gage is 2,500 ft above sea level, from topographic map. May 15, 1952, to September 30, 1955, at site 200 ft downstream at different datum.

REMARKS.—East Fork Kaweah River No. 1 Conduit (station 11208720) diverts up to 30 ft³/s from left bank of river near diversion dam. Water is returned to Middle Fork Kaweah River, 1.9 mi downstream from mouth of East Fork. See schematic diagram of Kaweah River Basin. For records of combined discharges of river and conduit, see station 11208731.

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

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 13,000 ft³/s, Dec. 6, 1966, gage height, 21 ft, from floodmarks, from rating curve extended above 850 ft³/s, on basis of critical-depth measurement of peak flow over diversion dam; minimum daily, no flow, Jan. 22, Oct. 18–20, 1962.

Combined flow, maximum discharge, 13,000 ft³/s, Dec. 6, 1966; minimum daily, 3.5 ft³/s, Sept. 28, 29, 1960.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	18	37	15	27	36	34	102	281	43	8.2	8.4
2	26	17	24	14	24	39	29	107	245	42	6.6	8.4
3	27	16	26	14	24	40	29	114	201	40	6.3	8.4
4	26	15	23	14	26	44	30	95	181	38	6.3	8.3
5	24	14	21	14	26	38	28	117	165	35	6.3	8.3
6	21	14	21	14	26	33	38	180	169	32	6.5	8.3
7	18	17	21	13	59	32	40	247	173	31	6.6	8.3
8	17	23	e21	13	61	37	44	265	175	30	6.5	8.3
9	17	19	e21	11	94	35	42	252	169	29	6.5	8.7
10	17	22	e21	11	63	30	42	232	167	29	6.4	9.0
11	16	32	21	11	49	33	42	274	170	32	6.5	9.0
12	15	22	22	11	49	29	44	344	163	33	6.5	9.0
13	14	22	22	11	45	29	49	364	169	70	6.4	9.0
14	15	22	22	11	40	30	73	317	171	89	7.3	8.4
15	16	21	20	11	37	30	106	273	160	46	7.6	8.1
16	17	20	19	17	35	32	125	241	149	37	7.6	8.4
17	16	22	19	15	38	29	129	270	139	33	7.5	8.4
18	15	19	19	15	40	29	133	327	131	30	7.5	9.9
19	14	17	18	18	37	30	158	330	126	24	7.5	9.9
20	12	16	17	105	44	32	177	341	117	21	7.5	17
21	12	16	15	58	44	32	181	337	104	19	7.6	19
22	12	16	28	30	34	29	170	324	93	17	7.5	26
23	12	18	e25	30	34	32	127	329	86	16	7.5	25
24	14	19	e20	55	33	31	106	353	80	15	7.8	22
25	23	18	e21	46	34	32	96	357	73	14	8.3	21
26	19	16	e22	35	33	22	110	381	64	14	8.4	20
27	20	15	e22	28	34	32	138	366	58	14	8.3	19
28	19	20	e23	27	36	32	132	344	53	14	8.3	18
29	22	24	20	28	---	33	121	346	49	14	8.3	17
30	23	24	17	27	---	36	103	308	46	14	8.4	17
31	19	---	16	32	---	42	---	296	---	14	8.4	---
TOTAL	566	574	664	754	1126	1020	2676	8533	4127	929	226.9	385.5
MEAN	18.3	19.1	21.4	24.3	40.2	32.9	89.2	275	138	30.0	7.32	12.9
MAX	28	32	37	105	94	44	181	381	281	89	8.4	26
MIN	12	14	15	11	24	22	28	95	46	14	6.3	8.1
AC-FT	1120	1140	1320	1500	2230	2020	5310	16930	8190	1840	450	765

e Estimated.

11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.69	9.78	39.8	65.0	58.1	74.9	152	354	364	138	27.7	10.7
MAX	22.4	83.9	594	674	219	251	350	944	1017	775	148	73.9
(WY)	1970	1997	1967	1997	1969	1995	1969	1969	1998	1998	1967	1978
MIN	.32	.48	.23	.55	.37	2.28	45.2	54.8	21.3	.85	.34	.23
(WY)	1959	1963	1959	1961	1961	1977	1977	1977	1976	1959	1955	1953

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1952 - 1999	
ANNUAL TOTAL	88747		21581.4			
ANNUAL MEAN	243		59.1		107	
HIGHEST ANNUAL MEAN					300	
LOWEST ANNUAL MEAN					15.9	
HIGHEST DAILY MEAN	1350	Jun 16	381	May 26	8000	Dec 6 1966
LOWEST DAILY MEAN	12	Oct 20	6.3	Aug 3	.00	Jan 22 1962
ANNUAL SEVEN-DAY MINIMUM	13	Oct 18	6.4	Aug 3	.10	Sep 28 1953
INSTANTANEOUS PEAK FLOW			466	May 25	13000	Dec 6 1966
INSTANTANEOUS PEAK STAGE			5.27	May 25	21.00	Dec 6 1966
ANNUAL RUNOFF (AC-FT)	176000		42810		77800	
10 PERCENT EXCEEDS	845		170		327	
50 PERCENT EXCEEDS	94		26		23	
90 PERCENT EXCEEDS	18		8.4		.70	

11208731 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA—Continued

EAST FORK KAWEAH RIVER AND EAST FORK KAWEAH RIVER NO. 1 CONDUIT NEAR THREE RIVERS, CA

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	41	60	34	49	53	54	125	304	66	28	18
2	49	40	47	33	46	56	51	130	268	65	28	18
3	50	39	49	33	46	57	51	137	224	63	26	18
4	49	38	46	33	48	61	52	118	204	61	25	18
5	47	37	44	33	48	56	50	140	188	58	25	18
6	44	37	44	33	48	52	60	204	192	55	26	17
7	42	40	42	32	81	50	62	271	196	53	27	17
8	40	46	e42	32	84	55	66	289	198	52	26	16
9	40	42	e42	30	114	53	64	276	192	51	24	21
10	41	45	e42	30	80	48	64	256	190	51	24	24
11	39	55	42	30	66	51	64	298	193	54	26	24
12	38	45	43	30	66	48	66	368	186	55	24	23
13	37	45	43	30	62	48	70	388	193	90	22	23
14	38	45	43	30	57	49	95	340	195	110	22	21
15	39	44	41	30	54	49	128	296	184	67	22	21
16	40	43	39	37	52	51	147	264	173	57	21	20
17	39	45	39	34	55	48	151	293	163	52	20	20
18	38	42	40	34	57	48	155	350	155	49	20	23
19	37	40	39	39	54	50	181	354	150	46	20	22
20	35	39	37	126	61	52	200	365	141	45	18	22
21	35	39	34	80	61	52	203	360	128	43	19	21
22	35	39	39	52	51	49	192	347	117	40	18	28
23	35	41	e33	52	51	53	149	352	110	39	18	27
24	37	42	e28	77	50	52	128	376	104	37	18	24
25	46	41	e28	68	51	53	118	380	97	36	18	23
26	42	39	e22	57	50	43	132	405	88	34	20	22
27	43	38	e22	50	51	53	161	390	81	33	21	21
28	42	43	e29	49	53	53	154	368	76	32	19	20
29	45	47	35	50	---	54	141	370	72	31	18	19
30	46	47	36	49	---	57	126	331	69	31	18	19
31	42	---	36	54	---	62	---	319	---	30	18	---
TOTAL	1281	1264	1206	1381	1646	1616	3335	9260	4831	1586	679	628
MEAN	41.3	42.1	38.9	44.5	58.8	52.1	111	299	161	51.2	21.9	20.9
MAX	51	55	60	126	114	62	203	405	304	110	28	28
MIN	35	37	22	30	46	43	50	118	69	30	18	16
AC-FT	2540	2510	2390	2740	3260	3210	6610	18370	9580	3150	1350	1250

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1999, BY WATER YEAR (WY)

MEAN	21.6	27.3	57.7	82.6	79.9	97.0	175	377	389	162	48.2	28.4
MAX	42.2	98.2	597	674	223	270	368	966	1036	793	174	99.5
(WY)	1970	1997	1967	1997	1969	1995	1969	1969	1998	1998	1967	1978
MIN	10.2	9.37	10.2	14.5	17.8	22.9	68.1	79.5	47.4	18.4	10.8	10.2
(WY)	1960	1960	1960	1961	1961	1977	1977	1977	1976	1977	1994	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1952 - 1999	
ANNUAL TOTAL	96371		28713			
ANNUAL MEAN	264		78.7		128	
HIGHEST ANNUAL MEAN					317	
LOWEST ANNUAL MEAN					34.0	
HIGHEST DAILY MEAN	1360	Jun 16	405	May 26	8000	Dec 6 1966
LOWEST DAILY MEAN	22	Dec 26	16	Sep 8	3.5	Sep 28 1960
ANNUAL SEVEN-DAY MINIMUM	28	Dec 23	17	Sep 2	6.3	Sep 27 1960
ANNUAL RUNOFF (AC-FT)	191200		56950		92560	
10 PERCENT EXCEEDS	864		193		347	
50 PERCENT EXCEEDS	116		48		46	
90 PERCENT EXCEEDS	39		22		15	

e Estimated.

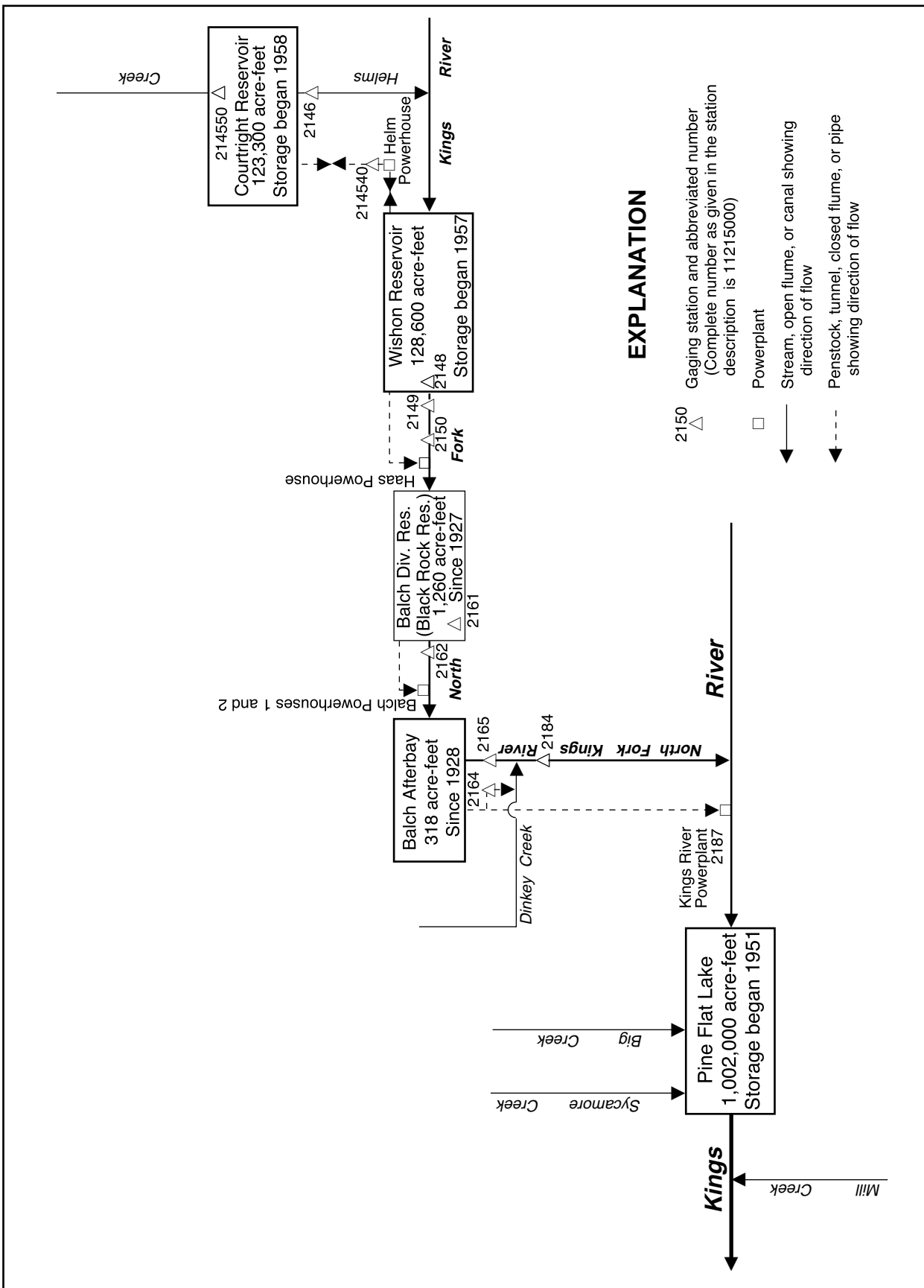


Figure 26. Diversions and storage in Kings River Basin.

11214540 HELMS POWERPLANT NEAR WISHON RESERVOIR, CA

LOCATION.—Lat 37°02'22", long 118°57'16", unsurveyed, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, underground facility, 2.4 mi north of Wishon Dam, and 2.8 mi south of Courtright Dam.

PERIOD OF RECORD.—October 1989 to current year.

GAGE.—Acoustic-velocity meter in penstock. Elevation of powerplant, approximately 1,000 ft below land surface, is 6,286.0 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Flow is diverted from Courtright Reservoir (station 11214550) through a tunnel to the powerplant which generates electricity during peak power demand, then to Wishon Reservoir (station 11214800). During periods of low power demand, reversible turbines pump water from Wishon Reservoir to Courtright Reservoir. Turbines draft up to 9,000 ft³/s and pump up to 7,200 ft³/s. Figures shown represent the net daily flow from Courtright Reservoir to Wishon Reservoir. Negative values represent net flow pumped to Courtright Reservoir. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 5,440 ft³/s, Dec. 22, 1998; maximum daily pumpage, 6,860 ft³/s, Jan. 5, 1997.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139	-1010	569	-1470	1500	-301	-819	523	-684	1580	176	-2200
2	443	334	-2.0	-1780	2320	950	-1260	792	-413	144	1620	-1930
3	-699	-718	-269	-1570	1380	768	-1160	884	153	-901	1380	-824
4	102	91	1940	752	848	99	-2320	244	1550	-2380	76	-1560
5	1210	-583	945	239	-72	465	50	1170	285	-584	-428	-712
6	626	-49	1080	483	-306	-183	-127	232	-966	-302	-824	-588
7	805	-1080	1800	478	-1320	-462	-658	-194	-352	-216	-1120	698
8	1300	-911	1730	143	365	1710	-709	-1280	796	-371	-691	1050
9	636	42	1280	213	150	1090	1130	-1040	-267	729	-488	1300
10	272	241	906	-46	625	436	162	-897	93	968	-991	625
11	178	322	576	1380	500	910	-653	-730	64	2070	-533	-171
12	1080	1170	-1050	798	140	1210	-432	-756	-164	2850	1830	846
13	2840	277	-1080	247	176	2190	-771	-170	-194	1710	1120	961
14	1690	-287	-496	262	-1930	893	-405	.50	478	1150	1270	1110
15	-142	-713	-906	-264	-627	578	1510	-472	-511	113	1900	801
16	-623	-80	-1030	-1290	-328	237	1280	-1430	726	-167	524	446
17	-2060	-302	-21	-1040	-539	856	221	437	808	-996	1070	415
18	-1240	-441	-307	-877	153	226	-1330	-517	574	-1860	-613	-64
19	-629	-182	-674	-862	1160	-382	843	-1180	-743	-1160	-375	-64
20	130	-897	1760	-855	957	-984	-147	-1200	-1070	-1590	-304	536
21	446	-938	5420	-1040	26	-1260	-151	-309	286	-1120	-906	843
22	894	-570	5440	780	2230	-212	-692	-373	447	-1030	432	2800
23	624	-122	1940	-1120	2180	271	-1550	-704	993	-1180	2160	2050
24	-35	-668	-407	-1170	2120	128	-2940	1410	411	-2200	2070	229
25	-1100	-575	-1720	1350	1740	-290	-2710	2430	-626	-65	4770	1790
26	-759	-1010	-1730	850	180	-926	30	2050	-455	-358	4250	1920
27	-200	-891	-25	1180	334	-2550	-467	867	-937	-412	5210	668
28	-412	-1070	-89	-454	-823	-3160	-75	-780	817	163	2240	668
29	-342	-914	-589	730	---	-606	2110	-1370	1820	354	1620	668
30	-689	685	-615	-433	---	-1060	1790	-2360	2120	1070	678	2340
31	-1870	---	-3290	38	---	-926	---	-3270	---	1260	-758	---
TOTAL	2615	-10849	11086.0	-4348	13139	-285	-10250	-7992.50	5039	-2731	26365	14651
MEAN	84.4	-362	358	-140	469	-9.19	-342	-258	168	-88.1	850	488
MAX	2840	1170	5440	1380	2320	2190	2110	2430	2120	2850	5210	2800
MIN	-2060	-1080	-3290	-1780	-1930	-3160	-2940	-3270	-1070	-2380	-1120	-2200
AC-FT	5190	-21520	21990	-8620	26060	-565	-20330	-15850	9990	-5420	52290	29060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
MEAN	142	-97.3	31.7	-51.1	141	51.3	55.1	-311	-15.0	153	351	389
MAX	499	247	358	245	469	371	370	194	242	627	850	894
(WY)	1996	1994	1999	1995	1999	1995	1995	1995	1992	1989	1999	1991
MIN	-110	-734	-203	-844	-84.6	-315	-342	-722	-239	-209	177	51.6
(WY)	1993	1992	1996	1997	1997	1989	1999	1992	1997	1997	1990	1990

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1989 - 1999	
ANNUAL TOTAL	39195.45		36439.50			
ANNUAL MEAN	107		99.8		69.2	
HIGHEST ANNUAL MEAN					177	
LOWEST ANNUAL MEAN					-77.5	
HIGHEST DAILY MEAN	5440	Dec 22	5440	Dec 22	5440	Dec 22 1998
LOWEST DAILY MEAN	-3290	Dec 31	-3290	Dec 31	-6860	Jan 5 1997
ANNUAL SEVEN-DAY MINIMUM	-1250	Jul 10	-1480	Mar 27	-2530	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	77740		72280		50160	
10 PERCENT EXCEEDS	1440		1710		1190	
50 PERCENT EXCEEDS	.00		.50		.00	
90 PERCENT EXCEEDS	-1070		-1170		-956	

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 sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by rockfill dam completed in 1958. Usable capacity, 123,286 acre-ft between elevations 7,902 ft, invert of tunnel, and 8,184 ft, elevation of spillway. Dead storage negligible. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Kings River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 124,220 acre-ft, Sept. 26, 1982, elevation, 8,184.57 ft; no contents in 1961–62, 1968, 1970.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 121,911 acre-ft, July 27, elevation, 8,183.15 ft; minimum, 24,005 acre-ft, Sept. 30, elevation, 8,087.66 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated Apr. 13, 1959)

7,902	0	7,970	736	8,035	6,269	8,115	42,141
7,950	267	7,990	1,617	8,060	12,298	8,150	75,878
7,960	462	8,010	3,129	8,085	22,584	8,184	123,286

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73318	69900	87812	70057	73341	51324	54165	76519	119330	108636	115672	65540
2	72470	69347	87812	73519	68804	49417	56703	78429	120709	108278	112425	69249
3	73762	70595	88343	76578	66100	47932	59103	76871	120789	110028	109623	70716
4	73557	70508	84546	75089	64438	47803	63701	76730	117996	114650	109209	73693
5	71194	71183	82712	74628	64584	46800	63680	74951	117869	115725	109960	75091
6	69955	71651	80590	73656	65191	47255	64022	75055	120067	116257	111522	76157
7	68371	73804	77024	72718	67957	48185	65370	76390	120951	116913	113635	74780
8	65846	75635	73682	72400	67261	44837	66858	79730	119618	117357	114998	72696
9	64576	75529	71149	71940	67176	42660	64638	82490	120404	115917	115810	70098
10	64014	75112	69358	72021	65920	41852	64325	84987	120355	114095	117403	68826
11	63600	74456	68228	69281	64845	40063	65529	87411	120436	110434	118497	69100
12	61567	72153	70222	67708	64573	37676	66515	90003	120951	104297	114914	67326
13	56058	71583	72324	67190	64209	33350	68054	91286	121452	101278	112687	65529
14	52679	72131	73292	66642	68033	31628	68934	92030	120663	99056	110126	63268
15	52860	73497	75008	67150	69238	30472	66100	93455	121822	98871	106325	61629
16	54092	73636	77095	69685	69893	30025	63796	96761	120436	98885	105248	60696
17	58116	74241	77104	71696	70972	28354	63600	96984	118931	100694	103089	59774
18	60601	75080	77721	73724	70662	27937	66270	98726	117865	104140	103640	59873
19	61718	75413	79020	75471	68381	28733	65172	101863	119330	106330	104325	59005
20	61455	77107	75459	77295	66612	30808	65867	104984	121434	109362	104910	57894
21	60621	78948	65078	79325	66631	33277	66537	106375	120934	111782	106607	56172
22	58848	80032	54387	77764	62150	33848	68304	107857	120120	113666	105692	50819
23	57584	80238	50667	80105	57875	33296	71461	110035	118135	115825	101420	46631
24	57690	81567	51423	82539	54655	33032	77531	108203	117359	120116	97288	46268
25	59814	82663	54803	79935	51222	33643	82021	104369	118723	120629	87773	42717
26	61274	84609	58233	78279	49742	35548	82576	101347	119634	121190	79657	38896
27	61627	86397	58282	76006	49093	40696	83869	100421	121450	121911	69652	37569
28	62440	88460	58438	76905	50755	47002	84332	102612	119842	121751	65128	32563
29	63024	90239	59556	75459	---	48259	80481	105896	115897	120869	61922	28555
30	64367	88902	60731	76274	---	50470	77210	111001	111737	118689	60577	24005
31	67950	---	67190	76274	---	52472	---	117596	---	116392	62206	---
MAX	73762	90239	88343	82539	73341	52472	84332	117596	121822	121911	118497	76157
MIN	52679	69347	50667	66642	49093	27937	54165	74951	111737	98871	60577	24005
a	8142.92	8160.57	8142.21	8150.34	8125.36	8127.29	8151.14	8180.46	8176.69	8179.69	8137.44	8087.66
b	-5573	+20952	-21712	+9084	-25519	+1717	+24738	+40386	-5859	+4655	-54186	-38201

CAL YR 1998 b +10649

WTR YR 1999 b -49518

a Elevation, in feet, in 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 February 1986. May 1986, to current year.

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

GAGE.—Water-stage recorder and broad-crested weir (with low-water 90° V-notch weir since Nov. 13, 1990). Elevation of gage is 7,836 ft above sea level, from photogrammetry survey.

REMARKS.—Flow regulated since October 1958 by Courtright Reservoir (station 11214550) 500 ft upstream. Water bypasses this gage through Helms Powerplant (station 11214540). See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,340 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e24	21	30	20	21	17	16	20	27	28	43	25
2	e24	22	30	20	21	17	16	20	28	27	43	26
3	e23	21	30	21	20	17	17	20	28	27	42	27
4	e23	22	29	21	20	17	17	20	28	28	41	28
5	e22	22	28	21	20	16	18	20	28	29	41	29
6	e21	22	27	21	20	16	18	20	29	29	42	29
7	e21	22	26	20	20	17	18	20	29	30	42	29
8	e22	23	25	20	20	16	18	20	29	30	43	29
9	e22	24	23	20	20	15	18	20	29	30	43	28
10	e22	23	22	20	20	15	18	21	29	29	43	27
11	e22	23	20	20	20	15	18	21	29	29	44	27
12	e22	23	20	20	20	14	18	22	30	27	44	26
13	e24	22	21	19	20	12	18	22	30	26	43	26
14	e25	22	21	19	20	12	19	22	30	25	42	25
15	e24	22	21	19	20	11	19	22	31	24	41	24
16	e23	23	21	20	21	11	18	22	31	24	41	24
17	e22	23	22	20	21	11	18	23	30	25	40	24
18	e20	23	22	20	21	9.4	18	23	30	25	40	24
19	e20	23	22	21	20	9.4	18	23	30	26	40	24
20	e19	23	22	21	20	9.6	18	23	31	27	40	24
21	e20	24	21	21	20	10	19	24	32	27	40	24
22	e20	25	19	21	20	10	18	24	32	28	40	23
23	e20	25	17	22	19	11	18	24	31	29	40	22
24	e20	26	17	22	18	10	19	24	30	30	39	21
25	e19	26	17	22	18	10	20	24	30	32	37	19
26	e18	27	18	22	17	11	21	24	31	32	34	17
27	e18	27	18	21	17	12	21	23	32	32	31	17
28	e19	29	18	21	17	13	21	23	32	33	27	15
29	19	30	18	21	---	14	21	23	31	33	26	13
30	19	31	19	21	---	15	20	24	30	33	25	11
31	20	---	19	22	---	15	---	25	---	37	25	---
TOTAL	657	719	683	639	551	408.4	554	686	897	891	1202	707
MEAN	21.2	24.0	22.0	20.6	19.7	13.2	18.5	22.1	29.9	28.7	38.8	23.6
MAX	25	31	30	22	21	17	21	25	32	37	44	29
MIN	18	21	17	19	17	9.4	16	20	27	24	25	11
AC-FT	1300	1430	1350	1270	1090	810	1100	1360	1780	1770	2380	1400

e Estimated.

11214600 HELMS CREEK BELOW COURTRIGHT DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1983, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	32.4	25.7	25.0	43.0	31.3	43.3	77.0	83.9	73.4	111	209	146
MAX	235	145	212	373	408	642	645	488	410	576	734	890
(WY)	1970	1964	1979	1979	1979	1983	1983	1961	1961	1968	1980	1969
MIN	2.29	.42	.051	.095	.17	.42	1.53	3.35	4.02	3.38	2.39	1.97
(WY)	1973	1971	1971	1971	1971	1971	1971	1971	1971	1976	1977	1977

SUMMARY STATISTICS

WATER YEARS 1959 - 1983

ANNUAL MEAN	75.4
HIGHEST ANNUAL MEAN	185 1983
LOWEST ANNUAL MEAN	2.29 1971
HIGHEST DAILY MEAN	986 Aug 29 1969
LOWEST DAILY MEAN	.00 Nov 21 1970
ANNUAL SEVEN-DAY MINIMUM	.00 Dec 3 1970
INSTANTANEOUS PEAK FLOW	1340 Aug 29 1969
INSTANTANEOUS PEAK STAGE	7.70 Aug 23 1978
ANNUAL RUNOFF (AC-FT)	54610
10 PERCENT EXCEEDS	287
50 PERCENT EXCEEDS	10
90 PERCENT EXCEEDS	2.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.4	7.50	6.57	6.58	6.93	6.11	6.74	9.50	15.0	16.4	15.3	11.0
MAX	58.3	24.0	22.0	20.6	19.7	13.2	18.5	22.1	29.9	28.7	38.8	25.0
(WY)	1985	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1998
MIN	5.32	4.15	2.92	3.47	3.30	3.48	3.24	5.15	6.80	6.82	6.07	5.71
(WY)	1991	1986	1987	1987	1991	1991	1998	1990	1990	1990	1992	1990

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1985 - 1999

ANNUAL TOTAL	6292.94	8594.4	
ANNUAL MEAN	17.2	23.5	10.1
HIGHEST ANNUAL MEAN			23.5 1999
LOWEST ANNUAL MEAN			5.65 1987
HIGHEST DAILY MEAN	34 Jul 28	44 Aug 11	679 Oct 13 1984
LOWEST DAILY MEAN	.90 Apr 17	9.4 Mar 18	.90 Apr 17 1998
ANNUAL SEVEN-DAY MINIMUM	1.5 Apr 16	9.9 Mar 18	1.5 Apr 16 1998
INSTANTANEOUS PEAK FLOW		44 Jul 31	1340 Aug 29 1969
INSTANTANEOUS PEAK STAGE		4.59 Jul 31	7.70 Aug 23 1978
ANNUAL RUNOFF (AC-FT)	12480	17050	7290
10 PERCENT EXCEEDS	30	32	20
50 PERCENT EXCEEDS	18	22	7.0
90 PERCENT EXCEEDS	4.6	17	4.0

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 sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by rockfill dam completed in 1957. Capacity, 128,600 acre-ft between elevations 6,317 ft, bottom of slide gates, and 6,550 ft, operating crest of spillway gates. Dead storage negligible. Water is diverted to Haas Powerplant (station 11216050). Records, including extremes, represent contents at 2400 hours. See schematic diagram of Kings River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 129,700 acre-ft, July 29, 1958, elevation, 6,551.1 ft; no contents in 1960.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 124,825 acre-ft, July 14, elevation, 6,546.27 ft; minimum, 39,307 acre-ft, Jan. 24, elevation, 6,439.72 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated Apr. 13, 1959)

6,317	40	6,385	11,618	6,440	39,471	6,520	99,807
6,360	2,810	6,400	18,359	6,460	51,900	6,550	129,118
6,370	5,738	6,420	28,362	6,490	74,128	6,551.1	129,733

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105821	83974	51104	51098	49744	75152	75233	71719	109976	123381	90356	108941
2	105960	83972	50458	47522	54482	77151	72836	70902	110469	123152	92547	103940
3	103592	81888	49306	44348	57341	78779	70624	73003	112069	121421	94203	101528
4	102768	80950	52525	45551	59141	79313	66096	73652	116168	116208	93092	97798
5	104244	79545	54163	46047	59061	80432	66373	76185	117433	114076	91594	95303
6	104621	78345	55977	47061	58533	80180	66334	78248	116451	113309	89557	92955
7	105405	75712	59054	48047	56262	79321	65072	79985	116518	112326	86977	93193
8	107241	73465	61889	48352	57179	82381	63814	79919	118714	111053	84962	93951
9	107914	73027	63731	48799	57870	84631	66096	80052	118744	111964	83180	95269
10	107857	73147	64912	48722	59061	85451	66434	80235	118989	112746	80340	95784
11	107484	73443	65453	51373	60211	87298	65369	80809	119336	115713	78289	94380
12	108587	75289	62711	52979	60644	89782	64525	82357	119375	120369	81560	94530
13	112928	75241	59893	53435	61144	94092	63348	84992	119375	123046	82634	95178
14	115558	74246	58231	53994	57362	95634	62823	86934	120510	124825	84403	96424
15	114508	72318	55741	53420	56018	96824	66042	87442	119274	124021	87476	96637
16	112451	71703	52992	50941	55256	97244	69232	86052	121101	122482	87433	96210
17	107083	70743	52146	48908	54238	99146	69938	88605	122303	119333	88373	95677
18	103629	69523	50653	46916	54570	99715	67796	89921	123101	114297	86591	94859
19	101401	68701	48391	45341	57031	99128	70293	89947	121091	111053	84792	94814
20	100330	66227	50836	43851	58834	97306	71075	90165	118557	107082	83180	94513
21	100821	63852	60207	41860	59075	94867	72158	91324	118430	104289	80482	94699
22	101665	62189	69750	43573	63460	94357	71799	92881	118401	101292	80356	99074
23	102303	61410	72902	41505	67819	95330	69232	93823	119934	97924	83357	102019
24	101674	59693	71624	39307	70980	95500	64146	99104	120181	92477	86394	101001
25	99068	57948	67633	42135	74630	94601	60416	106600	118117	92153	94592	102942
26	96854	55935	64123	44004	76275	93153	61026	113443	116480	90469	101391	105219
27	95749	54177	64018	46465	77094	88399	60908	117579	114076	88787	110211	105626
28	94322	52206	63566	45637	75597	82247	61484	118147	114798	88218	113290	109646
29	93149	50263	61907	47212	---	80667	65935	117912	117980	88011	115376	112364
30	91185	50810	60710	46446	---	78712	69875	115153	121220	89089	115763	115947
31	86638	---	54048	46659	---	76634	---	110145	---	90661	113415	---
MAX	115558	83974	72902	53994	77094	99715	75233	118147	123101	124825	115763	115947
MIN	86638	50263	48391	39307	49744	75152	60416	70902	109976	88011	78289	92955
a	6505.03	6458.34	6463.21	6451.85	6491.81	6493.08	6484.67	6531.21	6542.66	6509.69	6534.65	6537.28
b	-19584	-35828	+3238	-7389	+28938	+1037	-6759	+40270	+11075	-30559	+22754	+2532

CAL YR 1998 b +18475
WTR YR 1999 b +9725

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

11214900 NORTH FORK KINGS RIVER BELOW WISHON RESERVOIR, CA

LOCATION.—Lat 37°00'05", long 118°58'20", in SE 1/4 NE 1/4 sec.1, T.11 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank 1,700 ft downstream from Wishon Dam and 20 mi southeast of Big Creek.

DRAINAGE AREA.—178 mi².

PERIOD OF RECORD.—October 1986 to current year (since October 1990, low-flow records only).

GAGE.—Water-stage recorder and 90° V-notch steel weir and concrete control. Elevation of gage is 6,300 ft above sea level, from topographic map.

REMARKS.—No records computed above 25 ft³/s. Flow regulated by Wishon Reservoir (station 11214800) and Courtright Reservoir (station 11214550). Water diverted for power from Wishon Reservoir by tunnel to Haas Powerplant (station 11216050). See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e21	e21	e20	---	---	---	---	---	---	---
2	---	---	e20	e20	e21	---	---	---	---	---	---	---
3	---	---	e20	e19	e22	---	---	---	---	---	---	---
4	---	---	e21	e19	e23	---	---	---	---	---	---	---
5	---	---	e21	e19	e23	---	25	---	---	---	---	---
6	---	---	e22	e20	e22	---	25	---	---	---	---	---
7	---	---	e23	e20	e22	---	25	---	---	---	---	---
8	---	---	e23	e20	e22	---	25	---	---	---	---	---
9	---	---	e24	e20	e22	---	25	---	---	---	---	---
10	---	---	e24	e20	e23	---	25	---	---	---	---	---
11	---	---	e24	e21	e23	---	25	---	---	---	---	---
12	---	---	e23	e21	e23	---	---	---	---	---	---	---
13	---	---	e23	e21	e23	---	---	---	---	---	---	---
14	---	---	e22	e21	e22	---	---	---	---	---	---	---
15	---	---	e22	e21	e22	---	---	---	---	---	---	---
16	---	e25	e21	e21	e22	---	---	---	---	---	---	---
17	---	e25	e21	e20	e21	---	---	---	---	---	---	---
18	---	e25	e20	e19	e21	---	---	---	---	---	---	---
19	---	e25	e20	e19	e22	---	---	---	---	---	---	---
20	---	e24	e20	e19	e22	---	---	---	---	---	---	---
21	---	e24	e23	e18	e23	---	---	---	---	---	---	---
22	---	e23	e25	e19	e24	---	---	---	---	---	---	---
23	---	e23	---	e18	e25	---	---	---	---	---	---	---
24	---	e23	e25	e17	e25	---	25	---	---	---	---	---
25	---	e22	e25	e18	---	---	25	---	---	---	---	---
26	---	e22	e24	e19	---	---	25	---	---	---	---	---
27	---	e21	e24	e19	---	---	25	---	---	---	---	---
28	---	e21	e24	e19	---	---	25	---	---	---	---	---
29	---	e20	e23	e20	---	---	25	---	---	---	---	---
30	---	e20	e23	e19	---	---	---	---	---	---	---	---
31	---	---	e21	e19	---	---	---	---	---	---	---	---
TOTAL	---	---	---	606	---	---	---	---	---	---	---	---
MEAN	---	---	---	19.5	---	---	---	---	---	---	---	---
MAX	---	---	---	21	---	---	---	---	---	---	---	---
MIN	---	---	---	17	---	---	---	---	---	---	---	---
AC-FT	---	---	---	1200	---	---	---	---	---	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1990, BY WATER YEAR (WY)

	1987	1988	1989	1990	1987	1988	1989	1990	1987	1988	1989	1990
MEAN	17.7	18.2	16.5	16.5	16.6	17.3	16.7	19.5	20.0	15.3	13.5	13.6
MAX	22.9	23.5	22.8	22.0	21.5	22.5	20.3	25.6	28.3	19.5	17.0	17.1
(WY)	1987	1987	1987	1987	1987	1987	1989	1987	1987	1989	1989	1989
MIN	14.9	16.2	8.60	8.23	8.52	9.84	8.74	10.2	8.67	9.01	8.40	8.20
(WY)	1988	1988	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990

SUMMARY STATISTICS

WATER YEARS 1987 - 1990

ANNUAL MEAN	16.8
HIGHEST ANNUAL MEAN	20.9
LOWEST ANNUAL MEAN	10.1
HIGHEST DAILY MEAN	30
LOWEST DAILY MEAN	7.2
ANNUAL SEVEN-DAY MINIMUM	7.8
INSTANTANEOUS PEAK FLOW	35
INSTANTANEOUS PEAK STAGE	3.59
ANNUAL RUNOFF (AC-FT)	12150
10 PERCENT EXCEEDS	23
50 PERCENT EXCEEDS	17
90 PERCENT EXCEEDS	8.6

e Estimated.

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 (since October 1990, high-flow records only). Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1715: 1951, drainage area.

GAGE.—Water-stage recorder. Datum of gage is 6,143.95 ft above sea level (levels by San Joaquin Light and Power Corp.). Prior to Nov. 24, 1922, at site 1 mi upstream at different datum.

REMARKS.—No records computed below 25 ft³/s. Flow regulated since Dec. 5, 1957, by Wishon Reservoir (station 11214800) 1.2 mi upstream, and since Oct. 17, 1958, by Courtright Reservoir (station 11214550). Water diverted for power from Wishon Reservoir by tunnel to Haas Powerplant (station 11216050) since Dec. 10, 1958. Monthly chemical, trace-element, biological, and sediment data are available in files of the U.S. Geological Survey and in U.S. Geological Survey Open-File Report 88-479. Also available in the same report are daily maximum, minimum, and mean specific-conductance and water-temperature values. 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 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.
From 1957 to 1990.—Maximum discharge, 5,110 ft³/s, Sept. 5, 1978, gage height, 11.96 ft.

EXTREME FOR CURRENT YEAR (Maximum only).—Maximum discharge, 71 ft³/s, Apr. 14, gage height 3.61 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	29	32	---	---	37	35	33	36	35	30	35
2	32	29	25	---	25	38	33	33	37	36	30	34
3	32	29	25	---	27	39	31	37	39	36	30	33
4	32	29	25	---	28	41	32	35	39	35	30	33
5	32	29	25	---	27	38	30	34	39	34	30	33
6	32	28	25	---	27	35	30	35	38	33	30	32
7	32	29	25	---	57	32	30	35	37	33	30	32
8	32	30	26	---	48	31	29	35	37	33	30	32
9	32	28	26	---	71	32	29	33	37	33	30	32
10	32	28	26	---	39	32	29	32	37	33	29	32
11	32	29	27	---	32	32	29	32	37	34	29	32
12	32	28	26	---	31	33	34	32	37	35	29	32
13	32	28	26	---	30	37	43	32	37	37	29	32
14	33	28	26	---	29	38	49	31	37	37	29	32
15	33	28	25	---	28	37	48	31	36	37	30	32
16	33	27	25	25	28	37	47	31	37	36	30	32
17	33	27	---	---	41	38	45	30	37	36	30	32
18	32	27	---	---	34	39	43	31	37	35	30	32
19	32	27	---	29	31	39	43	31	37	33	30	32
20	31	26	---	35	29	39	43	31	36	33	30	32
21	31	26	---	28	29	38	41	30	35	32	30	32
22	31	25	26	27	28	37	40	30	35	31	30	33
23	32	25	27	32	29	43	36	30	35	31	30	33
24	32	27	28	31	30	42	35	32	35	30	30	32
25	32	25	28	26	32	42	34	34	35	30	31	32
26	31	25	27	26	32	42	33	36	34	30	32	33
27	31	---	26	25	34	41	38	37	34	30	33	33
28	31	26	26	26	36	39	35	38	33	30	35	33
29	31	26	26	26	---	38	32	38	33	30	35	34
30	30	27	26	26	---	37	33	38	34	30	35	34
31	30	---	25	25	---	37	---	37	---	30	35	---
TOTAL	985	---	---	---	---	1160	1089	1034	1087	1028	951	977
MEAN	31.8	---	---	---	---	37.4	36.3	33.4	36.2	33.2	30.7	32.6
MAX	33	---	---	---	---	43	49	38	39	37	35	35
MIN	30	---	---	---	---	31	29	30	33	30	29	32
AC-FT	1950	---	---	---	---	2300	2160	2050	2160	2040	1890	1940
a	25540	15850	20090	847	2160	5280	8540	14720	28130	27450	29950	33960

a Diversion, in acre-feet, to Haas Powerplant, provided by Pacific Gas and Electric Co.

11215000 NORTH FORK KINGS RIVER NEAR CLIFF CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1957, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.3	49.3	84.9	62.2	93.6	197	709	1670	1177	211	27.7	9.45
MAX	121	550	605	300	212	402	1210	3232	3395	1161	131	37.4
(WY)	1946	1951	1956	1956	1945	1956	1926	1952	1938	1938	1938	1938
MIN	5.54	6.25	7.00	11.6	20.3	36.0	306	357	35.7	5.52	1.83	1.60
(WY)	1956	1930	1931	1924	1948	1924	1948	1934	1924	1924	1924	1924

SUMMARY STATISTICS

WATER YEARS 1922 - 1957

ANNUAL MEAN	360
HIGHEST ANNUAL MEAN	749
LOWEST ANNUAL MEAN	80.2
HIGHEST DAILY MEAN	7460
LOWEST DAILY MEAN	1.3
ANNUAL SEVEN-DAY MINIMUM	1.4
INSTANTANEOUS PEAK FLOW	14000
INSTANTANEOUS PEAK STAGE	18.00
ANNUAL RUNOFF (AC-FT)	260600
10 PERCENT EXCEEDS	1240
50 PERCENT EXCEEDS	63
90 PERCENT EXCEEDS	6.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1990, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.3	17.5	15.8	17.8	18.4	20.7	36.1	96.1	173	97.3	17.9	19.1
MAX	24.5	29.4	41.0	49.8	66.9	49.2	298	1170	1339	918	27.0	84.1
(WY)	1987	1966	1967	1969	1986	1986	1986	1969	1983	1967	1986	1978
MIN	7.67	7.53	7.45	7.62	8.20	9.21	8.62	8.45	8.21	7.37	7.56	7.83
(WY)	1960	1960	1963	1964	1964	1961	1961	1961	1961	1964	1961	1964

SUMMARY STATISTICS

WATER YEARS 1960 - 1990

ANNUAL MEAN	45.5
HIGHEST ANNUAL MEAN	241
LOWEST ANNUAL MEAN	10.0
HIGHEST DAILY MEAN	3040
LOWEST DAILY MEAN	3.9
ANNUAL SEVEN-DAY MINIMUM	4.2
INSTANTANEOUS PEAK FLOW	5110
INSTANTANEOUS PEAK STAGE	11.96
ANNUAL RUNOFF (AC-FT)	32970
10 PERCENT EXCEEDS	29
50 PERCENT EXCEEDS	17
90 PERCENT EXCEEDS	8.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1990, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.3	17.5	15.8	17.8	18.4	20.7	36.1	96.1	173	97.3	17.9	19.1
MAX	24.5	29.4	41.0	49.8	66.9	49.2	298	1170	1339	918	27.0	84.1
(WY)	1987	1966	1967	1969	1986	1986	1986	1969	1983	1967	1986	1978
MIN	7.67	7.53	7.45	7.62	8.20	9.21	8.62	8.45	8.21	7.37	7.56	7.83
(WY)	1960	1960	1963	1964	1964	1961	1961	1961	1961	1964	1961	1964

SUMMARY STATISTICS

WATER YEARS 1960 - 1990

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

ANNUAL MEAN	45.5		
HIGHEST ANNUAL MEAN	241		
LOWEST ANNUAL MEAN	10.0		
HIGHEST DAILY MEAN	3040	Jul 1	1967
LOWEST DAILY MEAN	3.9	Dec 9	1967
ANNUAL SEVEN-DAY MINIMUM	4.2	Dec 6	1967
INSTANTANEOUS PEAK FLOW	5110	Sep 5	1978
INSTANTANEOUS PEAK STAGE	11.96	Sep 5	1978
ANNUAL RUNOFF (AC-FT)	32970		
TOTAL DIVERSION (AC-FT) a		367800	212500
10 PERCENT EXCEEDS	29		
50 PERCENT EXCEEDS	17		
90 PERCENT EXCEEDS	8.6		

a Diversion, in acre-feet, to Haas Powerplant, provided by Pacific Gas and Electric Co.

11216100 BLACK ROCK RESERVOIR NEAR BALCH CAMP, CA

LOCATION.—Lat 36°55'13", long 119°01'20", in NW 1/4 NW 1/4 sec.6, T.12 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank at intake tower on North Fork Kings River, 5.6 mi east-northeast of Balch Camp.

DRAINAGE AREA.—233 mi².

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete arch-type dam, completed to elevation 4,054 ft in 1927 and raised to 4,098 ft in 1958. Storage began in 1927. Spillway is ungated. Capacity, 1,260 acre-ft between elevation 4,054 ft, fish release valve, and 4,098 ft, top of spillway crest. Water is diverted from reservoir through tunnel to Balch Powerplant 3.7 mi downstream and returns to the North Fork Kings River at Balch Afterbay. Flow is again diverted from Balch Afterbay in a closed conduit to Kings River Powerplant. Records, including extremes, represent contents at 2400 hours. See schematic diagram of Kings River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 1,324 acre-ft, July 7, 1998, elevation, 4,099.81 ft; minimum, 359 acre-ft, Nov. 3, 1986, elevation 4,064.51 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 1,242 acre-ft, Apr. 15, elevation, 4,097.05 ft; minimum, 578 acre-ft, Jan. 2, elevation, 4,075.00 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas and Electric Co., dated Dec. 1, 1958)

4,050	165	4,065	367	4,080	706	4,095	1,157
4,055	219	4,070	465	4,085	846	4,100	1,331
4,060	286	4,075	579	4,090	996	4,108	1,635

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	990	969	844	1101	1129	1107	921	953	950	1051	981	984
2	941	1001	871	578	1010	1007	849	1027	1072	1018	990	1021
3	975	1086	901	672	961	1093	937	960	1046	1059	982	955
4	996	1147	933	747	1053	1121	1027	912	936	896	967	987
5	1049	1160	958	849	1060	1036	956	1191	1117	1014	971	991
6	1104	1001	1159	938	853	975	1014	897	972	1036	929	1027
7	1117	1082	1160	1029	950	900	1129	1060	895	1105	949	981
8	1072	1174	1073	1121	801	993	1067	982	820	1051	978	996
9	1094	1147	1065	1206	853	1033	1081	908	671	1126	936	1017
10	1127	1159	1004	1235	988	1069	1198	959	958	1118	938	1007
11	1154	1160	979	963	1009	1074	1118	1078	999	1167	977	1015
12	1107	1133	901	999	950	923	1101	1027	1059	1155	941	1096
13	1154	1053	933	1047	1028	925	1060	941	1091	1199	998	1082
14	1160	1101	891	897	996	933	1112	991	1039	1076	972	1037
15	1208	1126	919	991	1093	972	1242	1053	1062	1076	1000	967
16	1027	1160	1050	1104	937	1053	867	921	908	995	929	800
17	1091	1154	1046	1017	861	1067	999	867	993	1024	947	818
18	1075	1154	972	1129	835	967	1185	899	925	997	957	703
19	1144	1194	993	1092	801	933	848	789	899	1008	973	663
20	1150	1209	1041	1081	801	1017	1003	941	890	948	956	653
21	1104	1154	1175	1010	947	1104	1064	1160	966	967	962	659
22	1069	1172	1082	1000	1003	1134	1023	1194	1010	981	981	601
23	1056	1126	1001	987	1046	1060	1012	1118	1032	979	1053	705
24	1072	1023	976	994	907	1088	944	1182	1081	935	1033	1053
25	1144	1086	1055	998	947	1159	1072	1164	1017	1063	1069	1124
26	1154	1130	1079	994	926	1222	1041	1017	922	964	1009	1194
27	1147	1008	1082	941	918	1020	1106	829	876	958	996	1153
28	1184	1062	1061	902	1023	1101	1101	1002	904	1003	954	1111
29	1201	881	982	943	---	1144	1126	840	975	997	1000	1239
30	1059	739	1068	1085	---	762	998	878	1003	959	959	1184
31	1078	---	1072	1144	---	925	---	967	---	951	1008	---
MAX	1208	1209	1175	1235	1129	1222	1242	1194	1117	1199	1069	1239
MIN	941	739	844	578	801	762	848	789	671	896	929	601
a	4092.60	4081.21	4092.41	4094.63	4090.87	4087.66	4090.07	4089.05	4090.23	4088.63	4090.40	4095.80
b	+56	-339	+72	+333	-121	-98	+73	-31	+36	-52	+57	+176

CAL YR 1998 b +234

WTR YR 1999 b +162

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11216200 NORTH FORK KINGS RIVER BELOW BALCH DIVERSION DAM, CA

LOCATION.—Lat 36°54'10", long 119°03'00", in NE 1/4 sec.8, T.12 S., R.27 E., Fresno County, Hydrologic Unit 18030010, on right bank 2.0 mi downstream from Balch Diversion Dam (Black Rock Reservoir), 400 ft upstream from Weir Creek, and 4 mi east of Balch Camp.

DRAINAGE AREA.—238 mi².

PERIOD OF RECORD.—October 1983 to current year.

GAGE.—Water-stage recorder and sharp-crested rectangular weir. Elevation of gage is 2,890 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100). Water diverted past station from Black Rock Reservoir through tunnel to Balch Powerplant (station 11216300) 1.7 mi downstream and returns to the North Fork Kings River at Balch Afterbay. Flow is again diverted from Balch Afterbay in a closed conduit to Kings River Powerplant. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,690 ft³/s, Jan.2, 1997, gage height, 10.54 ft, from rating curve extended above 827 ft³/s on basis of computation of spill over Balch Diversion Dam; minimum daily, 0.89 ft³/s, Oct. 21, 1984.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	9.5	9.5	6.7	9.1	11	9.8	9.5	7.1	5.7	5.8	5.8
2	9.1	9.3	12	6.9	9.2	10	9.7	9.4	8.1	5.6	5.8	5.8
3	9.0	9.3	10	6.9	10	10	9.9	10	9.9	5.8	5.9	5.9
4	9.1	9.4	9.6	6.8	9.5	9.8	9.8	9.6	8.3	6.3	5.9	5.8
5	9.2	9.6	12	5.8	9.3	10	9.8	9.4	7.9	6.0	5.8	5.8
6	9.2	9.7	10	5.5	9.2	9.9	12	9.3	7.8	6.2	5.8	5.8
7	9.2	9.6	9.9	5.7	9.0	11	14	9.0	7.1	6.3	5.9	5.9
8	9.2	9.9	10	5.9	8.9	11	13	9.2	6.9	6.3	5.9	5.8
9	9.2	14	10	6.1	8.6	9.9	12	8.9	6.5	6.2	6.0	5.9
10	9.2	10	9.9	6.2	17	9.2	12	8.7	6.3	6.3	5.9	5.9
11	9.3	11	9.7	6.4	32	9.3	13	8.7	6.6	6.5	5.9	5.9
12	9.2	11	9.7	6.5	31	9.1	12	8.8	6.7	6.5	5.9	6.0
13	9.1	10	9.7	6.6	26	11	12	8.7	6.8	6.6	5.8	6.1
14	9.2	9.7	11	6.3	17	9.8	12	8.1	6.7	6.4	5.8	6.1
15	9.3	9.7	11	6.1	15	9.5	94	8.1	6.4	6.3	5.9	5.9
16	9.4	9.7	7.2	6.0	15	9.3	16	8.3	6.5	6.1	5.8	5.7
17	9.1	9.7	6.8	5.7	13	9.0	11	7.9	6.2	6.0	5.6	7.3
18	9.1	11	6.8	6.5	12	9.1	10	7.6	6.1	6.0	5.7	10
19	9.2	9.9	7.0	6.8	11	9.3	10	7.7	5.9	6.0	5.7	9.8
20	9.3	9.7	6.9	6.5	12	9.9	9.7	7.4	5.8	6.0	5.8	9.7
21	9.3	9.7	6.9	6.8	11	9.6	9.9	8.0	5.9	5.9	5.7	9.7
22	9.2	9.8	7.4	13	11	9.4	10	8.3	6.0	6.0	5.8	9.9
23	9.1	9.7	7.4	32	10	9.1	9.8	8.2	6.0	5.9	5.8	9.5
24	9.1	9.7	7.4	13	12	9.4	9.7	8.3	6.1	6.0	5.9	11
25	9.9	9.8	7.1	9.7	12	9.4	9.6	8.2	6.1	6.0	5.9	11
26	9.7	9.5	7.0	17	11	9.3	9.6	7.9	5.9	5.9	5.9	12
27	9.6	9.6	6.9	23	10	14	9.7	7.2	5.7	5.9	5.8	12
28	9.6	9.7	7.1	15	10	11	9.9	6.9	5.5	5.9	5.8	12
29	9.7	11	7.2	12	---	10	9.7	7.2	5.6	5.9	5.8	12
30	9.9	10	6.9	10	---	10	9.7	6.9	5.6	5.9	5.9	12
31	9.7	---	6.8	9.7	---	10	---	6.9	---	5.9	5.8	---
TOTAL	288.6	300.2	266.8	287.1	370.8	308.3	409.3	258.3	198.0	188.3	180.7	242.0
MEAN	9.31	10.0	8.61	9.26	13.2	9.95	13.6	8.33	6.60	6.07	5.83	8.07
MAX	9.9	14	12	32	32	14	94	10	9.9	6.6	6.0	12
MIN	9.0	9.3	6.8	5.5	8.6	9.0	9.6	6.9	5.5	5.6	5.6	5.7
AC-FT	572	595	529	569	735	612	812	512	393	373	358	480
a	6350	4150	5090	1170	1660	2	0	3980	8240	6300	7150	7370

a Diversion, in acre-feet, to Balch Powerplant, provided by Pacific Gas and Electric Co.

11216200 NORTH FORK KINGS RIVER BELOW BALCH DIVERSION DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.35	8.35	7.47	35.9	36.6	54.0	89.3	194	337	159	7.34	6.43
MAX	9.31	26.4	23.5	440	201	441	541	1004	1792	1194	23.7	10.7
(WY)	1999	1984	1997	1997	1997	1986	1986	1995	1998	1998	1998	1998
MIN	3.48	3.54	3.18	3.16	4.69	4.61	3.59	3.25	2.84	3.10	3.14	3.06
(WY)	1988	1991	1987	1987	1985	1994	1987	1987	1987	1987	1987	1987

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1984 - 1999	
ANNUAL TOTAL	113584.0		3298.4			
ANNUAL MEAN	311		9.04		78.4	
HIGHEST ANNUAL MEAN					353	
LOWEST ANNUAL MEAN					3.97	
HIGHEST DAILY MEAN	4990	Jul 8	94	Apr 15	4990	Jul 8 1998
LOWEST DAILY MEAN	4.0	Jan 1	5.5	Jan 6	.89	Oct 21 1984
ANNUAL SEVEN-DAY MINIMUM	4.3	Jan 1	5.6	Jun 27	2.5	May 24 1984
INSTANTANEOUS PEAK FLOW			740		7690	
INSTANTANEOUS PEAK STAGE			3.81		10.54	
ANNUAL RUNOFF (AC-FT)	225300		6540		56830	
TOTAL DIVERSION (AC-FT) a	103400		51460		256000	
10 PERCENT EXCEEDS	1050		12		52	
50 PERCENT EXCEEDS	20		9.1		6.5	
90 PERCENT EXCEEDS	7.9		5.8		3.6	

a Diversion, in acre-feet, to Balch Powerplant, provided by Pacific Gas and Electric Co.

11216400 DINKEY CREEK SIPHON FISH RELEASE AT BALCH CAMP, CA

LOCATION.—Lat 36°54'29", long 119°07'27", in NW 1/4 NE 1/4 sec.10, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, in concrete vault on right bank of Dinkey Creek, 200 ft downstream from Dinkey Creek Siphon at invert of Kings River Powerplant Conduit, and 1,700 ft northwest of Balch Camp.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Ultrasonic flowmeter. Elevation of gage is 1,320 ft above sea level, from topographic map. Prior to August 1995, pressure-differential flowmeter at same site and datum.

REMARKS.—Water diverted from the North Fork Kings River is released into Dinkey Creek for fishery enhancement from June 1 to Sept. 30 when natural flow of Dinkey Creek is equal to or less than 60 ft³/s. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 25 ft³/s, several days in June and July 1997; no flow many days most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	6.0	6.2	.00	.00	.00	.00	.00	.00	.00	5.8	5.8
2	5.8	6.1	4.3	.00	.00	.00	.00	.00	.00	.00	5.7	5.7
3	5.8	5.9	.00	.00	.00	.00	.00	.00	.00	.00	5.7	5.7
4	5.8	5.9	.00	.00	.00	.00	.00	.00	.00	.00	5.7	5.8
5	5.8	5.9	.00	.00	.00	.00	.00	.00	.00	.00	5.7	5.7
6	5.8	5.9	.00	.00	.00	.00	.00	.00	.00	.00	5.7	5.8
7	6.0	5.8	.00	.00	.00	.00	.00	.00	.00	6.7	5.7	5.6
8	6.1	5.7	.00	.00	.00	.00	.00	.00	.00	7.5	5.7	6.0
9	6.1	5.8	.00	.00	.00	.00	.00	.00	.00	5.7	5.7	6.8
10	6.0	6.0	.00	.00	.00	.00	.00	.00	.00	5.7	5.7	6.9
11	6.0	5.9	.00	.00	.00	.00	.00	.00	.00	5.8	5.6	6.9
12	5.8	5.8	.00	.00	.00	.00	.00	.00	.00	5.6	5.5	6.8
13	5.9	5.9	.00	.00	.00	.00	.00	.00	.00	5.7	5.5	6.8
14	5.9	5.8	.00	.00	.00	.00	.00	.00	.00	5.7	5.7	6.8
15	5.9	5.8	.00	.00	.00	.00	.00	.00	.00	5.7	5.6	6.8
16	5.9	6.0	.00	.00	.00	.00	.00	.00	.00	5.7	5.7	6.9
17	5.9	5.9	.00	.00	.00	.00	.00	.00	.00	5.6	5.6	6.9
18	6.0	5.8	.00	.00	.00	.00	.00	.00	.00	5.7	5.6	7.0
19	6.0	5.8	.00	.00	.00	.00	.00	.00	.00	5.7	5.6	7.0
20	6.0	5.9	.00	.00	.00	.00	.00	.00	.00	5.7	5.7	6.8
21	5.8	5.9	.00	.00	.00	.00	.00	.00	.00	5.8	5.7	6.8
22	5.9	5.9	.00	.00	.00	.00	.00	.00	.00	5.8	5.6	6.8
23	6.0	5.8	.00	.00	.00	.00	.00	.00	.00	5.8	5.5	6.8
24	5.9	5.8	.00	.00	.00	.00	.00	.00	.00	5.8	5.6	6.8
25	6.0	5.8	.00	.00	.00	.00	.00	.00	.00	5.8	5.6	6.9
26	6.0	5.9	.00	.00	.00	.00	.00	.00	.00	5.7	5.7	6.9
27	6.0	6.1	.00	.00	.00	.00	.00	.00	.00	5.7	5.7	6.8
28	6.0	6.2	.00	.00	.00	.00	.00	.00	.00	5.7	5.6	8.6
29	6.0	6.2	.00	.00	---	.00	.00	.00	.00	5.7	5.6	11
30	6.0	6.2	.00	.00	---	.00	.00	.00	.00	5.7	5.7	13
31	6.0	---	.00	.00	---	.00	---	.00	---	5.8	5.8	---
TOTAL	183.9	177.4	10.50	0.00	0.00	0.00	0.00	0.00	0.00	145.80	175.3	208.9
MEAN	5.93	5.91	.34	.000	.000	.000	.000	.000	.000	4.70	5.65	6.96
MAX	6.1	6.2	6.2	.00	.00	.00	.00	.00	.00	7.5	5.8	13
MIN	5.8	5.7	.00	.00	.00	.00	.00	.00	.00	.00	5.5	5.6
AC-FT	365	352	21	.00	.00	.00	.00	.00	.00	289	348	414

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	5.89	1.78	.43	.14	.11	.000	.000	.000	2.10	6.13	7.83	8.99	
MAX	14.4	7.09	3.20	1.71	1.41	.000	.000	.000	5.63	16.6	14.4	15.0	
(WY)	1991	1991	1991	1990	1991	1987	1987	1987	1992	1997	1994	1992	
MIN	.15	.000	.000	.000	.000	.000	.000	.000	.000	.000	1.09	5.33	
(WY)	1996	1987	1987	1987	1987	1987	1987	1987	1991	1993	1998	1987	

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	572.30		901.80			
ANNUAL MEAN	1.57		2.47		2.80	
HIGHEST ANNUAL MEAN					4.76	
LOWEST ANNUAL MEAN					.73	
HIGHEST DAILY MEAN	6.2	Nov 28	13	Sep 30	25	Jun 28 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Dec 3	.00	Oct 3 1986
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Dec 3	.00	Oct 3 1986
ANNUAL RUNOFF (AC-FT)	1140		1790		2030	
10 PERCENT EXCEEDS	5.9		6.0		10	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

11216500 NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CA

LOCATION.—Lat 36°54'12", long 119°07'14", in SE 1/4 NE 1/4 sec.10, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 12 ft downstream from bridge at Balch Camp, 300 ft upstream from Dinkey Creek, and 9.3 mi east of Trimmer.

DRAINAGE AREA.—250 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.

WATER TEMPERATURE: Water years 1968–79.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder and Cippoletti weir since May 9, 1988. Concrete control Apr. 15, 1966, to May 9, 1988. Elevation of gage is 1,240 ft above sea level, from river-profile map. October 1919 to Sept. 30, 1930, and Mar. 24, 1960, to Apr. 14, 1966, at site 100 ft downstream at different datum.

REMARKS.—Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100); Balch Afterbay, capacity, 318 acre-ft; and Haas and Balch Powerplants. Water is diverted from Balch Afterbay to Kings River Powerplant, beginning Mar. 1, 1962. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD (prior to regulation by Wishon and Courtright Reservoirs).—Maximum discharge, 6,080 ft³/s, June 4, 1922, gage height, 12.18 ft, site and datum then in use; minimum, 4.0 ft³/s, Aug. 29 to Sept. 1, 1924. From 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	18	16	12	90	94	97	18	18	18	18	19
2	17	18	15	12	100	255	242	18	18	18	18	19
3	16	18	12	15	168	149	93	18	18	18	18	19
4	16	17	13	110	50	140	84	18	18	18	18	19
5	17	18	13	21	86	171	143	18	18	18	18	19
6	16	17	13	18	193	174	129	18	18	18	18	19
7	16	18	13	17	239	201	50	18	18	18	18	18
8	16	18	12	17	454	345	137	18	18	18	18	18
9	17	18	13	17	428	166	19	18	18	18	18	19
10	17	18	13	17	273	132	19	18	18	18	18	19
11	17	18	13	264	241	201	19	18	19	18	e17	19
12	17	18	13	46	198	197	19	18	18	17	e22	18
13	16	18	12	177	102	246	19	18	18	18	e21	18
14	17	18	13	18	129	221	79	18	18	18	23	18
15	17	18	12	17	201	218	19	18	18	18	22	18
16	17	18	12	17	314	164	18	18	18	18	21	18
17	17	18	12	96	281	111	18	18	18	18	21	18
18	17	18	13	18	249	241	18	18	18	18	21	18
19	17	18	13	110	170	129	18	18	19	18	21	18
20	17	17	13	273	153	111	18	17	18	18	19	18
21	17	17	516	183	83	102	18	18	18	18	18	18
22	17	18	14	108	202	150	18	18	18	18	18	19
23	17	19	13	132	181	200	18	18	18	18	18	18
24	17	21	13	254	305	312	18	18	17	18	18	18
25	17	21	13	149	111	421	18	18	18	18	18	18
26	17	20	13	128	100	95	18	18	18	18	19	18
27	17	19	13	115	122	282	18	18	18	18	19	18
28	17	18	13	120	84	176	18	18	18	18	18	18
29	18	17	12	90	---	468	18	18	18	18	18	18
30	18	17	13	19	---	493	18	18	18	18	18	17
31	18	---	12	65	---	398	---	18	---	18	19	---
TOTAL	524	544	904	2655	5307	6763	1438	557	541	557	589	549
MEAN	16.9	18.1	29.2	85.6	190	218	47.9	18.0	18.0	18.0	19.0	18.3
MAX	18	21	516	273	454	493	242	18	19	18	23	19
MIN	16	17	12	12	50	94	18	17	17	17	17	17
AC-FT	1040	1080	1790	5270	10530	13410	2850	1100	1070	1100	1170	1090

e Estimated.

11216500 NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1930, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.2	69.3	65.4	66.4	132	280	779	1877	1136	164	29.0	15.3
MAX	52.1	225	130	111	397	498	1434	3040	3200	472	73.8	41.2
(WY)	1921	1928	1923	1923	1927	1921	1926	1922	1922	1922	1922	1923
MIN	10.0	11.2	18.7	24.1	42.2	54.6	389	552	42.2	9.50	5.40	5.09
(WY)	1922	1922	1930	1926	1924	1924	1924	1924	1924	1924	1924	1924

SUMMARY STATISTICS

WATER YEARS 1920 - 1930

ANNUAL MEAN	387
HIGHEST ANNUAL MEAN	646 1922
LOWEST ANNUAL MEAN	102 1924
HIGHEST DAILY MEAN	4890 Jun 4 1922
LOWEST DAILY MEAN	4.0 Aug 29 1924
ANNUAL SEVEN-DAY MINIMUM	4.2 Aug 28 1924
INSTANTANEOUS PEAK FLOW	6080 Jun 4 1922
INSTANTANEOUS PEAK STAGE	12.18 Jun 4 1922
ANNUAL RUNOFF (AC-FT)	280500
10 PERCENT EXCEEDS	1300
50 PERCENT EXCEEDS	74
90 PERCENT EXCEEDS	11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

	1960	1962	1967	1977	1964	1971	1971	1977	1977	1968	1976	1964
MEAN	17.7	20.2	26.6	58.2	51.8	45.5	69.8	222	325	177	46.3	28.3
MAX	60.5	92.3	332	499	239	405	490	1838	2042	1176	822	331
(WY)	1962	1962	1967	1997	1962	1986	1986	1969	1983	1967	1960	1960
MIN	5.80	5.42	5.87	8.07	7.32	7.29	7.18	4.54	6.81	7.34	8.86	8.72
(WY)	1978	1978	1978	1977	1964	1971	1971	1977	1977	1968	1976	1964

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1960 - 1999

ANNUAL TOTAL	67048	20928	
ANNUAL MEAN	184	57.3	87.7
HIGHEST ANNUAL MEAN			406 1983
LOWEST ANNUAL MEAN			8.47 1977
HIGHEST DAILY MEAN	3450 Jul 8	516 Dec 21	7680 Dec 6 1966
LOWEST DAILY MEAN	12 Dec 3	12 Dec 3	.30 Nov 3 1964
ANNUAL SEVEN-DAY MINIMUM	12 Dec 11	12 Dec 11	4.3 May 30 1977
INSTANTANEOUS PEAK FLOW		919 Feb 20	14000 Feb 1 1963
INSTANTANEOUS PEAK STAGE		3.31 Feb 20	13.24 Feb 1 1963
ANNUAL RUNOFF (AC-FT)	133000	41510	63570
10 PERCENT EXCEEDS	479	179	201
50 PERCENT EXCEEDS	21	18	16
90 PERCENT EXCEEDS	16	16	8.4

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 sea level, from river-profile map.

REMARKS.—Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100); Balch Afterbay, capacity, 318 acre-ft; and Haas and Balch Powerplants. Water is diverted from Balch Afterbay to Kings River Powerplant (station 11218700), beginning Mar. 1, 1962. Some water diverted from Balch Afterbay returns upstream from station at a release to Dinkey Creek. See schematic diagram of Kings River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 27,400 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	61	214	70	191	285	325	413	427	86	49	40
2	64	59	137	67	166	491	448	490	392	82	49	40
3	62	59	108	68	303	376	324	409	412	79	48	40
4	61	57	108	161	168	407	248	359	360	76	48	40
5	61	57	92	82	177	386	314	433	425	74	47	39
6	59	57	85	69	268	361	356	713	450	71	47	39
7	58	58	74	68	510	376	248	847	361	72	48	38
8	56	118	81	66	1050	497	330	853	321	72	49	36
9	56	86	76	64	1050	337	181	782	304	68	48	38
10	56	76	74	65	668	295	191	721	287	67	47	38
11	56	83	75	330	540	356	196	814	286	67	47	38
12	56	80	75	112	449	351	183	959	276	77	47	37
13	54	79	76	239	319	406	234	923	262	93	53	37
14	54	78	80	78	298	389	446	762	250	155	52	37
15	55	78	76	65	381	380	500	654	234	86	51	36
16	56	76	75	80	486	321	573	601	218	75	49	36
17	56	80	76	168	520	296	595	677	199	69	48	36
18	55	78	78	90	496	468	601	720	181	65	47	37
19	54	71	76	200	380	346	681	691	172	63	47	37
20	54	67	72	581	364	281	750	704	159	61	45	37
21	53	67	603	367	280	279	741	697	145	60	41	37
22	52	68	75	241	256	321	665	678	138	59	40	38
23	52	75	68	259	341	441	450	714	127	58	39	53
24	53	97	68	535	478	512	409	757	120	56	39	49
25	65	93	70	348	298	652	398	764	116	56	38	43
26	61	82	70	301	270	330	505	804	110	55	40	40
27	60	75	71	220	284	539	667	733	104	53	41	39
28	58	85	69	233	270	471	542	668	98	52	41	40
29	60	90	68	224	---	757	401	582	93	51	40	42
30	71	164	69	132	---	794	371	475	89	50	39	41
31	65	---	70	175	---	686	---	446	---	50	39	---
TOTAL	1800	2354	3109	5758	11261	13187	12873	20843	7116	2158	1403	1178
MEAN	58.1	78.5	100	186	402	425	429	672	237	69.6	45.3	39.3
MAX	71	164	603	581	1050	794	750	959	450	155	53	53
MIN	52	57	68	64	166	279	181	359	89	50	38	36
AC-FT	3570	4670	6170	11420	22340	26160	25530	41340	14110	4280	2780	2340

11218400 NORTH FORK KINGS RIVER BELOW DINKEY CREEK, NEAR BALCH CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	49.3	89.0	140	248	289	368	618	1038	890	323	61.4	49.6
MAX	288	347	920	1492	1269	1329	2163	4253	4210	1894	422	233
(WY)	1983	1984	1967	1997	1986	1986	1982	1969	1983	1983	1961	1978
MIN	10.6	17.6	19.3	26.3	30.0	48.1	111	129	47.3	21.9	16.2	14.1
(WY)	1978	1978	1977	1991	1991	1977	1977	1977	1976	1976	1968	1968

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	235836		83040			
ANNUAL MEAN	646		228		347	
HIGHEST ANNUAL MEAN					1045	
LOWEST ANNUAL MEAN					49.2	
HIGHEST DAILY MEAN	4710	Jul 8	1050	Feb 8	14900	Dec 6 1966
LOWEST DAILY MEAN	52	Oct 22	36	Sep 8	6.4	Oct 3 1977
ANNUAL SEVEN-DAY MINIMUM	53	Oct 18	37	Sep 12	9.6	Oct 2 1977
INSTANTANEOUS PEAK FLOW			2050		27400	
INSTANTANEOUS PEAK STAGE			6.77		19.20	
ANNUAL RUNOFF (AC-FT)	467800		164700		251100	
10 PERCENT EXCEEDS	1950		601		871	
50 PERCENT EXCEEDS	246		86		97	
90 PERCENT EXCEEDS	60		41		29	

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 sea level. Aug. 2, 1959, to Jan. 11, 1985, at site on right bank at datum 2.00 ft higher. Prior to Aug. 2, 1959, at site 100 ft downstream on right bank at datum 2.00 ft higher.

REMARKS.—Records fair. Minor diversion for irrigation and stock ponds.

EXTREMES FOR PERIOD OF RECORD (SINCE 1950).—Maximum discharge, 5,700 ft³/s, Mar. 10, 1995, gage height, 12.77 ft, present datum, in gage well, 13.41 ft from floodmarks, from rating curve extended above 3,000 ft³/s on basis of slope-area measurement at gage height 12.77 ft; maximum gage height, 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, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 23	0730	31	4.41

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.4	2.7	1.0	4.2	2.6	2.8	1.9	.69	.04	.00	.00
2	1.5	1.4	2.6	1.0	3.7	2.5	2.7	1.9	.82	.04	.00	.00
3	1.5	1.5	2.4	1.0	3.4	2.4	2.7	2.0	.90	.04	.00	.00
4	1.4	1.5	2.6	1.0	3.2	2.4	2.9	1.9	.97	.05	.00	.00
5	1.4	1.5	2.6	1.0	3.1	2.4	2.8	1.8	.89	.04	.00	.00
6	1.3	1.4	2.5	1.0	2.9	2.4	3.3	1.9	.76	.04	.00	.00
7	1.2	1.5	2.4	1.0	2.9	2.4	4.3	1.7	.70	.04	.00	.00
8	1.2	1.7	2.3	1.0	2.9	2.4	4.1	1.7	.70	.04	.00	.00
9	1.3	1.7	2.2	1.1	6.3	2.9	4.3	1.7	.67	.04	.00	.00
10	1.3	1.8	2.2	1.2	12	2.9	3.7	1.6	.65	.04	.00	.00
11	1.3	2.4	2.0	1.2	7.1	2.8	6.0	1.4	.59	.04	.00	.00
12	1.3	2.0	1.9	1.2	5.4	2.5	15	1.3	.55	.04	.00	.00
13	1.3	1.9	1.8	1.2	4.6	2.3	8.4	1.3	.50	.03	.00	.00
14	1.3	1.8	1.8	1.3	4.0	2.2	5.6	1.4	.54	.03	.00	.00
15	1.3	1.7	1.9	1.3	3.7	2.5	4.3	1.4	.50	.03	.00	.00
16	1.3	1.7	2.0	1.3	3.5	2.7	3.6	1.3	.46	.03	.00	.00
17	1.3	1.7	2.0	1.3	3.5	2.5	3.2	1.2	.44	.03	.00	.00
18	1.3	1.7	1.9	1.5	3.2	2.2	2.9	1.2	.37	.02	.00	.00
19	1.3	1.9	2.0	1.6	3.1	2.3	2.7	1.1	.31	.02	.00	.00
20	1.3	1.9	2.0	2.0	3.1	5.3	2.6	1.1	.28	.02	.00	.00
21	1.2	1.8	2.0	2.2	3.1	6.8	2.4	1.0	.23	.02	.00	.00
22	1.2	1.7	1.7	2.2	3.0	5.9	2.3	.98	.19	.02	.00	.00
23	1.2	1.7	1.5	2.3	2.9	4.6	2.3	.90	.13	.02	.00	3.9
24	1.4	1.7	1.3	2.9	3.0	4.2	2.2	.90	.10	.02	.00	.80
25	1.6	1.7	1.3	3.3	2.9	4.7	2.0	.85	.09	.02	.00	.33
26	1.5	1.7	1.3	3.5	2.9	4.4	2.0	.77	.09	.01	.00	.19
27	1.5	1.7	1.2	3.5	2.8	3.6	1.9	.71	.08	.01	.00	.12
28	1.5	2.1	1.2	3.4	2.7	3.2	2.1	.67	.07	.01	.00	.10
29	1.5	2.2	1.0	3.2	---	2.9	2.1	.61	.07	.01	.00	.09
30	1.5	2.2	1.0	3.1	---	2.7	2.0	.67	.06	.01	.00	.07
31	1.4	---	1.0	4.6	---	2.7	---	.67	---	.00	.00	---
TOTAL	42.1	52.6	58.3	58.4	109.1	98.3	109.2	39.53	13.40	0.85	0.00	5.60
MEAN	1.36	1.75	1.88	1.88	3.90	3.17	3.64	1.28	.45	.027	.000	.19
MAX	1.6	2.4	2.7	4.6	12	6.8	15	2.0	.97	.05	.00	3.9
MIN	1.2	1.4	1.0	1.0	2.7	2.2	1.9	.61	.06	.00	.00	.00
AC-FT	84	104	116	116	216	195	217	78	27	1.7	.00	11

11224500 LOS GATOS CREEK ABOVE NUNEZ CANYON, NEAR COALINGA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.29	.95	3.78	14.0	25.0	21.1	9.34	3.31	1.15	.31	.11	.26
MAX	7.18	18.2	36.3	139	287	236	160	43.0	16.4	5.71	2.92	8.33
(WY)	1946	1966	1967	1969	1978	1995	1958	1998	1983	1983	1983	1976
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1947	1948	1948	1948	1948	1961	1949	1948	1948	1947	1945	1945

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1945 - 1999	
ANNUAL TOTAL	9403.03		587.38			
ANNUAL MEAN	25.8		1.61		6.54	
HIGHEST ANNUAL MEAN					48.5	
LOWEST ANNUAL MEAN					.000	
HIGHEST DAILY MEAN	586	Feb 7	15	Apr 12	2940	Mar 10 1995
LOWEST DAILY MEAN	.84	Jan 1	.00	Jul 31	.00	Jul 5 1945
ANNUAL SEVEN-DAY MINIMUM	1.1	Jan 1	.00	Jul 31	.00	Jul 5 1945
INSTANTANEOUS PEAK FLOW			31		5700	
INSTANTANEOUS PEAK STAGE			4.41		13.95	
ANNUAL RUNOFF (AC-FT)	18650		1170		4740	
10 PERCENT EXCEEDS	65		3.3		7.0	
50 PERCENT EXCEEDS	4.0		1.4		.01	
90 PERCENT EXCEEDS	1.3		.00		.00	

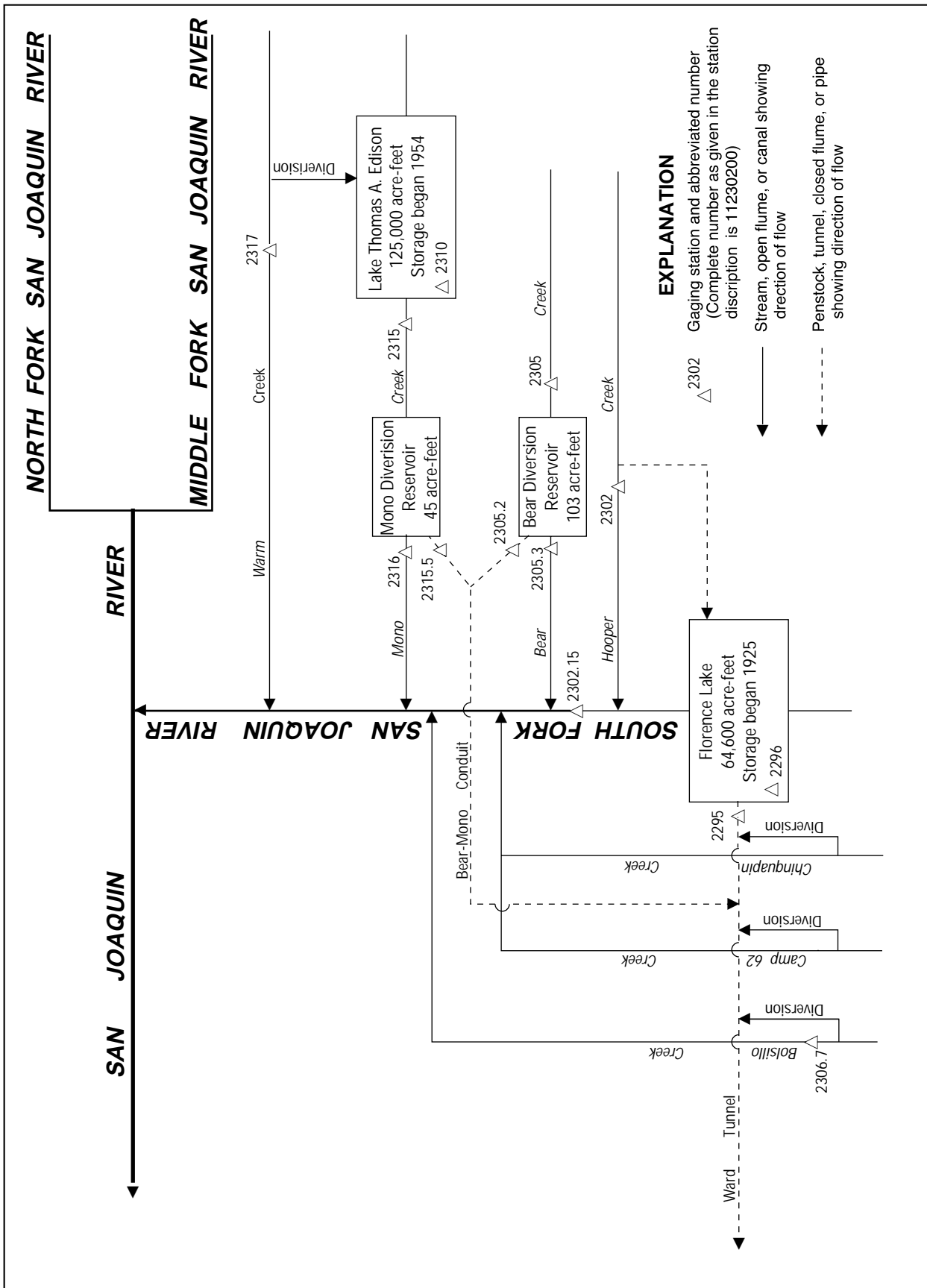


Figure 27. Diversions and storage in upper San Joaquin River Basin.

11229500 WARD TUNNEL INTAKE AT FLORENCE LAKE, CA

LOCATION.—Lat 37°16'20", long 118°58'17", unsurveyed, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse at entrance of tunnel, 0.4 mi south of left abutment of Florence Lake Dam, and 16 mi northeast of town of Big Creek.

PERIOD OF RECORD.—April 1925 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as Florence Lake Tunnel at Intake 1925–36 and as Ward Tunnel at Intake 1937–60.

REVISED RECORDS.—WSP 1515: 1931.

GAGE.—Water-stage recorder, concrete control, and Venturi meter. Datum of gage is 7,213.89 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Ward Tunnel diverts from Florence Lake (station 11229600), a reservoir on South Fork San Joaquin River, to Huntington Lake (station 11236000) via Portal Powerplant (station 11235500). Water used again in Big Creek powerplants. See schematic diagram of upper San Joaquin River Basin.

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e716	29	46	14	43	70	75	178	2.9	789	451	510
2	e741	26	44	13	43	77	70	217	2.9	762	451	507
3	e730	22	43	12	45	81	67	196	50	762	449	500
4	e703	23	39	12	49	86	61	170	250	763	446	492
5	e679	20	35	12	45	77	62	190	250	763	447	486
6	e656	16	35	12	39	66	63	342	252	763	445	478
7	e629	15	35	11	46	56	64	438	433	629	444	470
8	593	18	34	11	70	49	60	486	773	486	441	467
9	547	20	34	10	71	48	62	514	775	487	438	507
10	490	23	34	11	52	45	65	524	850	471	435	440
11	409	32	33	11	60	49	66	546	977	312	526	433
12	147	32	33	10	85	44	62	592	975	312	603	427
13	62	36	33	10	89	50	76	e644	973	312	601	422
14	44	39	33	10	83	55	117	696	972	405	600	486
15	38	36	33	10	69	54	162	699	971	627	551	562
16	36	36	32	12	63	51	198	693	969	627	409	344
17	30	36	30	14	64	54	231	697	1030	625	584	116
18	27	28	29	18	69	66	239	721	1120	622	583	116
19	25	25	29	25	62	78	304	746	1120	618	579	117
20	22	26	28	31	55	73	364	771	1120	617	575	103
21	21	28	24	32	56	63	395	797	1160	468	571	64
22	22	29	18	36	53	60	397	822	1200	346	565	65
23	21	28	13	45	59	67	302	851	1200	343	560	65
24	23	26	17	45	59	76	225	461	840	342	557	64
25	24	26	17	48	60	90	196	2.3	534	340	557	64
26	29	25	19	54	57	106	245	2.3	534	400	662	64
27	31	24	19	47	56	124	320	2.5	536	453	755	65
28	30	27	18	49	63	110	304	2.6	487	455	748	64
29	28	36	16	52	---	104	227	2.7	421	456	742	65
30	29	43	15	50	---	98	189	2.8	620	456	735	65
31	28	---	15	49	---	89	---	2.8	---	454	649	---
TOTAL	7610	830	883	776	1665	2216	5268	13009.0	21397.8	16265	17159	8628
MEAN	245	27.7	28.5	25.0	59.5	71.5	176	420	713	525	554	288
MAX	741	43	46	54	89	124	397	851	1200	789	755	562
MIN	21	15	13	10	39	44	60	2.3	2.9	312	409	64
AC-FT	15090	1650	1750	1540	3300	4400	10450	25800	42440	32260	34030	17110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1999, BY WATER YEAR (WY)

MEAN	237	129	108	77.9	76.9	113	273	465	556	542	430	349
MAX	634	745	1064	546	240	297	588	949	1161	1199	856	897
(WY)	1996	1938	1946	1939	1986	1986	1997	1974	1974	1967	1995	1998
MIN	.000	.47	3.04	2.13	.64	22.5	35.4	.85	1.49	90.1	48.3	1.50
(WY)	1946	1965	1991	1991	1991	1977	1991	1939	1938	1931	1977	1949

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1925 - 1999	
ANNUAL TOTAL	134521.5		95706.8			
ANNUAL MEAN	369		262		282	
HIGHEST ANNUAL MEAN					460	
LOWEST ANNUAL MEAN					98.1	
HIGHEST DAILY MEAN	1420	Aug 14	1200	Jun 22	1990	Apr 30 1926
LOWEST DAILY MEAN	1.5	Jun 2	2.3	May 25	.00	Oct 7 1925
ANNUAL SEVEN-DAY MINIMUM	2.0	Jun 2	2.6	May 25	.00	Nov 5 1925
ANNUAL RUNOFF (AC-FT)	266800		189800		204200	
10 PERCENT EXCEEDS	999		708		677	
50 PERCENT EXCEEDS	129		70		164	
90 PERCENT EXCEEDS	23		18		12	

e Estimated.

11229600 FLORENCE LAKE NEAR BIG CREEK, CA

LOCATION.—Lat 37°16'20", long 118°58'17", unsurveyed, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of Ward Tunnel intake, 0.3 mi west of dam on South Fork San Joaquin River, and 16 mi northeast of town of Big Creek.

DRAINAGE AREA.—171 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 sea level (levels by Southern California Edison Co.).

REMARKS.—Lake is formed by multiple-arch concrete dam; storage began in April 1925. Usable capacity, 64,406 acre-ft between elevations 7,220.94 ft, throat of Venturi tube in Ward Tunnel intake (station 11229500), and 7,327.50 ft, top of spillway drum gates. Additional storage of 168 acre-ft is not available for diversion. Water is diverted through Ward Tunnel to Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) and used for further power development in Big Creek powerplants. Records, including extremes, represent contents at 2400 hours. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. 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, 64,089 acre-ft, July 1, elevation, 7,327.17 ft; minimum, 1,059 acre-ft, Jan. 14, elevation, 7,231.10.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Aug. 26, 1926)

7,220.94	0	7,240	2,976	7,270	17,755
7,222	63	7,245	4,66	7,280	24,588
7,225	281	7,250	6,648	7,290	31,966
7,230	887	7,255	8,950	7,310	48,284
7,235	1,774	7,260	11,608	7,330	66,826

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12371	e1115	e1136	e1068	e1141	e1183	e1185	1312	44088	64089	54354	24617
2	10927	e1091	e1137	e1068	e1141	e1188	e1178	1293	45830	63992	53696	23774
3	9517	e1098	e1139	e1066	e1147	e1197	e1166	1280	46706	63666	53052	23001
4	8155	e1085	e1127	e1064	e1147	e1193	e1170	1370	47423	63187	52410	22165
5	6856	e1076	e1127	e1064	e1137	e1178	e1166	1631	48154	62643	51736	21124
6	5669	e1064	e1125	e1062	e1129	e1164	e1170	2037	48810	62386	51047	20417
7	4415	e1074	e1125	e1062	e1178	e1154	e1168	2442	49081	62433	50335	19475
8	3229	e1081	e1125	e1061	e1178	e1147	e1166	2704	49186	62481	49601	18636
9	2259	e1090	e1125	e1061	e1164	e1142	e1176	2939	49919	62548	48888	17807
10	1471	e1115	e1124	e1061	e1151	e1154	e1175	3824	50629	62815	48006	17011
11	1375	e1125	e1124	e1061	e1183	e1147	e1166	5012	51889	63024	46947	16223
12	1282	e1129	e1122	e1061	e1202	e1147	e1176	5922	52086	63274	45882	15496
13	e1151	e1130	e1125	e1061	e1198	e1154	e1209	6057	53224	63695	44807	14778
14	e1134	e1132	e1124	e1059	e1188	e1158	1287	6061	54445	63772	43810	14525
15	e1129	e1129	e1122	e1061	e1171	e1154	1321	6061	55446	63580	43105	13753
16	e1124	e1127	e1120	e1066	e1163	e1151	1330	6438	56211	63139	42039	13261
17	e1110	e1125	e1117	e1074	e1178	e1163	1382	7184	57016	62586	40981	13010
18	e1102	e1112	e1117	e1088	e1171	e1183	1443	7957	57917	61938	39933	12772
19	e1096	e1108	e1112	e1110	e1163	e1185	1518	8945	58683	61217	38902	12560
20	e1088	e1112	e1108	e1122	e1156	e1175	1586	10023	58926	60725	37872	12207
21	e1091	e1119	e1098	e1124	e1156	e1164	1492	11269	58851	60394	36875	11844
22	e1088	e1112	e1071	e1137	e1166	e1166	1357	12637	58889	60026	35885	11536
23	e1088	e1112	e1068	e1142	e1159	e1178	1310	14940	59631	59650	34912	11319
24	e1102	e1103	e1076	e1141	e1163	e1195	1328	18331	60810	59245	33953	11297
25	e1105	e1105	e1081	e1154	e1161	e1209	1393	21826	61606	58730	32832	11247
26	e1120	e1100	e1085	e1149	e1159	e1239	1428	25145	62186	58094	31586	11174
27	e1119	e1102	e1083	e1151	e1163	e1234	1359	28687	62815	57452	30292	11096
28	e1112	e1122	e1078	e1154	e1175	e1219	1309	32135	63599	56812	29327	11003
29	e1119	e1136	e1074	e1154	---	e1216	1282	35201	63983	56192	28044	10938
30	e1117	e1142	e1071	e1149	---	e1205	1309	38297	64012	55602	26755	10807
31	e1110	---	e1071	e1142	---	e1193	---	41385	---	54987	25518	---
MAX	12371	1142	1139	1154	1202	1239	1586	41385	64012	64089	54354	24617
MIN	1088	1064	1068	1059	1129	1142	1166	1280	44088	54987	25518	10807
a	7231.40	7231.59	7231.17	7231.59	7231.78	7231.89	7232.54	7301.87	7327.09	7317.48	7281.30	7258.55
b	-12740	+32	-71	+71	+33	+18	+116	+40076	+22627	-9025	-29469	-14711

CAL YR 1998 b -49

WTR YR 1999 b -3043

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

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

LOCATION.—Lat 37°18'21", long 118°56'59", unsurveyed, T.7 S., R.28 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 300 ft downstream from diversion dam, 0.7 mi upstream from mouth, 2.5 mi north of Florence Lake, and 17.6 mi northeast of town of Big Creek.

DRAINAGE AREA.—7.22 mi².

PERIOD OF RECORD.—October 1986 to current year. Prior to October 1991, published as Hooper Creek at diversion dam near Florence Lake.

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 7,440 ft above sea level, from topographic map.

REMARKS.—Flow regulated by diversion dam 300 ft upstream. Most of the water is diverted at the diversion dam to Florence Lake (station 11229600). See schematic diagram of upper San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 112 ft³/s, July 17, 1995; minimum daily, 1.2 ft³/s, Apr. 25, 1989.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	4.8	4.4	3.1	3.0	3.1	3.4	7.3	7.7	7.3	3.7	2.4
2	3.9	4.8	4.3	3.1	3.1	3.3	3.6	7.5	7.8	7.4	3.7	2.4
3	4.0	4.8	4.2	3.1	3.2	3.4	3.4	7.3	7.7	7.3	3.9	2.5
4	4.0	4.7	e4.1	3.1	3.0	3.4	3.6	7.2	7.5	7.4	3.6	2.5
5	4.0	4.6	e4.0	3.1	2.9	2.9	3.3	7.6	7.4	7.3	3.6	2.4
6	4.0	4.5	e3.9	3.0	2.9	2.8	3.4	8.9	7.9	7.2	3.6	2.4
7	4.1	4.8	e3.8	3.0	3.4	3.0	3.4	8.6	7.9	7.3	3.7	2.4
8	4.1	4.8	e3.7	3.0	3.3	2.9	3.2	9.0	7.9	7.3	3.7	2.4
9	4.1	4.6	e3.7	2.9	3.1	3.0	3.6	9.7	7.9	7.3	3.7	2.6
10	4.1	4.4	e3.6	3.0	e3.0	3.2	3.3	9.8	7.8	7.3	3.7	2.9
11	4.1	4.4	3.6	2.9	e2.8	3.0	e3.5	9.9	7.8	7.3	3.7	2.8
12	4.1	5.0	3.6	2.9	2.7	3.1	e4.0	8.8	7.7	7.3	3.7	2.7
13	4.2	5.0	3.6	2.9	2.7	3.1	e4.4	6.4	8.0	7.3	3.6	2.6
14	4.2	5.0	3.6	2.9	2.7	3.1	4.7	6.4	8.0	5.5	3.6	2.6
15	4.2	4.8	3.5	3.0	2.7	3.0	5.2	6.5	7.9	3.8	3.6	2.5
16	4.3	4.6	3.5	3.0	2.8	3.1	e5.4	6.5	7.9	3.8	3.6	2.5
17	4.9	4.5	3.5	3.2	2.9	3.2	e5.8	8.9	7.8	3.8	3.5	3.0
18	5.3	4.3	3.5	3.1	2.9	3.4	6.3	9.7	7.8	3.8	3.5	3.1
19	5.1	4.3	3.3	3.2	2.8	3.4	7.4	11	7.8	3.8	3.5	3.0
20	5.1	4.3	e3.3	3.2	2.8	3.4	8.1	11	7.8	3.8	3.5	2.8
21	5.1	4.4	e3.3	3.1	2.8	3.3	e8.5	11	7.7	3.7	3.4	2.8
22	5.1	4.4	e3.3	3.2	2.9	3.4	e8.3	11	7.7	3.7	3.5	7.9
23	5.0	4.3	e3.3	3.1	2.9	3.5	8.1	11	7.6	3.7	3.5	9.1
24	5.1	4.3	3.3	3.2	2.9	3.5	7.7	11	7.6	3.7	3.4	7.8
25	5.1	4.2	3.3	3.3	2.9	3.7	7.8	9.8	7.6	3.7	3.6	5.9
26	5.1	4.1	3.3	3.2	2.9	4.0	8.3	7.2	7.5	3.7	3.3	5.0
27	5.0	4.1	3.3	e3.1	3.0	4.0	8.6	6.9	7.4	3.7	2.5	4.5
28	4.9	4.4	3.2	3.1	3.0	3.9	8.1	7.0	7.4	3.7	2.5	4.1
29	5.1	4.5	3.2	3.1	---	3.9	7.6	7.0	7.4	3.7	2.5	3.9
30	5.0	4.4	3.2	3.1	---	3.9	7.5	8.0	7.3	3.7	2.5	3.7
31	4.8	---	3.2	3.0	---	3.5	---	7.8	---	3.7	2.5	---
TOTAL	141.1	136.1	110.6	95.2	82.0	103.4	169.5	265.7	231.2	164.0	105.9	107.2
MEAN	4.55	4.54	3.57	3.07	2.93	3.34	5.65	8.57	7.71	5.29	3.42	3.57
MAX	5.3	5.0	4.4	3.3	3.4	4.0	8.6	11	8.0	7.4	3.9	9.1
MIN	3.9	4.1	3.2	2.9	2.7	2.8	3.2	6.4	7.3	3.7	2.5	2.4
AC-FT	280	270	219	189	163	205	336	527	459	325	210	213

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	2.79	2.66	2.47	2.91	2.72	3.84	6.69	10.7	15.2	14.3	5.13	2.90	
MAX	4.75	4.54	3.57	10.2	5.14	8.03	18.8	60.9	45.7	68.3	18.8	4.76	
(WY)	1996	1999	1999	1997	1997	1997	1997	1997	1998	1995	1995	1998	
MIN	1.68	1.82	1.59	1.55	1.55	2.10	3.07	2.50	2.46	2.66	2.32	1.91	
(WY)	1991	1991	1989	1991	1991	1990	1996	1991	1989	1989	1989	1990	

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	4889.5		1711.9			
ANNUAL MEAN	13.4		4.69		6.03	
HIGHEST ANNUAL MEAN					15.6	
LOWEST ANNUAL MEAN					2.42	
HIGHEST DAILY MEAN	68	Jul 9	11	May 19	112	Jul 17 1995
LOWEST DAILY MEAN	2.4	Jan 8	2.4	Sep 1	1.2	Apr 25 1989
ANNUAL SEVEN-DAY MINIMUM	2.5	Jan 26	2.4	Sep 1	1.3	Oct 10 1990
ANNUAL RUNOFF (AC-FT)	9700		3400		4370	
10 PERCENT EXCEEDS	43		7.8		7.7	
50 PERCENT EXCEEDS	4.8		3.7		3.0	
90 PERCENT EXCEEDS	3.0		2.9		1.9	

e Estimated.

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

LOCATION.—Lat 37°18'35", long 118°57'40", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.1 mi downstream from Hooper Creek, 3.5 mi downstream from Florence Lake Dam, and 17 mi northeast of town of Big Creek.

DRAINAGE AREA.—184 mi².

PERIOD OF RECORD.—October 1978 to September 1997, October 1998 to September 1999. October 1946 to September 1978, operated as a low-flow station only, in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder, Parshall flume, and concrete control. Datum of gage is 6,949.41 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Flow regulated by Florence Lake (station 11229600) 3.5 mi upstream, and Hooper Creek Diversion Dam (capacity less than 2 acre-ft) 0.7 mi upstream. Most of the water is diverted at Florence Lake to Ward Tunnel (station 11229500). See schematic diagram of upper San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 5,950 ft³/s, Sept. 26, 1982, gage height, 11.42; minimum daily, 3.9 ft³/s, Oct. 24, 1979.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	22	20	18	21	24	23	32	39	32	30	31
2	25	22	19	18	21	25	22	33	39	32	29	31
3	22	22	18	18	19	26	23	33	39	32	30	31
4	22	22	16	18	19	27	22	32	39	32	29	31
5	21	22	17	18	19	25	22	32	38	31	29	30
6	21	21	16	18	18	23	23	36	38	31	28	30
7	21	22	18	18	22	22	23	43	38	31	29	30
8	20	22	15	18	22	21	22	47	38	30	28	30
9	19	21	17	18	21	21	23	48	37	30	28	30
10	19	22	17	18	22	21	22	49	38	30	29	30
11	18	22	19	18	24	21	23	52	38	30	28	29
12	18	22	20	18	22	21	24	54	38	31	28	29
13	17	22	20	18	21	22	29	53	38	38	28	29
14	17	22	20	18	20	23	31	53	36	36	28	28
15	17	21	20	18	20	22	31	53	35	33	28	28
16	17	21	20	19	21	22	31	53	35	32	28	28
17	19	19	20	19	23	24	31	54	34	32	29	29
18	21	19	19	19	24	26	30	55	30	32	29	29
19	21	18	19	20	22	26	32	55	30	32	29	28
20	21	18	19	20	22	25	33	55	30	31	28	28
21	21	19	19	19	22	23	33	56	30	31	28	28
22	21	19	19	19	22	23	33	56	33	31	28	37
23	21	19	19	19	21	25	30	56	33	31	28	38
24	21	18	19	20	21	26	29	57	33	31	28	36
25	21	18	19	19	21	28	29	55	32	30	28	34
26	21	18	19	19	21	30	29	50	32	30	29	33
27	21	18	19	19	22	28	31	44	32	30	33	32
28	22	19	19	21	23	26	30	38	32	30	32	31
29	28	19	19	20	---	25	30	38	32	30	31	31
30	23	19	19	20	---	24	33	39	32	30	31	31
31	22	---	19	19	---	24	---	38	---	30	31	---
TOTAL	645	608	578	581	596	749	827	1449	1048	972	899	920
MEAN	20.8	20.3	18.6	18.7	21.3	24.2	27.6	46.7	34.9	31.4	29.0	30.7
MAX	28	22	20	21	24	30	33	57	39	38	33	38
MIN	17	18	15	18	18	21	22	32	30	30	28	28
AC-FT	1280	1210	1150	1150	1180	1490	1640	2870	2080	1930	1780	1820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1999, BY WATER YEAR (WY)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
MEAN	18.7	16.7	16.0	18.2	20.6	26.3	30.3	45.4	389	326	71.3	38.8										
MAX	30.5	24.9	25.3	53.0	42.6	49.0	53.1	164	2429	1799	661	268										
(WY)	1990	1996	1984	1997	1986	1995	1995	1983	1983	1995	1983	1982										
MIN	7.87	11.8	8.93	11.9	12.2	17.8	18.4	20.9	20.5	21.4	13.1	7.19										
(WY)	1980	1979	1979	1979	1991	1990	1990	1981	1981	1981	1979	1979										

SUMMARY STATISTICS

FOR 1999 WATER YEAR

WATER YEARS 1979 - 1999

ANNUAL TOTAL	9872	
ANNUAL MEAN	27.0	84.8
HIGHEST ANNUAL MEAN		396
LOWEST ANNUAL MEAN		18.5
HIGHEST DAILY MEAN	57	May 24
LOWEST DAILY MEAN	15	Dec 8
ANNUAL SEVEN-DAY MINIMUM	17	Dec 4
INSTANTANEOUS PEAK FLOW	61	May 24
INSTANTANEOUS PEAK STAGE	4.63	May 24
ANNUAL RUNOFF (AC-FT)	19580	61460
10 PERCENT EXCEEDS	38	50
50 PERCENT EXCEEDS	25	23
90 PERCENT EXCEEDS	19	14

11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CA

LOCATION.—Lat 37°20'22", long 118°58'21", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.2 mi upstream from diversion dam, 1.7 mi upstream from mouth, 2.1 mi south of Lake Thomas A. Edison, and 2.4 mi northeast of Mono Hot Springs.

DRAINAGE AREA.—52.5 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 sea level (levels by Southern California Edison Co.).

REMARKS.—No storage or diversion upstream from station. See schematic diagram of upper San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,660 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	22	22	e13	e22	29	31	56	466	280	47	26
2	28	18	23	e13	e22	31	29	66	382	276	44	24
3	26	19	23	e13	e23	33	27	57	265	240	42	23
4	25	18	20	e13	e24	33	27	54	200	205	42	21
5	24	16	e20	e13	e22	30	26	83	174	169	41	21
6	23	14	e20	e13	e20	27	26	171	205	153	39	19
7	23	16	e21	e13	e23	23	26	224	243	151	36	19
8	21	17	e22	e12	e27	21	25	242	266	158	32	18
9	21	17	e20	e12	e29	22	26	221	289	156	31	17
10	20	19	e19	e12	e27	23	28	211	327	150	35	18
11	20	20	e18	12	e33	21	25	286	349	146	35	18
12	19	22	e18	13	e38	22	26	397	373	139	33	18
13	19	22	e18	11	e34	24	33	383	449	133	31	17
14	19	22	e18	12	e29	27	51	279	511	209	29	16
15	19	23	e18	11	e26	26	65	216	524	156	27	16
16	18	21	e18	11	e25	24	79	209	491	122	26	16
17	17	20	e18	13	e26	27	89	283	485	100	25	17
18	17	18	e18	14	e27	34	96	349	529	87	25	19
19	17	15	e17	15	e26	36	120	351	539	79	25	20
20	16	17	e13	19	e25	32	140	401	492	71	25	19
21	17	17	e14	e20	e25	28	144	425	440	65	26	19
22	17	17	e15	e23	e27	29	118	466	396	57	31	46
23	17	17	e14	e27	e27	32	76	488	440	53	33	73
24	18	16	e14	e24	e26	35	63	525	418	51	30	90
25	19	16	e14	e25	e26	38	61	544	366	50	31	61
26	21	16	e14	e26	e25	43	91	510	315	48	34	49
27	21	15	e14	e27	e26	49	104	427	274	47	42	41
28	21	16	e13	e29	27	44	83	433	272	46	38	36
29	21	19	e13	e26	---	42	63	439	293	46	34	32
30	21	21	e13	e23	---	37	56	431	285	46	31	29
31	21	---	e13	e22	---	35	---	454	---	48	29	---
TOTAL	636	546	535	530	737	957	1854	9681	11058	3737	1029	858
MEAN	20.5	18.2	17.3	17.1	26.3	30.9	61.8	312	369	121	33.2	28.6
MAX	30	23	23	29	38	49	144	544	539	280	47	90
MIN	16	14	13	11	20	21	25	54	174	46	25	16
AC-FT	1260	1080	1060	1050	1460	1900	3680	19200	21930	7410	2040	1700

e Estimated.

11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	15.1	15.5	19.7	22.6	23.8	33.2	86.8	253	350	207	67.1	28.8
MAX	62.2	56.1	71.2	107	61.0	79.8	172	586	740	747	349	260
(WY)	1983	1951	1956	1997	1986	1986	1926	1969	1983	1995	1983	1982
MIN	2.71	3.10	4.86	4.50	5.80	9.00	33.1	71.3	42.2	12.2	3.15	1.63
(WY)	1925	1930	1930	1924	1991	1924	1975	1977	1924	1924	1924	1924

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	56881		32158			
ANNUAL MEAN	156		88.1		93.7	
HIGHEST ANNUAL MEAN					201 1983	
LOWEST ANNUAL MEAN					29.2 1924	
HIGHEST DAILY MEAN	888	Jul 9	544	May 25	2610	Sep 26 1982
LOWEST DAILY MEAN	13	Dec 20	11	Jan 13	1.2	Sep 29 1924
ANNUAL SEVEN-DAY MINIMUM	13	Dec 25	12	Jan 10	1.2	Sep 29 1924
INSTANTANEOUS PEAK FLOW			782	May 25	3660	Sep 26 1982
INSTANTANEOUS PEAK STAGE			5.59	May 25	8.35	Sep 26 1982
ANNUAL RUNOFF (AC-FT)	112800		63790		67890	
10 PERCENT EXCEEDS	675		291		294	
50 PERCENT EXCEEDS	38		27		30	
90 PERCENT EXCEEDS	17		16		7.0	

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

LOCATION.—Lat 37°20'10", long 118°58'28", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank at diversion dam, 2.2 mi northeast of Mono Hot Springs, and 2.5 mi south of Lake Thomas A. Edison.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Discharge computed as difference between flows at Bear Creek near Lake Thomas A. Edison (station 11230500) and Bear Creek below diversion dam (station 11230530). Datum of conduit invert, 7,340 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Conduit diverts at diversion dam on Bear Creek to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 504 ft³/s, May 24, 1999; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	19	19	e9.7	e18	26	28	53	445	276	44	21
2	25	15	20	e9.7	e18	28	26	64	373	272	41	19
3	24	16	20	e9.7	e20	30	24	54	260	236	39	18
4	23	15	17	e9.7	e21	30	24	49	195	201	39	16
5	22	13	e17	e9.7	e19	27	23	78	169	166	38	16
6	21	11	e17	e9.7	e17	24	23	166	200	150	36	14
7	21	13	e18	e9.7	e20	20	23	220	238	148	33	14
8	19	14	e19	e8.7	e24	18	22	236	261	155	29	13
9	19	14	e17	e8.7	e25	19	23	215	284	153	28	12
10	18	16	e16	e8.7	e23	20	25	205	321	147	32	13
11	18	17	e15	8.7	e29	18	22	280	343	143	e32	13
12	17	19	e15	9.7	e34	19	23	384	367	136	e30	13
13	17	19	e15	7.7	e30	21	30	374	423	130	e28	12
14	17	19	e15	8.7	e25	24	48	273	441	206	26	11
15	17	20	e15	7.7	e23	23	62	210	438	152	24	11
16	16	18	e15	7.7	e22	21	76	203	423	119	23	11
17	15	17	e15	9.8	e23	24	86	277	433	97	22	12
18	15	15	e15	11	e24	31	93	343	431	84	22	14
19	15	12	e14	12	e23	33	117	345	434	76	22	15
20	14	14	e9.9	16	e22	29	137	395	420	67	22	14
21	15	14	e11	e17	e22	25	141	417	405	62	23	14
22	15	14	e12	e20	e24	26	115	444	390	54	28	41
23	15	14	e11	e24	e24	29	73	464	420	50	30	68
24	16	13	e11	e21	e23	32	60	504	396	48	27	85
25	17	13	e11	e22	e23	35	58	488	359	47	28	56
26	19	13	e11	e23	e22	40	88	476	310	45	30	44
27	19	12	e11	e24	e23	46	101	415	269	44	37	36
28	19	13	e9.8	e25	24	41	80	423	267	43	33	31
29	18	16	e9.8	e22	---	39	60	428	289	43	29	27
30	18	18	e9.8	e19	---	34	53	422	281	43	26	24
31	18	---	e9.7	e18	---	32	---	436	---	45	24	---
TOTAL	569	456	441.0	428.0	645	864	1764	9341	10285	3638	925	708
MEAN	18.4	15.2	14.2	13.8	23.0	27.9	58.8	301	343	117	29.8	23.6
MAX	27	20	20	25	34	46	141	504	445	276	44	85
MIN	14	11	9.7	7.7	17	18	22	49	169	43	22	11
AC-FT	1130	904	875	849	1280	1710	3500	18530	20400	7220	1830	1400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	14.3	13.0	12.7	18.1	18.4	32.0	87.9	199	182	73.9	51.5	23.7
MAX	45.3	26.5	32.5	50.8	41.3	52.4	138	345	343	168	181	84.1
(WY)	1995	1995	1997	1997	1996	1995	1989	1997	1999	1996	1995	1995
MIN	3.23	3.68	3.23	3.46	.000	.000	43.2	59.2	.000	.000	10.6	4.53
(WY)	1989	1991	1991	1991	1997	1997	1991	1995	1995	1995	1989	1987

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	22494.0		30064.0			
ANNUAL MEAN	61.6		82.4		60.4	
HIGHEST ANNUAL MEAN					82.4	
LOWEST ANNUAL MEAN					49.2	
HIGHEST DAILY MEAN	421	Jun 16	504	May 24	504	May 24 1999
LOWEST DAILY MEAN	5.0	Jun 18	7.7	Jan 13	.00	Oct 18 1988
ANNUAL SEVEN-DAY MINIMUM	5.0	Jun 18	8.4	Jan 10	.00	May 18 1995
ANNUAL RUNOFF (AC-FT)	44620		59630		43770	
10 PERCENT EXCEEDS	189		286		199	
50 PERCENT EXCEEDS	28		24		23	
90 PERCENT EXCEEDS	5.0		12		3.4	

e Estimated.

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

LOCATION.—Lat 37°20'08", long 118°58'29", unsurveyed, T.7 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 60 ft downstream from diversion dam, 2.5 mi south of Lake Thomas A. Edison, and 18.3 mi east of town of Big Creek.

DRAINAGE AREA.—52.8 mi².

PERIOD OF RECORD.—October 1986 to current year. Prior to October 1991, published as "at Diversion Dam."

GAGE.—Water-stage recorder, Parshall flume, and concrete control. Datum of gage is 7,338.30 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Low and medium flow regulated at diversion dam. Most of the flow is diverted at the diversion dam to Bear Creek Conduit (station 11230520), then to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,730 ft³/s, July 9, 1995, gage height, 14.75 ft; minimum daily, 0.94 ft³/s, Oct. 15, 1987.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	3.1	3.1	3.3	3.6	3.4	2.9	3.0	21	3.6	3.4	5.2
2	3.0	3.1	2.9	3.3	3.6	3.5	2.9	2.4	8.6	3.7	3.4	5.2
3	2.5	3.1	2.8	3.3	3.5	3.5	2.9	3.4	5.2	3.6	3.4	5.3
4	2.5	3.1	2.8	3.3	3.5	3.3	2.9	5.5	5.0	3.6	3.4	5.3
5	2.5	3.0	2.8	3.3	3.5	3.3	2.9	5.4	5.0	3.5	3.4	5.3
6	2.5	3.0	2.8	3.3	3.5	3.2	2.9	4.7	5.2	3.5	3.4	5.3
7	2.5	3.0	2.9	3.3	3.5	3.2	2.9	4.5	5.4	3.5	3.4	5.4
8	2.5	3.0	3.0	3.3	3.5	3.1	2.9	5.7	5.4	3.5	3.4	5.4
9	2.5	3.0	3.0	3.3	3.6	3.2	2.9	5.7	5.5	3.5	3.4	5.4
10	2.5	3.0	3.1	3.3	3.6	3.2	3.0	5.6	5.6	3.5	3.4	5.4
11	2.5	3.0	3.1	3.3	3.6	3.3	2.9	5.7	5.6	3.5	e3.4	5.4
12	2.5	3.0	3.2	3.3	3.6	3.3	2.9	13	5.9	3.5	e3.4	5.3
13	2.5	3.1	3.2	3.3	3.6	3.2	2.8	8.7	26	3.5	e3.4	5.4
14	2.5	3.1	3.2	3.3	3.6	3.1	2.7	5.8	70	3.5	3.4	5.3
15	2.5	3.1	3.2	3.3	3.5	3.0	2.7	5.8	86	3.7	3.4	5.3
16	2.5	3.1	3.2	3.3	3.5	3.0	2.7	5.7	68	3.5	3.4	5.3
17	2.5	3.1	3.2	3.2	3.5	2.9	2.8	5.8	52	3.4	3.4	5.3
18	2.5	3.1	3.1	3.2	3.5	2.9	2.8	5.9	98	3.3	3.4	5.3
19	2.5	3.1	3.1	3.3	3.5	2.9	2.8	5.9	105	3.3	3.4	5.3
20	2.5	3.1	3.1	3.4	3.5	2.9	2.8	6.3	72	3.6	3.4	5.4
21	2.5	3.1	3.1	3.4	3.5	2.9	3.0	7.9	35	3.5	3.4	5.4
22	2.4	3.1	3.1	3.5	3.5	2.9	3.2	22	6.5	3.4	3.4	5.4
23	2.4	3.1	3.1	3.5	3.5	2.9	3.2	24	20	3.4	3.3	5.5
24	2.4	3.1	3.1	3.5	3.4	2.9	3.1	21	22	3.4	3.3	5.5
25	2.4	3.1	3.1	3.5	3.4	2.9	3.1	56	7.5	3.4	3.3	5.5
26	2.4	3.1	3.1	3.5	3.4	2.9	3.1	34	5.4	3.4	3.6	5.5
27	2.4	3.1	3.2	3.5	3.4	2.9	3.1	12	5.3	3.4	5.1	5.5
28	2.4	3.1	3.2	3.6	3.4	2.9	3.1	10	4.7	3.3	5.1	5.5
29	2.7	3.1	3.2	3.6	---	2.9	3.1	11	3.6	3.4	5.2	5.4
30	3.1	3.1	3.2	3.6	---	2.9	3.1	9.2	3.7	3.4	5.2	5.5
31	3.1	---	3.3	3.6	---	2.9	---	18	---	3.4	5.2	---
TOTAL	79.6	92.2	95.5	104.7	98.3	95.3	88.1	339.6	774.1	107.7	114.1	161.2
MEAN	2.57	3.07	3.08	3.38	3.51	3.07	2.94	11.0	25.8	3.47	3.68	5.37
MAX	3.4	3.1	3.3	3.6	3.6	3.5	3.2	56	105	3.7	5.2	5.5
MIN	2.4	3.0	2.8	3.2	3.4	2.9	2.7	2.4	3.6	3.3	3.3	5.2
AC-FT	158	183	189	208	195	189	175	674	1540	214	226	320

e Estimated.

11230530 BEAR CREEK BELOW DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.31	2.21	2.75	6.18	3.46	6.55	9.01	25.6	122	127	15.5	4.03
MAX	4.11	6.16	12.5	55.8	20.4	59.8	67.1	121	555	747	109	11.1
(WY)	1996	1996	1996	1997	1997	1997	1997	1995	1995	1995	1995	1996
MIN	1.33	1.38	1.41	1.48	1.35	1.48	1.42	2.57	2.43	2.25	2.25	2.44
(WY)	1988	1990	1993	1995	1995	1988	1990	1991	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	34509.4		2150.4			
ANNUAL MEAN	94.5		5.89		27.5	
HIGHEST ANNUAL MEAN					131 1995	
LOWEST ANNUAL MEAN					1.98 1990	
HIGHEST DAILY MEAN	863	Jul 9	105	Jun 19	1420	Jul 9 1995
LOWEST DAILY MEAN	2.4	Jan 4	2.4	Oct 22	.94	Oct 15 1987
ANNUAL SEVEN-DAY MINIMUM	2.4	Jan 4	2.4	Oct 22	1.0	Nov 5 1992
INSTANTANEOUS PEAK FLOW			249	Jun 18	1730	Jul 9 1995
INSTANTANEOUS PEAK STAGE			12.38	Jun 18	14.75	Jul 9 1995
ANNUAL RUNOFF (AC-FT)	68450		4270		19890	
10 PERCENT EXCEEDS	674		5.7		9.5	
50 PERCENT EXCEEDS	3.1		3.4		2.5	
90 PERCENT EXCEEDS	2.5		2.8		1.5	

11231000 LAKE THOMAS A. EDISON NEAR BIG CREEK, CA

LOCATION.—Lat 37°22'09", long 118°59'17", unsurveyed, T.6 1/2 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in outlet works of Vermillion Valley Dam on Mono Creek 18.1 mi northeast of town of Big Creek.

DRAINAGE AREA.—90.0 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 sea level (levels by Southern California Edison Co.).

REMARKS.—Lake is formed by earthfill dam; dam completed and storage began Oct. 12, 1954. Usable capacity, 125,035 acre-ft between elevations 7,508.9 ft, invert of outlet works, and 7,642.50 ft, top of gates in service spillway. Water is diverted at times into lake from Warm Creek (station 11231700). Water is released for diversion to Ward Tunnel via Mono Creek Conduit (station 11231550). Records, including extremes, represent contents at 2400 hours. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 125,983 acre-ft, Sept. 26, 1982, elevation, 7,643.55 ft; minimum since appreciable storage was attained, 4,553 acre-ft, Dec. 27, 1987, elevation, 7,552.07 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 122,928 acre-ft, July 14, elevation, 7,641.36 ft; minimum, 49,672 acre-ft, Mar. 25, 26, elevation, 7,597.03 ft.

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

7,550	3,567	7,580	28,515	7,620	85,006
7,555	6,147	7,590	40,454	7,630	102,367
7,560	9,521	7,600	53,769	7,640	120,424
7,570	18,137	7,610	68,616	7,644	127,820

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119837	106626	84228	76015	56236	50845	49849	54404	84888	118994	113797	91257
2	119599	105803	84058	75296	55637	50804	49863	54658	86197	119727	113071	90497
3	119379	105018	83872	74629	55025	50777	49863	54884	87203	120351	112528	89723
4	119178	104269	83652	73948	54390	50722	49863	55081	87990	120884	111823	88967
5	119013	103433	83449	73043	53797	50668	49863	55366	88726	121362	111082	88178
6	118866	102598	83230	72368	53211	50599	49877	55765	89413	121766	110307	87391
7	118756	101871	83078	71693	52751	50531	49890	56279	90118	122006	109514	86605
8	118609	101075	82860	70992	52195	50504	49904	56780	90981	121822	108706	85857
9	118463	100192	82674	70307	52029	50477	49904	57371	91844	121601	107951	85057
10	118335	99504	82523	69642	52002	50408	49904	58093	92900	121435	107235	84278
11	118189	98694	82355	68979	51974	50327	49877	58836	94010	121711	106537	83466
12	118079	97939	82186	68288	51947	50258	49836	59846	95123	122042	105839	82691
13	117969	97184	81984	67584	51905	50177	49849	60907	96450	122521	105072	81951
14	117768	96433	81816	66929	51850	50122	49972	61697	98167	122928	104269	81129
15	117604	95646	81631	66327	51781	50067	50136	62638	99839	122909	103700	80260
16	117366	95175	81430	65693	51712	50013	50327	64485	101517	122706	103291	79378
17	117220	94689	81263	65080	51698	49945	50559	63830	103060	122318	102527	78548
18	117092	93871	81063	64500	51643	49890	50804	64867	104590	121822	101783	77657
19	116708	93125	80828	63951	51547	49863	51105	65879	106214	121307	100986	76751
20	116253	92346	80594	63423	51491	49863	51450	67084	107646	120755	100192	76031
21	115597	91568	80394	62804	51464	49781	51836	68288	108957	120277	99416	75459
22	114741	90808	80176	62204	51395	49726	52181	69658	110217	119874	98694	75067
23	113906	90015	79976	61667	51312	49726	52402	71040	111660	119581	97939	74515
24	113107	89259	79793	61085	51216	49686	52625	72609	112872	119196	97202	73786
25	112293	88469	79627	60480	51133	49672	52876	74191	113997	118793	96485	72995
26	111497	87665	79444	59890	51050	49672	53155	75786	114941	118171	95786	72143
27	110721	86929	79245	59259	50981	49699	53462	77278	115816	117421	95106	71837
28	109892	86214	78780	58647	50900	49726	53769	78847	116635	116708	94376	71837
29	109065	85465	78101	58035	---	49754	53981	80427	117439	115998	93645	71837
30	108239	84735	77443	57429	---	49767	54192	81816	118152	115233	92848	71837
31	107432	---	76767	56823	---	49836	---	83331	---	114523	92052	---
MAX	119837	106626	84228	76015	56236	50845	54192	83331	118152	122928	113797	91257
MIN	107432	84735	76767	56823	50900	49672	49836	54404	84888	114523	92052	71837
a	7632.84	7619.84	7615.07	7602.15	7597.93	7597.15	7600.30	7619.01	7638.76	7636.77	7624.11	7612.03
b	-12552	-22697	-7968	-19944	-5923	-1064	+4356	+29139	+34821	-3629	-22471	-20215

CAL YR 1998 b +38843

WTR YR 1999 b -48147

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11231500 MONO CREEK BELOW LAKE THOMAS A. EDISON, CA

LOCATION.—Lat 37°21'41", long 118°59'28", unsurveyed, T.6 1/2 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 0.5 mi upstream from diversion dam, 0.9 mi downstream from Vermilion Valley Dam, and 1.0 mi south of Lake Thomas A. Edison.

DRAINAGE AREA.—92.5 mi².

PERIOD OF RECORD.—October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

REVISED RECORDS.—WSP 1011: 1943. WSP 1515: 1956. WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 7,380 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Lake Thomas A. Edison (station 11231000) 1 mi upstream beginning Oct. 12, 1954. Water is diverted at times into the basin from Warm Creek (station 11231700) to Lake Thomas A. Edison. See schematic diagram of upper San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,160 ft³/s, Sept. 26, 1982, gage height, 8.87 ft; minimum daily, 0.3 ft³/s, Nov. 11, 12, 1954.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	452	320	386	365	84	75	25	29	24	442	432
2	128	452	131	386	363	84	74	26	29	24	442	432
3	114	452	131	386	360	84	73	25	29	24	355	426
4	104	452	133	386	359	84	73	25	29	24	442	419
5	104	452	133	386	356	84	73	27	29	24	442	428
6	104	452	133	384	356	84	73	27	40	71	442	428
7	104	452	133	382	356	84	73	27	47	243	442	428
8	104	452	133	382	356	84	73	27	26	368	442	428
9	104	450	133	382	204	84	73	27	26	365	440	428
10	104	447	133	375	84	84	73	27	26	297	436	428
11	104	447	133	373	84	84	73	27	26	34	437	428
12	104	447	133	373	84	84	73	27	26	34	437	428
13	104	447	133	373	84	85	45	27	26	35	437	428
14	104	447	133	373	84	86	24	27	26	148	437	450
15	104	447	133	373	84	86	24	26	26	311	349	471
16	104	292	133	371	84	86	24	26	26	300	251	481
17	104	303	133	369	84	86	24	41	26	348	432	495
18	104	447	133	369	84	86	24	36	57	382	432	512
19	193	408	133	369	92	86	24	28	24	382	432	510
20	262	447	133	370	84	86	25	28	24	382	432	384
21	365	447	133	373	84	86	26	28	24	346	432	327
22	445	447	133	371	84	86	26	28	24	284	432	327
23	452	447	133	369	84	86	25	28	24	252	432	381
24	452	446	133	369	84	86	25	28	24	287	432	431
25	452	442	133	369	84	83	25	28	24	288	432	452
26	452	442	133	369	84	75	26	28	24	375	432	461
27	452	442	133	370	84	75	26	29	24	442	432	148
28	452	442	275	369	84	75	26	29	24	442	432	15
29	452	442	391	367	---	75	25	29	24	442	432	19
30	452	442	391	365	---	75	25	29	24	442	432	19
31	452	---	389	365	---	75	---	29	---	442	432	---
TOTAL	7263	13084	5220	11604	4679	2572	1348	869	837	7862	13153	11444
MEAN	234	436	168	374	167	83.0	44.9	28.0	27.9	254	424	381
MAX	452	452	391	386	365	86	75	41	57	442	442	512
MIN	104	292	131	365	84	75	24	25	24	24	251	15
AC-FT	14410	25950	10350	23020	9280	5100	2670	1720	1660	15590	26090	22700

11231500 MONO CREEK BELOW LAKE THOMAS A. EDISON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1954, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.4	29.4	31.4	33.3	39.8	59.4	170	457	548	270	79.6	31.3
MAX	60.8	124	127	76.8	74.4	94.8	282	714	1135	672	233	86.6
(WY)	1946	1951	1951	1951	1951	1934	1926	1952	1938	1938	1938	1938
MIN	11.3	10.5	12.0	14.0	17.0	25.0	77.8	197	79.6	36.6	17.6	11.5
(WY)	1925	1930	1931	1949	1949	1924	1948	1933	1924	1924	1924	1924

SUMMARY STATISTICS

WATER YEARS 1922 - 1954

ANNUAL MEAN	148
HIGHEST ANNUAL MEAN	268
LOWEST ANNUAL MEAN	52.8
HIGHEST DAILY MEAN	1550
LOWEST DAILY MEAN	8.0
ANNUAL SEVEN-DAY MINIMUM	8.1
INSTANTANEOUS PEAK FLOW	1760
INSTANTANEOUS PEAK STAGE	8.62
ANNUAL RUNOFF (AC-FT)	107300
10 PERCENT EXCEEDS	470
50 PERCENT EXCEEDS	48
90 PERCENT EXCEEDS	18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	103	167	200	216	211	187	127	69.4	86.1	210	230	181
MAX	324	436	437	467	472	479	647	515	577	684	424	450
(WY)	1998	1999	1968	1984	1973	1973	1983	1983	1969	1995	1999	1994
MIN	11.0	12.1	9.05	9.95	10.4	13.8	12.7	12.7	11.5	12.1	12.2	14.0
(WY)	1972	1982	1991	1991	1991	1990	1966	1966	1977	1977	1981	1966

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1956 - 1999

ANNUAL TOTAL	79399	79935	
ANNUAL MEAN	218	219	166
HIGHEST ANNUAL MEAN			366
LOWEST ANNUAL MEAN			53.2
HIGHEST DAILY MEAN	512	Jul 31	512
LOWEST DAILY MEAN	23	Jul 18	15
ANNUAL SEVEN-DAY MINIMUM	42	Jul 1	24
INSTANTANEOUS PEAK FLOW			512
INSTANTANEOUS PEAK STAGE			6.54
ANNUAL RUNOFF (AC-FT)	157500	158600	120000
10 PERCENT EXCEEDS	447	447	428
50 PERCENT EXCEEDS	166	133	101
90 PERCENT EXCEEDS	72	26	14

11231550 MONO CREEK CONDUIT NEAR MONO HOT SPRINGS, CA

LOCATION.—Lat 37°21'36", long 118°59'51", unsurveyed, T.6 1/2 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 40 ft upstream from diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 2.5 mi northeast of Mono Hot Springs.

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Discharge computed as difference between flow at Mono Creek below Lake Thomas A. Edison (station 11231500) and Mono Creek below diversion dam (station 11231600). Datum of conduit invert is 7,338 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Conduit diverts at diversion dam on Mono Creek to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 499 ft³/s, Apr. 7, 1995; minimum daily, -18 ft³/s, June 11, 1993 (reverse flow from Bear Creek Conduit).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	442	310	376	355	75	66	8.0	14	9.0	426	417
2	111	442	122	376	353	75	65	9.0	14	9.0	426	417
3	100	442	122	376	350	75	65	8.0	14	9.0	340	411
4	93	442	124	376	349	75	65	8.0	14	9.0	426	404
5	93	442	124	376	346	75	64	10	14	9.0	426	413
6	93	442	124	374	346	75	64	10	25	56	426	413
7	93	442	124	372	346	75	64	10	32	214	426	413
8	93	442	124	372	346	75	64	10	11	336	426	413
9	93	440	124	372	195	75	64	10	11	348	424	413
10	93	437	124	365	75	75	64	10	11	283	420	413
11	93	437	124	363	e75	75	64	10	11	19	421	413
12	93	437	124	363	e75	75	64	10	11	19	421	413
13	93	437	124	363	e75	76	36	10	11	20	421	413
14	93	437	124	363	e75	77	15	10	11	134	421	435
15	93	437	124	363	e75	77	15	9.0	11	298	334	456
16	93	283	124	361	e75	77	15	9.0	11	286	237	465
17	93	294	124	359	75	77	15	25	11	333	416	479
18	93	437	124	359	75	77	15	21	42	367	416	496
19	177	398	124	359	83	77	15	13	9.0	367	416	494
20	251	437	124	360	75	77	16	13	9.0	367	416	369
21	355	437	124	363	75	77	17	13	9.0	331	416	312
22	435	437	124	361	75	77	17	13	9.0	269	416	312
23	442	437	124	359	75	77	16	13	9.0	238	417	366
24	442	436	124	359	75	77	16	13	9.0	272	417	416
25	442	432	124	359	75	74	16	13	9.0	273	417	437
26	442	432	124	359	75	66	17	13	9.0	360	417	446
27	442	432	124	360	75	66	17	14	9.0	426	417	e113
28	442	432	266	359	75	66	17	14	9.0	426	417	e2.0
29	442	432	381	357	---	66	13	14	9.0	426	417	6.0
30	442	432	381	355	---	66	9.0	14	9.0	426	417	6.0
31	442	---	379	355	---	66	---	14	---	426	417	---
TOTAL	6913	12786	4937	11294	4419	2293	1070.0	371.0	387.0	7365.0	12670	10976.0
MEAN	223	426	159	364	158	74.0	35.7	12.0	12.9	238	409	366
MAX	442	442	381	376	355	77	66	25	42	426	426	496
MIN	93	283	122	355	75	66	9.0	8.0	9.0	9.0	237	2.0
AC-FT	13710	25360	9790	22400	8770	4550	2120	736	768	14610	25130	21770

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	118	158	126	99.0	100	165	130	69.2	74.4	174	262	205	
MAX	311	426	421	364	395	464	400	207	203	417	409	440	
(WY)	1998	1999	1987	1999	1996	1996	1996	1995	1997	1989	1999	1994	
MIN	13.8	12.6	1.39	4.08	.000	8.00	14.8	6.07	6.91	.000	93.0	11.8	
(WY)	1990	1989	1991	1991	1997	1990	1992	1989	1995	1995	1996	1989	

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	72127.0		75481.0			
ANNUAL MEAN	198		207		140	
HIGHEST ANNUAL MEAN					227	
LOWEST ANNUAL MEAN					50.5	
HIGHEST DAILY MEAN	489	Aug 2	496	Sep 18	499	Apr 7 1995
LOWEST DAILY MEAN	8.0	Jul 18	2.0	Sep 28	-18	Jun 11 1993
ANNUAL SEVEN-DAY MINIMUM	27	Jul 6	8.9	Apr 30	.00	Dec 5 1990
ANNUAL RUNOFF (AC-FT)	143100		149700		101700	
10 PERCENT EXCEEDS	432		436		413	
50 PERCENT EXCEEDS	158		124		68	
90 PERCENT EXCEEDS	58		10		7.1	

e Estimated.

11231600 MONO CREEK BELOW DIVERSION DAM, NEAR MONO HOT SPRINGS, CA

LOCATION.—Lat 37°21'36", long 118°59'51", unsurveyed, T.6 1/2 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 20 ft downstream from diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 2.5 mi northeast of Mono Hot Springs.

DRAINAGE AREA.—92.8 mi².

PERIOD OF RECORD.—October 1986 to current year. Prior to October 1991, published as "at Diversion Dam."

GAGE.—Acoustic-velocity meter on low-flow discharge, and water-stage recorder on diversion reservoir. Elevation of gage is 7,340 ft above sea level, from topographic map. Prior to Oct. 1, 1991, at datum 10 ft higher.

REMARKS.—Flow regulated by diversion reservoir and Lake Thomas A. Edison (station 11231000). Most of the flow is diverted at the diversion dam to Mono Creek Conduit (station 11231550), then to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. Discharge, including extremes, represents the combined flow at Mono Creek and spill at diversion dam. See schematic diagram of upper San Joaquin River Basin.

COOPERATION.—Records collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,300 ft³/s, July 11, 12, 1995; minimum daily, 4.1 ft³/s, Dec. 12–16, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	DAILY MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	10	9.8	10	10	8.7	8.6	17	15	15	16	15
2	17	10	8.9	10	10	8.7	8.6	17	15	15	16	15
3	14	10	8.8	10	10	8.7	8.5	17	15	15	15	15
4	11	10	8.8	10	10	8.7	8.5	17	15	15	16	15
5	11	10	8.8	10	10	8.7	8.6	17	15	15	16	15
6	11	10	8.8	10	10	8.6	8.6	17	15	15	16	15
7	11	10	8.8	10	10	8.6	8.6	17	15	29	16	15
8	11	10	8.8	10	10	8.6	8.6	17	15	32	16	15
9	11	10	8.8	10	9.3	8.6	8.6	17	15	17	16	15
10	11	10	8.8	10	8.6	8.6	8.6	17	15	14	16	15
11	11	10	8.8	10	e8.6	8.6	8.6	17	15	15	16	15
12	11	10	8.8	10	e8.6	8.6	8.6	17	15	15	16	15
13	11	10	8.8	10	e8.6	8.6	8.9	17	15	15	16	15
14	11	10	8.8	10	e8.6	8.7	9.2	17	15	14	16	15
15	11	10	8.8	10	e8.6	8.7	9.2	17	15	13	15	15
16	11	9.5	8.8	10	e8.6	8.7	9.2	17	15	14	14	16
17	11	9.5	8.8	10	8.6	8.7	9.2	16	15	15	16	16
18	11	10	8.8	10	8.6	8.7	9.3	15	15	15	16	16
19	16	10	8.8	10	8.7	8.7	9.3	15	15	15	16	16
20	11	10	8.8	10	8.6	8.7	9.3	15	15	15	16	15
21	10	10	8.8	10	8.7	8.7	9.3	15	15	15	16	15
22	10	10	8.8	10	8.6	8.7	9.3	15	15	15	16	15
23	10	10	8.8	10	8.6	8.7	9.2	15	15	14	15	15
24	10	10	8.8	10	8.6	8.7	9.2	15	15	15	15	15
25	10	10	8.8	10	8.6	8.7	9.2	15	15	15	15	15
26	10	10	8.8	10	8.6	8.6	9.3	15	15	15	15	15
27	10	10	8.8	10	8.6	8.6	9.3	15	15	16	15	e35
28	10	10	9.5	10	8.6	8.6	9.2	15	15	16	15	e13
29	10	10	10	10	---	8.6	12	15	15	16	15	13
30	10	10	10	10	---	8.6	16	15	15	16	15	13
31	10	---	10	10	---	8.6	---	15	---	16	15	---
TOTAL	350	299.0	278.2	310	252.9	268.3	278.6	498	450	497	483	468
MEAN	11.3	9.97	8.97	10.0	9.03	8.65	9.29	16.1	15.0	16.0	15.6	15.6
MAX	17	10	10	10	10	8.7	16	17	15	32	16	35
MIN	10	9.5	8.8	10	8.6	8.6	8.5	15	15	13	14	13
AC-FT	694	593	552	615	502	532	553	988	893	986	958	928

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	9.26	8.98	8.80	8.29	8.65	8.26	9.29	12.6	47.5	82.8	24.2	12.7
MAX	12.6	23.1	27.0	20.9	25.5	17.7	18.5	18.6	336	684	141	16.9
(WY)	1998	1996	1996	1997	1997	1997	1995	1995	1997	1995	1995	1998
MIN	6.72	5.62	5.69	5.66	5.69	5.84	5.88	9.45	9.98	9.91	9.85	9.67
(WY)	1995	1992	1993	1993	1993	1990	1992	1994	1990	1991	1994	1994

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	7251.8		4433.0			
ANNUAL MEAN	19.9		12.1		20.2	
HIGHEST ANNUAL MEAN					79.4	
LOWEST ANNUAL MEAN					7.83	
HIGHEST DAILY MEAN	326	Jul 29	35	Sep 27	1300	Jul 11 1995
LOWEST DAILY MEAN	7.5	Mar 1	8.5	Apr 3	4.1	Dec 12 1990
ANNUAL SEVEN-DAY MINIMUM	7.6	Feb 25	8.6	Mar 29	4.2	Dec 12 1990
ANNUAL RUNOFF (AC-FT)	14380		8790		14640	
10 PERCENT EXCEEDS	17		16		16	
50 PERCENT EXCEEDS	12		10		9.9	
90 PERCENT EXCEEDS	7.7		8.6		5.9	

e Estimated.

11231700 WARM CREEK BELOW DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA

LOCATION.—Lat 37°23'31", long 119°01'39", unsurveyed, T.6 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank, 40 ft downstream from diversion dam, 1.5 mi northwest of Lake Thomas A. Edison, and 17.4 mi northeast of town of Big Creek.

DRAINAGE AREA.—2.14 mi².

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder and 90° V-notch weir control. Elevation of gage is 8,030 ft above sea level, from topographic map.

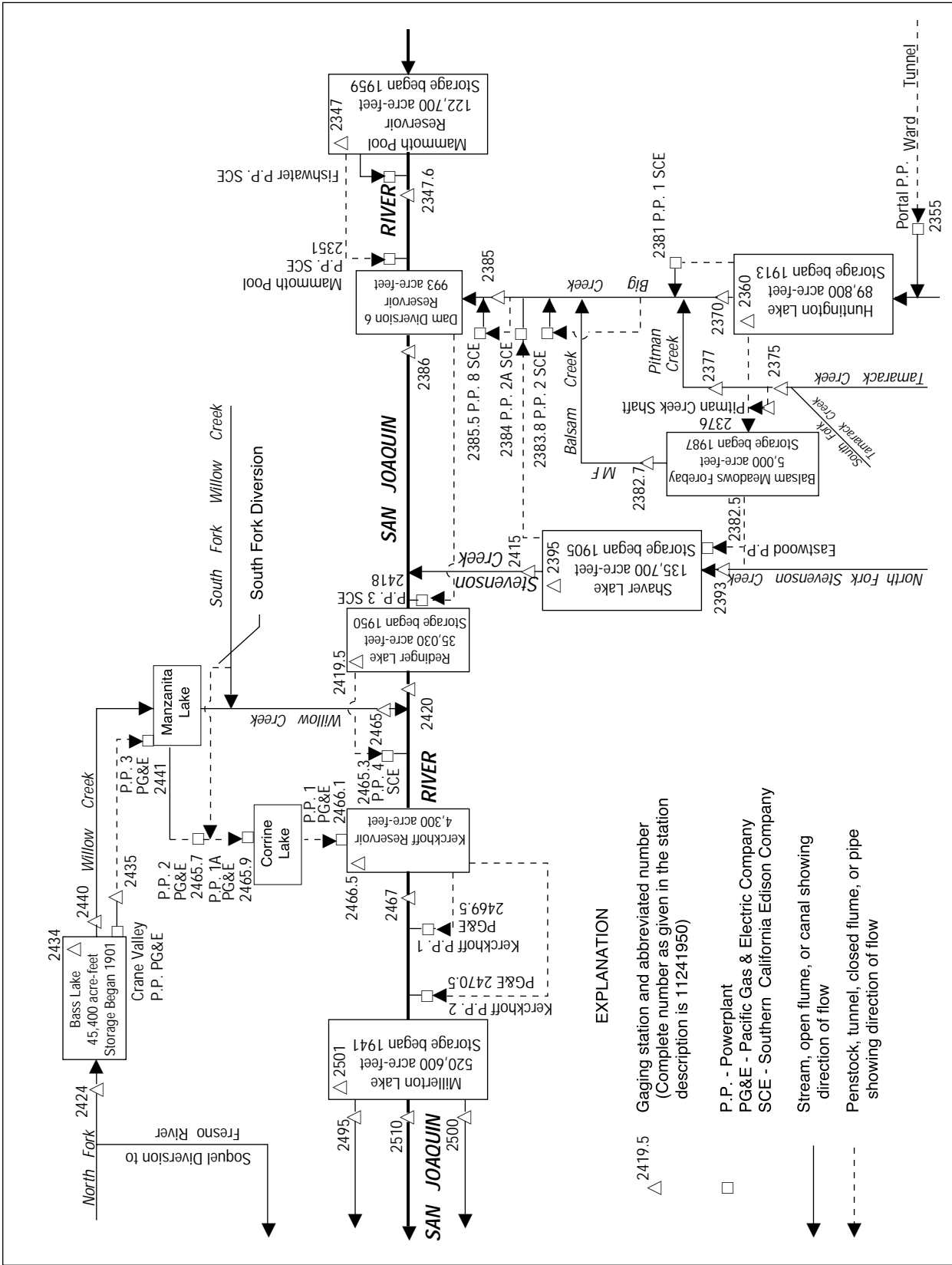
REMARKS.—Records normally computed only in summer months or during periods of diversion to Lake Thomas A. Edison. Diversion occurred May 15 to July 26 and Aug. 6, 7. See schematic diagram of upper San Joaquin River Basin.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	.81	e.69	---	---
2	---	---	---	---	---	---	---	---	.79	e.68	---	---
3	---	---	---	---	---	---	---	---	.79	e.67	---	---
4	---	---	---	---	---	---	---	---	.79	e.72	---	---
5	---	---	---	---	---	---	---	---	.79	e.66	---	---
6	---	---	---	---	---	---	---	---	.78	e.66	---	---
7	---	---	---	---	---	---	---	---	.76	e.67	.55	---
8	---	---	---	---	---	---	---	---	.76	e.68	.57	---
9	---	---	---	---	---	---	---	---	.77	e.69	---	---
10	---	---	---	---	---	---	---	---	.79	e.70	---	---
11	---	---	---	---	---	---	---	---	.79	e.70	---	---
12	---	---	---	---	---	---	---	---	.79	e.71	---	---
13	---	---	---	---	---	---	---	---	.79	e.80	---	---
14	---	---	---	---	---	---	---	---	.79	.77	---	---
15	---	---	---	---	---	---	---	e1.0	.79	.70	---	---
16	---	---	---	---	---	---	---	e.98	.78	.73	---	---
17	---	---	---	---	---	---	---	e.95	.76	.73	---	---
18	---	---	---	---	---	---	---	e.93	.76	.70	---	---
19	---	---	---	---	---	---	---	e.91	.76	.70	---	---
20	---	---	---	---	---	---	---	e.89	.76	.67	---	---
21	---	---	---	---	---	---	---	.89	.76	.64	---	---
22	---	---	---	---	---	---	---	.89	.76	.61	---	---
23	---	---	---	---	---	---	---	.89	.75	.64	---	---
24	---	---	---	---	---	---	---	.89	.73	.67	---	---
25	---	---	---	---	---	---	---	.92	.73	.70	---	---
26	---	---	---	---	---	---	---	.91	.73	.72	---	---
27	---	---	---	---	---	---	---	.88	.73	---	---	---
28	---	---	---	---	---	---	---	.82	.73	---	---	---
29	---	---	---	---	---	---	---	.82	.71	---	---	---
30	---	---	---	---	---	---	---	.82	.70	---	---	---
31	---	---	---	---	---	---	---	.82	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	22.93	---	---	---
MEAN	---	---	---	---	---	---	---	---	.76	---	---	---
MAX	---	---	---	---	---	---	---	---	.81	---	---	---
MIN	---	---	---	---	---	---	---	---	.70	---	---	---
AC-FT	---	---	---	---	---	---	---	---	45	---	---	---

e Estimated.



EXPLANATION

- △ 2419.5 Gaging station and abbreviated number
(Complete number as given in the station description is 11241950)
- P.P. - Powerplant
PG&E - Pacific Gas & Electric Company
SCE - Southern California Edison Company
- Stream, open flume, or canal showing direction of flow
- - - Penstock, tunnel, closed flume, or pipe showing direction of flow

Figure 28. Diversions and storage in lower San Joaquin River Basin.

11234700 MAMMOTH POOL RESERVOIR NEAR BIG CREEK, CA

LOCATION.—Lat 37°19'40", long 119°19'38", in SE 1/4 SE 1/4 sec.10, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of power tunnel intake 0.7 mi northwest of dam on San Joaquin River, 9.0 mi northwest of town of Big Creek.

DRAINAGE AREA.—995 mi².

PERIOD OF RECORD.—October 1959 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.).

REMARKS.—Reservoir is formed by an earthfill dam; storage began Oct. 8, 1959. Usable capacity, 119,940 acre-ft between elevations 3,100.00 ft, invert of power tunnel, and 3,330.00 ft, crest of spillway. Additional storage of 2,780 acre-ft is not available for release. Water is diverted from basin through Ward Tunnel (stations 11229500 and 11235500). Water is diverted from Mammoth Pool through tunnel for power development and returned to river 8.5 mi downstream from dam. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 128,944 acre-ft, Jan. 2, 1997; elevation, 3,338.00 ft; minimum contents since appreciable storage was attained, 1,134 acre-ft, Sept. 25, 1992, elevation, 3,112.82 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 121,770 acre-ft, May 29, elevation, 3,331.65 ft; minimum, 9,098 acre-ft, Apr. 9, elevation, 3,161.97 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Nov. 6, 1959)

3,100	0	3,130	3,114	3,180	14,060	3,260	56,381
3,105	417	3,140	4,605	3,190	17,414	3,280	72,109
3,110	861	3,150	6,402	3,200	21,400	3,300	89,781
3,115	1,355	3,160	8,618	3,220	31,109	3,320	109,336
3,120	1,900	3,170	11,165	3,240	42,787	3,340	131,255

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60017	59510	56602	29473	30377	29133	10023	22905	121492	116612	111312	66500
2	58931	58788	57334	29515	29894	28392	9258	24139	121058	116601	110436	64168
3	59389	58070	58130	28614	29369	28176	9300	23541	120637	117360	110000	63077
4	59828	56971	58526	27802	28987	28109	10112	22616	120250	116793	109595	61283
5	58728	56772	58953	26979	28490	27435	10433	21816	120040	115336	109492	59261
6	57698	57112	59029	26279	27986	26518	10303	23563	120294	113559	109647	56994
7	56543	57586	58406	25734	29768	25594	9477	26889	120383	112296	109233	54987
8	55312	58235	58010	25971	31946	24629	9120	30191	120283	111772	108852	52822
9	54034	58601	57646	26309	35761	23690	9098	32946	120250	111856	108719	51188
10	53345	58601	57542	26488	37403	22655	9751	35515	120438	111426	108719	49543
11	52935	58841	57742	26354	37987	22629	10417	38997	120759	110999	107836	47499
12	51607	58796	56920	26493	37897	22483	10076	44563	120826	109989	106796	45350
13	51866	58593	56162	26209	37546	22372	10608	50134	121147	108472	105146	43155
14	52294	58593	55572	26249	37683	21430	11700	53211	121292	109937	103520	40781
15	52745	57097	54907	26653	37142	20345	12237	55052	121336	111458	101862	38334
16	53161	55667	54707	27258	36628	19223	12564	58743	121203	112632	99447	35824
17	53571	55754	53806	27827	36326	18296	13949	61587	121036	113443	97063	34002
18	53984	55885	52541	28073	35928	17731	15582	65526	121058	113212	95201	33902
19	54391	56068	51712	29705	35316	17298	17761	69153	121103	112717	94063	33846
20	54778	54728	50868	32329	34611	16832	19398	73525	120859	112192	92307	33695
21	55175	54585	47831	34052	34432	16137	21842	78082	120593	111615	89949	33361
22	55558	54814	45092	34706	33545	15379	23459	83698	120516	111228	87510	32775
23	55951	53387	41685	35784	32648	15048	23477	90583	120615	110978	85282	31984
24	56388	53685	39039	36822	31760	14515	22620	97082	120549	111437	82977	30488
25	56890	53735	37308	36988	30932	13679	22152	104162	120228	111647	80662	30005
26	57379	54020	36014	36899	30627	13786	23187	111114	119558	111888	78585	29557
27	57876	54384	34639	35692	30037	14249	24737	116633	118816	112192	76114	29076
28	58384	54707	32670	33584	29689	14407	25322	121715	118308	111961	73339	28774
29	58623	55211	31624	32252	---	13743	24531	121770	117489	112202	71068	27868
30	58923	55638	31326	31364	---	13682	23518	121559	116559	112076	68989	26249
31	59096	---	30986	30889	---	12263	---	121526	---	111426	67951	---
MAX	60017	59510	59029	36988	37987	29133	25322	121770	121492	117360	111312	66500
MIN	51607	53387	30986	25734	27986	12263	9098	21816	116559	108472	67951	26249
a	3263.65	3258.98	3219.77	3219.59	3217.33	3173.93	3204.79	3331.43	3326.87	3322.01	3274.96	3210.61
b	-1966	-3458	-24652	-97	-1200	-17426	+11255	+98008	-4967	-5133	-43475	-41702

CAL YR 1998 b +20333

WTR YR 1999 b -34813

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11234760 SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CA

LOCATION.—Lat 37°19'00", long 119°19'43", in NE 1/4 SE 1/4 sec.15, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,500 ft upstream from Shakeflat Creek, 4,900 ft downstream from Mammoth Pool Dam, and 9.0 mi northwest of town of Big Creek.

DRAINAGE AREA.—1,003 mi².

PERIOD OF RECORD.—October 1959 to current year.

GAGE.—Water-stage recorder. Datum of gage is 2,865.50 ft above sea level (levels by Southern California Edison Co.). Since 1961, supplementary water-stage recorder and sharp-crested weir at different datum at outlet of dam 4,900 ft upstream, used for low flows of 60 ft³/s or less.

REMARKS.—Flow regulated by Mammoth Pool Reservoir (station 11234700) 4,900 ft upstream. Diversions upstream through Ward Tunnel (see stations 11229500 and 11235500). Since March 1960, most of the water is diverted past this station to Mammoth Pool Powerplant (station 11235100). See schematic diagrams of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 80,000 ft³/s, Jan. 2, 1997, gage height, 32.00 ft from floodmarks, from rating curve extended above 20,300 ft³/s; minimum daily, 0.3 ft³/s, Oct. 14, Dec. 5, 1959.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	29	11	13	13	14	13	30	2220	48	34	33
2	29	29	12	12	13	14	14	30	1510	36	34	33
3	29	23	13	13	13	14	14	30	705	36	34	35
4	29	11	13	13	13	14	14	30	286	36	34	35
5	29	11	14	12	13	14	14	29	93	36	34	35
6	29	11	14	12	13	14	14	30	220	36	34	34
7	28	11	14	12	13	14	14	30	250	36	34	34
8	28	11	14	12	13	14	14	31	261	36	34	34
9	28	11	13	12	13	14	14	31	216	36	34	32
10	28	11	14	12	13	14	14	31	271	36	31	33
11	28	11	13	12	13	14	14	32	567	33	36	33
12	28	11	14	13	13	14	14	32	793	34	36	33
13	28	11	14	13	13	14	21	32	1140	34	35	33
14	28	11	13	13	13	14	28	31	1420	34	35	35
15	28	11	13	13	13	14	29	29	1590	34	35	35
16	28	11	13	13	13	14	29	29	1680	34	34	35
17	28	11	14	13	13	13	29	35	1190	34	34	32
18	28	11	14	13	14	13	29	46	1140	34	34	29
19	28	11	13	13	14	13	29	46	1300	34	34	29
20	28	11	13	13	14	13	29	46	1050	34	34	29
21	28	11	13	13	14	13	29	46	799	34	34	29
22	28	11	14	13	14	13	30	47	535	34	34	29
23	28	11	13	13	14	13	30	35	540	34	33	28
24	29	11	13	13	14	13	30	30	587	34	33	28
25	29	11	13	13	14	13	29	40	501	34	33	28
26	29	11	13	13	14	13	30	57	98	34	33	28
27	29	11	13	13	14	13	30	58	59	34	33	28
28	29	11	13	13	14	13	30	391	59	34	33	28
29	29	11	13	13	---	13	30	3110	59	34	33	28
30	29	11	13	13	---	13	30	2660	58	34	33	28
31	29	---	13	13	---	13	---	2380	---	34	33	---
TOTAL	882	378	410	395	375	419	688	9514	21197	1085	1049	943
MEAN	28.5	12.6	13.2	12.7	13.4	13.5	22.9	307	707	35.0	33.8	31.4
MAX	29	29	14	13	14	14	30	3110	2220	48	36	35
MIN	28	11	11	12	13	13	13	29	58	33	31	28
AC-FT	1750	750	813	783	744	831	1360	18870	42040	2150	2080	1870
a	19250	21050	46960	31440	51440	72430	87600	135700	138800	55210	56720	51830

a Diversion, in acre-feet, to Mammoth Pool Powerplant, provided by Southern California Edison Co.

11234760 SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.4	13.0	15.2	98.7	68.8	98.9	212	1425	2185	980	77.5	23.3
MAX	61.9	20.1	66.3	2872	754	1111	2489	9681	12400	7169	1184	45.3
(WY)	1960	1974	1967	1997	1980	1995	1995	1969	1983	1995	1983	1978
MIN	12.6	.82	3.06	10.2	10.8	10.9	12.3	12.9	11.8	12.4	12.8	12.4
(WY)	1961	1960	1960	1986	1985	1960	1964	1961	1961	1961	1972	1960

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	428858		37335			
ANNUAL MEAN	1175		102		436	
HIGHEST ANNUAL MEAN					2022	
LOWEST ANNUAL MEAN					13.2	
HIGHEST DAILY MEAN	10400	Jul 2	3110	May 29	26000	Jan 3 1997
LOWEST DAILY MEAN	11	Jan 15	11	Nov 4	.30	Oct 14 1959
ANNUAL SEVEN-DAY MINIMUM	11	Jan 22	11	Nov 4	.57	Dec 1 1959
INSTANTANEOUS PEAK FLOW			3800	May 29	80000	Jan 2 1997
INSTANTANEOUS PEAK STAGE			10.49	May 29	32.00	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	850600		74050		315800	
TOTAL DIVERSION (AC-FT) a	912100		768500			
10 PERCENT EXCEEDS	6090		52		587	
50 PERCENT EXCEEDS	29		28		15	
90 PERCENT EXCEEDS	11		12		12	

a Diversion, in acre-feet, to Mammoth Pool Powerplant, provided by Southern California Edison Co.

11235500 PORTAL POWERPLANT AT HUNTINGTON LAKE, CA

LOCATION.—Lat 37°15'25", long 119°09'30", in SE 1/4 SW 1/4 sec.5, T.8 S., R.26 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in powerplant at tunnel outlet at east end of Huntington Lake, 0.9 mi east of Lakeshore Post Office, and 6 mi northeast of town of Big Creek.

PERIOD OF RECORD.—October 1927 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1960, published as Ward Tunnel at Outlet. October 1960 to September 1991, published as Ward Tunnel Outlet at Huntington Lake.

GAGE.—Acoustic-velocity meter in tunnel since Dec. 1, 1987. Oct. 1, 1968, to Nov. 30, 1987, pressure-differential recorder recorded discharge through penstock. November 1927 to May 23, 1956, water-stage recorder at datum 6,999.00 ft above sea level (levels by Southern California Edison Co.). May 24, 1956, to Sept. 30, 1968, no recorder, see REMARKS below.

REMARKS.—Daily discharge for the period May 24, 1956, to Sept. 30, 1968, computed as the sum of Ward Tunnel at Intake, Mono-Bear Conduit, Camp Creek Conduit, and corrected for change in contents of Portal Forebay. Powerplant receives water from Florence Lake (station 11229600) via Ward Tunnel, receives diversions from Bear and Mono Creeks (stations 11230520 and 11231550), and at times from several other small tributaries to South Fork San Joaquin River. See schematic diagram lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 2,080 ft³/s, June 21, 1935; no flow at times many years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	963	444	474	405	448	235	246	233	500	1160	948	968
2	988	570	189	359	415	238	164	382	489	1080	983	983
3	923	457	214	469	445	169	167	312	418	1010	882	968
4	963	565	216	419	431	241	232	272	524	1070	968	993
5	887	514	110	368	395	130	190	281	519	948	953	928
6	852	437	250	407	458	217	173	539	529	993	963	953
7	802	468	111	468	388	103	176	782	766	988	948	933
8	741	545	194	437	534	176	167	842	968	978	943	933
9	741	430	123	369	331	140	140	832	1110	1020	892	958
10	605	550	187	417	141	141	140	832	1230	968	943	923
11	620	442	186	468	181	210	168	1410	1500	524	998	862
12	317	585	190	413	242	175	166	1470	1380	534	1110	903
13	139	433	121	339	220	142	170	1230	1520	449	1040	892
14	204	590	219	429	103	212	215	1040	1530	766	1050	963
15	203	430	181	399	222	140	254	968	1530	1230	978	968
16	107	415	185	337	201	198	94	716	1530	1040	666	822
17	108	390	177	467	140	142	140	1000	1570	1130	1080	676
18	106	509	138	388	228	245	140	1250	1670	1140	1070	635
19	262	417	161	418	176	197	464	1120	1660	1130	1070	766
20	264	575	202	467	133	221	464	1180	1660	1120	1050	560
21	365	471	139	372	227	231	421	1320	1660	892	1000	430
22	428	471	181	509	135	102	671	1300	1500	716	1040	455
23	585	474	138	435	214	240	436	1390	1690	716	1050	453
24	534	524	138	466	140	116	447	1030	1100	711	1030	681
25	519	485	205	461	244	234	344	545	983	716	1040	600
26	545	534	150	460	136	248	386	605	983	812	1130	565
27	490	454	150	402	168	241	383	465	983	1010	1240	269
28	490	476	313	488	158	237	363	524	857	1020	1220	126
29	560	545	419	465	---	246	290	498	726	918	1220	109
30	447	448	407	465	---	246	299	499	928	1020	1230	146
31	585	---	454	497	---	246	---	495	---	988	1140	---
TOTAL	16343	14648	6522	13263	7254	6059	8110	25362	34013	28797	31875	21421
MEAN	527	488	210	428	259	195	270	818	1134	929	1028	714
MAX	988	590	474	509	534	248	671	1470	1690	1230	1240	993
MIN	106	390	110	337	103	102	94	233	418	449	666	109
AC-FT	32420	29050	12940	26310	14390	12020	16090	50310	67460	57120	63220	42490

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999, BY WATER YEAR (WY)

	335	269	272	257	259	296	522	855	916	839	666	505
MEAN	335	269	272	257	259	296	522	855	916	839	666	505
MAX	757	908	1102	793	806	815	953	1459	1665	1321	1386	1104
(WY)	1996	1983	1946	1985	1985	1985	1936	1946	1974	1956	1995	1983
MIN	.82	.81	5.29	13.4	10.3	78.8	98.9	119	3.93	150	147	2.00
(WY)	1946	1946	1991	1991	1991	1976	1991	1983	1938	1931	1934	1949

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1928 - 1999	
ANNUAL TOTAL	246726		213667			
ANNUAL MEAN	676		585		501	
HIGHEST ANNUAL MEAN					748	
LOWEST ANNUAL MEAN					196	
HIGHEST DAILY MEAN	1670	Jul 16	1690	Jun 23	2080	Jun 21 1935
LOWEST DAILY MEAN	106	Oct 18	94	Apr 16	.00	Sep 18 1961
ANNUAL SEVEN-DAY MINIMUM	157	Dec 18	155	Mar 7	.00	Dec 2 1969
ANNUAL RUNOFF (AC-FT)	489400		423800		362600	
10 PERCENT EXCEEDS	1260		1110		1090	
50 PERCENT EXCEEDS	545		468		466	
90 PERCENT EXCEEDS	229		148		63	

11236000 HUNTINGTON LAKE NEAR BIG CREEK, CA

LOCATION.—Lat 37°14'04", long 119°12'44", in SW 1/4 sec.14, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gate tower of dam 1 on Big Creek, and 2.7 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 sea level (levels by Southern California Edison Co.). Prior to June 19, 1920, nonrecording gage at same site and datum.

REMARKS.—Lake is formed by four dams; storage began Apr. 11, 1913. Dams were raised in 1914 and again in 1917. Usable capacity, 89,166 acre-ft between elevations 6,819.90 ft, invert of Outlet Tunnel No. 1, and 6,950.00 ft, spillway crest at Dam 1. Additional storage of 600 acre-ft is not available for release. Lake receives water from South Fork San Joaquin River Basin via Ward Tunnel through Portal Powerplant (station 11235500). Water is diverted from lake through Huntington–Shaver Conduit and Eastwood Powerplant (station 11238250) to Shaver Lake (station 11239500) since Apr. 21, 1928. Water is also diverted to Big Creek Powerplant No. 1 (station 11238100) on Big Creek. Records, including extremes, represent contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. 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, 88,866 acre-ft, July 11, elevation, 6,949.79 ft; minimum, 24,859 acre-ft, Apr. 13, elevation, 6,892.65 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Sept. 24, 1964)

6,835	1,552	6,870	11,293	6,920	50,812
6,840	2,354	6,880	16,370	6,930	62,555
6,845	3,324	6,890	22,882	6,940	75,344
6,850	4,480	6,900	30,861	6,950	89,166
6,860	7,427	6,910	40,216	6,951	90,606

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87041	78201	75026	45366	47327	50378	33784	38516	83247	88666	88065	87850
2	86970	77608	74165	44354	47391	50067	32824	39610	82762	88780	88294	88022
3	86757	77029	73506	44135	47989	49138	31923	40146	82138	88666	87922	88523
4	86643	77379	72704	43791	48316	48973	31421	40067	81890	88651	87979	87951
5	86388	77527	71686	43333	48676	48174	30551	40457	81628	88351	87979	87993
6	86064	77298	70959	43033	49172	47848	29441	41334	81559	88265	88036	87993
7	85641	76652	69630	42971	49645	47370	28436	43085	81697	88251	88094	87965
8	85106	76559	68643	42590	50223	46637	27843	44607	82623	88337	88237	87850
9	84573	76118	67649	41986	50645	45963	26952	46368	82818	88608	88036	87424
10	83791	76052	66890	41426	50356	45569	26140	48196	83386	88794	87736	87296
11	83026	75132	65520	41061	50467	45366	25476	50467	84504	88866	87836	87168
12	81725	74788	64559	40679	50534	45081	25080	53370	85148	88751	88065	87055
13	80967	74642	63689	40337	50812	44565	24859	56394	86120	88723	88237	86828
14	80733	74960	63159	40488	51037	44208	25134	58798	86899	88365	88408	86601
15	80528	75478	62617	40840	51217	43749	25483	60653	87254	88251	88480	87069
16	80078	75691	62188	41192	51307	43239	25421	61296	87566	88809	88308	87808
17	79654	76052	61552	41833	51543	42487	25818	63529	87793	88365	88322	87908
18	79191	76105	61029	41965	51543	41884	26694	66524	87353	87822	88308	88208
19	78974	76052	60616	42673	51914	40920	27745	69219	87594	88022	88279	88694
20	78771	76305	60107	43541	52175	40186	29136	72143	87566	88465	88237	88594
21	78622	76132	59422	44041	52515	39630	30620	75119	87509	88608	88194	88065
22	78500	75785	58333	44649	52095	38888	32145	78025	87310	87951	88108	87708
23	78581	75424	56347	45134	51959	38427	33067	81215	87651	87679	88108	87452
24	78811	75066	54416	45643	51644	37757	33465	83414	88194	87736	87993	87552
25	78893	74695	52845	45718	51352	36929	34078	83345	88351	87922	87736	88079
26	79110	74933	51262	45920	51059	36690	35076	83428	88494	87908	87381	88208
27	79232	75132	49833	45974	50857	36575	36403	83791	88651	87722	87381	87608
28	79354	74986	48698	46304	50567	36518	37005	84000	88523	87951	87693	86998
29	79586	75371	47793	46464	---	36166	37612	83665	88308	88022	88065	85430
30	79586	75265	46982	46325	---	35468	37776	83651	88537	88208	88065	83888
31	79123	---	46551	46874	---	34686	---	83553	---	88022	87951	---
MAX	87041	78201	75026	46874	52515	50378	37776	84000	88651	88866	88480	88694
MIN	78500	74642	46551	40337	47327	34686	24859	38516	81559	87679	87381	83888
a	6942.81	6939.94	6916.11	6916.41	6919.78	6904.26	6907.52	6946.03	6949.56	6949.20	6949.15	6946.27
b	-8003	-3858	-28714	+323	+3693	-15881	+3090	+45777	+4984	-515	-71	-4063

CAL YR 1998 b -10078

WTR YR 1999 b -3238

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11237000 BIG CREEK BELOW HUNTINGTON LAKE, CA

LOCATION.—Lat 37°13'17", long 119°12'42", in SE 1/4 NW 1/4 sec.23, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 800 ft upstream from Grouse Creek, 1.0 mi south of main dam of Huntington Lake, and 2.1 mi northeast of town of Big Creek.

DRAINAGE AREA.—81.1 mi².

PERIOD OF RECORD.—June 1925 to September 1970, October 1986 to current year.

WATER TEMPERATURE: Water years 1961–70.

REVISED RECORDS.—WSP 1315-A: 1943(M). WSP 1635: 1925–29. WSP 1930: Drainage area.

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 6,630 ft above sea level, from topographic map. Prior to Oct. 1, 1942, at datum 1.00 ft lower and Oct. 1, 1942, to Sept. 30, 1948, at datum 1.00 ft higher.

REMARKS.—Flow regulated by Huntington Lake (station 11236000). Diversions to Big Creek Powerplant No. 1 (station 11238100) and Eastwood Powerplant (station 11238250) bypass this station. See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,040 ft³/s, June 23, 1925, gage height, 11.3 ft, present datum; minimum daily, 0.1 ft³/s, many days in 1931.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	2.6	3.1	2.0	2.2	2.5	2.4	5.4	6.5	3.9	3.4	3.3
2	3.1	2.6	2.8	1.9	2.2	2.6	2.2	5.4	5.9	3.8	3.4	3.3
3	3.1	2.6	2.7	1.9	2.1	2.6	2.0	5.5	5.1	3.9	3.4	3.3
4	3.1	2.6	2.7	1.9	2.1	2.6	1.9	5.4	3.8	3.8	3.4	3.3
5	3.0	2.6	2.6	1.9	2.1	2.5	1.8	5.4	4.0	3.8	3.4	3.3
6	3.0	2.6	2.6	1.8	2.1	2.5	1.8	5.5	3.9	3.7	3.4	3.3
7	3.0	2.6	2.6	1.8	3.3	2.5	2.5	5.6	3.8	3.7	3.4	3.3
8	3.0	2.7	2.5	1.8	3.2	2.4	4.0	5.6	3.9	3.7	3.4	3.3
9	2.9	2.6	2.5	1.8	3.5	2.4	4.0	5.5	5.8	3.7	3.4	3.3
10	2.9	2.6	2.5	1.8	3.3	2.4	4.0	5.5	6.3	3.7	3.4	3.2
11	2.9	2.6	2.5	1.8	3.0	2.4	4.0	5.5	6.9	3.8	3.3	3.2
12	2.8	2.6	2.4	1.8	2.9	2.4	4.0	5.6	7.6	3.8	3.3	3.2
13	2.6	2.6	2.4	1.8	2.7	2.4	4.1	5.6	8.0	3.9	3.4	3.2
14	2.6	2.6	2.4	1.7	2.6	2.3	4.4	5.6	8.3	3.7	3.4	3.2
15	2.6	2.6	2.4	1.8	2.6	2.2	4.7	5.6	7.0	3.6	3.4	3.2
16	2.6	2.6	2.4	1.8	2.5	2.2	4.8	5.6	4.5	3.8	3.4	3.2
17	2.6	2.6	2.4	1.8	2.9	2.2	4.8	5.6	4.3	3.6	3.3	3.3
18	2.6	2.6	2.4	1.9	2.7	2.3	5.0	5.6	4.3	3.5	3.3	3.3
19	2.6	2.6	2.4	2.5	2.7	2.3	5.2	5.8	4.2	3.5	3.3	3.3
20	2.6	2.6	2.4	3.0	2.6	2.3	5.3	5.9	4.2	3.5	3.3	3.4
21	2.6	2.6	2.4	2.4	2.6	2.2	5.3	6.1	4.1	3.5	3.3	3.4
22	2.6	2.6	2.4	2.3	2.6	2.2	5.2	6.3	4.1	3.5	3.3	3.4
23	2.6	2.6	2.4	2.3	2.5	2.3	5.1	6.6	4.1	3.4	3.3	3.4
24	2.6	2.6	2.3	2.3	2.5	2.3	5.2	8.5	4.1	3.4	3.3	3.4
25	2.6	2.6	2.3	2.2	2.5	2.4	5.3	9.1	4.1	3.4	3.3	3.4
26	2.6	2.5	2.2	2.2	2.5	2.5	5.4	6.8	4.1	3.4	3.3	3.4
27	2.6	2.5	2.2	2.2	2.5	2.5	5.5	6.8	4.1	3.4	3.3	3.4
28	2.6	2.6	2.2	2.2	2.5	2.5	5.4	7.2	4.0	3.4	3.3	3.3
29	2.6	2.7	2.2	2.2	---	2.5	5.3	7.2	3.9	3.4	3.3	3.3
30	2.6	3.2	2.1	2.2	---	2.5	5.4	7.0	3.9	3.4	3.3	3.2
31	2.6	---	2.0	2.2	---	2.5	---	6.7	---	3.4	3.4	---
TOTAL	85.3	78.6	75.4	63.2	73.5	74.4	126.0	189.5	148.8	112.0	103.8	99.0
MEAN	2.75	2.62	2.43	2.04	2.62	2.40	4.20	6.11	4.96	3.61	3.35	3.30
MAX	3.1	3.2	3.1	3.0	3.5	2.6	5.5	9.1	8.3	3.9	3.4	3.4
MIN	2.6	2.5	2.0	1.7	2.1	2.2	1.8	5.4	3.8	3.4	3.3	3.2
AC-FT	169	156	150	125	146	148	250	376	295	222	206	196
a	14620	24960	27680	19340	11390	17140	12340	19850	26030	31610	34440	25910

a Diversion, in acre-feet, to Big Creek Powerplant No. 1, provided by Southern California Edison Co.

SAN JOAQUIN RIVER BASIN

11237000 BIG CREEK BELOW HUNTINGTON LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.46	1.49	1.51	1.35	1.34	1.70	2.76	9.10	9.12	10.1	2.00	1.54
MAX	4.79	4.55	4.70	6.45	3.53	5.90	7.09	297	242	293	8.34	4.86
(WY)	1994	1994	1956	1997	1995	1995	1995	1926	1926	1925	1969	1993
MIN	.16	.23	.18	.20	.30	.38	.47	.46	.43	.31	.16	.12
(WY)	1932	1932	1932	1932	1931	1948	1934	1934	1931	1931	1931	1931

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1925 - 1999	
ANNUAL TOTAL	1544.4		1229.5			
ANNUAL MEAN	4.23		3.37		3.22	
HIGHEST ANNUAL MEAN					45.9	
LOWEST ANNUAL MEAN					.35	
HIGHEST DAILY MEAN	15	Jun 7	9.1	May 25	1160	May 23 1926
LOWEST DAILY MEAN	1.2	Feb 27	1.7	Jan 14	.10	Jan 18 1931
ANNUAL SEVEN-DAY MINIMUM	1.2	Mar 4	1.8	Jan 8	.10	Aug 21 1931
INSTANTANEOUS PEAK FLOW			11		2040	Jun 23 1925
INSTANTANEOUS PEAK STAGE			2.80		11.30	Jun 23 1925
ANNUAL RUNOFF (AC-FT)	3060		2440		2330	
TOTAL DIVERSION (AC-FT) ^a	358700		265300			
10 PERCENT EXCEEDS	10		5.5		4.0	
50 PERCENT EXCEEDS	3.0		3.1		1.4	
90 PERCENT EXCEEDS	1.9		2.2		.40	

a Diversion, in acre-feet, to Big Creek Powerplant No. 1, provided by Southern California Edison Co.

11237500 PITMAN CREEK BELOW TAMARACK CREEK, CA

LOCATION.—Lat 37°11'55", long 119°12'46", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 250 ft upstream from Huntington–Shaver Conduit Tunnel, 0.8 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.4 mi upstream from mouth, and 1.9 mi east of town of Big Creek.

DRAINAGE AREA.—22.9 mi².

PERIOD OF RECORD.—October 1927 to current year. Records for water year 1928 incomplete, yearly estimate published in WSP 1315-A.

REVISED RECORDS.—WSP 931: 1940. WSP 1315-A: 1944. WSP 1395: 1928–29, 1938. WSP 1515: 1929. WSP 1930: Drainage area.

GAGE.—Water-stage recorder, Parshall flume and concrete control. Elevation of gage is 7,020 ft above sea level, from topographic map. Prior to Sept. 28, 1940, at site 10 ft downstream at same datum.

REMARKS.—No diversion upstream from station; practically all flow is diverted downstream from station to Huntington–Shaver Conduit. See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,500 ft³/s, Jan. 2, 1997, gage height, 12.65 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	3.1	17	e6.0	14	20	39	124	108	13	2.0	.55
2	3.5	2.9	13	e5.5	14	21	e30	125	103	12	2.0	.58
3	3.2	2.7	10	e5.0	14	24	30	102	99	11	1.9	.60
4	3.1	2.6	11	e6.0	14	e20	e26	99	99	11	1.7	.57
5	2.9	2.5	11	e6.0	13	e19	30	155	125	10	1.6	.57
6	2.7	2.4	9.1	e5.5	13	23	28	223	120	9.1	1.6	.53
7	2.5	2.8	9.1	e5.3	14	e17	27	252	99	8.4	1.8	.46
8	2.2	4.0	7.3	e5.5	20	e17	26	243	86	7.9	1.8	.40
9	2.1	3.3	6.2	e5.2	27	19	35	218	80	7.3	1.6	.39
10	2.1	3.2	5.9	e5.0	31	19	28	208	74	7.0	1.5	.36
11	2.1	3.6	e5.1	e4.8	32	18	26	243	72	7.5	1.7	.35
12	2.0	3.9	e5.1	e4.5	32	e17	26	281	68	8.4	1.7	.34
13	1.9	4.7	e5.2	e4.3	32	19	31	254	64	9.0	1.4	.33
14	1.9	5.0	e5.1	e4.1	33	21	49	203	60	12	1.3	.33
15	2.0	4.9	e7.0	e4.5	32	20	68	177	56	8.5	1.2	.33
16	2.1	4.8	e5.5	e5.0	32	e17	85	175	51	7.0	1.1	.31
17	2.1	4.9	e4.8	e6.0	29	e18	93	201	46	6.0	1.0	.30
18	2.1	3.9	e4.9	e7.0	26	e19	106	203	41	5.6	.95	.36
19	2.0	4.1	e4.8	11	24	28	126	194	37	5.3	.89	.36
20	2.0	3.6	e3.5	12	23	25	141	202	33	5.1	.79	.34
21	1.9	3.7	e5.0	12	23	e21	147	193	30	4.9	.74	.32
22	1.9	4.2	e7.0	11	22	25	127	197	28	4.6	.72	.48
23	1.8	4.8	e6.8	12	22	26	103	193	25	4.0	.66	1.6
24	2.1	6.1	e8.0	14	22	25	99	204	24	3.7	.61	.97
25	3.1	5.5	e9.0	13	21	28	110	205	22	3.5	.57	.67
26	3.7	4.7	e10	13	21	32	145	202	20	3.1	.57	.55
27	3.3	5.0	e9.0	14	20	39	167	180	18	2.8	.67	.48
28	2.9	4.9	e8.5	14	19	44	131	165	16	2.6	.65	.42
29	3.6	5.7	e8.0	14	---	45	101	139	15	2.4	.56	.38
30	4.3	17	e7.3	14	---	45	101	119	14	2.2	.51	.36
31	3.5	---	e6.5	14	---	42	---	113	---	2.1	.51	---
TOTAL	80.8	134.5	235.7	263.2	639	773	2281	5792	1733	207.0	36.30	14.59
MEAN	2.61	4.48	7.60	8.49	22.8	24.9	76.0	187	57.8	6.68	1.17	.49
MAX	4.3	17	17	14	33	45	167	281	125	13	2.0	1.6
MIN	1.8	2.4	3.5	4.1	13	17	26	99	14	2.1	.51	.30
AC-FT	160	267	468	522	1270	1530	4520	11490	3440	411	72	29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999, BY WATER YEAR (WY)

MEAN	1.91	5.51	10.8	12.1	14.2	27.8	92.7	200	120	21.0	2.43	1.40
MAX	42.0	110	135	194	91.1	136	264	550	648	180	21.4	18.9
(WY)	1983	1951	1951	1997	1986	1986	1982	1969	1983	1995	1983	1978
MIN	.13	.18	.20	.20	.20	.30	16.6	24.3	7.82	.67	.11	.10
(WY)	1989	1930	1932	1930	1949	1949	1975	1977	1976	1934	1931	1928

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1928 - 1999

ANNUAL TOTAL	29981.3	12190.09	
ANNUAL MEAN	82.1	33.4	42.8
HIGHEST ANNUAL MEAN			118
LOWEST ANNUAL MEAN			6.16
HIGHEST DAILY MEAN	776	Jun 15	2200
LOWEST DAILY MEAN	1.5	Jan 1	.00
ANNUAL SEVEN-DAY MINIMUM	1.5	Jan 25	.04
INSTANTANEOUS PEAK FLOW			395
INSTANTANEOUS PEAK STAGE			6.19
ANNUAL RUNOFF (AC-FT)	59470	24180	31030
10 PERCENT EXCEEDS	296	119	130
50 PERCENT EXCEEDS	5.9	8.5	5.6
90 PERCENT EXCEEDS	1.8	.67	.30

e Estimated.

11237600 PITMAN CREEK SHAFT BELOW TAMARACK CREEK, CA

LOCATION.—Lat 37°11'54", long 119°12'48", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank at Huntington–Shaver Conduit Tunnel, 0.8 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.4 mi upstream from mouth, and 1.9 mi east of town of Big Creek.

PERIOD OF RECORD.—October 1986 to February 1989, March 1989 to December 1995, April 1996 to November 1996, and March 1997 to current year.

GAGE.—Discharge computed as difference between Pitman Creek below Tamarack Creek (station 11237500) and Pitman Creek near Tamarack Mountain (station 11237700). Elevation of diversion point is 7,010 ft above sea level, from topographic map.

REMARKS.—Flow is diversion from Pitman Creek into Huntington–Shaver Conduit for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, unknown, Jan. 2, 1997, no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	1.5	e16	e5.4	e13	e19	e38	e123	107	12	1.4	.00
2	1.6	1.4	e12	e4.9	e13	e20	e29	e124	102	11	1.4	.00
3	1.4	1.3	e9.3	e4.4	e13	e23	e29	e101	97	10	1.3	.00
4	1.3	1.2	e10	e5.4	e13	e19	e25	e98	97	10	1.1	.00
5	1.3	1.2	e10	e5.4	e12	e18	e29	e154	123	9.1	1.0	.00
6	1.1	1.1	e8.4	e4.9	e12	e22	e27	e222	119	8.2	1.0	.00
7	.80	1.3	e8.4	e4.7	e13	e16	e26	e251	98	7.5	1.2	.00
8	.40	1.8	e6.7	e4.9	e19	e16	e25	e242	85	7.0	1.2	.00
9	.50	1.1	e5.6	e4.6	e26	e18	e34	e217	80	6.4	1.0	.00
10	.60	1.1	e5.3	e4.4	e30	e18	e27	e145	73	6.1	.91	.00
11	.60	1.4	e4.5	e4.2	e31	e17	e25	e123	70	6.6	1.1	.00
12	.50	.80	e4.5	e3.9	e31	e16	e25	280	67	7.5	1.1	.00
13	.40	1.1	e4.6	e3.7	e31	e18	e30	252	63	8.1	.81	.00
14	.50	.80	e4.5	e3.5	e32	e20	e48	201	59	11	.71	.00
15	.50	.00	e6.3	e3.9	e31	e19	e67	175	55	7.7	.59	.00
16	.60	1.8	e4.9	e4.4	e31	e16	e84	173	50	6.2	.49	.00
17	.60	4.5	e4.2	e5.4	e28	e17	e92	200	45	5.2	.39	.00
18	.60	3.3	e4.3	e6.4	e25	e18	e105	202	40	4.8	.34	.00
19	.50	e3.5	e4.2	e10	e23	e27	e125	193	36	4.5	.28	.00
20	.60	e3.0	e2.9	e11	e22	e24	e140	201	32	4.3	.18	.00
21	.50	e3.1	e4.4	e11	e22	e20	e146	192	29	4.1	.11	.00
22	.60	e3.6	e6.3	e10	e21	e24	e126	196	27	3.8	.08	.10
23	.50	e4.2	e6.2	e11	e21	e25	e102	192	24	3.2	.05	1.1
24	.70	e5.5	e7.3	e13	e21	e24	e98	203	23	2.9	.01	.48
25	1.4	e4.9	e8.3	e12	e20	e27	e109	204	21	2.7	.00	.20
26	1.9	e4.1	e9.2	e12	e20	e31	e144	200	19	2.3	.00	.09
27	1.7	e4.4	e8.3	e13	e19	e38	e166	178	17	2.1	.00	.02
28	1.4	e4.3	e7.8	e13	e18	e43	e130	163	15	1.9	.00	.00
29	1.8	e5.1	e7.3	e13	---	e44	e100	137	14	1.7	.00	.00
30	2.1	e16	e6.6	e13	---	e44	e100	118	13	1.6	.00	.00
31	1.8	---	e5.9	e13	---	e41	---	112	---	1.5	.00	---
TOTAL	30.90	88.40	214.2	239.4	611	742	2251	5572	1700	181.0	17.75	1.99
MEAN	1.00	2.95	6.91	7.72	21.8	23.9	75.0	180	56.7	5.84	.57	.066
MAX	2.1	16	16	13	32	44	166	280	123	12	1.4	1.1
MIN	.40	.00	2.9	3.5	12	16	25	98	13	1.5	.00	.00
AC-FT	61	175	425	475	1210	1470	4460	11050	3370	359	35	3.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	.55	1.10	1.55	3.86	6.70	23.7	77.3	128	66.3	11.2	1.58	.16
MAX	3.22	6.24	7.33	22.5	25.6	78.5	124	440	365	76.0	13.7	.90
(WY)	1995	1995	1995	1995	1995	1995	1989	1993	1995	1995	1995	1995
MIN	.000	.000	.000	.000	.000	.000	40.7	53.3	9.14	.83	.000	.000
(WY)	1989	1989	1989	1987	1987	1992	1995	1997	1992	1994	1988	1988

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1987 - 1999

ANNUAL TOTAL	9330.80	11649.64		
ANNUAL MEAN	25.6	31.9	29.1	
HIGHEST ANNUAL MEAN			67.8	1993
LOWEST ANNUAL MEAN			13.5	1987
HIGHEST DAILY MEAN	251	May 30	888	May 16 1996
LOWEST DAILY MEAN	.00	Jan 1	.00	Nov 15 1986
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Aug 25 1986
ANNUAL RUNOFF (AC-FT)	18510	23110	21080	
10 PERCENT EXCEEDS	87	118	90	
50 PERCENT EXCEEDS	4.3	7.8	1.5	
90 PERCENT EXCEEDS	.00	.09	.00	

e Estimated.

11237700 PITMAN CREEK NEAR TAMARACK MOUNTAIN, CA

LOCATION.—Lat 37°11'57", long 119°12'51", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 400 ft downstream from Huntington–Shaver Conduit Tunnel, 0.9 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.3 mi upstream from mouth, and 1.8 mi east of town of Big Creek.

DRAINAGE AREA.—23.0 mi².

PERIOD OF RECORD.—October 1986 to February 1989, March 1989 to December 1995, April 1996 to November 1996, and March 1997 to current year.

GAGE.—Water-stage recorder and concrete control with V-notch sharp-crested weir. Elevation of gage is 7,000 ft above sea level, from topographic map.

REMARKS.—Most of flow is diverted upstream from station at Pitman Creek Shaft below Tamarack Creek (station 11237600) to Huntington–Shaver Conduit. See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, unknown, Jan. 2, 1997, no flow Feb. 15 to Apr. 4, 1991.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	1.6	e.80	e.60	e.80	e.80	e.90	e1.1	1.1	.98	.64	.51
2	1.9	1.5	e.70	e.60	e.80	e.80	e.90	e1.1	.56	.95	.64	.51
3	1.8	1.4	e.70	e.60	e.80	e.90	e.90	e1.1	1.7	.95	.64	.54
4	1.8	1.4	e.70	e.60	e.80	e.90	e.90	e1.1	2.1	.95	.61	.53
5	1.6	1.3	e.70	e.60	e.80	e.90	e.90	e1.1	1.6	.95	.59	.50
6	1.6	1.3	e.70	e.60	e.80	e.90	e.90	e1.2	1.0	.94	.58	.48
7	1.7	1.5	e.70	e.60	e.80	e.80	e.90	e1.2	.68	.92	.59	.43
8	1.8	2.2	e.60	e.60	e.80	e.80	e.90	e1.2	.51	.92	.59	.39
9	1.6	2.2	e.60	e.60	e.90	e.80	e.90	e1.2	.44	.92	.59	.38
10	1.5	2.1	e.60	e.60	e.90	e.80	e.90	e63	.87	.92	.59	.36
11	1.5	2.2	e.60	e.60	e.90	e.80	e.90	e120	1.6	.92	.59	.34
12	1.5	3.1	e.60	e.60	e.90	e.80	e.90	.85	1.4	.92	.59	.34
13	1.5	3.6	e.60	e.60	e.90	e.80	e.90	1.6	1.3	.88	.59	.32
14	1.4	4.2	e.60	e.60	e.90	e.80	e.90	2.3	1.2	.84	.59	.30
15	1.5	5.7	e.70	e.60	e.90	e.80	e1.0	2.0	1.2	.79	.61	.30
16	1.5	3.0	e.60	e.60	e.90	e.80	e1.0	1.6	1.3	.79	.61	.30
17	1.5	.45	e.60	e.60	e.90	e.80	e1.0	.64	1.5	.79	.61	.29
18	1.5	.56	e.60	e.60	e.90	e.80	e1.0	1.2	1.4	.79	.61	.34
19	1.5	e.60	e.60	e.70	e.90	e.90	e1.1	1.4	1.4	.79	.61	.36
20	1.4	e.60	e.60	e.80	e.90	e.90	e1.1	1.1	1.3	.77	.61	.33
21	1.4	e.60	e.60	e.80	e.90	e.90	e1.1	.90	1.3	.76	.63	.32
22	1.3	e.60	e.70	e.80	e.90	e.90	e1.1	.83	1.2	.76	.64	.38
23	1.3	e.60	e.60	e.80	e.90	e.90	e1.1	.86	1.1	.76	.61	.50
24	1.4	e.60	e.70	e.80	e.80	e.90	e1.1	.82	1.1	.76	.60	.49
25	1.7	e.60	e.70	e.80	e.80	e.90	e1.1	1.3	1.1	.76	.57	.47
26	1.8	e.60	e.80	e.80	e.80	e.90	e1.1	2.2	1.0	.76	.56	.46
27	1.6	e.60	e.70	e.80	e.80	e.90	e1.1	2.0	1.0	.75	.57	.46
28	1.5	e.60	e.70	e.80	e.80	e.90	e1.1	1.8	1.0	.70	.55	.43
29	1.8	e.60	e.70	e.80	---	e.90	e1.1	1.6	.99	.66	.52	.39
30	2.2	e.80	e.70	e.80	---	e.90	e1.1	1.2	.99	.64	.49	.36
31	1.7	---	e.60	e.80	---	e.90	---	.69	---	.64	.49	---
TOTAL	49.9	46.71	20.40	21.10	23.90	26.50	29.80	220.19	34.94	25.63	18.31	12.11
MEAN	1.61	1.56	.66	.68	.85	.85	.99	7.10	1.16	.83	.59	.40
MAX	2.2	5.7	.80	.80	.90	.90	1.1	120	2.1	.98	.64	.54
MIN	1.3	.45	.60	.60	.80	.80	.90	.64	.44	.64	.49	.29
AC-FT	99	93	40	42	47	53	59	437	69	51	36	24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	.70	.92	1.02	1.31	1.78	4.83	26.1	43.9	54.8	20.8	1.12	.67
MAX	1.61	1.74	1.50	2.17	5.19	24.8	126	265	506	132	6.17	2.92
(WY)	1999	1990	1990	1990	1992	1990	1997	1995	1998	1998	1998	1998
MIN	.13	.31	.41	.56	.35	.000	.99	1.22	.66	.52	.16	.13
(WY)	1989	1991	1991	1991	1991	1991	1999	1990	1990	1992	1994	1987

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1987 - 1999

ANNUAL TOTAL	20651.90	529.49										
ANNUAL MEAN	56.6	1.45								12.9		
HIGHEST ANNUAL MEAN										56.5		1998
LOWEST ANNUAL MEAN										.79		1991
HIGHEST DAILY MEAN	746	Jun 15					120	May 11		762	May 16	1996
LOWEST DAILY MEAN	.45	Nov 17					.29	Sep 17		.00	Feb 15	1991
ANNUAL SEVEN-DAY MINIMUM	.57	Nov 17					.31	Sep 11		.00	Feb 15	1991
ANNUAL RUNOFF (AC-FT)	40960						1050			9360		
10 PERCENT EXCEEDS	249						1.6			5.1		
50 PERCENT EXCEEDS	2.0						.80			1.1		
90 PERCENT EXCEEDS	.70						.55			.27		

e Estimated.

11238250 EASTWOOD POWERPLANT ABOVE SHAVER LAKE, NEAR BIG CREEK, CA

LOCATION.—Lat 37°07'55", long 119°15'39", in NE 1/4 SW 1/4 sec.20, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, 0.25 mi upstream from Shaver Lake and 5.0 mi south of Big Creek.

PERIOD OF RECORD.—October 1987 to current year.

GAGE.—Acoustic-flow meter in powerplant penstock. Elevation of gage is 5,400 ft above sea level, from topographic map.

REMARKS.—Flow is diverted from Huntington Lake (station 11236000) and Pitman Creek (station 11237600) to Balsam Meadows Forebay, then through a tunnel to the powerplant. Water is returned to Shaver Lake (station 11239500) 0.25 mi downstream for further power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,910 ft³/s, May 24, 1993; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	509	661	425	645	.00	440	426	174	787	807	373	731
2	441	691	458	565	.00	433	455	298	938	711	426	149
3	466	.00	469	97	.00	447	428	267	827	963	431	565
4	514	.00	431	.00	.00	493	375	271	862	817	352	524
5	524	21	390	.00	.00	474	503	524	862	751	465	585
6	625	342	392	.00	.00	254	514	519	877	605	615	472
7	771	363	454	37	.00	378	417	691	797	701	371	691
8	792	430	545	453	.00	442	171	534	686	494	650	706
9	615	451	436	489	.00	464	265	354	887	701	555	475
10	304	439	412	436	.00	282	194	.00	903	5.0	447	466
11	645	494	407	424	.00	.00	176	.00	892	.00	373	380
12	451	.00	469	427	.00	284	192	.00	948	.00	465	486
13	369	.00	438	467	.00	459	191	488	892	10	382	445
14	369	.00	.00	408	.00	461	172	247	1090	822	415	529
15	469	.00	.00	431	.00	436	171	296	918	872	70	422
16	555	.00	.00	441	.00	418	222	726	998	998	590	108
17	394	.00	.00	349	.00	357	.00	498	1050	908	406	219
18	366	.00	39	257	.00	266	181	529	1320	837	731	147
19	550	70	534	347	.00	395	491	319	1360	913	726	134
20	321	274	.00	370	59	393	122	481	1360	661	580	585
21	391	195	.00	388	39	519	177	450	1400	580	681	291
22	822	436	110	333	.00	431	314	452	1490	431	676	325
23	400	441	751	340	.00	364	361	756	1050	529	620	208
24	393	570	812	356	332	570	397	550	721	391	741	114
25	488	560	475	344	341	384	534	1680	661	425	832	333
26	397	500	489	346	432	442	438	1390	716	309	822	138
27	376	570	590	395	501	442	393	1140	862	374	792	313
28	676	450	509	357	488	428	175	766	882	478	857	183
29	470	489	590	387	---	417	354	1230	872	635	837	721
30	529	605	539	417	---	390	339	1260	852	330	862	465
31	676	---	519	.00	---	464	---	1010	---	625	756	---
TOTAL	15668	9052.00	11683.00	10306.00	2192.00	12427.00	9148.00	17900.00	28760	17683.00	17899	11910
MEAN	505	302	377	332	78.3	401	305	577	959	570	577	397
MAX	822	691	812	645	501	570	534	1680	1490	998	862	731
MIN	304	.00	.00	.00	.00	.00	.00	.00	661	.00	70	108
AC-FT	31080	17950	23170	20440	4350	24650	18150	35500	57050	35070	35500	23620

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	327	227	282	303	255	279	470	786	899	730	557	440
MAX	600	571	540	534	574	684	1081	1605	1502	1343	837	702
(WY)	1996	1996	1997	1997	1997	1997	1996	1993	1993	1995	1997	1996
MIN	.000	.000	21.4	6.19	.000	19.5	29.3	159	270	156	181	81.7
(WY)	1988	1988	1991	1990	1996	1991	1991	1991	1990	1992	1992	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1988 - 1999
ANNUAL TOTAL	220700.50	164628.00	
ANNUAL MEAN	605	451	464
HIGHEST ANNUAL MEAN			720
LOWEST ANNUAL MEAN			141
HIGHEST DAILY MEAN	1660	Jun 20	1680
LOWEST DAILY MEAN	.00	Feb 11	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Nov 12	.00
ANNUAL RUNOFF (AC-FT)	437800	326500	336200
10 PERCENT EXCEEDS	1130	843	1010
50 PERCENT EXCEEDS	514	438	410
90 PERCENT EXCEEDS	139	.00	.00

11238270 MIDDLE FORK BALSAM CREEK BELOW BALSAM MEADOWS FOREBAY, NEAR BIG CREEK, CA

LOCATION.—Lat 37°09'46", long 119°15'12", in NE 1/4 NW 1/4 sec.9, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 80 ft downstream from control house at base of Balsam Meadows Dam and 2.6 mi south of Big Creek.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—January 1989 to current year.

GAGE.—Water-stage recorder, 90° V-notch weir and concrete control. Elevation of gage is 6,560 ft above sea level, from topographic map.

REMARKS.—Flow consists of fishery maintenance release and spill over Balsam Meadows Dam. No record of flow over spillway Apr. 15, 1989. Diversion from Balsam Meadows Dam through penstock to Eastwood Powerplant (station 11238250). See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, unknown, Apr. 15, 1989, as there was no record of flow over spillway; minimum daily, 0.31 ft³/s, Feb. 4, 1989.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	.59	.64	.66	.61	.64	.68	.67	1.2	1.1	1.1	1.3
2	.70	.59	.61	.64	.61	.64	.67	.67	1.1	1.1	1.1	1.4
3	.75	.60	.61	.64	.61	.64	.64	.65	1.1	1.1	1.2	1.4
4	.78	.61	.61	.64	.61	.64	.65	.64	1.1	1.1	1.2	1.4
5	.81	.61	.61	.64	.61	.66	.66	.64	1.2	1.1	1.2	1.3
6	.87	.61	.61	.64	.61	.66	.64	.64	1.2	1.1	1.2	1.3
7	.89	.60	.61	.64	.64	.64	.61	.67	1.1	1.2	1.2	1.3
8	.88	.60	.62	.64	.67	.64	.59	.62	1.2	1.2	1.1	1.3
9	.88	.61	.61	.64	.70	.64	.59	.61	1.2	1.2	1.1	1.3
10	.89	.61	.61	.64	.68	.64	.61	.63	1.2	1.2	1.1	1.3
11	.89	.61	.61	.64	.67	.64	.61	.67	1.2	1.2	1.1	1.3
12	.89	.60	.62	.64	.67	.65	.63	.70	1.2	1.3	1.1	1.3
13	.89	.61	.61	.64	.68	.64	.64	.67	1.2	1.3	1.1	1.3
14	.87	.61	.61	.64	.69	.64	.64	.60	1.2	1.3	1.1	1.3
15	.87	.63	.61	.64	.67	.64	.64	.57	1.2	1.3	1.3	1.3
16	.87	.64	.63	.61	.67	.65	.66	.57	1.2	1.2	1.3	1.2
17	.86	.64	.65	.62	.68	.64	.69	.61	1.2	1.2	1.3	1.2
18	.86	.64	.67	.61	.70	.65	.72	.61	1.2	1.2	1.3	1.2
19	.87	.64	.66	.64	.70	.67	.74	.61	1.2	1.2	1.3	1.2
20	.73	.64	.64	.67	.67	.67	.73	.61	1.2	1.2	1.4	1.2
21	.60	.64	.64	.64	.67	.67	.73	.61	1.2	1.2	1.4	1.2
22	.64	.61	.64	.62	.68	.67	.71	.61	1.2	1.2	1.4	1.2
23	.61	.61	.65	.61	.68	.67	.64	.61	1.2	1.2	1.3	1.2
24	.61	.61	.67	.61	.69	.68	.65	.61	1.2	1.1	1.2	1.2
25	.64	.61	.65	.61	.66	.67	.70	.81	1.2	1.1	1.2	1.2
26	.67	.61	.68	.61	.66	.68	.70	1.2	1.2	1.1	1.2	1.2
27	.67	.61	.69	.61	.66	.68	.70	1.2	1.2	1.2	1.2	1.2
28	.64	.61	.68	.61	.65	.68	.65	1.2	1.1	1.2	1.1	1.2
29	.59	.61	.67	.61	---	.67	.65	1.1	1.2	1.2	1.1	1.2
30	.60	.64	.67	.61	---	.67	.65	1.2	1.1	1.1	1.2	1.2
31	.62	---	.67	.61	---	.67	---	1.2	---	1.1	1.2	---
TOTAL	23.94	18.45	19.76	19.52	18.50	20.34	19.82	23.01	35.4	36.5	37.3	37.8
MEAN	.77	.62	.64	.63	.66	.66	.66	.74	1.18	1.18	1.20	1.26
MAX	1.0	.64	.69	.67	.70	.68	.74	1.2	1.2	1.3	1.4	1.4
MIN	.59	.59	.61	.61	.61	.64	.59	.57	1.1	1.1	1.1	1.2
AC-FT	47	37	39	39	37	40	39	46	70	72	74	75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
MEAN	.78	.70	.76	.74	.76	.91	1.02	.86	1.28	1.30	1.32	1.32
MAX	.93	1.15	1.44	1.10	1.10	2.20	2.75	1.28	1.45	1.38	1.48	1.50
(WY)	1992	1992	1992	1993	1993	1992	1992	1995	1995	1990	1992	1992
MIN	.59	.57	.58	.56	.57	.56	.57	.60	1.10	1.17	1.20	1.21
(WY)	1998	1997	1998	1996	1996	1996	1996	1996	1998	1997	1999	1997

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1989 - 1999	
ANNUAL TOTAL	316.68		310.34			
ANNUAL MEAN	.87		.85		.98	
HIGHEST ANNUAL MEAN					1.38	
LOWEST ANNUAL MEAN					.81	
HIGHEST DAILY MEAN	1.3	Jun 30	1.4	Aug 20	3.4	Apr 2 1992
LOWEST DAILY MEAN	.55	Jan 4	.57	May 15	.31	Feb 4 1989
ANNUAL SEVEN-DAY MINIMUM	.56	Jan 2	.60	May 14	.51	Nov 1 1996
INSTANTANEOUS PEAK FLOW			2.1		Sep 4	
INSTANTANEOUS PEAK STAGE			.97		Sep 4	
ANNUAL RUNOFF (AC-FT)	628		616		711	
10 PERCENT EXCEEDS	1.3		1.2		1.4	
50 PERCENT EXCEEDS	.70		.67		.84	
90 PERCENT EXCEEDS	.61		.61		.61	

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.—June 1923 to May 1932, October 1986 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.—Water-stage recorder. Elevation of gage is 2,620 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Huntington Lake (station 11236000) and diversions for power development in Big Creek powerplants. Most of the water is diverted past this station to Big Creek Powerplant No. 8 (station 11238550). See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records collected by the Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,400 ft³/s, Jan. 2, 1997, gage height, 10.34 ft, from rating curve extended above 900 ft³/s; no flow several days in 1925 and 1931.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	279	742	758	6.2	5.5	5.0	4.8	5.0	5.2	4.1	3.8	4.1
2	286	700	778	5.4	5.3	5.0	4.8	5.0	5.5	4.1	3.8	4.1
3	286	391	675	6.0	5.2	5.0	4.8	5.1	5.6	96	4.3	4.1
4	284	189	747	5.9	5.2	5.0	4.8	4.8	5.3	4.0	3.9	4.1
5	284	7.7	782	5.9	5.2	4.9	4.9	4.8	5.3	3.9	3.9	4.1
6	229	7.2	726	5.9	5.2	4.8	5.4	4.8	5.2	3.9	3.9	4.1
7	4.1	7.1	807	5.9	7.3	4.9	6.5	4.8	5.3	3.9	3.9	4.1
8	4.7	7.2	804	5.9	7.4	4.8	6.4	4.8	5.3	38	3.9	4.1
9	4.7	6.7	770	6.0	8.3	5.3	6.3	4.8	5.3	4.0	3.9	4.1
10	4.7	6.9	340	6.0	6.7	4.9	6.3	4.8	5.3	3.9	3.9	4.1
11	4.7	6.6	479	5.6	5.8	4.8	6.2	4.7	5.3	3.9	3.9	4.1
12	4.6	6.5	800	5.7	5.5	4.9	6.0	4.7	5.3	12	3.9	4.1
13	3.9	6.3	669	5.6	5.4	4.8	5.9	4.7	5.3	4.6	3.9	4.1
14	3.9	7.1	499	5.7	5.2	4.8	5.8	4.7	5.3	4.0	3.9	4.1
15	3.8	6.5	577	5.9	5.1	4.9	5.6	4.7	5.4	3.9	3.9	4.1
16	10	303	49	6.2	5.0	4.9	6.3	4.7	5.4	3.9	3.9	4.1
17	13	212	6.6	5.9	5.5	4.8	5.4	4.8	5.4	3.9	3.9	4.1
18	13	452	6.5	5.9	5.1	4.6	5.3	4.8	5.6	3.9	3.9	4.1
19	13	671	6.6	6.4	5.0	4.5	5.3	5.0	32	3.8	3.9	4.1
20	13	665	6.6	8.5	4.9	4.7	5.2	5.0	3.9	3.8	4.0	4.1
21	13	787	6.4	7.5	6.1	4.6	5.2	5.0	3.9	3.9	4.1	17
22	12	784	6.2	6.2	5.4	4.5	5.2	5.0	3.9	3.9	4.1	4.1
23	18	777	6.2	6.3	5.2	5.4	5.1	5.1	3.9	3.9	4.0	4.1
24	23	800	6.3	7.8	5.0	4.9	5.1	5.0	3.8	3.9	4.1	4.1
25	20	785	6.3	6.8	5.3	4.8	5.2	5.0	3.8	3.8	4.1	4.1
26	16	439	6.2	6.4	5.1	4.7	5.2	5.0	3.8	3.8	4.1	4.1
27	15	317	6.2	5.7	5.0	4.7	5.3	5.0	3.8	3.8	4.1	4.1
28	15	594	6.1	5.4	5.0	4.7	5.2	5.0	3.8	3.8	4.1	4.1
29	108	371	6.1	5.2	---	4.7	5.2	5.0	3.9	3.8	4.1	4.1
30	252	643	6.1	5.2	---	4.7	5.2	5.0	4.1	3.8	4.1	4.1
31	516	---	6.0	5.8	---	5.1	---	5.1	---	3.8	4.1	---
TOTAL	2757.1	10697.8	10354.4	188.8	155.9	150.1	163.9	151.7	170.9	255.7	123.3	135.9
MEAN	88.9	357	334	6.09	5.57	4.84	5.46	4.89	5.70	8.25	3.98	4.53
MAX	516	800	807	8.5	8.3	5.4	6.5	5.1	32	96	4.3	17
MIN	3.8	6.3	6.0	5.2	4.9	4.5	4.8	4.7	3.8	3.8	3.8	4.1
AC-FT	5470	21220	20540	374	309	298	325	301	339	507	245	270
a	27710	41350	45350	32150	25740	33160	39670	36530	59530	65690	71780	54970

a Diversion, in acre-feet, to Big Creek Powerplant No. 8, provided by Southern California Edison Co.

11238500 BIG CREEK NEAR MOUTH, NEAR BIG CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10.2	50.6	70.5	66.8	30.5	49.8	13.1	38.8	71.5	26.8	5.78	5.65
MAX	88.9	357	554	786	331	377	58.3	327	569	137	26.7	25.4
(WY)	1999	1999	1997	1997	1997	1995	1995	1995	1998	1998	1998	1998
MIN	2.44	1.97	1.28	1.61	1.69	2.03	2.35	2.23	2.23	2.20	2.27	2.33
(WY)	1988	1988	1995	1989	1988	1992	1989	1987	1987	1987	1988	1987

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	49157.0		25305.5			
ANNUAL MEAN	135		69.3		36.7	
HIGHEST ANNUAL MEAN					171	
LOWEST ANNUAL MEAN					2.34	
HIGHEST DAILY MEAN	999	Jun 17	807	Dec 7	3540	Jan 2 1997
LOWEST DAILY MEAN	3.6	Jan 1	3.8	Oct 15	1.0	Dec 8 1994
ANNUAL SEVEN-DAY MINIMUM	3.7	Jan 1	3.8	Jul 25	1.1	Dec 4 1994
INSTANTANEOUS PEAK FLOW			942		7400	
INSTANTANEOUS PEAK STAGE			4.68		10.34	
ANNUAL RUNOFF (AC-FT)	97500		50190		26600	
TOTAL DIVERSION (AC-FT) a	702200		533600		496000	
10 PERCENT EXCEEDS	578		284		23	
50 PERCENT EXCEEDS	7.6		5.1		3.7	
90 PERCENT EXCEEDS	4.2		3.9		1.8	

a Diversion, in acre-feet, to Big Creek Powerplant No. 8, provided by Southern California Edison Co.

11238600 SAN JOAQUIN RIVER ABOVE STEVENSON CREEK, NEAR BIG CREEK, CA

LOCATION.—Lat 37°12'28", long 119°19'44", unsurveyed, T.8 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in intake structure near left bank, 300 ft upstream from Dam 6, 3.5 mi upstream from Stevenson Creek, 4.4 mi west of town of Big Creek, and at mile 313.6.

DRAINAGE AREA.—1,197 mi².

PERIOD OF RECORD.—Water years 1987, 1993–94, October 1995 to current year. Records for water years 1951 to 1972 in files of Southern California Edison Co. Records for water years 1974 to 1986 in files of the U.S. Geological Survey.

GAGE.—Acoustic-velocity meter and water-stage recorder on Dam 6 since Oct. 1, 1992. Water-stage recorders at various sites downstream prior to 1992. Elevation of gage is 2,200 ft above sea level, from topographic map.

REMARKS.—Record consists of computed flow over spillway at Dam 6 and flow through fish-water release valve. At times the sluice valve leaks and this flow bypasses the station. Flow regulated by Mammoth Pool Reservoir and Huntington Lake (stations 11234700 and 11236000) and diversions for power development in Big Creek powerplants. Most of the water is diverted past this station to Big Creek Powerplant No. 3 (station 11241800). See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records collected by the Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 72,500 ft³/s, Jan. 2, 1997; minimum daily, 3.0 ft³/s, at times in several years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	1860	3.4	3.4	3.4
2	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.4	1640	3.4	18	3.4
3	3.4	3.4	3.4	3.4	3.4	3.4	6.2	3.4	722	3.4	25	3.4
4	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.4	183	3.4	3.4	3.4
5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	226	3.4	4.1	3.4
6	3.4	3.4	3.4	3.4	3.4	3.4	3.4	163	530	3.4	5.2	3.4
7	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	851	3.4	3.4	3.4
8	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	531	3.4	3.4	3.4
9	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	246	3.4	3.4	3.4
10	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	216	4.6	3.4	3.4
11	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	493	33	3.4	3.4
12	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	857	81	3.4	3.4
13	e32	3.4	3.4	3.4	3.4	3.4	3.4	3.4	1090	35	3.4	3.4
14	e60	3.4	3.4	3.4	3.4	3.4	3.4	3.4	1390	3.4	3.4	3.4
15	e60	e3.4	3.4	3.4	3.4	3.4	20	3.4	1740	5	3.4	3.4
16	e60	e3.4	3.4	3.4	3.4	3.4	64	3.3	1820	3.4	3.9	3.4
17	e60	3.4	3.4	3.4	3.4	3.4	3.4	3.4	1560	3.4	3.5	3.4
18	e60	3.4	3.4	3.4	3.4	3.4	3.4	3.4	1470	3.4	3.4	3.5
19	e60	3.4	3.4	3.4	3.4	3.4	3.4	3.4	1300	3.4	3.4	3.5
20	e60	3.2	3.4	3.4	3.4	3.4	3.4	84	1140	3.4	3.4	3.4
21	e60	3.4	3.4	3.4	3.4	3.4	3.4	115	895	3.4	3.4	3.4
22	e60	3.4	3.4	3.4	3.4	3.4	3.4	3.4	673	3.4	11	3.4
23	e60	e3.4	3.4	3.4	3.4	3.4	3.4	3.4	462	3.4	29	3.4
24	e60	3.4	3.4	3.4	3.4	7.0	3.4	3.4	551	3.4	15	3.4
25	e60	3.4	3.4	3.4	3.4	3.3	5.1	3.4	451	3.4	70	3.4
26	e60	3.4	3.4	3.3	3.4	3.4	3.4	3.4	114	3.4	3.4	3.5
27	e60	3.4	3.4	3.2	3.4	3.4	3.4	3.4	3.8	3.4	3.4	3.5
28	e60	3.4	3.4	3.4	3.4	3.4	3.4	22	4.3	3.4	3.4	3.5
29	e60	3.4	3.4	3.4	---	3.4	3.4	2670	69	3.4	3.4	3.4
30	e10	3.3	3.4	3.4	---	3.4	3.4	2200	46	3.4	3.4	88
31	28	---	3.4	3.4	---	3.4	---	1880	---	17	3.4	---
TOTAL	1070.7	101.5	105.4	105.1	95.2	108.9	183.7	7215.5	23134.1	260.6	256.1	187.1
MEAN	34.5	3.38	3.40	3.39	3.40	3.51	6.12	233	771	8.41	8.26	6.24
MAX	60	3.4	3.4	3.4	3.4	7.0	64	2670	1860	81	70	88
MIN	3.3	3.2	3.4	3.2	3.4	3.3	3.4	3.3	3.8	3.4	3.4	3.4
AC-FT	2120	201	209	208	189	216	364	14310	45890	517	508	371
a	50920	85840	114800	68190	86280	108400	132100	175700	187100	123500	128800	107700

e Estimated.

a Diversion, in acre-feet, to Big Creek Powerplant No. 3, provided by Southern California Edison Co.

11238600 SAN JOAQUIN RIVER ABOVE STEVENSON CREEK, NEAR BIG CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.84	3.40	31.5	947	416	308	231	1462	2400	758	46.1	3.89
MAX	34.5	3.95	200	6605	1841	954	621	3726	7614	3623	291	6.24
(WY)	1999	1987	1997	1997	1997	1996	1996	1993	1998	1998	1998	1999
MIN	3.14	3.20	3.25	3.26	3.30	3.20	3.25	3.39	3.60	3.29	3.30	3.29
(WY)	1993	1993	1993	1993	1993	1994	1994	1994	1994	1997	1997	1993

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	378104.4		32823.9			
ANNUAL MEAN	1036		89.9		551	
HIGHEST ANNUAL MEAN					1202	
LOWEST ANNUAL MEAN					3.38	
HIGHEST DAILY MEAN	10600	Jun 23	2670	May 29	32000	Jan 3 1997
LOWEST DAILY MEAN	3.2	May 17	3.2	Nov 20	3.0	Dec 4 1993
ANNUAL SEVEN-DAY MINIMUM	3.4	Mar 16	3.4	Jan 21	3.1	Oct 6 1992
INSTANTANEOUS PEAK FLOW			4110	May 29	72500	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	750000		65110		399200	
TOTAL DIVERSION (AC-FT) a	1654000		1369000		1157000	
10 PERCENT EXCEEDS	4770		66		1860	
50 PERCENT EXCEEDS	3.4		3.4		3.4	
90 PERCENT EXCEEDS	3.4		3.4		3.3	

a Diversion, in acre-feet, to Big Creek Powerplant No. 3, provided by Southern California Edison Co.

11239300 NORTH FORK STEVENSON CREEK AT PERIMETER ROAD, NEAR BIG CREEK, CA

LOCATION.—Lat 37°08'13", long 119°15'13", in SE 1/4 NW 1/4 sec.21, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 100 ft upstream from Perimeter Road and 4.8 mi south of town of Big Creek.

DRAINAGE AREA.—4.42 mi².

PERIOD OF RECORD.—January 1989 to current year.

GAGE.—Water-stage recorder, modified Parshall flume, and concrete control. Elevation of gage is 5,740 ft above sea level, from topographic map.

REMARKS.—Releases for fishery maintenance from Balsam Meadows Forebay on Balsam Creek enter creek upstream from station. See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,220 ft³/s, May 16, 1996, gage height, 9.58 ft; minimum daily, 1.6 ft³/s, Feb. 14, 1991.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	5.0	7.6	4.7	e5.4	e7.8	8.9	10	10	6.0	7.1	4.7
2	5.5	4.9	6.3	4.7	e5.3	e8.1	8.9	11	11	5.8	6.9	4.7
3	6.6	5.0	5.9	4.3	5.2	e8.4	8.6	9.5	12	5.7	7.0	4.4
4	6.0	4.5	5.4	4.1	4.9	e8.8	8.8	10	12	5.7	6.8	4.7
5	5.6	4.3	5.3	4.1	4.8	e8.7	9.0	9.1	13	5.6	6.9	4.6
6	4.6	4.3	5.4	4.1	4.8	e8.7	8.6	9.0	13	5.3	7.0	4.6
7	4.5	5.1	6.7	4.0	e8.2	e8.7	8.6	9.0	11	5.2	7.0	4.7
8	4.4	5.7	5.1	4.4	e8.5	e8.6	8.7	9.0	10	5.2	7.0	7.6
9	4.5	5.0	5.0	4.5	e8.8	e8.6	8.2	9.3	10	5.0	7.3	7.8
10	4.5	5.0	4.9	4.3	e9.0	e8.5	8.0	10	9.6	5.2	7.3	7.4
11	4.4	5.4	5.2	4.3	e8.8	e8.5	8.9	11	9.4	4.8	7.0	7.5
12	4.4	5.2	4.9	4.2	e8.7	e8.5	8.0	12	9.2	5.7	7.1	7.5
13	4.3	4.8	4.9	4.2	e8.5	7.8	8.2	12	9.0	7.7	6.9	7.5
14	4.3	4.7	5.0	4.2	e8.3	7.9	8.5	11	8.6	8.1	6.9	7.6
15	4.5	4.7	4.7	4.3	e8.2	e7.9	8.8	12	8.4	8.1	6.9	7.4
16	5.2	4.6	4.7	4.8	e8.0	e7.8	9.2	12	8.3	8.3	6.3	6.5
17	5.3	4.8	4.7	4.4	e7.8	e7.8	9.7	12	8.1	8.4	7.1	6.8
18	5.4	4.6	4.6	4.6	e7.7	e8.3	10	12	8.2	8.4	7.1	6.7
19	5.4	4.6	4.6	5.8	e7.5	e8.8	10	11	7.9	7.9	6.9	6.7
20	5.4	4.6	5.0	7.7	e7.3	e8.9	10	8.4	8.0	7.5	6.9	7.0
21	5.4	4.5	5.9	5.9	e7.2	e9.0	9.9	8.6	7.8	7.7	7.0	7.1
22	5.4	4.7	4.7	5.7	e7.0	e9.0	9.8	9.3	7.7	7.5	6.9	7.4
23	5.4	4.9	5.1	6.8	e7.0	e9.0	10	10	7.4	6.8	6.9	7.3
24	5.5	5.4	5.0	6.6	e7.2	e9.1	9.7	10	7.0	7.0	6.8	7.2
25	5.6	5.0	4.9	6.4	e7.3	9.6	9.7	10	6.6	6.9	7.0	6.6
26	5.6	4.9	4.9	e6.2	e7.5	9.6	9.4	9.9	6.5	7.5	7.2	6.8
27	5.3	4.8	4.8	e6.1	e7.6	e10	9.1	10	6.4	7.3	7.1	7.1
28	4.9	5.3	4.8	e6.0	e7.7	e9.6	9.1	10	6.2	7.1	7.0	7.0
29	5.1	5.3	4.8	e5.8	---	e9.3	9.6	11	6.1	7.0	6.1	7.8
30	5.1	7.7	4.8	e5.7	---	e9.7	9.8	11	6.0	7.0	4.9	7.6
31	5.0	---	4.8	e5.5	---	e9.8	---	9.8	---	7.3	4.8	---
TOTAL	158.6	149.3	160.4	158.4	204.2	270.8	273.7	318.9	264.4	208.7	211.1	198.3
MEAN	5.12	4.98	5.17	5.11	7.29	8.74	9.12	10.3	8.81	6.73	6.81	6.61
MAX	6.6	7.7	7.6	7.7	9.0	10	10	12	13	8.4	7.3	7.8
MIN	4.3	4.3	4.6	4.0	4.8	7.8	8.0	8.4	6.0	4.8	4.8	4.4
AC-FT	315	296	318	314	405	537	543	633	524	414	419	393

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
MEAN	4.78	7.63	6.87	13.2	11.6	16.6	26.0	32.3	29.6	9.56	5.96	5.27
MAX	6.39	22.1	14.1	71.8	52.2	40.7	53.9	108	178	36.2	11.3	7.15
(WY)	1994	1998	1992	1997	1996	1995	1992	1996	1995	1995	1996	1995
MIN	3.65	3.80	4.29	4.59	3.89	7.15	8.99	5.80	4.66	4.00	4.08	4.14
(WY)	1991	1993	1993	1992	1991	1991	1994	1990	1989	1989	1989	1991

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1989 - 1999	
ANNUAL TOTAL	6269.4		2576.8			
ANNUAL MEAN	17.2		7.06		14.8	
HIGHEST ANNUAL MEAN					34.7	
LOWEST ANNUAL MEAN					5.57	
HIGHEST DAILY MEAN	99	Jun 11	13	Jun 5	1750	May 16 1996
LOWEST DAILY MEAN	4.3	Oct 13	4.0	Jan 7	1.6	Feb 14 1991
ANNUAL SEVEN-DAY MINIMUM	4.4	Oct 8	4.2	Jan 3	2.0	Feb 14 1991
INSTANTANEOUS PEAK FLOW			16	Jun 5	3220	May 16 1996
INSTANTANEOUS PEAK STAGE			2.38	Jun 5	9.58	May 16 1996
ANNUAL RUNOFF (AC-FT)	12440		5110		10720	
10 PERCENT EXCEEDS	51		9.8		30	
50 PERCENT EXCEEDS	7.4		7.0		6.1	
90 PERCENT EXCEEDS	4.8		4.6		4.2	

e Estimated.

11239500 SHAVER LAKE NEAR BIG CREEK, CA

LOCATION.—Lat 37°08'41", long 119°18'06", in SW 1/4 SE 1/4 sec.13, T.9 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, near center of dam on Stevenson Creek, 5.2 mi southwest of town of Big Creek.

DRAINAGE AREA.—29.1 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 sea level (levels by Southern California Edison Co.). Prior to Jan. 11, 1927, gage on rockfill dam a short distance upstream at different datum.

REMARKS.—Storage began prior to 1905. Original lake formed by rockfill dam, usable capacity, 5,500 acre-ft. Water diverted by Fresno Flume and Lumber Co.'s Flumes Nos. 1 and 2 beginning prior to 1907 and discontinued July 7, 1920. Present lake formed by concrete-arch dam; dam completed Nov. 18, 1927. Usable capacity of present lake, 135,568 acre-ft between elevations 5,225 ft, trash-rack foundation, and 5,370.13 ft, crest of spillway. Additional storage of 92 acre-ft is not available for release. Water is received from Pitman Creek (since Feb. 22, 1928) and Huntington Lake (since Apr. 21, 1928) via Huntington–Shaver Conduit and Eastwood Powerplant (station 11238250). Water is released for power development in Big Creek powerplants. Records, including extremes, represent contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. 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, 134,587 acre-ft, June 26, elevation, 5,369.68 ft; minimum, 87,363 acre-ft, Feb. 24, elevation, 5,346.11 ft.

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

(Based on table provided by Southern California Edison Co., dated Oct. 1, 1967)

5,245	379	5,270	4,748	5,320	46,797
5,250	700	5,280	9,189	5,330	60,942
5,255	1,254	5,290	15,598	5,340	76,741
5,260	2,070	5,300	24,004	5,350	94,568
5,265	3,206	5,310	34,455	5,371	137,476

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131297	132030	108910	93303	93511	88634	93756	89824	111746	133869	128091	121122
2	131038	131750	108208	93416	93114	88834	93737	89824	113083	133804	127708	121080
3	130674	131383	107412	93718	92456	88943	93926	90376	114526	133587	127368	119791
4	130332	130118	106875	93190	92177	89659	93983	90707	115630	133935	127028	119771
5	130096	128899	106041	92643	91674	90063	94417	90985	116736	133956	126540	119605
6	129883	127708	105291	92102	91245	90100	94474	91693	117210	134043	126012	119543
7	129861	127134	104502	91562	90892	90284	94247	92158	117848	133717	125843	119398
8	129583	126688	103874	91171	90707	90486	94096	92888	118177	133608	125484	119274
9	129433	126076	103248	91115	90413	90578	93775	93624	118425	133391	125463	119004
10	128984	125252	102349	91115	90854	90670	93228	93775	118984	133195	125315	118777
11	128346	124513	101689	91115	90541	90615	92512	93303	119626	132095	125062	118528
12	128367	124240	101282	91003	90302	90266	91916	93397	120226	131254	124597	118280
13	128006	123107	100545	90966	89788	90615	91301	93756	120892	130396	124282	117992
14	128006	121893	99889	90947	89696	90817	90817	94816	121664	129455	123799	117704
15	128154	120913	98984	90985	89769	90578	89990	95044	122687	130353	123380	117518
16	128282	120413	97889	91283	89622	90376	89824	95082	123359	130866	122331	117477
17	128346	119584	96932	91693	89255	90045	89291	96416	124219	131254	122289	116633
18	128537	118880	95768	91823	89218	89733	88289	96645	125167	131858	121810	116304
19	128686	118012	94892	91674	88688	89769	88125	96856	126582	132504	121706	115916
20	128771	116860	94854	92028	88253	90082	88670	96703	127963	132763	121414	115507
21	128792	116222	93718	92475	88198	90615	88089	e97143	129519	132547	121309	115262
22	128984	115425	92512	92756	88307	91357	87708	e97583	131211	132547	120997	114996
23	129626	114588	91488	92831	87762	91749	87708	e98023	133086	132202	120913	114894
24	129861	113855	91693	93228	87363	92196	87671	e98483	134022	131577	120705	114710
25	130096	113063	92028	93492	87563	92475	88271	98945	134435	131017	120538	114139
26	130417	112312	91898	93416	87653	92737	88471	101980	134587	130289	120538	113956
27	130588	111524	91749	93662	87817	92888	88561	104030	134435	129754	120809	113510
28	130717	110859	92084	93907	88234	93058	88925	105686	134370	129091	120851	113428
29	131426	110073	92196	93888	---	93020	89291	107213	134196	128941	120851	113266
30	131599	109211	92531	93605	---	93171	89494	108950	134043	128622	121018	113895
31	131814	---	92831	93530	---	93548	---	110234	---	128091	121101	---
MAX	131814	132030	108910	93907	93511	93548	94474	110234	134587	134043	128091	121122
MIN	128006	109211	91488	90947	87363	88634	87671	89824	111746	128091	120538	113266
a	5368.40	5357.52	5349.08	5349.45	5346.59	5349.46	5347.28	5358.03	5369.43	5366.66	5363.34	5359.84
b	+237	-22603	-16380	+699	-5296	+5314	-4054	+20740	+23809	-5952	-6990	-7206

CAL YR 1998 b +4996

WTR YR 1999 b -17682

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11241500 STEVENSON CREEK AT SHAVER LAKE, CA

LOCATION.—Lat 37°08'41", long 119°18'27", in NE 1/4 SW 1/4 sec.13, T.9 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 400 ft downstream from Highway 168, 1,600 ft downstream from Shaver Lake Dam, 2.6 mi north of town of Shaver Lake, and 5.1 mi southwest of town of Big Creek.

DRAINAGE AREA.—29.4 mi².

PERIOD OF RECORD.—October 1916 to August 1919, October 1919 to September 1920, May 1922 to September 1928, and October 1986 to current year. Prior to October 1986, published as "at Shaver."

GAGE.—Water-stage recorder, Parshall flume, and concrete control; auxiliary gage, acoustic-velocity meters on Shaver Lake Dam. Elevation of gage is 5,200 ft above sea level, from topographic map. See WSP 1315-A for history of changes prior to October 1986.

REMARKS.—Flow regulated by Shaver Lake (station 11239500). Flow diverted into basin through Eastwood Powerplant (station 11238250). Diversion to Big Creek Powerplant No. 2A (station 11238400) bypasses station and returns to Big Creek. See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,390 ft³/s, Nov. 27, 1926, gage height, 3.65 ft, site and datum then in use; maximum gage height, 7.64 ft, Apr. 26, 1993; no flow at times in 1924, 1925, 1927.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	3.8	2.9	2.2	2.4	2.4	3.4	3.9	3.6	3.6	3.5	3.2
2	3.6	4.5	2.7	2.2	2.4	2.5	3.4	3.9	3.8	3.6	3.5	3.2
3	3.6	4.6	2.7	2.2	2.4	2.5	3.4	3.9	3.9	3.6	3.5	3.2
4	3.6	4.6	2.7	2.2	2.4	2.5	3.4	3.9	3.8	3.6	3.5	3.2
5	3.5	4.6	2.7	2.2	2.4	2.5	3.4	3.9	3.8	3.6	3.5	3.1
6	3.5	4.6	2.7	2.2	2.3	2.5	3.5	3.9	3.8	3.6	3.5	3.1
7	3.5	4.6	2.6	2.2	2.9	2.4	3.5	3.9	3.7	3.7	3.3	3.1
8	3.5	4.7	2.6	2.2	2.8	2.4	3.5	3.9	3.7	3.7	3.3	3.1
9	3.5	4.6	2.6	2.2	3.8	2.5	3.4	3.9	3.6	3.7	3.2	3.1
10	3.5	4.6	2.6	2.2	2.8	2.5	3.5	3.9	3.6	3.7	3.2	3.1
11	3.5	4.6	2.6	2.2	2.6	2.5	3.5	3.8	3.6	3.7	3.2	3.2
12	3.5	4.5	2.6	2.2	2.5	2.4	3.6	3.8	3.6	3.7	3.2	3.2
13	146	4.5	2.6	2.2	2.5	2.5	3.8	3.8	3.6	3.7	3.2	3.5
14	278	4.4	2.6	2.2	2.4	2.5	4.1	3.8	3.6	3.7	3.2	3.8
15	278	4.4	2.6	2.2	2.4	2.5	4.4	3.8	3.6	3.7	3.2	3.8
16	278	4.4	2.6	2.3	2.4	2.5	4.4	3.8	3.6	3.7	3.2	3.7
17	278	4.5	2.4	2.3	2.7	2.5	4.3	3.8	3.6	3.7	3.2	3.7
18	278	3.5	2.3	2.3	2.5	2.4	4.2	3.8	3.6	3.7	3.2	3.7
19	275	2.6	2.3	2.5	2.5	2.4	4.1	3.7	3.6	3.7	3.2	3.7
20	274	2.6	2.3	2.9	2.5	2.5	4.1	3.6	3.6	3.7	3.2	3.7
21	273	2.6	2.3	2.6	2.5	2.5	4.0	3.6	3.6	3.7	3.2	3.7
22	273	2.6	2.3	2.4	2.5	2.5	4.0	3.6	3.6	3.7	3.2	3.7
23	273	2.6	2.3	2.5	2.5	2.6	3.9	3.6	3.6	3.6	3.2	3.8
24	273	2.6	2.3	2.5	2.5	2.5	3.9	3.6	3.6	3.6	3.2	3.8
25	271	2.6	2.2	2.5	2.5	2.5	3.9	3.5	3.6	3.5	3.1	3.8
26	270	2.6	2.2	2.4	2.5	2.5	3.9	3.5	3.6	3.5	3.1	3.8
27	274	2.6	2.2	2.4	2.5	2.5	3.9	3.5	3.7	3.5	3.2	3.8
28	273	2.6	2.2	2.4	2.4	2.5	3.9	3.6	3.6	3.5	3.2	3.8
29	235	2.6	2.2	2.4	---	3.0	3.9	3.6	3.6	3.5	3.2	3.8
30	3.7	2.8	2.2	2.4	---	3.4	3.9	3.6	3.6	3.5	3.2	3.8
31	3.1	---	2.2	2.4	---	3.4	---	3.6	---	3.5	3.2	---
TOTAL	4549.2	111.4	76.3	72.2	71.5	79.3	114.1	116.0	109.4	112.5	101.0	105.2
MEAN	147	3.71	2.46	2.33	2.55	2.56	3.80	3.74	3.65	3.63	3.26	3.51
MAX	278	4.7	2.9	2.9	3.8	3.4	4.4	3.9	3.9	3.7	3.5	3.8
MIN	3.1	2.6	2.2	2.2	2.3	2.4	3.4	3.5	3.6	3.5	3.1	3.1
AC-FT	9020	221	151	143	142	157	226	230	217	223	200	209
a	17650	35440	35390	12100	12230	14840	25620	15160	32090	33660	37180	28840

a Diversion, in acre-feet, to Big Creek Powerplant No. 2A, provided by Southern California Edison Co.

11241500 STEVENSON CREEK AT SHAVER LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1928, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.54	8.14	7.53	5.13	12.9	38.7	66.8	59.8	20.3	5.73	4.76	3.51
MAX	9.76	45.5	33.5	15.1	40.7	147	245	203	61.3	16.5	12.7	10.9
(WY)	1917	1927	1927	1920	1927	1917	1917	1922	1922	1920	1927	1927
MIN	.48	.30	.13	.15	.25	.37	.46	.27	.070	.000	.000	.000
(WY)	1926	1928	1928	1928	1928	1924	1928	1928	1924	1924	1924	1924

SUMMARY STATISTICS WATER YEARS 1917 - 1928

ANNUAL TOTAL	
ANNUAL MEAN	19.6
HIGHEST ANNUAL MEAN	61.9 1917
LOWEST ANNUAL MEAN	.76 1928
HIGHEST DAILY MEAN	854 Nov 27 1926
LOWEST DAILY MEAN	.00 Jun 11 1924
ANNUAL SEVEN-DAY MINIMUM	.00 Jun 20 1924
ANNUAL RUNOFF (AC-FT)	14170
10 PERCENT EXCEEDS	46
50 PERCENT EXCEEDS	4.5
90 PERCENT EXCEEDS	.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	14.6	3.30	2.74	22.0	32.6	51.0	53.6	92.5	133	95.6	16.5	3.54
MAX	147	3.84	3.73	253	280	304	289	382	556	495	98.4	4.90
(WY)	1999	1988	1994	1997	1997	1997	1997	1996	1995	1995	1995	1997
MIN	3.26	2.92	2.22	2.21	2.39	2.53	3.43	3.45	3.23	3.03	3.16	3.11
(WY)	1997	1993	1990	1996	1990	1996	1989	1992	1994	1997	1996	1998

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1987 - 1999

ANNUAL TOTAL	39357.7	5618.1	
ANNUAL MEAN	108	15.4	43.5
HIGHEST ANNUAL MEAN			156 1995
LOWEST ANNUAL MEAN			3.06 1990
HIGHEST DAILY MEAN	459 Jul 9	278 Oct 14	688 Jun 25 1995
LOWEST DAILY MEAN	2.2 Dec 25	2.2 Dec 25	1.2 Dec 1 1991
ANNUAL SEVEN-DAY MINIMUM	2.2 Dec 25	2.2 Dec 25	1.9 Nov 26 1991
INSTANTANEOUS PEAK FLOW		282 Oct 13	816 Jun 13 1995
INSTANTANEOUS PEAK STAGE		5.70 Oct 13	7.64 Apr 26 1993
ANNUAL RUNOFF (AC-FT)	78070	11140	31500
TOTAL DIVERSION (AC-FT) a	351800	300200	241700
10 PERCENT EXCEEDS	273	4.2	218
50 PERCENT EXCEEDS	4.6	3.5	3.4
90 PERCENT EXCEEDS	2.6	2.4	2.5

a Diversion, in acre-feet, to Big Creek Powerplant No. 2A, provided by Southern California Edison Co.

11241950 REDINGER LAKE NEAR AUBERRY, CA

LOCATION.—Lat 37°08'42", long 119°26'58", in NE 1/4 SW 1/4 sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, at intake structure on Dam No. 7 on San Joaquin River, 4.2 mi northeast of Auberry.

DRAINAGE AREA.—1,295 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 sea level (levels by Southern California Edison Co.).

REMARKS.—Lake is formed by a concrete dam; storage began Nov. 19, 1950. Usable capacity, 26,120 acre-ft between elevations 1,320.00 ft, invert of tunnel, and 1,403.00 ft, top of radial gates. Additional storage of 8,914 acre-ft not available for release. Water is used for power development in Big Creek Powerplant No. 4 (station 11246530). Records, including extremes, represent contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. 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, 25,598 acre-ft, Aug. 17, elevation, 1,401.87 ft; minimum, 9,976 acre-ft, Nov. 12, elevation, 1,361.08 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Southern California Edison Co., dated Oct. 27, 1950)

1,340	4,284	1,380	16,455
1,350	6,809	1,390	20,427
1,360	9,651	1,400	24,748
1,370	12,858	1,405	27,058

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12634	12553	12425	23799	14920	12851	24264	24412	24551	24264	24211	24042
2	12702	12052	12699	24109	14599	12916	22758	23830	24425	24408	24216	24897
3	12566	11797	12452	23759	13539	12634	23469	24180	24167	23883	24304	24367
4	12607	12025	12502	24140	13956	12875	22650	23909	24560	24322	24564	24448
5	12580	12098	12345	24434	14232	13988	22702	24145	24605	24376	24551	24233
6	12597	11552	12002	24399	14399	14877	22871	24167	25055	24233	23931	24897
7	12773	10922	11686	24591	15366	15783	23764	24479	25082	24354	24211	24555
8	12729	10457	11729	24403	16176	17171	24605	24520	25273	24560	24091	24176
9	12577	10126	11578	24189	17907	18711	25241	24735	25314	24658	23825	23856
10	12726	10047	11387	23949	18839	19547	24645	24520	25342	24627	24091	23403
11	12787	10099	12048	24082	19001	19801	24363	24524	25369	24748	24176	21958
12	12604	9976	11797	24029	19263	20059	24327	24443	24879	24834	24497	21826
13	12638	10108	11748	24082	18635	20498	24372	24193	24811	24757	24997	20702
14	12766	10182	11794	24385	17048	21770	25273	23746	24730	25337	24897	21219
15	12638	10148	11883	24399	16387	23486	25141	23377	25534	24699	24875	22206
16	11784	10348	11439	24663	15977	25223	25429	21337	25497	23976	25259	23750
17	11863	10145	12075	24775	15824	25159	25128	22090	24983	23985	25598	24264
18	11975	10261	13240	24100	16240	25110	25150	22447	24488	25078	25110	24569
19	12065	10298	13970	23825	15843	25132	24399	22970	25223	24430	24600	24730
20	12148	10463	14819	24367	15139	24667	24555	23680	25438	24897	24578	24551
21	12128	10476	15862	21903	14382	24011	23985	23588	25200	24847	24291	24273
22	12224	10361	16331	19417	14855	23963	24313	23588	24942	24856	24780	22193
23	12325	11578	17970	16825	15051	23627	24893	24929	25401	24623	24614	20623
24	12455	11611	19332	14499	15205	23680	24811	25096	24992	24171	24475	20623
25	12587	11667	20802	14949	15480	24114	24979	24636	24685	24569	24403	15988
26	12770	12204	21975	15447	14421	23923	25096	25055	24591	24251	24753	13560
27	12221	12325	23522	15132	13365	23469	24834	25246	24802	24202	24658	13216
28	12335	11319	24735	16108	13438	23259	24251	25051	24667	24546	23927	13296
29	12352	11791	24807	16676	---	23923	25110	24721	24461	24363	24649	15498
30	12184	12081	24699	16550	---	23869	25227	24542	24421	24470	24726	17691
31	12151	---	24582	15742	---	23931	---	24542	---	25479	24153	---
MAX	12787	12553	24807	24775	19263	25223	25429	25246	25534	25479	25598	24897
MIN	11784	9976	11387	14499	13365	12634	22650	21337	24167	23883	23825	13216
a	1367.90	1367.69	1399.63	1378.10	1371.68	1398.17	1401.06	1399.54	1399.27	1401.61	1398.67	1383.21
b	-314	-70	+12501	-8840	-2304	+10493	+1296	-685	-121	+1058	-1326	-6462

CAL YR 1998 b +393

WTR TY 1999 b +5226

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11242000 SAN JOAQUIN RIVER ABOVE WILLOW CREEK, NEAR AUBERRY, CA

LOCATION.—Lat 37°08'40", long 119°27'13", in SW 1/4 SW 1/4 sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,000 ft downstream from Redinger Lake Dam, 0.4 mi upstream from Willow Creek, and 4.2 mi northeast of Auberry.

DRAINAGE AREA.—1,295 mi².

PERIOD OF RECORD.—March 1951 to current year.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 1,175.54 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Flow regulated by Redinger Lake (station 11241950). Most of the flow, since June 1951, is diverted at Redinger Lake to Big Creek No. 4 Powerplant (station 11246530). See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 99,200 ft³/s, Jan. 2, 1997, gage height, 65.17 ft, from floodmarks, from rating curve extended above 7,000 ft³/s on basis of computed flow over dam; no flow, Sept. 25, 1951.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	19	19	21	20	20	20	20	19	20	20	25
2	19	19	19	21	20	19	20	19	19	19	20	25
3	19	18	19	21	20	20	21	19	19	19	20	25
4	19	19	19	21	20	20	21	19	20	19	20	25
5	19	19	19	21	20	20	20	19	20	20	20	25
6	19	18	19	e131	20	20	21	19	20	20	20	25
7	19	18	19	21	20	20	20	20	20	20	20	25
8	19	18	19	21	20	20	21	20	20	20	20	25
9	19	18	18	21	20	20	20	20	20	20	20	25
10	19	18	18	21	20	20	20	20	20	20	20	25
11	19	18	19	21	20	20	21	20	e326	20	20	25
12	19	18	19	21	20	20	21	20	1110	20	20	25
13	19	18	19	21	20	20	21	19	1230	20	20	24
14	19	18	19	21	20	20	21	19	1370	20	20	24
15	19	18	19	21	20	20	20	19	1390	20	20	25
16	19	18	19	21	20	21	20	19	1810	20	20	25
17	18	18	19	21	20	21	20	19	1790	20	20	25
18	19	18	19	21	20	21	20	19	1680	20	20	25
19	19	18	19	21	20	21	20	19	e821	20	e46	31
20	19	18	19	21	20	21	20	19	e980	20	e76	37
21	19	18	20	21	20	21	20	19	e977	20	e73	37
22	19	18	20	20	20	21	20	19	e560	20	e74	37
23	19	18	20	20	20	21	19	20	20	20	e73	36
24	19	18	20	20	20	21	20	20	e734	12	e73	36
25	19	18	20	20	20	21	19	20	e600	26	e71	36
26	19	19	21	20	20	21	20	20	e42	22	e53	e36
27	19	19	20	20	20	20	20	20	20	20	25	e36
28	19	19	21	20	20	20	20	20	20	20	24	e36
29	19	18	21	20	---	20	20	19	20	20	25	e36
30	19	19	20	20	---	20	20	19	20	20	25	e36
31	19	---	21	20	---	20	---	19	---	20	25	---
TOTAL	588	548	602	751	560	630	606	602	15717	617	1023	878
MEAN	19.0	18.3	19.4	24.2	20.0	20.3	20.2	19.4	524	19.9	33.0	29.3
MAX	19	19	21	131	20	21	21	20	1810	26	76	37
MIN	18	18	18	20	20	19	19	19	19	12	20	24
AC-FT	1170	1090	1190	1490	1110	1250	1200	1190	31170	1220	2030	1740
a	50920	85840	114800	68190	86280	108400	132100	175700	187100	123500	128800	107700

e Estimated.

a Diversion, in acre-feet, to Big Creek No. 4 Powerplant, provided by Southern California Edison Co.

11242000 SAN JOAQUIN RIVER ABOVE WILLOW CREEK, NEAR AUBERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	20.2	20.3	111	163	121	154	420	1658	2268	931	74.2	22.0
MAX	26.6	76.2	3501	4156	1255	1456	2739	10410	12700	7739	1343	46.9
(WY)	1998	1983	1956	1997	1986	1983	1951	1969	1983	1995	1983	1997
MIN	8.15	8.55	5.66	3.83	3.38	2.86	3.27	4.76	8.59	13.5	16.5	2.79
(WY)	1983	1985	1966	1965	1966	1968	1955	1971	1971	1979	1984	1951

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1951 - 1999	
ANNUAL TOTAL	468590.8		23122			
ANNUAL MEAN	1284		63.3		492	
HIGHEST ANNUAL MEAN					2409	
LOWEST ANNUAL MEAN					11.4	
HIGHEST DAILY MEAN	11300	Jul 3	1810	Jun 16	47700	Dec 23 1955
LOWEST DAILY MEAN	9.8	Mar 14	12	Jul 24	.00	Sep 25 1951
ANNUAL SEVEN-DAY MINIMUM	9.8	Mar 13	18	Nov 6	.38	Oct 17 1982
INSTANTANEOUS PEAK FLOW			5440	Jan 6	99200	Jan 2 1997
INSTANTANEOUS PEAK STAGE			14.60	Jan 6	65.17	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	929400		45860		356400	
TOTAL DIVERSION (AC-FT) a	1872000		1369000			
10 PERCENT EXCEEDS	6270		28		1240	
50 PERCENT EXCEEDS	20		20		20	
90 PERCENT EXCEEDS	15		19		5.0	

a Diversion, in acre-feet, to Big Creek No. 4 Powerplant, provided by Southern California Edison Co.

11242400 NORTH FORK WILLOW CREEK NEAR SUGAR PINE, CA

LOCATION.—Lat 37°23'52", long 119°33'55", in SW 1/4 NE 1/4 sec.21, T.6 S., R.22 E., Madera County, Hydrologic Unit 18040006, on right bank at road bridge, 0.6 mi downstream from Soquel Campground, 3.0 mi upstream from Chilkoot Creek, and 4.7 mi southeast of Sugar Pine.

DRAINAGE AREA.—16.9 mi².

PERIOD OF RECORD.—August 1965 to current year.

REVISED RECORDS.—WDR CA-72-2: 1970, 1971. WDR CA-85-3: 1983, 1984(P). WDR CA-93-3: 1992.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 5,200 ft above sea level, from topographic map.

REMARKS.—Records good. No storage upstream from station. Madera Irrigation District has water rights to divert up to 50 ft³/s from North Fork Willow Creek through Soquel Ditch into Nelder Creek (Fresno River Basin) from October through July each year. See schematic diagram of lower San Joaquin River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,750 ft³/s, Jan. 13, 1980, gage height, 7.41 ft, from rating curve extended above 1,100 ft³/s on basis of a step-backwater survey; minimum daily, 0.27 ft³/s, Oct. 4, 1987.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 100 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0300	143	3.83	Apr. 9	0115	225	4.12
Feb. 19	1130	186	3.99				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	7.7	34	8.5	19	29	31	49	70	19	7.8	4.1
2	8.3	7.5	20	8.1	18	30	31	51	65	18	7.1	3.9
3	8.1	7.3	20	7.9	18	32	29	54	57	17	7.1	3.9
4	8.0	7.1	16	7.7	18	35	30	49	50	14	6.5	3.8
5	7.5	7.0	13	7.7	18	31	29	52	52	14	6.3	3.7
6	7.1	7.3	14	7.6	18	30	34	65	50	14	6.5	3.6
7	6.7	15	12	7.4	74	29	29	75	47	14	6.8	3.5
8	6.7	23	11	7.2	71	28	76	76	45	13	6.6	3.5
9	7.0	10	11	7.1	99	32	122	72	43	13	6.3	3.5
10	7.0	9.0	10	6.9	57	28	30	73	42	13	6.3	3.5
11	6.9	11	10	6.9	43	27	26	81	40	12	6.6	3.4
12	6.5	9.0	10	6.8	38	27	28	90	39	12	6.4	3.3
13	6.4	8.6	10	6.8	35	28	35	90	38	13	6.0	3.3
14	6.6	8.2	11	6.7	32	27	46	83	36	12	5.8	3.3
15	7.1	7.9	9.9	7.7	30	27	53	77	35	11	5.7	3.3
16	7.2	7.6	10	14	30	27	59	76	34	11	5.5	3.2
17	6.9	9.4	11	11	50	28	63	83	32	11	5.3	3.3
18	6.8	7.8	10	17	39	29	65	88	30	10	5.1	3.4
19	6.6	7.3	9.8	46	35	29	68	89	29	9.9	4.9	3.4
20	6.4	7.0	14	93	32	30	69	92	27	10	4.8	3.2
21	6.3	6.8	16	41	33	28	66	93	26	10	4.7	3.2
22	6.4	6.8	12	30	30	28	61	97	25	10	4.6	3.1
23	6.4	7.4	12	46	29	33	53	100	23	11	4.5	3.2
24	8.0	14	13	37	29	32	50	96	22	11	4.4	3.3
25	8.3	9.1	11	28	30	32	50	99	21	11	4.3	3.1
26	8.0	7.9	10	26	28	32	55	104	21	10	4.4	3.0
27	7.8	7.7	9.6	23	28	33	60	103	22	9.7	4.9	3.0
28	7.6	11	9.3	21	28	33	56	99	21	9.4	4.3	2.9
29	8.8	12	9.0	21	---	33	50	90	21	8.9	4.1	2.9
30	8.7	34	9.0	19	---	33	49	81	20	8.7	3.9	2.9
31	7.7	---	9.4	21	---	34	---	74	---	8.4	4.0	---
TOTAL	226.7	301.4	387.0	605.0	1009	934	1503	2501	1083	369.0	171.5	100.7
MEAN	7.31	10.0	12.5	19.5	36.0	30.1	50.1	80.7	36.1	11.9	5.53	3.36
MAX	8.9	34	34	93	99	35	122	104	70	19	7.8	4.1
MIN	6.3	6.8	9.0	6.7	18	27	26	49	20	8.4	3.9	2.9
AC-FT	450	598	768	1200	2000	1850	2980	4960	2150	732	340	200

11242400 NORTH FORK WILLOW CREEK NEAR SUGAR PINE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.67	9.60	15.2	31.5	30.3	41.5	51.3	78.5	53.3	18.3	6.08	4.43
MAX	17.8	43.0	78.2	268	178	151	176	228	219	109	26.9	14.3
(WY)	1983	1984	1997	1997	1986	1986	1982	1995	1995	1983	1983	1978
MIN	.41	1.63	1.20	1.84	2.08	2.04	1.78	2.40	1.84	.99	.66	.38
(WY)	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1965 - 1999	
ANNUAL TOTAL	17133.4		9191.3			
ANNUAL MEAN	46.9		25.2		28.7	
HIGHEST ANNUAL MEAN					82.7	
LOWEST ANNUAL MEAN					1.57	
HIGHEST DAILY MEAN	173	Jun 21	122	Apr 9	1600	Jan 2 1997
LOWEST DAILY MEAN	6.1	Sep 20	2.9	Sep 28	.27	Oct 4 1987
ANNUAL SEVEN-DAY MINIMUM	6.3	Sep 17	3.0	Sep 24	.29	Oct 11 1977
INSTANTANEOUS PEAK FLOW			225		2750	
INSTANTANEOUS PEAK STAGE			4.12		7.41	
ANNUAL RUNOFF (AC-FT)	33980		18230		20800	
10 PERCENT EXCEEDS	128		65		81	
50 PERCENT EXCEEDS	23		14		8.4	
90 PERCENT EXCEEDS	7.1		4.4		1.9	

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 sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir formed by earthfill and rockfill dam; completed in 1901 and raised in 1910. Since 1910 usable contents 45,100 acre-ft between elevations 3,280.22 ft, invert of outlet conduit No. 3, and 3,376.40 ft, top of spillway gates. Additional storage of 300 acre-ft not available for release. Water is released through Crane Valley Powerplant below dam for use in three small powerplants before being discharged into Kerckhoff Reservoir (station 11246650) at Wishon Powerplant. Water is diverted from South Fork Willow Creek via Browns Creek Ditch into Bass Lake near left end of dam. Madera Irrigation District has water rights to divert up to 50 ft³/s from North Fork Willow Creek through Soquel Ditch into Nelder Creek (Fresno River Basin) from October through July each year. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 45,960 acre-ft, June 17, 1923, elevation, 3,376.8 ft; minimum, 35 acre-ft, Nov. 19, 1953, elevation, 3,270.2 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 45,173 acre-ft, July 1, 2, elevation, 3,376.19 ft; minimum, 22,091 acre-ft, Nov. 21, elevation, 3,353.11 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated March 1937)

3,280	290	3,310	3,404	3,340	13,227	3,370	38,218
3,290	890	3,320	5,584	3,350	19,663	3,376.4	45,410
3,300	1,896	3,330	8,717	3,360	28,121		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35984	27141	23130	22421	26661	30619	31375	37955	44708	45173	42789	35856
2	35696	26869	23248	22463	26761	30532	31522	38163	44780	45173	42570	35579
3	35409	26589	23417	22521	26860	30465	31679	38413	44780	45162	42380	35324
4	35123	26293	23518	22562	26960	30398	31767	38598	44720	45162	42178	35060
5	34809	26023	23612	22621	27032	30321	31914	38805	44684	45150	41977	34788
6	34476	25738	23688	22654	27132	30235	32132	39034	44744	45150	41766	34528
7	34145	25533	23773	22696	27712	30149	32350	39286	44899	45128	41577	34258
8	33826	25382	23815	22746	28204	30044	32630	39557	44947	45049	41378	33990
9	33540	25119	23875	22787	29182	30101	32760	39808	44911	44875	41192	33734
10	33244	24866	23935	22821	29588	30015	32900	40048	44947	44708	41007	33458
11	32970	24640	23995	22862	29863	29939	33072	40332	44959	44529	40811	33204
12	32680	24380	24054	22904	30082	29844	33244	40626	44970	44351	40626	32940
13	32390	24114	24114	22929	30254	29739	33458	40930	44959	44172	40441	32680
14	32102	23850	24020	22979	30436	29645	33734	41203	44959	44007	40245	32410
15	31826	23569	23798	23030	30629	29569	34021	41455	44993	43935	40048	32281
16	31551	23307	23586	23139	30764	29465	34310	41710	45060	43983	39840	32281
17	31268	23046	23366	23189	31093	29380	34600	41977	45117	44007	39655	32122
18	30986	22771	23139	23316	31190	29408	34892	42256	45128	44030	39449	31914
19	30696	22488	22913	23612	31132	29550	35176	42537	45105	44054	39253	31708
20	30417	22215	22712	24346	31064	29701	35451	42824	45083	44078	39056	31483
21	30139	22091	22488	24648	31103	29825	35728	43115	45049	44101	38827	31210
22	29853	22149	22248	24796	31044	29958	35962	43407	45038	44101	38554	30957
23	29578	22190	22157	25251	30967	30139	36198	43758	45072	44101	38283	30706
24	29305	22289	22157	25560	30909	30283	36413	44066	45094	44101	38021	30455
25	29042	22355	22174	25755	30909	30417	36618	44374	45105	44113	37747	30206
26	28770	22388	22182	25943	30841	30552	36846	44577	45117	44018	37486	29958
27	28491	22438	22198	26068	30754	30677	37074	44660	45128	43817	37215	29701
28	28213	22521	22231	26185	30677	30812	37334	44732	45139	43606	36954	29456
29	27963	22596	22281	26293	---	30938	37540	44744	45150	43407	36683	29201
30	27694	22871	22322	26392	---	31073	37747	44756	45162	43197	36403	28939
31	27417	---	22363	26553	---	31258	---	44744	---	42999	36134	---
MAX	35984	27141	24114	26553	31190	31258	37747	44756	45162	45173	42789	35856
MIN	27417	22091	22157	22421	26661	29380	31375	37955	44684	42999	36134	28939
a	3359.24	3354.05	3353.44	3358.29	3362.70	3363.31	3369.57	3375.80	3376.18	3374.34	3368.08	3360.88
b	-8978	-4546	-508	+4190	+4124	+581	+6489	+6997	+418	-2163	-6865	-7195

CAL YR 1998 b +5922

WTR YR 1999 b -7456

a Elevation, in feet, at end of month.

b change in contents, in acre-feet.

11243500 PACIFIC GAS & ELECTRIC CO. CONDUIT NO. 3 NEAR BASS LAKE, CA

LOCATION.—Lat 37°17'21", long 119°31'44", in NE 1/4 SE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 1,000 ft downstream from Crane Valley Powerplant and Dam and 2.5 mi southeast of town of Bass Lake.

PERIOD OF RECORD.—October 1940 to current year. Prior to October 1954, published as "near Crane Valley Reservoir."

GAGE.—Water-stage recorder and concrete flume. Elevation of gage is 3,300 ft above sea level, from topographic map.

REMARKS.—Conduit diverts from Bass Lake in sec.26, T.7 S., R.22 E. Water passes through Crane Valley Powerplant, then to Powerplant No. 3 (station 11244100), and is stored temporarily at Manzanita Lake on North Fork Willow Creek; flow then diverts to Powerplants No. 2 and No. 1A (stations 11246570 and 11246590), before it enters San Joaquin River at Kerckhoff Reservoir through San Joaquin Powerplant No. 1 (station 11246610). See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 167 ft³/s, June 23, 24, 1965; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	144	.00	.24	1.3	114	.36	.60	121	.00	91	136
2	147	144	.10	.24	1.3	114	.36	.60	121	.00	91	136
3	147	143	.60	.24	1.3	114	1.3	.60	121	.00	91	136
4	146	143	.87	.75	1.3	114	2.5	.60	121	.00	91	136
5	145	143	.87	1.2	1.3	114	2.5	.60	121	.00	90	136
6	146	143	.87	1.2	1.3	114	2.5	1.2	56	.00	90	136
7	145	143	.87	1.3	1.3	114	2.5	1.9	.00	6.9	90	136
8	146	143	.88	1.3	1.3	114	2.5	1.5	.00	39	91	136
9	146	141	.87	1.2	1.3	114	2.5	1.1	.00	76	90	135
10	146	141	.87	1.3	1.3	114	2.5	1.1	.00	76	90	135
11	145	142	.87	1.3	1.3	114	2.5	1.1	.00	77	91	135
12	145	142	.87	1.3	1.3	119	2.6	1.1	.00	78	91	135
13	146	142	.87	1.3	1.3	123	2.6	1.0	.00	78	91	134
14	148	142	77	1.3	1.3	120	1.3	1.0	.00	78	91	134
15	147	143	140	1.3	1.3	121	.36	1.0	.00	41	92	67
16	148	144	140	1.3	1.3	121	.51	1.0	.00	.76	92	.44
17	148	145	140	1.3	1.3	121	.67	1.0	.00	2.3	93	76
18	147	144	140	1.3	70	53	.69	1.0	.00	2.7	93	100
19	147	143	140	1.3	115	1.5	.69	1.0	.00	2.8	93	98
20	147	144	140	1.3	114	1.5	.69	1.0	.00	2.9	94	115
21	147	108	140	1.3	114	1.5	1.1	1.0	.00	2.9	117	130
22	146	2.7	140	1.3	114	1.5	1.7	1.0	.00	2.9	132	125
23	146	2.3	140	1.3	114	1.5	1.6	1.0	.00	2.5	133	125
24	146	.35	139	1.3	114	1.5	1.6	1.0	.00	1.7	133	125
25	145	.10	138	1.3	114	1.5	1.3	1.0	.00	1.7	133	125
26	144	.00	118	1.3	114	1.5	.60	70	.00	44	134	125
27	145	.00	1.5	1.3	114	1.5	.60	119	.00	91	134	126
28	145	.87	1.6	1.3	114	1.5	.60	119	.00	91	135	128
29	145	.00	1.6	1.3	---	1.0	.60	119	.00	91	135	130
30	144	.00	6.0	1.3	---	.44	.60	119	.00	91	135	132
31	144	---	4.4	1.3	---	.38	---	121	---	91	135	---
TOTAL	4526	2973.32	1756.51	36.27	1233.1	2048.82	42.43	692.00	661.00	1072.06	3282	3623.44
MEAN	146	99.1	56.7	1.17	44.0	66.1	1.41	22.3	22.0	34.6	106	121
MAX	148	145	140	1.3	115	123	2.6	121	121	91	135	136
MIN	144	.00	.00	.24	1.3	.38	.36	.60	.00	.00	90	.44
AC-FT	8980	5900	3480	72	2450	4060	84	1370	1310	2130	6510	7190
a	7950	5090	2880	180	2060	3950	512	1600	1140	2240	5850	6160
b	9270	6000	2890	192	2330	4470	803	1720	2230	2550	6590	6820
c	10080	7200	2850	1110	5700	7730	6140	7460	3950	1290	7210	7640
d	10740	7860	5060	3710	7630	9400	6550	7510	5960	3600	7430	7480

- a Discharge, in acre-feet, to San Joaquin Powerplant No. 3, provided by Pacific Gas & Electric Co.
 b Discharge, in acre-feet, to San Joaquin Powerplant No. 2, provided by Pacific Gas & Electric Co.
 c Discharge, in acre-feet, to San Joaquin Powerplant No. 1A, provided by Pacific Gas & Electric Co.
 d Discharge, in acre-feet, to San Joaquin Powerplant No. 1, provided by Pacific Gas & Electric Co.

11243500 PACIFIC GAS & ELECTRIC CO. CONDUIT NO. 3 NEAR BASS LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	66.4	45.4	57.8	60.9	71.0	76.3	64.4	61.2	61.1	83.2	102	86.9
MAX	152	148	157	157	161	162	158	157	160	153	155	154
(WY)	1951	1984	1983	1956	1956	1956	1956	1958	1952	1983	1958	1980
MIN	.000	.000	.042	.19	.079	.12	.12	.090	.060	.52	9.43	.23
(WY)	1988	1968	1954	1954	1977	1947	1947	1977	1942	1977	1977	1996

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1941 - 1999	
ANNUAL TOTAL	36092.66		21946.95			
ANNUAL MEAN	98.9		60.1		69.7	
HIGHEST ANNUAL MEAN					128	
LOWEST ANNUAL MEAN					14.4	
HIGHEST DAILY MEAN	150	Sep 30	148	Oct 14	167	Jun 23 1965
LOWEST DAILY MEAN	.00	Aug 24	.00	Nov 26	.00	Nov 6 1940
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 2	.00	Jun 7	.00	Feb 8 1941
ANNUAL RUNOFF (AC-FT)	71590		43530		50520	
TOTAL DIVERSION (AC-FT) a	64740		39620			
TOTAL DIVERSION (AC-FT) b	76530		45880			
TOTAL DIVERSION (AC-FT) c	91570		68350			
TOTAL DIVERIOSN (AC-FT) d	10990		82930			
10 PERCENT EXCEEDS	144		144		151	
50 PERCENT EXCEEDS	117		4.4		70	
90 PERCENT EXCEEDS	.44		.10		.03	

- a Discharge, in acre-feet, to San Joaquin Powerplant No. 3, provided by Pacific Gas & Electric Co.
b Discharge, in acre-feet, to San Joaquin Powerplant No. 2, provided by Pacific Gas & Electric Co.
c Discharge, in acre-feet, to San Joaquin Powerplant No. 1A, provided by Pacific Gas & Electric Co.
d Discharge, in acre-feet, to San Joaquin Powerplant No. 1, provided by Pacific Gas & Electric Co.

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 sea level, from topographic map.

REMARKS.—Flow regulated by Bass Lake (station 11243400), 1,500 ft upstream and by diversion into Pacific Gas & Electric Co. Conduit No. 3 near Bass Lake (station 11243500). Soquel ditch diverts up to 50 ft³/s from North Fork Willow Creek into Nelder Creek in Fresno River Basin. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,770 ft³/s, Jan. 2, 1997, gage height, 9.10 ft; minimum daily, 0.01 ft³/s, Dec. 4, 1989.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	18	2.6	1.1	1.5	1.3	1.4	2.8	2.8	22	1.9	1.1
2	19	18	1.3	1.1	1.4	1.3	1.4	2.8	2.9	22	1.8	1.1
3	19	18	1.5	1.1	1.4	1.3	1.4	2.8	2.9	21	1.7	1.0
4	20	17	1.4	1.1	1.3	1.3	1.4	2.9	2.7	20	1.7	1.0
5	29	17	1.2	1.1	1.3	1.3	1.4	3.0	2.6	20	1.6	.99
6	42	16	1.3	1.1	1.3	1.3	1.7	3.1	2.6	20	1.6	.96
7	42	17	1.2	1.1	2.9	1.3	2.0	3.2	2.6	18	1.6	1.4
8	31	18	1.2	1.1	3.0	1.2	2.2	3.3	64	8.3	1.5	2.1
9	22	18	1.2	1.1	4.3	1.7	2.3	3.3	94	3.2	1.4	2.0
10	20	18	1.2	1.1	2.5	1.4	2.4	3.4	83	2.9	1.4	2.0
11	20	18	1.2	1.1	2.0	1.3	2.3	3.7	63	2.8	1.3	2.0
12	20	18	1.2	1.1	1.8	1.3	2.4	4.1	63	2.7	1.3	1.9
13	20	18	1.2	1.1	1.7	1.3	2.3	3.7	63	2.5	1.3	1.9
14	19	18	1.2	1.1	1.6	1.3	2.2	3.1	63	2.4	1.4	1.9
15	19	18	1.1	1.1	1.5	1.3	2.8	3.5	41	2.4	1.6	1.9
16	19	18	1.1	1.2	1.5	1.3	2.9	3.8	26	2.3	1.5	2.0
17	19	19	1.1	1.1	1.9	1.2	2.8	3.8	25	2.4	1.5	1.9
18	19	20	1.1	1.1	1.6	1.2	2.8	3.8	41	2.4	1.5	1.9
19	19	20	1.1	1.8	1.5	1.3	2.9	3.7	57	2.5	1.4	1.9
20	19	20	1.1	5.0	1.4	1.3	3.0	3.7	56	2.5	1.4	1.8
21	19	9.9	1.1	2.5	1.8	1.3	3.2	3.6	55	2.5	1.4	1.8
22	19	1.1	1.0	1.6	1.6	1.3	3.3	3.6	39	2.5	1.3	1.8
23	19	1.1	7.8	2.9	1.5	1.4	3.0	3.6	25	2.5	1.3	1.8
24	19	1.2	26	2.8	1.4	1.3	3.0	3.6	24	2.5	1.2	1.8
25	18	1.1	20	2.2	1.7	1.3	2.8	3.7	24	2.5	1.2	1.8
26	18	1.1	20	1.8	1.5	1.3	2.8	3.8	23	2.4	1.2	1.8
27	18	1.1	20	1.6	1.4	1.3	3.0	3.7	22	2.4	1.2	1.7
28	18	1.2	9.3	1.5	1.4	1.3	2.9	3.3	22	2.3	1.2	1.7
29	18	1.2	1.1	1.4	---	1.9	2.8	3.1	22	2.3	1.1	1.7
30	18	2.1	1.1	1.3	---	2.1	2.8	2.9	22	2.1	1.1	1.7
31	18	---	1.1	1.6	---	1.6	---	2.8	---	2.0	1.1	---
TOTAL	658	383.1	134.0	47.9	49.7	42.3	73.6	105.2	1036.1	208.3	43.7	50.35
MEAN	21.2	12.8	4.32	1.55	1.77	1.36	2.45	3.39	34.5	6.72	1.41	1.68
MAX	42	20	26	5.0	4.3	2.1	3.3	4.1	94	22	1.9	2.1
MIN	18	1.1	1.0	1.1	1.3	1.2	1.4	2.8	2.6	2.0	1.1	.96
AC-FT	1310	760	266	95	99	84	146	209	2060	413	87	100

11244000 NORTH FORK WILLOW CREEK NEAR BASS LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.36	4.16	7.42	24.6	28.5	36.3	20.4	30.7	25.0	5.16	4.12	4.29
MAX	77.8	54.6	106	524	380	387	272	317	244	73.6	66.4	103
(WY)	1949	1958	1947	1997	1986	1995	1982	1995	1998	1983	1963	1963
MIN	.18	.26	.21	.22	.18	.24	.30	.23	.24	.21	.24	.26
(WY)	1991	1992	1987	1991	1991	1977	1977	1977	1977	1977	1977	1976

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1941 - 1999	
ANNUAL TOTAL	11797.4		2832.25		16.1	
ANNUAL MEAN	32.3		7.76		92.4	
HIGHEST ANNUAL MEAN					1995	
LOWEST ANNUAL MEAN					.26	
HIGHEST DAILY MEAN	420	Jun 9	94	Jun 9	2880	Jan 2 1997
LOWEST DAILY MEAN	1.0	Dec 22	.96	Sep 6	.01	Dec 4 1989
ANNUAL SEVEN-DAY MINIMUM	1.1	Dec 16	1.0	Aug 31	.11	Oct 1 1990
INSTANTANEOUS PEAK FLOW			96		3770	Jan 2 1997
INSTANTANEOUS PEAK STAGE			2.64		9.10	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	23400		5620		11670	
10 PERCENT EXCEEDS	130		20		26	
50 PERCENT EXCEEDS	2.5		2.1		.80	
90 PERCENT EXCEEDS	1.3		1.1		.30	

11246500 WILLOW CREEK AT MOUTH, NEAR AUBERRY, CA

LOCATION.—Lat 37°09'03", long 119°27'34", in SE 1/4 NE 1/4 sec.16, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 40 ft upstream from bridge, 0.4 mi upstream from mouth, 1.3 mi downstream from Whiskey Creek, and 4.3 mi northeast of Auberry.

DRAINAGE AREA.—130 mi².

PERIOD OF RECORD.—January 1952 to September 1988, October 1989 to current year.

WATER TEMPERATURE: Water years 1961–72.

GAGE.—Water-stage recorder. Concrete control since Oct. 22, 1964. Datum of gage is 1,174.69 ft above sea level (levels by Southern California Edison Co.).

REMARKS.—Flow regulated by Bass Lake (station 11243400) 10 mi upstream. Soquel Ditch diverts up to 50 ft³/s from North Fork Willow Creek into Nelder Creek in Fresno River Basin. Flow diverted out of basin by Pacific Gas & Electric Co. Conduit No. 3. See schematic diagram of lower San Joaquin River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 15,700 ft³/s, Dec. 23, 1955, gage height, 28.5 ft, from floodmarks, from rating curve extended above 4,700 ft³/s; maximum gage height, 31.65 ft, Jan. 2, 1997 (backwater from San Joaquin River); no flow at times some years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	5.1	64	11	32	47	36	47	17	6.4	9.2	4.1
2	6.7	4.7	25	9.2	29	53	33	46	19	6.1	8.9	4.4
3	6.6	4.7	17	8.6	28	58	33	57	43	5.9	6.9	4.3
4	6.2	4.6	26	8.2	28	68	32	55	30	5.7	7.9	4.3
5	6.0	4.5	15	8.0	26	55	31	42	25	5.7	8.3	4.2
6	19	6.6	14	8.0	24	43	42	45	22	5.5	8.2	4.0
7	18	5.4	12	7.8	196	37	69	57	19	5.2	9.2	3.6
8	17	48	12	7.7	410	34	86	58	17	5.0	10	3.5
9	17	19	11	7.6	566	40	75	49	17	4.8	10	3.4
10	17	9.6	11	7.4	296	42	83	39	18	4.6	9.5	3.4
11	17	10	10	7.4	136	34	74	36	15	4.6	5.1	3.3
12	17	9.4	11	7.4	e120	32	54	38	15	e4.5	3.4	3.3
13	16	7.6	10	7.2	e101	33	58	40	14	e4.4	3.1	3.3
14	16	7.0	11	7.1	e69	34	96	31	13	e4.2	2.5	3.2
15	16	6.5	12	8.4	50	32	126	31	12	e4.1	2.3	3.2
16	6.8	6.3	10	13	44	32	137	29	12	e4.0	2.1	3.1
17	5.2	7.9	11	12	110	32	144	28	11	e3.9	1.9	3.0
18	5.0	8.9	10	11	117	34	137	27	11	e3.8	1.9	2.7
19	4.9	7.6	9.9	62	102	33	140	26	10	e3.7	2.3	3.3
20	4.6	7.1	10	397	77	34	142	26	9.8	3.4	2.2	3.9
21	4.4	6.9	8.5	219	95	32	132	24	9.5	3.6	2.1	6.7
22	4.2	6.9	10	53	78	31	107	23	9.4	3.6	1.9	10
23	4.1	7.0	15	103	97	38	81	21	12	3.5	8.3	4.3
24	4.1	12	15	230	85	37	71	22	9.7	3.4	5.1	1.7
25	5.2	9.9	16	108	64	35	67	23	8.5	e3.3	2.3	1.2
26	5.0	7.8	19	65	60	35	77	20	8.0	e3.2	1.6	1.0
27	4.6	6.8	18	46	46	35	126	19	7.6	e5.0	1.4	.92
28	4.3	8.0	18	35	46	36	86	18	7.4	11	1.6	.82
29	4.9	9.0	18	33	---	34	71	17	7.1	10	1.3	.76
30	9.9	22	17	30	---	34	56	16	6.7	9.8	1.1	.73
31	6.2	---	17	33	---	38	---	16	---	9.4	1.8	---
TOTAL	285.8	286.8	483.4	1571.0	3132	1192	2502	1026	435.7	161.3	143.4	99.63
MEAN	9.22	9.56	15.6	50.7	112	38.5	83.4	33.1	14.5	5.20	4.63	3.32
MAX	19	48	64	397	566	68	144	58	43	11	10	10
MIN	4.1	4.5	8.5	7.1	24	31	31	16	6.7	3.2	1.1	.73
AC-FT	567	569	959	3120	6210	2360	4960	2040	864	320	284	198

e Estimated.

11246500 WILLOW CREEK AT MOUTH, NEAR AUBERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.58	16.7	57.1	126	137	151	145	155	64.2	10.7	2.57	2.89
MAX	24.6	150	652	1108	1255	1033	995	747	614	102	12.6	28.3
(WY)	1983	1997	1956	1997	1986	1983	1982	1967	1998	1998	1983	1982
MIN	.000	.54	1.13	2.13	1.89	2.63	2.36	3.61	1.93	.000	.000	.000
(WY)	1956	1978	1991	1991	1991	1977	1977	1977	1961	1961	1959	1960

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1952 - 1999	
ANNUAL TOTAL	65387.0		11319.03			
ANNUAL MEAN	179		31.0		70.8	
HIGHEST ANNUAL MEAN					344	
LOWEST ANNUAL MEAN					1.71	
HIGHEST DAILY MEAN	1460	Mar 25	566	Feb 9	7500	Dec 23 1955
LOWEST DAILY MEAN	4.1	Oct 23	.73	Sep 30	.00	Sep 4 1955
ANNUAL SEVEN-DAY MINIMUM	4.5	Oct 18	1.0	Sep 24	.00	Sep 4 1955
INSTANTANEOUS PEAK FLOW			1380	Feb 9	15700	Dec 23 1955
INSTANTANEOUS PEAK STAGE			10.44	Feb 9	31.65	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	129700		22450		51300	
10 PERCENT EXCEEDS	522		74		181	
50 PERCENT EXCEEDS	32		12		8.5	
90 PERCENT EXCEEDS	6.2		3.4		.38	

11246650 KERCKHOFF RESERVOIR NEAR AUBERRY, CA

LOCATION.—Lat 37°07'40", long 119°31'25", in SE 1/4 SW 1/4 sec.24, R.9 S., T.22 E., Fresno County, Hydrologic Unit 18040006, near center of Kerckhoff Dam on San Joaquin River, 2.0 mi downstream from A.G. Wishon Powerplant, and 7.9 mi northwest of Auberry.

DRAINAGE AREA.—1,460 mi².

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete arch dam with spillway completed in 1920. Usable contents, 4,247 acre-ft between elevations 900.14 ft, invert of sluice gates, and 985.68 ft, top of spillway gates. Water is released for use in Kerckhoff Powerplants No. 1 (station 11246950) and No. 2 (station 11247050) 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, 5,700 acre-ft, Jan. 2, 1997, elevation, unknown; minimum, 2,104 acre-ft, Nov. 14–17, 1988, elevation, 970.10 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 4,167 acre-ft, Nov. 15, elevation, 985.17 ft; minimum, 3,384 acre-ft, Jan. 5, elevation, 979.98 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas and Electric Co., dated July 16, 1919)

960	1,090	970	2,092	980	3,387	990	4,964
965	1,549	975	2,703	985	4,140		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3664	3906	3743	3842	3544	3654	4143	3965	3586	4046	3564	3815
2	3815	4125	3682	3596	3739	3783	4159	4006	3815	4069	3806	3899
3	3546	4083	4065	3672	3743	3739	3583	4035	3485	3984	3961	3975
4	3644	4159	3643	3911	3639	3639	3885	3979	3917	4061	3897	3958
5	3664	4156	3893	3384	3885	3700	3548	3891	3839	4116	3927	4001
6	3694	4140	3885	3439	3751	3697	3614	3910	3679	4066	3956	4022
7	3830	4165	3746	3754	3864	3561	3978	3865	3556	4003	3942	3989
8	3860	4140	3746	3639	3830	3603	4012	3845	3567	4066	3907	3992
9	3984	4087	3590	3964	3953	3565	3937	3670	3724	4035	3917	3968
10	3679	4116	3762	3830	3746	3664	3790	3719	3466	4032	3995	3948
11	3953	4132	3590	3649	3707	3596	3593	3999	3800	4035	3877	3886
12	3891	4116	3959	3746	3772	3754	3703	3815	3784	4104	4012	3795
13	3664	4129	3853	3783	3953	3739	3509	3724	3860	4088	3982	3688
14	3620	4086	3916	3661	3604	3639	3654	3580	3754	4116	4142	3634
15	3830	4167	3463	3685	3860	3523	3605	3816	3923	4066	3721	3568
16	3830	4159	3959	3783	3675	3490	3830	3743	3517	4035	3570	3686
17	3488	3694	3754	3809	3579	3639	3830	3679	3922	4007	3886	3945
18	3517	3953	3739	3618	3509	3657	3887	3769	3642	4003	3821	3857
19	3680	3646	3689	3654	3548	3996	3906	3810	3498	4046	4145	3844
20	3845	4038	3558	3956	3692	3919	3908	3664	3547	4047	3815	3842
21	3760	3842	3404	3835	3576	3975	3836	3595	3529	4021	3891	3579
22	3891	3700	3502	3689	3478	3675	3964	3552	3769	4004	3864	3675
23	3694	3516	3751	3516	3860	3703	3961	3899	3839	3897	3992	3956
24	3891	3632	3882	3593	3667	3546	4035	3679	3992	3982	4077	3851
25	3953	3555	3830	3523	3940	3586	3961	3473	3959	4088	3830	3815
26	3769	3520	3919	3614	3724	3835	3827	3561	4096	3803	3821	3800
27	3860	3473	3956	3611	3502	3700	3927	3517	4068	4060	3685	4054
28	3769	3532	3809	3604	3561	3576	4012	3579	4057	3891	3824	3754
29	3784	3754	3848	3634	---	3632	3853	3561	4030	4032	3721	3478
30	3754	3485	3743	3586	---	3661	3968	3430	3968	3832	4030	3611
31	3709	---	3661	3621	---	3948	---	3775	---	3880	3769	---
MAX	3984	4167	4065	3964	3953	3996	4159	4035	4096	4116	4145	4054
MIN	3488	3473	3404	3384	3478	3490	3509	3430	3466	3803	3564	3478
a	982.20	980.68	981.88	981.61	981.20	983.77	983.90	982.64	983.90	983.33	982.60	981.54
b	-60	-224	+176	-40	-60	+387	+20	-193	+193	-88	-111	-158

CAL YR 1998 b -319

WTYR YR1999 b -158

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11246700 SAN JOAQUIN RIVER NEAR AUBERRY, CA

LOCATION.—Lat 37°07'56", long 119°31'50", in NW 1/4 SW 1/4 sec.24, T.9 S., R.22 E., Fresno County, Hydrologic Unit 18040006, on left bank 2,300 ft downstream from Kerckhoff Dam, 2.8 mi northwest of Auberry, and 6.7 mi south of town of North Fork.

DRAINAGE AREA.—1,461 mi².

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder. Datum of gage is 870.11 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Flow regulated by nine powerplants and eight reservoirs with combined capacity of about 609,300 acre-ft. Diversions to Kerckhoff Powerplant No. 1 and Kerckhoff Powerplant No. 2 (stations 11246950 and 11247050) bypass this station. 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, 80,600 ft³/s, Jan. 3, 1997, gage height, 35.62 ft; minimum daily, 16 ft³/s, May 9–18, 1987, Sept. 29, 30, 1988.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	40	41	38	37	36	1430	38	39	42	38	39
2	41	671	40	37	37	36	1750	38	604	42	37	40
3	42	622	41	38	37	37	425	38	42	42	39	41
4	40	324	41	38	37	37	608	42	41	42	39	41
5	41	153	40	38	37	37	298	41	43	976	37	40
6	41	228	41	37	37	36	37	39	41	39	38	40
7	41	270	40	37	37	36	38	39	42	35	40	40
8	42	303	41	37	38	36	38	39	41	36	39	39
9	42	221	40	37	38	37	37	39	42	35	38	40
10	42	266	40	38	37	36	38	39	41	35	40	41
11	41	107	39	37	38	37	37	39	42	34	40	39
12	42	279	41	37	38	36	37	44	42	36	39	39
13	42	306	40	37	38	37	36	39	42	34	39	37
14	42	46	40	36	37	37	36	39	42	33	44	35
15	42	255	40	37	37	37	36	39	42	40	42	37
16	43	467	39	37	37	37	36	39	42	36	38	39
17	42	91	40	37	37	37	37	39	41	35	40	40
18	40	44	39	38	37	37	37	39	41	35	39	39
19	41	44	40	37	37	37	38	39	41	35	40	41
20	42	44	40	39	37	38	39	40	41	35	40	41
21	43	43	39	38	37	38	38	39	41	36	40	39
22	42	42	38	37	37	37	38	39	40	35	39	41
23	42	42	38	38	37	37	38	40	51	35	38	42
24	42	42	38	38	37	37	39	39	64	35	39	40
25	43	41	38	38	36	37	39	39	58	36	40	41
26	42	40	38	37	36	37	38	39	59	35	40	43
27	42	40	38	37	37	37	39	39	59	35	39	43
28	42	41	38	37	37	37	38	39	59	37	39	43
29	41	40	38	37	---	36	38	289	50	37	39	37
30	41	41	38	37	---	195	38	38	42	38	42	36
31	41	---	38	38	---	898	---	38	---	43	39	---
TOTAL	1291	5193	1222	1159	1039	2160	5451	1466	1915	2079	1220	1193
MEAN	41.6	173	39.4	37.4	37.1	69.7	182	47.3	63.8	67.1	39.4	39.8
MAX	43	671	41	39	38	898	1750	289	604	976	44	43
MIN	40	40	38	36	36	36	36	38	39	33	37	35
AC-FT	2560	10300	2420	2300	2060	4280	10810	2910	3800	4120	2420	2370
a	9500	45770	.00	.00	.00	855	9160	26170	46030	2300	2610	153
b	57380	33240	95160	74700	94080	96380	116200	161200	178900	106200	126800	107800

a Discharge, in acre-feet, to Kerckhoff Powerplant No. 1, provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, to Kerckhoff Powerplant No. 2, provided by Pacific Gas & Electric Co.

11246700 SAN JOAQUIN RIVER NEAR AUBERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	29.2	47.5	30.9	270	40.3	103	80.0	482	1020	720	37.1	32.1
MAX	41.6	173	43.1	2571	144	881	534	2683	5452	5217	89.3	45.6
(WY)	1999	1999	1991	1997	1996	1995	1995	1995	1995	1995	1995	1993
MIN	17.5	17.4	18.2	18.0	18.0	17.8	19.1	18.7	17.3	17.2	17.3	17.1
(WY)	1988	1988	1988	1989	1988	1988	1988	1988	1987	1987	1988	1988

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	281611		25388			
ANNUAL MEAN	772		69.6			
HIGHEST ANNUAL MEAN					242	1995
LOWEST ANNUAL MEAN					18.2	1988
HIGHEST DAILY MEAN	8350	Jun 29	1750	Apr 2	35200	Jan 3 1997
LOWEST DAILY MEAN	29	Jan 22	33	Jul 14	16	May 9 1987
ANNUAL SEVEN-DAY MINIMUM	29	Jan 22	35	Jul 8	16	May 9 1987
INSTANTANEOUS PEAK FLOW			6850	Mar 30	80600	Jan 3 1997
INSTANTANEOUS PEAK STAGE			12.86	Mar 30	35.62	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	558600		50360		175300	
TOTAL DIVERSION (AC-FT) a	297500		142500		149200	
TOTAL DIVERSION (AC-FT) b	1949000		1248000		1316000	
10 PERCENT EXCEEDS	3450		44		42	
50 PERCENT EXCEEDS	40		39		30	
90 PERCENT EXCEEDS	30		36		18	

a Discharge, in acre-feet, to Kerckhoff Powerplant No. 1, provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, to Kerckhoff Powerplant No. 2, provided by Pacific Gas & Electric Co.

11250000 FRIANT-KERN CANAL AT FRIANT, CA

LOCATION.—Lat 36°59'53", long 119°42'11", in SE 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040006, at Friant Dam 0.9 mi northeast of Friant.

PERIOD OF RECORD.—March 1949 to current year.

GAGE.—Discharge computed on basis of megawatt meter reading, efficiency of generator coefficient, and net head on turbines. Prior to January 1986, discharge computed on basis of valve openings and head on valves. Prior to July 8, 1949, nonrecording gages at various sites and datums. July 8 to Sept. 30, 1949, water-stage recorder at site 0.2 mi downstream.

REMARKS.—Canal diverts from Millerton Lake (station 11250100) at left end of Friant Dam for irrigation in upper San Joaquin Valley. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 5,330 ft³/s, June 25, 1982; no flow for many days in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1780	608	303	900	1170	842	954	1850	3250	3870	2770	2420
2	1620	679	303	871	1420	858	925	1940	3320	3640	2910	1760
3	1470	671	101	965	1500	958	700	2090	3160	3410	2980	1140
4	1480	650	.00	1050	1530	1000	817	2210	2980	3350	3000	842
5	1560	592	190	1110	1640	1000	842	2310	2780	3470	2880	917
6	1720	492	380	1180	1730	942	771	2350	2820	3700	2550	1120
7	1860	407	380	1180	1780	927	683	2260	2900	3830	2150	1320
8	1840	377	380	575	1780	1070	650	2110	2900	3820	2250	1400
9	1720	378	430	391	1600	1150	621	2170	2990	3680	2550	1340
10	1540	379	675	385	1500	1090	600	2320	3050	3570	2650	1180
11	1560	337	800	385	1500	1050	600	2480	2960	3730	2710	1040
12	1630	301	800	385	1540	933	513	2500	2900	4010	2790	1060
13	1680	297	800	385	1650	850	450	2380	3080	4180	2620	1160
14	1700	297	819	385	1760	908	450	2150	3470	4210	2500	1200
15	1670	298	850	385	1800	950	450	2270	3700	4140	2720	1200
16	1590	299	917	385	1800	950	519	2730	3730	3920	2930	1300
17	1500	300	1220	385	1950	921	629	2680	3700	3680	3020	1180
18	1500	301	1250	385	2180	900	738	2590	3900	3710	3140	883
19	1560	301	1340	385	2240	842	917	2650	3980	3770	3220	858
20	1650	302	1490	339	2200	771	1150	2590	4020	3690	2960	900
21	1760	88.0	1640	308	2260	721	1320	2380	4010	3800	2650	958
22	1710	.00	1800	309	2300	1010	1850	1710	3900	3780	2460	1270
23	1570	.00	1810	311	2530	1330	2040	1670	3880	3490	2400	1420
24	1450	172	1700	312	2760	1130	2000	2230	3860	3260	2430	1220
25	1510	305	1580	104	2980	892	2150	2400	3560	3340	2630	1100
26	1550	304	1470	.00	3130	958	2370	2400	3150	3480	2690	1190
27	1550	304	1450	.00	2920	1050	2480	2740	3140	3500	2520	1250
28	1490	303	1300	449	1530	1110	2440	2840	3300	3620	2300	1310
29	1390	303	900	750	---	1150	2310	2630	3540	3550	2500	1400
30	1060	303	821	779	---	1210	2080	2800	3750	3170	2640	1420
31	550	---	817	917	---	1080	---	3040	---	2740	2650	---
TOTAL	48220	10348.00	28716.00	16650.00	54680	30553	35019	73470	101680	113110	83170	36758
MEAN	1555	345	926	537	1953	986	1167	2370	3389	3649	2683	1225
MAX	1860	679	1810	1180	3130	1330	2480	3040	4020	4210	3220	2420
MIN	550	.00	.00	.00	1170	721	450	1670	2780	2740	2150	842
AC-FT	95640	20530	56960	33030	108500	60600	69460	145700	201700	224400	165000	72910

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1999, BY WATER YEAR (WY)

MEAN	868	327	94.7	223	1254	1236	1393	1662	2665	2959	2590	1522
MAX	3085	1364	926	1349	4505	3551	4476	4238	4529	4905	4339	4033
(WY)	1979	1979	1999	1966	1965	1965	1962	1993	1993	1993	1967	1967
MIN	.000	.000	.000	.000	.000	5.13	32.2	87.5	598	262	384	1.33
(WY)	1950	1950	1950	1950	1950	1991	1998	1977	1977	1949	1949	1950

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1949 - 1999	
ANNUAL TOTAL	448351.00		632374.00			
ANNUAL MEAN	1228		1733		1410	
HIGHEST ANNUAL MEAN					2356	
LOWEST ANNUAL MEAN					270	
HIGHEST DAILY MEAN	4540	Jul 29	4210	Jul 14	5330	Jun 25 1982
LOWEST DAILY MEAN	.00	Jan 12	.00	Nov 22	.00	Jul 5 1949
ANNUAL SEVEN-DAY MINIMUM	.00	Feb 24	166	Nov 18	.00	Sep 11 1949
ANNUAL RUNOFF (AC-FT)	889300		1254000		1022000	
10 PERCENT EXCEEDS	3280		3480		3550	
50 PERCENT EXCEEDS	650		1530		993	
90 PERCENT EXCEEDS	.00		380		.00	

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 sea level (levels by U.S. Bureau of Reclamation). Prior to May 29, 1944, nonrecording gage on left bank at same datum.

REMARKS.—Reservoir is formed by gravity-type concrete dam with spillway near center, completed in December 1942. Control valves installed in February 1944, and spillway gates installed in November 1947. Usable capacity, 503,200 acre-ft between elevations 375.4 ft, invert of river outlet, and 578.0 ft, top of drum-type spillway gates. Not available for release, 17,400 acre-ft. Millerton Lake is one of the storage units in the Central Valley Project. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of lower San Joaquin River Basin.

COOPERATION.—Records and capacity table were provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 528,800 acre-ft, July 21, 1998, elevation, 579.68 ft, (maximum instantaneous contents, 530,500 acre-ft, at 1300 hours, Jan. 3, 1997, elevation 580.01 ft); minimum since lake first filled, 133,600 acre-ft, Apr. 11, 1969, elevation, 467.81 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 523,900 acre-ft, June 16, elevation, 578.68 ft; minimum, 227,400 acre-ft, Sept. 2, elevation, 503.93 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by U.S. Bureau of Reclamation, dated 1921)

400	36,400	440	83,300	480	161,700	520	279,400	560	436,500
420	57,000	460	117,500	500	215,000	540	353,000	580	530,400

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	437600	382400	418000	420500	458700	429900	461100	514800	523400	505500	317800	228500
2	437200	383500	417000	420900	458700	431500	464200	514300	523500	502300	313300	227400
3	436200	385500	416200	422100	458700	433200	465900	514700	523100	498400	308700	228100
4	434900	386700	416400	422200	457700	434000	466000	514900	522400	494100	303800	229500
5	435100	387900	415400	423200	456100	435000	467600	515400	522200	489900	299000	231400
6	435100	389200	414600	423400	454600	435300	469900	515500	521600	486400	295200	232000
7	434500	390900	414500	422900	453900	436300	472100	515800	521600	481000	291900	233000
8	434300	392600	414300	423400	454800	436800	474600	516600	521000	474700	288600	234000
9	434400	394300	413900	423800	455900	437200	477600	517000	520400	468100	285100	234800
10	434400	396300	412100	424900	456700	437600	480900	517000	520300	462000	280700	235900
11	433500	397600	410000	426000	457000	437900	483800	516600	520000	455800	277300	238500
12	433700	399400	409700	426700	457700	438200	486900	516700	521600	449600	273500	240100
13	432200	401500	409400	427400	457800	438900	489800	517300	522100	443700	270700	242600
14	428900	403200	408900	427500	458200	439700	491800	518900	522800	435200	268600	244000
15	425600	404900	410000	426800	456300	440100	496000	519600	522500	426500	266600	243900
16	423200	407700	410000	425900	454900	440400	500100	519400	523900	418300	264000	242800
17	420500	410000	411100	425100	453500	442200	503900	518400	523800	410800	261100	241800
18	417500	411200	411500	426300	451600	443900	506700	517600	523100	402900	257600	240600
19	414200	413300	411800	426600	449400	445300	509600	516200	521200	396000	253300	239300
20	410900	415600	412000	428000	447000	447500	513000	515300	520400	390100	250100	238500
21	407600	418100	413700	431500	444700	449300	515400	515900	519700	383600	248400	237900
22	404000	420400	415300	435000	442600	450300	515700	516300	518800	376400	246400	238400
23	401100	422600	416500	439100	439300	450700	515300	516600	516700	370000	245100	238700
24	398000	422700	417100	443800	436500	451900	515400	516700	515800	363700	243500	240000
25	394700	422000	417000	446400	433700	453200	515000	516400	515000	356200	242100	242000
26	391900	419200	416700	448300	430900	454000	514300	515300	514800	350500	239200	243200
27	389300	417600	415400	451200	429000	455000	514200	514200	513400	343600	238100	241800
28	386700	418300	415800	453300	428000	455900	514000	513100	512000	337300	237900	240100
29	384300	417100	416800	455000	---	456600	513300	516800	510400	330600	235600	237300
30	382400	418200	417400	456200	---	456800	513300	520100	508400	325100	232700	234900
31	382400	---	417700	457700	---	458700	---	522100	---	320200	230800	---
MAX	437600	422700	418000	457700	458700	458700	515700	522100	523900	505500	317800	244000
MIN	382400	382400	408900	420500	428000	429900	461100	513100	508400	320200	230800	227400
a	547.34	555.82	555.72	564.73	558.08	564.95	576.53	578.32	575.52	531.42	505.05	506.37
b	-55600	+35800	-500	+40000	-29700	+30700	+54600	+8800	-13700	-188200	-89400	+4100

CAL YR 1998 b +199600

WTR YR 1999 b -203100

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

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 sea level (levels by U.S. Bureau of Reclamation). Oct. 18, 1907, to Nov. 9, 1913, nonrecording gage at site 4.5 mi upstream at different datum. Nov. 10, 1913, to Sept. 30, 1938, water-stage recorder at site 2.5 mi upstream at different datum.

REMARKS.—Records good. Flow regulated by Millerton Lake (station 11250100) beginning in 1941, and by nine powerplants and eight reservoirs with combined capacity of about 609,300 acre-ft. Diversion for irrigation to Madera and Friant-Kern Canals (stations 11249500 and 11250000) began in 1943 and 1949, respectively. See schematic diagram of lower San Joaquin River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 77,200 ft³/s, Dec. 11, 1937, gage height, 23.8 ft, site and datum then in use; minimum daily, 54 ft³/s, Sept. 15, 1924. Maximum discharge since construction of Friant Dam in 1941, 60,300 ft³/s, Jan. 3, 1997, gage height, 22.97 ft (provided by U.S. Bureau of Reclamation); minimum daily, 11 ft³/s, Jan. 8, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400	334	829	234	248	142	68	147	616	143	310	247
2	402	317	963	243	248	129	68	146	932	150	307	237
3	402	279	965	244	247	103	66	144	719	584	305	221
4	402	286	963	244	247	102	63	145	272	813	306	219
5	402	302	963	242	247	102	65	144	240	813	305	219
6	400	309	967	239	247	102	64	142	381	813	297	221
7	403	307	969	237	248	102	55	143	174	808	287	220
8	400	307	961	240	249	102	37	144	149	770	288	204
9	397	283	956	234	268	95	44	144	141	767	296	196
10	397	229	956	237	181	81	41	144	137	737	290	197
11	397	228	734	238	101	81	40	148	135	710	286	202
12	401	227	604	237	183	81	40	141	147	710	283	200
13	386	225	602	236	186	78	48	141	176	689	284	200
14	364	225	594	238	406	77	66	144	297	665	284	200
15	361	228	598	244	808	77	67	145	253	659	284	200
16	361	232	594	241	978	77	71	145	349	635	284	206
17	363	232	364	234	991	79	113	147	776	591	284	205
18	365	225	215	234	989	77	142	142	1210	589	277	203
19	367	304	215	239	989	82	141	138	1060	566	262	203
20	344	393	215	245	989	79	142	139	423	542	260	203
21	322	393	215	247	989	75	144	137	144	548	260	203
22	318	393	215	244	993	74	146	139	141	524	260	203
23	316	399	215	250	992	76	145	143	140	493	261	205
24	318	399	215	245	790	74	147	144	142	487	254	205
25	318	753	215	252	383	73	147	145	143	434	253	204
26	315	976	220	250	164	78	145	143	142	377	250	206
27	321	771	219	247	144	73	144	143	142	377	257	210
28	273	599	227	247	144	72	145	149	142	366	260	203
29	234	599	220	247	---	75	146	156	141	343	260	185
30	292	595	228	247	---	70	147	158	144	341	260	183
31	333	---	233	247	---	68	---	217	---	327	256	---
TOTAL	11074	11349	16649	7503	13649	2656	2897	4547	10008	17371	8610	6210
MEAN	357	378	537	242	487	85.7	96.6	147	334	560	278	207
MAX	403	976	969	252	993	142	147	217	1210	813	310	247
MIN	234	225	215	234	101	68	37	137	135	143	250	183
AC-FT	21970	22510	33020	14880	27070	5270	5750	9020	19850	34460	17080	12320

11251000 SAN JOAQUIN RIVER BELOW FRIANT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 1940, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	628	609	868	1276	1704	2246	3805	5876	6085	2765	1166	772
MAX	1678	1317	3589	4507	4391	6854	8010	11170	15870	9635	2312	1361
(WY)	1919	1928	1910	1909	1937	1938	1916	1938	1911	1911	1914	1938
MIN	164	196	301	333	393	419	1262	1703	635	335	264	156
(WY)	1932	1932	1909	1918	1924	1924	1912	1934	1924	1924	1924	1931

SUMMARY STATISTICS

WATER YEARS 1908 - 1940

ANNUAL TOTAL	
ANNUAL MEAN	2343
HIGHEST ANNUAL MEAN	4961 1938
LOWEST ANNUAL MEAN	698 1924
HIGHEST DAILY MEAN	38800 Jan 31 1911
LOWEST DAILY MEAN	54 Sep 15 1924
ANNUAL SEVEN-DAY MINIMUM	105 Sep 16 1931
INSTANTANEOUS PEAK FLOW	77200 Dec 11 1937
INSTANTANEOUS PEAK STAGE	23.80 Dec 11 1937
ANNUAL RUNOFF (AC-FT)	1698000
10 PERCENT EXCEEDS	6100
50 PERCENT EXCEEDS	1190
90 PERCENT EXCEEDS	394

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	358	265	410	762	1106	1234	1771	1930	1728	1062	595	468
MAX	1663	1623	3798	9144	7100	7705	7701	9107	9438	5322	2807	2392
(WY)	1946	1983	1983	1997	1969	1969	1983	1941	1941	1995	1945	1948
MIN	47.2	37.3	32.5	30.0	33.9	33.0	43.2	43.9	78.6	101	91.1	67.2
(WY)	1970	1972	1971	1966	1966	1968	1971	1971	1970	1970	1970	1969

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1941 - 1999

ANNUAL TOTAL	830342	112523	
ANNUAL MEAN	2275	308	972
HIGHEST ANNUAL MEAN			4385 1983
LOWEST ANNUAL MEAN			66.9 1971
HIGHEST DAILY MEAN	7930	Jun 18	1210 Jun 18 36800 Jan 3 1997
LOWEST DAILY MEAN	50	Jan 25	37 Apr 8 11 Jan 8 1977
ANNUAL SEVEN-DAY MINIMUM	60	Jan 20	44 Apr 7 20 Jan 22 1990
INSTANTANEOUS PEAK FLOW			2800 Jun 3 60300 Jan 3 1997
INSTANTANEOUS PEAK STAGE			6.29 Jun 3 22.97 Jan 3 1997
ANNUAL RUNOFF (AC-FT)	1647000	223200	704300
10 PERCENT EXCEEDS	5480	714	2990
50 PERCENT EXCEEDS	961	239	151
90 PERCENT EXCEEDS	215	81	52

1125310 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 and crest-stage gage. Elevation of gage is 680 ft above sea level, from topographic map. Prior to October 1966, crest-stage gage at datum 2.00 ft lower.

REMARKS.—Records fair. Some small dams for stock use upstream from station. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,420 ft³/s, Mar. 1, 1983, gage height, 5.72 ft; maximum gage height, 7.38 ft, from floodmarks, Mar. 10, 1995; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 50 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 12	0030	8.0	1.20				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.0	2.7	1.4	3.0	1.4	2.6	1.4	.66	.12	.00	.00
2	1.0	1.0	2.2	1.4	2.3	1.5	2.3	1.5	.67	.13	.00	.00
3	.92	1.1	1.9	1.4	2.0	1.4	2.1	1.5	.80	.10	.00	.00
4	.92	1.1	2.1	1.4	1.9	1.5	2.2	1.4	.86	.08	.00	.00
5	.93	1.1	2.1	1.4	1.9	1.5	2.1	1.3	.79	.07	.00	.00
6	.93	1.1	2.1	1.4	1.9	1.6	2.6	1.2	.65	.05	.00	.00
7	.84	1.1	2.1	1.4	1.9	1.6	4.2	.89	.61	.05	.00	.00
8	.84	1.1	2.0	1.4	1.9	1.6	3.3	.74	.60	.04	.00	.00
9	.85	1.3	2.0	1.4	2.6	2.2	3.4	.73	.59	.04	.00	.00
10	.90	1.5	2.0	1.4	4.6	3.0	3.1	.70	.55	.03	.00	.00
11	.90	2.5	1.9	1.4	3.1	2.6	3.4	.65	.35	.03	.00	.00
12	.88	2.0	1.9	1.4	2.3	2.3	7.1	.64	.31	.01	.00	.00
13	.88	1.7	1.9	1.3	2.0	2.0	6.5	.60	.27	.00	.00	.00
14	.84	1.7	1.7	1.3	1.7	1.9	3.8	.60	.28	.00	.00	.00
15	.86	1.7	1.7	1.3	1.6	2.0	2.7	.59	.28	.00	.00	.00
16	.85	1.7	1.7	1.3	1.6	3.0	2.3	.63	.28	.00	.00	.00
17	.83	1.7	1.7	1.3	1.5	2.5	2.0	.63	.24	.00	.00	.00
18	.82	1.7	1.7	1.3	1.4	1.9	1.9	.60	.24	.00	.00	.00
19	.82	1.7	1.7	1.3	1.4	1.8	1.7	.61	.22	.00	.00	.00
20	.78	1.7	1.7	1.3	1.4	4.0	1.7	.64	.23	.00	.00	.00
21	.74	1.7	1.8	1.4	1.4	5.3	1.7	.77	.22	.00	.00	.00
22	.68	1.7	e1.8	1.4	1.4	6.1	1.6	.76	.21	.00	.00	.00
23	.67	1.7	e1.7	1.5	1.4	4.4	1.6	.68	.21	.00	.00	.00
24	.84	1.7	e1.6	2.2	1.4	3.5	1.5	.66	.19	.00	.00	.00
25	1.1	1.7	1.5	2.4	1.4	4.6	1.6	.68	.19	.00	.00	.00
26	1.1	1.7	1.6	2.0	1.4	5.3	1.5	.67	.18	.00	.00	.00
27	1.0	1.7	1.5	2.2	1.4	3.8	1.4	.55	.17	.00	.00	.00
28	.99	2.0	1.5	1.9	1.4	3.3	1.4	.58	.15	.00	.00	.00
29	1.0	2.1	1.4	1.7	---	3.0	1.6	.59	.16	.00	.00	.00
30	.99	2.2	1.4	1.7	---	2.7	1.5	.60	.15	.00	.00	.00
31	1.0	---	1.4	2.2	---	2.7	---	.70	---	.00	.00	---
TOTAL	27.80	47.7	56.0	47.8	53.2	86.0	76.4	24.79	11.31	0.75	0.00	0.00
MEAN	.90	1.59	1.81	1.54	1.90	2.77	2.55	.80	.38	.024	.000	.000
MAX	1.1	2.5	2.7	2.4	4.6	6.1	7.1	1.5	.86	.13	.00	.00
MIN	.67	1.0	1.4	1.3	1.4	1.4	1.4	.55	.15	.00	.00	.00
AC-FT	55	95	111	95	106	171	152	49	22	1.5	.00	.00

e Estimated.

11253310 CANTUA CREEK NEAR CANTUA CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.11	.37	1.45	7.15	11.1	13.4	5.09	2.71	1.19	.44	.12	.15
MAX	1.40	2.82	11.2	44.0	65.3	101	23.2	17.4	7.64	3.83	1.83	1.41
(WY)	1984	1973	1984	1969	1998	1995	1983	1983	1983	1983	1983	1976
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1967	1967	1969	1975	1976	1989	1972	1972	1968	1968	1968	1968

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1967 - 1999	
ANNUAL TOTAL	3874.06		431.75			
ANNUAL MEAN	10.6		1.18		3.58	
HIGHEST ANNUAL MEAN					18.9	
LOWEST ANNUAL MEAN					.003	
HIGHEST DAILY MEAN	264	Feb 7	7.1	Apr 12	1070	Mar 10 1995
LOWEST DAILY MEAN	.65	Jan 1	.00	Jul 13	.00	Oct 1 1966
ANNUAL SEVEN-DAY MINIMUM	.71	Aug 29	.00	Jul 13	.00	Oct 1 1966
INSTANTANEOUS PEAK FLOW			8.0		3420	
INSTANTANEOUS PEAK STAGE			1.20		7.38	
ANNUAL RUNOFF (AC-FT)	7680		856		2590	
10 PERCENT EXCEEDS	22		2.3		6.8	
50 PERCENT EXCEEDS	2.6		1.1		.11	
90 PERCENT EXCEEDS	.84		.00		.00	

11253500 JAMES BYPASS NEAR SAN JOAQUIN, CA

LOCATION.—Lat 36°39'09", long 120°10'49", in NE 1/4 SW 1/4 sec.1, T.15 S., R.16 E., Fresno County, Hydrologic Unit 18030012, on right bank 3.2 mi north of San Joaquin.

PERIOD OF RECORD.—October 1947 to current year. Published as "Fresno Slough bypass" in WSP 1315-A and 1735. Daily discharge data for period October 1954 to September 1972 are in files of U.S. Bureau of Reclamation. Monthly totals published in WDR CA-72-2.

GAGE.—Water-stage recorder. Elevation of gage is 160 ft above sea level, from topographic map.

REMARKS.—Diversion upstream from station for irrigation. James Bypass carries overflow from Kings River to San Joaquin River.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation; rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 5,570 ft³/s, June 7, 1969; no flow for all or most of each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	397	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	415	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	456	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	393	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	415	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	386	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	293	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	313	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	327	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	113	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	73	379	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	---	415	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	---	415	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	---	327	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	---	108	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	---	88	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	361	68	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	45	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	---	---	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1999, BY WATER YEAR (WY)

MEAN	57.4	151	232	364	367	549	763	926	594	268	38.3	27.2
MAX	1723	2364	3648	3551	4688	5192	5066	4932	4913	2985	1077	811
(WY)	1984	1984	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1948	1948	1948	1948	1948	1948	1948	1954	1953	1948	1948	1949

SUMMARY STATISTICS

WATER YEARS 1948 - 1999a

ANNUAL MEAN	338
HIGHEST ANNUAL MEAN	3189
LOWEST ANNUAL MEAN	.000
HIGHEST DAILY MEAN	5360
LOWEST DAILY MEAN	.00
ANNUAL SEVEN-DAY MINIMUM	.00
ANNUAL RUNOFF (AC-FT)	244700
10 PERCENT EXCEEDS	1240
50 PERCENT EXCEEDS	.00
90 PERCENT EXCEEDS	.00

a Does not include water years 1955 to 1972 (see Period of Record).

1125575 PANOCHE CREEK AT INTERSTATE 5, NEAR SILVER CREEK, CA

LOCATION.—Lat 36°39' 09", long 120°37' 52", in NE 1/4 SW 1/4 sec. 2 T.15 S., R.12 E. (revised), Fresno County, Hydrologic Unit 18040001, on left bank at downstream side of Interstate Highway 5 bridge over Panoche Creek, 7.3 mi southwest of Silver Creek Township, and 11.8 mi east of Panoche.

DRAINAGE AREA.— 305 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.— December 1997 to current year. Record is published seasonally, Dec. 1 to June 30 of each water year.

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

REMARKS.—Records poor. No known regulation or diversions upstream of station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 9,940 ft³/s, Feb. 3, 1998, gage height 13.46 ft, from rating curve extended above 1,500 ft³/s on the basis of slope-area measurement of peak flow; no flow for many days.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 150 ft³/s, or maximum. No peak greater than 17 ft³/s occurred outside of period of published record during this water year:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 25	0340	17	2.74				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.00	.00	.03	.00	.06	.11	.00	---	---	---
2	---	---	.00	.00	.05	.00	.11	.15	.00	---	---	---
3	---	---	.00	.00	.00	.00	.09	.13	.00	---	---	---
4	---	---	.00	.00	.00	.00	.00	.12	.22	---	---	---
5	---	---	.00	.00	.00	.00	.15	.00	.06	---	---	---
6	---	---	.00	.00	.00	.00	.15	.00	.30	---	---	---
7	---	---	.00	.00	.00	.00	.15	.00	.00	---	---	---
8	---	---	.00	.00	.00	.00	.17	.00	.13	---	---	---
9	---	---	.00	.00	.00	.00	.15	.00	.02	---	---	---
10	---	---	.00	.00	.00	.00	.11	.00	.03	---	---	---
11	---	---	.00	.00	.00	.00	.12	.00	.12	---	---	---
12	---	---	.00	.00	.00	.00	.01	.07	.07	---	---	---
13	---	---	.00	.00	.00	.00	.00	.00	.09	---	---	---
14	---	---	.00	.00	.00	.00	.13	.09	.07	---	---	---
15	---	---	.00	.00	.00	.00	.17	.00	.51	---	---	---
16	---	---	.00	.00	.00	.00	.15	.00	1.8	---	---	---
17	---	---	.00	.00	.00	.00	.21	.00	2.4	---	---	---
18	---	---	.00	.00	.00	.00	.29	.00	3.0	---	---	---
19	---	---	.00	.00	.01	.03	.00	.02	2.7	---	---	---
20	---	---	.00	.00	.10	1.1	.10	.26	2.8	---	---	---
21	---	---	.00	.00	.33	.38	.09	.24	3.8	---	---	---
22	---	---	.00	.00	.01	.00	.03	.68	1.3	---	---	---
23	---	---	.00	.35	.11	.00	.00	.00	.58	---	---	---
24	---	---	.00	.10	.00	.00	.14	.00	1.9	---	---	---
25	---	---	.00	.19	.00	.02	.17	.18	6.1	---	---	---
26	---	---	.00	.01	.00	.00	.15	.15	4.4	---	---	---
27	---	---	.00	.00	.00	.00	.13	.14	4.5	---	---	---
28	---	---	.00	.00	.00	.00	.00	.18	4.5	---	---	---
29	---	---	.00	.00	---	.00	.03	.32	6.4	---	---	---
30	---	---	.00	.02	---	.00	.26	.22	6.5	---	---	---
31	---	---	.00	.03	---	.11	---	.23	---	---	---	---
TOTAL	---	---	0.00	0.70	0.64	1.64	3.32	3.29	54.30	---	---	---
MEAN	---	---	.000	.023	.023	.053	.11	.11	1.81	---	---	---
MAX	---	---	.00	.35	.33	1.1	.29	.68	6.5	---	---	---
MIN	---	---	.00	.00	.00	.00	.00	.00	.00	---	---	---
AC-FT	---	---	.00	1.4	1.3	3.3	6.6	6.5	108	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	---	---	.000	1.31	158	1.29	5.51	2.18	1.33	---	---	---
MAX	---	---	.000	2.59	316	2.53	10.9	4.26	1.81	---	---	---
(WY)	---	---	1998	1998	1998	1998	1998	1998	1999	---	---	---
MIN	---	---	.000	.023	.023	.053	.11	.11	.86	---	---	---
(WY)	---	---	1998	1999	1999	1999	1999	1999	1998	---	---	---

11255575 PANOCHE CREEK AT INTERSTATE 5, NEAR SILVER CREEK, CA

WATER-QUALITY RECORDS

PERIOD OF RECORD.—January 1998 to current year

CHEMICAL DATA: January 1998 to current year.

SEDIMENT DATA: January 1998 to current year.

REMARKS.—Zero bedload discharge observed for flows less than 1.0 ft³/s during current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
APR 08...	1315	.50	471	8.0	13.0	1400	756	10.4	100	100

DATE	TIME	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3 CO3) (00453)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)
APR 08...	47	29	7.9	45	46	2	8.1	70	0	57	

DATE	TIME	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
APR 08...	60	53	.21	15	298	252	.41	1	<1	

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER-ATURE WATER (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70339)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70341)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)
APR 08...	1400	.33	13.0	2770	2.5	72	87	93	98	98	100

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

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA

LOCATION.—Lat 37°14'52", long 120°51'04", in SE 1/4 SE 1/4, sec.10, T.8 S., R.10 E., Merced County, Hydrologic Unit 18040001, on right bank at bridge on Highway 165 and 5.5 mi south of Stevinson.

DRAINAGE AREA.—Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—Water years 1986–94. October 1995 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is sea level.

REMARKS.—Records fair. During major storm events record can be affected by backwater from the San Joaquin River. Discharge is affected by irrigation return and drainage from Kesterson Wildlife Refuge.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 810 ft³/s, Feb. 20, 1986; minimum daily, 24 ft³/s, Sept. 6, 1992.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	185	193	143	343	404	203	246	141	144	256	137
2	157	179	189	144	311	415	191	258	114	140	258	109
3	132	185	191	135	294	430	177	279	147	169	245	116
4	150	199	191	139	285	415	166	282	174	183	180	149
5	143	191	183	139	275	389	169	263	213	217	161	156
6	142	197	178	144	275	373	176	228	235	238	174	163
7	161	207	173	172	267	350	185	190	225	196	187	153
8	160	205	161	180	260	328	210	169	206	161	231	155
9	158	197	154	177	330	326	210	140	193	147	261	138
10	165	193	156	180	418	307	181	143	176	142	255	156
11	176	194	153	186	495	273	173	159	160	156	225	141
12	180	194	154	189	429	268	184	165	151	148	152	149
13	186	187	154	195	358	265	202	133	179	168	155	154
14	208	177	144	204	333	291	188	101	209	176	171	159
15	207	176	139	205	336	337	208	96	190	208	188	153
16	212	172	138	222	322	362	219	100	142	200	222	148
17	180	177	133	265	286	384	225	103	117	187	236	155
18	159	191	122	284	289	394	211	112	130	173	189	181
19	142	183	116	299	308	381	188	117	131	204	193	175
20	123	159	118	327	342	379	172	128	137	223	214	164
21	122	150	123	356	391	371	174	130	159	201	217	159
22	143	153	121	371	438	379	156	149	170	e160	241	124
23	175	151	113	369	490	365	170	179	174	e147	228	118
24	189	152	114	355	527	379	189	192	177	e145	189	119
25	228	147	127	353	534	400	177	187	176	e186	143	138
26	229	145	129	361	503	397	132	134	189	e248	182	155
27	216	150	132	365	467	374	120	122	220	e263	195	149
28	211	163	131	344	423	346	115	117	220	e207	191	149
29	200	177	121	327	---	319	145	111	176	230	200	166
30	193	191	119	333	---	266	194	104	149	256	182	181
31	187	---	130	346	---	234	---	147	---	265	192	---
TOTAL	5404	5327	4500	7809	10329	10901	5410	4984	5180	5888	6313	4469
MEAN	174	178	145	252	369	352	180	161	173	190	204	149
MAX	229	207	193	371	534	430	225	282	235	265	261	181
MIN	122	145	113	135	260	234	115	96	114	140	143	109
AC-FT	10720	10570	8930	15490	20490	21620	10730	9890	10270	11680	12520	8860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

MEAN	160	176	144	170	297	359	258	216	221	239	256	175
MAX	255	273	237	426	631	512	419	355	339	376	411	289
(WY)	1990	1990	1996	1997	1998	1996	1986	1987	1987	1986	1986	1986
MIN	41.3	65.2	63.4	60.6	83.4	231	159	75.2	72.0	61.7	57.1	39.4
(WY)	1993	1993	1991	1991	1991	1992	1997	1992	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1986 - 1999	
ANNUAL TOTAL	101516		76514			
ANNUAL MEAN	278		210		222	
HIGHEST ANNUAL MEAN					289	
LOWEST ANNUAL MEAN					96.6	
HIGHEST DAILY MEAN	764	Feb 17	534	Feb 25	810	Feb 20 1986
LOWEST DAILY MEAN	69	Jan 8	96	May 15	24	Sep 6 1992
ANNUAL SEVEN-DAY MINIMUM	72	Jan 6	108	May 14	31	Dec 25 1992
INSTANTANEOUS PEAK FLOW			542	Feb 25	unknown	Feb 20 1986
INSTANTANEOUS PEAK STAGE			68.27	Feb 25	unknown	Feb 20 1986
ANNUAL RUNOFF (AC-FT)	201400		151800		161000	
10 PERCENT EXCEEDS	508		354		374	
50 PERCENT EXCEEDS	253		183		202	
90 PERCENT EXCEEDS	129		131		85	

e Estimated.

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1985–94. October 1995 to current year. Data for the period October 1985 to March 1987 are available in U.S. Geological Survey Open-File Report 88-479. Data for the period April 1987 to September 1988 are available in U.S. Geological Survey Open File Report 91–74.

CHEMICAL DATA: Water years 1985–88, 1993–94.

SEDIMENT DATA: Water years 1983–88, 1993–94.

SPECIFIC CONDUCTANCE: Water years 1985–94. October 1995 to current year.

WATER TEMPERATURE: Water years 1985–94. October 1995 to current year.

PERIOD OF DAILY RECORD.—Water years 1985–94. October 1995 to current year.

SPECIFIC CONDUCTANCE: Water years 1985–94. October 1995 to current year.

WATER TEMPERATURE: Water years 1985–94. October 1995 to current year.

INSTRUMENTATION.—Water-quality monitor.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 4,330 microsiemens, Jan. 16, 1991; minimum recorded, 450 microsiemens, July 24, 1986.

WATER TEMPERATURE: Maximum recorded, 32.5°C, July 15, 1992, July 12, 1999; minimum recorded, 0.5°C, Dec. 26, 1985, Dec. 23, 1990.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 2,240 microsiemens Apr. 1; minimum recorded, 646 microsiemens, Aug. 24.

WATER TEMPERATURE: Maximum recorded, 32.5°C, July 12; minimum recorded, 3.5°C, Dec. 24.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	810	680	1090	1060	1230	1160	1630	1580	1320	1280	1390	1260
2	875	686	1110	1080	1180	1160	1630	1550	1400	1310	1290	1240
3	899	850	1110	981	1180	1140	1590	1550	1420	1360	1280	1240
4	851	795	1020	1000	1230	1160	1590	1530	1480	1370	1370	1270
5	890	818	1090	1020	1310	1230	1530	1500	1430	1360	1430	1350
6	947	874	1100	1040	1340	1300	1630	1480	1390	1330	1430	1350
7	948	814	1040	1000	1400	1340	1480	1260	1450	1270	1530	1410
8	956	810	1060	1030	1480	1400	1370	1260	1490	1360	1550	1490
9	968	888	1080	1060	1490	1440	1380	1300	1390	1320	1550	1470
10	968	895	1100	1070	1490	1460	1300	1270	1330	1240	1610	1480
11	952	859	1110	1080	1480	1460	1290	1220	1380	1240	1730	1530
12	941	860	1150	1070	1480	1420	1240	1190	1460	1380	1670	1560
13	961	856	1160	1120	1460	1450	1230	1200	1430	1350	1650	1490
14	949	829	1200	1130	1560	1460	1240	1160	1430	1350	1610	1510
15	907	868	1200	1060	1600	1560	1220	1200	1370	1300	1600	1430
16	926	865	1090	1060	1600	1550	1260	1170	1450	1300	1570	1430
17	1010	888	1090	966	1580	1520	1180	1070	1500	1430	1640	1470
18	1020	976	974	874	1600	1510	1160	1110	1440	1340	1620	1560
19	1060	1020	1160	956	1650	1590	1170	1100	1400	1340	1660	1580
20	1080	1060	1270	1130	1610	1580	1200	1170	1370	1290	1660	1610
21	1080	1030	1280	1240	1620	1580	1170	1130	1300	1230	1660	1600
22	1030	902	1250	1220	1640	1550	1210	1150	1240	1140	1640	1600
23	953	822	1240	1200	1560	1540	1280	1210	1150	1110	1770	1590
24	952	852	1230	1170	1560	1510	1270	1240	1150	1100	1770	1660
25	921	875	1210	1170	1580	1550	1290	1250	1180	1140	1780	1670
26	946	879	1220	1190	1600	1580	1290	1240	1230	1170	1770	1720
27	1020	869	1340	1190	1660	1560	1290	1220	1330	1210	1820	1730
28	994	930	1350	1240	1680	1610	1380	1290	1390	1310	1830	1730
29	1030	969	1250	1220	1620	1600	1370	1310	---	---	1930	1810
30	1040	1020	1280	1160	1600	1560	1340	1290	---	---	2010	1870
31	1060	1030	---	---	1580	1480	1330	1250	---	---	2090	1970
MONTH	1080	680	1350	874	1680	1140	1630	1070	1500	1100	2090	1240

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	2240	2060	957	868	1230	1140	1240	1110	871	796	1060	744
2	2120	2040	921	885	1430	1230	1160	1040	811	764	1210	1050
3	2140	2050	914	874	1410	1080	1050	933	850	757	1080	1030
4	2140	2060	955	873	1160	1060	1020	928	1010	763	1060	886
5	2170	2110	1100	955	1090	945	965	876	1000	903	913	890
6	2140	1970	1250	1060	997	943	894	800	951	831	931	879
7	1970	1900	1290	1190	1010	910	924	815	961	775	927	878
8	1920	1670	1380	1200	1040	985	969	846	800	733	934	849
9	1670	1540	1490	1290	1140	1020	1020	865	816	721	1010	913
10	1780	1570	1520	1270	1190	1080	1030	920	824	781	1020	912
11	1800	1560	1270	1180	1240	1190	930	866	954	792	1020	900
12	1820	1620	1260	1180	1300	1210	943	854	1090	950	1040	874
13	1760	1650	1470	1210	1260	1070	939	812	997	914	959	903
14	1790	1650	1830	1470	1070	980	945	814	916	852	964	893
15	1760	1580	1820	1690	1160	965	870	775	889	827	975	913
16	1610	1470	1770	1670	1400	1130	908	843	851	788	1010	891
17	1490	1360	1680	1530	1400	1270	989	885	878	783	924	877
18	1460	1360	1560	1440	1340	1090	1010	965	904	836	903	799
19	1470	1360	1560	1400	1150	1080	992	854	888	788	969	796
20	1490	1430	1420	1310	1120	1080	893	783	801	751	969	924
21	1510	1380	1500	1280	1080	1020	1030	860	773	695	988	900
22	1710	1470	1550	1250	1060	974	1090	994	733	685	1100	988
23	1590	1290	1260	1200	1020	987	1180	1000	723	648	1100	1040
24	1320	1160	1210	1070	1050	1000	1100	962	857	646	1060	977
25	1350	1140	1210	1020	1080	1050	975	785	947	857	977	900
26	1650	1340	1440	1210	1120	1040	794	717	869	810	954	910
27	1660	1570	1430	1250	1120	1030	865	743	813	739	1010	944
28	1710	1610	1260	1160	1090	1020	995	848	760	730	1090	963
29	1720	1270	1270	1140	1140	1070	935	810	773	712	1080	951
30	1270	957	1400	1200	1230	1120	846	764	818	741	1070	972
31	---	---	1270	1120	---	---	840	777	759	712	---	---
MONTH	2240	957	1830	868	1430	910	1240	717	1090	646	1210	744

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.0	19.0	16.5	15.0	14.0	12.5	10.0	8.5	10.5	9.0	16.5	14.5
2	21.5	18.5	16.5	14.5	14.0	12.5	9.0	8.5	10.5	8.5	16.5	14.5
3	20.5	17.5	16.0	14.0	13.5	12.0	9.0	8.5	11.0	9.0	15.5	14.5
4	19.5	17.0	16.0	14.5	12.0	10.0	8.5	8.0	11.5	10.0	14.5	13.0
5	20.0	16.5	16.0	14.0	10.0	8.5	8.5	7.5	12.0	10.0	13.5	12.0
6	20.5	17.5	14.5	13.5	10.0	8.5	8.0	7.5	11.0	10.5	13.5	11.5
7	21.0	18.0	14.0	13.0	9.0	7.5	7.5	7.0	11.5	10.5	14.0	11.5
8	21.0	18.0	14.0	12.5	10.0	8.0	8.0	6.5	13.0	11.5	13.0	12.0
9	20.5	18.0	14.5	12.5	9.5	8.0	7.0	6.5	13.0	11.0	13.0	11.0
10	19.5	17.0	13.0	12.0	9.0	7.5	6.5	6.0	11.0	9.5	13.0	11.5
11	19.5	16.5	12.0	11.5	9.5	7.5	6.5	5.5	10.5	9.0	14.5	12.0
12	18.5	17.0	13.5	11.0	9.0	8.0	5.5	5.0	10.5	9.0	15.0	12.5
13	19.5	16.5	13.5	12.0	10.0	8.5	6.0	5.0	11.0	9.0	15.5	13.0
14	19.5	17.0	13.5	12.0	11.0	9.0	6.5	5.0	12.0	10.5	14.5	13.5
15	18.0	16.5	14.5	12.0	11.0	9.0	8.5	6.0	12.0	10.0	14.0	12.5
16	16.5	14.5	14.0	13.5	11.0	9.0	11.0	8.5	12.0	11.0	14.0	12.0
17	17.0	14.0	15.0	13.5	11.0	9.0	12.5	11.0	14.0	11.5	15.5	12.5
18	17.5	14.5	14.5	12.5	10.5	9.0	13.0	12.0	14.0	13.0	16.5	13.5
19	18.0	15.0	13.5	12.0	10.0	8.0	13.0	12.5	13.5	11.5	15.5	14.5
20	18.5	15.0	13.5	11.5	8.0	6.0	13.0	12.5	12.5	11.5	15.0	13.5
21	19.0	15.5	13.5	11.5	6.0	4.0	12.5	11.5	12.0	10.5	15.5	13.0
22	19.0	16.0	15.0	12.5	6.0	4.5	12.5	11.5	13.0	11.0	16.5	13.5
23	19.0	16.0	15.0	14.0	6.0	4.0	12.0	11.0	13.5	11.5	17.0	14.5
24	18.0	16.0	15.0	13.5	5.5	3.5	11.0	10.0	14.0	12.0	17.0	15.0
25	16.5	14.5	14.5	12.5	6.0	4.0	10.5	9.5	14.0	13.0	17.5	15.5
26	17.0	14.5	14.0	12.0	6.5	4.5	9.5	8.5	14.0	12.5	18.5	16.0
27	17.5	15.0	13.5	13.0	7.0	5.0	9.5	8.0	14.5	12.5	17.5	15.5
28	17.0	15.5	13.5	12.5	8.0	5.5	9.5	8.0	15.0	13.0	16.5	14.0
29	17.5	15.5	13.0	12.5	8.5	6.5	9.5	8.0	---	---	16.5	14.0
30	16.5	15.0	13.5	12.0	8.5	6.5	9.0	8.5	---	---	16.5	14.0
31	16.0	14.0	---	---	10.5	8.0	10.0	8.5	---	---	16.5	14.0
MONTH	22.0	14.0	16.5	11.0	14.0	3.5	13.0	5.0	15.0	8.5	18.5	11.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.0	13.5	21.0	17.0	24.5	20.0	31.5	26.5	26.5	23.0	24.0	20.0
2	16.0	13.0	19.5	17.0	21.5	18.5	29.0	25.0	27.0	23.5	25.0	20.0
3	14.5	11.5	17.0	15.5	20.0	17.0	26.0	22.0	28.0	24.5	24.5	20.5
4	13.5	9.0	19.0	15.5	21.0	17.5	24.5	21.0	28.5	24.5	25.0	21.0
5	13.0	12.0	20.5	16.5	23.5	19.0	26.0	21.5	26.5	24.0	26.0	21.5
6	14.0	11.0	23.0	19.0	24.5	20.5	27.0	23.0	24.5	21.5	26.5	22.5
7	12.5	11.5	22.0	19.5	23.5	20.0	26.0	23.0	24.5	21.0	27.0	23.0
8	12.0	11.0	20.5	17.5	23.0	19.0	28.0	22.5	25.0	22.0	26.5	23.0
9	14.0	10.0	19.0	15.5	23.5	19.0	28.5	24.0	24.5	22.5	26.5	22.5
10	15.0	11.5	20.0	16.0	24.0	19.5	28.5	24.5	25.5	22.0	25.0	22.0
11	14.0	13.0	22.0	17.5	25.0	20.5	30.5	25.0	25.0	21.5	25.5	21.5
12	16.0	11.5	24.0	20.0	26.0	21.5	32.5	27.5	26.5	22.0	25.5	22.0
13	19.5	15.0	22.0	19.5	25.5	22.0	32.0	29.0	26.0	22.5	25.5	22.0
14	21.5	17.5	23.0	17.0	27.0	22.5	30.0	27.0	26.5	22.0	25.0	21.5
15	23.0	19.0	21.5	16.5	26.5	23.5	29.0	25.0	25.5	21.5	26.0	22.0
16	24.0	21.0	22.5	16.5	27.0	22.5	27.0	23.5	26.5	22.0	25.5	22.0
17	24.5	21.5	24.5	18.0	29.0	22.5	27.0	23.0	27.5	23.5	25.0	21.5
18	24.5	21.5	24.5	19.5	29.0	24.0	27.5	23.0	27.0	23.5	24.5	21.0
19	24.0	21.0	24.0	19.5	28.0	23.0	26.0	22.5	26.0	22.0	24.0	21.0
20	23.0	20.5	22.5	19.0	27.5	23.0	26.0	22.0	26.5	22.5	23.5	20.0
21	21.5	19.0	23.0	18.0	27.5	24.0	26.0	22.0	26.5	23.0	25.0	20.5
22	20.0	17.5	24.5	20.0	29.0	24.5	27.5	22.5	27.0	23.5	26.5	22.5
23	18.5	14.5	25.0	21.5	30.0	25.0	27.5	23.0	28.5	24.5	27.0	23.0
24	21.0	16.0	25.0	21.0	28.5	24.5	26.0	22.0	28.5	24.5	27.0	23.0
25	21.0	17.0	26.0	21.5	27.5	23.5	26.5	22.0	28.5	24.0	26.5	23.0
26	22.0	18.0	28.0	23.0	27.0	23.0	27.5	23.5	27.0	25.0	24.5	22.0
27	22.0	17.5	26.5	22.5	27.0	23.5	27.0	24.0	28.0	23.5	23.0	20.5
28	19.0	15.5	26.5	21.5	28.5	24.0	27.0	23.0	28.0	24.5	23.0	19.0
29	17.0	12.5	24.0	20.5	30.5	25.0	26.0	23.0	28.5	25.0	23.5	20.0
30	20.0	15.5	24.5	18.0	31.0	26.0	26.5	23.0	26.5	24.0	24.5	21.0
31	---	---	24.5	20.0	---	---	26.5	23.0	24.0	21.0	---	---
MONTH	24.5	9.0	28.0	15.5	31.0	17.0	32.5	21.0	28.5	21.0	27.0	19.0

11262890 SAN LUIS DRAIN, SITE A, NEAR SOUTH DOS PALOS, CA

LOCATION.—Lat 36°57'53", long 120°40'08", in NW 1/4 NW 1/4 sec.21, T.11 S., R.12 E., Merced County, Hydrologic Unit 18040001, on left bank 15 ft upstream from culvert, 1.2 mi upstream from Santa Fe Grade and Swift Roads, and 0.9 mi west of South Dos Palos.

DRAINAGE AREA.—Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1998 to September 1999 (discontinued).

GAGE.—Water-stage recorder and sharp-crested weir. Elevation of gage is 115 ft above sea level, from topographic map.

REMARKS.—Records good. Drain intercepts subsurface drainage water from irrigated farmland and conveys it into Mud Slough and the San Joaquin River.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 83 ft³/s, Aug. 28, 1999; minimum daily, 6.4 ft³/s, Dec. 9, 1998.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e27	25	17	24	40	57	40	43	54	56	70	54
2	e30	25	20	21	38	52	41	41	47	59	75	50
3	e25	27	21	22	40	61	44	39	48	59	66	55
4	e24	25	17	20	40	57	40	37	51	65	61	53
5	e23	26	15	18	42	58	38	40	56	72	58	53
6	e24	22	15	21	38	56	35	44	61	69	60	51
7	e29	22	14	20	43	59	37	47	65	70	65	47
8	e30	22	13	24	52	58	35	45	65	73	65	38
9	e32	24	6.4	29	57	56	33	51	66	66	69	31
10	e34	23	16	23	66	57	34	47	70	63	62	33
11	e29	20	22	22	51	54	38	41	68	65	55	37
12	e28	18	18	15	58	51	37	41	65	68	56	29
13	e27	18	18	18	58	53	36	51	65	62	58	31
14	e30	20	20	14	55	57	33	53	64	58	60	42
15	e28	19	20	17	54	60	33	51	62	61	55	45
16	e25	18	18	15	60	53	35	57	62	62	55	37
17	e24	17	23	19	59	55	32	e55	68	62	57	31
18	e23	18	28	18	61	53	32	e54	68	67	53	29
19	e22	25	20	17	63	50	32	48	68	65	53	25
20	e21	19	20	24	58	55	36	49	69	67	58	28
21	e21	19	19	20	64	55	30	48	68	62	57	31
22	e23	18	18	22	64	49	30	50	59	65	59	29
23	e24	19	20	21	61	49	34	53	55	69	68	31
24	27	16	23	24	62	49	35	57	58	70	68	32
25	35	16	21	27	66	50	37	56	59	69	76	32
26	34	18	20	27	65	49	39	51	57	72	81	25
27	34	18	16	28	59	47	37	52	61	61	81	21
28	32	21	19	28	59	43	36	46	57	60	83	18
29	30	19	17	32	---	42	39	51	57	60	77	15
30	35	15	22	33	---	39	39	54	54	67	63	16
31	26	---	20	40	---	37	---	59	---	66	64	---
TOTAL	856	612	576.4	703	1533	1621	1077	1511	1827	2010	1988	1049
MEAN	27.6	20.4	18.6	22.7	54.8	52.3	35.9	48.7	60.9	64.8	64.1	35.0
MAX	35	27	28	40	66	61	44	59	70	73	83	55
MIN	21	15	6.4	14	38	37	30	37	47	56	53	15
AC-FT	1700	1210	1140	1390	3040	3220	2140	3000	3620	3990	3940	2080

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 1999, BY WATER YEAR (WY)

MEAN	27.6	20.4	18.6	22.7	54.8	52.3	35.9	48.7	60.9	64.8	64.1	35.0
MAX	27.6	20.4	18.6	22.7	54.8	52.3	35.9	48.7	60.9	64.8	64.1	35.0
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	27.6	20.4	18.6	22.7	54.8	52.3	35.9	48.7	60.9	64.8	64.1	35.0
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999

SUMMARY STATISTICS

FOR 1999 WATER YEAR

ANNUAL TOTAL	15363.4	
ANNUAL MEAN	42.1	
HIGHEST DAILY MEAN	83	Aug 28
LOWEST DAILY MEAN	6.4	Dec 9
ANNUAL SEVEN-DAY MINIMUM	14	Dec 4
ANNUAL RUNOFF (AC-FT)	30470	
10 PERCENT EXCEEDS	65	
50 PERCENT EXCEEDS	41	
90 PERCENT EXCEEDS	19	

e Estimated.

11262890 SAN LUIS DRAIN, SITE A, NEAR SOUTH DOS PALOS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—October 1998 to September 1999 (discontinued).

SPECIFIC CONDUCTANCE: October 1998 to September 1999 (discontinued).

WATER TEMPERATURE: October 1998 to September 1999 (discontinued).

PERIOD OF DAILY RECORD.—October 1998 to September 1999 (discontinued).

SPECIFIC CONDUCTANCE: October 1998 to September 1999 (discontinued).

WATER TEMPERATURE: October 1998 to September 1999 (discontinued).

INSTRUMENTATION.—Water-quality monitor since October 1998.

REMARKS.—Water quality is influenced by subsurface drainage water from irrigated farmland. Interruptions in record were due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 6,860 microsiemens, Nov. 20, 1998; minimum recorded, 3,060 microsiemens, Aug. 7, 1999.

WATER TEMPERATURE: Maximum recorded, 31.5°C, July 12, 1999; minimum recorded, 2.0°C, Dec. 21, 1998.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 6,860 microsiemens, Nov. 20; minimum recorded, 3,060 microsiemens, Aug. 7.

WATER TEMPERATURE: Maximum recorded, 31.5°C, July 12; minimum recorded, 2.0°C, Dec. 21.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	4150	3500	3810	5480	4580	5050	6110	5080	5450	5620	4720	5090
2	4700	3570	4310	5050	4400	4700	6280	4880	5530	5620	4940	5250
3	5110	4410	4710	5020	4510	4760	5670	4750	5270	5420	4920	5110
4	5300	4590	4870	4960	4510	4710	5430	4290	4720	5260	4660	4900
5	5300	4850	5050	5040	4470	4770	5410	4920	5130	5080	4660	4830
6	5520	5000	5230	5240	4540	4790	5730	5140	5360	5120	4490	4790
7	5640	4500	4990	5270	4610	4890	5730	4180	5180	5060	4720	4850
8	5230	4440	4860	5330	4890	5080	5430	3870	4880	5280	4730	4940
9	5110	4340	4690	5270	4800	4980	5410	4570	5070	6250	4450	5240
10	5400	4700	5110	5410	4830	5090	5770	5090	5330	6130	5020	5830
11	5440	4830	5080	5580	4940	5230	5890	5050	5400	5260	4800	4980
12	5790	5080	5360	5500	5080	5240	5330	4940	5120	5600	4900	5210
13	5880	5090	5450	5800	5200	5490	5620	5170	5230	5550	4960	5250
14	5630	4740	5230	5660	5080	5300	5630	5140	5330	5690	5270	5430
15	5370	4650	4940	5720	5310	5490	5440	5210	5340	5630	5020	5230
16	5450	4820	5120	5860	5460	5630	5640	5400	5520	5540	5020	5200
17	5800	4800	5300	5900	5440	5630	5590	4850	5310	5670	5070	5350
18	5670	5250	5450	6710	5490	6230	6230	5330	5760	5560	5090	5290
19	5630	5180	5400	6850	6540	6750	5940	5480	5720	5420	4980	5150
20	5850	5310	5490	6860	5890	6470	6190	5600	5780	5470	5010	5210
21	5970	5590	5750	6290	5510	5920	5900	4700	5400	5330	4930	5110
22	5910	5510	5670	5940	5320	5640	4780	3930	4220	5300	4680	4990
23	5700	5240	5460	5830	5390	5580	4630	4110	4350	5180	4630	4890
24	5620	5070	5300	5780	5270	5480	5570	4510	4910	5160	4750	4920
25	5330	3710	4630	5730	5340	5500	5720	5210	5430	5020	4620	4730
26	4540	3950	4290	5700	5170	5460	5570	5120	5330	5170	4680	4890
27	4540	4210	4340	5910	5130	5570	5530	5110	5270	5200	4740	4950
28	4960	4330	4610	5840	5110	5490	5790	5120	5430	5480	4750	4960
29	4980	4210	4590	5760	5220	5440	5840	5130	5600	5050	4300	4630
30	5420	4310	4890	5770	5390	5550	5380	4720	5000	4560	3980	4320
31	5430	4870	5130	---	---	---	5160	4640	4850	4570	4030	4220
MONTH	5970	3500	5000	6860	4400	5400	6280	3870	5230	6250	3980	5020

11262890 SAN LUIS DRAIN, SITE A, NEAR SOUTH DOS PALOS, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4790	4170	4430	5470	5180	5310	5900	5580	5700	5370	4520	4980
2	4840	4200	4470	5600	5230	5390	6310	5590	5860	5340	4120	4740
3	5060	4220	4690	5550	5230	5340	6490	5920	6150	5060	4440	4780
4	4720	4150	4440	5610	5260	5420	6490	5900	6120	5010	4750	4900
5	4950	4510	4690	5610	5290	5410	6350	5540	6000	5200	4680	4880
6	5060	4410	4760	5590	5180	5350	6020	5700	5850	5030	4280	4780
7	4650	4330	4450	5530	5130	5310	5870	5340	5590	5150	4900	5040
8	4640	4200	4400	5470	5170	5310	5750	5340	5550	5420	4950	5170
9	4430	3830	4120	5570	5260	5400	5780	5290	5490	5280	4880	5130
10	4320	3880	4090	5450	5100	5260	6250	5540	5750	5380	4880	5120
11	4510	4050	4310	5630	5110	5320	5920	5400	5630	5740	4980	5240
12	4780	4030	4350	5730	5190	5400	5810	5150	5450	5790	5390	5600
13	4910	4300	4630	5600	5110	5300	5690	5250	5400	5710	5100	5410
14	4940	4610	4770	5620	5130	5380	5740	5270	5430	5760	5330	5600
15	4990	4490	4720	5430	4940	5120	5590	5390	5470	5620	5210	5440
16	4720	4280	4480	5500	4850	5110	5580	5190	5350	5240	4770	5000
17	4790	4450	4620	5470	5020	5280	5610	5120	5330	---	---	---
18	4950	4540	4760	5460	4840	5070	5420	5160	5260	---	---	---
19	5000	4560	4770	5560	5100	5270	5310	4920	5180	5000	4570	4730
20	5170	4610	4800	5480	4970	5220	5140	3980	4780	5240	4790	4960
21	5140	4530	4920	5250	4870	5050	5240	4780	5070	4970	4790	4900
22	4830	4460	4650	5520	5100	5290	5540	4970	5240	5070	4320	4700
23	4910	4560	4720	5530	5160	5310	5710	5530	5660	5090	4310	4430
24	5240	4760	4980	5580	5200	5380	5820	5240	5510	5040	4330	4680
25	5210	4730	4890	5590	5200	5340	5940	5220	5550	4540	4090	4370
26	5260	4850	5010	5810	5340	5520	5540	4880	5140	4860	4210	4620
27	5450	5150	5270	5730	5330	5500	5510	4930	5150	4980	4210	4620
28	5480	5140	5280	5760	5280	5510	5510	4910	5200	5540	4980	5290
29	---	---	---	5590	5390	5490	5490	4990	5230	5320	5030	5160
30	---	---	---	5900	5410	5660	5560	4870	5180	5280	5050	5170
31	---	---	---	5850	5480	5620	---	---	---	5050	4810	4870
MONTH	5480	3830	4660	5900	4840	5340	6490	3980	5480	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	5200	4580	4980	4820	4060	4470	4730	3970	4410	4270	3760	3990
2	5350	4230	4950	4840	4230	4500	4590	3710	4150	4200	3400	3920
3	5280	4660	4940	4860	4180	4510	4400	3500	3930	3800	3380	3570
4	5060	4770	4930	4660	4280	4490	4670	3190	3800	4070	3390	3770
5	5120	4470	4850	4760	3940	4340	3740	3160	3440	4170	3520	3830
6	4890	3970	4730	4330	4070	4220	3690	3120	3420	4200	3490	3780
7	4960	4560	4740	4570	4060	4300	3610	3060	3370	4210	3510	3870
8	4660	4330	4520	---	3790	---	---	---	---	4240	3730	3930
9	4630	4340	4500	4710	4000	4300	---	---	---	4430	3800	4090
10	4630	4220	4400	4720	4080	4450	3820	3180	3600	---	---	---
11	4480	4140	4280	4590	3810	4140	3960	3340	3700	---	---	---
12	4820	3680	4450	4530	3850	4120	3890	3260	3610	---	---	---
13	4850	4490	4670	4370	3870	4130	3780	3270	3580	---	---	---
14	4840	4490	4670	4700	3970	4320	4260	3580	3870	---	---	---
15	4830	4270	4580	4620	3890	4250	3870	3670	3790	---	---	---
16	4900	4310	4670	4710	3730	4090	3810	3590	3690	---	---	---
17	5050	4500	4780	4620	3590	4080	4300	3600	3850	---	---	---
18	5120	4500	4880	4430	3720	4050	4350	3670	4010	4910	4510	4760
19	5060	4400	4740	4560	3640	4080	4280	3630	3920	5110	4520	4830
20	4470	4400	4450	4370	3630	3980	3820	3310	3600	5110	4380	4560
21	4880	4170	4470	4490	3500	3980	3780	3380	3550	5080	4330	4750
22	4850	4180	4510	4290	3520	4020	3550	3360	3460	5110	4230	4770
23	4880	4290	4600	4580	3660	4140	---	---	---	4770	3830	4300
24	4870	4300	4600	4730	3810	4290	---	---	---	4270	3860	4050
25	4850	4350	4620	4670	3770	4200	4020	3330	3610	5080	3860	4590
26	4880	4400	4620	4380	3710	4070	3920	3340	3590	4840	4470	4640
27	4700	4040	4430	4430	3490	4040	4150	3220	3790	5530	4640	5240
28	4670	4030	4200	4540	3570	4030	4050	3530	3780	5790	5160	5470
29	4800	3850	4440	4650	3770	4200	---	---	---	6010	5590	5740
30	4900	3910	4510	4810	4160	4430	4500	3410	3940	5870	4960	5490
31	---	---	---	4870	4200	4430	3940	3560	3780	---	---	---
MONTH	5350	3680	4620	---	3490	---	---	---	---	---	---	---

SAN JOAQUIN RIVER BASIN

11262890 SAN LUIS DRAIN, SITE A, NEAR SOUTH DOS PALOS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	22.5	18.0	20.0	17.0	14.0	15.5	14.5	12.5	13.5	10.0	7.5	9.0
2	22.0	17.0	19.5	16.5	13.0	15.0	14.0	11.0	12.5	9.0	7.0	8.0
3	20.5	16.0	18.5	16.5	13.0	15.0	13.5	10.5	12.5	9.5	8.0	8.5
4	20.5	16.0	18.0	16.5	13.5	15.0	10.5	8.5	9.5	9.0	8.0	8.5
5	21.0	16.0	18.5	16.5	14.0	15.0	9.0	7.5	8.5	9.5	7.5	8.5
6	21.0	16.5	19.0	14.5	11.5	13.0	10.0	7.0	8.5	8.5	7.5	8.0
7	21.0	16.5	19.0	13.5	12.5	13.0	---	5.5	---	7.5	7.0	7.0
8	21.5	16.5	19.0	15.0	12.0	13.5	---	---	---	9.0	7.0	7.5
9	21.0	17.0	18.5	14.5	11.5	13.5	---	7.5	---	7.0	6.0	6.5
10	19.5	16.0	18.0	13.0	11.0	12.0	11.0	6.5	8.5	7.0	6.0	6.5
11	20.0	15.0	17.5	13.0	11.0	12.0	14.0	8.0	10.0	8.0	6.0	6.5
12	19.0	16.5	17.5	15.0	11.0	13.0	11.5	9.0	10.0	7.0	5.0	6.0
13	20.5	15.5	18.0	15.0	11.5	13.0	11.0	9.0	10.0	8.0	5.5	6.5
14	20.0	16.5	18.5	15.0	12.0	13.5	11.5	9.0	10.0	9.0	5.5	7.0
15	18.0	15.5	17.0	15.0	12.0	13.5	10.5	9.0	10.0	12.0	8.0	10.0
16	17.0	13.5	15.5	15.0	13.5	14.0	10.0	8.5	9.5	14.0	10.5	12.5
17	17.5	13.0	15.5	16.5	13.0	14.5	10.5	8.5	9.5	16.0	12.5	14.0
18	18.0	13.5	16.0	14.5	12.0	13.5	9.0	7.5	8.5	15.0	13.0	14.0
19	18.5	14.0	16.5	14.0	11.0	12.5	9.0	5.5	7.5	15.0	13.5	14.0
20	18.5	14.0	16.5	13.5	10.5	12.0	5.5	4.0	5.0	14.5	13.0	13.5
21	18.5	14.5	17.0	14.0	10.5	12.0	---	2.0	---	14.0	11.0	12.5
22	19.0	15.0	17.5	15.5	12.0	14.0	---	---	---	14.0	11.0	12.5
23	19.5	15.5	17.5	15.0	13.5	14.0	---	---	---	13.5	11.0	11.5
24	18.5	15.5	16.5	15.5	13.0	14.0	---	7.5	---	11.5	9.5	10.5
25	17.0	13.5	15.0	14.5	11.5	13.0	7.5	5.5	6.5	11.0	8.5	10.0
26	17.5	13.5	15.5	14.0	11.0	12.5	7.0	5.5	6.0	9.5	7.5	8.5
27	18.0	14.5	16.5	13.5	13.0	13.5	7.5	5.0	6.0	10.5	7.0	9.0
28	16.5	15.0	16.0	14.0	12.0	13.0	8.0	5.0	6.5	10.5	7.5	9.0
29	18.0	15.0	16.5	13.0	11.5	12.5	8.5	6.0	7.0	11.0	7.5	9.5
30	16.5	13.5	15.5	15.0	11.0	13.0	8.5	6.0	7.5	10.5	8.0	9.0
31	16.5	12.0	14.5	---	---	---	11.0	7.5	9.0	12.0	9.0	10.5
MONTH	22.5	12.0	17.2	17.0	10.5	13.4	---	---	---	16.0	5.0	9.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	11.5	9.0	10.0	17.5	14.5	16.0	16.0	11.5	14.0	23.0	18.0	20.5
2	11.5	8.0	10.0	18.0	13.0	16.0	16.5	11.5	14.0	21.0	16.0	17.5
3	12.5	9.0	11.0	17.0	14.0	15.5	15.5	10.0	13.0	18.5	15.5	17.0
4	12.0	9.5	11.0	15.0	11.0	13.0	15.0	7.0	11.0	20.0	14.5	17.5
5	12.5	10.0	11.5	14.0	11.0	12.5	14.0	11.5	12.5	22.5	16.5	19.5
6	12.0	10.5	11.0	14.0	11.5	13.0	14.0	10.5	12.5	24.0	19.0	21.5
7	13.5	10.5	12.0	15.5	10.5	13.0	13.5	11.5	12.0	22.5	18.5	20.5
8	15.0	13.0	14.0	14.0	11.5	12.5	13.0	10.5	11.5	20.0	16.5	18.5
9	14.5	10.0	12.5	15.0	11.0	13.0	16.0	9.0	12.5	19.0	15.5	17.5
10	11.0	8.0	9.5	14.0	10.5	12.5	15.5	11.5	13.5	20.5	15.5	18.0
11	12.0	8.0	10.0	16.0	12.0	14.0	15.0	12.5	13.5	23.5	17.5	20.5
12	12.0	9.0	10.5	16.5	11.5	14.0	19.5	11.5	15.5	24.5	20.5	22.5
13	13.0	9.5	11.0	17.0	12.5	15.0	22.0	15.5	19.0	21.5	17.5	19.5
14	13.0	11.0	12.0	15.5	13.0	14.0	23.5	17.5	20.5	21.0	16.0	18.5
15	13.5	10.0	12.0	14.5	12.0	13.5	24.5	18.5	21.5	20.5	15.0	18.0
16	13.0	12.0	12.5	15.5	12.0	13.5	25.0	20.0	23.0	21.5	16.5	19.0
17	16.5	12.5	14.5	17.5	12.5	15.0	25.0	19.5	22.5	---	---	---
18	15.5	13.5	14.5	18.0	13.5	16.0	24.0	20.5	22.5	---	---	---
19	14.5	11.5	13.5	17.0	14.0	15.0	24.5	20.0	22.5	23.0	18.5	20.5
20	13.5	11.0	12.0	14.0	12.0	13.0	23.0	18.5	21.0	21.0	17.0	19.0
21	14.5	11.0	12.5	17.5	12.0	14.5	21.5	16.5	19.0	23.0	16.5	20.0
22	15.5	11.5	13.5	17.5	13.0	15.5	19.5	16.0	18.0	25.5	20.0	22.5
23	16.0	12.0	14.0	18.5	14.0	16.0	19.0	13.5	16.5	25.0	20.0	22.5
24	16.0	12.5	14.5	18.0	14.0	16.0	21.5	15.5	19.0	25.5	20.5	22.5
25	16.0	13.5	14.5	19.0	14.5	16.5	22.5	16.5	19.5	25.5	20.5	23.0
26	15.0	12.0	13.5	20.0	15.0	17.5	22.0	17.0	20.0	27.0	22.5	24.5
27	16.5	12.0	14.5	17.5	13.5	16.0	21.0	16.0	18.5	26.0	20.5	23.5
28	17.0	13.0	15.0	17.5	12.5	15.0	18.0	13.5	15.5	25.5	21.0	23.0
29	---	---	---	17.5	13.0	15.5	18.0	11.5	15.0	23.0	19.5	21.5
30	---	---	---	18.0	13.0	15.5	22.0	16.0	19.0	23.0	19.0	21.0
31	---	---	---	17.5	13.5	15.0	---	---	---	23.0	20.0	21.5
MONTH	17.0	8.0	12.4	20.0	10.5	14.6	25.0	7.0	16.9	---	---	---

11262890 SAN LUIS DRAIN, SITE A, NEAR SOUTH DOS PALOS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	24.5	20.5	22.0	30.0	25.0	27.5	26.5	22.0	24.5	23.5	19.5	21.5
2	21.5	18.0	19.5	27.5	23.0	25.5	27.5	23.5	25.5	24.0	19.5	22.0
3	22.0	16.0	18.5	25.5	21.0	23.0	28.0	23.5	26.0	24.0	20.0	22.0
4	23.0	17.0	19.5	24.5	19.5	22.0	28.0	24.0	26.0	25.0	20.5	22.5
5	25.0	19.0	22.0	26.0	21.5	23.5	26.0	22.5	24.5	25.5	21.5	23.5
6	25.0	20.5	22.5	27.0	22.5	24.5	25.0	21.0	23.0	26.5	22.0	24.0
7	23.0	18.5	20.5	26.0	22.0	24.0	25.5	21.0	23.5	27.0	22.0	24.5
8	23.0	17.0	20.0	27.0	23.0	---	26.0	21.5	24.0	27.0	21.5	24.5
9	23.5	18.0	20.5	27.5	23.0	25.5	25.0	22.0	23.5	27.0	21.5	24.0
10	24.0	18.5	21.0	28.0	23.5	26.0	26.0	21.5	23.5	---	---	---
11	25.0	20.0	22.5	29.5	25.0	27.5	26.5	21.0	23.5	---	---	---
12	26.0	20.0	22.5	31.5	27.0	29.0	27.5	22.0	24.5	---	---	---
13	25.5	20.5	23.0	31.0	27.5	29.5	27.0	22.5	25.0	---	---	---
14	27.0	21.5	24.0	29.5	25.5	27.5	26.0	22.0	24.0	---	---	---
15	26.0	22.0	24.0	27.5	23.5	25.5	26.0	21.0	23.5	---	---	---
16	26.5	20.5	23.5	26.5	21.5	24.0	27.5	22.5	25.0	---	---	---
17	27.5	22.5	25.0	26.5	22.0	24.0	27.5	23.5	25.5	26.0	---	---
18	27.5	23.0	25.0	26.5	22.5	24.5	26.0	22.0	24.0	25.5	20.5	22.5
19	26.5	22.5	24.5	25.5	21.0	23.0	26.0	21.0	23.5	24.0	19.0	21.5
20	27.0	22.0	24.5	25.0	20.5	23.0	26.5	22.0	24.5	25.0	19.0	22.0
21	27.0	23.0	25.0	25.5	21.0	23.0	27.0	22.5	24.5	26.0	20.0	23.0
22	29.0	23.0	26.0	27.0	22.5	24.5	27.5	23.0	25.5	27.0	22.0	24.0
23	29.0	24.0	26.5	26.0	23.0	24.5	---	---	---	27.0	22.5	24.5
24	28.5	23.0	25.5	25.0	20.5	22.5	---	---	---	27.5	22.0	24.5
25	27.0	22.0	24.5	26.5	22.0	24.0	28.0	24.0	26.0	26.5	22.0	24.0
26	27.0	21.0	24.0	27.5	23.5	25.5	27.0	24.0	25.0	25.5	22.0	23.5
27	27.0	22.0	24.5	27.0	22.5	25.0	27.5	22.5	25.0	24.0	20.0	22.0
28	29.0	23.0	26.0	27.0	21.5	24.5	27.5	24.0	25.5	24.5	18.5	21.5
29	29.5	24.0	26.5	27.0	21.5	24.5	27.5	24.5	25.5	26.5	19.5	22.5
30	30.5	24.5	27.5	27.0	22.5	24.5	25.5	22.5	24.0	26.5	20.5	23.5
31	---	---	---	27.0	22.5	24.5	23.5	20.0	22.0	---	---	---
MONTH	30.5	16.0	23.4	31.5	19.5	---	---	---	---	---	---	---

11262895 SAN LUIS DRAIN, SITE B, NEAR STEVINSON, CA

LOCATION.—Lat 37°14'27", long 120°52'37", in SE 1/4 NW 1/4 sec.16, T.8 S., R.10 E., Merced County, Hydrologic Unit 18040001, Kesterson National Wildlife Refuge, on left bank, 1.8 mi upstream of terminus of drain, and 6.2 mi southwest of Stevinson.

DRAINAGE AREA.—Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1998 to September 1999.

GAGE.—Acoustic-velocity meter. Elevation of gage is 75 ft above sea level, from topographic map.

REMARKS.—Records fair. Drain intercepts subsurface drainage water from irrigated farmland and conveys it into Mud Slough and the San Joaquin River.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily, 82 ft³/s, Aug. 29, 1999; minimum daily, 18 ft³/s, Dec. 10, 1998.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	29	19	e25	43	62	37	42	58	54	64	64
2	28	28	22	e27	45	61	40	43	51	55	68	56
3	22	29	23	e24	43	59	41	41	46	57	70	52
4	30	30	26	e25	43	63	e44	39	49	58	63	55
5	31	28	24	e24	45	61	43	40	52	65	59	55
6	31	30	20	e23	45	62	39	42	56	69	59	54
7	34	27	22	e25	43	59	38	44	60	66	61	52
8	32	27	20	25	47	62	38	45	64	70	66	48
9	36	26	20	28	58	62	37	46	66	73	67	40
10	40	29	18	31	72	60	35	51	66	66	67	34
11	41	27	20	28	68	60	36	46	72	62	60	36
12	35	25	27	27	58	58	39	42	68	65	56	39
13	33	25	25	22	67	54	38	41	65	64	56	32
14	32	25	23	24	63	57	37	49	65	59	57	36
15	36	25	26	21	61	61	27	51	64	57	60	46
16	35	25	26	24	62	62	e21	54	63	60	56	46
17	31	24	25	24	66	56	e32	58	63	e62	54	39
18	29	22	27	26	65	57	e30	53	67	e64	56	35
19	29	23	31	27	67	55	e29	53	68	e67	53	33
20	28	29	27	26	68	55	30	49	68	62	55	31
21	29	25	23	29	66	57	31	50	68	65	58	34
22	29	24	23	28	70	56	28	49	66	60	58	36
23	31	25	24	29	69	53	29	51	59	63	60	35
24	32	22	24	27	67	52	33	55	45	66	67	37
25	31	22	26	30	68	54	34	58	53	68	68	38
26	37	23	26	32	70	54	36	56	61	68	76	36
27	38	23	24	31	69	51	37	51	57	68	81	31
28	38	24	19	35	61	46	36	43	65	58	81	27
29	37	26	23	34	---	45	35	46	e59	58	82	28
30	36	23	24	36	---	43	38	52	e57	59	73	25
31	37	---	26	39	---	40	---	54	---	64	62	---
TOTAL	1030	770	733	856	1669	1737	1048	1494	1821	1952	1973	1210
MEAN	33.2	25.7	23.6	27.6	59.6	56.0	34.9	48.2	60.7	63.0	63.6	40.3
MAX	42	30	31	39	72	63	44	58	72	73	82	64
MIN	22	22	18	21	43	40	21	39	45	54	53	25
AC-FT	2040	1530	1450	1700	3310	3450	2080	2960	3610	3870	3910	2400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 1999, BY WATER YEAR (WY)

MEAN	33.2	25.7	23.6	27.6	59.6	56.0	34.9	48.2	60.7	63.0	63.6	40.3
MAX	33.2	25.7	23.6	27.6	59.6	56.0	34.9	48.2	60.7	63.0	63.6	40.3
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	33.2	25.7	23.6	27.6	59.6	56.0	34.9	48.2	60.7	63.0	63.6	40.3
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999

SUMMARY STATISTICS

FOR 1999 WATER YEAR

ANNUAL TOTAL	16293
ANNUAL MEAN	44.6
HIGHEST DAILY MEAN	82 Aug 29
LOWEST DAILY MEAN	18 Dec 10
ANNUAL SEVEN-DAY MINIMUM	21 Dec 5
ANNUAL RUNOFF (AC-FT)	32320
10 PERCENT EXCEEDS	66
50 PERCENT EXCEEDS	43
90 PERCENT EXCEEDS	24

e Estimated.

11262895 SAN LUIS DRAIN, SITE B, NEAR STEVINSON, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—October 1998 to September 1999.

SPECIFIC CONDUCTANCE: October 1998 to September 1999.

WATER TEMPERATURE: October 1998 to September 1999.

PERIOD OF DAILY RECORD.—October 1998 to September 1999.

SPECIFIC CONDUCTANCE: October 1998 to September 1999.

WATER TEMPERATURE: October 1998 to September 1999.

INSTRUMENTATION.—Water-quality monitor since October 1998.

REMARKS.—Water quality is influenced by subsurface drainage water from irrigated farmland. Interruptions in record were due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 6,030 microsiemens, Apr. 6, 1999; minimum recorded, 2,800 microsiemens, Aug. 23, 1999.

WATER TEMPERATURE: Maximum recorded, 31.5°C, July 13, 1999; minimum recorded, 4.0°C, Dec. 24, 1998.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 6,030 microsiemens, Apr. 6; minimum recorded, 2,800 microsiemens, Aug. 23.

WATER TEMPERATURE: Maximum recorded, 31.5°C, July 13; minimum recorded, 4.0°C, Dec. 24.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	3240	3040	3110	4700	4400	4510	5010	4900	4960	5220	5000	5070
2	3430	3220	3270	4710	4540	4600	4930	4840	4890	5010	4850	4910
3	3650	3430	3590	4700	4400	4560	5120	4760	4900	5170	4870	5020
4	3940	3560	3720	4920	4470	4670	5220	4830	5060	5280	4920	5170
5	3940	3460	3620	5100	4910	4990	4850	4740	4820	4920	4590	4730
6	3890	3570	3760	5120	4880	5060	4910	4750	4860	4600	4350	4470
7	4300	3640	4010	4880	4550	4670	4970	4780	4900	4690	4360	4550
8	4550	4290	4410	4820	4610	4710	4980	4690	4820	4930	4690	4830
9	4790	4550	4670	4710	4540	4620	4940	4770	4880	4780	4630	4690
10	5060	4700	4890	4650	4470	4600	4890	4490	4720	4660	4520	4600
11	5230	4720	5050	4700	4480	4620	4500	4110	4380	4650	4570	4600
12	4820	4580	4670	4740	4520	4620	4380	3980	4110	4620	4560	4590
13	4970	4400	4640	4860	4540	4710	4680	4380	4540	4800	4580	4670
14	4880	4580	4810	4880	4800	4840	4730	4600	4670	4800	4500	4620
15	5120	4850	5000	4840	4660	4720	4720	4600	4660	5070	4370	4550
16	5260	4870	5090	4870	4720	4810	5020	4660	4840	5350	4820	5140
17	5630	5250	5370	5000	4730	4860	5220	5020	5130	4820	4400	4600
18	5630	5260	5420	4990	4880	4920	5220	4550	4860	4500	4340	4390
19	5520	4990	5210	5090	4880	4940	4880	4550	4660	4580	4470	4510
20	5050	4800	4910	5120	4810	4960	4890	4760	4810	4600	4480	4540
21	5160	4930	5050	5130	4850	5010	4970	4800	4890	4620	4380	4510
22	5280	5020	5110	5150	5070	5110	5040	4970	5000	4550	4400	4450
23	5470	5280	5430	5180	5040	5110	5000	4720	4850	4600	4540	4570
24	5480	5330	5410	5740	5150	5450	5390	4870	5090	4570	4460	4540
25	5650	5410	5480	5950	5560	5850	5400	5030	5160	4610	4450	4500
26	5810	5650	5760	5950	5600	5810	5160	5060	5100	4610	4510	4550
27	5740	5600	5690	5600	5340	5430	5160	5100	5120	4610	4490	4540
28	5600	5340	5490	5350	4910	5090	5160	5060	5100	4570	4310	4440
29	5340	4600	5140	5140	4980	5070	5130	5040	5090	4610	4440	4540
30	4600	4080	4240	4990	4870	4940	5340	4990	5060	4560	4370	4420
31	4480	4330	4410	---	---	---	5550	5210	5420	4620	4470	4560
MONTH	5810	3040	4720	5950	4400	4930	5550	3980	4880	5350	4310	4640

11262895 SAN LUIS DRAIN, SITE B, NEAR STEVINSON, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4820	4530	4670	5150	4850	5000	5300	5140	5240	5200	4880	5010
2	4600	4090	4380	5170	4830	4980	5490	5230	5290	5160	4760	4960
3	4120	3760	3920	4950	4860	4910	5560	5320	5430	5120	4750	4880
4	4290	3790	3980	5150	4860	4980	5670	5480	5550	5040	4640	4830
5	4330	4030	4150	5250	5060	5170	5840	5490	5610	4680	4050	4450
6	4610	4040	4360	5240	5050	5110	6030	5710	5850	4600	3940	4240
7	4660	4120	4420	5310	5130	5200	6020	5530	5780	4320	3850	4120
8	4390	4050	4260	5310	5050	5200	5910	5570	5730	4480	4030	4300
9	4580	4320	4460	5270	5070	5170	5740	5200	5440	4400	3820	4150
10	4570	4170	4330	5160	5070	5120	5470	5170	5330	4520	4070	4340
11	4440	3820	4170	5250	5160	5210	5340	5150	5240	4400	4140	4250
12	4300	3820	4090	5420	5080	5250	5470	5200	5320	4590	4080	4380
13	4300	3900	4080	5200	5060	5140	5600	5330	5450	4930	4050	4390
14	4360	3970	4190	5430	5010	5210	5770	5390	5620	5170	4930	5010
15	4620	4240	4380	5530	5050	5250	5660	5510	5580	5480	4960	5260
16	4740	4580	4690	5400	5080	5260	5550	5340	5450	5520	4730	5220
17	4740	4570	4660	5480	4870	5170	5460	5190	5360	5020	4730	4870
18	4740	4210	4460	5170	4750	4960	5740	5460	5600	4830	4420	4600
19	4590	4210	4400	5150	4770	5000	5720	5600	5640	4750	4210	4410
20	4690	4490	4600	5080	4560	4880	5900	5580	5760	4700	4220	4490
21	4690	4440	4580	5140	4520	4820	6020	5690	5860	4640	4180	4410
22	4780	4620	4700	5310	4880	5110	5880	5650	5810	4720	4180	4460
23	4950	4740	4880	5260	4930	5090	5780	5480	5660	4880	4320	4630
24	4950	4460	4660	5100	4840	4950	5690	5160	5500	4770	4300	4580
25	4690	4470	4600	5220	5000	5120	5390	4990	5160	4830	4480	4680
26	4940	4560	4760	5240	4980	5090	5490	5040	5300	4860	4490	4720
27	5000	4670	4870	5310	5110	5190	5720	5330	5600	4790	4540	4640
28	4910	4680	4770	5400	5110	5230	5860	5350	5610	4580	4490	4540
29	---	---	---	5580	5180	5380	5930	5290	5610	4840	4510	4710
30	---	---	---	5390	5200	5320	5580	4880	5160	4980	4660	4820
31	---	---	---	5460	5120	5330	---	---	---	5360	4870	5110
MONTH	5000	3760	4450	5580	4520	5120	6030	4880	5520	5520	3820	4630
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	5260	4790	5040	5140	4100	4670	4940	4360	4620	3980	3150	3490
2	5170	4380	4910	5580	4350	5030	4980	4470	4660	4380	3430	3870
3	4660	4360	4540	5650	4280	5020	5200	4620	4840	3980	3750	3840
4	4600	4310	4370	5490	4650	5150	4970	4270	4550	4310	3850	4110
5	4380	4180	4290	5260	4840	5070	4840	4040	4300	4310	3480	4050
6	4290	3950	4130	5220	4470	4880	4540	3840	4150	3720	3140	3580
7	4020	3840	3950	5010	4610	4790	4660	4000	4250	4170	3410	3840
8	3910	3700	3800	4970	4000	4470	4200	3820	3960	4250	3760	4040
9	3760	3510	3670	---	---	---	3990	3690	3820	4340	3720	3980
10	3620	3410	3530	4250	3910	4140	3870	3600	3720	4200	3540	3770
11	3750	3460	3650	4460	3930	4170	3750	3520	3620	4360	3660	4080
12	3990	3710	3900	4580	4040	4320	3860	3670	3740	4220	3840	4000
13	4210	3930	4100	4710	4210	4510	4040	3860	3980	4240	4090	4160
14	4410	4160	4310	4350	4070	4230	4130	3920	4040	4560	3900	4240
15	4900	4390	4810	4670	4050	4290	4180	3960	4070	5160	3960	4510
16	4990	4850	4920	4480	4120	4310	4200	4040	4140	4740	4180	4430
17	5130	4860	5030	4600	4000	4290	4500	3860	4210	4500	3590	4090
18	5180	4490	4860	4210	3720	3940	4140	3860	4020	3980	3240	3720
19	5610	5140	5370	4100	3540	3790	4160	3910	4020	4110	3240	3600
20	5610	4960	5280	3940	3500	3700	4210	3770	4010	4580	3950	4130
21	5440	4920	5200	3930	3700	3810	3970	3630	3830	4660	4460	4550
22	5170	4520	4750	4070	3790	3920	3770	3600	3670	4760	4290	4500
23	4840	4330	4600	4150	3070	3900	3700	2800	3500	4890	4630	4780
24	5000	4280	4640	4300	3600	4000	3940	3240	3580	4760	4320	4480
25	4810	4280	4530	4780	4260	4520	3760	3270	3500	4960	4400	4660
26	4850	4240	4590	5020	3970	4430	4200	3550	3850	4960	4480	4730
27	4710	4190	4490	5020	4240	4650	4130	3480	3820	4580	4080	4300
28	4630	4130	4390	4830	4030	4370	3880	3340	3570	4160	3820	3930
29	4520	4130	4310	4790	4250	4500	4080	3350	3670	3990	3700	3820
30	4620	4060	4280	4850	3800	4330	3910	3490	3700	4750	3790	4460
31	---	---	---	4860	4020	4360	4020	3260	3610	---	---	---
MONTH	5610	3410	4470	---	---	---	5200	2800	3970	5160	3150	4120

11262895 SAN LUIS DRAIN, SITE B, NEAR STEVINSON, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

11262895 SAN LUIS DRAIN, SITE B, NEAR STEVINSON, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.0	20.5	21.5	30.5	27.5	29.0	27.0	24.5	25.5	24.0	22.0	23.0
2	21.5	19.5	20.5	29.0	27.0	28.0	27.5	25.0	26.0	24.0	22.0	23.0
3	20.5	18.5	19.5	27.0	25.0	26.0	27.5	25.5	26.5	24.0	22.0	23.0
4	21.0	18.5	20.0	25.0	23.5	24.0	28.0	26.0	27.0	24.5	22.5	23.5
5	22.5	20.0	21.0	25.5	22.5	24.0	27.0	25.0	26.0	25.5	23.0	24.5
6	23.5	20.5	22.0	26.0	23.5	24.5	25.0	23.5	24.5	26.5	24.0	25.0
7	23.5	21.0	22.0	25.5	23.5	24.5	25.0	22.5	23.5	27.0	24.5	25.5
8	23.0	21.0	22.0	26.5	23.5	25.0	25.5	23.0	24.0	27.0	25.0	26.0
9	23.0	20.5	21.5	27.5	24.5	26.0	25.0	23.0	24.0	27.0	25.0	26.0
10	23.0	20.5	22.0	28.0	25.5	26.5	25.0	23.0	24.0	26.5	24.5	25.5
11	23.5	21.0	22.5	29.0	26.5	27.5	25.0	22.5	24.0	26.0	24.0	25.0
12	25.0	22.0	23.5	31.0	28.0	29.5	25.5	23.0	24.0	26.5	24.0	25.0
13	25.5	23.0	24.0	31.5	29.5	30.5	26.0	23.5	24.5	26.0	24.0	25.0
14	26.5	23.5	25.0	30.0	28.5	29.0	26.5	24.0	25.0	26.0	24.0	25.0
15	26.5	24.5	25.5	29.0	27.0	28.0	26.0	24.0	25.0	26.5	24.5	25.5
16	26.5	24.0	25.5	27.5	26.0	27.0	26.5	23.5	25.0	26.0	24.5	25.5
17	27.0	24.5	26.0	27.0	25.0	26.0	27.5	24.5	26.0	26.0	24.0	25.0
18	27.5	25.0	26.0	27.0	24.5	25.5	27.0	25.0	26.0	25.5	24.0	24.5
19	27.0	24.5	26.0	26.5	24.0	25.5	27.0	24.5	25.5	25.0	23.5	24.0
20	27.0	24.5	26.0	26.0	23.5	25.0	27.0	24.5	25.5	24.5	23.0	23.5
21	27.0	25.0	26.0	26.0	23.5	24.5	27.0	24.5	25.5	24.5	23.0	23.5
22	27.5	25.0	26.5	26.5	24.0	25.0	27.5	24.5	26.0	26.0	23.5	24.5
23	28.5	26.0	27.0	27.0	24.5	25.5	28.5	26.0	27.0	27.0	25.0	26.0
24	28.0	26.0	27.0	26.0	24.0	25.0	28.0	26.0	27.0	27.5	25.5	26.0
25	27.5	25.0	26.5	26.5	23.5	25.0	28.0	26.0	27.5	27.0	25.0	26.0
26	27.5	24.5	26.0	27.0	24.5	26.0	28.0	26.5	27.0	26.5	24.5	25.0
27	27.5	25.0	26.0	27.0	25.0	26.0	28.0	25.5	26.5	24.5	22.0	23.0
28	28.0	25.0	26.5	27.0	24.5	26.0	28.0	26.0	27.0	23.0	21.0	22.0
29	29.5	26.0	27.5	26.5	24.5	25.5	28.0	25.5	27.0	23.5	21.5	22.5
30	29.5	27.0	28.5	26.5	24.0	25.5	27.0	25.5	26.0	24.5	22.5	23.0
31	---	---	---	26.5	24.5	25.5	25.5	22.5	23.5	---	---	---
MONTH	29.5	18.5	24.5	31.5	22.5	26.0	28.5	22.5	25.5	27.5	21.0	24.5

11262900 MUD SLOUGH NEAR GUSTINE, CA

LOCATION.—Lat 37°15'45", long 120°54'20", in SE 1/4 SE 1/4 sec.6, T.8 S., R.10 E., Merced County, Hydrologic Unit 18040001, Kesterson National Wildlife Refuge, on right bank at footbridge 400 ft northwest of terminus of San Luis Drain and 5.2 mi east of Gustine.

DRAINAGE AREA.—Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1985 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 70 ft above sea level, from topographic map.

REMARKS.—Records fair. During major storm events record can be affected by backwater from the San Joaquin River. Discharge is affected by irrigation return and drainage from Kesterson Wildlife Refuge.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,060 ft³/s, Feb. 8, 1998; gage height, 11.11 ft; maximum gage height, 12.03 ft, Jan. 28, 1997, minimum daily, 0.01 ft³/s, Sept. 24, 1991.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	168	202	149	134	193	292	152	82	115	81	71	83
2	171	198	150	130	188	334	149	78	107	91	74	72
3	175	192	156	128	183	308	148	80	106	74	76	69
4	186	195	158	126	179	269	145	88	113	77	70	71
5	187	193	157	125	194	243	143	94	111	88	67	69
6	178	185	159	125	213	234	139	93	107	93	67	67
7	190	181	165	126	243	233	133	87	108	91	70	66
8	206	182	168	130	237	229	133	83	106	88	80	65
9	208	183	165	137	226	229	140	83	109	90	79	58
10	203	187	164	140	251	222	137	83	109	90	75	54
11	208	189	158	139	296	219	134	90	102	85	68	56
12	211	183	162	139	318	208	137	89	96	85	63	71
13	213	176	158	138	341	213	139	85	90	89	75	71
14	209	169	152	138	344	211	138	89	85	82	73	73
15	202	166	149	142	341	209	123	99	89	79	76	79
16	191	165	146	141	328	204	121	90	91	82	68	80
17	183	165	144	148	317	185	125	89	85	76	65	74
18	177	165	146	165	278	177	121	97	87	77	59	73
19	166	159	149	181	255	177	117	95	95	79	63	75
20	158	151	151	202	242	189	114	95	100	80	74	77
21	151	147	146	229	242	194	109	95	97	79	75	82
22	148	141	145	236	240	186	98	101	91	73	74	82
23	149	142	144	233	230	190	104	106	79	74	87	79
24	161	142	141	263	227	194	110	106	69	77	92	84
25	176	133	137	261	229	212	98	104	71	79	73	91
26	193	130	143	242	218	211	94	103	77	75	79	94
27	212	134	144	218	214	201	91	118	79	76	95	91
28	232	144	136	209	214	190	88	136	81	68	105	84
29	219	147	135	201	---	179	90	133	78	67	111	89
30	212	147	137	187	---	167	82	129	73	69	117	91
31	209	---	138	192	---	163	---	122	---	71	93	---
TOTAL	5852	4993	4652	5305	6981	6672	3652	3022	2806	2485	2414	2270
MEAN	189	166	150	171	249	215	122	97.5	93.5	80.2	77.9	75.7
MAX	232	202	168	263	344	334	152	136	115	93	117	94
MIN	148	130	135	125	179	163	82	78	69	67	59	54
AC-FT	11610	9900	9230	10520	13850	13230	7240	5990	5570	4930	4790	4500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

MEAN	51.4	69.1	91.3	148	204	173	83.9	47.6	45.4	43.9	38.6	25.3
MAX	189	181	305	545	958	563	229	123	130	114	100	105
(WY)	1999	1997	1997	1997	1998	1998	1986	1998	1986	1998	1987	1998
MIN	3.35	7.53	5.86	6.17	6.96	28.0	19.2	1.76	3.79	7.42	3.36	2.67
(WY)	1993	1991	1991	1991	1991	1990	1992	1992	1994	1994	1994	1990

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1986 - 1999

ANNUAL TOTAL	92432	51104	
ANNUAL MEAN	253	140	84.5
HIGHEST ANNUAL MEAN			252 1998
LOWEST ANNUAL MEAN			17.6 1991
HIGHEST DAILY MEAN	1060	344	1060 Feb 9 1998
LOWEST DAILY MEAN	72	54	.01 Jun 23 Sep 10 1991
ANNUAL SEVEN-DAY MINIMUM	79	62	.12 Jun 21 Sep 5 1992
INSTANTANEOUS PEAK FLOW		349	1060 Feb 13 1998
INSTANTANEOUS PEAK STAGE		7.23	12.03 Feb 13 Jan 28 1997
ANNUAL RUNOFF (AC-FT)	183300	101400	61240
10 PERCENT EXCEEDS	695	220	184
50 PERCENT EXCEEDS	146	135	47
90 PERCENT EXCEEDS	88	74	4.8

11262900 MUD SLOUGH NEAR GUSTINE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water year 1985 to current year. Data for the period October 1985 to March 1987 are available in U.S. Geological Survey Open-File Report 88-479. Data for the period April 1987 to September 1988 are available in U.S. Geological Survey Open-File Report 91-74.

CHEMICAL DATA: Water years 1985–88, 1993–94, October 1998 to September 1999.

SPECIFIC CONDUCTANCE: October 1985 to current year.

WATER TEMPERATURE: October 1985 to current year.

SEDIMENT DATA: Water years 1985–94, October 1998 to September 1999.

PERIOD OF DAILY RECORD.—October 1985 to current year.

SPECIFIC CONDUCTANCE: October 1985 to current year.

WATER TEMPERATURE: October 1985 to current year.

INSTRUMENTATION.—Water-quality monitor since October 1985.

REMARKS.—Maximum and minimum values are affected by the drainage of holding ponds located immediately upstream from the station. Interruptions in record were due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 15,900 microsiemens, Feb. 25, 1991; minimum recorded, 470 microsiemens, Oct. 15, 1986.

WATER TEMPERATURE: Maximum recorded, 34.5°C, July 22, 1988, Aug. 6, 1990, July 2, 25, Aug. 13, 1996; minimum recorded, 2.5°C, Jan. 17, 1987, Dec. 24, 1990.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 4,880 microsiemens, June 30; minimum recorded, 1,010 microsiemens, Oct. 3.

WATER TEMPERATURE: Maximum recorded, 32.0°C, July 13; minimum recorded, 3.0°C, Dec. 21, 23, 24.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, (PER- CENT SATUR- ATION) (MG/L) (00301)	HARD- NESS TOTAL (MG/L CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	
SEP	21... 1110	81	2390	7.9	23.5	760	6.0	71	570	430	140	54	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT. DIS GRAN T. FIELD CACO3 (MG/L) (29802)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	
SEP	21... 300	53	5	4.4	140	620	300	.3	19	1590	1540	2.17	
DATE		NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (MG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (MG/L AS MN) (01056)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)
SEP	21... .05	5.0	<.02	1.4	.9	.29	.09	.08	59	250	<.003	<.002	
DATE		ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)
SEP	21... <.002	<.002	.006	<.002	<.002	<.003	<.003	.016	<.004	<.002	<.002	.014	

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

11262900 MUD SLOUGH NEAR GUSTINE, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD (UG/L) (82677)	EPTC WATER FLTRD (UG/L) (82668)	ETHAL-ALIN WAT FLT (UG/L) (82663)	ETHO-PROP WATER FLTRD (UG/L) (82672)	FONOFOS WATER REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL-AZIN-PHOS WAT FLT (UG/L) (82686)	METHYL-PARA-THION WAT FLT (UG/L) (82667)
SEP 21...	<.001	<.017	.010	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
DATE	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD (UG/L) (82669)	PENDI-METH-ALIN WAT FLT (UG/L) (82683)	PER-METHRIN CIS WAT FLT (UG/L) (82687)	PHORATE WATER FLTRD (UG/L) (82664)	PRO-METON, DISS, REC (UG/L) (04037)
SEP 21...	.010	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
DATE	PRON-AMIDE WATER FLTRD (UG/L) (82676)	PRO-PANIL WATER FLTRD (UG/L) (82679)	PRO-PARGITE WATER FLTRD (UG/L) (82685)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD (UG/L) (82670)	TER-BACIL WATER FLTRD (UG/L) (82665)	TER-BUFOS WATER FLTRD (UG/L) (82675)	THIO-BENCARB WATER FLTRD (UG/L) (82681)	TRIAL-LATE WATER FLTRD (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT (UG/L) (82661)
SEP 21...	<.003	<.004	<.013	<.007	.010	<.010	<.007	<.013	<.002	<.001	<.002

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER-ATURE WATER (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
SEP 21...	1110	81	23.5	37	8.1	96

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

11262900 MUD SLOUGH NEAR GUSTINE, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX		MIN		MAX		MIN		MAX		MIN		MAX		MIN	
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH					
1	1490	1350	1530	1470	1920	1750	2270	2200	2460	2440	2740	2130				
2	1350	1120	1520	1470	1900	1770	2290	2250	2590	2370	---	---				
3	1230	1010	1560	1520	1870	1810	2260	2250	2380	2280	2580	2330				
4	1270	1190	1610	1550	1910	1820	2260	2250	2350	2270	2880	2570				
5	1290	1230	1640	1580	1890	1750	2270	2210	2430	2120	2830	2760				
6	1300	1210	1740	1640	1810	1700	2210	2190	2260	1890	2840	2770				
7	1360	1260	1770	1640	1720	1680	2270	2200	1950	1850	2800	2740				
8	1460	1360	1660	1630	1690	1620	2360	2250	2250	1850	2880	2750				
9	1520	1440	1660	1640	1740	1620	2380	2320	2390	2250	2800	2740				
10	1550	1520	1660	1650	1690	1610	2410	2290	2430	2290	2820	2760				
11	1560	1550	1660	1640	1770	1610	2300	2220	2320	1860	2890	2820				
12	1560	1410	1640	1620	1820	1760	2220	2160	1920	1820	2970	2890				
13	1410	1350	1640	1620	1840	1780	2180	2120	1980	1830	2900	2760				
14	1350	1300	1720	1640	1940	1810	2210	2110	1950	1710	2850	2780				
15	1460	1330	1770	1720	1960	1890	2120	2050	1970	1830	2920	2840				
16	1550	1460	1750	1740	1990	1940	2210	2080	2090	1840	3010	2910				
17	1590	1550	1750	1720	2050	1990	2190	2050	2270	2020	3090	2980				
18	1590	1580	1740	1720	2130	2040	2060	1990	2490	2150	3080	2900				
19	1580	1570	1820	1680	2220	2040	2040	1980	2640	2410	3040	2830				
20	1590	1570	1970	1820	2190	2020	2040	1980	2720	2460	3020	2900				
21	1590	1570	1890	1810	2140	2050	2020	1830	2730	2630	3040	2810				
22	1710	1590	1940	1860	2170	2110	1890	1840	2850	2690	3060	2940				
23	1790	1710	---	---	2160	2110	1870	1770	2900	2800	2940	2880				
24	1810	1790	1970	1830	2230	2110	1810	1690	2900	2740	2950	2860				
25	1810	1750	2160	1910	2370	2220	1840	1690	2800	2750	2950	2450				
26	1750	1730	2170	2040	2310	2100	1950	1840	3040	2800	2760	2680				
27	1740	1670	2160	1890	2130	2110	2040	1950	3100	2960	2680	2600				
28	1680	1570	1950	1760	2130	2050	2090	2040	2980	2730	2630	2440				
29	1600	1590	1850	1750	2170	2050	2220	2090	---	---	2470	2410				
30	1590	1450	1900	1760	2190	2080	2350	2220	---	---	2540	2470				
31	1540	1470	---	---	2270	2080	2460	2350	---	---	2550	2510				
MONTH	1810	1010	---	---	2370	1610	2460	1690	3100	1710	---	---				
DAY	MAX		MIN		MAX		MIN		MAX		MIN		MAX		MIN	
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER					
1	2550	2500	2870	2800	3010	2620	4240	2980	4790	3880	2940	2530				
2	2530	2510	2930	2870	3010	2510	4150	2480	4800	4680	3310	2680				
3	2540	2520	2990	2920	2960	2470	4160	2750	4850	4780	3000	2730				
4	2560	2540	3030	2980	2860	2230	3890	3040	---	---	3260	2780				
5	2580	2560	3020	2770	3030	2630	3780	3000	---	---	3300	3100				
6	2610	2570	3030	2300	3620	2890	3820	2700	---	---	3280	2830				
7	2630	2610	3420	2500	3620	3320	3880	2950	---	---	3200	2750				
8	2650	2630	3450	2720	3890	3430	3840	2890	---	---	3200	2910				
9	2670	2640	3430	2580	3590	3340	4010	3180	---	---	3020	2660				
10	2660	2640	3620	2850	3720	3030	3600	2800	---	---	2940	2650				
11	2660	2620	3650	2380	3940	3480	3680	2450	---	---	2820	2600				
12	2650	2600	3210	2440	4000	3480	3860	2640	---	---	2880	2160				
13	2600	2560	3760	2810	3990	3510	4040	3650	---	---	2190	2070				
14	2580	2560	4090	3310	4060	3820	3860	3530	---	---	2390	2080				
15	2570	2540	4190	3190	4230	3550	3990	3480	---	---	2840	2240				
16	2560	2540	4480	3670	4010	3820	3930	3390	---	---	3000	2420				
17	2540	2500	4180	3300	4260	3980	4470	3290	---	---	2650	2270				
18	2500	2470	3680	3040	4310	3950	4280	3110	---	---	2300	2090				
19	2470	2450	3390	2600	4020	3810	3890	3000	---	---	2200	1970				
20	2490	2440	3000	2380	3840	3540	3800	2820	---	---	2250	2080				
21	2490	2470	3060	2640	4060	3690	3950	3290	---	---	2520	2160				
22	2500	2470	2870	2520	4180	3730	4170	3280	---	---	2710	2510				
23	2520	2490	2870	2350	4300	3760	4040	3340	---	---	2840	2710				
24	2550	2510	2870	2510	4260	3810	4190	3100	---	---	2830	2560				
25	2570	2540	3250	2610	4260	3660	4160	3560	3020	2820	2610	2460				
26	2610	2560	3300	2580	4200	4080	4250	3440	3680	2900	2720	2480				
27	2660	2610	2700	2220	4140	3770	4440	3610	3420	2270	2540	2290				
28	2710	2660	2350	1930	4130	3900	4340	3560	---	---	2600	2160				
29	2750	2710	2170	1870	4690	3770	4250	3720	---	---	2200	2030				
30	2810	2750	2410	2030	4880	3880	4220	3720	2460	2160	2140	1940				
31	---	---	2890	2270	---	---	4290	3970	2800	2330	---	---				
MONTH	2810	2440	4480	1870	4880	2230	4470	2450	---	---	3310	1940				

11262900 MUD SLOUGH NEAR GUSTINE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.5	19.0	17.0	15.0	14.5	12.5	9.5	7.5	11.5	9.0	17.5	15.0
2	21.5	18.5	16.5	14.0	14.5	12.0	9.0	8.0	11.5	8.5	17.5	10.0
3	20.5	17.5	17.0	14.0	14.0	12.0	8.5	8.0	12.5	9.0	16.0	14.5
4	20.0	17.5	17.0	14.5	12.0	10.0	8.0	7.5	12.0	10.0	15.5	12.5
5	20.5	17.0	16.5	14.5	10.0	8.0	8.0	7.0	13.0	9.5	14.5	11.5
6	21.0	18.0	15.0	13.0	9.5	8.0	7.0	6.5	11.5	10.5	14.5	12.0
7	21.5	18.0	14.5	13.0	9.0	7.0	7.0	6.5	11.5	10.0	15.0	11.0
8	21.5	18.5	14.5	12.0	10.0	8.0	8.0	6.0	13.0	11.0	13.5	12.0
9	21.5	18.5	14.0	12.0	9.0	7.0	6.5	6.0	13.0	10.5	14.5	11.0
10	20.0	18.0	13.0	12.0	9.0	7.0	6.5	5.5	11.5	9.0	14.0	11.0
11	20.5	17.0	12.5	11.5	9.0	7.0	6.5	5.0	11.0	8.5	15.0	11.0
12	19.5	17.5	13.5	10.5	9.0	7.5	6.0	4.5	10.5	9.0	16.0	11.5
13	20.5	17.0	14.0	11.5	9.5	8.0	6.5	4.5	11.5	9.0	16.5	12.5
14	20.5	17.5	14.0	11.5	10.5	9.0	6.5	5.0	12.0	10.5	14.5	10.5
15	19.0	17.0	14.5	11.5	10.5	8.5	9.5	6.5	12.0	10.0	15.0	9.5
16	17.0	14.5	14.0	13.5	10.5	8.5	12.5	9.5	12.0	11.0	14.5	12.0
17	17.5	13.5	15.0	13.0	10.5	8.5	14.0	11.5	14.5	11.5	17.0	12.5
18	18.0	15.0	14.5	12.0	10.5	8.5	13.5	12.5	14.0	13.0	17.5	14.0
19	18.5	15.5	14.0	11.5	10.0	8.0	14.0	13.0	14.0	11.5	16.5	14.5
20	19.0	16.0	14.0	11.5	8.0	6.0	13.5	12.5	13.0	12.0	15.5	13.0
21	19.5	16.5	14.0	11.5	6.0	3.0	13.5	11.5	14.0	11.0	17.0	12.5
22	19.5	16.5	16.0	13.0	5.5	3.5	13.5	11.5	14.5	11.5	17.5	13.5
23	19.5	16.5	---	---	5.0	3.0	12.5	11.5	15.5	11.5	18.0	14.5
24	19.0	16.5	15.5	14.0	5.0	3.0	11.5	9.5	16.0	13.0	18.0	15.0
25	17.5	15.0	15.5	13.0	6.0	3.5	10.5	9.0	16.0	13.5	19.5	15.0
26	17.5	15.0	15.0	12.5	6.0	4.0	9.5	8.0	15.5	10.0	20.0	16.0
27	18.0	15.5	14.5	13.0	6.5	4.0	10.0	7.5	16.5	13.0	18.0	15.5
28	17.5	16.0	14.0	12.5	7.5	5.0	10.5	8.0	17.0	13.5	18.0	14.0
29	17.5	16.0	13.5	12.5	8.0	5.5	11.0	8.0	---	---	18.0	14.0
30	17.0	15.0	13.5	12.0	8.0	6.0	10.0	8.5	---	---	18.5	14.5
31	16.5	14.0	---	---	10.0	7.5	11.5	9.0	---	---	17.5	14.0
MONTH	22.5	13.5	---	---	14.5	3.0	14.0	4.5	17.0	8.5	20.0	9.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.5	13.5	21.5	16.0	24.5	20.5	30.5	27.0	26.5	23.5	23.5	21.0
2	16.5	13.0	19.0	16.5	22.0	19.0	29.5	25.0	27.0	24.0	24.0	21.0
3	15.0	11.0	18.0	16.0	22.0	17.5	27.5	24.0	27.5	24.5	24.5	21.0
4	14.0	9.0	20.5	14.5	22.5	18.0	25.5	23.0	28.0	25.0	24.5	21.0
5	12.5	11.5	21.5	16.0	24.5	19.5	25.5	22.0	27.0	24.5	25.5	21.5
6	14.0	11.0	23.0	18.0	24.0	21.0	26.5	23.0	25.5	23.0	26.0	22.5
7	13.0	11.5	22.0	18.5	24.0	20.0	26.0	23.0	25.0	22.0	26.5	23.0
8	12.5	11.0	20.5	18.0	24.0	19.5	27.0	23.0	26.0	22.5	26.5	23.0
9	14.5	10.0	19.0	16.0	23.5	19.5	27.5	24.5	25.0	22.5	26.5	23.0
10	14.5	11.5	19.5	16.0	24.0	20.0	28.0	25.0	25.0	22.5	26.0	22.5
11	14.0	12.0	22.0	17.0	24.5	20.5	29.5	26.0	24.5	22.0	25.5	22.0
12	17.0	10.5	23.0	19.5	25.5	21.0	31.5	27.5	25.0	22.0	26.0	22.0
13	19.5	14.5	22.0	19.5	25.5	21.5	32.0	28.5	26.0	22.5	26.0	22.0
14	21.5	17.0	22.0	18.0	26.5	22.5	30.5	27.5	26.0	22.0	26.0	21.5
15	23.5	18.5	21.0	17.5	26.5	23.0	30.0	25.5	25.5	22.0	26.0	22.0
16	25.0	20.5	21.5	17.0	26.5	23.0	28.5	24.5	26.0	22.5	26.0	22.0
17	25.5	21.0	22.5	18.0	27.5	23.5	27.0	23.5	27.5	23.0	25.5	21.5
18	25.0	21.5	24.0	19.5	28.0	24.5	27.0	23.5	---	---	25.5	21.5
19	24.5	21.0	24.5	19.5	27.5	24.0	27.0	23.0	---	---	25.0	21.0
20	24.0	21.0	23.5	19.5	27.5	24.0	26.5	23.0	---	---	25.0	20.5
21	22.5	19.5	23.5	18.5	28.0	24.5	26.0	22.5	---	---	25.5	21.0
22	20.5	17.0	24.5	19.5	28.0	25.0	26.5	22.5	---	---	26.0	22.5
23	19.0	14.0	26.0	20.5	29.0	25.5	27.0	23.5	---	---	27.0	23.0
24	22.0	16.0	25.5	20.5	29.0	25.5	26.0	23.0	---	---	27.0	22.5
25	22.0	16.5	26.0	21.5	27.5	24.5	26.5	23.0	28.0	25.0	26.5	23.0
26	22.0	18.0	28.0	22.5	27.5	24.0	27.0	23.5	27.0	25.5	25.0	22.5
27	21.5	17.5	27.0	22.5	27.0	24.0	27.0	24.0	28.5	24.5	23.0	20.0
28	19.0	15.5	26.5	22.0	28.0	24.5	26.5	24.0	---	---	23.5	19.0
29	17.5	12.5	24.5	21.0	29.0	25.0	26.0	23.5	---	---	24.5	20.0
30	20.5	15.0	24.5	19.0	30.0	25.5	26.5	23.0	26.5	24.5	25.5	21.0
31	---	---	25.0	20.0	---	---	26.5	23.5	24.5	21.5	---	---
MONTH	25.5	9.0	28.0	14.5	30.0	17.5	32.0	22.0	---	---	27.0	19.0

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA

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.

PERIOD OF RECORD.—August 1915 to current year.

CHEMICAL DATA: Water years 1968–96.

BIOLOGICAL DATA: Water years 1973–81.

WATER TEMPERATURE: Water years 1966–77, 1979–93.

SEDIMENT DATA: Water years 1970–71, 1973–96.

REVISED RECORDS.—WSP 1215: 1938(M).

GAGE.—Water-stage recorder. Datum of gage is 4,016.58 ft above sea level. Prior to Nov. 2, 1916, nonrecording gage at datum 0.55 ft lower.

REMARKS.—Records good. Up to 5 ft³/s can be diverted upstream from station for Yosemite Valley water supply.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 10,100 ft³/s, Jan. 2, 1997, gage height, 13.27 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 daily, 1.5 ft³/s, Sept. 26, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,900 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	0145	2,810	6.76				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	37	122	41	77	145	199	506	1720	610	99	46
2	98	36	116	41	78	161	183	615	1590	605	98	42
3	86	34	120	42	84	176	175	516	1040	541	95	38
4	75	33	97	41	96	176	164	437	804	460	93	34
5	64	31	85	41	89	160	162	529	704	385	90	31
6	57	30	84	40	85	147	159	950	802	346	92	28
7	51	32	90	41	199	135	153	1290	880	363	91	27
8	46	40	85	39	213	128	144	1310	878	397	80	27
9	42	35	73	38	197	127	154	1230	904	381	70	27
10	39	36	70	38	158	121	147	1140	967	338	64	28
11	37	45	71	38	165	120	145	1340	1170	334	76	27
12	34	45	71	37	158	115	149	1780	1310	339	70	27
13	32	50	77	38	143	127	188	1870	1420	296	63	27
14	31	57	79	36	131	138	292	1420	1550	298	59	26
15	30	65	76	40	122	132	404	1120	1650	283	57	25
16	28	63	76	54	121	128	509	1060	1530	254	54	24
17	27	66	79	64	164	143	594	1270	1370	218	50	24
18	26	56	82	86	150	177	686	1570	1440	182	48	25
19	25	49	78	137	136	198	816	1520	1420	159	48	35
20	25	48	57	149	127	189	921	1650	1250	144	50	40
21	25	47	57	124	128	165	957	1790	1140	133	50	37
22	24	50	71	113	123	158	851	1970	995	123	50	34
23	22	58	78	117	121	179	632	2360	1120	114	51	32
24	25	69	70	115	121	182	529	2350	1110	111	49	31
25	33	61	51	112	127	192	519	2390	973	113	49	30
26	32	56	49	108	118	226	709	2430	765	109	52	29
27	33	53	45	91	122	273	819	1940	641	104	62	28
28	34	55	44	94	131	266	689	2230	611	101	64	26
29	35	66	44	89	---	259	523	2210	642	101	62	25
30	38	109	43	89	---	243	459	1770	589	104	56	24
31	37	---	43	86	---	231	---	1720	---	103	50	---
TOTAL	1299	1512	2283	2219	3684	5317	13031	46283	32985	8149	2042	904
MEAN	41.9	50.4	73.6	71.6	132	172	434	1493	1100	263	65.9	30.1
MAX	108	109	122	149	213	273	957	2430	1720	610	99	46
MIN	22	30	43	36	77	115	144	437	589	101	48	24
AC-FT	2580	3000	4530	4400	7310	10550	25850	91800	65430	16160	4050	1790

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	36.8	62.0	84.9	91.4	109	191	539	1258	1234	485	115	44.8
MAX	267	818	736	1084	401	575	1007	2675	3317	2393	775	360
(WY)	1919	1951	1965	1997	1986	1986	1926	1969	1983	1995	1983	1978
MIN	2.58	4.89	4.49	6.56	8.89	25.2	173	231	120	28.6	7.79	3.18
(WY)	1956	1933	1977	1991	1991	1977	1975	1977	1924	1931	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1916 - 1999	
ANNUAL TOTAL	219556		119708			
ANNUAL MEAN	602		328		355	
HIGHEST ANNUAL MEAN					802	
LOWEST ANNUAL MEAN					84.9	
HIGHEST DAILY MEAN	3610	Jun 16	2430	May 26	9030	Jan 2 1997
LOWEST DAILY MEAN	22	Oct 23	22	Oct 23	1.5	Sep 26 1977
ANNUAL SEVEN-DAY MINIMUM	25	Oct 18	25	Oct 18	1.9	Oct 14 1964
INSTANTANEOUS PEAK FLOW			2810		10100	
INSTANTANEOUS PEAK STAGE			6.76		13.27	
ANNUAL RUNOFF (AC-FT)	435500		237400		257100	
10 PERCENT EXCEEDS	2120		1130		1140	
50 PERCENT EXCEEDS	163		108		100	
90 PERCENT EXCEEDS	40		32		11	

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.

CHEMICAL DATA: Water years 1971–72, 1981–82, 1994, and 1995.

WATER TEMPERATURE: Water year 1995.

SEDIMENT DATA: Water year 1995.

GAGE.—Water-stage recorder. Datum of gage is 3,861.66 ft above sea level. Prior to Sept. 5, 1918, at datum 1.8 ft higher. Sept. 5, 1918, to Sept. 30, 1955, at datum 1.0 ft higher.

REMARKS.—Records good. No diversions between stations at Happy Isles Bridge and Pohono Bridge.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 24,600 ft³/s, Jan. 3, 1997, gage height, 23.43 ft, from floodmarks in gagehouse, 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 daily 5.4 ft³/s, Oct. 26, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,900 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	0130	4,920	8.84				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	66	308	103	177	314	428	1230	3150	922	145	67
2	141	66	263	101	179	344	400	1420	2970	909	142	63
3	129	64	264	99	193	380	389	1190	2230	822	139	59
4	117	62	209	98	212	380	357	1020	1770	718	134	55
5	106	60	182	98	205	344	363	1180	1570	615	130	51
6	96	59	177	97	196	323	352	2010	1740	545	130	48
7	88	62	150	96	401	297	345	2750	1850	542	131	46
8	82	74	e172	93	546	281	327	2850	1800	571	122	45
9	78	69	e150	90	517	277	311	2680	1800	551	108	43
10	74	68	e147	89	384	257	326	2450	1860	498	100	43
11	71	79	150	89	370	267	334	2760	2110	477	107	43
12	69	79	153	88	382	251	329	3480	2280	491	105	43
13	67	86	162	88	355	276	395	3660	2390	459	95	42
14	64	98	163	87	326	305	608	2950	2560	505	88	41
15	62	114	157	94	295	291	838	2420	2660	440	85	40
16	61	115	158	124	292	278	1040	2270	2510	394	82	39
17	60	121	170	145	366	306	1200	2600	2250	346	78	38
18	58	107	178	207	358	381	1360	3130	2290	297	74	38
19	57	98	168	344	328	443	1590	3060	2230	261	72	43
20	55	91	135	399	301	427	1830	3230	2000	238	72	51
21	54	88	110	331	307	367	1910	3460	1860	219	73	51
22	53	92	123	295	285	350	1730	3750	1660	202	72	49
23	52	111	112	302	285	404	1300	4260	1760	187	72	47
24	54	152	109	277	280	408	1150	4250	1740	178	71	45
25	65	138	114	270	297	434	1160	4280	1540	176	70	44
26	63	120	115	252	272	511	1560	4470	1250	169	71	43
27	63	115	111	210	278	613	1830	3950	1070	160	78	41
28	63	112	107	213	289	596	1530	4030	995	155	83	40
29	64	126	104	205	---	587	1190	3990	1010	150	82	38
30	68	276	106	205	---	549	1100	3380	927	150	77	37
31	68	---	110	205	---	487	---	3240	---	150	71	---
TOTAL	2357	2968	4837	5394	8676	11728	27582	91400	57832	12497	2959	1373
MEAN	76.0	98.9	156	174	310	378	919	2948	1928	403	95.5	45.8
MAX	155	276	308	399	546	613	1910	4470	3150	922	145	67
MIN	52	59	104	87	177	251	311	1020	927	150	70	37
AC-FT	4680	5890	9590	10700	17210	23260	54710	181300	114700	24790	5870	2720

e Estimated.

11266500 MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	63.7	123	186	204	249	420	1099	2329	1941	661	153	66.3
MAX	436	1587	1666	2461	1035	1459	2136	5305	6279	3460	1045	426
(WY)	1983	1951	1951	1997	1986	1986	1982	1969	1983	1983	1983	1978
MIN	5.89	13.9	15.1	17.3	21.0	51.5	343	379	148	47.2	14.7	7.38
(WY)	1978	1930	1977	1977	1991	1977	1977	1977	1924	1931	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1917 - 1999	
ANNUAL TOTAL	399109		229603			
ANNUAL MEAN	1093		629		626	
HIGHEST ANNUAL MEAN					1466	
LOWEST ANNUAL MEAN					127	
HIGHEST DAILY MEAN	6420		Jun 16	4470	May 26	21000
LOWEST DAILY MEAN	52		Oct 23	37	Sep 30	5.4
ANNUAL SEVEN-DAY MINIMUM	55		Oct 18	40	Sep 12	5.6
INSTANTANEOUS PEAK FLOW			4920		May 26	24600
INSTANTANEOUS PEAK STAGE			8.84		May 26	23.43
ANNUAL RUNOFF (AC-FT)	791600		455400		453200	
10 PERCENT EXCEEDS	3630		2160		1920	
50 PERCENT EXCEEDS	294		205		184	
90 PERCENT EXCEEDS	75		60		26	

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 sea level (levels by Merced Irrigation District). Prior to Oct. 1, 1964, indicator in powerplant at same datum. Oct. 1, 1964, to July 31, 1966, nonrecording gage at center of upstream face of dam at same datum.

REMARKS.—Reservoir is formed by a rockfill dam with a reinforced concrete face completed in March 1967. Dam is downstream from and connected to the original concrete arch and gravity-type dam which was completed in April 1926. Usable capacity, 1,024,000 acre-ft between elevations 440.0 ft, invert entrance to outlet tunnel, and 867.0 ft, top of spillway gates. Dead storage, 300 acre-ft. Water is released through Exchequer Powerplant (station 11269700) down the Merced River to a diversion dam for Merced Irrigation District's main canal.

COOPERATION.—Records were provided by Pacific Gas and Electric Company under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 1,026,000 acre-ft, July 14, 15, 1969, elevation, 867.2 ft; practically no storage at times in 1926, 1930–31, 1964–65 when reservoir was drained for inspection or construction. Minimum since construction of New Exchequer Dam in 1966 and since lake first filled, 66,100 acre-ft, Feb. 28, 1991, elevation, 588.4 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 920,200 acre-ft, June 25, maximum elevation, 851.72 ft; minimum, 666,600 acre-ft, Jan. 17, minimum elevation, 808.09 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Merced Irrigation District, dated June 1966)

590	67,900	640	137,800	720	317,800	840	845,800
600	79,900	660	173,500	750	415,900	860	975,700
610	92,800	680	215,200	780	534,500	870	1,046,000
620	106,700	700	263,000	820	729,600		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	771200	675900	676100	674500	675300	700100	695200	706100	866800	913200	824900	739300
2	766800	675100	677000	674400	675800	700400	695100	706100	871700	912100	821800	737000
3	762800	674900	678000	674100	676300	700000	694300	706500	875100	909900	818500	734800
4	757900	674500	678800	673800	676600	699600	694100	705200	877300	907700	815600	732500
5	752600	674300	678500	673400	676400	699300	694700	705100	879000	905500	812600	730400
6	749100	674000	678400	672800	676700	698800	694400	705500	880600	902500	809900	728300
7	743900	673900	678400	672400	683900	698100	695500	707300	882900	899700	806400	726200
8	738700	673800	678200	670300	692300	697300	698500	711200	885300	897300	805300	723800
9	733800	673700	678000	669700	704700	697500	701300	714200	887800	893700	802000	721500
10	729100	673600	678100	669300	706900	696800	703100	717500	890000	892200	798900	719100
11	724400	673800	678000	669000	706000	696300	703600	720900	893100	889900	796400	716700
12	719500	673700	677800	668500	704900	695500	703200	727200	896000	887400	794100	714800
13	714700	673800	677600	667900	704000	695000	703000	733900	899200	884700	791000	712600
14	710100	673700	677400	667300	704200	694400	703500	738600	902700	882000	788400	710800
15	705300	673800	677300	666800	703500	693400	704200	742800	905700	879400	785200	708500
16	701200	673800	677100	666700	703000	692600	705400	746900	908600	874400	783000	706400
17	698200	674100	677200	666600	704100	692200	705700	751600	911000	872900	780000	704500
18	695400	674500	677300	666700	704300	692200	707000	757900	913200	869800	777600	702600
19	693500	674900	677300	669500	703200	692200	710900	763700	914400	866500	774800	700500
20	692000	674300	678000	675900	700800	692400	710500	769800	916100	863600	771100	698900
21	690000	673100	677300	677600	700900	692200	710600	777100	918700	860600	769300	697100
22	688800	673100	676400	675800	700700	692000	709400	784700	919400	857100	766400	695700
23	687000	673000	675800	675500	700400	692400	e708600	794000	919800	853900	763300	693800
24	685200	673000	675500	675400	700000	692100	707800	803400	919900	851000	760800	692100
25	683700	673200	675400	673800	699900	692100	707500	813300	920200	847700	757700	690400
26	682000	673400	675300	673000	699500	692400	e707400	823000	919400	844500	755000	688500
27	680400	673500	674900	672900	699500	693100	707400	832000	919500	841400	751700	686500
28	678800	673200	674500	672700	699600	693600	707900	840400	917100	838200	749300	684900
29	677800	673600	674800	673300	---	694200	707900	848700	916000	834900	746700	683000
30	677200	674300	675200	673800	---	695000	706500	855200	914700	831600	743800	680800
31	676500	---	674800	674500	---	695000	---	861300	---	828300	741800	---
MAX	771200	675900	678800	677600	706900	700400	710900	861300	920200	913200	824900	739300
MIN	676500	673000	674500	666600	675300	692000	694100	705100	866800	828300	741800	680800
a	810.02	809.59	809.70	809.63	814.44	813.57	815.73	842.50	850.87	837.12	822.21	810.85
b	-104900	-2200	+500	-300	+25100	-4600	+11500	+154800	+53400	-86400	-86500	-61000
c	113900	9770	21480	44460	87600	72070	116800	131300	111900	132100	97740	60020

CAL YR 1998 b +87900

WTR YR 1999 b -100600

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Diversion, in acre-feet, through Exchequer Powerplant, provided by Pacific Gas and Electric Company.

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.

REVISED RECORDS.—WSP 1315-A: 1901–9, 1911(M). WSP 1515: 1918–20, 1942–43 (published as station 11270000). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 310.55 ft above sea level. See WSP 1930 for history of changes prior to Oct. 1, 1964.

REMARKS.—Merced Falls Dam diverts water to Northside Canal for irrigation downstream from station. Flow regulated by Exchequer (station 11269700), McSwain (station 11270610), and Merced Falls powerplants, Lake McClure (station 11269500) since 1926, enlarged 1967, and McSwain Reservoir (station 11270600) since 1966, capacity, 9,200 acre-ft.

COOPERATION.—Records were provided by Pacific Gas and Electric Company, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD (water years 1901–13, 1916–99).—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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2370	326	294	437	502	978	1020	2390	1760	1750	1760	1230
2	2560	331	294	438	498	981	1000	2450	1620	1800	1730	1160
3	2560	332	294	434	497	1280	1090	2480	1530	1850	1690	1120
4	2560	305	374	433	497	1350	1130	2450	1540	1890	1660	1070
5	2570	307	451	431	498	1250	1140	2440	1550	1960	1620	1080
6	2560	307	448	431	498	1260	1130	2710	1460	1950	1550	1110
7	2550	309	447	430	514	1260	1070	2750	1420	1900	1520	1140
8	2560	308	447	461	1200	1250	946	2650	1410	1850	1520	1160
9	2580	304	447	507	2470	1070	791	2450	1420	1830	1450	1170
10	2570	308	447	503	2770	1240	717	2150	1360	1790	1370	1130
11	2580	307	447	503	2780	1240	1160	2170	1420	1780	1400	1060
12	2590	303	445	502	2480	1240	1630	2280	1480	1820	1450	1060
13	2650	303	446	497	1790	1250	1830	2380	1640	1860	1510	1080
14	2650	303	447	500	1530	1240	1840	1970	1800	1870	1540	1040
15	2650	307	447	502	1530	1230	1830	1650	1830	1880	1500	1030
16	2060	307	452	502	1540	1230	2110	1570	1750	1910	1430	987
17	1750	310	441	502	1770	1090	2230	1520	1650	1930	1370	962
18	1440	302	431	502	2050	982	2280	1560	1630	1920	1380	941
19	1070	301	424	502	2350	978	2350	1580	1630	1880	1470	904
20	982	305	419	514	2760	981	2390	1610	1620	1800	1500	896
21	974	299	483	1150	2490	1010	2870	1590	1710	1780	1520	892
22	974	300	555	2090	2020	1020	3340	1560	1810	1740	1550	878
23	973	300	550	2080	1720	1010	3370	1510	1800	1720	1530	930
24	975	304	483	2080	1500	1010	3250	1530	1830	1750	1490	960
25	978	300	437	2070	1500	958	2730	1580	1810	1770	1480	959
26	978	301	434	1570	1490	954	2420	1570	1800	1770	1460	960
27	979	299	432	1010	1200	973	2370	1520	1840	1740	1420	962
28	980	297	432	999	981	984	2210	1500	1840	1710	1390	949
29	789	297	432	708	---	983	1990	1530	1800	1710	1380	945
30	616	295	432	502	---	1040	2200	1580	1740	1740	1280	878
31	459	---	434	498	---	1080	---	1700	---	1760	1220	---
TOTAL	55537	9177	13446	24288	43425	34402	56434	60380	49500	56410	46140	30643
MEAN	1792	306	434	783	1551	1110	1881	1948	1650	1820	1488	1021
MAX	2650	332	555	2090	2780	1350	3370	2750	1840	1960	1760	1230
MIN	459	295	294	430	497	954	717	1500	1360	1710	1220	878
AC-FT	110200	18200	26670	48180	86130	68240	111900	119800	98180	111900	91520	60780
a	8690	8660	8600	9220	9070	9500	8810	8980	8910	8500	8840	9120
b	116000	.00	2740	41460	84130	70190	108300	118300	98120	111800	85860	63320

a End of month contents, in acre-feet, McSwain Reservoir, provided by Pacific Gas and Electric Company.

b Total discharge, in acre-feet, McSwain Powerplant, provided by Pacific Gas and Electric Company.

11270900 MERCED RIVER BELOW MERCED FALLS DAM, NEAR SNELLING, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1925, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	224	222	396	1095	1290	2102	2644	4362	3719	1261	306	144
MAX	1522	531	1676	4409	3232	6995	5749	6768	8225	5867	958	302
(WY)	1905	1910	1910	1911	1909	1907	1907	1922	1906	1906	1906	1904
MIN	49.4	58.5	83.7	100	208	314	774	1478	212	61.3	29.9	20.5
(WY)	1914	1922	1906	1918	1913	1924	1912	1924	1924	1924	1924	1924

SUMMARY STATISTICS

WATER YEARS 1901 - 1925

ANNUAL MEAN	1443
HIGHEST ANNUAL MEAN	2937
LOWEST ANNUAL MEAN	348
HIGHEST DAILY MEAN	37200
LOWEST DAILY MEAN	1.0
ANNUAL SEVEN-DAY MINIMUM	20
INSTANTANEOUS PEAK FLOW	47700
INSTANTANEOUS PEAK STAGE	23.30
ANNUAL RUNOFF (AC-FT)	1045000
10 PERCENT EXCEEDS	4340
50 PERCENT EXCEEDS	488
90 PERCENT EXCEEDS	80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1964, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	223	57.8	267	402	694	1059	1892	3143	2737	1739	1400	884
MAX	638	385	4698	3869	3155	5375	3876	7249	7426	2384	1713	1313
(WY)	1945	1951	1951	1956	1938	1938	1958	1952	1938	1938	1963	1952
MIN	20.8	25.2	26.0	20.7	35.1	33.3	275	1049	1090	210	171	17.2
(WY)	1932	1932	1934	1940	1960	1948	1948	1955	1934	1931	1961	1931

SUMMARY STATISTICS

WATER YEARS 1927 - 1964

ANNUAL MEAN	1210
HIGHEST ANNUAL MEAN	2738
LOWEST ANNUAL MEAN	360
HIGHEST DAILY MEAN	24000
LOWEST DAILY MEAN	4.5
ANNUAL SEVEN-DAY MINIMUM	8.7
INSTANTANEOUS PEAK FLOW	46200
INSTANTANEOUS PEAK STAGE	22.60
ANNUAL RUNOFF (AC-FT)	876500
10 PERCENT EXCEEDS	2510
50 PERCENT EXCEEDS	1150
90 PERCENT EXCEEDS	38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	900	387	567	812	1150	1345	1844	2289	2331	2135	1744	1389
MAX	3143	1396	2451	7368	6686	4680	5278	5701	6975	5177	2761	3049
(WY)	1984	1970	1983	1997	1997	1983	1983	1982	1983	1983	1983	1983
MIN	76.4	118	120	133	113	139	394	528	813	922	636	83.1
(WY)	1978	1969	1969	1977	1977	1977	1991	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1968 - 1999

ANNUAL TOTAL	884195	479782	
ANNUAL MEAN	2422	1314	1409
HIGHEST ANNUAL MEAN			3779
LOWEST ANNUAL MEAN			363
HIGHEST DAILY MEAN	5520	Jul 9	3370
LOWEST DAILY MEAN	207	Jan 1	294
ANNUAL SEVEN-DAY MINIMUM	207	Jan 1	296
INSTANTANEOUS PEAK FLOW			4800
INSTANTANEOUS PEAK STAGE			9.51
ANNUAL RUNOFF (AC-FT)	1754000	951600	1021000
10 PERCENT EXCEEDS	4280	2380	2910
50 PERCENT EXCEEDS	2590	1280	1190
90 PERCENT EXCEEDS	307	428	185

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 records only).

GAGE.—Water-stage recorder. Datum of gage is 116.79 ft above sea level.

REMARKS.—No records computed above 200 ft³/s. 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.

COOPERATION.—Records were provided by Pacific Gas and Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	183	133	80
2	---	---	---	---	---	---	---	---	---	196	150	80
3	---	---	---	---	---	---	---	---	---	186	127	78
4	---	---	---	---	---	---	---	---	---	---	104	82
5	---	---	---	---	---	---	---	---	---	---	82	74
6	---	---	---	---	---	---	---	---	---	192	72	83
7	---	---	---	---	---	---	---	---	---	---	69	82
8	---	---	---	---	---	---	---	---	---	178	88	81
9	---	---	---	---	---	---	---	---	---	163	100	91
10	---	---	---	---	---	---	---	---	---	145	86	97
11	---	---	---	---	---	---	---	---	---	140	73	102
12	---	---	---	---	---	---	---	---	---	158	68	110
13	---	---	---	---	---	---	---	---	184	148	65	98
14	---	---	---	---	---	---	---	---	200	123	61	97
15	---	---	---	---	---	---	---	---	172	120	80	95
16	---	---	---	---	---	---	---	---	176	124	89	101
17	---	---	---	---	---	---	---	---	164	113	80	96
18	---	---	---	---	---	---	---	---	167	130	59	94
19	---	---	---	---	---	---	---	---	182	151	96	98
20	---	---	---	---	---	---	---	---	178	149	96	102
21	---	---	---	---	---	---	---	---	195	153	94	92
22	---	---	---	---	---	---	---	---	198	169	86	103
23	---	---	---	---	---	---	---	---	179	166	91	92
24	---	---	---	---	---	---	---	---	174	162	95	99
25	---	---	---	---	---	---	---	---	176	163	88	104
26	---	---	---	---	---	---	---	---	168	157	83	106
27	---	---	---	---	---	---	---	---	184	144	79	111
28	---	---	---	---	---	---	---	---	192	126	90	111
29	---	---	---	---	---	---	---	---	185	117	106	110
30	---	---	---	---	---	---	---	---	162	122	100	100
31	---	---	---	---	---	---	---	---	---	122	76	---
TOTAL	---	---	---	---	---	---	---	---	---	---	2766	2849
MEAN	---	---	---	---	---	---	---	---	---	---	89.2	95.0
MAX	---	---	---	---	---	---	---	---	---	---	150	111
MIN	---	---	---	---	---	---	---	---	---	---	59	74
AC-FT	---	---	---	---	---	---	---	---	---	---	5490	5650

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA

LOCATION.—Lat 37°21'04", long 120°57'39", in NE 1/4 SE 1/4 sec. 4, T.7 S., R.9 E, Merced County, Hydrologic Unit 1804002, on upstream side of River Road Bridge, near right bank, just downstream from Hatfield State Park, and 1.1 river miles upstream from confluence with the San Joaquin River.

DRAINAGE AREA.—1,276 mi².

PERIOD OF RECORD.—April 1992 to current year. Published as Merced River near Stevinson (11272500) water years 1985–94.

CHEMICAL DATA: Water years 1994–95, February 1997 to current year.

SEDIMENT DATA: Water years 1994–95, February 1997 to current year.

SPECIFIC CONDUCTANCE: April 1992 to current year.

WATER TEMPERATURE: April 1992 to current year.

PERIOD OF DAILY RECORD.—April 1992 to current year.

SPECIFIC CONDUCTANCE: April 1992 to current year.

WATER TEMPERATURE: April 1992 to current year.

INSTRUMENTATION.—Water-quality monitor since April 1992.

REMARKS.—Interruptions in record were due to malfunction of the recording instruments. Specific-conductance and water-temperature values are affected by irrigation return flow. Discharge data provided by Pacific Gas and Electric (not reviewed by U.S. Geological Survey).

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 910 microsiemens, Aug. 7, 1992; minimum recorded, 22 microsiemens, June 23, 1995.

WATER TEMPERATURE: Maximum recorded, 34.0°C, July 12, 13, 1999; minimum recorded, 4.5°C, Dec. 24, 1998.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 552 microsiemens, Aug. 20, 21; minimum recorded, 36 microsiemens, Oct. 6, 7.

WATER TEMPERATURE: Maximum recorded, 34.0°C, July 12, 13; minimum recorded, 4.5°C, Dec. 24.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED SATUR- ATION) (MG/L) (00301)	HARD- NESS TOTAL AS CACO3 (MG/L) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT												
20...	1140	735	171	7.5	14.9	759	8.2	81	--	--	--	--
NOV												
10...	1120	418	240	7.5	12.7	762	9.2	87	--	--	--	--
DEC												
23...	1230	456	145	7.3	5.4	768	11.4	89	--	--	--	--
JAN												
13...	1200	428	112	7.5	6.8	766	11.1	90	--	--	--	--
26...	1140	1780	46	7.5	9.6	759	10.5	92	--	--	--	--
FEB												
11...	1230	2390	61	7.6	9.5	770	11.3	98	--	--	--	--
24...	1200	1860	53	7.5	10.3	761	10.7	96	--	--	--	--
MAR												
18...	1150	673	111	7.5	12.9	761	9.8	93	--	--	--	--
23...	1220	446	184	7.6	15.5	760	9.1	91	--	--	--	--
APR												
06...	1300	444	156	7.7	12.9	758	10.4	99	--	--	--	--
27...	1230	1580	55	7.2	14.2	765	8.1	79	--	--	--	--
MAY												
07...	1130	1440	63	7.7	16.0	758	9.8	100	--	--	--	--
24...	1300	438	179	7.6	22.5	761	7.6	88	--	--	--	--
JUN												
01...	1300	358	242	7.3	22.5	758	8.0	93	64	13	16	5.8
15...	1200	316	265	7.7	23.6	758	7.4	88	--	--	--	--
JUL												
07...	1130	224	303	7.9	23.3	760	9.5	112	78	12	20	7.0
19...	1130	253	178	7.8	23.8	760	12.8	152	--	--	--	--
AUG												
03...	1200	79	239	7.6	24.5	762	7.70	92	65	10	16	5.9
SEP												
08...	1200	172	405	7.7	22.9	757	6.90	81	110	20	28	9.4

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT.DIS GRAN T. FIELD CACO3 (MG/L) (29802)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT												
20...	--	--	--	--	43	--	--	--	--	--	--	--
NOV												
10...	--	--	--	--	58	--	--	--	--	--	--	--
DEC												
23...	--	--	--	--	26	--	--	--	--	--	--	--
JAN												
13...	--	--	--	--	31	--	--	--	--	--	--	--
26...	--	--	--	--	13	--	--	--	--	--	--	--
FEB												
11...	--	--	--	--	19	--	--	--	--	--	--	--
24...	--	--	--	--	18	--	--	--	--	--	--	--
MAR												
18...	--	--	--	--	33	--	--	--	--	--	--	--
23...	--	--	--	--	48	--	--	--	--	--	--	--
APR												
06...	--	--	--	--	36	--	--	--	--	--	--	--
27...	--	--	--	--	19	--	--	--	--	--	--	--
MAY												
07...	--	--	--	--	17	--	--	--	--	--	--	--
24...	--	--	--	--	43	--	--	--	--	--	--	--
JUN												
01...	19	38	1	1.9	51	15	19	<.1	13	151	133	.21
15...	--	--	--	--	63	--	--	--	--	--	--	--
JUL												
07...	26	42	1	1.7	66	16	26	.1	14	205	162	.28
19...	--	--	--	--	47	--	--	--	--	--	--	--
AUG												
03...	19	38	1	1.5	55	14	17	<.1	13	133	132	.18
SEP												
08...	36	41	2	2.4	88	26	37	<.1	18	240	210	.33
DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTH- DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTH- DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
OCT												
20...	.01	1.8	.09	.2	.2	.04	.02	.02	--	--	<1	--
NOV												
10...	.03	2.9	.09	.2	.2	.04	.03	.03	--	--	<1	--
DEC												
23...	.02	.87	.09	.2	.2	e.03	e.01	.03	--	--	<1	--
JAN												
13...	.02	1.1	.06	.1	.1	.02	.01	.02	--	--	<1	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
11...	<.01	.19	.15	.6	.3	.18	.09	.08	--	--	<1	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
18...	<.01	1.0	.05	.2	.1	.04	.02	.02	--	--	<1	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
06...	.01	1.5	.07	.3	.2	.05	.03	.02	--	--	<1	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
07...	<.01	.19	.05	.2	e.1	.03	.02	.02	--	--	1	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
01...	.03	2.7	.08	.5	.3	.10	.05	.05	67	23	<1	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
07...	.04	2.5	.05	.3	.4	.09	.07	.05	28	63	<1	2.5
19...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
03...	.02	2.6	.02	.2	.3	.08	.05	.04	18	27	<1	--
SEP												
08...	--	--	--	--	--	--	--	--	22	62	--	--

e Estimated.

< Actual value known to be less than value shown.

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLT GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS- SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD GF, REC (UG/L) (82682)
OCT												
20...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
10...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
23...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
26..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
FEB												
11..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
24..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
MAR												
18..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	.005	<.004	<.002
23..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
APR												
06..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
27..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
MAY												
07..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
24..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.010	<.004	<.002
JUN												
01..	<.003	<.002	<.002	<.002	<.001	<.002	.005	<.003	<.003	e.004	<.004	<.002
15..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
JUL												
07..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
19..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	.034	<.002
AUG												
03..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.010	<.010	<.002
SEP												
08...	--	--	--	--	--	--	--	--	--	--	--	--
DATE	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD GF, REC (UG/L) (82677)	EPTC WATER FLTRD GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LIN- URON WATER FLTRD GF, REC (UG/L) (39341)	LINDANE DIS- SOLVED (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METHYL AZIN- PHOS WAT FLT GF, REC (UG/L) (82686)
OCT												
20...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
10...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
23...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13..	<.002	.017	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
26..	<.002	.006	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
FEB												
11..	<.002	.014	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
24..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
MAR												
18..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
23..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	.006	<.001
APR												
06..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.010	<.001
27..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
MAY												
07..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
24..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
JUN												
01..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
15..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
JUL												
07..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.020
19..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
AUG												
03..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.020
SEP												
08...	--	--	--	--	--	--	--	--	--	--	--	--

e Estimated.

< Actual value known to be less than value shown.

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	METHYL- PARA- THION WAT FLT 0.7 U	METHO- LACHLOR WATER DISSOLV (UG/L) (82667)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U (UG/L) (82684)	P, P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	PEB- ULATE WATER FILTRD 0.7 U (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U (UG/L) (82683)	PER- METHRIN CIS WAT FLT 0.7 U (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)
	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	DISSOLV	SOLVED	GF, REC	GF, REC	GF, REC	GF, REC	REC
OCT												
20...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
10...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
23...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
26..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
FEB												
11..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
24..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
MAR												
18..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	.038	<.005	<.002	<.018
23..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
APR												
06..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.030	<.005	<.002	<.018
27..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
MAY												
07..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
24..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
JUN												
01..	<.006	e.003	<.004	.035	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
15..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
JUL												
07..	<.006	e.003	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
19..	<.006	.010	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
AUG												
03..	<.006	.009	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
SEP												
08...	--	--	--	--	--	--	--	--	--	--	--	--
DATE	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PROP- CHLOR, WATER, DISS, REC (UG/L) (04024)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	
OCT												
20...	--	--	--	--	--	--	--	--	--	--	--	
NOV												
10...	--	--	--	--	--	--	--	--	--	--	--	
DEC												
23...	--	--	--	--	--	--	--	--	--	--	--	
JAN												
13...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	<.002	<.001	<.002	
26...	<.003	<.004	<.013	<.007	.030	<.010	<.007	<.013	<.002	<.001	<.002	
FEB												
11...	<.003	<.004	<.013	<.007	.184	<.010	<.007	<.013	<.002	<.001	<.002	
24...	<.003	<.004	<.013	<.007	.052	<.010	<.007	<.013	<.002	<.001	<.002	
MAR												
18...	<.003	<.004	<.013	<.007	.011	<.010	<.007	<.013	<.002	<.001	<.002	
23...	<.003	<.004	<.013	<.007	.009	<.010	<.007	<.013	<.002	<.001	<.002	
APR												
06...	<.003	<.004	<.013	<.007	<.010	<.010	<.007	<.013	<.002	<.001	<.002	
27...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	<.002	<.001	<.002	
MAY												
07...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	<.002	<.001	<.002	
24...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	<.002	<.001	<.002	
JUN												
01...	<.003	<.004	.161	<.007	.008	<.010	<.007	<.013	<.002	<.001	.028	
15...	<.003	<.004	<.013	<.007	.009	<.010	<.007	<.013	<.002	<.001	<.002	
JUL												
07...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	<.002	<.001	<.002	
19...	<.003	<.004	.270	<.007	<.010	<.010	<.007	<.013	<.002	<.001	<.002	
AUG												
03...	<.003	<.004	<.060	<.007	<.005	<.010	<.007	<.013	<.002	<.001	<.002	
SEP												
08...	--	--	--	--	--	--	--	--	--	--	--	

e Estimated.

< Actual value known to be less than value shown.

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA—Continued

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
20...N	1140	735	14.9	11	22	97
NOV						
10...N	1120	418	12.7	6	6.8	79
DEC						
23...N	1230	456	5.4	5	6.2	66
JAN						
13...N	1200	428	6.8	11	13	94
26...N	1140	1780	9.6	--	--	--
FEB						
11...N	1230	2390	9.5	57	367	91
24...N	1200	1860	10.3	--	--	--
MAR						
18...N	1150	673	12.9	9	16	71
23...N	1220	446	15.5	15	18	78
APR						
06...N	1300	444	12.9	14	17	90
27...N	1230	1580	14.2	39	167	87
MAY						
07...N	1130	1440	16.0	45	175	73
24...N	1300	438	22.5	21	25	89
JUN						
01...N	1300	358	22.5	41	40	91
15...N	1200	316	23.6	9	7.7	91
JUL						
07...N	1130	224	23.3	18	11	90
19...N	1130	253	23.8	21	14	92
AUG						
03...N	1200	79	24.5	16	3.4	88
SEP						
08...N	1200	172	22.9	9	4.2	83

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	81	58	211	162	221	214	136	132	65	61	71	65
2	89	53	180	171	232	214	132	123	---	---	71	68
3	54	37	187	171	234	219	125	121	81	63	71	68
4	43	38	211	187	227	206	122	120	87	80	68	59
5	43	37	216	206	207	194	124	119	89	86	62	59
6	50	36	224	191	194	122	134	123	93	88	63	61
7	50	36	253	224	126	123	129	124	94	91	63	61
8	50	39	253	235	134	123	132	127	92	73	65	63
9	50	43	242	233	136	126	131	126	81	58	64	62
10	48	38	248	231	137	126	126	102	62	59	88	63
11	49	38	248	244	136	128	109	106	62	59	79	63
12	47	39	245	234	140	136	114	109	59	56	67	65
13	49	43	247	234	139	135	114	111	57	56	102	67
14	46	40	249	241	136	131	115	110	58	56	114	102
15	48	45	248	243	138	126	115	111	59	57	115	111
16	49	42	246	233	158	137	112	107	59	57	118	108
17	80	41	235	221	142	130	108	104	58	57	117	102
18	98	80	236	225	136	131	108	105	57	56	134	105
19	139	84	239	227	138	133	112	101	58	55	164	134
20	204	139	239	227	148	134	107	92	60	55	163	158
21	240	204	244	236	145	139	92	68	58	54	174	152
22	265	240	246	229	148	139	95	68	61	54	187	174
23	269	227	234	219	144	137	69	50	57	54	196	184
24	264	232	240	210	139	129	51	48	55	53	207	185
25	235	147	221	211	148	123	55	48	56	54	200	166
26	211	167	225	209	137	125	48	44	57	55	190	169
27	217	181	232	221	141	136	45	42	57	56	203	189
28	219	194	226	217	141	138	47	45	65	57	199	184
29	219	187	224	217	141	137	46	45	---	---	184	164
30	220	184	223	217	140	138	52	44	---	---	183	169
31	224	211	---	---	139	135	63	52	---	---	199	172
MONTH	269	36	253	162	234	122	136	42	---	---	207	59
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	216	198	73	59	246	212	343	291	---	---	394	285
2	208	200	63	58	283	222	336	289	---	---	401	308
3	204	174	63	58	258	213	318	255	---	---	365	308
4	195	170	63	57	224	202	340	311	---	---	364	311
5	172	161	62	57	216	202	311	252	---	---	349	291
6	164	146	65	59	214	203	298	266	---	---	322	291
7	152	146	65	60	204	155	342	265	---	---	419	321
8	162	134	64	61	200	171	350	292	---	---	480	376
9	166	135	68	63	227	185	312	223	---	---	477	413
10	194	152	68	65	231	187	303	260	---	---	475	356
11	212	163	75	68	229	187	378	302	---	---	402	322
12	167	93	80	75	273	228	355	245	---	---	369	274
13	93	66	82	78	306	226	322	269	---	---	368	281
14	70	64	84	80	266	222	354	295	---	---	368	257
15	68	61	107	83	321	234	393	306	---	---	421	337
16	63	61	132	107	341	276	446	370	---	---	427	375
17	63	58	140	132	347	296	499	402	---	---	391	331
18	62	57	157	140	315	279	505	278	412	370	331	271
19	58	54	167	157	356	292	443	192	519	398	332	286
20	58	55	211	165	352	249	278	212	552	517	326	280
21	57	54	213	204	272	254	302	239	552	317	280	257
22	57	53	239	206	293	262	327	246	405	317	---	---
23	55	52	232	203	310	260	324	290	407	302	---	---
24	54	50	206	171	407	231	305	250	388	302	---	---
25	55	48	203	174	412	246	342	250	455	345	---	---
26	54	50	212	184	294	221	315	219	482	445	---	---
27	57	54	198	183	268	221	356	219	476	395	---	---
28	63	57	227	197	240	196	376	346	440	395	---	---
29	69	63	248	225	264	197	412	311	453	289	---	---
30	74	67	228	206	307	246	412	326	334	274	---	---
31	---	---	228	200	---	---	---	---	310	292	---	---
MONTH	216	48	248	57	412	155	---	---	---	---	---	---

11273500 MERCED RIVER AT RIVER ROAD BRIDGE, NEAR NEWMAN, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.0	17.0	16.0	14.5	14.0	13.0	9.5	8.0	11.0	9.5	13.0	12.0
2	18.0	17.0	15.5	14.0	14.0	12.0	9.5	8.5	---	---	14.0	12.0
3	17.5	16.5	15.5	14.0	13.5	12.5	9.5	9.0	11.5	10.0	13.5	13.0
4	16.5	15.5	15.5	14.0	12.5	11.0	9.0	9.0	11.5	10.0	13.0	12.0
5	16.5	15.5	15.5	14.0	11.0	9.5	9.0	8.5	11.5	10.0	12.0	11.0
6	16.5	15.5	14.5	13.5	10.5	9.5	8.5	8.0	11.0	11.0	11.5	10.5
7	16.5	15.5	14.0	13.5	9.5	8.5	8.0	7.5	11.5	11.0	11.5	10.0
8	16.5	15.5	14.5	13.0	10.0	9.0	8.5	7.5	12.0	11.5	11.0	10.5
9	16.5	16.0	14.0	12.5	9.5	8.5	7.5	7.0	11.5	11.0	11.5	10.5
10	16.5	15.5	13.0	12.5	9.5	8.0	7.0	6.5	11.0	9.5	11.5	10.0
11	15.5	15.0	13.0	12.0	10.0	8.5	7.0	6.5	10.0	9.0	12.0	11.0
12	15.5	14.5	13.5	11.5	9.5	9.0	7.0	6.0	10.0	9.0	12.5	10.5
13	15.5	14.5	13.5	12.0	10.0	9.0	7.5	6.5	10.5	9.0	12.5	11.0
14	16.0	15.0	13.5	12.0	10.5	9.5	7.5	6.5	10.5	9.5	12.5	12.0
15	15.5	14.5	14.0	12.0	10.5	9.0	9.0	7.5	10.5	9.5	13.0	12.0
16	15.0	14.0	13.5	13.0	10.5	9.0	10.0	8.5	10.5	10.0	13.0	11.5
17	14.5	13.5	14.5	13.0	10.5	9.5	11.5	10.0	11.5	10.5	13.5	11.5
18	15.0	14.0	14.0	12.5	10.5	9.5	12.0	11.0	11.5	11.0	13.5	12.0
19	15.0	14.0	13.5	12.0	10.0	9.0	13.0	12.0	11.0	10.0	14.0	13.0
20	16.0	14.0	13.0	11.5	9.0	8.0	12.5	12.0	10.5	10.0	14.5	12.5
21	16.5	14.5	13.5	11.5	8.0	6.5	12.5	11.5	10.0	9.0	16.0	13.5
22	17.0	15.0	14.5	12.5	7.5	6.0	12.0	11.5	10.5	9.5	16.0	13.5
23	17.0	15.0	14.0	13.5	6.0	5.0	11.5	11.0	11.0	9.5	17.0	14.0
24	16.5	15.5	14.5	13.0	5.5	4.5	11.0	10.0	11.0	10.0	16.5	14.5
25	16.0	14.5	14.0	12.0	6.0	5.0	10.0	10.0	12.0	10.5	18.0	15.0
26	16.5	14.5	13.5	12.0	6.5	5.5	10.0	9.5	12.0	11.0	18.5	15.5
27	16.5	15.0	13.5	13.0	7.0	5.5	10.0	9.0	12.0	10.5	17.5	15.0
28	16.0	15.0	14.0	12.5	7.5	6.0	9.5	9.0	12.0	11.0	17.5	14.5
29	16.5	15.0	13.0	12.5	8.0	6.5	9.5	8.5	---	---	17.0	14.5
30	16.0	14.5	13.5	12.5	8.0	7.0	9.5	9.0	---	---	17.0	14.5
31	15.5	14.0	---	---	10.0	8.0	10.5	9.5	---	---	17.0	14.0
MONTH	18.0	13.5	16.0	11.5	14.0	4.5	13.0	6.0	---	---	18.5	10.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.5	13.5	18.0	15.5	24.5	20.5	31.5	25.0	---	---	24.0	19.5
2	17.0	13.5	17.5	15.5	23.0	20.0	31.0	24.5	---	---	25.0	19.5
3	15.5	13.0	15.5	14.5	22.5	18.0	28.5	23.0	---	---	24.5	20.0
4	15.5	11.5	15.5	13.5	23.0	18.5	27.0	21.0	---	---	25.0	20.0
5	14.0	12.5	16.5	14.0	24.5	19.5	28.0	21.5	---	---	25.5	20.5
6	14.0	11.5	17.5	15.0	25.0	20.5	28.0	22.5	---	---	26.5	21.5
7	13.5	12.0	17.5	16.0	23.5	19.5	27.0	22.0	---	---	26.5	21.5
8	12.5	11.0	16.5	15.0	23.5	19.0	28.5	22.5	---	---	26.0	21.5
9	14.0	10.0	16.0	14.5	24.0	19.0	29.0	23.5	---	---	26.5	21.5
10	14.0	11.5	16.0	14.0	25.0	19.5	29.5	23.5	---	---	25.5	21.0
11	13.0	12.5	17.5	15.0	25.5	20.0	31.5	24.5	---	---	25.5	21.0
12	15.0	11.5	19.0	16.5	26.0	20.5	34.0	27.0	---	---	26.0	21.5
13	14.5	12.5	19.0	17.0	26.0	20.5	34.0	28.0	---	---	25.5	21.5
14	16.0	13.5	18.5	17.0	27.0	21.5	32.0	26.5	---	---	25.5	21.0
15	16.5	14.5	18.0	16.0	26.5	22.0	31.5	24.5	---	---	26.0	21.0
16	17.5	15.5	19.5	16.5	26.5	21.0	30.0	23.0	---	---	25.5	21.0
17	17.5	16.5	21.0	17.5	28.5	21.5	29.0	22.0	---	---	25.0	20.5
18	17.0	15.5	22.0	18.5	28.5	23.0	28.5	21.5	27.0	22.0	24.5	21.0
19	16.5	15.0	23.0	19.0	27.0	22.0	27.0	22.0	27.0	20.0	24.5	20.5
20	16.0	14.5	23.0	19.5	27.5	21.0	27.0	21.5	27.5	21.0	24.5	20.5
21	15.5	14.5	24.0	19.5	28.0	23.0	27.0	21.0	27.5	21.5	25.0	21.0
22	15.0	14.0	25.5	21.0	29.5	23.0	27.5	22.0	28.5	22.0	---	---
23	14.5	12.5	26.5	22.0	31.0	24.0	28.0	22.0	29.5	23.5	---	---
24	15.0	12.5	26.5	23.0	29.0	24.0	26.5	21.0	28.5	23.0	---	---
25	15.0	13.0	27.5	23.5	27.5	22.0	27.5	21.0	28.5	23.0	---	---
26	15.0	13.5	29.0	24.5	27.0	21.0	28.0	22.5	26.5	23.0	---	---
27	15.0	14.0	29.0	25.0	27.5	22.0	27.5	22.0	28.5	22.0	---	---
28	14.5	13.0	27.0	23.0	28.5	23.0	27.5	21.5	28.0	22.5	---	---
29	15.0	13.0	24.5	20.5	30.5	24.0	27.0	21.0	28.5	23.0	---	---
30	16.5	14.0	26.0	20.5	31.0	24.5	27.0	21.5	26.5	22.5	---	---
31	---	---	26.0	21.0	---	---	---	---	24.0	20.0	---	---
MONTH	17.5	10.0	29.0	13.5	31.0	18.0	---	---	---	---	---	---

11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA

LOCATION.—Lat 37°21'02", long 120°58'34", in NW 1/4 SW 1/4 sec.3, T.7 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 600 ft downstream from bridge on Hills Ferry Road, 650 ft downstream from Merced River, and 3.5 mi northeast of Newman.

DRAINAGE AREA.—9,520 mi².

PERIOD OF RECORD.—April 1912 to current year. Water years 1938 to 1943 include flows through Merced River Slough.

CHEMICAL DATA: Water year 1993.

SPECIFIC CONDUCTANCE: Water years 1989, 1992–95.

TEMPERATURE: Water years 1989, 1992–95.

SEDIMENT DATA: Water year 1993.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level. Prior to Mar. 3, 1931, gage at various sites within 240 ft of bridge. Mar. 3, 1931, to Sept. 30, 1959, water-stage recorder within 300 ft of bridge, at datum 47.31 ft higher. Oct. 1, 1959, to Aug. 9, 1960, water-stage recorder at site 70 ft upstream, at present datum.

REMARKS.—Records good. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge (river only), 36,200 ft³/s, Jan. 28, 1997, elevation, 66.14 ft; minimum daily, 15 ft³/s, Aug. 9, 10, 1924. Maximum discharge (including flow in Merced River Slough in water years 1938–43), 33,000 ft³/s, Mar. 7, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 2, 1868, reached a stage of 69.0 ft from floodmarks; flood of February 1886 reached a stage of 67.1 ft from floodmarks; and flood of 1911 reached a stage of 66.3 ft from floodmarks. All stages referred to current datum. Discharges unknown.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1890	1410	1160	982	1350	2160	1150	1420	709	429	483	525
2	1960	1420	1060	989	1310	2120	1100	1660	681	418	513	477
3	2230	1410	1160	982	1280	2120	1090	1740	641	437	529	458
4	2320	1350	1330	975	1260	2170	1060	1760	659	421	505	454
5	2340	1290	1370	965	1210	2280	1070	1800	675	462	441	489
6	2300	1190	1460	960	1190	2140	1110	1760	767	497	392	494
7	2300	1130	1540	946	1200	2100	1130	1790	854	508	370	448
8	2250	1090	1620	955	1240	2050	1160	1960	812	483	426	442
9	2280	1040	1660	949	1590	2020	1260	1890	760	488	486	429
10	2290	997	1700	975	3110	1930	1440	1810	719	441	516	419
11	2310	962	1730	984	4260	1920	1510	1610	660	436	480	447
12	2330	932	1710	997	4630	1930	1590	1530	612	434	426	481
13	2320	901	1690	1020	4290	1840	1960	1470	594	418	393	525
14	2360	867	1700	1020	3530	1620	2090	1390	619	414	412	513
15	2360	836	1690	1020	2920	1590	2040	1250	611	410	406	490
16	2330	819	1700	1030	2730	1590	1980	965	582	411	425	479
17	2160	806	1650	1050	2640	1630	2020	906	521	412	419	470
18	1760	810	1440	1090	2650	1600	2140	854	491	413	425	506
19	1590	813	1270	1130	2880	1470	2150	793	471	434	385	506
20	1330	807	1260	1180	3090	1450	2130	760	469	450	387	517
21	1190	890	1230	1250	3490	1430	2140	732	497	457	426	523
22	1120	894	1160	1470	3800	1400	2230	673	493	434	451	494
23	1150	888	1130	2250	3500	1380	2540	736	493	393	494	433
24	1170	906	1100	2510	3250	1390	2650	845	507	407	478	397
25	1310	904	1070	2650	2880	1470	2690	837	503	435	431	405
26	1330	884	1030	2650	2720	1490	2390	822	484	506	389	471
27	1400	881	1010	2500	2600	1480	1940	806	503	518	430	498
28	1440	894	999	1980	2440	1430	1730	726	548	501	466	469
29	1470	939	988	1820	---	1370	1490	694	523	463	489	497
30	1440	1090	978	1650	---	1310	1400	704	453	464	526	506
31	1370	---	976	1400	---	1250	---	696	---	465	537	---
TOTAL	57400	30050	41571	42329	73040	53130	52380	37389	17911	13859	13936	14262
MEAN	1852	1002	1341	1365	2609	1714	1746	1206	597	447	450	475
MAX	2360	1420	1730	2650	4630	2280	2690	1960	854	518	537	525
MIN	1120	806	976	946	1190	1250	1060	673	453	393	370	397
AC-FT	113900	59600	82460	83960	144900	105400	103900	74160	35530	27490	27640	28290

11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1937, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	290	362	796	1857	3623	3223	3395	5010	5490	1888	328	209
MAX	1422	1233	2907	8356	11840	13000	11780	14210	15700	8803	1370	442
(WY)	1919	1928	1923	1914	1916	1916	1916	1916	1922	1914	1914	1936
MIN	55.0	85.5	136	228	278	233	122	115	92.5	29.1	21.3	26.7
(WY)	1914	1932	1913	1918	1913	1913	1931	1931	1924	1924	1924	1924

SUMMARY STATISTICS

WATER YEARS 1912 - 1937

ANNUAL MEAN		2208
HIGHEST ANNUAL MEAN	6585	1916
LOWEST ANNUAL MEAN	196	1931
HIGHEST DAILY MEAN	20700	Jan 27 1914
LOWEST DAILY MEAN	15	Aug 9 1924
ANNUAL SEVEN-DAY MINIMUM	17	Aug 4 1924
INSTANTANEOUS PEAK FLOW	20700	Jan 27 1914
INSTANTANEOUS PEAK STAGE	65.30	Jan 27 1914
ANNUAL RUNOFF (AC-FT)	1599000	
10 PERCENT EXCEEDS	7040	
50 PERCENT EXCEEDS	590	
90 PERCENT EXCEEDS	112	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1943, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	447	494	1558	3378	7512	10070	7308	8025	9334	3383	686	482
MAX	708	1065	2832	5111	14350	23500	11480	15310	21010	8625	1745	768
(WY)	1939	1939	1938	1942	1938	1938	1938	1938	1938	1938	1938	1938
MIN	226	190	423	1967	2442	679	959	627	333	234	225	278
(WY)	1940	1940	1940	1939	1939	1939	1939	1939	1939	1939	1939	1939

SUMMARY STATISTICS

WATER YEARS 1938 - 1943

ANNUAL MEAN		4366
HIGHEST ANNUAL MEAN	8643	1938
LOWEST ANNUAL MEAN	904	1939
HIGHEST DAILY MEAN	33000	Mar 7 1938
LOWEST DAILY MEAN	170	Nov 9 1939
ANNUAL SEVEN-DAY MINIMUM	171	Nov 8 1939
INSTANTANEOUS PEAK FLOW	33000	Mar 7 1938
INSTANTANEOUS PEAK STAGE	65.81	Mar 7 1938
ANNUAL RUNOFF (AC-FT)	3163000	
10 PERCENT EXCEEDS	11900	
50 PERCENT EXCEEDS	1580	
90 PERCENT EXCEEDS	291	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	708	666	1226	2406	3274	3123	2998	2861	2222	1011	521	629
MAX	5831	4039	10880	24920	21100	24170	18860	14050	15280	11320	2683	3786
(WY)	1984	1984	1983	1997	1983	1983	1983	1983	1983	1983	1983	1983
MIN	25.2	122	202	230	180	212	159	141	48.7	45.9	80.4	41.2
(WY)	1978	1978	1950	1991	1991	1948	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1944 - 1999

ANNUAL TOTAL		2233490		447257								
ANNUAL MEAN		6119		1225						1795		
HIGHEST ANNUAL MEAN										11620		1983
LOWEST ANNUAL MEAN										200		1961
HIGHEST DAILY MEAN				19300	Feb 11		4630	Feb 12		36000		Jan 28 1997
LOWEST DAILY MEAN				504	Jan 8		370	Aug 7		20		Oct 26 1977
ANNUAL SEVEN-DAY MINIMUM				523	Jan 4		408	Aug 14		23		Oct 7 1977
INSTANTANEOUS PEAK FLOW							4670	Feb 12		36200		Jan 28 1997
INSTANTANEOUS PEAK STAGE							57.18	Feb 12		66.14		Jan 28 1997
INSTANTANEOUS LOW FLOW										15		Aug 9 1924
ANNUAL RUNOFF (AC-FT)		4430000					887100			1300000		
10 PERCENT EXCEEDS		13400					2300			4250		
50 PERCENT EXCEEDS		3260					1060			596		
90 PERCENT EXCEEDS		1010					436			218		

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, WDR CA-95-3: 1986 (M).

GAGE.—Water-stage recorder. Datum of gage is 216.01 ft above sea level. Prior to Oct. 1, 1958, at site 1,080 ft downstream at datum 24.14 ft lower. Oct. 1, 1958, to Aug. 13, 1969, at site 960 ft downstream at datum 27.14 ft lower. Aug. 13, 1969, to Feb. 6, 1984, at site 240 ft upstream, present datum.

REMARKS.—Records good except for discharges below 10 ft³/s which are fair. No storage or diversion upstream from station except for minor stock ponds.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,000 ft³/s, Mar. 10, 1995, gage height, 9.51, from rating curve extended above 4,000 ft³/s on basis of critical depth measurement; no flow for all or parts of each year.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 500 ft³/s, revised, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 9	1545	833	4.45				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	21	5.4	11	2.5	.00	.00	.00	.00
2	.00	.00	.00	.00	16	5.0	9.5	2.7	.00	.00	.00	.00
3	.00	.00	.00	.00	11	5.1	8.3	3.1	.00	.00	.00	.00
4	.00	.00	.00	.00	8.8	4.8	8.0	2.8	.00	.00	.00	.00
5	.00	.00	.00	.00	7.1	4.5	7.9	2.5	.00	.00	.00	.00
6	.00	.00	.00	.00	6.2	4.3	9.2	2.0	.00	.00	.00	.00
7	.00	.00	.00	.00	7.8	4.1	9.8	1.7	.00	.00	.00	.00
8	.00	.00	.00	.00	66	4.3	8.9	1.4	.00	.00	.00	.00
9	.00	.00	.00	.00	283	6.1	9.9	1.1	.00	.00	.00	.00
10	.00	.00	.00	.00	168	7.8	11	.92	.00	.00	.00	.00
11	.00	.00	.00	.00	55	6.8	13	.76	.00	.00	.00	.00
12	.00	.00	.00	.00	28	5.6	55	.51	.00	.00	.00	.00
13	.00	.00	.00	.00	18	5.1	37	.32	.00	.00	.00	.00
14	.00	.00	.00	.00	13	4.9	24	.24	.00	.00	.00	.00
15	.00	.00	.00	.00	10	4.7	18	.17	.00	.00	.00	.00
16	.00	.00	.00	.00	8.3	4.6	14	.10	.00	.00	.00	.00
17	.00	.00	.00	.00	7.8	4.5	11	.06	.00	.00	.00	.00
18	.00	.00	.00	.00	7.9	4.7	9.2	.03	.00	.00	.00	.00
19	.00	.00	.00	.00	6.9	5.2	7.9	.01	.00	.00	.00	.00
20	.00	.00	.00	4.8	6.4	12	7.2	.00	.00	.00	.00	.00
21	.00	.00	.00	14	8.2	13	6.4	.00	.00	.00	.00	.00
22	.00	.00	.00	10	13	9.7	5.5	.00	.00	.00	.00	.00
23	.00	.00	.00	8.7	11	8.5	4.4	.00	.00	.00	.00	.00
24	.00	.00	.00	7.4	9.1	8.1	3.9	.00	.00	.00	.00	.00
25	.00	.00	.00	7.0	8.2	56	3.7	.00	.00	.00	.00	.00
26	.00	.00	.00	7.4	7.5	71	3.7	.00	.00	.00	.00	.00
27	.00	.00	.00	31	6.4	32	3.5	.00	.00	.00	.00	.00
28	.00	.00	.00	22	5.8	20	3.5	.00	.00	.00	.00	.00
29	.00	.00	.00	13	---	15	3.2	.00	.00	.00	.00	.00
30	.00	.00	.00	9.6	---	12	2.7	.00	.00	.00	.00	.00
31	.00	---	.00	10	---	12	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	144.90	825.4	366.8	330.3	22.92	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	4.67	29.5	11.8	11.0	.74	.000	.000	.000	.000
MAX	.00	.00	.00	31	283	71	55	3.1	.00	.00	.00	.00
MIN	.00	.00	.00	.00	5.8	4.1	2.7	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	287	1640	728	655	45	.00	.00	.00	.00

11274500 ORESTIMBA CREEK NEAR NEWMAN, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.000	.94	11.6	46.7	87.5	49.4	22.5	3.43	.70	.13	.001	.000
MAX	.000	31.0	181	432	818	345	362	46.9	15.1	5.32	.045	.000
(WY)	1933	1951	1956	1997	1998	1995	1958	1983	1941	1941	1958	1932
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1933	1933	1933	1936	1935	1933	1933	1933	1932	1932	1932	1932

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1932 - 1999	
ANNUAL TOTAL	30336.16		1690.32			
ANNUAL MEAN	83.1		4.63		18.2	
HIGHEST ANNUAL MEAN					89.4	
LOWEST ANNUAL MEAN					.000	
HIGHEST DAILY MEAN	4550	Feb 3	283	Feb 9	4550	Feb 3 1998
LOWEST DAILY MEAN	.00	Jul 25	.00	Oct 1	.00	May 9 1932
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 25	.00	Oct 1	.00	May 9 1932
INSTANTANEOUS PEAK FLOW			833	Feb 9	12000	Mar 10 1995
INSTANTANEOUS PEAK STAGE			4.45	Feb 9	9.51	Mar 10 1995
ANNUAL RUNOFF (AC-FT)	60170		3350		13210	
10 PERCENT EXCEEDS	145		10		21	
50 PERCENT EXCEEDS	4.1		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA

LOCATION.—Lat 37°24'49", long 121°00'54", in Orestimba Grant, Stanislaus County, Hydrologic Unit 18040002, on right bank at downstream side of River Road Bridge, 0.8 mi upstream of mouth, and 3.4 mi northeast of Crows Landing.

DRAINAGE AREA.—Not determined.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—April 1992 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 65 ft above sea level, from topographic map.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Flows during summer and fall consist mainly of return water from irrigated areas. During major storm events record can be affected by backwater from the San Joaquin River.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,650 ft³/s, Mar. 10, 1995, gage height 18.40 ft, from rating curve extended above 2,470 ft³/s, maximum gage height, 19.60 ft, Jan. 23, 1997 (backwater from San Joaquin River); no flow for many days during winter months.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	149	66	30	22	5.1	37	166	12	17	19	16
2	127	131	69	23	20	4.8	29	186	12	14	19	8.5
3	116	140	63	22	13	8.8	33	192	13	20	18	13
4	152	142	63	20	4.0	42	24	130	23	21	19	16
5	141	126	63	21	3.8	58	30	113	11	41	42	13
6	130	104	65	19	3.8	119	20	30	8.1	25	41	9.7
7	e77	135	51	16	3.8	98	5.2	8.1	8.7	13	57	5.9
8	e75	163	46	9.8	3.8	68	3.6	11	6.7	16	34	9.3
9	e79	126	34	9.3	116	65	3.8	28	13	22	26	9.0
10	e85	97	29	17	216	30	3.2	43	17	21	13	20
11	e95	119	19	18	51	41	5.2	32	8.8	19	12	12
12	e100	117	16	15	22	34	8.0	8.7	7.0	21	18	9.9
13	e98	129	22	16	10	10	51	7.8	11	18	10	10
14	e105	140	20	28	4.8	48	101	18	50	20	14	19
15	e110	145	19	34	3.8	37	188	7.4	33	22	17	9.7
16	127	93	23	30	3.8	6.5	182	16	16	21	17	17
17	133	111	31	25	8.0	22	194	9.9	17	23	15	28
18	128	93	30	30	15	26	196	6.0	12	e30	13	7.0
19	124	90	26	33	19	33	243	8.9	9.5	e35	14	1.6
20	115	73	20	35	27	76	228	13	61	e32	27	11
21	100	75	13	29	48	78	229	12	59	e18	19	53
22	80	76	13	23	41	46	238	16	15	e17	22	26
23	76	76	27	25	31	25	242	21	16	e17	29	24
24	96	77	30	23	32	12	228	33	15	e17	20	32
25	165	64	35	23	22	84	202	18	20	e25	13	31
26	185	54	35	21	13	108	203	27	22	e18	14	27
27	170	47	35	21	10	40	237	28	39	e25	13	19
28	171	47	32	22	8.5	24	205	20	24	e35	9.9	14
29	169	43	33	19	---	14	194	9.6	19	e20	13	20
30	171	60	33	18	---	18	190	12	17	e18	9.6	12
31	155	---	32	22	---	11	---	20	---	22	10	---
TOTAL	3752	3042	1093	697.1	776.1	1292.2	3753.0	1251.4	595.8	683	617.5	503.6
MEAN	121	101	35.3	22.5	27.7	41.7	125	40.4	19.9	22.0	19.9	16.8
MAX	185	163	69	35	216	119	243	192	61	41	57	53
MIN	75	43	13	9.3	3.8	4.8	3.2	6.0	6.7	13	9.6	1.6
AC-FT	7440	6030	2170	1380	1540	2560	7440	2480	1180	1350	1220	999

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1999, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	30.8	29.7	20.5	144	208	120	65.3	57.4	28.6	33.7	27.3	17.6
MAX	121	101	54.1	596	721	318	185	243	97.3	104	62.2	42.7
(WY)	1999	1999	1997	1997	1998	1995	1998	1998	1998	1998	1998	1998
MIN	2.19	3.82	1.01	11.4	6.15	12.5	12.2	11.7	7.38	14.1	11.2	4.04
(WY)	1995	1995	1995	1994	1995	1994	1994	1994	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1992 - 1999

ANNUAL TOTAL	55893.80	18056.7		
ANNUAL MEAN	153	49.5	65.8	
HIGHEST ANNUAL MEAN			134	1998
LOWEST ANNUAL MEAN			15.7	1994
HIGHEST DAILY MEAN	2250	Feb 3	243	Apr 19
LOWEST DAILY MEAN	.00	Jan 1	1.6	Sep 19
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	7.0	Apr 6
INSTANTANEOUS PEAK FLOW			521	Feb 9
INSTANTANEOUS PEAK STAGE			9.26	Feb 9
ANNUAL RUNOFF (AC-FT)	110900	35820	47680	19.60
10 PERCENT EXCEEDS	283	134	142	
50 PERCENT EXCEEDS	92	24	20	
90 PERCENT EXCEEDS	25	9.2	2.1	

e Estimated.

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—April 1992 to current year.

CHEMICAL DATA: Water years 1992–95, February 1997 to current year.

SPECIFIC CONDUCTANCE: April 1992 to current year.

WATER TEMPERATURE: April 1992 to current year.

SEDIMENT DATA: Water years 1992–95, February 1997 to current year.

PERIOD OF DAILY RECORD.—April 1992 to current year.

SPECIFIC CONDUCTANCE: April 1992 to current year.

WATER TEMPERATURE: April 1992 to current year.

INSTRUMENTATION.—Water-quality monitor since April 1992.

REMARKS.—Interruption in record was due to malfunction of the recording instruments. Specific-conductance, water-temperature, and chemical values are affected by irrigation-return flow from a drainage pipe located 30 ft upstream from gage.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 1,890 microsiemens, Sept. 13, 1992; minimum recorded, 103 microsiemens, Jan. 7, 1993.

WATER TEMPERATURE: Maximum recorded, 31.0°C, July 29, 1996, Aug. 4, 5, 1998; minimum recorded, 2.0°C, Dec. 22, 24, 1998.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 1,010 microsiemens, Feb. 5, 8; minimum recorded, 228 microsiemens, Nov. 23.

WATER TEMPERATURE: Maximum recorded, 29.5°C, July 12; minimum recorded, 2.0°C, Dec. 22, 24.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	BARO- METRIC PRES- SURE (MM HG) (00025)	OXYGEN, OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED SATUR- ATION (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT												
20...	1100	121	383	7.9	15.6	759	10.4	105	--	--	--	--
NOV												
10...	1040	94	451	8.0	12.4	762	10.3	97	--	--	--	--
DEC												
23...	1130	27	462	8.4	2.8	768	13.4	98	--	--	--	--
JAN												
13...	1120	14	765	8.0	4.9	766	12.5	97	--	--	--	--
26...	1100	21	493	8.0	8.4	759	11.5	99	--	--	--	--
FEB												
11...	1130	49	586	8.3	8.2	770	11.6	98	--	--	--	--
24...	1130	34	271	8.0	12.1	761	10.8	101	--	--	--	--
MAR												
18...	1040	24	497	8.0	13.7	761	10.3	100	--	--	--	--
23...	1120	29	531	8.2	15.1	760	10.0	100	--	--	--	--
APR												
06...	1220	15	600	8.1	10.8	758	11.7	106	--	--	--	--
27...	1140	245	553	7.8	16.8	765	9.0	93	--	--	--	--
MAY												
07...	1000	11	531	8.0	16.4	762	9.0	92	--	--	--	--
24...	1150	42	551	8.2	19.8	761	8.5	93	--	--	--	--
JUN												
01...	1220	11	693	7.4	19.2	758	8.4	92	--	--	--	--
15...	1120	37	580	7.7	22.0	758	8.4	97	--	--	--	--
JUL												
07...	1030	15	570	8.1	20.1	760	11.4	126	180	70	40	19
19...	1050	e35	443	8.0	24.6	760	12.6	152	--	--	--	--
AUG												
03...	1100	18	653	8.0	22.0	762	8.7	100	230	120	52	24
SEP												
08...	1120	11	839	8.1	20.4	759	8.3	93	290	130	63	32
21...	1600	55	596	8.1	23.4	759	8.5	100	160	71	35	18

e Estimated.

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT.DIS GRAN T. FIELD CACO3 (MG/L) (29802)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT												
20...	--	--	--	--	71	--	--	--	--	--	--	--
NOV												
10...	--	--	--	--	67	--	--	--	--	--	--	--
DEC												
23...	--	--	--	--	110	--	--	--	--	--	--	--
JAN												
13...	--	--	--	--	110	--	--	--	--	--	--	--
26...	--	--	--	--	70	--	--	--	--	--	--	--
FEB												
11...	--	--	--	--	160	--	--	--	--	--	--	--
24...	--	--	--	--	40	--	--	--	--	--	--	--
MAR												
18...	--	--	--	--	82	--	--	--	--	--	--	--
23...	--	--	--	--	75	--	--	--	--	--	--	--
APR												
06...	--	--	--	--	77	--	--	--	--	--	--	--
27...	--	--	--	--	85	--	--	--	--	--	--	--
MAY												
07...	--	--	--	--	79	--	--	--	--	--	--	--
24...	--	--	--	--	92	--	--	--	--	--	--	--
JUN												
01...	--	--	--	--	110	--	--	--	--	--	--	--
15...	--	--	--	--	110	--	--	--	--	--	--	--
JUL												
07...	42	33	1	2.9	109	68	54	.2	16	355	328	.48
19...	--	--	--	--	84	--	--	--	--	--	--	--
AUG												
03...	41	28	1	3.5	110	84	52	.2	16	414	398	.56
SEP												
08...	54	28	1	6.4	160	110	76	.2	17	520	455	.71
21...	54	42	2	2.7	91	57	78	.1	15	345	326	.47

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
OCT												
20...	.01	1.4	.04	.5	.3	.11	.05	.05	--	--	2	--
NOV												
10...	.02	1.7	.06	.3	.3	.09	.06	.07	--	--	3	--
DEC												
23...	.02	1.3	.03	.5	.2	.15	<.05	.02	--	--	1	--
JAN												
13...	.04	4.0	.20	.5	.4	.10	.07	.05	--	--	4	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
11...	<.01	.29	.03	.4	.3	.07	.03	.02	--	--	<1	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
18...	.04	2.3	.13	.6	.4	.13	.08	.07	--	--	1	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
06...	.06	1.6	.15	.7	.5	--	.17	.14	--	--	<1	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
07...	.04	2.3	.05	.8	.3	.29	.15	.13	--	--	1	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
01...	.07	3.9	.09	1	.2	.28	.17	.16	--	--	2	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
07...	.14	4.5	.03	1.3	.3	.59	.16	.12	<10	e2	<1	3.1
19...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
03...	.37	13	1.7	4.0	3.0	.52	.22	.17	<10	7	2	--
SEP												
08...	--	--	--	--	--	--	--	--	e6	17	--	--
21...	.05	2.7	.25	1.3	.5	.38	.09	.08	<10	17	--	--

e Estimated.

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

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD GF, REC (UG/L) (82680)	CARBO-FURAN FLTRD GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS- SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)
OCT												
20...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
10...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
23...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13..	<.003	<.002	<.002	<.002	<.001	<.002	.0086	<.003	<.003	<.004	.015	<.002
26..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	.032	<.002
FEB												
11..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	.124	<.002
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
18..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	e.315	.021	.173	<.002
23..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	e.019	.042	.126	e.002
APR												
06..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	e.163	.008	.048	e.002
27..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	e.007	e.005	<.004	<.020	<.002
MAY												
07..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	e.014	e.004	<.004	<.004	.006
24..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	e.031	e.011	<.010	.008	<.002
JUN												
01..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	e.016	e.035	<.010	.008	<.002
15..	<.003	<.002	e.003	<.002	.013	<.002	<.002	<.010	e.015	<.010	.007	<.002
JUL												
07..	<.003	<.002	<.002	<.002	<.010	<.002	<.002	<.003	<.003	<.004	<.004	<.002
19..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.020	<.002
AUG												
03..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	e.008	<.003	.031	.017	<.002
SEP												
08...	--	--	--	--	--	--	--	--	--	--	--	--
21..	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	.016	<.004	<.002

e Estimated.

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

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD GF, REC (UG/L) (82677)	EPTC WATER FLTRD GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METHYL AZIN- PHOS WAT FLT GF, REC (UG/L) (82686)
OCT												
20...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
10...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
23...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13..	<.002	.024	<.001	<.017	.006	<.004	<.003	<.003	<.004	<.002	<.005	<.001
26..	<.002	.017	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
FEB												
11..	<.002	.011	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
18..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	.167	<.001
23..	<.002	.008	<.001	<.017	e.003	<.004	<.003	.009	<.004	<.002	.065	<.001
APR												
06..	<.002	<.010	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	.025	<.001
27..	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	.009	<.001
MAY												
07..	<.002	.030	<.001	<.017	.104	<.004	<.003	e.003	<.004	<.002	<.005	<.001
24..	<.002	e.004	<.001	<.017	.870	<.004	<.003	.025	<.004	<.002	<.005	<.001
JUN												
01..	<.002	e.003	<.001	<.017	1.09	<.004	<.003	.054	<.004	<.002	<.005	<.001
15..	<.002	<.002	<.001	<.017	.068	.037	.018	.019	<.004	<.002	<.005	<.001
JUL												
07..	<.002	<.002	<.001	<.017	.169	.017	<.003	.027	<.004	<.002	<.005	<.020
19..	<.002	<.010	<.001	<.017	.248	.018	<.003	.024	<.004	<.002	<.020	e.252
AUG												
03..	<.002	.042	<.001	<.017	<.002	.093	<.003	.032	<.004	<.002	<.005	<.050
SEP												
08...	--	--	--	--	--	--	--	--	--	--	--	--
21..	<.002	e.004	<.001	<.017	e.003	<.004	<.003	<.003	<.004	<.002	<.005	<.001

e Estimated.

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

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	METHYL PARA- THION WAT FLT 0.7 U	METO- LACHLOR WATER DISSOLV (UG/L) (82667)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U (UG/L) (82684)	P, P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	PEB- ULATE WATER FILTRD 0.7 U (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U (UG/L) (82683)	PER- CIS WAT FLT 0.7 U (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)
OCT												
20...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
10...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
23...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13..	<.006	.010	<.004	<.004	.012	<.006	<.004	<.004	<.004	<.005	<.002	<.018
26..	<.006	.012	<.004	<.004	<.003	<.006	<.004	<.004	<.020	<.005	<.002	<.018
FEB												
11..	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
18..	<.006	.007	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
23..	<.006	.007	.010	<.004	<.003	e.002	<.004	<.004	<.004	<.005	<.002	<.018
APR												
06..	<.006	.007	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
27..	<.006	.099	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
MAY												
07..	<.006	.082	.017	<.004	<.010	e.004	<.004	.011	<.004	<.005	<.002	<.018
24..	<.006	.112	.006	.008	<.003	.010	<.004	.273	<.004	<.005	<.002	<.018
JUN												
01..	<.006	.098	.014	<.004	.028	e.005	<.004	.201	<.004	<.005	<.002	<.018
15..	<.006	.108	.014	.015	.014	.007	<.004	.055	<.004	<.005	<.002	<.018
JUL												
07..	<.006	.253	.036	.054	<.003	.015	<.004	.015	<.004	<.005	<.002	<.018
19..	.090	.090	<.004	.020	<.020	.012	<.004	<.004	.022	<.005	<.002	<.018
AUG												
03..	<.006	.047	.013	<.010	<.003	.011	<.004	.008	<.004	<.005	<.002	<.018
SEP												
08...	--	--	--	--	--	--	--	--	--	--	--	--
21..	<.006	.027	<.004	e.004	<.003	.009	<.004	<.004	<.004	<.005	<.002	<.018

e Estimated.

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

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT											
20...	--	--	--	--	--	--	--	--	--	--	--
NOV											
10...	--	--	--	--	--	--	--	--	--	--	--
DEC											
23...	--	--	--	--	--	--	--	--	--	--	--
JAN											
13...	<.003	<.004	<.013	<.007	.014	<.010	<.007	<.013	<.002	<.001	.021
26...	<.003	<.004	<.013	<.007	.030	<.010	<.007	<.013	<.002	<.001	<.010
FEB											
11...	<.003	<.004	<.013	<.007	.048	<.010	<.007	<.013	<.002	<.001	<.010
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
18...	<.003	<.004	<.013	<.007	.125	<.010	<.007	<.013	<.002	<.001	.092
23...	<.003	<.004	<.013	<.007	.493	<.010	<.007	<.013	<.002	<.001	.025
APR											
06...	<.003	<.004	<.013	<.007	.773	<.010	<.007	<.013	<.002	<.001	.010
27...	<.003	<.004	<.013	<.007	.668	<.010	<.007	<.013	<.002	<.001	.023
MAY											
07...	<.003	<.004	<.013	<.007	.311	<.010	<.007	<.013	<.002	<.001	.019
24...	<.003	<.004	<.013	<.007	.032	<.010	<.007	<.013	<.002	<.001	.065
JUN											
01...	<.003	<.004	<.013	<.007	.040	<.010	<.007	<.013	<.002	<.001	.265
15...	<.003	<.004	<.013	<.007	.102	<.010	<.007	<.013	<.002	<.001	.066
JUL											
07...	<.003	<.004	.238	<.007	.011	<.010	<.007	<.013	<.002	<.001	.104
19...	<.003	<.004	.210	<.007	.175	<.010	<.007	<.013	<.002	<.001	.073
AUG											
03...	<.003	<.004	<1.00	<.007	.014	<.010	<.007	<.013	<.002	<.001	.094
SEP											
08...	--	--	--	--	--	--	--	--	--	--	--
21...	<.003	<.004	.043	<.007	.024	<.010	<.007	<.013	<.002	<.001	.008

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

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. THAN .062 MM (70331)
OCT						
20...N	1100	121	15.6	67	22	95
NOV						
10...N	1040	94	12.4	29	7.4	97
DEC						
23...N	1130	27	2.8	45	3.3	100
JAN						
13...N	1120	14	4.9	26	.98	96
26...N	1100	21	8.4	--	--	--
FEB						
11...N	1130	49	8.2	45	6.0	98
24...N	1130	34	12.1	--	--	--
MAR						
18...N	1040	24	13.7	42	2.7	100
23...N	1120	29	15.1	45	3.5	100
APR						
06...N	1220	15	10.8	33	1.3	100
27...N	1140	245	16.8	187	124	98
MAY						
07...N	1000	11	16.4	131	3.9	98
24...N	1150	42	19.8	475	54	99
JUN						
01...N	1220	11	19.2	129	3.8	99
15...N	1120	37	22.0	243	24	100
JUL						
07...N	1030	15	20.1	371	15	99
19...N	1050	e35	24.6	581	55	99
AUG						
03...N	1100	18	22.0	471	23	98
SEP						
08...N	1120	11	20.4	206	6.1	91
21...N	1600	55	23.4	405	60	99

e Estimated.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	496	446	402	372	519	442	488	386	643	619	459	403
2	451	399	393	385	648	492	552	459	699	639	484	459
3	402	377	415	393	625	338	556	398	735	694	497	272
4	387	362	463	415	348	315	398	311	802	735	449	343
5	382	360	474	439	660	310	556	387	1010	802	457	345
6	374	355	474	439	664	554	564	370	980	963	383	344
7	363	342	463	430	677	577	692	475	968	936	419	383
8	450	340	456	398	577	461	723	434	1010	968	432	419
9	393	350	444	433	589	538	656	494	---	---	464	431
10	382	335	455	407	656	582	651	427	631	463	467	455
11	449	348	450	411	718	656	774	463	620	544	486	467
12	530	449	468	444	751	692	774	630	657	619	476	454
13	589	530	487	451	747	634	770	614	681	656	459	454
14	588	565	484	450	643	589	721	450	699	681	488	458
15	595	315	492	470	767	604	750	597	715	699	503	488
16	340	320	495	326	678	531	644	597	723	713	522	503
17	345	312	379	294	579	504	621	582	870	607	535	493
18	355	334	342	293	521	487	633	580	720	672	502	493
19	365	353	346	318	488	470	632	522	779	563	507	501
20	387	360	359	317	580	469	568	511	691	486	503	477
21	404	382	360	305	657	580	561	496	978	510	527	485
22	409	400	318	281	734	657	579	508	548	423	532	526
23	435	400	290	228	660	321	509	477	423	286	537	530
24	431	413	520	229	365	314	484	470	307	268	549	536
25	422	380	550	378	536	279	485	473	410	307	556	548
26	389	372	565	492	334	265	500	485	401	306	700	552
27	437	376	603	443	309	268	502	486	480	401	662	647
28	567	404	555	441	315	274	524	489	480	390	670	661
29	431	396	556	438	370	297	663	524	---	---	663	640
30	429	382	457	409	341	298	668	601	---	---	640	563
31	409	383	---	---	459	341	619	591	---	---	565	561
MONTH	595	312	603	228	767	265	774	311	---	---	700	272
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	574	562	579	536	711	687	767	691	624	528	835	761
2	584	574	544	523	714	700	709	644	566	512	790	718
3	584	579	535	431	725	699	696	649	706	527	859	786
4	594	581	538	431	734	697	699	690	687	643	826	677
5	602	594	562	522	697	673	691	642	687	563	677	630
6	608	598	554	461	697	689	642	594	576	563	699	676
7	626	604	559	508	726	671	594	570	579	574	782	697
8	651	626	602	559	810	609	585	571	574	565	876	781
9	674	651	619	600	804	590	595	584	565	520	921	841
10	689	674	600	506	891	777	600	587	539	522	920	749
11	761	689	506	490	804	660	587	501	586	532	749	674
12	828	761	527	503	844	712	525	484	610	564	775	695
13	848	705	545	527	863	709	529	485	568	553	780	769
14	705	625	548	521	819	521	486	470	602	568	770	672
15	677	608	537	520	626	521	471	436	602	563	672	609
16	662	534	551	537	755	601	476	454	629	563	624	545
17	597	548	554	549	790	696	476	452	612	566	549	524
18	720	584	570	551	787	709	484	465	769	592	524	504
19	713	549	590	570	778	705	465	436	850	769	504	486
20	575	528	586	572	758	701	456	444	828	717	504	458
21	615	517	577	569	706	675	469	443	717	552	640	484
22	634	519	581	574	713	656	481	465	725	582	645	579
23	560	497	594	579	713	656	509	480	582	465	592	546
24	544	501	592	531	701	659	545	509	671	514	563	528
25	543	500	532	495	716	701	556	544	932	671	549	530
26	588	497	551	505	728	691	571	542	958	881	562	548
27	554	509	573	550	739	728	599	571	912	852	570	562
28	541	476	601	572	735	723	604	590	982	907	603	569
29	511	475	649	601	726	716	606	568	975	825	624	603
30	571	504	696	649	738	722	730	594	825	695	644	623
31	---	---	704	688	---	---	791	598	872	761	---	---
MONTH	848	475	704	431	891	521	791	436	982	465	921	458

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	20.5	19.0	15.5	14.5	13.0	12.0	8.5	6.5	10.0	8.0	16.5	14.0
2	20.5	19.0	15.5	14.0	13.5	11.5	8.0	6.5	9.5	7.5	16.0	12.5
3	19.5	18.0	15.5	14.5	13.0	11.5	8.0	7.5	10.5	8.0	15.5	14.0
4	19.0	17.5	16.0	14.5	11.5	10.0	7.5	7.0	10.0	8.5	15.0	12.0
5	19.0	17.0	15.5	14.5	10.0	8.0	8.5	6.5	10.0	7.0	14.0	11.5
6	19.5	17.5	14.5	13.5	9.5	8.0	8.5	6.0	9.0	8.5	14.0	12.0
7	20.5	18.0	14.0	13.0	9.0	7.0	8.5	6.0	11.5	9.0	14.0	11.5
8	21.0	17.5	13.5	12.5	9.0	8.0	8.0	6.0	12.5	10.0	12.5	11.5
9	20.0	17.5	13.5	12.0	8.5	7.5	6.0	5.5	12.0	10.0	13.0	11.0
10	19.0	17.5	13.0	12.0	8.0	7.0	5.5	5.0	10.0	7.0	13.0	10.5
11	18.5	16.5	12.5	12.0	8.5	7.0	5.5	5.0	9.5	8.0	14.0	11.0
12	18.5	17.5	13.5	12.0	8.0	7.0	5.5	4.0	9.0	6.5	14.5	11.0
13	19.0	17.0	13.5	12.0	9.0	7.5	6.0	4.5	10.0	8.0	14.5	11.5
14	19.0	17.0	13.5	12.0	9.0	8.0	7.5	5.0	11.0	9.0	14.5	12.0
15	18.0	16.0	14.0	12.5	9.0	8.0	8.0	6.0	10.5	8.0	14.5	12.5
16	16.5	14.5	14.0	13.5	9.5	7.5	10.0	8.0	10.5	9.5	13.5	11.5
17	16.0	13.5	14.0	13.0	9.5	8.0	11.5	9.5	13.5	10.0	15.5	11.0
18	16.5	14.5	14.0	12.0	9.5	8.0	12.5	11.0	13.0	12.0	16.5	13.0
19	17.0	15.0	13.0	12.0	9.0	7.5	13.0	12.0	13.0	10.5	16.0	14.0
20	17.0	15.5	12.5	11.0	7.5	5.5	13.0	12.0	12.0	10.5	15.0	13.5
21	17.5	15.5	13.0	11.5	5.5	3.0	12.5	11.0	12.0	10.5	16.5	13.0
22	18.0	16.0	14.0	12.5	3.5	2.0	12.5	10.5	13.5	10.5	17.0	13.5
23	18.0	16.0	14.5	13.5	3.5	2.5	12.0	10.5	13.5	11.0	16.5	14.5
24	17.5	16.0	14.5	13.0	4.0	2.0	10.5	9.0	14.0	11.5	17.0	14.0
25	17.0	15.0	14.0	12.5	4.0	3.0	10.5	9.5	14.0	12.5	17.5	15.0
26	16.5	15.0	14.0	12.0	4.5	3.0	9.5	8.0	13.5	11.0	18.0	16.0
27	17.0	15.5	14.0	12.5	5.0	3.0	8.5	6.5	14.5	11.5	17.0	14.0
28	17.0	16.0	13.0	12.0	5.5	3.5	8.5	7.0	15.0	12.0	16.5	13.0
29	17.0	16.0	12.5	11.5	6.0	4.0	8.5	6.5	---	---	16.0	13.0
30	16.0	15.0	13.0	11.5	6.5	5.0	8.5	7.5	---	---	17.0	13.5
31	15.5	14.0	---	---	8.5	6.5	10.0	8.0	---	---	16.0	13.0
MONTH	21.0	13.5	16.0	11.0	13.5	2.0	13.0	4.0	15.0	6.5	18.0	10.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.0	13.0	19.5	16.0	22.0	18.5	28.5	25.0	25.5	20.0	22.5	18.5
2	16.0	12.0	18.0	16.0	20.5	18.0	27.0	23.0	26.5	21.0	23.5	18.5
3	14.0	11.5	17.0	15.0	19.5	15.0	25.0	21.0	27.0	21.5	23.0	19.0
4	13.0	9.0	18.5	14.0	21.0	15.5	23.5	19.5	27.0	21.5	22.5	20.0
5	12.5	11.0	20.0	15.5	24.0	18.0	25.0	20.0	25.5	21.0	24.0	20.5
6	13.5	10.0	20.5	16.5	23.0	19.5	24.5	21.5	24.0	21.5	25.0	20.5
7	12.5	10.5	19.5	16.5	20.5	18.5	23.5	20.0	25.0	20.5	24.0	20.0
8	12.0	9.5	18.5	14.0	21.0	16.0	26.0	20.0	24.5	20.5	24.5	20.0
9	13.0	8.0	18.5	14.0	21.0	17.0	26.5	22.0	24.0	21.0	25.0	20.0
10	13.0	9.0	19.0	14.5	22.0	17.5	27.0	22.0	23.5	20.5	24.0	21.0
11	11.5	10.5	21.0	16.0	23.0	18.0	28.0	23.5	23.0	20.5	24.0	20.5
12	17.0	10.0	23.5	17.5	23.0	18.5	29.5	26.0	23.5	20.0	23.5	21.0
13	18.5	13.0	19.5	15.0	24.0	18.0	29.0	27.0	23.5	19.5	23.5	21.0
14	19.5	16.0	20.0	15.0	25.5	21.0	28.5	25.0	23.0	19.5	23.5	21.5
15	21.0	17.0	20.5	12.0	24.5	21.5	27.5	24.0	23.5	19.5	24.0	21.5
16	22.5	19.0	19.0	14.0	25.5	20.5	26.0	23.5	24.0	20.0	24.0	21.5
17	23.0	19.5	20.5	15.5	25.5	21.0	25.0	21.5	25.0	20.5	24.0	22.0
18	22.5	19.5	21.0	16.5	26.5	21.5	24.5	21.5	23.0	20.5	24.0	21.0
19	22.0	19.5	21.5	16.0	25.0	20.5	24.5	23.0	25.5	18.5	23.0	21.0
20	21.5	19.5	19.5	16.5	26.5	21.0	24.0	22.0	26.5	20.5	23.0	20.0
21	20.0	18.0	20.0	16.5	26.0	23.0	23.5	21.5	26.0	21.0	25.0	22.5
22	18.5	16.5	21.5	17.5	27.0	23.0	23.5	22.0	26.5	21.5	25.5	24.0
23	16.5	14.0	23.5	18.5	28.0	24.0	23.5	22.5	28.0	24.0	26.0	24.5
24	19.0	15.0	23.0	19.0	28.0	23.0	23.5	21.5	27.5	22.5	26.0	24.5
25	19.0	15.5	23.5	18.5	27.0	21.0	23.5	21.5	27.5	22.0	26.0	24.5
26	19.0	16.0	25.0	20.0	27.0	19.5	24.0	22.5	25.0	22.5	26.0	24.0
27	19.0	16.0	24.0	20.0	27.0	22.0	24.0	22.5	29.0	21.5	24.5	22.0
28	17.5	14.5	22.5	19.5	28.0	22.5	24.0	22.5	28.0	21.5	22.0	20.0
29	15.5	11.5	23.0	17.5	28.5	23.5	24.0	22.0	26.5	23.0	22.5	20.5
30	18.5	14.0	24.0	17.0	29.0	25.0	25.0	22.0	25.0	21.5	22.5	21.0
31	---	---	21.5	18.0	---	---	25.5	19.5	23.0	18.0	---	---
MONTH	23.0	8.0	25.0	12.0	29.0	15.0	29.5	19.5	29.0	18.0	26.0	18.5

11274550 SAN JOAQUIN RIVER NEAR CROWS LANDING, CA

LOCATION.—Lat 37°25'42", long 121°00'12", in NE 1/4 NE 1/4 sec.7, T.6 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on right bank 50 ft downstream from bridge on Crows Landing Road, and 4.2 miles northeast of Crows Landing.

DRAINAGE AREA.—9,694 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1995 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Records good. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 38,000 ft³/s, Jan. 28, 1997, gage height, 59.23 ft, from rating curve extended above 32,100 ft³/s; minimum daily, 432 ft³/s, Sept. 18, 1997.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2100	1660	1380	e1110	1640	2420	1170	1710	735	527	652	668
2	2130	1680	1310	e1120	1590	2310	1080	1920	735	501	703	631
3	2380	1690	e1360	e1110	1550	2300	1040	2100	714	520	710	614
4	2510	1670	e1500	e1100	1500	2330	1040	2050	713	523	718	631
5	2550	1590	e1600	e1090	1450	2500	1030	2070	736	598	675	615
6	2500	1490	e1700	e1080	1410	2430	1060	1950	764	607	590	635
7	2490	1410	e1760	e1070	1400	2350	1070	1920	903	610	600	544
8	2410	1390	e1790	e1080	1440	2290	1110	2120	898	596	635	541
9	2460	1310	e1860	e1080	1720	2240	1190	2130	863	597	661	546
10	2480	1240	e1920	e1090	3120	2140	1380	2070	840	569	689	530
11	2530	1210	e1950	e1100	4350	2070	1530	1870	751	575	653	530
12	2590	1180	e1920	e1120	4910	2080	1580	1720	688	558	604	583
13	2540	1150	e1900	1160	4830	2020	1980	1690	653	523	548	662
14	2590	1120	e1890	1170	4170	1770	2250	1600	745	503	583	623
15	2620	1090	1980	1180	3390	1700	2330	1500	735	518	587	587
16	2590	1050	1990	1190	3060	1650	2290	1170	690	519	587	555
17	2540	1030	1980	1200	2920	1670	2290	1060	598	514	557	596
18	2120	1020	1800	1260	2890	1690	2420	975	537	533	556	613
19	1900	1010	1520	1330	3110	1580	2520	910	540	580	533	591
20	1610	988	1480	1390	3320	1560	2460	853	563	568	527	581
21	1420	1050	1440	1460	3740	1530	2460	822	673	576	560	622
22	1300	1080	1360	1610	4120	1490	2540	750	594	565	632	602
23	1330	1070	1320	2280	4000	1440	2870	764	568	510	659	538
24	1350	1090	1280	2730	3740	1420	3050	903	585	531	605	491
25	1550	1090	1260	2950	3320	1550	3090	907	613	562	579	458
26	1620	1060	1200	2990	3070	1640	2890	890	577	631	509	530
27	1670	1040	1170	2950	2920	1580	2480	870	648	668	549	583
28	1740	1050	1150	2440	2760	1500	2210	808	652	660	616	543
29	1800	1080	1140	2180	---	1420	1900	745	640	584	630	558
30	1780	1260	1120	2030	---	1350	1790	780	561	606	677	562
31	1660	---	1110	1760	---	1250	---	756	---	633	677	---
TOTAL	64860	36848	48140	48410	81440	57270	58100	42383	20512	17565	19061	17363
MEAN	2092	1228	1553	1562	2909	1847	1937	1367	684	567	615	579
MAX	2620	1690	1990	2990	4910	2500	3090	2130	903	668	718	668
MIN	1300	988	1110	1070	1400	1250	1030	745	537	501	509	458
AC-FT	128600	73090	95490	96020	161500	113600	115200	84070	40690	34840	37810	34440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1999, BY WATER YEAR (WY)

MEAN	1523	1001	1945	7599	12090	5657	4816	4375	3577	2531	949	930
MAX	2338	1228	4364	25600	23390	10130	13980	12090	11890	8176	1757	1842
(WY)	1996	1999	1997	1997	1997	1998	1998	1998	1998	1998	1998	1998
MIN	648	751	866	960	2909	1847	1353	1238	605	567	612	501
(WY)	1998	1998	1998	1996	1999	1999	1997	1997	1997	1999	1997	1997

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1996 - 1999	
ANNUAL TOTAL	2553221		511952			
ANNUAL MEAN	6995		1403		3869	
HIGHEST ANNUAL MEAN					6775	
LOWEST ANNUAL MEAN					1403	
HIGHEST DAILY MEAN	24300	Feb 11	4910	Feb 12	37600	Jan 28 1997
LOWEST DAILY MEAN	514	Jan 1	458	Sep 25	432	Sep 18 1997
ANNUAL SEVEN-DAY MINIMUM	589	Jan 1	524	Jul 12	476	Aug 29 1997
INSTANTANEOUS PEAK FLOW			5000	Feb 12	38000	Jan 28 1997
INSTANTANEOUS PEAK STAGE			46.93	Feb 12	59.23	Jan 28 1997
ANNUAL RUNOFF (AC-FT)	5064000		1015000		2803000	
10 PERCENT EXCEEDS	14600		2520		12000	
50 PERCENT EXCEEDS	4210		1180		1340	
90 PERCENT EXCEEDS	1210		562		589	

e Estimated.

11274550 SAN JOAQUIN RIVER NEAR CROWS LANDING, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—January 1996 to current year.

SPECIFIC CONDUCTANCE: January 1996 to current year.

WATER TEMPERATURE: January 1996 to current year.

PERIOD OF DAILY RECORD.—January 1996 to current year.

SPECIFIC CONDUCTANCE: January 1996 to current year.

WATER TEMPERATURE: January 1996 to current year.

INSTRUMENTATION.—Water-quality monitor since January 1996.

REMARKS.— Specific conductance and water temperature values are affected by irrigation return flow.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 1,690 microsiemens, June 20, 1999; minimum recorded 120 microsiemens, July 11, 12, 16, 1998.

WATER TEMPERATURE: Maximum recorded, 31.0°C, July 12, 13, 1999; minimum recorded, 4.0°C, Dec. 24, 1998.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 1,690 microsiemens, June 20; minimum recorded, 259 microsiemens, Oct. 3, 4.

WATER TEMPERATURE: Maximum recorded, 31.0°C, July 12, 13; minimum recorded, 4.0°C, Dec. 24.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	366	355	620	577	1000	713	1010	978	943	892	822	742
2	378	334	597	564	867	710	1030	1010	1000	943	845	819
3	334	259	579	568	880	654	1030	1020	1020	1000	867	824
4	268	259	598	571	662	610	1030	1010	1040	1010	878	821
5	283	267	632	596	627	612	1060	1020	1070	1040	821	767
6	295	279	707	619	614	536	1070	1030	1090	1070	846	811
7	295	285	739	686	536	499	1040	1020	1100	1060	861	845
8	311	293	769	719	499	488	1050	1030	1060	1040	870	846
9	314	300	798	730	490	483	1030	1000	1050	846	879	862
10	330	312	824	780	485	454	1050	1000	846	380	977	865
11	328	317	863	810	455	448	1020	1000	387	358	997	874
12	339	323	899	857	483	452	1020	981	413	364	927	878
13	345	327	903	871	490	482	983	962	464	413	1010	911
14	338	321	923	881	483	472	994	953	542	464	1120	1010
15	334	318	962	902	474	461	1040	952	588	542	1170	1120
16	344	320	1010	952	472	461	999	942	600	579	1190	1150
17	380	328	996	957	520	472	957	935	617	591	1180	1130
18	479	380	1020	967	676	520	976	936	629	601	1220	1130
19	511	479	1030	973	737	676	977	953	601	557	1300	1220
20	631	511	1030	963	725	687	953	919	559	518	1300	1220
21	670	626	1070	986	715	699	924	884	518	467	1320	1270
22	735	665	1020	987	803	713	885	838	470	434	1360	1270
23	741	673	1030	990	817	801	838	526	522	459	1380	1320
24	688	661	1030	985	815	797	526	493	577	511	1380	1310
25	694	565	1020	984	856	815	493	454	609	573	1380	1270
26	592	565	1070	1000	945	855	490	477	644	609	1340	1270
27	593	561	1100	1060	966	944	557	489	671	644	1350	1310
28	585	561	1100	1090	969	956	659	557	742	671	1390	1330
29	592	564	1100	1080	979	965	696	658	---	---	1400	1350
30	597	571	1080	959	978	956	760	696	---	---	1450	1360
31	618	586	---	---	990	975	895	760	---	---	1520	1450
MONTH	741	259	1100	564	1000	448	1070	454	1100	358	1520	742

11274550 SAN JOAQUIN RIVER NEAR CROWS LANDING, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1560	1490	781	690	1280	1200	1460	1360	1290	1150	1160	1060
2	1620	1550	697	563	1290	1190	1490	1400	1260	1090	1160	1060
3	1620	1570	593	561	1330	1270	1540	1340	1230	1160	1260	1100
4	1590	1470	607	566	1340	1230	1480	1300	1250	1140	1230	1050
5	1540	1470	615	556	1230	1160	1400	1180	1240	1180	1180	1120
6	1500	1420	626	558	1220	1140	1300	1170	1430	1230	1130	1060
7	1420	1330	627	535	1150	1060	1290	1260	1360	1220	1160	1110
8	1400	1320	561	487	1170	1080	1350	1220	1370	1240	1180	1110
9	1320	1220	563	518	1250	1150	1350	1190	1370	1210	1220	1110
10	1250	874	573	519	1280	1170	1410	1180	1260	1130	1160	1110
11	898	857	701	563	1300	1240	1430	1270	1280	1150	1140	1080
12	894	824	720	639	1440	1280	1370	1240	1320	1240	1080	1020
13	828	637	676	614	1490	1390	1380	1220	1370	1290	1020	993
14	649	601	675	608	1400	1240	1410	1320	1390	1290	1020	953
15	655	612	789	653	1280	1210	1400	1280	1350	1270	1100	966
16	671	605	1040	771	1330	1210	1320	1210	1350	1230	1160	1100
17	664	593	1120	1020	1480	1320	1320	1220	1250	1180	1200	1120
18	634	582	1160	1100	1630	1480	1310	1230	1260	1200	1170	1030
19	621	555	1180	1110	1670	1510	1330	1170	1330	1210	1070	988
20	611	559	1200	1130	1690	1460	1310	1100	1390	1250	1030	939
21	597	558	1190	1110	1490	1390	1270	1160	1390	1210	973	937
22	600	502	1230	1130	1510	1420	1300	1160	1260	1090	1030	926
23	533	441	1260	1190	1560	1440	1420	1290	1200	1070	1160	1020
24	488	452	1240	1030	1460	1340	1420	1310	1140	1070	1280	1140
25	482	441	1070	1030	1360	1250	1430	1290	1220	1100	1300	1250
26	521	458	1080	1030	1420	1260	1360	1180	1380	1220	1260	1110
27	593	506	1130	1070	1420	1240	1190	1140	1380	1300	1130	1010
28	647	581	1210	1100	1400	1240	1260	1160	1320	1190	1070	1010
29	724	625	1250	1210	1350	1200	1320	1230	1260	1170	1070	984
30	756	701	1250	1160	1460	1340	1330	1260	1230	1100	1020	976
31	---	---	1220	1160	---	---	1270	1180	1190	1120	---	---
MONTH	1620	441	1260	487	1690	1060	1540	1100	1430	1070	1300	926

SAN JOAQUIN RIVER BASIN

11274550 SAN JOAQUIN RIVER NEAR CROWS LANDING, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.5	18.5	16.0	15.0	13.0	12.5	9.5	8.5	10.5	9.5	14.5	13.5
2	19.0	18.0	15.5	15.0	13.0	12.5	9.0	8.5	10.5	9.5	15.0	13.5
3	18.5	17.5	15.5	15.0	13.0	12.0	9.0	8.5	11.0	9.5	15.0	14.5
4	18.0	17.0	15.5	15.0	12.0	10.5	9.0	8.5	11.0	10.0	14.5	13.5
5	17.5	16.5	15.5	15.0	10.5	9.5	8.5	8.5	11.5	10.0	13.5	12.5
6	18.0	16.5	15.0	14.0	9.5	9.0	8.5	8.0	11.0	11.0	12.5	12.0
7	18.0	16.5	14.5	13.5	9.0	8.0	8.0	7.5	11.5	10.5	13.0	11.5
8	18.0	17.0	14.0	13.5	8.5	8.0	8.0	7.5	12.0	11.5	12.5	11.5
9	18.0	17.0	14.0	13.0	8.5	7.5	7.5	7.5	12.0	11.5	12.5	11.5
10	17.5	16.5	13.5	13.0	8.0	7.5	7.5	7.0	11.5	10.0	12.0	11.0
11	17.0	16.0	13.0	12.5	8.0	7.5	7.0	6.5	10.5	9.5	13.0	12.0
12	17.0	16.0	13.0	12.0	8.0	7.5	6.5	6.0	10.0	9.5	13.5	12.0
13	17.0	15.5	13.5	12.5	8.5	8.0	7.0	6.0	10.0	9.5	14.0	12.5
14	17.0	16.0	13.5	12.5	9.0	8.5	7.0	6.5	10.5	10.0	14.0	13.0
15	16.5	16.0	14.0	12.5	9.0	8.5	8.5	7.0	11.0	10.0	14.0	13.0
16	16.0	14.5	14.0	13.5	9.5	8.5	10.5	8.5	11.0	10.5	14.0	13.0
17	15.5	14.0	14.5	13.5	9.5	8.5	12.0	10.5	12.0	11.0	14.5	13.0
18	16.0	14.5	14.0	13.0	9.5	9.0	13.0	12.0	12.0	11.5	15.0	13.5
19	16.5	15.0	13.5	12.5	9.5	9.0	13.0	12.5	12.0	11.0	15.0	14.5
20	17.0	15.5	13.0	12.0	9.0	7.5	13.0	13.0	11.5	11.0	15.0	14.0
21	17.5	16.0	13.0	12.0	7.5	6.0	13.0	12.0	11.0	10.5	16.0	14.0
22	17.5	16.5	14.0	12.5	6.0	5.5	12.5	12.0	11.0	10.5	16.5	14.5
23	18.0	16.5	14.5	14.0	5.5	5.0	12.5	11.5	11.5	11.0	16.5	15.5
24	17.5	16.5	14.5	14.0	5.0	4.0	11.5	10.5	12.0	11.5	17.0	16.0
25	16.5	15.5	14.0	13.0	5.5	4.5	11.0	10.0	12.5	12.0	17.5	16.0
26	16.5	15.5	13.5	12.5	6.0	5.0	10.0	9.5	12.5	12.0	18.0	16.5
27	17.0	16.0	13.5	13.0	6.5	5.5	9.5	9.0	13.0	12.0	17.5	16.0
28	16.5	16.0	13.5	13.0	7.0	6.0	9.5	9.0	13.5	12.5	17.0	15.5
29	17.0	16.0	13.0	12.5	7.5	6.5	9.5	8.5	---	---	16.5	15.0
30	16.5	15.5	13.0	12.5	8.0	7.0	9.0	8.5	---	---	17.0	15.0
31	16.0	15.0	---	---	9.0	7.5	10.0	9.0	---	---	16.5	15.0
MONTH	19.5	14.0	16.0	12.0	13.0	4.0	13.0	6.0	13.5	9.5	18.0	11.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.0	14.5	19.0	16.5	24.5	22.0	29.5	26.5	26.0	22.5	23.0	20.5
2	16.0	14.0	18.5	17.0	23.0	21.0	29.0	26.0	27.0	23.5	24.0	20.5
3	15.0	13.5	17.0	16.0	21.0	19.0	28.5	25.0	27.5	24.0	24.0	21.5
4	14.0	11.5	16.5	14.5	22.0	19.0	26.0	23.0	27.5	24.5	24.0	21.5
5	13.5	13.0	17.5	15.0	24.0	20.5	26.0	22.0	26.5	24.0	25.0	22.0
6	14.0	12.0	19.0	16.5	24.5	22.0	26.0	23.0	26.0	23.5	25.5	22.5
7	13.5	13.0	19.0	17.0	23.5	21.0	25.5	23.0	25.0	22.0	26.0	23.0
8	13.0	11.5	18.0	16.5	23.0	20.5	27.0	23.0	25.5	22.0	25.5	23.0
9	13.5	11.0	17.0	15.5	23.5	20.5	27.5	24.0	25.0	22.5	25.5	23.0
10	13.5	12.0	17.5	15.5	23.5	21.0	28.0	24.5	25.0	22.5	25.0	22.0
11	13.0	13.0	19.0	16.0	24.5	21.5	29.0	25.0	25.0	22.5	25.0	22.0
12	15.0	12.5	20.5	18.0	25.0	21.5	31.0	27.0	25.5	22.5	25.0	22.0
13	16.5	14.0	20.0	18.0	25.0	22.0	31.0	28.5	25.0	22.0	24.5	22.5
14	17.5	15.5	19.5	17.5	25.5	22.5	30.5	27.5	25.0	22.0	24.5	22.0
15	19.0	17.0	19.0	17.0	25.5	23.0	29.0	25.5	25.5	22.0	25.0	22.5
16	20.0	18.0	20.0	17.0	25.5	22.0	28.0	24.5	26.5	22.5	24.5	22.5
17	21.0	19.0	21.5	18.0	26.5	22.5	26.5	23.0	27.0	23.0	24.5	22.0
18	20.0	19.0	22.0	19.5	27.0	23.5	26.5	22.5	26.5	23.5	24.0	22.0
19	19.5	18.0	22.0	19.5	26.5	23.0	26.0	22.5	25.5	22.0	23.5	21.5
20	19.0	18.0	22.0	20.0	26.5	22.5	25.5	22.5	26.0	22.5	24.0	21.5
21	18.5	17.0	22.5	19.5	26.5	24.0	25.5	22.0	26.0	23.0	24.5	21.5
22	17.5	16.0	23.5	20.5	28.0	24.0	26.0	22.5	27.0	23.0	25.5	23.0
23	16.0	14.5	24.5	21.5	29.0	25.5	26.0	23.0	28.0	24.5	25.5	23.5
24	16.5	15.0	24.5	22.0	28.5	25.5	25.5	22.5	28.0	24.5	25.5	23.0
25	16.5	15.5	25.0	22.0	27.0	24.0	27.0	22.5	28.0	25.0	25.5	23.0
26	17.0	16.0	26.5	23.0	26.5	23.0	27.0	24.0	27.5	24.5	25.0	22.5
27	17.5	16.0	26.0	24.0	27.0	23.5	26.5	23.5	27.5	23.0	23.5	21.0
28	16.5	15.0	25.5	23.0	27.5	24.0	26.0	23.0	27.5	24.5	22.0	19.0
29	16.0	13.5	25.0	22.5	29.0	25.5	26.0	23.0	28.0	25.0	23.0	20.0
30	18.0	15.0	24.5	21.5	29.5	26.0	26.0	22.5	27.0	24.0	23.5	21.5
31	---	---	25.0	22.0	---	---	26.0	22.5	24.5	21.5	---	---
MONTH	21.0	11.0	26.5	14.5	29.5	19.0	31.0	22.0	28.0	21.5	26.0	19.0

11274560 TURLOCK IRRIGATION DISTRICT LATERAL NO. 5 NEAR PATTERSON, CA

LOCATION.—Lat 37°27'52", long 121°01'52", in SE 1/4 SE 1/4 sec.25, T.5 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, on right bank, at upstream side of abandoned bridge, upstream of bridge crossing on Carpenter Road, and 7.2 mi. east of Patterson.

PERIOD OF RECORD.—April 1992 to December 1994, October 1998 to September 1999.

CHEMICAL DATA: April 1992 to November 1994, October 1998 to September 1999.

SPECIFIC CONDUCTANCE: April 1992 to December 1994.

WATER TEMPERATURE: April 1992 to December 1994.

SEDIMENT DATA: April 1992 to November 1994, October 1998 to September 1999.

PERIOD OF DAILY RECORD.—May 1992 to December 1994.

SPECIFIC CONDUCTANCE: May 1992 to December 1994.

WATER TEMPERATURE: May 1992 to December 1994.

INSTRUMENTATION.—Water-quality monitor since May 1992.

REMARKS.—Flows consist of return water from irrigation areas Discharge data furnished by Turlock Irrigation District (not reviewed by U.S. Geological Survey).

EXTREMES FOR PERIOD OF DAILY RECORD (May 1992 to December 1994):—

SPECIFIC CONDUCTANCE: Maximum recorded, 3,060 microsiemens, Oct. 8, 1994; minimum recorded, 204 microsiemens, May 29, 1994.

WATER TEMPERATURE: Maximum recorded, 31.5°C, July 2, 1994; minimum recorded 7.0°C, Jan. 3, 1993.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L CAC03) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
SEP	21... 1440	80	599	8.0	23.0	760	11.4	134	130	36	10	67
DATE	SODIUM PERCENT (00932)	SODIUM RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT. DIS GRAN T. FIELD CACO3 (MG/L) (29802)	SULFATE DIS-SOLVED (MG/L AS S04) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
SEP	21... 52	3	4.2	135	28	63	.2	30	363	351	.49	.27
DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	2,6-DI-ETHYL ANILINE, WAT FLT 0.7 U (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC (UG/L) (46342)
SEP	21... 5.8	.85	1.6	1.4	1.8	1.7	1.5	e6	27	<.003	<.002	<.002
DATE	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER, FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER, FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER, FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	
SEP	21...	.012	.008	<.002	<.002	<.003	<.003	.005	<.004	<.002	e.006	.012

e Estimated.

< Actual value known to be less than value shown.

11274560 TURLOCK IRRIGATION DISTRICT LATERAL NO. 5 NEAR PATTERSON, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER 0.7 U (UG/L) (82677)	EPTC WATER FLTRD 0.7 U (UG/L) (82668)	ETHAL-ALIN WAT FLT 0.7 U (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL-AZIN- PHOS WAT FLT 0.7 U (UG/L) (82686)	METHYL-PARA-THION WAT FLT 0.7 U (UG/L) (82667)
SEP 21...	<.001	<.017	e.003	<.004	<.003	<.003	.019	<.002	<.005	<.010	<.006
DATE	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U (UG/L) (82669)	PENDI-ALIN WAT FLT 0.7 U (UG/L) (82683)	PER-CIS WAT FLT 0.7 U (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U (UG/L) (82664)	PRO-METON, DISS, REC (UG/L) (04037)
SEP 21...	.007	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
DATE	PRON-AMIDE WATER FLTRD 0.7 U (UG/L) (82676)	PRO-PANIL WATER FLTRD 0.7 U (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U (UG/L) (82685)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U (UG/L) (82661)
SEP 21...	<.003	<.004	<.013	<.007	.009	<.010	<.007	<.013	<.002	<.001	<.002

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER-ATURE (DEG C) (00010)	SEDI-MENT, DIS-SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
SEP 21...	1440	80	23.0	19	4.1

e Estimated.
 < Actual value known to be less than value shown.

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 sea level, from topographic map. Prior to June 1965, crest-stage gage at site 1.0 mi downstream at different datum.

REMARKS.—Records good except those below 0.1 ft³/s, which are poor. Some stock ponds and small diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,270 ft³/s, Feb. 3, 1998, gage height, 14.92, from rating curve extended above 3,400 ft³/s on basis of computation of peak flow through culvert; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 50 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 9	1615	227	4.31				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.3	4.8	3.3	9.2	6.5	6.8	3.4	1.0	.61	.02	.00
2	1.7	2.4	4.4	3.3	6.4	6.3	6.0	3.5	1.0	.51	.02	.00
3	1.7	2.3	4.1	3.3	5.5	6.4	5.7	4.0	1.1	.45	.00	.00
4	1.7	2.4	4.0	3.3	5.1	6.2	5.6	3.9	1.3	.42	.00	.00
5	1.6	2.4	3.8	3.3	4.7	5.9	5.3	3.5	1.2	.36	.00	.00
6	1.6	2.5	4.1	3.2	4.5	5.8	6.4	3.1	1.1	.31	.00	.00
7	1.7	2.8	4.0	3.3	10	5.8	5.9	2.8	1.0	.26	.02	.00
8	1.7	3.2	3.7	3.2	40	5.5	5.6	2.7	.96	.18	.03	.00
9	1.7	3.2	3.4	3.1	79	7.4	6.5	2.7	.89	.14	.03	.00
10	1.8	3.1	3.3	3.1	56	6.8	5.6	2.6	.94	.11	.04	.00
11	1.7	3.3	3.3	3.3	29	6.0	12	2.5	1.4	.08	.04	.00
12	1.7	3.2	3.3	3.2	19	5.6	34	2.4	1.4	.06	.04	.00
13	1.9	3.0	3.3	3.3	13	5.3	17	2.3	1.4	.04	.03	.00
14	1.9	2.9	3.3	3.3	10	5.4	11	2.2	1.4	.04	.02	.00
15	1.8	2.8	3.1	3.3	8.8	5.3	8.0	2.3	1.4	.04	.02	.00
16	1.6	2.8	3.1	3.3	7.6	5.2	7.0	2.2	1.4	.04	.01	.00
17	1.6	2.8	3.3	3.3	8.4	5.1	6.4	2.0	1.4	.04	.00	.00
18	1.6	2.8	3.3	3.6	7.6	5.1	5.9	1.9	1.4	.04	.00	.00
19	1.6	2.8	3.3	9.1	7.1	5.0	5.5	2.0	1.4	.04	.00	.00
20	1.5	2.8	3.3	20	7.0	11	5.3	2.0	1.2	.05	.00	.00
21	1.5	2.7	3.3	12	16	7.5	5.1	2.0	1.2	.05	.00	.00
22	1.5	2.8	3.3	6.5	17	6.2	5.1	1.8	1.2	.05	.00	.00
23	1.5	2.7	3.3	5.9	11	6.0	4.8	1.5	1.2	.04	.00	.00
24	2.0	2.8	3.2	5.5	9.3	5.5	4.5	1.5	1.2	.05	.00	.00
25	2.5	2.8	3.3	4.9	8.6	23	4.4	1.5	1.1	.04	.00	.00
26	2.6	2.8	3.3	5.0	8.0	22	4.5	1.4	1.1	.04	.00	.00
27	2.4	3.0	3.3	6.6	7.1	11	4.3	1.3	1.1	.04	.00	.00
28	2.4	4.2	3.3	5.8	6.6	8.2	4.2	1.3	.94	.04	.00	.00
29	2.5	4.0	3.3	5.1	---	6.9	4.0	1.5	.86	.04	.00	.00
30	2.5	4.2	3.3	4.9	---	6.4	3.8	1.0	.78	.03	.00	.00
31	2.3	---	3.3	7.0	---	7.1	---	1.0	---	.03	.00	---
TOTAL	57.4	87.8	108.4	157.3	421.5	231.4	216.2	69.8	34.97	4.27	0.32	0.00
MEAN	1.85	2.93	3.50	5.07	15.1	7.46	7.21	2.25	1.17	.14	.010	.000
MAX	2.6	4.2	4.8	20	79	23	34	4.0	1.4	.61	.04	.00
MIN	1.5	2.3	3.1	3.1	4.5	5.0	3.8	1.0	.78	.03	.00	.00
AC-FT	114	174	215	312	836	459	429	138	69	8.5	.6	.00

11274630 DEL PUERTO CREEK NEAR PATTERSON, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.15	1.08	3.69	19.9	36.1	26.3	9.81	4.24	1.99	.37	.10	.20
MAX	2.15	9.38	31.8	130	340	218	54.1	31.5	31.3	5.56	2.06	4.48
(WY)	1984	1983	1984	1997	1998	1983	1983	1983	1983	1983	1983	1990
MIN	.000	.000	.000	.000	.000	.062	.002	.000	.000	.000	.000	.000
(WY)	1966	1967	1969	1977	1977	1977	1990	1992	1966	1965	1965	1965

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1965 - 1999	
ANNUAL TOTAL	14495.51		1389.36			
ANNUAL MEAN	39.7		3.81		8.52	
HIGHEST ANNUAL MEAN					47.7 1983	
LOWEST ANNUAL MEAN					.030 1977	
HIGHEST DAILY MEAN	1870	Feb 3	79	Feb 9	1870	Feb 3 1998
LOWEST DAILY MEAN	.77	Sep 2	.00	Aug 3	.00	Jul 1 1965
ANNUAL SEVEN-DAY MINIMUM	.81	Aug 31	.00	Aug 17	.00	Jul 1 1965
INSTANTANEOUS PEAK FLOW			227	Feb 9	5270	Feb 3 1998
INSTANTANEOUS PEAK STAGE			4.31	Feb 9	14.92	Feb 3 1998
ANNUAL RUNOFF (AC-FT)	28750		2760		6170	
10 PERCENT EXCEEDS	82		7.1		15	
50 PERCENT EXCEEDS	4.9		2.7		.16	
90 PERCENT EXCEEDS	1.0		.00		.00	

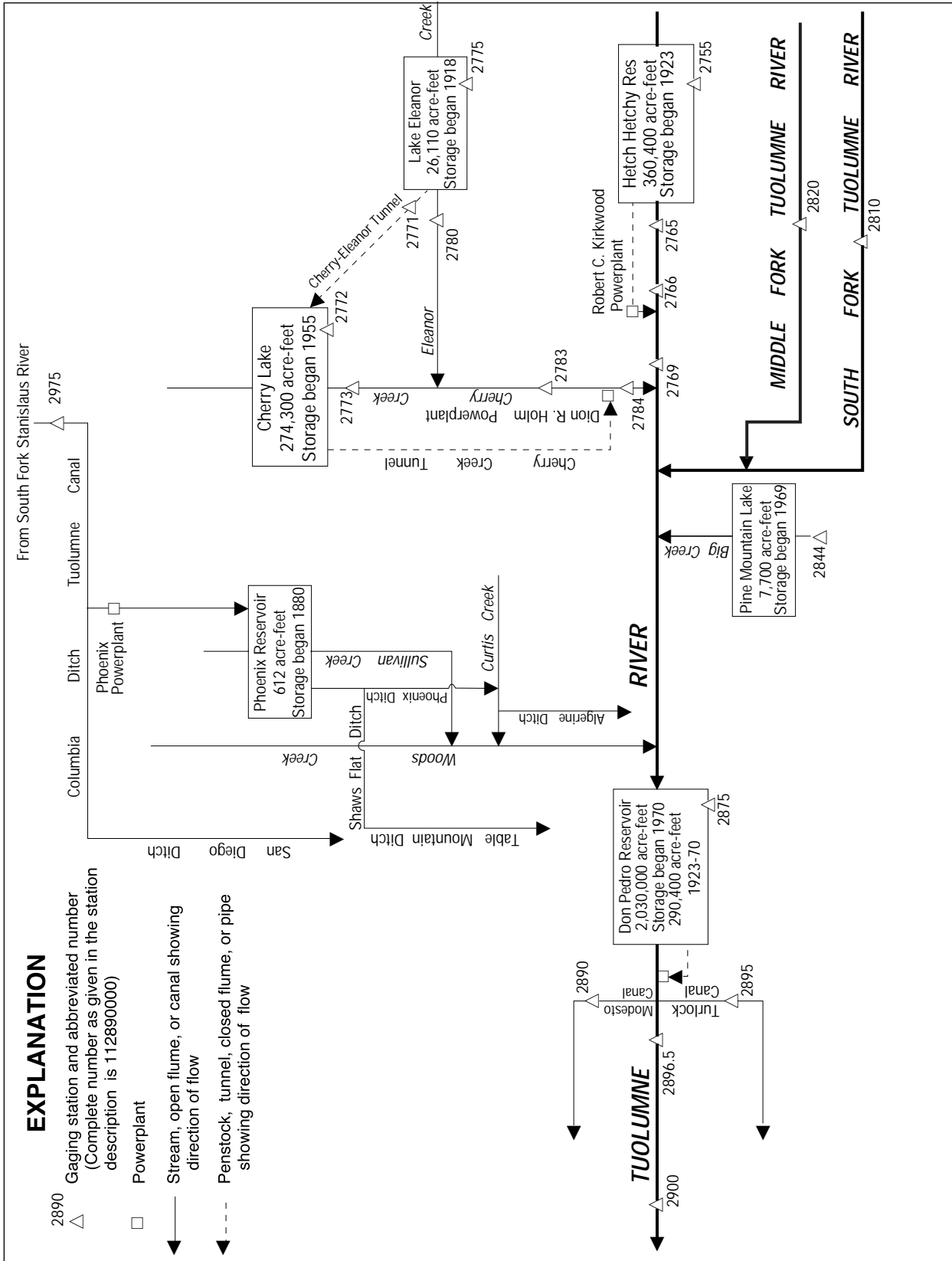


Figure 29. Diversions and storage in Tuolumne River Basin.

11275500 HETCH HETCHY RESERVOIR AT HETCH HETCHY, CA

LOCATION.—Lat 37°56'52", long 119°47'13", in NW 1/4 NW 1/4 sec.16, T.1 N., R.20 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, near center of O'Shaughnessy Dam on Tuolumne River at Hetch Hetchy, 1.5 mi downstream from Falls Creek.

DRAINAGE AREA.—455 mi².

PERIOD OF RECORD.—May 1923 to current year. Prior to October 1930 monthend contents published in WSP 1315-A.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder installed March 1995. Datum of gage is 1.84 ft above sea level. Prior to Oct. 1, 1927, nonrecording gage at same site and datum. Oct. 1, 1927, to July 9, 1972, water-stage recorder at same site and datum. Prior to October 1974, datum published as at mean sea level.

REMARKS.—Reservoir is formed by concrete gravity-type dam, completed to crest gage height 3,726.5 ft in 1923 and raised to 3,812.0 ft in 1937. Storage began Apr. 6, 1923. Ten-foot drum gates were installed on spillway in 1949. Capacity, 360,400 acre-ft between gage heights 3,512.0 ft, bottom outlet, and 3,806.0 ft, top of drum-type spillway gates. Water is diverted from reservoir through tunnel to Robert C. Kirkwood Powerplant 15 mi downstream. Flow is diverted from powerplant tailrace in a closed conduit through Hetch Hetchy Aqueduct to Moccasin Powerplant with flows in excess of aqueduct capacity being spilled to the river. At Moccasin Creek Diversion Dam, water re-enters Hetch Hetchy Aqueduct and flows into Crystal Springs Reservoir, which supplies city of San Francisco. Surplus water is spilled into Don Pedro Reservoir (station 11287500) at Red Mountain Bar. Flow downriver is for State Department of Fish and Game and Raker Act requirements. Hetch Hetchy Reservoir is the main storage unit of Hetch Hetchy water-supply system for San Francisco. Records, including extremes for current year, represent contents at 2400 hours. See schematic diagram of Tuolumne River Basin.

EXTREMES (AT 0800) FOR PERIOD OF RECORD.—Maximum contents, 369,100 acre-ft, Dec. 3, 1950, gage height, 3,810.4 ft; no contents at times in 1929–31.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 362,300 acre-ft, June 23, gage height, 3,806.98 ft; minimum, 179,800 acre-ft, Apr. 16, gage height, 3,703.19 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by San Francisco Public Utilities Commission, dated May 20, 1971)

3,512	0	3,530	3,300	3,600	57,400	3,680	146,200	3,760	273,700
3,513	51	3,540	8,700	3,620	76,500	3,700	175,000	3,780	310,400
3,515	154	3,560	22,900	3,640	97,000	3,720	206,000	3,800	348,600
3,520	410	3,580	39,500	3,660	119,900	3,740	238,900	3,810.4	369,100

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	334700	318400	311800	298700	292200	257400	202800	190000	302300	362100	349200	322700
2	334200	317800	312100	298000	290900	255700	201000	190200	307100	362000	348600	321800
3	333900	317200	312600	297400	290100	254100	199100	190000	309300	361600	347900	320900
4	333600	316800	312700	297100	289700	252300	197200	189400	309400	361100	347300	320000
5	332900	316600	313000	296700	289300	250300	195200	189300	308900	360700	346600	318800
6	332300	316200	313000	296200	289000	248200	193400	191200	309800	360200	346100	317700
7	331800	315800	313000	295700	291400	246300	191400	195300	311800	359900	345600	316600
8	331200	315200	312600	295400	292000	244100	189600	199700	313600	359500	345200	315700
9	330600	314700	312000	295300	293000	242100	187800	203600	315400	358800	344300	314600
10	330400	314200	311800	295100	292100	239900	185900	206700	317900	358200	343400	313600
11	330000	313800	311600	294600	290500	237800	184300	211000	322100	357300	342400	312800
12	329300	313400	311400	294200	288800	235600	182600	218000	327600	356200	341700	311800
13	328800	313100	311300	293800	286900	233400	181200	225400	334200	355100	341000	310800
14	328400	312900	311100	293300	284900	231400	180500	230100	341800	355400	340000	309900
15	327600	312600	310900	293000	282900	229200	180000	233200	348500	356100	339000	308700
16	327000	312300	310800	e292900	281000	227100	179800	235900	353000	356400	338000	307600
17	326700	312000	310800	e292900	279900	225200	180200	239500	356500	356500	337200	306600
18	326400	311600	310200	e292900	278200	223600	e181500	241700	360300	356200	336200	305800
19	325700	311200	309500	e294400	276300	222000	e183000	242100	361900	356000	335300	304800
20	324900	310600	308800	e295900	274200	220400	184600	243500	361700	355700	334400	303900
21	324200	310400	307800	e297400	273300	218600	186500	246000	361400	355300	333300	302800
22	323500	310100	306900	e297500	271300	216800	187800	250400	361800	354900	332400	301800
23	323100	310000	306000	e297700	269200	215200	188000	257300	362300	354400	331600	300700
24	322700	310100	305100	e297900	267200	213600	187800	262000	361900	353800	330500	299800
25	322300	310000	304200	e297900	265300	212000	188000	266400	360700	353300	329400	299000
26	321700	309800	303200	297800	263200	210900	189000	271600	360300	352800	328200	298000
27	321300	309600	302200	297500	261100	209900	190300	274200	361000	352200	327300	297000
28	320500	309300	301200	296900	259200	208800	191000	281200	361700	351600	326400	296000
29	319800	309600	300600	295900	---	207500	190800	288600	362100	351100	325600	295000
30	319300	310800	299900	294600	---	206100	190300	293300	362000	350400	324600	294000
31	318900	---	299300	293600	---	204600	---	297800	---	349800	323700	---
MAX	334700	318400	313000	298700	293000	257400	202800	297800	362300	362100	349200	322700
MIN	318900	309300	299300	292900	259200	204600	179800	189300	302300	349800	323700	294000
a	3784.51	3780.21	3774.05	3770.95	3751.76	3719.10	3710.06	3773.21	3806.82	3800.62	3787.05	3771.16
b	-16600	-8100	-11500	-5700	-34400	-54600	-14300	+107500	+64200	-12200	-26100	-29700

CAL YR 1998 b +69800

WRR YR 1999 b -41500

e Estimated.

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

b Change in contents, in acre-feet.

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA

LOCATION.—Lat 37°56'15", long 119°47'50", in SW 1/4 SE 1/4 sec.17, T.1 N., R.20 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on left bank 0.9 mi downstream from O'Shaughnessy Dam at Hetch Hetchy and 2.5 mi downstream from Falls Creek.

DRAINAGE AREA.—457 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1910 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Hetch Hetchy damsite, near Sequoia" 1910–14 and as "below Hetch Hetchy damsite, near Sequoia" 1915–18.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder, crest-stage gage with concrete control since May 5, 1970. Elevation of gage is 3,480 ft above sea level, from topographic map. Prior to Jan. 1, 1915, water-stage recorder at site 1 mi upstream, at damsite, at different datum. Jan. 1, 1915, to Sept. 3 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.—Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 0.9 mi upstream beginning in April 1923. Flow diverted upstream from station through tunnel to Robert C. Kirkwood Powerplant and Hetch Hetchy Aqueduct beginning Apr. 26, 1967. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 16,400 ft³/s, Jan. 3, 1997, gage height, 15.08 ft; no flow at times in 1968–70.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	62	61	49	56	135	165	197	2560	1180	124	116
2	67	62	55	44	61	133	159	263	1620	1180	127	109
3	63	62	56	42	62	133	154	219	978	1070	128	109
4	63	62	56	42	63	132	152	164	981	759	127	109
5	63	62	56	42	65	131	150	163	979	390	125	110
6	63	62	55	42	65	130	148	164	980	208	129	111
7	63	63	55	42	92	129	146	169	983	191	129	112
8	63	62	55	42	132	128	145	175	986	196	128	111
9	63	62	55	42	161	128	143	181	990	195	126	111
10	63	62	55	42	141	126	141	186	995	193	124	111
11	63	63	55	42	136	125	139	191	1000	191	131	112
12	63	62	55	42	133	135	136	199	1010	188	134	111
13	63	62	55	42	129	152	139	217	1020	186	133	111
14	63	62	55	42	126	150	143	239	1040	166	132	104
15	63	62	55	42	122	149	142	247	1690	127	129	92
16	63	62	55	43	120	143	142	251	2420	122	127	87
17	63	62	55	43	125	136	142	486	2610	126	128	87
18	63	63	54	45	127	135	143	2140	2560	128	129	87
19	63	63	54	58	138	134	145	3180	3350	127	129	87
20	62	63	54	71	134	133	147	3140	3760	127	129	87
21	63	63	54	54	136	132	150	3160	3720	127	129	86
22	63	63	54	47	138	130	153	3190	3060	126	129	87
23	63	63	54	53	142	130	153	3250	3600	125	129	87
24	63	63	54	51	140	131	154	3660	3970	124	129	87
25	63	63	54	49	141	134	153	4100	3520	128	129	87
26	62	63	54	49	138	133	154	4150	1950	129	128	87
27	62	63	53	48	137	132	130	4190	911	128	128	86
28	62	63	53	47	136	131	113	2900	892	127	128	86
29	62	64	53	46	---	130	136	2360	1130	126	129	86
30	62	66	53	45	---	129	147	2530	1170	145	128	86
31	62	---	53	46	---	144	---	2530	---	125	128	---
TOTAL	1958	1879	1695	1434	3296	4153	4364	48191	56435	8460	3982	2939
MEAN	63.2	62.6	54.7	46.3	118	134	145	1555	1881	273	128	98.0
MAX	71	66	61	71	161	152	165	4190	3970	1180	134	116
MIN	62	62	53	42	56	125	113	163	892	122	124	86
AC-FT	3880	3730	3360	2840	6540	8240	8660	95590	111900	16780	7900	5830

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1966, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	534	516	544	528	519	620	971	2005	3149	1396	636	548
MAX	813	780	2281	1221	1556	1078	2803	5336	7859	4624	1320	1143
(WY)	1949	1939	1951	1965	1965	1916	1952	1919	1911	1911	1939	1939
MIN	13.8	1.52	1.83	2.51	34.2	11.2	507	493	480	279	27.1	5.83
(WY)	1925	1924	1924	1924	1924	1925	1937	1961	1924	1919	1924	1923

SUMMARY STATISTICS

WATER YEARS 1911 - 1966

ANNUAL MEAN	997
HIGHEST ANNUAL MEAN	1724 1911
LOWEST ANNUAL MEAN	516 1924
HIGHEST DAILY MEAN	11400 Jun 18 1911
LOWEST DAILY MEAN	1.3 Nov 2 1923
ANNUAL SEVEN-DAY MINIMUM	1.4 Nov 1 1923
INSTANTANEOUS PEAK FLOW	12900 Jun 1 1943
INSTANTANEOUS PEAK STAGE	13.90 Jun 1 1943
ANNUAL RUNOFF (AC-FT)	722600
10 PERCENT EXCEEDS	2230
50 PERCENT EXCEEDS	721
90 PERCENT EXCEEDS	115

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	50.2	62.9	79.1	126	75.0	79.7	229	1119	1827	901	165	75.6
MAX	164	561	618	2105	305	489	1371	3327	5885	5149	1263	125
(WY)	1987	1987	1997	1997	1974	1983	1986	1969	1983	1983	1983	1989
MIN	31.1	33.6	34.1	33.5	31.7	29.9	33.6	49.0	71.2	68.2	66.7	31.6
(WY)	1969	1991	1991	1977	1971	1974	1981	1990	1977	1968	1974	1970

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1968 - 1999

ANNUAL TOTAL	247758	138786	
ANNUAL MEAN	679	380	400
HIGHEST ANNUAL MEAN			1433 1983
LOWEST ANNUAL MEAN			49.5 1977
HIGHEST DAILY MEAN	7110	Jul 10	4190 May 27 13800 Jan 3 1997
LOWEST DAILY MEAN	51	Jan 1	42 Jan 3 .00 Oct 3 1968
ANNUAL SEVEN-DAY MINIMUM	52	Jan 4	42 Jan 3 .00 Feb 20 1970
INSTANTANEOUS PEAK FLOW			4910 Jun 23 16400 Jan 3 1997
INSTANTANEOUS PEAK STAGE			10.72 Jun 23 15.08 Jan 3 1997
ANNUAL RUNOFF (AC-FT)	491400	275300	289700
10 PERCENT EXCEEDS	3290	1000	1040
50 PERCENT EXCEEDS	130	127	65
90 PERCENT EXCEEDS	55	54	35

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—August 1987 to current year.

WATER TEMPERATURE: August 1987 to current year.

PERIOD OF DAILY RECORD.—August 1987 to current year.

WATER TEMPERATURE: August 1987 to current year.

INSTRUMENTATION.—Temperature recorder since August 1987.

REMARKS.—Temperature recorder installed Aug. 13, 1987, located 0.6 mi upstream from gaging station on left bank at road bridge. Water temperature can be affected by releases from O'Shaughnessy Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 19.5°C, July 12, 1996; minimum recorded, 4.0°C, Mar. 25, 1991.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 14.5°C, July 2; minimum recorded, 6.0°C, Mar. 5, 8–10, 12.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA

LOCATION.—Lat 37°52'46", long 119°56'46", in SE 1/4 SW 1/4 sec.1, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 0.5 mi upstream from Early Intake, 2.4 mi upstream from Cherry Creek, and 5.0 mi west of Mather.

DRAINAGE AREA.—484 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1970 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 2,420 ft above sea level, from topographic map.

REMARKS.—Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 12 mi upstream. Flow diverted upstream from station through tunnel to Robert C. Kirkwood Powerplant and Hetch Hetchy Aqueduct. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 17,700 ft³/s, Jan. 3, 1997, gage height, 22.98 ft; minimum daily, 25 ft³/s, Oct. 11, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of June 1, 1943, reached a stage of 22.1 ft, discharge, 12,900 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	73	160	67	101	228	217	192	2680	1230	128	126
2	77	73	90	60	108	220	213	295	1960	1240	128	110
3	74	73	87	56	105	216	207	311	1030	1140	131	110
4	72	74	100	55	106	221	203	223	1020	868	130	110
5	72	74	82	55	106	208	204	210	1020	500	129	109
6	72	74	81	55	106	201	215	207	1010	251	129	112
7	72	78	77	54	456	195	217	207	1020	205	133	112
8	71	79	75	54	440	191	227	211	1020	211	131	112
9	72	76	75	54	644	210	237	215	1020	209	130	112
10	72	76	72	53	390	203	238	219	1030	206	128	111
11	72	79	71	53	300	197	245	222	1030	203	129	112
12	72	76	71	53	272	195	251	228	1040	201	138	112
13	72	75	72	53	256	222	263	239	1060	198	136	112
14	72	75	77	53	237	220	268	260	1070	194	135	111
15	73	75	74	54	219	213	249	271	1580	143	133	99
16	72	75	73	70	210	208	232	277	2470	128	131	87
17	72	77	72	68	380	194	218	364	2740	128	128	87
18	73	76	71	85	270	188	210	1850	2670	132	132	87
19	73	75	70	302	279	185	205	3400	3390	132	131	87
20	72	75	71	409	245	189	204	3330	4000	131	132	87
21	72	74	68	278	295	186	204	3350	4000	131	132	86
22	72	76	68	153	271	181	204	3400	3380	130	131	86
23	72	77	68	175	268	202	202	3450	3670	129	131	87
24	74	83	68	201	256	192	201	3810	4290	128	131	86
25	74	77	68	147	294	190	202	4430	3870	129	131	86
26	73	76	68	137	262	186	199	4490	2370	133	131	86
27	73	76	68	125	241	180	191	4550	1030	132	131	86
28	73	80	67	110	231	175	151	3400	873	131	131	86
29	73	85	67	102	---	173	160	2440	1140	130	131	86
30	73	100	67	97	---	170	185	2660	1220	144	131	85
31	73	---	67	101	---	183	---	2660	---	132	131	---
TOTAL	2268	2312	2365	3389	7348	6122	6422	51371	59703	9099	4064	2965
MEAN	73.2	77.1	76.3	109	262	197	214	1657	1990	294	131	98.8
MAX	89	100	160	409	644	228	268	4550	4290	1240	138	126
MIN	71	73	67	53	101	170	151	192	873	128	128	85
AC-FT	4500	4590	4690	6720	14570	12140	12740	101900	118400	18050	8060	5880

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999, BY WATER YEAR (WY)

	52.9	76.3	113	196	151	162	282	1133	1835	933	180	84.4
MEAN	52.9	76.3	113	196	151	162	282	1133	1835	933	180	84.4
MAX	142	552	801	2501	375	814	1564	3339	6142	5424	1319	132
(WY)	1987	1987	1997	1997	1998	1983	1983	1982	1983	1995	1983	1989
MIN	33.3	36.6	38.7	39.7	38.5	38.5	39.7	55.8	78.0	74.3	73.7	56.7
(WY)	1989	1991	1991	1977	1977	1977	1977	1992	1977	1977	1977	1977

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1971 - 1999	
ANNUAL TOTAL	281881		157428			
ANNUAL MEAN	772		431		434	
HIGHEST ANNUAL MEAN					1584	
LOWEST ANNUAL MEAN					53.5	
HIGHEST DAILY MEAN	7720	Jul 10	4550	May 27	14500	Jan 3 1997
LOWEST DAILY MEAN	61	Jan 1	53	Jan 10	25	Oct 11 1988
ANNUAL SEVEN-DAY MINIMUM	67	Dec 25	53	Jan 8	27	Oct 11 1988
INSTANTANEOUS PEAK FLOW			4910		17700	
INSTANTANEOUS PEAK STAGE			18.84		22.98	
ANNUAL RUNOFF (AC-FT)	559100		312300		314300	
10 PERCENT EXCEEDS	3500		1030		1100	
50 PERCENT EXCEEDS	243		131		84	
90 PERCENT EXCEEDS	72		72		41	

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—August 1987 to current year.

WATER TEMPERATURE: August 1987 to current year.

PERIOD OF DAILY RECORD.—August 1987 to current year.

WATER TEMPERATURE: August 1987 to current year.

INSTRUMENTATION.—Temperature recorder since Aug. 12, 1987.

REMARKS.—Temperature recorder located 600 ft upstream from gaging station on right bank. Water temperature is affected by regulation from O'Shaughnessy Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 25.5°C, June 1, 1992; minimum recorded, 0.0°C, Dec. 24, 25, 1990.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 21.0°C, July 15, 16; minimum recorded, 2.0°C, Dec. 24.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.5	7.0	14.5	10.5	10.5	9.5	17.0	14.5	20.0	16.5	16.0	13.5
2	9.0	7.0	12.0	10.0	10.0	9.5	17.0	14.5	20.5	16.5	16.0	13.0
3	8.0	7.0	10.0	9.0	10.0	8.5	16.5	14.0	20.5	17.0	16.5	13.0
4	9.5	6.5	12.0	8.5	10.0	9.0	15.5	13.5	20.5	17.0	17.0	13.5
5	8.0	7.0	13.5	9.5	11.5	9.5	16.0	14.0	20.5	17.5	17.5	14.0
6	8.0	6.5	15.0	11.5	12.0	10.0	18.0	14.5	19.0	17.0	17.5	14.5
7	7.0	6.5	15.5	12.0	11.5	9.5	19.0	15.5	18.5	16.0	17.5	14.5
8	6.5	5.0	15.0	12.5	11.5	9.5	19.0	16.0	18.5	15.0	18.0	14.5
9	7.5	5.0	14.0	11.5	11.5	9.5	19.0	16.0	19.0	16.0	17.5	15.0
10	8.0	6.0	13.5	11.0	12.0	9.5	18.5	16.0	18.0	16.0	17.5	15.0
11	8.0	7.0	14.5	11.0	12.0	10.0	19.0	15.5	19.0	15.5	17.5	15.0
12	10.5	7.5	15.0	12.0	12.0	10.0	19.5	16.5	19.5	15.5	17.5	15.0
13	12.0	9.0	15.0	12.5	12.5	10.0	20.5	17.5	19.5	16.0	17.5	15.0
14	12.5	9.5	14.0	11.5	12.5	10.0	20.5	17.5	19.5	16.0	17.5	15.0
15	13.0	10.5	13.0	10.5	12.0	10.5	21.0	17.0	19.0	15.5	17.5	14.5
16	13.5	10.5	13.5	10.0	12.0	10.0	21.0	17.5	19.0	15.5	17.5	15.0
17	13.5	11.0	14.0	11.0	12.0	10.0	20.5	17.0	19.0	15.5	18.0	15.0
18	13.5	11.0	12.0	9.5	12.0	10.0	20.5	16.5	19.0	16.0	17.0	15.5
19	14.0	11.0	10.5	9.0	12.0	10.0	20.0	16.5	19.0	15.5	17.5	15.0
20	14.0	11.5	11.0	9.0	12.5	10.5	20.0	16.5	19.0	15.5	17.5	15.0
21	14.0	11.5	11.0	9.0	12.5	10.5	20.0	16.0	19.0	15.5	18.0	15.0
22	13.0	10.5	11.5	9.5	12.5	10.5	20.0	16.0	19.0	15.5	17.0	16.0
23	12.0	9.5	11.0	9.5	13.5	11.0	20.0	16.5	19.0	16.0	17.5	15.0
24	11.5	9.5	11.0	9.5	13.0	11.5	20.0	16.5	18.5	15.5	17.5	15.0
25	13.5	10.0	11.0	9.5	12.5	11.0	20.0	16.5	18.0	15.5	18.0	15.5
26	13.0	11.0	11.0	9.5	13.0	10.5	20.5	16.5	17.0	15.5	18.0	15.5
27	14.0	11.5	11.0	9.5	13.5	10.5	20.5	16.5	18.0	14.5	17.5	15.5
28	12.5	10.5	12.0	9.5	15.0	12.0	20.5	17.0	18.5	15.0	17.5	15.0
29	12.0	9.5	11.0	9.5	16.0	13.0	20.5	17.0	18.5	15.0	17.0	15.0
30	13.0	10.0	11.0	9.5	16.5	14.0	20.5	17.0	18.0	15.0	17.0	14.5
31	---	---	11.5	9.5	---	---	20.0	16.5	17.0	14.0	---	---
MONTH	14.0	5.0	15.5	8.5	16.5	8.5	21.0	13.5	20.5	14.0	18.0	13.0

11276900 TUOLUMNE RIVER BELOW EARLY INTAKE, NEAR MATHER, CA

LOCATION.—Lat 37°52'54", long 119°58'09", in NW 1/4 SW 1/4 sec.2, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 0.6 mi upstream from Cherry Creek, 0.7 mi downstream from Robert C. Kirkwood Powerplant and Hetch Hetchy Aqueduct, and 6.3 mi west of Mather.

DRAINAGE AREA.—487 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 sea level, from topographic map.

REMARKS.—Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 13 mi upstream and Robert C. Kirkwood Powerplant beginning Apr. 26, 1967. Water is diverted to Hetch Hetchy Aqueduct from the tailrace of the powerplant through a closed conduit. Flow in excess of aqueduct capacity is diverted to river. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 18,200 ft³/s, Jan. 3, 1997, gage height, 12.33 ft; minimum daily, 12 ft³/s, Nov. 28–30, 1976.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	68	154	66	419	972	923	867	3070	1920	134	134
2	75	68	86	60	418	963	916	969	2520	1910	167	116
3	73	68	82	56	283	970	913	995	1740	1830	139	117
4	70	68	97	55	112	988	917	911	1740	1590	137	117
5	70	68	79	55	111	981	916	887	1740	1260	136	116
6	70	68	78	55	110	978	919	877	1740	1050	127	119
7	69	72	74	54	529	874	916	873	1750	1000	122	120
8	69	73	73	54	768	944	919	880	1740	1000	133	120
9	69	69	73	53	969	961	931	905	1730	993	139	127
10	69	69	71	53	909	945	928	924	1730	827	137	127
11	70	72	71	53	1020	909	812	930	1750	963	137	119
12	69	70	71	53	1020	942	923	940	1760	983	146	119
13	69	69	71	53	1000	968	942	959	1800	906	144	118
14	69	69	76	53	979	960	942	975	1840	240	142	121
15	69	102	73	54	969	953	915	993	2250	158	139	110
16	69	69	72	70	972	938	890	1000	2950	140	148	92
17	69	71	71	68	1090	924	875	1100	3160	141	135	91
18	68	69	70	83	1030	922	787	2360	3100	143	139	91
19	68	69	69	330	1040	913	895	3680	3770	139	138	92
20	67	89	70	387	995	917	896	3640	4350	138	139	92
21	67	73	68	289	657	913	886	3640	4340	137	149	95
22	67	65	68	162	1040	907	882	3690	3720	136	139	93
23	67	67	67	170	1030	924	882	3750	3970	135	138	113
24	69	72	67	213	955	915	884	4140	4600	134	137	92
25	69	71	67	154	1040	917	759	4730	4210	133	159	91
26	68	70	67	144	1010	913	890	4790	2860	139	131	91
27	68	70	67	132	988	910	877	4810	1770	138	137	102
28	68	71	67	117	976	906	839	3780	1630	137	136	98
29	68	78	66	279	---	900	846	2860	1870	135	136	95
30	68	94	66	409	---	895	868	3040	1950	145	142	98
31	68	---	66	405	---	906	---	3030	---	139	137	---
TOTAL	2155	2171	2317	4239	22439	28928	26688	67925	77150	18839	4319	3226
MEAN	69.5	72.4	74.7	137	801	933	890	2191	2572	608	139	108
MAX	87	102	154	409	1090	988	942	4810	4600	1920	167	134
MIN	67	65	66	53	110	874	759	867	1630	133	122	91
AC-FT	4270	4310	4600	8410	44510	57380	52940	134700	153000	37370	8570	6400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	83.2	107	162	286	316	376	490	1368	2072	1052	242	122
MAX	247	313	1169	2917	1039	990	1694	3727	6260	5530	1726	370
(WY)	1984	1984	1997	1997	1996	1996	1983	1986	1983	1983	1983	1983
MIN	30.0	34.8	29.4	31.1	34.8	37.5	33.7	52.0	36.9	29.9	31.1	28.7
(WY)	1989	1988	1977	1977	1977	1977	1977	1992	1976	1976	1976	1976

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	378700		260396			
ANNUAL MEAN	1038		713			
HIGHEST ANNUAL MEAN					557	1983
LOWEST ANNUAL MEAN					49.2	1977
HIGHEST DAILY MEAN	6930	Jul 10	4810	May 27	14400	Jan 3 1997
LOWEST DAILY MEAN	60	Jan 1	53	Jan 9	12	Nov 28 1976
ANNUAL SEVEN-DAY MINIMUM	67	Dec 25	53	Jan 8	13	Nov 24 1976
INSTANTANEOUS PEAK FLOW			5070	May 27	18200	Jan 3 1997
INSTANTANEOUS PEAK STAGE			8.51	May 27	12.33	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	751200		516500		403200	
10 PERCENT EXCEEDS	3590		1760		1490	
50 PERCENT EXCEEDS	816		142		137	
90 PERCENT EXCEEDS	69		68		45	

11277100 LAKE ELEANOR DIVERSION TUNNEL TO CHERRY LAKE, NEAR HETCH HETCHY, CA

LOCATION.—Lat 37°58'47", long 119°52'51", in SW 1/4 SW 1/4 sec.34, T.2 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on west side of Lake Eleanor, 0.5 mi northwest of Eleanor Dam, and 6.0 mi northwest of Hetch Hetchy.

PERIOD OF RECORD.—July 1996 to August 1996, October 1996 to September 1999 (discontinued).

GAGE.—Ultrasonic-velocity meter system. Elevation of gage is 4,670 ft above sea level, from topographic map.

REMARKS.—Records fair. Instrumentation damaged by forest fire on Aug. 26, 1996. Flow is gravity flow or regulated by pump station at Cherry Lake (11277200). Diversion from Lake Eleanor (station 11277500) to Cherry Lake began in March 1960. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 550 ft³/s, July 3, 1997 and many days in 1998; no flow at times each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e223	e205	e.00	e.00	e369	e409	e445	e.00	e241	e.00	e.00
2	e.00	e220	e212	e.00	e.00	e371	e409	e448	e.00	e240	e.00	e.00
3	e.00	e218	e215	e.00	e.00	e373	e410	e451	e.00	e238	e.00	e.00
4	e295	e110	e222	e.00	e.00	e376	e411	e452	e.00	e239	e.00	e.00
5	e289	e112	e227	e.00	e.00	e377	e411	e455	e270	e238	e.00	e.00
6	e.00	e112	e230	e.00	e.00	e378	e412	e456	e269	e239	e.00	e.00
7	e.00	e112	e232	e.00	e.00	e379	e413	e458	e267	e239	e.00	e.00
8	e.00	e111	e235	e.00	e351	e380	e414	e456	e264	e237	e.00	e.00
9	e.00	e110	e235	e.00	e348	e381	e415	e449	e264	e48	e.00	e.00
10	e286	e218	e235	e.00	e345	e382	e415	e444	e260	e168	e.00	e.00
11	e282	e216	e237	e.00	e345	e384	e415	e441	e258	e238	e.00	e.00
12	e.00	e215	e235	e.00	e345	e385	e416	e437	e255	e234	e.00	e.00
13	e.00	e212	e235	e.00	e347	e386	e416	e432	e.00	e231	e.00	e.00
14	e.00	e211	e234	e.00	e348	e387	e417	e427	e.00	e219	e.00	e.00
15	e.00	e206	e233	e.00	e349	e387	e420	e424	e.00	e204	e.00	e.00
16	e.00	e202	e234	e.00	e350	e388	e423	e421	e.00	e223	e.00	e.00
17	e279	e200	e232	e.00	e352	e390	e425	e417	e.00	e219	e.00	e.00
18	e275	e199	e231	e.00	e353	e391	e426	e412	e.00	e215	e.00	e.00
19	e270	e198	e230	e.00	e355	e392	e428	e407	e.00	e210	e.00	e.00
20	e266	e197	e227	e.00	e357	e394	e431	e401	e.00	e206	e.00	e.00
21	e262	e194	e223	e.00	e252	e395	e432	e395	e.00	e203	e.00	e.00
22	e260	e191	e222	e.00	e361	e395	e434	e386	e.00	e201	e.00	e.00
23	e256	e186	e220	e.00	e362	e396	e435	e375	e.00	e199	e.00	e.00
24	e256	e188	e219	e.00	e363	e397	e436	e361	e.00	e197	e.00	e.00
25	e252	e191	e217	e.00	e365	e400	e437	e349	e.00	e193	e.00	e.00
26	e246	e183	e214	e.00	e367	e401	e439	e338	e.00	e189	e.00	e.00
27	e242	e190	e210	e.00	e367	e402	e440	e324	e.00	e19	e.00	e.00
28	e239	e191	e207	e.00	e368	e404	e442	e312	e.00	e.00	e.00	e.00
29	e235	e190	e208	e.00	---	e404	e443	e.00	e244	e.00	e.00	e.00
30	e233	e194	e208	e.00	---	e406	e445	e.00	e244	e.00	e.00	e.00
31	e227	---	e207	e.00	---	e407	---	e.00	---	e.00	e.00	---
TOTAL	4950.00	5500	6931	0.00	7350.00	12057	12719	11573.00	2595.00	5537.00	0.00	0.00
MEAN	160	183	224	.000	262	389	424	373	86.5	179	.000	.000
MAX	295	223	237	.00	368	407	445	458	270	241	.00	.00
MIN	.00	110	205	.00	.00	369	409	.00	.00	.00	.00	.00
AC-FT	9820	10910	13750	.00	14580	23920	25230	22960	5150	10980	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1999, BY WATER YEAR (WY)

MEAN	53.2	94.7	228	38.3	190	361	438	417	168	100	40.8	.000
MAX	160	183	286	115	308	434	504	550	224	179	123	.000
(WY)	1999	1999	1998	1998	1998	1998	1998	1998	1998	1999	1998	1997
MIN	.000	.000	176	.000	.000	261	385	327	86.5	19.1	.000	.000
(WY)	1997	1997	1997	1997	1997	1997	1997	1997	1999	1998	1997	1997

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1996 - 1999	
ANNUAL TOTAL	86319.00		69212.00			
ANNUAL MEAN	236		190		177	
HIGHEST ANNUAL MEAN					221	
LOWEST ANNUAL MEAN					121	
HIGHEST DAILY MEAN	550	Mar 23	458	May 7	550	Jul 3 1997
LOWEST DAILY MEAN	.00	Jan 13	.00	Oct 1	.00	Oct 1 1996
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 13	.00	Jan 1	.00	Oct 1 1996
ANNUAL RUNOFF (AC-FT)	171200		137300		128500	
10 PERCENT EXCEEDS	550		415		440	
50 PERCENT EXCEEDS	231		215		191	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated.

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 sea level. Prior to October 1974, datum published as at mean sea level.

REMARKS.—Reservoir is formed by a rockfill dam completed in 1956. Storage began in December 1955. Capacity, 274,300 acre-ft between gage heights 4,430 ft, bottom of sluice gates, and 4,703 ft, top of flashboard gates on concrete spillway. No dead storage. Installation of flashboard gates on top of concrete spillway completed in 1979. Water is released down Cherry Creek for power development and domestic supply as part of Hetch Hetchy system of city and county of San Francisco. Unmeasured diversion from Lake Eleanor (station 11277500) into Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake through tunnel to Dion R. Holm Powerplant near mouth of Cherry Creek began Aug. 1, 1960. See schematic diagram of Tuolumne River Basin. Records, including extremes, represent contents at 2400 hours.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 274,300 acre-ft, June 25–28, 1986, gage height, 4,703.0 ft; minimum since reservoir first filled, 7,660 acre-ft, Jan. 24, 1960, gage height, 4,502.1 ft. Reservoir drained for inspection in 1961, 1964, and 1989.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 273,900 acre-ft, June 15, gage height, 4,702.79 ft; minimum, 192,700 acre-ft, Apr. 14, 15, gage height, 4,654.70 ft, Apr. 14.

Capacity table (gage height, in feet, and contents, in acre-feet)

(Based on table provided by San Francisco Public Utilities Commission, dated May 15, 1971)

4,440	0	4,490	3,020	4,560	60,800	4,660	201,100
4,450	75	4,500	6,030	4,580	85,100	4,680	234,100
4,460	250	4,510	11,700	4,600	111,800	4,700	268,800
4,470	675	4,520	19,700	4,620	139,900	4,705	277,900
4,480	1,530	4,540	38,900	4,640	169,700		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	249000	252100	254300	244200	240400	223900	202400	199000	260500	272000	268300	243500
2	248400	251500	253700	243800	239600	223100	201600	199400	261900	272400	267200	242400
3	248200	250700	253200	243500	239000	222600	200800	199400	262300	272400	266200	241300
4	248800	249900	252300	243700	238300	221900	199900	199000	261800	272200	265200	240800
5	248800	249200	251400	243900	237500	221000	199100	198900	261900	271800	264200	240500
6	248900	248700	250900	244000	236600	220300	198300	199900	262600	271200	263000	240000
7	248900	249400	249900	244100	238300	219400	197400	201700	263700	270700	262500	239000
8	248900	249700	249500	244300	239200	218500	196700	203700	264300	270200	262500	238100
9	249100	249400	248900	244500	240400	217400	195800	205600	265100	270100	261600	237400
10	249700	249400	248000	244600	239800	216500	194900	206900	266100	270200	260700	236600
11	249900	249200	247600	244600	239000	215500	194100	208500	267500	270600	259700	236200
12	249800	249000	247400	244900	238300	214600	193300	211100	269100	270600	258700	236100
13	249700	248900	247600	244900	237600	213700	192800	213600	270600	270600	257600	235800
14	249700	249700	247400	244900	236500	212900	192700	215000	272300	270200	256400	235300
15	249700	250200	247100	245300	235600	212000	192700	215800	273900	270400	256300	235100
16	249700	250100	246900	245700	234700	211100	192800	216600	273700	270600	255400	234800
17	250400	250100	246800	245900	234300	210300	193200	218100	273600	270700	254400	234300
18	250900	250000	246900	246800	233600	209700	193700	220300	273400	271200	253200	234000
19	251400	249800	247400	248600	232700	209100	194500	222200	273400	271200	251700	233900
20	251700	249900	247600	249800	231800	208600	195400	224200	273500	271100	250200	233800
21	251800	250100	247500	249700	230700	208100	196200	226800	273400	271000	249400	233700
22	251700	250800	247400	248900	229900	207500	196700	230400	273500	270800	249400	233700
23	251300	251400	247300	249200	229000	207000	196900	234700	273700	270600	248800	233500
24	251300	251800	247200	248600	228100	206200	196800	238300	273500	270700	248700	233000
25	251600	251700	247200	248000	227300	205500	197100	242200	273200	271100	248600	233000
26	251600	252000	247300	247000	226400	205100	197800	245600	272800	270800	248000	232800
27	251500	251800	247400	246100	225400	204800	198700	248800	272200	270300	247400	232700
28	251400	251500	247200	245200	224600	204800	199000	252000	271700	269800	246600	232300
29	251600	251700	246500	244700	---	204400	198800	254600	271600	269300	246500	231900
30	251500	254400	245700	243300	---	203800	198700	256800	271700	268800	245600	231300
31	251800	---	244700	241900	---	203200	---	258700	---	268300	244500	---
MAX	251800	254400	254300	249800	240400	223900	202400	258700	273900	272400	268300	243500
MIN	248200	248700	244700	241900	224600	203200	192700	198900	260500	268300	244500	231300
a	4690.35	4691.82	4686.21	4684.57	4674.34	4661.29	4658.48	4694.24	4701.59	4699.71	4686.08	4678.35
b	+2700	+2600	-9700	-2800	-17300	-21400	-4500	+60000	+13000	-3400	-23800	-13200

CAL YR 1998 b +87000

WTR YR 1999 b -17800

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

b Change in contents, in acre-feet.

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 sea level. Prior to Oct. 1, 1927, nonrecording gage on upstream side of dam at same site and datum.

REMARKS.—Reservoir is formed by multiple-arch dam completed in 1918; storage began June 23, 1918. Capacity, 26,110 acre-ft between gage heights 4,620.9 ft, natural outlet of old lake, and 4,660.0 ft, top of 5-ft flashboards. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of Tuolumne River Basin.

COOPERATION.—Periodic observations of gage height were provided by city and county of San Francisco.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 31,000 acre-ft, Dec. 11, 1937, from capacity table then in use, gage height, 4,663.4 ft, maximum gage height, 4,663.87 ft, Jan. 1, 1997; no usable contents at times in many years.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 27,100 acre-ft, June 24, 25, gage height, 4,661.01 ft, June 24; minimum, 9,620 acre ft Dec. 31, gage height, 4,641.15 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by San Francisco Public Utilities Commission, dated May 1941)

4,608	0	4,620	36	4,628	1,480	4,646	13,500
4,610	6	4,622	49	4,630	2,450	4,650	17,000
4,612	12	4,624	92	4,632	3,580	4,655	21,500
4,614	18	4,625	211	4,635	5,270	4,660	26,100
4,616	24	4,626	550	4,638	7,330	4,663	29,100
4,618	27	4,627	996	4,642	10,300		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22600	14100	13700	9740	23100	21000	15500	21900	25700	26300	19600	18200
2	22600	13700	14000	9870	23200	20900	15200	22600	25700	26300	19500	18100
3	22400	13400	14300	9990	23400	20900	14800	23000	25600	26300	19500	18100
4	21900	13200	14500	10100	23700	20900	14500	23300	25300	26100	19400	18000
5	21700	13000	14400	10200	23800	20700	14200	23500	25100	25900	19400	18000
6	21700	12800	14400	10300	24000	20400	13900	24400	25100	25600	19400	17900
7	21800	12900	14200	10400	25500	20100	13500	25500	25200	25400	19300	17900
8	21800	12800	14100	10500	25700	19800	13200	25600	25400	25300	19300	17900
9	21600	12600	13900	10600	25700	19500	12800	25300	25400	25300	19200	17800
10	21100	12300	13700	10700	25200	19100	12500	25100	25400	25000	19200	17700
11	20900	12100	13500	10800	24900	18800	12100	25200	25700	24800	19200	17700
12	20900	11800	13300	10900	24700	18400	11800	25500	26100	24500	19100	17600
13	20900	11600	13100	11000	24300	18000	11700	25600	26200	24200	19100	17600
14	20900	11400	13000	11000	24100	17700	11900	25300	26300	23900	19000	17600
15	21000	11200	12900	11200	23800	17400	12200	25000	26600	23600	19000	17500
16	20800	11000	12700	11500	23500	17100	12700	24900	26800	23200	19000	17500
17	20300	10900	12600	11900	23700	16800	13400	25200	26900	22800	18900	17500
18	19800	10700	12500	13000	23600	16700	14100	25500	27000	22500	18900	17400
19	19300	10500	12400	15500	23400	16600	15000	25600	26900	22100	18800	17400
20	18800	10300	12200	17600	23200	16600	16000	25600	26800	21700	18800	17400
21	18400	10000	12000	18500	23000	16300	16900	25700	26800	21300	18800	17300
22	17900	9810	11700	19100	22700	16100	17600	26000	26800	21000	18700	17300
23	17500	10000	11500	20000	22400	16000	17900	26100	27000	20600	18700	17300
24	17200	10600	11200	20600	22100	15900	18200	25900	27100	20300	18600	17300
25	16800	10700	11000	21000	22000	15700	18600	25900	27100	19900	18600	17200
26	16400	10700	10800	21400	21700	15700	19400	25900	26900	19800	18500	17200
27	16000	10600	10500	21700	21400	15900	20300	25800	26600	19700	18500	17200
28	15600	10500	10200	22100	21100	16000	21000	25900	26500	19700	18400	17100
29	15200	10700	9970	22300	---	15900	21200	25900	26500	19700	18400	17100
30	14800	12700	9710	22600	---	15800	21400	25800	26400	19600	18300	17100
31	14500	---	9620	22900	---	15700	---	25700	---	19600	18200	---
MAX	22600	14100	14500	22900	25700	21000	21400	26100	27100	26300	19600	18200
MIN	14500	9810	9620	9740	21100	15700	11700	21900	25100	19600	18200	17100
a	4647.06	4645.08	4641.15	4656.48	4654.60	4648.54	4654.93	4659.52	4660.26	4652.88	4651.40	4650.11
b	-7900	-1800	-3080	+13300	-1800	-5400	+5700	+4300	+700	-6800	-1400	-1100

CAL YR 1998 b +7850

WTR YR 1999 b -5300

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

b Change in contents, in acre-feet.

11278000 ELEANOR CREEK NEAR HETCH HETCHY, CA

LOCATION.—Lat 37°58'09", long 119°52'52", in NW 1/4 SW 1/4 sec.3, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on right bank 0.5 mi downstream from Lake Eleanor Dam, 1.1 mi upstream from Miguel Creek, and 5.5 mi northwest of Hetch Hetchy.

DRAINAGE AREA.—78.4 mi².

PERIOD OF RECORD.—October 1909 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Sequoia" 1910–18.

REVISED RECORDS.—WSP 1315-A: 1923(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder . Elevation of gage is 4,500 ft above sea level, from topographic map. November 1909 to November 1915, nonrecording gage and water-stage recorder at site 1 mi upstream at different datum. Prior to Jan. 2, 1997, datum of gage 10 ft lower.

REMARKS.—Records fair. Flow regulated by Lake Eleanor (station 11277500) 0.5 mi upstream beginning in 1918. Since March 1960, water is diverted at Lake Eleanor via Lake Eleanor diversion tunnel (station 11277100) to Cherry Lake (station 11277200). See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 19,500 ft³/s, Jan. 2, 1997, gage height, 26.74 ft, from rating curve extended above 2,600 ft³/s on basis of slope-area measurements at gage heights 9.94 and 12.24 ft, datum then in use; no flow at times in 1910, 1930–31, 1933, 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	3.9	7.4	5.3	32	10	12	26	857	34	22	21
2	3.9	4.2	6.3	5.3	36	14	12	27	812	34	22	21
3	3.8	5.3	6.3	5.3	41	14	11	41	790	34	22	21
4	3.7	5.3	6.0	5.3	47	14	11	48	596	34	22	22
5	3.5	5.3	5.8	5.3	52	14	12	54	298	34	22	23
6	3.5	5.3	5.9	5.3	58	13	12	70	167	32	22	23
7	3.3	6.0	5.8	5.2	153	13	12	183	183	30	22	23
8	4.0	5.5	5.9	5.2	569	13	12	826	133	29	22	23
9	4.7	5.4	5.8	5.3	761	14	11	847	190	29	22	23
10	4.7	5.3	5.8	5.3	372	13	11	668	177	29	22	23
11	4.6	5.4	5.8	5.3	150	13	12	612	97	29	22	23
12	4.7	5.4	5.8	5.3	100	13	13	760	209	29	22	23
13	4.4	5.3	5.8	5.3	86	13	12	957	510	29	22	23
14	4.2	5.3	5.8	5.3	72	13	12	818	573	28	21	15
15	4.2	5.3	5.8	5.4	60	12	18	633	510	28	21	9.1
16	4.2	5.3	5.8	5.7	50	12	25	535	513	28	21	11
17	4.2	5.5	5.8	5.6	54	12	26	390	514	28	21	11
18	4.2	5.3	5.8	6.9	52	12	26	531	513	28	21	11
19	4.1	5.3	5.8	12	47	12	26	659	512	28	21	11
20	4.2	5.2	5.8	14	41	12	26	724	510	28	21	11
21	4.1	5.2	5.8	7.6	39	12	26	789	410	28	21	11
22	4.2	5.3	5.7	6.7	31	12	26	961	350	28	21	11
23	4.2	5.4	5.7	8.5	23	13	27	1200	350	25	21	11
24	4.2	5.6	5.6	7.2	13	12	27	1180	351	23	21	11
25	4.1	5.4	5.5	6.9	9.4	12	27	1020	395	23	21	11
26	4.0	5.4	5.5	6.9	6.8	12	27	1050	417	23	21	11
27	4.0	5.4	5.5	6.7	6.3	12	27	965	373	23	21	11
28	3.9	5.5	5.4	6.9	6.2	12	27	958	189	23	21	11
29	3.9	6.0	5.4	9.2	---	12	26	1060	34	22	21	11
30	3.9	7.5	5.4	18	---	12	25	959	34	23	21	11
31	3.9	---	5.3	25	---	12	---	864	---	22	21	---
TOTAL	129.0	161.5	179.8	233.2	2967.7	389	577	20415	11567	865	664	481.1
MEAN	4.16	5.38	5.80	7.52	106	12.5	19.2	659	386	27.9	21.4	16.0
MAX	6.5	7.5	7.4	25	761	14	27	1200	857	34	22	23
MIN	3.3	3.9	5.3	5.2	6.2	10	11	26	34	22	21	9.1
AC-FT	256	320	357	463	5890	772	1140	40490	22940	1720	1320	954

11278000 ELEANOR CREEK NEAR HETCH HETCHY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1917, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.2	62.5	97.2	208	175	320	610	742	640	190	25.7	8.81
MAX	157	287	358	485	307	516	806	945	1207	484	65.4	25.8
(WY)	1917	1910	1910	1914	1911	1916	1916	1914	1911	1911	1911	1913
MIN	.081	.19	12.4	33.6	66.6	116	264	536	230	36.5	6.06	2.10
(WY)	1916	1916	1912	1913	1912	1912	1912	1913	1910	1910	1910	1915

SUMMARY STATISTICS

WATER YEARS 1910 - 1917

ANNUAL MEAN	259
HIGHEST ANNUAL MEAN	386
LOWEST ANNUAL MEAN	144
HIGHEST DAILY MEAN	5000
LOWEST DAILY MEAN	.00
ANNUAL SEVEN-DAY MINIMUM	.00
ANNUAL RUNOFF (AC-FT)	187300
10 PERCENT EXCEEDS	770
50 PERCENT EXCEEDS	109
90 PERCENT EXCEEDS	5.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1959, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	76.0	75.5	105	94.5	134	224	460	696	409	144	98.9	103
MAX	145	931	826	490	454	708	794	1330	981	471	204	179
(WY)	1929	1951	1951	1956	1945	1928	1936	1952	1922	1958	1958	1933
MIN	3.68	1.65	1.74	2.50	6.64	1.70	44.5	138	46.0	20.7	16.4	4.16
(WY)	1932	1928	1932	1957	1930	1920	1924	1931	1924	1959	1959	1931

SUMMARY STATISTICS

WATER YEARS 1920 - 1959

ANNUAL MEAN	218
HIGHEST ANNUAL MEAN	356
LOWEST ANNUAL MEAN	86.2
HIGHEST DAILY MEAN	8270
LOWEST DAILY MEAN	.00
ANNUAL SEVEN-DAY MINIMUM	.00
INSTANTANEOUS PEAK FLOW	11700
INSTANTANEOUS PEAK STAGE	14.95
ANNUAL RUNOFF (AC-FT)	158200
10 PERCENT EXCEEDS	584
50 PERCENT EXCEEDS	113
90 PERCENT EXCEEDS	8.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.7	37.6	33.3	72.8	60.1	25.1	88.1	291	352	119	25.9	26.0
MAX	333	565	314	1416	586	198	916	1029	1605	677	176	137
(WY)	1983	1984	1984	1997	1986	1986	1982	1995	1983	1983	1983	1982
MIN	.15	2.55	4.30	4.27	3.76	4.15	4.44	4.81	4.72	12.0	2.43	.40
(WY)	1967	1978	1964	1978	1974	1972	1973	1972	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1961 - 1999

ANNUAL TOTAL	80870.9	38629.3	
ANNUAL MEAN	222	106	95.6
HIGHEST ANNUAL MEAN			320
LOWEST ANNUAL MEAN			4.73
HIGHEST DAILY MEAN	1770	Jun 7	15100
LOWEST DAILY MEAN	3.3	Oct 7	.10
ANNUAL SEVEN-DAY MINIMUM	3.7	Oct 2	.10
INSTANTANEOUS PEAK FLOW			19500
INSTANTANEOUS PEAK STAGE			26.74
ANNUAL RUNOFF (AC-FT)	160400	76620	69260
10 PERCENT EXCEEDS	944	510	292
50 PERCENT EXCEEDS	15	14	8.1
90 PERCENT EXCEEDS	5.3	5.3	4.6

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 sea level (levels by city and county of San Francisco).

REMARKS.—Records good. Flow regulated by Cherry Lake (station 11277200) 10 mi upstream and Lake Eleanor (station 11277500) 9.8 mi upstream. Diversion from Cherry Lake to Dion R. Holm Powerplant began Aug. 1, 1960. Water is returned to creek 1.2 mi below station. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 33,200 ft³/s, Jan. 2, 1997, gage height, 18.46 ft, from rating curve extended above 4,600 ft³/s; minimum daily, 0.30 ft³/s, Apr. 5, 6, 1964.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e28	15	85	34	113	153	92	89	806	62	44	45
2	e22	15	58	33	117	155	92	91	774	70	44	45
3	e16	16	56	32	124	158	94	127	768	70	46	45
4	e16	19	60	32	137	161	91	144	639	67	46	45
5	e16	19	50	32	142	142	96	139	400	66	46	46
6	e16	19	48	31	150	133	102	149	259	65	49	46
7	e15	26	44	32	617	125	100	233	253	60	50	46
8	e15	40	43	32	929	122	104	763	228	58	49	46
9	16	24	44	32	1160	132	104	835	219	56	49	46
10	17	23	42	31	689	123	102	690	275	56	49	46
11	17	27	41	31	408	122	108	640	157	56	48	46
12	17	24	41	31	320	122	122	728	231	56	48	46
13	17	22	42	31	289	122	160	904	512	55	48	46
14	16	22	46	31	261	120	180	801	603	55	47	45
15	16	21	44	33	232	114	169	660	647	54	47	30
16	16	21	43	47	216	108	154	577	1480	54	47	34
17	16	26	41	48	377	105	136	470	1240	53	46	34
18	16	24	39	66	275	102	122	547	1160	53	46	35
19	15	22	38	285	253	99	115	663	1000	52	46	35
20	15	22	39	474	221	103	111	703	808	53	46	34
21	15	21	37	294	232	102	108	751	752	53	46	34
22	15	22	36	162	204	98	106	876	685	53	46	35
23	15	23	35	205	192	113	103	1120	728	52	46	35
24	16	31	37	186	180	112	101	1130	907	46	46	35
25	18	25	35	140	206	102	101	951	775	46	46	34
26	16	23	35	129	178	97	99	985	489	46	46	34
27	16	23	35	112	159	93	97	913	433	46	46	34
28	15	25	35	103	154	89	96	886	299	45	45	34
29	16	30	34	100	---	87	94	1010	66	45	45	34
30	15	54	34	102	---	86	91	902	64	45	45	34
31	15	---	34	112	---	95	---	818	---	45	45	---
TOTAL	510	724	1331	3043	8535	3595	3350	20295	17657	1693	1443	1184
MEAN	16.5	24.1	42.9	98.2	305	116	112	655	589	54.6	46.5	39.5
MAX	28	54	85	474	1160	161	180	1130	1480	70	50	46
MIN	15	15	34	31	113	86	91	89	64	45	44	30
AC-FT	1010	1440	2640	6040	16930	7130	6640	40260	35020	3360	2860	2350

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

MEAN	23.9	52.3	63.2	156	143	116	162	354	487	218	42.0	38.9
MAX	341	610	390	2566	922	399	1298	1342	2845	1699	229	164
(WY)	1983	1984	1965	1997	1986	1983	1982	1982	1983	1983	1983	1978
MIN	2.95	4.85	3.07	3.27	2.70	2.71	2.12	2.16	2.88	9.55	10.3	11.0
(WY)	1961	1961	1977	1977	1977	1977	1977	1977	1977	1977	1963	1962

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	119992		63360			
ANNUAL MEAN	329		174		154	
HIGHEST ANNUAL MEAN					634	
LOWEST ANNUAL MEAN					8.08	
HIGHEST DAILY MEAN	2150	Jul 10	1480	Jun 16	25200	Jan 2 1997
LOWEST DAILY MEAN	15	Oct 7	15	Oct 7	.30	Apr 5 1964
ANNUAL SEVEN-DAY MINIMUM	15	Oct 17	15	Oct 17	1.4	Oct 6 1970
INSTANTANEOUS PEAK FLOW			1710		Jun 16	33200
INSTANTANEOUS PEAK STAGE			6.56		Jun 16	18.46
ANNUAL RUNOFF (AC-FT)	238000		125700		111900	
10 PERCENT EXCEEDS	1080		652		392	
50 PERCENT EXCEEDS	154		54		32	
90 PERCENT EXCEEDS	21		21		10	

e Estimated.

11278400 CHERRY CREEK BELOW DION R. HOLM POWERPLANT, NEAR MATHER, CA

LOCATION.—Lat 37°53'24", long 119°58'08", in NE 1/4 NW 1/4 sec.2, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 600 ft upstream from mouth, 0.5 mi downstream from powerplant, 0.8 mi northwest of Early Intake, and 6.2 mi west of Mather.

DRAINAGE AREA.—234 mi².

PERIOD OF RECORD.—March 1963 to current year. Prior to October 1965, published as "below Cherry Powerhouse, near Mather."

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 2,133.50 ft above sea level (levels by city and county of San Francisco).

REMARKS.—Records good. Flow regulated by Cherry Lake (station 11277200) 11 mi upstream and Lake Eleanor (station 11277500) 10 mi upstream. Flow diverted, at times, into Cherry Creek Canal (station 11278200) 2 mi upstream from station for domestic use and to supplement flow to Hetch Hetchy Aqueduct. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 33,500 ft³/s, Jan. 2, 1997, gage height, unknown, on basis of combined peak flow for Cherry Creek near Early Intake (station 11278300) and Dion R. Holm Powerplant, maximum gage height (from floodmark) 25.4 ft, Jan. 3, 1997, caused by backwater from Tuolumne River; minimum daily, 1.6 ft³/s, June 4, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232	114	988	396	1030	1180	1130	1120	1820	790	49	560
2	392	567	926	328	683	1180	1130	1130	1780	769	534	569
3	336	595	985	198	582	1190	1130	1160	1770	816	550	575
4	31	588	1080	63	725	1190	1130	1170	1630	861	544	215
5	141	477	966	41	742	1170	1130	1160	1380	854	524	218
6	24	464	712	31	811	1160	1140	1170	1250	892	647	263
7	22	36	1010	32	1120	1150	1140	1230	1240	813	265	513
8	22	107	662	32	1790	1160	1140	1770	1230	685	52	438
9	22	378	683	32	2250	1160	1140	1620	1220	421	477	379
10	23	434	895	32	1710	1160	1140	1690	1270	416	481	403
11	23	498	666	47	1400	1160	1150	1630	1170	212	506	216
12	23	413	530	32	1310	1160	1160	1730	1230	470	555	49
13	61	400	414	33	1280	1150	1190	1920	1480	448	591	216
14	61	30	533	33	1260	1160	1200	1820	1590	711	636	199
15	23	96	545	34	1230	1150	1190	1650	1630	288	59	201
16	27	401	537	176	1210	1150	1180	1520	2570	291	486	203
17	22	408	555	284	1370	1140	1170	1460	2300	293	538	203
18	22	380	436	344	1280	1140	1160	1530	2220	56	595	202
19	47	420	265	533	1270	1140	1150	1660	2040	291	779	38
20	65	253	205	935	1230	1140	1150	1690	1810	336	774	39
21	253	158	479	767	1250	939	1140	1760	1750	329	437	38
22	255	33	422	896	1220	1130	1140	1880	1670	330	50	39
23	501	530	413	738	1210	1140	1140	2160	1720	325	322	95
24	255	541	370	712	1200	1140	1140	2190	1930	213	49	245
25	119	529	298	746	1230	1130	1140	1990	1780	49	67	39
26	306	249	276	843	1200	1130	1130	2020	1460	266	340	39
27	281	502	255	817	1190	1120	1130	1930	1410	270	310	101
28	279	543	445	732	1180	914	1130	1900	1300	269	420	154
29	256	539	720	501	---	1120	1130	2050	1090	292	54	201
30	292	721	751	1010	---	1120	1130	1920	932	270	500	308
31	64	---	705	1030	---	1130	---	1830	---	281	534	---
TOTAL	4480	11404	18727	12428	33963	35203	34400	51460	47672	13607	12725	6958
MEAN	145	380	604	401	1213	1136	1147	1660	1589	439	410	232
MAX	501	721	1080	1030	2250	1190	1200	2190	2570	892	779	575
MIN	22	30	205	31	582	914	1130	1120	932	49	49	38
AC-FT	8890	22620	37150	24650	67370	69830	68230	102100	94560	26990	25240	13800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

MEAN	419	444	480	654	686	726	832	1074	1190	779	524	467
MAX	962	1445	1394	3266	1528	1351	2199	2310	3728	2643	1161	765
(WY)	1983	1984	1984	1997	1986	1997	1982	1996	1983	1983	1983	1997
MIN	12.7	14.9	5.56	4.22	3.84	3.71	2.63	2.67	4.08	11.3	25.8	20.4
(WY)	1994	1994	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1963 - 1999

ANNUAL TOTAL	370829	283027										
ANNUAL MEAN	1016	775								689		
HIGHEST ANNUAL MEAN										1437		1983
LOWEST ANNUAL MEAN										47.9		1977
HIGHEST DAILY MEAN	3490	Jul 10	2570	Jun 16	25500	Jan 2	1997					
LOWEST DAILY MEAN	22	Oct 7	22	Oct 7	1.6	Jun 4	1977					
ANNUAL SEVEN-DAY MINIMUM	23	Oct 6	23	Oct 6	2.1	Apr 21	1977					
INSTANTANEOUS PEAK FLOW			2880	Jun 16	33500	Jan 2	1997					
INSTANTANEOUS PEAK STAGE			10.69	Jun 16	25.40	Jan 3	1997					
ANNUAL RUNOFF (AC-FT)	735500	561400			499300							
10 PERCENT EXCEEDS	2150	1630			1280							
50 PERCENT EXCEEDS	988	683			620							
90 PERCENT EXCEEDS	62	49			72							

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 September 1996, October 1997 to current year.

REVISED RECORDS.—WSP 1445: 1923, 1925(M), 1926–28, 1929–30(M), 1932(M), 1935–36(M), 1937–38, 1943(M), 1945(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 2,800 ft above sea level, from topographic map. Prior to Nov. 22, 1931, at site 50 ft upstream at same datum. Nov. 22, 1931, to July 19, 1977, at present site, datum 1.00 ft higher.

REMARKS.—Records good. No diversion upstream from station. One small recreation reservoir (capacity unknown) is located approximately 3.5 mi upstream. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 11,900 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 daily, 0.4 ft³/s, Aug. 22, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 3, 1997, reached a stage of 12.51 ft, from floodmarks, discharge, 12,000 ft³/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 900 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 9	1230	1,620	7.45				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	33	177	45	99	175	151	233	228	55	25	16
2	52	32	90	44	95	177	146	253	206	53	25	16
3	39	32	90	44	96	183	145	249	196	51	25	16
4	37	32	82	43	100	187	140	220	171	49	24	16
5	36	32	64	42	97	171	146	223	173	49	23	15
6	35	32	62	42	94	162	150	284	175	47	23	15
7	34	36	55	41	500	154	145	333	168	45	25	15
8	33	53	56	41	583	148	149	329	161	43	25	14
9	33	47	56	40	999	159	146	305	155	42	25	14
10	33	40	54	40	470	149	154	287	150	41	24	14
11	33	41	52	40	305	147	164	300	155	41	24	14
12	32	40	51	39	257	145	178	356	156	41	23	14
13	32	38	52	39	228	149	229	349	150	40	22	14
14	32	36	54	39	206	153	290	304	148	40	21	14
15	32	35	54	40	187	146	332	272	144	39	21	14
16	32	35	53	63	178	140	340	259	133	37	20	15
17	32	39	53	63	303	139	334	283	124	36	20	15
18	32	42	54	92	253	143	319	314	117	35	19	15
19	31	39	54	341	234	148	323	300	108	34	19	16
20	31	35	54	563	205	156	330	306	101	34	19	16
21	30	37	41	317	214	148	326	313	95	33	18	15
22	30	36	52	186	194	140	305	358	90	33	18	15
23	30	38	55	316	191	168	259	374	87	32	17	16
24	30	49	51	244	188	159	238	336	82	31	17	17
25	36	47	50	178	223	152	245	318	78	31	16	15
26	33	44	49	156	199	163	281	339	65	30	16	14
27	33	41	47	128	182	166	299	303	66	29	17	13
28	32	41	44	116	177	162	277	296	63	28	16	13
29	34	45	42	108	---	159	237	280	61	27	16	13
30	36	117	43	103	---	156	218	248	57	26	15	13
31	34	---	44	109	---	162	---	238	---	26	16	---
TOTAL	1049	1244	1835	3702	7057	4866	6996	9162	3863	1178	634	442
MEAN	33.8	41.5	59.2	119	252	157	233	296	129	38.0	20.5	14.7
MAX	52	117	177	563	999	187	340	374	228	55	25	17
MIN	30	32	41	39	94	139	140	220	57	26	15	13
AC-FT	2080	2470	3640	7340	14000	9650	13880	18170	7660	2340	1260	877

11281000 SOUTH FORK TUOLUMNE RIVER NEAR OAKLAND RECREATION CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	12.9	31.1	62.2	91.4	139	167	226	258	134	36.1	13.7	10.3
MAX	50.6	229	516	652	725	750	730	760	656	242	57.9	39.0
(WY)	1983	1951	1956	1969	1986	1983	1982	1969	1983	1983	1983	1998
MIN	1.53	3.66	6.04	8.05	8.74	11.1	15.7	26.0	12.7	2.56	.48	.75
(WY)	1978	1930	1991	1977	1991	1977	1977	1977	1976	1931	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1923 - 1999	
ANNUAL TOTAL	77152		42028			
ANNUAL MEAN	211		115		97.8	
HIGHEST ANNUAL MEAN					330 1983	
LOWEST ANNUAL MEAN					9.25 1977	
HIGHEST DAILY MEAN	1340	Feb 3	999	Feb 9	6960	Dec 23 1955
LOWEST DAILY MEAN	30	Jan 1	13	Sep 27	.40	Aug 22 1934
ANNUAL SEVEN-DAY MINIMUM	31	Oct 18	14	Sep 8	.45	Aug 12 1977
INSTANTANEOUS PEAK FLOW			1620	Feb 9	11900	Dec 23 1955
INSTANTANEOUS PEAK STAGE			7.45	Feb 9	11.90	Dec 23 1955
ANNUAL RUNOFF (AC-FT)	153000		83360		70870	
10 PERCENT EXCEEDS	515		297		265	
50 PERCENT EXCEEDS	120		54		32	
90 PERCENT EXCEEDS	34		17		6.2	

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 September 1996, October 1997 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 "Middle Tuolumne River near Buck Meadows" 1933–40.

REVISED RECORDS.—WSP 1395: 1919(M), 1938(M), 1951(P). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 2,800 ft above sea level, from topographic map.

REMARKS.—Records good except for estimated daily discharges, which are fair. No regulation but small diversion upstream from station for irrigation. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 4,920 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 some years.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 3, 1997, reached a stage of 13.02 ft, from floodmarks, discharge, 6,300 ft³/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 380 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0100	445	4.31	May 26	0030	680	5.16
Feb. 9	1130	708	5.25				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	21	119	32	62	114	120	235	376	65	20	10
2	28	21	69	31	61	120	114	257	338	61	20	11
3	26	21	69	30	65	125	113	243	280	58	19	10
4	25	20	57	30	67	126	109	217	245	55	20	10
5	24	19	47	30	65	116	112	232	245	54	19	9.8
6	22	19	47	29	63	109	113	297	259	51	19	9.6
7	21	23	38	29	265	103	112	365	259	48	21	9.0
8	20	30	45	28	318	100	117	371	243	46	21	8.6
9	20	27	40	28	439	103	114	357	233	44	21	9.2
10	19	24	38	28	214	101	124	332	229	42	20	8.3
11	19	28	37	28	153	101	126	352	241	41	22	8.1
12	19	26	37	28	139	99	131	421	243	40	22	8.0
13	19	25	38	27	126	102	161	435	235	42	20	7.8
14	18	26	41	27	118	104	198	388	237	42	18	7.7
15	18	25	39	30	109	99	222	345	230	38	17	7.6
16	19	25	39	54	106	96	231	332	211	35	16	7.4
17	18	28	41	52	213	99	240	358	192	34	15	7.3
18	18	27	41	71	171	106	247	412	179	32	14	7.4
19	18	25	40	237	148	114	267	407	165	31	14	8.8
20	17	25	e36	288	127	123	285	418	155	30	14	8.7
21	17	25	e27	166	136	111	288	432	148	29	13	8.1
22	17	26	36	112	124	106	264	477	138	29	12	8.1
23	16	28	33	164	120	121	229	521	129	28	12	8.8
24	17	43	36	126	117	116	225	508	119	27	11	9.4
25	21	37	39	100	146	114	233	492	110	26	11	8.9
26	22	31	36	91	124	125	266	531	96	25	11	8.5
27	21	29	34	77	115	136	291	495	85	24	11	8.0
28	21	32	33	71	112	133	273	471	79	23	11	7.5
29	21	35	32	69	---	131	223	452	74	22	11	7.3
30	22	83	32	67	---	129	210	399	69	21	10	7.1
31	22	---	34	72	---	128	---	384	---	21	10	---
TOTAL	636	854	1330	2252	4023	3510	5758	11936	5842	1164	495	256.0
MEAN	20.5	28.5	42.9	72.6	144	113	192	385	195	37.5	16.0	8.53
MAX	31	83	119	288	439	136	291	531	376	65	22	11
MIN	16	19	27	27	61	96	109	217	69	21	10	7.1
AC-FT	1260	1690	2640	4470	7980	6960	11420	23680	11590	2310	982	508

e Estimated.

11282000 MIDDLE TUOLUMNE RIVER AT OAKLAND RECREATION CAMP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.41	15.3	32.1	43.7	68.4	88.2	156	296	193	39.3	7.23	3.66
MAX	36.9	181	318	248	345	353	476	747	875	361	60.7	27.3
(WY)	1983	1951	1951	1956	1986	1995	1982	1969	1983	1983	1983	1998
MIN	.083	.80	1.71	2.49	3.51	4.87	16.9	24.0	10.7	.85	.011	.000
(WY)	1978	1930	1991	1991	1991	1977	1977	1977	1992	1924	1977	1931

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1917 - 1999	
ANNUAL TOTAL	68121		38056.0			
ANNUAL MEAN	187		104		78.9	
HIGHEST ANNUAL MEAN					246	
LOWEST ANNUAL MEAN					6.49	
HIGHEST DAILY MEAN	890	Jun 16	531	May 26	4000	Dec 23 1955
LOWEST DAILY MEAN	13	Jan 1	7.1	Sep 30	.00	Sep 4 1924
ANNUAL SEVEN-DAY MINIMUM	17	Oct 18	7.6	Sep 12	.00	Sep 4 1924
INSTANTANEOUS PEAK FLOW			708	Feb 9	4920	Dec 23 1955
INSTANTANEOUS PEAK STAGE			5.25	Feb 9	11.75	Dec 23 1955
ANNUAL RUNOFF (AC-FT)	135100		75480		57200	
10 PERCENT EXCEEDS	536		269		240	
50 PERCENT EXCEEDS	100		44		19	
90 PERCENT EXCEEDS	21		11		1.7	

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 sea level (levels by Boise-Cascade Corp.).

REMARKS.—Records good except flows below 1 ft³/s, which are fair, and flows below 0.10 ft³/s, which are poor. No storage or diversion from station. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,620 ft³/s, Feb. 17, 1986, gage height, 7.03 ft, from rating curve extended above 1,100 ft³/s on basis of slope-area measurement at gage height 6.51 ft; no flow for many days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 6, 1965, 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, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0245	490	4.57	Feb. 9	1245	809	5.19
Jan. 23	1715	255	3.93	Feb. 18	2230	177	3.67

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.42	.56	14	1.9	24	15	10	6.2	2.8	.46	.00	.00
2	.41	.58	4.8	1.8	14	14	8.6	6.2	3.1	.41	.00	.00
3	.39	.59	4.9	1.6	11	15	7.6	9.7	4.3	.39	.00	.00
4	.37	.59	7.1	1.6	9.0	15	7.5	8.7	3.8	.37	.00	.00
5	.36	.78	4.0	1.6	7.6	12	7.7	6.8	3.5	.36	.00	.00
6	.34	.78	3.3	1.6	7.6	11	14	6.2	3.2	.34	.00	.00
7	.31	1.6	2.9	1.5	268	11	21	5.8	2.9	.31	.00	.00
8	.28	2.7	2.7	1.5	221	10	45	5.5	2.7	.27	.00	.00
9	.29	1.4	2.6	1.5	435	21	52	5.3	2.6	.25	.00	.00
10	.29	1.0	2.3	1.5	134	16	52	5.0	2.4	.22	.00	.00
11	.29	1.5	2.1	1.5	59	13	47	4.9	2.3	.21	.00	.00
12	.30	1.4	2.0	1.5	36	11	35	4.8	2.1	.18	.00	.00
13	.29	1.1	1.9	1.4	25	10	28	4.7	2.0	.17	.00	.00
14	.30	.94	2.4	1.4	20	9.7	23	4.6	1.9	.13	.00	.00
15	.32	.90	2.3	1.7	16	9.4	19	4.6	1.8	.09	.00	.00
16	.32	.87	2.0	5.5	15	8.9	15	4.4	1.7	.06	.00	.00
17	.32	1.4	1.9	4.3	93	8.4	13	4.2	1.6	.03	.00	.00
18	.34	1.7	1.8	7.8	70	7.9	12	4.1	1.5	.02	.00	.00
19	.34	1.3	1.8	68	98	7.6	10	4.0	1.3	.01	.00	.00
20	.34	1.1	1.9	206	49	10	10	3.9	1.3	.00	.00	.00
21	.34	1.0	1.8	76	71	9.1	9.6	3.9	1.2	.00	.00	.00
22	.33	1.1	1.8	25	55	7.9	9.1	3.8	1.1	.00	.00	.00
23	.32	1.3	1.8	106	38	9.9	8.1	3.6	1.1	.00	.00	.00
24	.48	3.0	1.8	70	29	8.6	7.7	3.6	.96	.00	.00	.00
25	.68	2.2	1.8	25	34	7.6	7.3	3.5	.85	.00	.00	.00
26	.59	1.5	1.9	19	25	7.1	7.1	3.3	.79	.00	.00	.00
27	.57	1.3	1.9	15	20	6.8	7.1	3.2	.73	.00	.00	.00
28	.56	1.3	1.9	11	17	6.4	6.9	2.9	.66	.00	.00	.00
29	.56	1.8	1.9	9.1	---	6.2	7.1	2.5	.59	.00	.00	.00
30	.56	6.7	1.9	7.8	---	6.2	6.6	2.8	.52	.00	.00	.00
31	.56	---	1.9	25	---	9.1	---	2.8	---	.00	.00	---
TOTAL	12.17	43.99	89.1	704.1	1901.2	320.8	514.0	145.5	57.30	4.28	0.00	0.00
MEAN	.39	1.47	2.87	22.7	67.9	10.3	17.1	4.69	1.91	.14	.000	.000
MAX	.68	6.7	14	206	435	21	52	9.7	4.3	.46	.00	.00
MIN	.28	.56	1.8	1.4	7.6	6.2	6.6	2.5	.52	.00	.00	.00
AC-FT	24	87	177	1400	3770	636	1020	289	114	8.5	.00	.00

11284400 BIG CREEK ABOVE WHITES GULCH, NEAR GROVELAND, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.093	3.30	10.8	28.9	34.2	25.7	11.5	4.01	1.23	.28	.043	.024
MAX	1.05	43.2	103	184	173	126	74.1	26.2	7.61	2.42	.82	.42
(WY)	1983	1983	1997	1997	1986	1983	1982	1983	1998	1983	1983	1983
MIN	.000	.000	.000	.000	.000	.038	.014	.018	.000	.000	.000	.000
(WY)	1971	1977	1977	1991	1991	1977	1977	1977	1977	1972	1971	1969

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1969 - 1999	
ANNUAL TOTAL	8173.83		3792.44			
ANNUAL MEAN	22.4		10.4		9.88	
HIGHEST ANNUAL MEAN					38.2	
LOWEST ANNUAL MEAN					.011	
HIGHEST DAILY MEAN	800	Feb 3	435	Feb 9	1370	Jan 2 1997
LOWEST DAILY MEAN	.02	Sep 4	.00	Jul 20	.00	Aug 27 1969
ANNUAL SEVEN-DAY MINIMUM	.05	Aug 30	.00	Jul 20	.00	Aug 27 1969
INSTANTANEOUS PEAK FLOW			809		2620	
INSTANTANEOUS PEAK STAGE			5.19		7.03	
ANNUAL RUNOFF (AC-FT)	16210		7520		7160	
10 PERCENT EXCEEDS	49		20		16	
50 PERCENT EXCEEDS	3.5		1.8		.37	
90 PERCENT EXCEEDS	.28		.00		.00	

11287500 DON PEDRO RESERVOIR NEAR LA GRANGE, CA

LOCATION.—Lat 37°42'06", long 120°25'16", in NE 1/4 SW 1/4 sec.3, T.3 S., R.14 E., Tuolumne County, Hydrologic Unit 18040009, on left end of New Don Pedro Dam on Tuolumne River, 500 ft downstream from Mexican Gulch, and 3.4 mi northeast of La Grange.

DRAINAGE AREA.—1,533 mi².

PERIOD OF RECORD.—September 1923 to current year. Year-end contents only 1923–24 and October 1924 to September 1930 monthend contents, published in WSP 1315-A.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Turlock Irrigation District). Prior to Feb. 1, 1941, nonrecording gage at site 1.5 mi upstream at same datum. Feb. 2, 1941, to Nov. 3, 1970, water-stage recorder at site 1.5 mi upstream at same datum. Nov. 4, 1970, to Apr. 26, 1972, nonrecording gage at same site and datum.

REMARKS.—Reservoir is formed by earthfill dam completed June 23, 1971. Storage began Nov. 3, 1970. Total capacity, 2,030,000 acre-ft at elevation 830.0 ft, top of uncontrolled spillway, of which 309,000 acre-ft below elevation 600.0 ft, mutually agreed-upon minimum, is not available for release. Water passes through powerplant at dam and down Tuolumne River to La Grange Dam, 2.5 mi downstream, where it is diverted into Turlock and Modesto Canals (stations 11289500 and 11289000) for irrigation. This reservoir is operated jointly by Turlock and Modesto Irrigation Districts. Prior to June 1971, reservoir was formed by a concrete gravity-type dam completed Jan. 1, 1923, capacity, 290,400 acre-ft. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 2,044,000 acre-ft, Jan. 2, 1997, elevation, 831.11 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, 1,972,000 acre-ft, July 6, 7, elevation, 825.49 ft, July 6; minimum, 1,623,000 acre-ft, Jan. 14–17, elevation 795.79 ft, Jan. 15.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Modesto and Turlock Irrigation Districts, dated August 1970)

550	158,700	650	517,400	770	1,359,000
570	212,900	680	679,000	800	1,669,000
590	274,800	710	869,700	830	2,030,000
620	384,100	740	1,095,000		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1711000	1633000	1657000	1644000	1657000	1664000	1646000	1652000	1803000	1958000	1856000	1715000
2	1707000	1633000	1660000	1644000	1657000	1663000	1646000	1649000	1809000	1962000	1850000	1711000
3	1703000	1634000	1663000	1644000	1657000	1663000	1646000	1648000	1811000	1966000	1844000	1707000
4	1699000	1635000	1664000	1643000	1655000	1663000	1645000	1647000	1818000	1969000	1838000	1704000
5	1694000	1635000	1665000	1641000	1654000	1663000	1645000	1647000	1824000	1971000	1833000	1700000
6	1691000	1635000	1665000	1638000	1652000	1663000	1646000	1646000	1829000	1972000	1827000	1697000
7	1687000	1636000	1665000	1636000	1665000	1663000	1646000	1646000	1833000	1972000	1819000	1694000
8	1683000	1636000	1666000	1634000	1680000	1662000	1646000	1649000	1837000	1969000	1812000	1692000
9	1680000	1637000	1666000	1632000	1703000	1662000	1647000	1649000	1840000	1967000	1810000	1688000
10	1678000	1638000	1665000	1631000	1709000	1660000	1648000	1650000	1844000	1964000	1808000	1687000
11	1675000	1639000	1664000	1629000	1708000	1657000	1648000	1651000	1847000	1961000	1804000	1686000
12	1672000	1639000	1663000	1626000	1701000	1654000	1650000	1652000	1851000	1956000	1799000	1683000
13	1670000	1640000	1661000	1625000	1695000	1650000	1654000	1653000	1855000	1953000	1795000	1679000
14	1667000	1641000	1660000	1623000	1687000	1647000	1658000	1654000	1860000	1949000	1791000	1677000
15	1664000	1641000	1659000	1623000	1678000	1643000	1661000	1654000	1865000	1943000	1785000	1674000
16	1662000	1641000	1657000	1623000	1671000	1642000	1664000	1654000	1874000	1938000	1780000	1672000
17	1661000	1642000	1656000	1623000	1672000	1641000	1666000	1656000	1881000	1933000	1776000	1670000
18	1659000	1642000	1654000	1626000	1671000	1641000	1669000	1661000	1889000	1927000	1773000	1668000
19	1655000	1643000	1653000	1638000	1670000	1640000	1671000	1670000	1898000	1922000	1769000	1666000
20	1651000	1644000	1651000	1655000	1668000	1640000	1672000	1680000	1908000	1917000	1765000	1663000
21	1648000	1644000	1647000	1660000	1668000	1640000	1673000	1689000	1918000	1911000	1761000	1660000
22	1646000	1644000	1644000	1661000	1667000	1639000	1674000	1698000	1925000	1906000	1756000	1656000
23	1644000	1644000	1643000	1665000	1665000	1639000	1674000	1709000	1932000	1902000	1753000	1653000
24	1641000	1646000	1643000	1666000	1665000	1639000	1673000	1720000	1941000	1898000	1747000	1650000
25	1638000	1647000	1643000	1665000	1665000	1640000	1672000	1731000	1950000	1893000	1742000	1648000
26	1636000	1648000	1643000	1664000	1665000	1641000	1672000	1742000	1955000	1887000	1739000	1647000
27	1635000	1648000	1643000	1662000	1665000	1642000	1669000	1756000	1957000	1883000	1735000	1646000
28	1634000	1649000	1643000	1660000	1664000	1642000	1665000	1768000	1957000	1878000	1731000	1644000
29	1633000	1650000	1644000	1658000	---	1643000	1661000	1777000	1958000	1872000	1727000	1642000
30	1633000	1653000	1644000	1656000	---	1643000	1656000	1786000	1958000	1866000	1723000	1638000
31	1633000	---	1644000	1656000	---	1645000	---	1795000	---	1861000	1718000	---
MAX	1711000	1653000	1666000	1666000	1709000	1664000	1674000	1795000	1958000	1972000	1856000	1715000
MIN	1633000	1633000	1643000	1623000	1652000	1639000	1645000	1646000	1803000	1861000	1718000	1638000
a	796.75	798.59	797.77	798.83	799.59	797.81	798.87	810.95	824.37	816.55	804.37	797.17
b	-81000	+20000	-9000	+12000	+8000	-19000	+11000	+139000	+163000	-97000	-143000	-80000
CAL YR 1998 b	+102000											
WTR YR 1999 b	-76000											

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11289000 MODESTO CANAL NEAR LA GRANGE, CA

LOCATION.—Lat 37°40'21", long 120°28'26", in NE 1/4 SW 1/4 sec.18, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 0.9 mi northwest of La Grange and 1.7 mi downstream from intake at La Grange Dam.

PERIOD OF RECORD.—April 1903 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1315-A: 1904-9 (monthly figures only).

GAGE.—Water-stage recorder and concrete control. Datum of gage is 267.47 ft above sea level (levels by Modesto Irrigation District). See WSP 1930 for history of changes prior to March 1932. March 1932 to Apr. 27, 1988, at site 1.1 mi upstream at different datum.

REMARKS.—Records good. Canal diverts from right bank of Tuolumne River at La Grange Dam for irrigation in Modesto and Waterford Irrigation Districts. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,820 ft³/s, July 1, 1935; no flow at times most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	718	103	36	240	30	.00	623	1270	601	952	904	656
2	547	89	.27	155	30	8.7	685	1270	609	638	1020	570
3	608	110	.24	159	30	261	809	762	725	702	1030	494
4	660	31	.10	186	30	270	857	459	528	870	898	756
5	322	62	.01	144	43	313	821	422	601	893	854	657
6	321	62	.05	96	56	297	653	508	846	307	812	705
7	181	46	.03	95	55	297	443	484	708	607	838	634
8	291	65	.00	95	56	314	600	471	631	683	772	578
9	197	65	.00	96	122	351	611	404	852	537	961	673
10	261	57	.00	95	438	351	434	403	752	819	1110	416
11	133	60	.00	78	336	445	436	380	634	814	970	743
12	267	61	.00	29	88	506	269	363	748	1260	947	826
13	413	61	.00	29	.10	502	187	362	732	1240	976	620
14	166	61	.00	29	.08	504	188	360	829	588	914	549
15	234	78	.00	29	.07	506	189	382	909	529	1310	688
16	153	81	23	29	.07	417	477	589	637	635	999	587
17	142	78	87	29	.09	186	298	1030	886	657	916	386
18	197	74	116	29	.07	191	328	1130	786	744	703	275
19	479	72	140	29	.05	193	417	880	668	546	915	415
20	378	72	145	29	.03	196	408	823	749	833	1060	595
21	412	85	149	29	.10	259	654	902	627	909	1040	524
22	402	79	148	30	.03	288	387	864	818	1080	1040	713
23	348	79	150	31	.00	361	674	808	968	730	875	606
24	443	79	264	31	.00	360	982	740	646	763	800	710
25	585	79	195	31	.00	218	909	881	717	720	988	611
26	409	79	195	30	.00	152	934	1070	819	755	721	65
27	497	79	163	30	.00	153	900	703	1010	713	871	76
28	261	79	200	30	.00	284	1170	717	905	868	800	581
29	311	79	191	30	---	295	1290	625	1010	1090	867	384
30	224	78	201	30	---	332	1280	704	1130	872	808	894
31	103	---	255	30	---	530	---	837	---	865	1020	---
TOTAL	10663	2183	2658.70	2032	1314.69	9340.70	18913	21603	23081	24219	28739	16987
MEAN	344	72.8	85.8	65.5	47.0	301	630	697	769	781	927	566
MAX	718	110	264	240	438	530	1290	1270	1130	1260	1310	894
MIN	103	31	.00	29	.00	.00	187	360	528	307	703	65
AC-FT	21150	4330	5270	4030	2610	18530	37510	42850	45780	48040	57000	33690

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1999, BY WATER YEAR (WY)

MEAN	244	103	76.2	51.9	87.0	300	655	824	890	789	641	433
MAX	633	579	416	465	407	799	1198	1349	1244	1194	977	902
(WY)	1968	1983	1980	1976	1976	1932	1949	1946	1943	1956	1983	1980
MIN	.000	.000	.000	.000	.000	.000	220	224	450	186	12.1	.000
(WY)	1913	1910	1910	1910	1920	1938	1991	1977	1926	1919	1918	1917

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1909 - 1999
ANNUAL TOTAL	126976.10	161734.09	
ANNUAL MEAN	348	443	427
HIGHEST ANNUAL MEAN			570
LOWEST ANNUAL MEAN			198
HIGHEST DAILY MEAN	1470	Jul 12	1820
LOWEST DAILY MEAN	.00	Dec 8	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Dec 8	.00
ANNUAL RUNOFF (AC-FT)	251900	320800	309400
10 PERCENT EXCEEDS	836	911	1010
50 PERCENT EXCEEDS	259	404	377
90 PERCENT EXCEEDS	28	29	.00

11289500 TURLOCK CANAL NEAR LA GRANGE, CA

LOCATION.—Lat 37°39'57", long 120°26'24", in NW 1/4 NW 1/4 sec.21, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on right bank, 0.4 mi downstream from intake at La Grange Dam, and 1.2 mi east of La Grange.

PERIOD OF RECORD.—October 1898 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1315-A: 1899–1908 (monthly figures only). WSP 1445: 1917–20, 1922.

GAGE.—Ultrasonic flow meter and concrete control. Datum of gage is 277.70 ft above sea level (levels by Turlock Irrigation District). See WSP 1930 for history of changes prior to Apr. 17, 1924. From May 17, 1984, to October 7, 1999, water-stage recorder at site 0.2 mi downstream at datum 2.72 ft lower.

REMARKS.—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 0.1 mi upstream from gage, passed through La Grange Powerplant, and returned to river. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 3,400 ft³/s several days in May 1984; no diversion for irrigation during some periods in some years; prior to 1939, unmeasured small discharge during winter called zero. No flow Jan. 27, 1984, to Mar. 14, 1984, when canal was drained for construction and installation of electromagnetic flow meter and many days during most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	201	.00	.00	.00	85	1.7	1220	1550	1240	2350	2140	1740
2	862	.00	.00	.00	143	13	1450	1360	1280	252	2250	1670
3	1200	.00	.00	.00	489	2.2	1630	1040	1210	.00	2610	1820
4	1300	.00	.00	391	4.1	209	1670	992	1370	.00	2580	1210
5	1160	.00	.00	794	424	421	1660	992	1620	340	2280	1610
6	1010	.00	.00	1320	704	431	1270	1220	1520	1120	1950	1210
7	937	.00	.00	969	16	434	1150	596	1740	2360	2400	1310
8	982	.00	.00	797	9.1	412	1550	315	1340	2630	1980	1100
9	571	.00	.00	909	22	582	1000	1050	1340	2380	1540	1220
10	109	.00	.00	782	80	932	672	943	1440	2330	1800	680
11	111	.00	.00	975	573	460	753	1080	1660	2430	1790	.00
12	131	.00	.01	1470	991	688	319	1010	1310	2750	1890	860
13	241	.00	.00	689	974	896	483	537	981	2310	1900	1210
14	215	.00	.00	463	993	899	673	737	1170	2900	1820	884
15	104	.00	.00	274	1050	738	1290	1010	1150	2730	1870	796
16	435	.00	.00	209	810	435	1220	1810	1370	2650	1830	810
17	550	.00	.00	138	527	405	918	1980	1910	2300	1710	778
18	649	.00	.00	182	207	425	861	1710	1470	2430	1150	644
19	1150	.00	.00	293	101	435	1080	1610	1640	2220	2020	672
20	1330	.00	.01	641	99	416	1450	1530	1130	2400	1720	816
21	1190	.00	.38	1220	118	412	1550	1650	1140	2100	1510	932
22	648	.00	.28	119	95	596	1890	1970	1820	2120	1380	1420
23	843	.00	.44	516	219	826	1600	1790	2130	1560	1440	1050
24	967	.00	.42	253	19	936	1730	1830	1650	1330	1890	869
25	998	.00	.13	235	2.6	1040	1960	2200	1560	1940	1710	543
26	463	.00	.04	707	1.6	1030	1570	2270	1880	2220	863	317
27	298	.00	.02	355	2.2	1050	1800	1300	1820	2090	1720	216
28	319	.00	.00	403	2.6	1050	1670	854	1890	1920	1490	410
29	20	.00	.00	409	---	1050	1460	1420	1940	2020	1180	703
30	.00	.00	.00	142	---	1030	1560	1320	2040	2110	1370	1050
31	.00	---	2.9	31	---	1070	---	1290	---	1780	1880	---
TOTAL	18994.00	0.00	4.63	15686.00	8761.2	19324.9	39109	40966	45761	60072.00	55663	28550.00
MEAN	613	.000	.15	506	313	623	1304	1321	1525	1938	1796	952
MAX	1330	.00	2.9	1470	1050	1070	1960	2270	2130	2900	2610	1820
MIN	.00	.00	.00	.00	1.6	1.7	319	315	981	.00	863	.00
AC-FT	37670	.00	9.2	31110	17380	38330	77570	81260	90770	119200	110400	56630

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 1999, BY WATER YEAR (WY)

MEAN	298	146	131	82.1	131	472	1022	1249	1343	1284	1074	691
MAX	883	1008	1210	544	855	1457	1874	1829	1883	2098	1991	1604
(WY)	1996	1976	1984	1997	1976	1997	1949	1984	1981	1980	1983	1967
MIN	.000	.000	.000	.000	.000	2.72	90.3	27.4	71.0	.000	25.4	.000
(WY)	1901	1901	1900	1900	1905	1973	1900	1977	1900	1914	1901	1901

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1899 - 1999	
ANNUAL TOTAL	265138.82		332891.73			
ANNUAL MEAN	726		912		665	
HIGHEST ANNUAL MEAN					1082	
LOWEST ANNUAL MEAN					54.3	
HIGHEST DAILY MEAN	2670		2900		3400	
LOWEST DAILY MEAN	.00		.00		.00	
ANNUAL SEVEN-DAY MINIMUM	.00		.00		.00	
ANNUAL RUNOFF (AC-FT)	525900		660300		481900	
10 PERCENT EXCEEDS	1760		1950		1670	
50 PERCENT EXCEEDS	585		896		456	
90 PERCENT EXCEEDS	.00		.00		.00	

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA

LOCATION.—Lat 37°39'59", long 120°26'28", in NW 1/4 NW 1/4 sec.21, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on left bank, 0.5 mi downstream from La Grange Dam, and 1.1 mi east of La Grange.

DRAINAGE AREA.—1,538 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 sea level (levels by Turlock Irrigation District).

REMARKS.—Records good. Flow diverted into Modesto Canal (station 11289000) and Turlock Canal (station 11289500) at La Grange Dam. Flow regulated by Don Pedro Powerplant, Don Pedro Reservoir (station 11287500), 4.5 mi upstream, Hetch Hetchy Reservoir (station 11275500), Cherry Lake (station 11277200), and Lake Eleanor (station 11277500). Tuolumne Canal (station 11297500) diverts water from the Stanislaus River Basin into the Tuolumne River Basin for power, irrigation, and domestic supply in the vicinity of Sonora, upstream from station. Diversion through Hetch Hetchy Aqueduct to San Francisco began Oct. 19, 1934; an average of 293 ft³/s was diverted during the current year. For records of combined discharge of river and Modesto and Turlock Canals, see station 11289651. See schematic diagram of Tuolumne River Basin.

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 58,900 ft³/s, Jan. 3, 1997, gage height, 28.43 ft; no flow for several days during September and October 1977.

Combined flow, maximum daily discharge, 50,100 ft³/s, Jan. 3, 1997; minimum daily, 0.45 ft³/s, Nov. 2, 1970.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1430	309	366	572	2500	4230	1400	2970	294	296	275	265
2	733	309	375	688	2080	4690	1110	3080	265	412	265	265
3	598	301	581	665	2240	4180	1060	2990	271	431	254	265
4	597	298	1160	607	2770	3740	1050	3050	268	306	259	264
5	710	292	1140	476	2240	3420	1180	2990	268	297	257	263
6	714	299	1310	367	2140	3450	1690	2870	267	298	256	265
7	1230	271	1240	364	1910	3230	2220	2760	268	290	252	268
8	e970	274	1140	380	2760	3430	2360	2780	268	287	251	268
9	923	282	1290	390	3610	3740	2650	2810	269	275	256	275
10	919	274	1810	388	4860	4000	2730	2810	268	265	259	300
11	1110	277	1820	382	6490	4490	2650	2940	267	267	258	321
12	1160	276	1720	374	7580	4370	2490	3400	282	325	259	315
13	1080	276	1680	370	7510	4120	1900	3620	287	253	255	289
14	1110	276	1630	373	7530	4270	1700	3520	295	259	254	290
15	1070	278	1700	377	7430	4050	1630	3110	296	262	254	287
16	585	288	1850	372	7090	3790	1770	1560	296	270	261	284
17	351	317	1660	377	6380	3460	1930	451	294	270	260	276
18	278	336	1650	363	6730	3400	1970	354	299	271	254	276
19	302	359	1690	358	6240	3360	1960	358	294	272	261	275
20	301	351	1920	408	6360	3390	2060	361	293	272	260	275
21	290	350	3010	876	6310	3240	2010	363	293	273	257	275
22	288	353	2110	2690	6280	3220	1930	362	292	271	260	286
23	314	355	1870	2750	5440	2780	1950	364	291	271	265	275
24	313	354	826	2940	4810	2370	1690	372	291	272	263	276
25	297	354	814	3050	4500	1870	1560	344	292	272	262	278
26	293	354	801	3000	4490	1950	1980	350	292	281	262	276
27	297	355	753	2970	4470	1970	2740	336	292	277	263	275
28	287	355	782	2870	4530	1960	3250	336	291	276	261	326
29	283	354	724	2880	---	1990	3330	336	293	277	261	429
30	313	352	734	3050	---	1910	3080	335	294	275	263	522
31	317	---	788	2920	---	1780	---	337	---	276	264	---
TOTAL	19463	9479	40944	38647	137280	101850	61030	52619	8530	8899	8041	8804
MEAN	628	316	1321	1247	4903	3285	2034	1697	284	287	259	293
MAX	1430	359	3010	3050	7580	4690	3330	3620	299	431	275	522
MIN	278	271	366	358	1910	1780	1050	335	265	253	251	263
AC-FT	38600	18800	81210	76660	272300	202000	121100	104400	16920	17650	15950	17460

e Estimated.

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	712	381	970	1702	2054	1888	1664	1504	761	466	238	532
MAX	4187	905	4625	13070	8116	6636	8900	9744	5161	3808	1747	3491
(WY)	1984	1984	1997	1997	1997	1983	1983	1983	1983	1983	1983	1983
MIN	1.02	8.16	10.2	9.78	21.6	93.9	40.9	8.73	8.43	7.46	5.63	4.42
(WY)	1978	1978	1978	1978	1978	1989	1977	1972	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1971 - 1999	
ANNUAL TOTAL	1045231		495586			
ANNUAL MEAN	2864		1358		1068	
HIGHEST ANNUAL MEAN					4786	
LOWEST ANNUAL MEAN					84.3	
HIGHEST DAILY MEAN	8010	Mar 5	7580	Feb 12	50100	Jan 3 1997
LOWEST DAILY MEAN	271	Nov 7	251	Aug 8	.00	Sep 26 1977
ANNUAL SEVEN-DAY MINIMUM	276	Nov 7	255	Aug 3	.00	Oct 12 1977
INSTANTANEOUS PEAK FLOW			8010	Feb 11	58900	Jan 3 1997
INSTANTANEOUS PEAK STAGE			12.97	Feb 11	28.43	Jan 3 1997
ANNUAL RUNOFF (AC-FT)	2073000		983000		773700	
10 PERCENT EXCEEDS	5930		3440		3600	
50 PERCENT EXCEEDS	2200		372		257	
90 PERCENT EXCEEDS	325		265		13	

11289651 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA—Continued

TUOLUMNE RIVER, MODESTO CANAL NEAR LA GRANGE, AND TURLOCK CANAL NEAR LA GRANGE,

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2350	412	402	812	2620	4230	3240	5790	2140	3600	3320	2660
2	2140	398	375	843	2250	4710	3250	5710	2150	1300	3530	2500
3	2410	411	581	824	2760	4440	3500	4790	2210	1130	3890	2580
4	2560	329	1160	1180	2800	4220	3580	4500	2170	1180	3740	2230
5	2190	354	1140	1410	2700	4150	3660	4400	2490	1530	3390	2530
6	2050	361	1310	1780	2900	4180	3610	4600	2630	1720	3020	2180
7	2350	317	1240	1430	1980	3960	3810	3840	2720	3260	3490	2210
8	2240	339	1140	1270	2830	4150	4510	3560	2240	3600	3000	1950
9	1690	347	1290	1400	3750	4670	4260	4260	2460	3190	2760	2170
10	1290	331	1810	1260	5380	5280	3830	4150	2460	3410	3170	1400
11	1350	337	1820	1440	7400	5400	3840	4400	2560	3510	3020	1060
12	1560	337	1720	1870	8660	5570	3080	4770	2340	4330	3100	2000
13	1730	337	1680	1090	8480	5520	2570	4520	2000	3800	3130	2120
14	1500	337	1630	865	8520	5670	2560	4620	2290	3750	2990	1720
15	1400	356	1700	680	8480	5300	3110	4500	2350	3520	3430	1770
16	1170	369	1870	610	7900	4640	3470	3960	2300	3560	3090	1680
17	1040	395	1750	544	6910	4060	3150	3460	3090	3230	2890	1440
18	1120	410	1770	574	6940	4020	3160	3190	2550	3450	2110	1200
19	1930	431	1830	680	6340	3980	3460	2850	2600	3040	3200	1360
20	2010	423	2060	1080	6460	4010	3920	2710	2170	3500	3040	1690
21	1890	435	3160	2120	6430	3910	4210	2910	2060	3280	2810	1730
22	1340	432	2260	2840	6380	4110	4210	3200	2930	3470	2680	2420
23	1500	434	2020	3300	5660	3970	4220	2960	3390	2560	2580	1930
24	1720	433	1090	3220	4830	3670	4400	2940	2590	2370	2950	1860
25	1880	433	1010	3320	4500	3130	4430	3420	2570	2930	2960	1430
26	1160	433	996	3740	4490	3130	4480	3690	2990	3260	1850	658
27	1090	434	916	3360	4470	3170	5440	2340	3120	3080	2850	567
28	867	434	982	3300	4530	3290	6090	1900	3090	3060	2550	1320
29	614	433	915	3320	---	3330	6080	2380	3240	3390	2310	1520
30	537	430	935	3220	---	3270	5920	2360	3460	3260	2440	2470
31	420	---	1040	2980	---	3380	---	2460	---	2920	3160	---
TOTAL	49098	11662	43602	56362	147350	130520	119050	115140	77360	93190	92450	54355
MEAN	1584	389	1407	1818	5262	4210	3968	3714	2579	3006	2982	1812
MAX	2560	435	3160	3740	8660	5670	6090	5790	3460	4330	3890	2660
MIN	420	317	375	544	1980	3130	2560	1900	2000	1130	1850	567
AC-FT	97390	23130	86480	111800	292300	258900	236100	228400	153400	184800	183400	107800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999, BY WATER YEAR (WY)

MEAN	1368	823	1361	1896	2269	2714	3303	3363	2978	3074	2541	1823
MAX	4693	2383	5327	13630	8885	6677	9873	11840	7644	6670	4715	5429
(WY)	1984	1983	1983	1997	1997	1983	1983	1983	1983	1983	1983	1983
MIN	107	35.9	115	76.8	97.8	230	921	262	595	664	606	305
(WY)	1978	1978	1989	1978	1989	1992	1992	1977	1992	1992	1992	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1971 - 1999

ANNUAL TOTAL	1437444	990139										
ANNUAL MEAN	3938	2713								2307		
HIGHEST ANNUAL MEAN										6186		1983
LOWEST ANNUAL MEAN										442		1992
HIGHEST DAILY MEAN	9980	Jul 12	8660	Feb 12	50100	Jan 3	1997					
LOWEST DAILY MEAN	317	Nov 7	317	Nov 7	.45	Nov 2	1970					
ANNUAL SEVEN-DAY MINIMUM	335	Nov 7	335	Nov 7	.61	Oct 29	1970					
ANNUAL RUNOFF (AC-FT)	2851000		1964000		1671000							
10 PERCENT EXCEEDS	7160		4510		4640							
50 PERCENT EXCEEDS	4130		2600		1940							
90 PERCENT EXCEEDS	434		571		253							

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—November 1970 to current year.

WATER TEMPERATURE: November 1970 to current year.

PERIOD OF DAILY RECORD.—November 1970 to current year.

WATER TEMPERATURE: November 1970 to current year.

INSTRUMENTATION.—Water-temperature recorder since November 1970.

REMARKS.—Water temperature can be affected by releases from La Grange Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 29.0°C, Sept. 27, Oct. 15, 1977; minimum recorded, 6.0°C, Feb. 6–8, 10, 1971.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 14.5°C, July 2; minimum recorded, 9.5°C, many days during February to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.5	12.5	13.0	12.0	12.0	11.5	12.0	11.0	11.0	10.5	10.5	10.0
2	13.5	12.0	12.5	12.0	11.5	11.5	11.0	11.0	11.0	10.5	10.5	10.0
3	13.5	12.0	12.5	12.0	11.5	11.0	11.0	11.0	11.0	10.5	10.0	10.0
4	13.5	12.0	12.5	11.5	11.5	11.0	11.0	10.5	11.0	10.5	10.0	9.5
5	13.5	12.5	12.5	12.0	11.5	11.0	11.0	10.5	11.0	10.5	10.0	9.5
6	13.5	12.5	12.0	11.5	11.5	11.5	11.0	10.5	10.5	10.5	10.0	9.5
7	13.5	12.5	12.0	11.5	12.0	11.5	11.0	11.0	10.5	10.5	10.0	9.5
8	13.5	12.5	12.0	11.5	12.0	11.5	11.0	11.0	10.5	10.5	10.0	9.5
9	13.5	12.5	11.5	11.5	12.0	11.5	11.0	11.0	10.5	10.0	10.0	9.5
10	13.5	12.0	11.5	11.5	12.0	11.5	11.0	10.5	11.0	10.0	10.0	9.5
11	13.5	12.0	12.0	11.5	12.0	11.5	11.0	10.5	11.0	10.0	10.0	9.5
12	13.0	12.0	12.0	11.0	12.0	11.5	11.5	11.0	11.0	10.5	10.5	9.5
13	13.5	12.0	12.0	11.5	12.0	11.5	11.5	11.0	11.0	10.5	10.5	10.0
14	13.0	12.0	12.0	11.0	12.0	11.5	11.5	11.0	10.5	10.5	10.0	10.0
15	13.0	12.0	12.0	11.0	12.0	11.5	11.5	11.0	10.5	10.5	10.0	10.0
16	13.0	12.0	12.0	11.5	12.0	11.5	12.0	11.0	10.5	10.5	10.0	9.5
17	13.5	12.0	12.0	11.5	12.0	11.5	12.0	11.0	10.5	10.0	10.5	9.5
18	13.0	12.0	11.5	11.0	12.0	11.5	11.5	11.0	10.5	10.0	10.5	9.5
19	13.5	12.0	11.5	11.0	11.5	11.5	11.5	11.0	10.5	10.0	10.0	9.5
20	13.5	12.0	11.5	11.0	11.5	11.5	11.5	11.0	10.0	10.0	10.0	9.5
21	13.5	12.0	12.0	11.0	11.5	11.5	11.5	11.0	10.5	10.0	10.5	9.5
22	13.5	12.0	12.0	11.5	11.5	11.5	11.5	11.0	10.5	10.0	10.5	9.5
23	13.5	12.0	12.0	11.5	12.0	11.0	11.0	11.0	10.5	10.0	10.0	9.5
24	12.5	12.5	12.0	11.5	11.5	11.0	11.5	11.0	10.5	10.0	10.5	9.5
25	13.0	12.0	12.0	11.0	11.5	11.0	11.0	11.0	10.5	10.0	10.5	10.0
26	13.5	12.0	12.0	11.0	11.5	11.0	11.0	10.5	10.5	9.5	11.0	10.0
27	13.5	12.0	12.0	11.5	11.5	11.0	11.0	10.5	10.5	9.5	10.5	9.5
28	13.0	12.0	11.5	11.5	11.5	11.0	11.0	10.5	10.5	9.5	10.5	9.5
29	13.0	12.0	11.5	11.0	11.5	11.0	11.0	10.5	---	---	10.5	9.5
30	12.5	11.5	12.0	11.5	12.0	11.0	11.0	10.5	---	---	10.5	10.0
31	12.5	11.5	---	---	11.5	11.5	11.0	10.5	---	---	10.5	9.5
MONTH	13.5	11.5	13.0	11.0	12.0	11.0	12.0	10.5	11.0	9.5	11.0	9.5

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	9.5	10.5	10.0	12.5	10.5	13.0	11.0	13.5	11.0	13.0	11.5
2	11.0	9.5	10.5	10.0	11.5	10.5	14.5	11.0	13.5	11.0	13.5	11.5
3	10.5	10.0	10.5	10.0	12.0	10.5	13.0	11.0	13.5	11.0	13.5	11.5
4	11.0	9.5	11.0	10.0	12.0	10.5	13.0	10.5	13.5	11.0	13.0	11.5
5	10.0	10.0	11.0	10.0	12.5	10.5	13.0	10.5	13.0	11.0	13.5	11.5
6	10.5	10.0	11.0	10.0	12.5	10.5	13.0	10.5	13.0	11.5	13.5	11.5
7	10.0	10.0	11.0	10.0	12.5	10.0	13.0	10.5	13.5	11.0	13.5	11.5
8	10.5	10.0	11.0	10.0	12.5	10.0	13.0	10.5	13.5	11.0	13.5	11.5
9	11.0	10.0	11.0	10.0	12.5	10.5	13.0	11.0	13.0	11.0	13.5	11.5
10	10.5	10.0	11.0	10.0	12.5	10.5	13.0	11.0	13.5	11.5	14.0	11.5
11	10.5	10.0	11.0	10.0	13.0	10.5	13.0	11.0	13.5	11.5	14.0	11.5
12	11.0	10.0	11.0	10.0	12.5	10.5	13.0	11.0	13.5	11.5	13.5	11.5
13	11.0	10.0	11.0	10.0	12.5	10.5	13.5	11.0	14.0	11.5	13.5	11.5
14	11.5	10.0	11.0	10.0	13.0	10.5	13.5	11.0	14.0	11.5	13.5	11.5
15	11.5	10.0	11.0	10.0	12.5	10.5	13.0	11.0	14.0	11.5	13.5	11.5
16	11.0	10.0	11.5	10.0	13.0	10.5	13.0	11.0	14.0	11.5	13.0	11.5
17	11.5	10.0	12.0	10.0	13.0	10.5	13.0	11.0	13.5	11.5	13.0	11.5
18	11.0	10.0	12.0	10.0	13.0	10.5	13.0	11.0	13.5	11.5	13.0	11.5
19	11.0	10.0	12.0	10.0	12.5	10.5	13.0	11.0	13.5	11.0	13.0	11.5
20	11.0	10.0	12.0	10.0	13.0	10.5	13.0	11.0	13.5	11.5	13.0	11.5
21	11.0	9.5	12.0	10.0	12.5	10.5	13.0	11.0	13.5	11.5	13.0	11.5
22	11.0	9.5	12.0	10.5	13.0	10.5	13.0	11.0	13.5	11.5	13.5	11.5
23	10.5	9.5	12.5	10.5	13.0	11.0	13.0	11.0	13.5	11.5	13.5	11.5
24	11.0	9.5	12.0	10.5	13.0	10.5	13.0	11.0	13.5	11.5	13.5	11.5
25	11.0	9.5	12.5	10.5	12.5	10.5	13.5	11.0	13.5	11.5	13.0	11.5
26	10.5	10.0	13.0	10.5	12.5	10.5	14.0	11.0	12.5	11.5	13.0	11.5
27	10.5	9.5	12.5	10.5	13.0	10.5	13.5	11.0	13.5	11.5	13.0	11.5
28	10.5	9.5	12.5	10.5	13.0	11.0	13.0	11.0	13.5	11.5	13.0	11.5
29	10.5	9.5	12.5	10.0	13.0	11.0	13.5	11.0	13.5	11.5	13.0	11.5
30	10.5	10.0	12.5	10.5	13.0	11.0	13.5	11.0	13.5	11.5	13.0	11.5
31	---	---	12.5	10.5	---	---	13.5	11.0	13.5	11.5	---	---
MONTH	11.5	9.5	13.0	10.0	13.0	10.0	14.5	10.5	14.0	11.0	14.0	11.5

11290000 TUOLUMNE RIVER AT MODESTO, CA

LOCATION.—Lat 37°37'38", long 120°59'11", in SE 1/4 SW 1/4 sec.33, T.3 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on left bank at bridge on Ninth Street in Modesto and 0.2 mi downstream from Dry Creek.

DRAINAGE AREA.—1,884 mi².

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

CHEMICAL DATA: Water years 1993–95.

SPECIFIC CONDUCTANCE: Water years 1989–95.

WATER TEMPERATURE: Water years 1989–95.

SEDIMENT: Water years 1993–95.

GAGE.—Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is sea level (levels by Modesto Irrigation District). Prior to July 11, 1947, at site 1,700 ft downstream at same datum; July 11, 1947, to Nov. 16, 1953, at site 1,000 ft downstream at same datum.

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

EXTREMES FOR PERIOD OF RECORD (water years 1896, 1941–98).—Maximum discharge observed, 57,000 ft³/s, Dec. 9, 1950, elevation, 69.19 ft; maximum gage height, 71.21 ft, Jan. 4, 1997 (backwater caused by debris on railroad trestle 1,500 ft downstream of gage); minimum daily, 56 ft³/s, Aug. 6, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2050	819	456	725	3280	4600	2090	2980	490	501	434	465
2	1990	812	460	637	3010	4530	e1620	2950	472	480	458	481
3	1390	800	488	669	2570	4650	e1560	3040	457	549	428	465
4	1000	795	654	665	2780	4330	e1540	3030	447	616	406	468
5	902	766	1010	638	3100	4030	e1500	3040	456	517	413	475
6	942	813	1070	559	2640	3780	e1610	3020	457	473	428	480
7	1020	768	1220	491	2580	3730	2280	2800	453	471	432	464
8	1460	490	1110	481	2810	3610	2850	2750	422	462	466	461
9	1620	421	1060	490	4380	3950	3070	2720	442	442	430	489
10	1620	489	1270	500	5270	4370	3420	2770	401	435	406	485
11	1730	429	1740	501	5430	4620	3520	2740	400	456	412	523
12	1990	402	1810	496	6440	4970	3530	2890	414	485	443	527
13	2000	390	1720	487	7200	4830	2850	3390	445	478	467	542
14	1780	389	1730	483	7250	4690	2000	3490	490	443	433	521
15	1610	389	1680	491	7260	4740	1780	3450	500	414	442	512
16	1400	387	1730	517	7280	4340	1560	2790	505	452	421	486
17	889	394	1820	502	6770	4020	1680	1310	515	485	420	481
18	724	413	1670	530	6690	3810	1780	677	510	529	410	468
19	651	428	1600	555	6700	3760	1750	578	500	482	432	517
20	599	452	1690	667	6460	3850	1800	556	535	434	422	524
21	550	447	2250	1030	6640	3750	1970	596	490	474	434	499
22	549	449	2860	1320	7180	3590	1890	550	472	486	458	469
23	547	448	2420	2650	6570	3540	1840	542	475	419	451	471
24	745	450	1750	3420	5550	3130	1680	516	497	459	408	439
25	843	449	837	3370	5090	2660	1390	523	533	487	417	478
26	685	446	789	3270	4780	2340	1300	518	518	451	448	513
27	775	459	759	3160	4650	2410	1820	521	505	435	487	540
28	927	489	731	3130	4610	2490	2700	510	502	459	496	514
29	980	457	736	2950	---	2380	3220	493	479	436	484	503
30	914	451	708	3190	---	2400	3270	506	509	435	476	577
31	867	---	712	3360	---	2250	---	503	---	456	478	---
TOTAL	35749	15591	40540	41934	144970	116150	64870	56749	14291	14601	13640	14837
MEAN	1153	520	1308	1353	5178	3747	2162	1831	476	471	440	495
MAX	2050	819	2860	3420	7280	4970	3530	3490	535	616	496	577
MIN	547	387	456	481	2570	2250	1300	493	400	414	406	439
AC-FT	70910	30920	80410	83180	287500	230400	128700	112600	28350	28960	27050	29430

e Estimated.

11290000 TUOLUMNE RIVER AT MODESTO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	876	1005	1581	1986	2208	2091	1949	1954	1610	654	370	567
MAX	4760	4124	8677	15500	8782	7658	9268	10420	7665	4244	2225	4041
(WY)	1984	1951	1951	1997	1997	1983	1983	1983	1942	1983	1983	1983
MIN	78.2	93.1	110	154	166	199	169	138	94.5	78.8	67.5	72.6
(WY)	1978	1978	1978	1991	1991	1961	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1940 - 1999
ANNUAL TOTAL	1161122	573922	
ANNUAL MEAN	3181	1572	1393
HIGHEST ANNUAL MEAN			5518 1983
LOWEST ANNUAL MEAN			185 1989
HIGHEST DAILY MEAN	10300	Feb 4	7280 Feb 16 52900 Jan 4 1997
LOWEST DAILY MEAN	387	Nov 16	387 Nov 16 56 Aug 6 1977
ANNUAL SEVEN-DAY MINIMUM	395	Nov 12	395 Nov 12 62 Aug 2 1977
INSTANTANEOUS PEAK FLOW			7470 Feb 17 57000 Dec 9 1950
INSTANTANEOUS PEAK STAGE			51.93 Feb 17 71.21 Jan 4 1997
ANNUAL RUNOFF (AC-FT)	2303000	1138000	1009000
10 PERCENT EXCEEDS	6670	3790	3730
50 PERCENT EXCEEDS	2400	654	618
90 PERCENT EXCEEDS	552	435	182

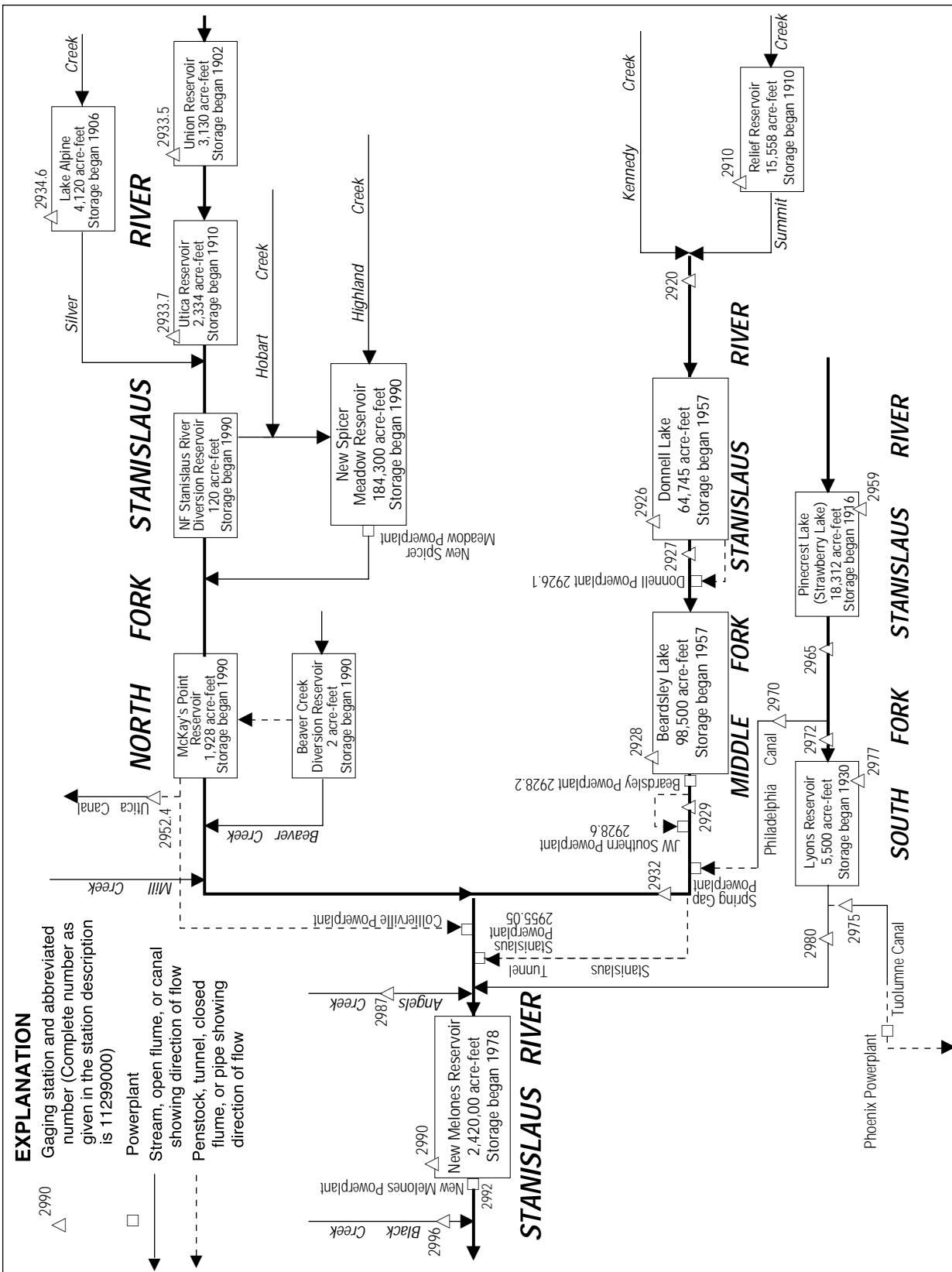


Figure 30. Diversions and storage in Stanislaus River Basin.

11291000 RELIEF RESERVOIR NEAR BAKER STATION, CA

LOCATION.—Lat 38°16'52", long 119°43'57", in NW 1/4 SW 1/4 sec.13, T.5 N., R.20 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on dam near spillway, 2.2 mi south of Kennedy Meadows, 3.6 mi southeast of Baker Station, and 7.0 mi southeast of Dardanelle.

DRAINAGE AREA.—24.4 mi².

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1981–86 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Prior to Dec. 9, 1991, nonrecording gage observed approximately weekly. Datum of gage is 7,200 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete-faced, rockfill dam completed in 1910. Usable capacity, 12,348 acre-ft between gage height, 1.37 ft, invert of outlet, and 123 ft, spillway crest. Flashboards are added in the summer months, increasing gage height to 138 ft and usable capacity to 15,550 acre-ft. Figures given represent total contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Stanislaus River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 15,817 acre-ft, May 28, 1999, gage height, 139.15 ft; minimum observed, 33 acre-ft, Jan. 12, 1987, gage height, 6.1 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 15,817 acre-ft, May 28, gage height, 139.15 ft; minimum, 950 acre-ft, Apr. 8–17, gage height, 41.70.

Capacity table (gage height, in feet, and contents, in acre-ft)
(Based on survey by Pacific Gas & Electric Co. in 1942)

10	53	50	1605	90	6579
20	105	60	2632	100	8105
30	308	70	3763	120	11895
40	842	80	5105	140	16012

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6694	1730	1215	1640	1934	2275	1776	3483	15666	15762	15173	10274
2	6469	1721	1294	1640	1941	2290	1658	3676	15534	15764	15109	10024
3	6207	1703	1326	1640	1950	2302	1532	3812	15460	15700	15057	9785
4	5936	1649	1342	1649	1957	2314	1409	3924	15373	15650	14987	9567
5	5671	1587	1367	1649	1965	2328	1285	4090	15359	15599	14932	9352
6	5398	1541	1384	1649	1978	2334	1154	4272	15468	15688	14872	9138
7	5146	1487	1401	1649	2007	2340	1024	4959	15486	15778	14791	8911
8	4875	1435	1418	1649	2040	2351	950	5445	15490	15780	14725	8692
9	4609	1384	1418	1649	2066	2360	950	5855	15509	15778	14657	8467
10	e4338	1326	1444	1649	2088	2370	950	6247	15586	15773	14636	8249
11	e4077	1285	1452	1649	2108	2374	950	6765	15647	15782	14531	8028
12	3849	1238	1461	1649	2120	2385	950	7441	15670	15759	14377	7835
13	3664	1192	1479	1652	2133	2393	950	8060	15718	15775	14214	7641
14	3423	1146	1496	1653	2139	2400	950	8548	15734	15766	14062	7441
15	3113	1102	1505	1660	2150	2408	950	8945	15707	15759	13898	7254
16	2969	1059	1514	1669	2161	2416	950	9350	15636	15720	13744	7069
17	2745	1052	1532	1679	2173	2429	950	9896	15604	15695	13577	6866
18	2526	1003	1550	1703	2182	2456	1073	10586	15599	15675	13390	6652
19	2290	1003	1559	1739	2185	2483	1318	11224	15559	15663	13184	6438
20	2069	1003	1568	1761	2201	2516	1577	11819	15538	15650	12968	6208
21	1861	1010	1587	1786	2212	2536	1795	12672	15527	15611	12729	5985
22	1739	1010	1596	1809	2219	2560	2079	13608	15675	15590	12490	5758
23	1730	1045	1605	1836	2225	2584	2110	14671	15814	15570	12251	5546
24	1730	1073	1614	1850	2233	2605	2323	15574	15711	15544	12017	5332
25	1730	1088	1614	1866	2241	2550	2457	15787	15565	15505	11798	5123
26	1730	1102	1622	1881	2247	2435	2704	15734	15466	15476	11611	4903
27	1739	1117	1622	1892	2254	2334	2915	15780	15384	15443	11427	4688
28	1739	1124	1631	1899	2259	2236	3079	15817	15454	15380	11241	4479
29	1739	1139	1631	1908	---	2236	3203	15725	15650	15336	11042	4267
30	1739	1215	1640	1917	---	2008	3318	15695	15739	15279	10797	4050
31	1730	---	1640	1922	---	1899	---	15695	---	15227	10527	---
MAX	6694	1730	1640	1922	2259	2605	3318	15817	15814	15782	15173	10274
MIN	1730	1003	1215	1640	1934	1899	950	3483	15359	15227	10527	4050
a	51.40	45.40	50.40	53.43	56.71	53.20	66.30	138.62	138.81	136.32	112.68	72.29
b	-5133	-515	+425	+282	+337	-360	+1419	+12377	+44	-512	-4700	-6477

CAL YR 1998 MAX 15620 MIN 500 b +397
WTR YR 1999 MAX 15817 MIN 950 b -

e Estimated.

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

b Change in contents, in acre-feet.

11292000 MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CA

LOCATION.—Lat 38°17'51", long 119°44'25", in SW 1/4 NE 1/4 sec.11, T.5 N., R.20 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at upper end of Kennedy Meadows, 1.3 mi upstream from Deadman Creek, 1.6 mi downstream from Relief Reservoir, and 5.8 mi southwest of Dardanelle.

DRAINAGE AREA.—47.5 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 sea level.

REMARKS.—Low and medium flow regulated by Relief Reservoir (station 11291000) 1.6 mi upstream. No diversion upstream from station. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,310 ft³/s, May 16, 1996, gage height, 8.37 ft; minimum daily, 7.1 ft³/s, Jan. 14, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	197	32	39	23	28	28	118	96	781	485	128	138
2	193	32	34	22	32	30	115	102	667	514	128	137
3	189	42	35	24	27	31	112	92	454	465	125	135
4	184	57	35	24	28	31	110	87	339	382	126	133
5	181	56	39	25	27	30	108	102	291	322	127	132
6	178	56	34	25	26	29	106	145	312	252	128	131
7	175	57	51	25	36	28	103	188	382	268	129	130
8	173	57	48	25	35	28	100	196	377	293	124	130
9	170	55	27	25	30	28	99	180	382	271	121	129
10	168	55	29	25	34	31	97	171	410	264	128	130
11	166	56	29	25	52	27	93	196	538	274	127	128
12	163	55	30	25	54	27	86	238	634	268	133	126
13	161	56	30	25	31	28	59	245	695	248	131	125
14	159	56	29	24	28	29	47	195	782	243	130	125
15	157	56	28	26	28	28	54	166	873	242	129	125
16	155	55	29	27	27	28	64	157	854	215	128	123
17	151	55	31	27	29	32	78	176	791	180	126	130
18	150	41	31	30	27	38	93	204	750	156	139	141
19	148	28	30	34	27	40	111	208	716	141	152	140
20	145	28	27	31	27	39	127	223	659	133	151	138
21	143	28	31	28	28	36	130	250	647	128	150	137
22	93	30	46	28	27	36	112	296	627	124	150	136
23	34	37	47	28	26	38	93	349	729	123	150	135
24	36	36	47	28	26	39	83	387	787	125	147	134
25	36	32	47	23	27	93	94	852	660	124	146	132
26	36	31	47	29	27	133	111	977	501	123	147	131
27	34	31	47	34	26	134	114	929	461	125	147	129
28	34	31	47	33	27	131	104	991	385	138	145	128
29	34	32	47	29	---	129	92	961	348	135	142	131
30	34	46	46	26	---	124	86	821	418	127	140	134
31	32	---	34	26	---	123	---	779	---	126	139	---
TOTAL	3909	1319	1151	829	847	1626	2899	10959	17250	7014	4213	3953
MEAN	126	44.0	37.1	26.7	30.2	52.5	96.6	354	575	226	136	132
MAX	197	57	51	34	54	134	130	991	873	514	152	141
MIN	32	28	27	22	26	27	47	87	291	123	121	123
AC-FT	7750	2620	2280	1640	1680	3230	5750	21740	34220	13910	8360	7840

11292000 MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

MEAN	81.3	46.6	39.9	33.8	30.7	45.1	94.8	315	443	247	122	127
MAX	226	372	266	272	92.5	155	247	626	949	767	328	272
(WY)	1983	1951	1951	1997	1997	1980	1943	1969	1983	1995	1983	1983
MIN	10.4	9.85	10.0	9.23	8.81	12.6	23.7	28.0	68.1	43.1	24.9	12.2
(WY)	1967	1978	1960	1960	1991	1948	1975	1977	1977	1939	1961	1981

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1939 - 1999	
ANNUAL TOTAL	72290		55969			
ANNUAL MEAN	198		153		136	
HIGHEST ANNUAL MEAN					256	
LOWEST ANNUAL MEAN					36.4	
HIGHEST DAILY MEAN	1070	Jun 22	991	May 28	2350	May 16 1996
LOWEST DAILY MEAN	21	Feb 10	22	Jan 2	7.1	Jan 14 1977
ANNUAL SEVEN-DAY MINIMUM	25	Jan 7	24	Jan 1	7.5	Feb 21 1991
INSTANTANEOUS PEAK FLOW			1160		3310	
INSTANTANEOUS PEAK STAGE			5.84		8.37	
ANNUAL RUNOFF (AC-FT)	143400		111000		98410	
10 PERCENT EXCEEDS	533		382		363	
50 PERCENT EXCEEDS	129		111		61	
90 PERCENT EXCEEDS	28		27		15	

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 sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.—Lake is formed by concrete arch-type dam completed in 1957. Usable capacity, 64,745 acre-ft, between gage heights 4,720.0 ft, minimum operating head, and 4,917.0 ft, top of spillway gates. Lake is for power and conservation storage. Water passes through a 7.2-mi tunnel to a powerplant and down the Middle Fork Stanislaus River to Beardsley Lake (station 11292800). Records, including extremes, represent total contents at 2400 hours, of which 2,150 acre-ft is below minimum operating head. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 64,900 acre-ft, May 8, 1963, gage height, 4,917.3 ft; minimum since reservoir first filled, 2,220 acre-ft, Apr. 15, 1983, gage height, 4,720.6 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 64,300 acre-ft, June 30, July 1, gage height, 4,915.83 ft; minimum, 5,320 acre-ft, Mar. 16, gage height, 4,737.73 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

(Based on table provided by Pacific Gas & Electric Co., dated Oct. 1, 1956)

4,720	2,150	4,740	5,830	4,780	16,200	4,850	38,700
4,725	2,850	4,750	8,220	4,790	19,100	4,880	49,800
4,730	3,730	4,760	10,800	4,800	22,100	4,917.3	64,900
4,735	4,730	4,770	13,400	4,820	28,400		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47500	36000	34000	24400	19800	9470	13800	14600	62200	64300	54600	40200
2	47600	35800	34300	24200	19400	8880	13400	15200	62000	64200	53800	39700
3	47400	35500	34700	24000	19100	8620	13000	15500	61500	64200	53000	39300
4	47100	35400	34700	23700	18700	8400	12400	15700	61200	64200	52200	38900
5	46700	35300	34700	23500	18300	7710	12300	16000	60900	64200	51400	38500
6	46300	35000	34600	23200	17700	7980	11800	17300	61100	64200	50700	38000
7	45600	34800	34500	23000	18000	8430	11200	19400	61500	64200	49700	37500
8	45100	34600	34200	22800	18100	7970	10400	21600	61800	64200	48900	36700
9	44900	34300	33900	22700	18300	7640	9570	23400	62000	64200	48100	36100
10	44600	34100	33700	22600	18000	7270	8680	25100	62400	64000	47300	35800
11	44000	33900	33800	22500	17500	6860	7800	27200	62700	63900	46900	35200
12	43300	33700	33600	22400	17000	6450	6910	30300	62600	63900	46600	34600
13	42500	33500	33500	22300	16900	6050	6070	33300	62700	63800	46300	34000
14	42300	33300	33400	22200	16800	5780	6280	35500	63000	63600	46700	33600
15	41900	33100	33200	22200	16700	5530	6910	36900	63100	63400	47100	33100
16	41100	33000	33000	22100	16600	5320	7240	38500	62900	63300	46600	32800
17	40500	32800	32700	22000	16500	5500	7280	41000	62600	62800	46100	32100
18	39900	32600	32000	22400	16000	6000	7640	43500	62400	62300	45800	32000
19	39300	32300	31200	23000	15500	6570	8370	46000	62400	61700	45400	31700
20	38900	32200	30300	23600	14800	7300	9360	48900	62700	61500	44900	31200
21	38500	31900	29200	23700	14300	7920	10400	52100	62900	61300	44800	30500
22	38100	31700	28300	26500	13700	8350	11000	56000	63100	60900	44500	30100
23	37900	31600	27400	23400	13000	8820	11100	60300	63500	60300	43900	29700
24	37800	31900	26500	23100	12400	9290	11100	61900	63800	59800	43600	29200
25	37600	32000	26200	22800	11800	9850	11400	62900	63600	59200	43000	28500
26	37400	32200	26000	22500	11200	10800	12200	62900	63400	58600	42300	27600
27	37200	32400	25700	22000	10600	11900	13100	62700	63700	58000	41900	26700
28	37000	32600	25500	21500	10000	12800	13800	62900	64000	57400	41500	25900
29	36800	32800	25200	21000	---	13700	14100	62400	64200	56900	41700	25300
30	36500	33500	25000	20600	---	14500	14200	62000	64300	56200	41300	24600
31	36200	---	24800	20200	---	14200	---	62100	---	55500	40800	---
MAX	47600	36000	34700	26500	19800	14500	14200	62900	64300	64300	54600	40200
MIN	36200	31600	24800	20200	10000	5320	6070	14600	60900	55500	40800	24600
a	4843.04	4835.27	4808.59	4793.97	4757.04	4772.80	4772.89	4910.66	4915.83	4894.43	4855.97	4808.24
b	-11300	-2700	-8700	-4600	-10200	+4200	0	+47900	+2200	-8800	-14700	-16200

CAL YR 1998 b +16400

WTR YR 1999 b -22900

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.

WATER TEMPERATURE: Water years 1966–71 and 1973–78.

GAGE.—Water-stage recorder. Datum of gage is 3,418.31 ft above sea level (river-profile survey). Prior to Aug. 9, 1961, at site 1,600 ft upstream at different datum.

REMARKS.—Flow regulated by Relief Reservoir (station 11291000), Donnell Lake (station 11292600) since April 1957 and diversion around station through Donnell Powerplant (station 11292610). See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, 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, 24,600 ft³/s, revised, Jan. 2, 1997, gage height, 18.02 ft, 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	46	131	58	123	231	217	372	2220	621	37	38
2	52	46	90	57	120	250	208	400	2090	641	36	38
3	51	45	94	57	122	317	205	361	1660	555	36	38
4	51	45	87	57	127	339	195	327	1190	392	36	38
5	50	45	74	56	120	282	197	357	1000	229	36	38
6	50	46	72	56	120	256	198	456	909	157	39	37
7	50	52	67	56	561	238	189	521	850	76	39	37
8	49	54	68	55	663	224	185	509	861	95	39	37
9	49	48	65	54	954	221	183	461	867	62	38	37
10	49	48	63	54	489	204	176	423	880	64	38	37
11	49	51	63	54	367	197	181	463	1130	54	38	36
12	48	48	63	54	329	190	188	526	1560	52	38	36
13	48	47	65	54	293	192	209	495	1640	51	37	36
14	48	47	67	54	270	196	262	425	1770	50	37	36
15	48	47	65	58	248	188	301	385	2000	48	37	35
16	48	46	67	82	245	187	343	369	2080	47	37	35
17	47	50	72	90	472	196	394	392	2010	46	37	35
18	47	48	72	201	373	214	432	408	1860	45	37	36
19	48	47	71	519	315	228	478	400	1630	44	37	35
20	47	46	65	624	286	232	506	418	1380	44	37	35
21	47	46	64	359	279	215	492	437	1260	43	41	35
22	47	49	64	247	254	208	435	476	1280	42	41	35
23	47	52	62	264	248	223	391	556	1300	42	41	35
24	49	73	60	215	237	223	383	1940	1410	41	40	35
25	49	56	60	186	240	220	419	2890	1440	41	39	34
26	48	53	60	170	225	249	468	3730	986	40	39	34
27	47	51	59	152	220	269	512	3720	545	40	40	34
28	46	53	59	143	223	263	449	3600	419	39	39	33
29	46	61	58	137	---	252	356	3560	419	38	39	33
30	46	164	59	133	---	238	332	2930	534	37	39	33
31	46	---	59	131	---	234	---	2360	---	37	38	---
TOTAL	1500	1610	2145	4487	8523	7176	9484	34667	39180	3813	1182	1071
MEAN	48.4	53.7	69.2	145	304	231	316	1118	1306	123	38.1	35.7
MAX	53	164	131	624	954	339	512	3730	2220	641	41	38
MIN	46	45	58	54	120	187	176	327	419	37	36	33
AC-FT	2980	3190	4250	8900	16910	14230	18810	68760	77710	7560	2340	2120
a	21850	8790	15780	29070	23680	15450	39750	43040	41780	37520	26020	25020

a Diversion, in acre-feet, through Donnell Powerplant, provided by Oakdale and South San Joaquin Irrigation District.

11292700 MIDDLE FORK STANISLAUS RIVER AT HELLS HALF ACRE BRIDGE, NEAR PINECREST, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	37.8	46.2	86.9	164	165	213	295	864	1027	292	46.6	35.1
MAX	184	305	814	1856	986	738	808	3144	4512	2016	320	72.8
(WY)	1983	1984	1965	1997	1986	1986	1986	1969	1983	1995	1983	1983
MIN	12.6	7.09	8.69	13.9	12.4	13.0	19.9	29.9	16.7	12.5	11.5	12.1
(WY)	1978	1958	1959	1961	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1958 - 1999	
ANNUAL TOTAL	207257		114838			
ANNUAL MEAN	568		315		273	
HIGHEST ANNUAL MEAN					868	
LOWEST ANNUAL MEAN					18.4	
HIGHEST DAILY MEAN	4360	Jun 15	3730	May 26	17300	Jan 2 1997
LOWEST DAILY MEAN	35	Jan 1	33	Sep 28	3.3	Nov 9 1957
ANNUAL SEVEN-DAY MINIMUM	38	Jan 1	34	Sep 24	3.7	Nov 7 1957
INSTANTANEOUS PEAK FLOW			4130		24600	
INSTANTANEOUS PEAK STAGE			9.64		18.02	
ANNUAL RUNOFF (AC-FT)	411100		227800		197500	
TOTAL DIVERSION (AC-FT) a	310400		327700			
10 PERCENT EXCEEDS	2140		650		639	
50 PERCENT EXCEEDS	138		72		49	
90 PERCENT EXCEEDS	48		37		20	

a Diversion, in acre-feet, through Donnell Powerplant, provided by Oakdale and South San Joaquin Irrigation District.

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 sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.—Reservoir is formed by rockfill, earth-core dam completed in 1957. Capacity, 98,500 acre-ft between gage heights 3,145.0 ft, tunnel invert, and 3,398.0 ft, top of spillway gates. No dead storage. Reservoir is used for power and conservation storage. Water passes through Beardsley Powerplant, is diverted at Beardsley Afterbay to J.W. Southern Powerplant at Sand Bar Flat on the Middle Fork Stanislaus River, then diverted to Stanislaus Powerplant at the head of New Melones Reservoir (station 11299000). Records, including extremes, represent contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 98,700 acre-ft, June 27, 1957, gage height, 3,398.2 ft; minimum since reservoir first filled, 3 acre-ft, Sept. 23, 1976, gage height, 3,154.4 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 97,700 acre-ft, July 8, gage height, 3,396.80 ft; minimum, 35,700 acre-ft, Jan. 18, gage height, 3,295.20 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated Oct. 3, 1956)

3,154	2	3,200	2,370	3,290	33,100
3,160	41	3,210	3,790	3,320	48,800
3,170	267	3,220	5,720	3,350	66,400
3,180	693	3,240	11,600	3,370	79,200
3,190	1,370	3,260	19,500	3,398	98,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81200	67300	52000	43600	41400	56000	52500	78900	95100	97300	96400	87600
2	80500	66800	51300	43200	41500	56600	53100	79900	95600	97400	96400	87200
3	80000	66100	50600	42800	41500	57100	53600	80800	95400	97400	96500	86800
4	79700	65600	50200	42400	41500	57400	54200	81500	95300	97400	96600	86300
5	79400	65000	49700	41900	41600	58200	54500	82400	95200	97500	96600	85800
6	79100	64600	49300	41500	41800	57900	55000	83500	95100	97500	96600	85400
7	79100	64300	48800	41100	43100	57300	55500	84700	95100	97500	96800	85000
8	78800	63900	48400	40600	44700	57500	56300	85900	95100	97700	96900	84800
9	78300	64000	48100	40000	46700	57700	57100	86900	95100	97600	97000	84400
10	77900	63800	47700	39400	47700	57800	57800	87900	95300	97600	97100	83800
11	77700	63400	47000	38800	48500	57900	58600	88900	95400	97600	96800	83500
12	77600	62900	46500	38200	49200	57900	59300	90000	95500	97600	96300	83200
13	77700	62500	46200	37600	49300	58000	60200	91000	95700	97600	96000	82700
14	77100	62000	45700	37100	49400	58000	60200	91700	95800	97600	94900	82300
15	76800	61500	45300	36500	49300	58000	60300	92300	95900	97600	93800	81800
16	76800	61100	44900	36200	49400	57900	60800	92900	95900	97500	93400	81400
17	76600	60600	44600	35900	50100	57400	62000	93400	95900	97600	93100	81000
18	76500	60200	44800	35700	50900	56900	63300	94000	95800	97600	92800	80200
19	76400	59700	45000	36800	51500	56400	64100	94500	95800	97500	92400	79700
20	75800	59200	45300	38200	52200	55800	66200	94700	95900	97300	92300	79300
21	75400	58800	45800	38800	52700	55200	67600	94900	96000	96700	91400	79000
22	74900	58300	46200	39200	53200	54700	68900	95100	96200	96600	91100	78600
23	74200	57900	46400	39800	53700	54200	70000	95400	96300	96600	90900	78200
24	73400	57100	46600	40100	54100	53800	71100	96100	96500	96600	90500	77700
25	72500	56300	46300	40400	54500	53300	72300	96500	96800	96600	90200	77500
26	71700	55500	45900	40600	54900	52900	73700	96600	96800	96400	90200	77500
27	71000	54700	45500	40800	55200	52500	75100	96300	96700	96400	89800	77500
28	70200	53900	45100	41100	55600	52100	76400	96000	96900	96400	89400	77400
29	69400	53100	44700	41200	---	51700	77200	95700	97100	96200	88600	77000
30	68700	52600	44300	41300	---	51300	78000	95100	97300	96200	88200	76700
31	68000	---	44000	41400	---	52000	---	94900	---	96300	87800	---
MAX	81200	67300	52000	43600	55600	58200	78000	96600	97300	97700	97100	87600
MIN	68000	52600	44000	35700	41400	51300	52500	78900	95100	96200	87800	76700
a	3352.62	3326.88	3311.15	3306.29	3332.06	3325.72	3368.17	3392.95	3396.25	3394.84	3382.86	3366.23
b	-13900	-15400	-8600	-2600	+14200	-3600	+26000	+16900	+2400	-1600	-8500	-11100

CAL YR 1998 b +11800

WTR YR 1999 b -5200

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

b Change in contents, in acre-feet.

11292900 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA

LOCATION.—Lat 38°11'36", long 120°05'53", in NW 1/4 NW 1/4 sec.22, T.4 N., R.17 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.5 mi downstream from Beardsley Afterbay Dam, 1.5 mi downstream from Beardsley Dam, and 5.7 mi west of Pinecrest.

DRAINAGE AREA.—316 mi².

PERIOD OF RECORD.—December 1956 to current year.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 3,044.7 ft above sea level (river-profile survey).

REMARKS.—Diversion from Beardsley Afterbay Dam, 0.5 mi upstream, to J.W. Southern Powerplant (station 11292860) at Sand Bar Flat 3 mi downstream, began May 31, 1986. Flow regulated by Relief Reservoir (station 11291000) since 1909, Donnell Lake (station 11292600) since April 1957, and by Beardsley Lake (station 11292800) since January 1957. See schematic diagram of Stanislaus River Basin. For records of combined discharge for river and powerplant, see station 11292901.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only, maximum discharge, 28,200 ft³/s, from rating curve extended above 5,400 ft³/s, on basis of spillway computation at Beardsley Dam, Jan. 2, 1997, gage height, 19.31 ft; minimum daily, 3.0 ft³/s, Oct. 10, 11, 1958. Combined flow, maximum daily discharge, 23,100 ft³/s, Jan. 2, 1997; minimum daily 25 ft³/s, Oct. 23, 1986.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	144	148	148	150	147	145	136	2210	703	142	144
2	139	144	148	148	150	149	146	140	2150	706	141	143
3	138	143	148	148	150	150	146	139	1850	671	142	143
4	138	143	148	148	150	150	145	139	1390	483	142	144
5	136	144	148	148	150	151	145	137	1180	310	142	143
6	136	144	148	148	150	151	145	137	1070	264	144	144
7	136	144	148	148	150	150	147	137	974	189	145	144
8	140	144	148	148	150	149	147	137	975	158	143	143
9	143	144	148	148	150	151	147	137	974	195	143	143
10	143	313	148	148	150	150	146	137	975	194	143	144
11	144	489	148	148	150	150	145	137	1170	176	143	144
12	143	392	148	148	151	150	144	140	1560	147	143	144
13	144	155	148	148	151	149	145	204	1660	143	142	144
14	144	146	148	148	150	148	146	239	1810	141	144	142
15	144	147	148	148	150	148	143	229	2040	141	141	144
16	144	147	147	148	150	149	143	223	2140	143	143	143
17	146	146	148	148	148	145	144	264	2140	147	143	141
18	142	148	148	149	148	145	144	285	1990	143	142	144
19	144	147	148	149	148	146	143	284	1710	141	143	143
20	143	148	148	151	151	146	144	410	1410	143	142	143
21	142	148	148	149	149	145	143	478	1270	144	143	144
22	143	148	148	148	148	144	145	466	1280	142	142	145
23	142	148	148	150	149	145	145	560	1290	142	142	145
24	143	148	148	150	152	144	145	1590	1390	141	142	143
25	143	148	148	150	150	145	145	2690	1360	142	142	144
26	143	148	148	150	150	146	144	3470	1080	142	141	144
27	143	148	148	150	152	147	146	3780	690	143	142	148
28	143	148	148	150	149	145	146	3610	488	143	142	143
29	144	148	148	150	---	144	142	3490	433	143	144	145
30	144	148	148	150	---	145	138	3070	562	141	146	142
31	144	---	148	150	---	147	---	2490	---	141	143	---
TOTAL	4396	5152	4587	4612	4196	4571	4339	29485	41221	6902	4422	4310
MEAN	142	172	148	149	150	147	145	951	1374	223	143	144
MAX	146	489	148	151	152	151	147	3780	2210	706	146	148
MIN	135	143	147	148	148	144	138	136	433	141	141	141
AC-FT	8720	10220	9100	9150	8320	9070	8610	58480	81760	13690	8770	8550
a	39460	19810	29760	28000	30260	36510	36010	39380	30460	37260	37660	39560

a Diversion, in acre-feet, through Beardsley Powerplant (station 11292820).

11292900 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1985, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	396	410	449	432	478	494	588	1271	1607	819	523	488
MAX	651	1064	1322	1035	1322	1307	1378	3754	5325	2420	958	690
(WY)	1984	1983	1984	1984	1980	1983	1982	1969	1983	1983	1983	1983
MIN	23.3	19.9	18.8	18.9	21.0	22.4	180	168	348	77.5	44.5	39.5
(WY)	1977	1977	1977	1977	1977	1977	1957	1960	1976	1977	1977	1977

SUMMARY STATISTICS

WATER YEARS 1957 - 1985

ANNUAL MEAN	671
HIGHEST ANNUAL MEAN	1507 1983
LOWEST ANNUAL MEAN	111 1977
HIGHEST DAILY MEAN	8630 May 30 1983
LOWEST DAILY MEAN	3.0 Oct 10 1958
ANNUAL SEVEN-DAY MINIMUM	5.0 Jan 16 1957
INSTANTANEOUS PEAK FLOW	9080 May 30 1983
INSTANTANEOUS PEAK STAGE	12.30 May 30 1983
ANNUAL RUNOFF (AC-FT)	485800
10 PERCENT EXCEEDS	1270
50 PERCENT EXCEEDS	500
90 PERCENT EXCEEDS	110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	110	115	113	272	155	199	212	714	943	389	124	113
MAX	152	172	154	2227	398	625	607	1973	3266	1960	269	151
(WY)	1998	1999	1990	1997	1997	1996	1995	1995	1995	1995	1995	1998
MIN	54.8	54.4	53.9	53.1	55.1	58.7	135	59.1	57.6	57.3	55.8	56.8
(WY)	1991	1991	1995	1995	1991	1991	1991	1994	1994	1994	1988	1990

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1987 - 1999

ANNUAL TOTAL	206321	118193	
ANNUAL MEAN	565	324	289
HIGHEST ANNUAL MEAN			735 1995
LOWEST ANNUAL MEAN			76.6 1988
HIGHEST DAILY MEAN	4840	Jun 15	3780 May 27 23100 Jan 2 1997
LOWEST DAILY MEAN	71	Sep 29	135 Oct 1 25 Oct 23 1986
ANNUAL SEVEN-DAY MINIMUM	126	Sep 29	137 Oct 1 44 Jan 19 1995
INSTANTANEOUS PEAK FLOW			3910 May 26 28200 Jan 2 1997
INSTANTANEOUS PEAK STAGE			9.38 May 26 19.31 Jan 2 1997
ANNUAL RUNOFF (AC-FT)	409200	234400	209100
TOTAL DIVERSION (AC-FT) a	393100	404100	294000
10 PERCENT EXCEEDS	2150	695	558
50 PERCENT EXCEEDS	150	147	145
90 PERCENT EXCEEDS	144	142	57

a Diversion, in acre-feet, through Beardsley Powerplant (station 11292820).

11292901 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA—Continued

MIDDLE FORK STANISLAUS RIVER AND J.W. SOUTHERN POWERPLANT BELOW BEARDSLEY DAM,

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	692	664	481	485	473	698	504	780	2850	1350	645	688
2	676	577	494	488	475	671	640	787	2790	1350	644	694
3	686	517	486	489	475	668	606	765	2490	1320	645	706
4	679	499	485	497	478	677	627	785	2030	1130	645	696
5	676	496	491	492	479	669	651	774	1820	959	645	696
6	685	478	491	490	474	649	641	772	1720	912	639	707
7	678	478	499	492	372	672	641	776	1620	825	640	718
8	670	477	497	490	529	696	656	779	1620	732	639	714
9	659	258	488	490	657	673	653	781	1620	842	640	710
10	656	313	488	489	690	671	620	783	1620	839	641	715
11	650	489	488	490	664	668	659	775	1820	819	633	710
12	664	503	490	490	649	670	701	785	2210	769	643	712
13	683	503	490	493	614	643	668	850	2310	730	640	712
14	671	499	486	492	650	668	666	886	2460	759	642	709
15	669	494	488	492	648	701	682	877	2690	764	648	708
16	669	499	491	490	698	667	678	872	2790	742	649	706
17	643	493	489	488	653	656	645	913	2780	639	651	705
18	671	494	490	471	665	662	679	933	2640	736	649	707
19	667	501	492	383	666	672	705	933	2360	745	655	703
20	663	503	490	335	638	630	673	1060	2060	742	655	702
21	660	502	487	409	664	658	684	1130	1920	685	671	700
22	665	504	490	435	692	695	699	1110	1920	649	665	699
23	654	502	494	412	663	660	692	1210	1930	646	664	704
24	643	502	495	439	659	648	669	2240	2040	644	674	703
25	661	504	494	455	674	663	697	3340	2010	646	668	701
26	654	505	491	457	670	652	720	4120	1730	646	671	699
27	647	503	490	348	637	608	695	4430	1340	647	671	651
28	658	504	489	461	669	645	663	4260	1140	645	674	701
29	623	497	489	469	---	688	729	4140	1080	646	304	699
30	660	478	490	474	---	466	787	3720	1210	647	661	699
31	659	---	490	470	---	647	---	3130	---	646	684	---
TOTAL	20591	14736	15193	14355	16975	20411	20030	49496	60620	24851	19895	21074
MEAN	664	491	490	463	606	658	668	1597	2021	802	642	702
MAX	692	664	499	497	698	701	787	4430	2850	1350	684	718
MIN	623	258	481	335	372	466	504	765	1080	639	304	651
AC-FT	40840	29230	30140	28470	33670	40490	39730	98180	120200	49290	39460	41800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

MEAN	377	273	395	454	410	545	612	1168	1476	866	576	494
MAX	664	538	656	2608	1007	1560	1448	2554	3874	2504	805	702
(WY)	1999	1987	1997	1997	1997	1986	1986	1995	1998	1995	1995	1999
MIN	57.6	58.1	55.8	55.3	55.1	58.7	146	72.7	208	444	471	124
(WY)	1989	1989	1989	1989	1991	1991	1988	1990	1987	1994	1994	1988

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1986 - 1999

ANNUAL TOTAL	377057	298227		
ANNUAL MEAN	1033	817	638	
HIGHEST ANNUAL MEAN			1165	1995
LOWEST ANNUAL MEAN			221	1988
HIGHEST DAILY MEAN	5470	Jun 15	4430	May 27
LOWEST DAILY MEAN	258	Feb 3	258	Nov 9
ANNUAL SEVEN-DAY MINIMUM	356	Feb 2	410	Jan 19
ANNUAL RUNOFF (AC-FT)	747900	591500	462200	
10 PERCENT EXCEEDS	2770	1340	1250	
50 PERCENT EXCEEDS	669	663	501	
90 PERCENT EXCEEDS	410	488	63	

11293200 MIDDLE FORK STANISLAUS RIVER BELOW SAND BAR DIVERSION DAM, CA

LOCATION.—Lat 38°10'59", long 120°09'28", in NW 1/4 SE 1/4 sec.24, T.4 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 100 ft downstream from Sand Bar Diversion Dam and 8.5 mi west of Strawberry.

DRAINAGE AREA.—332 mi².

PERIOD OF RECORD.—October 1985 to current year (low-flow records only). Unpublished records for water years 1970, 1971, and 1976–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and sharp-crested weir since February 1986. Elevation of gage is 2,700 ft above sea level, from topographic map.

REMARKS.—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 (station 11295505). See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	30	29	30	---	---	---	---	---	---	---
2	---	---	29	29	32	---	---	---	---	---	---	---
3	---	54	29	29	32	---	---	---	---	---	---	---
4	---	32	29	29	32	---	---	---	---	---	---	---
5	---	32	29	29	31	---	---	---	---	---	---	---
6	---	32	29	29	30	---	---	---	---	---	---	---
7	---	32	29	29	---	---	---	---	---	---	---	---
8	---	32	29	29	---	---	---	---	---	---	---	---
9	---	31	29	29	---	---	---	---	---	---	---	---
10	---	36	29	29	---	---	---	---	---	---	---	---
11	---	51	29	29	---	---	---	---	---	---	---	---
12	---	---	29	29	---	---	---	---	---	---	---	---
13	---	40	29	29	---	---	---	---	---	---	---	---
14	---	33	29	29	---	---	---	---	---	---	---	---
15	---	33	29	29	---	---	---	---	---	---	---	---
16	---	33	29	35	---	---	---	---	---	---	---	---
17	---	33	29	30	---	---	---	---	---	---	---	---
18	---	33	29	38	---	---	---	---	---	---	---	---
19	---	32	29	40	---	---	---	---	---	---	---	---
20	---	32	29	44	---	---	---	---	---	---	---	---
21	---	32	29	34	---	---	---	---	---	---	---	---
22	---	32	29	29	---	---	---	---	---	---	---	---
23	---	32	29	30	---	---	---	---	---	---	---	---
24	---	32	29	30	---	---	---	---	---	---	---	---
25	---	32	29	31	---	---	---	---	---	---	---	---
26	---	31	29	30	---	---	---	---	---	---	---	---
27	---	30	29	29	---	---	---	---	---	---	---	---
28	---	30	29	29	---	---	---	---	---	---	---	---
29	---	30	29	29	---	---	---	---	---	---	---	---
30	---	31	29	31	---	---	---	---	---	---	---	---
31	---	---	29	31	---	---	---	---	---	---	---	---
TOTAL	---	---	900	955	---	---	---	---	---	---	---	---
MEAN	---	---	29.0	30.8	---	---	---	---	---	---	---	---
MAX	---	---	30	44	---	---	---	---	---	---	---	---
MIN	---	---	29	29	---	---	---	---	---	---	---	---
AC-FT	---	---	1790	1890	---	---	---	---	---	---	---	---
a	30950	28210	29450	30100	27560	30530	29810	31100	30030	30910	30790	29660
CAL YR 1998	a	335400										
WTR YR 1999	a	359100										

a Diversion, in acre-feet, through Stanislaus Powerplant, provided by Pacific Gas & Electric Co.

11295240 UTICA CANAL AT PRESSURE TAP, NEAR HATHAWAY PINES, CA

LOCATION.—Lat 38°11'33", long 120°21'14", in SW 1/4 SW 1/4 sec.17, T.4 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, at pressure tap in Collierville Tunnel and 0.5 mi east of Hathaway Pines.

PERIOD OF RECORD.—October 1989 to current year.

GAGE.—Acoustic-velocity meter. Elevation of gage is 3,160 ft above sea level, from topographic map.

REMARKS.—Flow is diverted into Collierville Tunnel at McKay's Point Reservoir (stations 11295250 and 11295260) and enters canal through pressure tap in the tunnel. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Henwood Energy Services, Inc., for Utica Power Authority, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 89 ft³/s, Oct. 17, 1989; no flow for many days in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	25	.7	13	.1	.00	.1	18	72	41	41	46
2	19	25	.7	33	.1	.00	.2	23	46	41	43	46
3	16	25	.7	36	.1	.00	.2	9.3	33	41	43	46
4	15	25	.7	36	.1	.00	.2	9.1	33	41	43	46
5	23	25	.7	36	.00	.00	.2	16	34	41	44	46
6	28	24	.7	37	.00	.00	.2	19	34	41	45	46
7	28	23	6.8	37	.00	.00	.2	20	35	41	45	44
8	27	14	16	37	.00	.00	5.0	21	36	42	45	46
9	26	15	27	37	.1	.00	7.1	21	37	42	45	46
10	26	18	27	37	.2	.1	7.1	23	38	42	45	46
11	26	18	20	37	.2	.00	4.9	24	38	42	45	46
12	26	18	11	37	.1	.00	1.2	24	38	42	45	46
13	26	12	8.5	37	.1	.00	.00	24	38	42	45	46
14	25	16	12	19	.1	.00	.00	43	38	43	45	46
15	25	18	5.1	14	.1	.00	.00	68	38	43	45	46
16	25	3.4	.3	9.3	.1	.00	.00	66	38	43	45	47
17	25	.7	8.9	7.1	.00	.00	.00	65	38	43	45	47
18	25	.7	12	5.6	.00	.00	.00	65	38	42	45	47
19	25	.7	12	.7	.00	.00	.00	67	38	42	45	47
20	25	.7	12	.3	.1	.00	2.2	69	38	42	45	47
21	27	6.3	12	.1	.1	.00	5.1	70	39	42	45	47
22	22	9.1	12	.1	.1	.00	6.9	71	40	42	45	47
23	27	9.1	12	.1	.00	.00	8.1	70	40	42	45	47
24	27	6.1	12	.2	.00	.00	8.1	70	40	42	45	47
25	27	4.2	12	.1	.00	.00	8.1	72	40	42	46	47
26	27	4.1	12	.1	.1	.00	8.1	72	40	42	46	47
27	27	4.1	12	.1	.00	.00	8.0	72	40	42	46	47
28	27	7.2	12	.1	.00	.00	8.1	72	40	41	46	47
29	27	14	12	.1	---	.00	8.1	72	40	41	46	47
30	25	9.2	13	.1	---	.00	8.1	72	41	41	46	47
31	25	---	13	.1	---	.00	---	72	---	41	46	---
TOTAL	780	380.6	316.8	507.2	1.80	0.10	105.50	1479.4	1178	1295	1391	1393
MEAN	25.2	12.7	10.2	16.4	.064	.003	3.52	47.7	39.3	41.8	44.9	46.4
MAX	31	25	27	37	.20	.10	8.1	72	72	43	46	47
MIN	15	.70	.30	.10	.00	.00	.00	9.1	33	41	41	44
AC-FT	1550	755	628	1010	3.6	.2	209	2930	2340	2570	2760	2760

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

MEAN	43.6	40.0	46.8	40.3	37.4	40.2	42.4	58.8	61.6	51.2	43.6	42.9
MAX	74.7	59.3	70.2	77.7	79.0	75.8	81.5	85.2	86.0	81.9	56.0	51.3
(WY)	1990	1992	1994	1990	1991	1990	1990	1992	1992	1993	1995	1993
MIN	16.2	12.2	4.40	.023	.000	.003	3.52	24.6	39.3	36.2	30.4	33.9
(WY)	1997	1997	1997	1997	1997	1999	1999	1995	1999	1990	1990	1994

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1990 - 1999

ANNUAL TOTAL	9666.5	8828.40	
ANNUAL MEAN	26.5	24.2	45.8
HIGHEST ANNUAL MEAN			59.8
LOWEST ANNUAL MEAN			24.2
HIGHEST DAILY MEAN	65	72	89
LOWEST DAILY MEAN	.10	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.10	.00	.00
ANNUAL RUNOFF (AC-FT)	19170	17510	33180
10 PERCENT EXCEEDS	47	46	78
50 PERCENT EXCEEDS	27	25	48
90 PERCENT EXCEEDS	.20	.00	6.9

11295900 PINECREST LAKE AT PINECREST, CA

LOCATION.—Lat 38°11'59", long 119°59'20", in NE 1/4 SW 1/4 sec.15, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on south side of intake tower, 400 ft upstream from dam on South Fork Stanislaus River, and 0.7 mi north of Pinecrest.

DRAINAGE AREA.—26.5 mi².

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for water years 1981–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder since July 14, 1992. Oct. 1, 1985, to July 13, 1992, nonrecording gage read once daily. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete-faced, rockfill dam, completed in 1916; storage began in 1916. Capacity, 18,312 acre-ft between elevations 5,498.7 ft, outlet drain, and 5,617.5 ft, top of flash boards in spillway. Released water flows down South Fork Stanislaus River to diversion dam for Philadelphia Canal (station 11297000) for use at Spring Gap Powerplant on Middle Fork Stanislaus River. Figures given, including extremes, represent total contents. Records from July 14, 1992, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 18,582 acre-ft, June 5, 1997, elevation, 5,618.39 ft; minimum observed, 3,157 acre-ft, Mar. 3, 4, 1991, elevation, 5,546.6 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 18,433 acre-ft, June 30, elevation, 5,617.90 ft; minimum, 5,983 acre-ft, Mar. 16, elevation, 5,567.89 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated 1938)

5,520	792	5,550	3,534	5,580	8,576
5,530	1,558	5,560	4,738	5,600	13,537
5,540	2,475	5,570	6,395	5,618.5	18,615

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14478	10829	8992	7572	6654	6342	6177	11911	17839	18342	17362	16541
2	14452	10730	9006	7502	6610	6338	6173	12254	17810	18391	17322	16525
3	14373	10629	9039	7441	6583	6379	6161	12459	17723	18345	17293	16513
4	14268	10528	9025	7371	6550	6383	6146	12643	17665	18303	17262	16499
5	14189	10417	8982	7300	6515	6359	6146	12761	17665	18241	17225	16486
6	14059	10301	8954	7229	6477	6326	6130	13070	17723	18235	17185	16444
7	13954	10213	8897	7156	6604	6288	6113	13745	17781	18255	17154	16389
8	13823	10108	8851	7090	6687	6249	6109	14505	17781	18253	17129	16355
9	13693	10018	8799	7011	6846	6214	6087	14742	17723	18232	17092	16304
10	13589	9911	8752	6935	6834	6169	6058	14742	17752	18217	17067	16254
11	13459	9828	8706	6863	6808	6120	6031	15245	17810	18178	17039	16190
12	13381	9737	8664	6790	6785	6082	6028	16703	17839	18152	17011	16161
13	13251	9646	8638	6716	6756	6062	6091	17520	17868	18196	16991	16086
14	13055	9564	8597	6641	6716	6035	6278	17694	17897	18202	16946	15952
15	12931	9476	8553	6608	6675	6010	6522	17636	17897	18157	16918	15778
16	12794	9385	8527	6610	6656	5983	6813	17578	18045	18092	16887	15614
17	12668	9308	8509	6629	6693	5993	7169	17636	17986	18024	16851	15499
18	12538	9223	8474	6750	6681	6035	7594	17723	18163	17939	16815	15394
19	12410	9129	8434	6935	6641	6078	8094	17781	18134	17853	16781	15280
20	12282	9030	8377	7032	6616	6105	8553	17810	18134	17763	16742	15182
21	12149	8930	8317	7032	6583	6099	8978	17839	18223	17711	16719	15057
22	12025	8874	8258	7011	6542	6087	9294	17839	18253	17682	16707	14930
23	11893	8909	8192	7036	6501	6095	9529	17839	18312	17644	16690	14773
24	11776	8897	8126	7000	6472	6091	9768	17927	18282	17624	16676	14605
25	11657	8832	8051	6969	6442	6085	10074	17956	18282	17595	16659	14433
26	11544	8769	7984	6935	6407	6140	10501	17986	18193	17572	16648	14263
27	11428	8692	7912	6880	6373	6229	10897	17986	18134	17535	16632	14095
28	11309	8618	7847	6846	6347	6296	11171	17956	18163	17506	16610	13922
29	11189	8581	7775	6796	---	6330	11360	17927	18372	17468	16585	13745
30	11074	8928	7709	6748	---	6282	11587	17897	18433	17434	16573	13576
31	10954	---	7643	6710	---	6231	---	17868	---	17399	16557	---
MAX	14478	10829	9039	7572	6846	6383	11587	17986	18433	18391	17362	16541
MIN	10954	8581	7643	6608	6347	5983	6028	11911	17665	17399	16557	13576
a	5589.87	5581.51	5575.88	5571.53	5569.76	5569.17	5592.39	5616.00	5617.90	5614.38	5610.61	5600.15
b	-3551	-2026	-1285	-933	-363	-116	+5356	+6281	+565	-1034	-842	-2981

CAL YR 1998 MAX 18503 MIN 4276 b +3374

WTR YR 1999 MAX 18433 MIN 5983 b -929

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11296500 SOUTH FORK STANISLAUS RIVER AT STRAWBERRY, CA

LOCATION.—Lat 38°11'51", long 120°00'27", in SW 1/4 SW 1/4 sec.16, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.4 mi downstream from bridge on State Highway 108 at Strawberry, 0.6 mi downstream from Herring Creek, and 1.2 mi downstream from Pinecrest Lake.

DRAINAGE AREA.—44.8 mi².

PERIOD OF RECORD.—October 1911 to January 1917, August 1938 to current year. Monthly discharge only for October 1913 and yearly estimates for 1912–13, published in WSP 1315-A. Published as "near Confidence" 1911–13.

REVISED RECORDS.—WSP 1215: 1945(M). WSP 1515: 1916, 1943(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 5,235.1 ft above sea level (river-profile survey). October 1911 to January 1917, nonrecording gage at site 1 mi downstream at different datum.

REMARKS.—Low and medium flows regulated beginning in 1916 by Pinecrest Lake (station 11295900) 1.2 mi upstream. No diversion upstream from station. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,820 ft³/s, Jan. 2, 1997, gage height, 12.34 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 daily, 1.3 ft³/s, Nov. 22, 1946.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	69	54	54	58	64	86	115	748	205	30	17
2	65	63	54	53	58	65	65	124	646	181	28	17
3	64	59	58	54	58	70	64	95	436	157	22	17
4	64	59	55	54	59	70	63	84	321	137	22	17
5	68	62	56	54	59	67	63	99	306	124	21	17
6	67	66	55	54	59	66	63	165	414	82	21	17
7	67	66	57	54	69	65	61	217	492	64	21	17
8	67	66	58	54	70	65	61	224	472	63	21	16
9	66	62	57	54	82	64	61	204	474	63	21	16
10	66	63	56	54	69	63	60	187	505	61	21	16
11	66	64	56	54	66	63	60	228	599	62	22	16
12	66	63	56	54	66	63	61	286	653	61	21	16
13	66	62	57	54	65	64	64	456	701	61	21	25
14	67	62	57	54	64	65	66	600	728	66	20	49
15	71	62	56	55	63	64	72	494	655	60	20	65
16	73	62	57	58	63	64	86	474	695	63	19	62
17	72	62	58	58	71	65	96	542	578	61	19	60
18	71	62	58	64	68	68	94	648	582	61	19	58
19	71	61	58	73	66	71	114	646	563	62	19	59
20	71	61	56	72	65	73	131	726	481	62	19	61
21	70	61	57	65	64	71	130	794	461	43	19	68
22	70	61	56	62	64	69	111	942	448	26	18	72
23	70	63	55	63	63	70	94	1080	487	25	18	92
24	70	65	55	62	63	70	92	1060	456	25	18	98
25	70	62	55	61	63	70	105	1030	381	24	18	98
26	70	61	55	60	62	75	131	1080	302	28	18	97
27	70	61	54	59	62	80	139	1080	223	34	24	96
28	70	61	54	59	63	83	122	1070	124	33	26	96
29	70	62	54	59	---	94	92	962	136	32	23	95
30	70	60	54	59	---	105	94	804	204	32	17	95
31	69	---	54	59	---	102	---	754	---	31	17	---
TOTAL	2122	1873	1732	1803	1802	2208	2601	17270	14271	2089	643	1545
MEAN	68.5	62.4	55.9	58.2	64.4	71.2	86.7	557	476	67.4	20.7	51.5
MAX	73	69	58	73	82	105	139	1080	748	205	30	98
MIN	64	59	54	53	58	63	60	84	124	24	17	16
AC-FT	4210	3720	3440	3580	3570	4380	5160	34260	28310	4140	1280	3060

11296500 SOUTH FORK STANISLAUS RIVER AT STRAWBERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1999, BY WATER YEAR (WY)

MEAN	60.4	53.2	58.8	57.2	54.5	68.0	132	418	388	117	50.0	59.8
MAX	121	344	338	429	229	212	386	874	1066	683	127	99.2
(WY)	1983	1951	1951	1997	1982	1986	1982	1969	1983	1983	1983	1968
MIN	6.43	12.0	6.30	11.0	5.91	5.24	29.0	36.8	37.3	9.17	12.8	8.09
(WY)	1945	1943	1969	1987	1987	1977	1977	1977	1992	1977	1988	1984

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1938 - 1999	
ANNUAL TOTAL	75695		49959			
ANNUAL MEAN	207		137		127	
HIGHEST ANNUAL MEAN					259	
LOWEST ANNUAL MEAN					26.6	
HIGHEST DAILY MEAN	1280	Jun 16	1080	May 23	4680	Jan 2 1997
LOWEST DAILY MEAN	19	Sep 21	16	Sep 8	1.3	Nov 22 1946
ANNUAL SEVEN-DAY MINIMUM	19	Sep 19	16	Sep 6	2.3	Nov 9 1942
INSTANTANEOUS PEAK FLOW			1290	May 23	7820	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.35	May 23	12.34	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	150100		99090		91740	
10 PERCENT EXCEEDS	783		458		328	
50 PERCENT EXCEEDS	67		64		61	
90 PERCENT EXCEEDS	46		22		21	

11297200 SOUTH FORK STANISLAUS RIVER NEAR STRAWBERRY, CA

LOCATION.—Lat 38°10'40", long 120°02'45", in NW 1/4 NW 1/4 sec.30, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, on right bank 400 ft downstream from diversion dam and 2.8 mi southwest of Strawberry.

DRAINAGE AREA.—48.5 mi².

PERIOD OF RECORD.—October 1985 to current year (low-flow records only). Unpublished records for water-years 1970, 1976–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 4,915 ft above sea level, from topographic map.

REMARKS.—No records computed above 50 ft³/s. Flow regulated by Pinecrest Lake (station 11295900). Most of the water is diverted at diversion dam 400 ft upstream to Philadelphia Canal (station 11297000). See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	13	12	4.5	12	25	---	---	---	---	7.5	7.2
2	11	8.8	6.5	4.4	12	26	18	---	---	---	7.6	7.3
3	10	5.5	8.0	4.8	12	37	17	---	---	---	7.5	7.3
4	10	5.4	5.7	5.2	13	36	15	46	---	---	7.6	7.6
5	13	6.1	6.7	5.2	13	28	16	---	---	---	7.5	8.1
6	12	10	5.2	4.9	14	22	14	---	---	41	7.5	8.0
7	11	12	8.3	4.7	36	20	12	---	---	13	7.6	7.7
8	11	13	9.6	4.4	42	23	12	---	---	9.1	7.6	9.8
9	11	5.6	6.6	4.5	---	29	11	---	---	11	16	11
10	11	5.1	5.4	5.0	48	26	10	---	---	8.5	20	7.6
11	10	5.7	5.2	5.3	37	21	10	---	---	8.9	21	7.5
12	10	5.6	5.1	5.1	34	16	11	---	---	8.6	20	7.4
13	13	5.7	5.5	5.0	32	17	18	---	---	9.2	20	27
14	11	5.6	5.7	4.9	29	18	25	---	---	15	19	16
15	14	5.5	5.2	6.3	25	17	33	---	---	7.7	19	16
16	15	5.4	5.5	12	27	16	---	---	---	9.9	19	12
17	14	6.4	6.5	11	47	18	---	---	---	7.8	18	10
18	13	5.5	6.7	22	37	23	---	---	---	7.6	18	7.4
19	13	5.3	6.5	40	34	27	---	---	---	9.2	18	7.5
20	13	5.1	5.6	43	32	30	---	---	---	8.3	18	7.6
21	14	5.2	5.3	27	30	27	---	---	---	8.3	17	28
22	12	5.1	4.8	21	27	25	---	---	---	7.5	17	13
23	12	8.3	4.9	23	26	27	---	---	---	7.5	17	29
24	13	17	4.9	19	26	26	---	---	---	8.0	11	40
25	15	5.9	4.6	17	26	25	---	---	---	9.0	7.6	40
26	15	5.1	4.6	16	24	31	---	---	---	8.6	8.8	39
27	14	4.8	4.6	14	24	37	---	---	---	8.7	8.4	38
28	15	4.9	4.7	13	25	42	---	---	---	8.2	10	37
29	15	8.9	4.8	13	---	---	---	---	---	7.8	10	37
30	14	19	4.9	13	---	---	---	---	---	7.7	8.0	36
31	13	---	4.9	13	---	---	---	---	---	7.6	7.3	---
TOTAL	389	224.5	184.5	391.2	---	---	---	---	---	---	408.5	537.0
MEAN	12.5	7.48	5.95	12.6	---	---	---	---	---	---	13.2	17.9
MAX	15	19	12	43	---	---	---	---	---	---	21	40
MIN	10	4.8	4.6	4.4	---	---	---	---	---	---	7.3	7.2
AC-FT	772	445	366	776	---	---	---	---	---	---	810	1070
a	3560	3410	3140	3130	2830	3450	3410	3490	3370	2660	381	1980

CAL YR 1998 a 36190

WTR YR 1999 a 34800

a Diversion, in acre-feet, to Philadelphia Canal, provided by Pacific Gas & Electric Co.

11297700 LYONS RESERVOIR NEAR LONG BARN, CA

LOCATION.—Lat 38°05'38", long 120°09'59", in SW 1/4 NE 1/4 sec.24, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, at left abutment of dam and 1.6 mi west of Long Barn.

DRAINAGE AREA.—66.8 mi².

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for 1981–85 water years are available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Prior to Dec. 10, 1990, nonrecording gage read three times weekly. Datum of gage is 4,134 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Reservoir is formed by concrete arch dam completed in 1930; storage began in 1930. Usable capacity, 4,847 acre-ft between gage heights 0.0 ft, invert of outlet, and 86.0 ft, top of spillway gates. Dead storage, 2.5 acre-ft. Part of the released water is diverted to Tuolumne Canal (station 11297500) near the base of the dam. Records from Dec. 10, 1990, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents observed, 6,292 acre-ft, June 4, 5, 7, 9, 10, 1989, gage height, 90.4 ft; minimum observed, 832 acre-ft, Nov. 27, 1995, gage height, 48.51 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 5,527 acre-ft, July 2, gage height, 90.12 ft; minimum, 1,844 acre-ft, Sept. 23, gage height, 62.79 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1996)

20	34.2	40	474	70	2,598
25	94.4	50	908	80	3,913
30	186	60	1,592	90	5,507

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3853	3554	3525	3116	3951	4008	3976	3981	4169	5500	4221	2883
2	3834	3564	3540	3102	3949	4005	3958	3993	4149	5527	4164	2830
3	3815	3544	3571	3089	3969	4020	3954	3988	4094	5526	4107	2776
4	3794	3523	3573	3077	3969	4017	3954	3976	4058	5521	4049	2720
5	3774	3505	3566	3064	3969	4006	3958	3975	4049	5519	3994	2663
6	3761	3496	3559	3055	3979	4002	3955	4000	4085	5502	3937	2611
7	3742	3508	3541	3048	4084	3997	3951	4026	4104	5466	3881	2557
8	3728	3508	3530	3040	4117	3997	3957	4029	4097	5424	3828	2499
9	3708	3501	3527	3031	4125	4000	3954	4024	4097	5384	3778	2441
10	3686	3489	3527	3022	4068	3996	3952	4015	4111	5337	3751	2386
11	3665	3481	3522	3015	4046	3969	3954	4033	4134	5285	3719	2332
12	3644	3467	3514	3007	4032	3967	3973	4056	4146	5236	3689	2278
13	3627	3453	3509	3000	4021	3966	3991	4151	4167	5191	3658	2254
14	3610	3437	3511	2989	4017	3966	3996	4143	4169	5158	3625	2218
15	3593	3422	3508	2993	4008	3963	4002	4114	4242	5109	3590	2181
16	3586	3405	3503	3025	4024	3963	4009	4110	4292	5058	3557	2138
17	3575	3400	3501	3046	4047	3963	4017	4133	4365	5006	3507	2092
18	3562	3385	3497	3168	4056	3961	4009	4146	4440	4957	3470	2041
19	3578	3372	3494	3586	4038	3963	4011	4154	4509	4908	3482	1991
20	3603	3354	3475	4036	4038	3966	4012	4196	4618	4855	3445	1939
21	3630	3337	3439	4027	4027	3966	4011	4218	4800	4804	3409	1908
22	3651	3327	3401	4002	4023	3961	3999	4275	4957	4753	3374	1873
23	3678	3329	3362	4032	4021	3960	3984	4301	5221	4701	3341	1844
24	3686	3368	3323	4008	4015	3961	3984	4267	5438	4651	3303	1849
25	3655	3366	3285	3999	4027	3961	3982	4288	5504	4599	3249	1854
26	3632	3357	3248	3993	4020	3961	3996	4287	5460	4548	3198	1862
27	3617	3341	3208	3982	4014	3961	4000	4281	5332	4498	3149	1866
28	3599	3334	3171	3955	4012	3961	3993	4275	5162	4450	3098	1868
29	3592	3338	3149	3952	---	3966	3978	4219	5137	4393	3050	1868
30	3579	3450	3137	3951	---	3979	3972	4189	5307	4334	3001	1869
31	3568	---	3128	3955	---	3984	---	4184	---	4278	2949	---
MAX	3853	3564	3573	4036	4125	4020	4017	4301	5504	5527	4221	2883
MIN	3562	3327	3128	2989	3949	3960	3951	3975	4049	4278	2949	1844
a	77.60	76.75	74.32	80.28	80.66	80.47	80.39	81.79	88.81	82.40	72.91	63.06
b	-305	-118	-322	+827	+57	-28	-12	+212	+1123	-1029	-1329	-1080

CAL YR 1998 MAX 5526 MIN 2539 b +483
WTR YR 1999 MAX 5527 MIN 1844 b -2004

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

b Change in contents, in acre-feet.

11298700 ANGELS CREEK BELOW UTICA DITCH DIVERSION DAM, NEAR MURPHYS, CA

LOCATION.—Lat 38°07'51", long 120°29'03", in NW 1/4 NW 1/4 sec.7, T.3 N., R.14 E., Calaveras County, Hydrologic Unit 18040010, on right bank 120 ft downstream from diversion dam and 1.2 mi southwest of Murphys.

DRAINAGE AREA.—6.01 mi².

PERIOD OF RECORD.—October 1990 to current year (low-flow records only).

GAGE.—Water-stage recorder and 90° V-notch weir. Elevation of gage is 2,040 ft above sea level, from topographic map.

REMARKS.—No records computed above 2.5 ft³/s. Flow consists of fishery release and spill over diversion dam. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were collected by Henwood Energy Services, Inc., for Utica Power Authority, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.9	2.4	1.9	1.8	---	1.9	1.9	---	1.8	2.1	2.0
2	1.8	2.0	2.3	1.8	1.9	---	1.8	2.1	---	2.2	2.2	2.0
3	1.9	2.0	2.1	1.5	1.9	---	1.8	---	2.0	2.1	2.1	2.1
4	1.9	2.0	2.0	1.5	1.8	---	1.8	2.5	2.1	2.3	2.1	2.1
5	1.9	1.9	2.0	1.5	1.8	---	2.1	2.1	2.2	2.3	2.1	2.1
6	2.0	1.9	2.0	1.7	1.9	---	2.1	2.0	2.2	2.2	2.1	2.1
7	2.1	2.0	1.9	1.9	---	---	1.9	1.9	2.1	2.2	2.1	2.1
8	2.1	1.9	1.9	1.9	---	---	---	2.0	2.0	2.1	2.2	2.0
9	2.1	1.9	2.0	1.9	---	---	---	2.2	2.1	2.1	2.2	2.0
10	2.1	1.8	2.0	1.9	---	---	---	2.1	2.1	2.3	2.1	2.1
11	2.0	1.9	2.0	2.1	---	---	---	2.0	2.0	2.4	2.0	2.1
12	2.0	1.8	2.0	2.3	---	2.4	---	2.1	2.0	2.2	2.0	2.1
13	2.1	1.9	2.0	2.3	---	2.2	---	2.1	2.0	e2.2	2.0	2.1
14	2.0	2.0	2.1	2.1	---	1.9	---	---	2.1	e2.2	2.0	2.2
15	2.0	1.9	2.0	2.0	---	1.9	---	---	2.1	2.1	2.0	2.1
16	2.0	---	2.0	2.0	---	2.1	---	---	2.1	2.0	2.1	2.1
17	2.0	---	2.0	2.0	---	2.0	2.2	---	2.0	2.1	2.1	2.1
18	2.0	---	2.0	2.5	---	2.0	2.0	---	2.1	2.1	2.1	2.1
19	2.0	---	2.0	---	---	2.0	1.9	---	2.1	2.1	2.0	2.2
20	2.0	2.0	2.0	---	---	2.0	1.8	---	2.2	2.1	2.0	2.3
21	1.9	1.6	2.0	---	---	2.0	1.9	---	2.2	2.0	2.0	2.3
22	1.9	2.1	2.0	---	---	2.0	1.9	---	2.1	2.0	2.1	2.2
23	1.9	2.2	2.0	---	---	2.0	1.8	---	2.0	2.1	2.1	2.2
24	1.9	2.0	2.0	---	---	2.0	1.8	---	2.1	2.0	2.1	2.1
25	1.9	1.9	2.1	---	---	1.9	1.9	---	2.1	2.1	2.1	2.1
26	1.9	1.9	2.1	---	---	1.8	1.9	---	2.2	2.1	2.1	2.1
27	2.0	1.9	2.1	---	---	1.9	1.9	---	2.2	2.0	2.0	2.1
28	2.0	1.9	2.1	---	---	2.0	1.9	---	2.1	2.0	2.0	2.1
29	2.0	2.0	2.0	2.0	---	2.0	1.9	---	2.1	2.1	1.9	2.1
30	2.0	2.3	2.0	1.8	---	2.0	1.9	---	1.8	2.1	1.9	2.2
31	2.0	---	1.9	2.1	---	2.1	---	---	---	2.1	1.9	---
TOTAL	61.2	---	63.0	---	---	---	---	---	---	65.7	63.8	63.5
MEAN	1.97	---	2.03	---	---	---	---	---	---	2.12	2.06	2.12
MAX	2.1	---	2.4	---	---	---	---	---	---	2.4	2.2	2.3
MIN	1.8	---	1.9	---	---	---	---	---	---	1.8	1.9	2.0
AC-FT	121	---	125	---	---	---	---	---	---	130	127	126

e Estimated.

11299000 NEW MELONES RESERVOIR NEAR SONORA, CA

LOCATION.—Lat 37°57'02", long 120°30'49", in NW 1/4 SE 1/4 sec.11, T.1 N., R.13 E., Calaveras County, Hydrologic Unit 18040010, at right abutment of New Melones Dam on Stanislaus River, 0.1 mi downstream from the old Melones Dam, and 7.6 mi southwest of Sonora.

DRAINAGE AREA.—904 mi².

PERIOD OF RECORD.—1926 (year-end contents only, published in WSP 1315-A), June 1927 to current year. Prior to October 1970, published as Melones Reservoir at Melones Dam. October 1970 to September 1978, published as Melones Lake near Sonora.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Feb. 28, 1961, nonrecording gage, and Mar. 1, 1961, to Nov. 26, 1978, water-stage recorder at site on left side of old Melones Dam, at same datum.

REMARKS.—Reservoir is formed by earth and rockfill dam completed in November 1978. Dam is downstream from the original concrete dam which was completed in December 1926. Usable capacity 2,420,000 acre-ft between elevations 543.0 ft, invert entrance to outlet tunnel, and 1,088.0 ft, gross pool elevation. No dead storage. When elevation is above 808.0 ft, water is released through New Melones Powerplant (station 11299200) to Tulloch Reservoir (station 11299995) where it is used for irrigation. Records for the 1971 water year represent contents at 1630 hours. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River Basin.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD (Subsequent to completion of New Melones Dam in 1978).—Maximum contents, 2,400,000 acre-ft, July 8–10, 1983, elevation, 1,086.42 ft; minimum since reservoir first filled in July 1983, 83,630 acre-ft, Oct. 1, 1992, elevation, 721.15 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 2,095,000 acre-ft, Oct. 1, elevation, 1,060.71 ft; minimum, 1,827,000 acre-ft, Sept. 29, elevation, 1,036.19.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by U.S. Army Corps of Engineers, dated September 1978)

700	53,900	760	160,500	880	611,500	1,000	1,471,000
710	66,950	780	212,300	900	723,000	1,020	1,662,000
720	81,800	800	272,800	920	846,500	1,040	1,867,000
730	98,530	820	342,400	940	982,600	1,060	2,087,000
740	117,200	840	421,800	960	1,132,000	1,088	2,420,000
750	137,800	860	511,200	980	1,295,000		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2095000	1997000	1998000	1976000	1977000	1970000	1997000	1990000	2024000	2031000	1943000	1865000
2	2091000	1996000	1999000	1975000	1977000	1970000	1994000	1988000	2026000	2027000	1939000	1862000
3	2087000	1996000	1998000	1973000	1974000	1970000	1993000	1987000	2029000	2026000	1935000	1859000
4	2083000	1996000	1996000	1971000	1972000	1969000	1991000	1984000	2029000	2024000	1934000	1858000
5	2080000	1996000	1994000	1970000	1969000	1969000	1991000	1983000	2030000	2021000	1931000	1856000
6	2076000	1995000	1994000	1969000	1966000	1971000	1990000	1982000	2031000	2018000	1929000	1853000
7	2072000	1996000	1993000	1969000	1973000	1973000	1990000	1982000	2031000	2016000	1926000	1850000
8	2068000	1996000	1992000	1969000	1982000	1975000	1992000	1980000	2032000	2013000	1923000	1852000
9	2065000	1995000	1991000	1968000	2002000	1977000	1993000	1979000	2032000	2011000	1920000	1849000
10	2062000	1995000	1992000	1968000	2007000	1978000	1995000	1977000	2033000	2008000	1916000	1847000
11	2058000	1995000	1991000	1969000	2006000	1980000	1995000	1974000	2034000	2006000	1913000	1845000
12	2054000	1995000	1991000	1971000	2004000	1982000	1996000	1974000	2034000	2003000	1910000	1843000
13	2050000	1995000	1991000	1972000	2000000	1984000	1997000	1973000	2035000	2001000	1907000	1842000
14	2045000	1995000	1989000	1973000	1996000	1985000	1999000	1973000	2035000	1999000	1904000	1842000
15	2042000	1994000	1989000	1972000	1992000	1985000	2000000	1973000	2036000	1997000	1901000	1842000
16	2039000	1994000	1989000	1972000	1990000	1985000	2000000	1970000	2036000	1994000	1899000	1842000
17	2035000	1994000	1988000	1972000	1991000	1986000	2001000	1970000	2037000	1991000	1898000	1842000
18	2032000	1994000	1987000	1972000	1991000	1987000	2001000	1970000	2039000	1989000	1895000	1842000
19	2028000	1994000	1986000	1978000	1991000	1988000	2002000	1970000	2038000	1985000	1893000	1840000
20	2025000	1994000	1985000	1987000	1988000	1988000	2002000	1970000	2038000	1982000	1891000	1838000
21	2020000	1993000	1985000	1998000	1988000	1989000	2001000	1970000	2037000	1978000	1888000	1836000
22	2017000	1993000	1986000	1993000	1988000	1991000	2001000	1970000	2037000	1975000	1885000	1835000
23	2014000	1994000	1987000	1995000	1986000	1992000	1999000	1971000	2037000	1972000	1882000	1834000
24	2010000	1996000	1985000	1995000	1983000	1993000	1996000	1974000	2037000	1968000	1881000	1832000
25	2006000	1996000	1985000	1994000	1982000	1993000	1995000	1981000	2037000	1966000	1880000	1831000
26	2004000	1995000	1983000	1990000	1980000	1994000	1996000	1989000	2037000	1963000	1879000	1830000
27	2002000	1995000	1983000	1986000	1976000	1994000	1997000	1996000	2037000	1960000	1878000	1830000
28	2000000	1995000	1981000	1981000	1972000	1994000	1994000	2003000	2036000	1957000	1877000	1828000
29	1999000	1995000	1979000	1979000	---	1995000	1992000	2011000	2035000	1954000	1874000	1827000
30	1998000	1997000	1978000	1977000	---	1996000	1992000	2016000	2035000	1950000	1871000	1829000
31	1998000	---	1977000	1976000	---	1997000	---	2021000	---	1947000	1868000	---
MAX	2095000	1997000	1999000	1998000	2007000	1997000	2002000	2021000	2039000	2031000	1943000	1865000
MIN	1998000	1993000	1977000	1968000	1966000	1969000	1990000	1970000	2024000	1947000	1868000	1827000
a	1052.06	1052.01	1050.17	1050.09	1049.76	1052.04	1051.51	1054.12	1055.40	1047.44	1040.08	1036.37
b	-101000	-1000	-20000	-1000	-4000	+25000	-5000	+29000	+14000	-88000	-79000	-39000
c	3675	1226	857	966	1217	1930	3554	5340	7131	8759	7263	6043
d	158600	54060	77830	97270	176500	119100	137600	180400	167500	145000	130200	94120

CAL YR 1998 b +124000

WTR YR 1999 b -270000

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Total evaporation, in acre-feet, published as provided; not reviewed by U.S. Geological Survey.

d Discharge, in acre-feet, through New Melones Powerplant, provided by U.S. Bureau of Reclamation.

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 sea level.

REMARKS.—Records fair. No regulation or diversion upstream from station. See schematic diagram of Stanislaus River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,200 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, or maximim:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 19	2245	683	4.39	Feb. 21	0545	290	3.77
Feb. 9	1015	1,930	5.49	Apr. 8	1345	57	2.96
Feb. 17	0315	340	3.88				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.08	3.7	.70	26	17	6.2	3.2	.92	.02	.00	.00
2	.00	.09	1.6	.63	17	15	5.7	3.4	1.2	.01	.00	.00
3	.00	.09	2.6	.70	14	36	5.7	7.1	1.3	.00	.00	.00
4	.00	.09	2.8	.60	11	22	5.5	4.6	1.2	.00	.00	.00
5	.00	.09	1.6	.60	9.2	19	9.1	3.4	1.1	.00	.00	.00
6	.00	e.11	1.9	.62	11	17	15	3.0	.95	.00	.00	.00
7	.00	e.11	1.4	.71	426	15	9.4	2.7	.86	.00	.00	.00
8	.00	e.55	1.2	.71	352	14	27	2.6	.83	.00	.00	.00
9	.00	e.27	.99	.70	489	23	25	2.5	.78	.00	.00	.00
10	.00	.24	.90	.60	119	16	17	2.5	.74	.00	.00	.00
11	.00	e1.8	.83	.60	57	14	16	2.3	.67	.00	.00	.00
12	.00	.54	.77	.60	36	12	13	2.1	.64	.00	.00	.00
13	.00	.33	.81	.60	27	11	11	2.0	.56	.00	.00	.00
14	.00	e.27	1.2	.55	23	11	9.9	1.9	.51	.00	.00	.00
15	.00	e.25	.74	.97	18	10	9.0	1.9	.46	.00	.00	.00
16	.00	e.25	.62	3.8	27	9.6	8.3	1.8	.43	.00	.00	.00
17	.00	e.50	.60	2.1	162	9.0	7.5	1.7	.41	.00	.00	.00
18	.00	.41	.60	27	67	8.7	6.7	1.7	.35	.00	.00	.00
19	.00	.33	.60	195	52	8.2	6.2	1.7	.31	.00	.00	.00
20	.00	.27	.85	253	44	12	5.9	1.6	.28	.00	.00	.00
21	.00	.27	.83	66	171	8.6	5.7	1.6	.27	.00	.00	.00
22	.00	.48	.65	23	70	7.8	5.2	1.5	.26	.00	.00	.00
23	.00	.64	.59	133	46	8.1	4.7	1.4	.22	.00	.00	.00
24	.05	1.2	.59	51	34	7.6	4.5	1.3	.17	.00	.00	.00
25	.12	.57	.60	25	37	7.5	4.3	1.2	.12	.00	.00	.00
26	.06	.45	.60	24	27	6.6	4.3	1.1	.12	.00	.00	.00
27	.07	.39	.71	17	23	6.2	4.1	1.0	.10	.00	.00	.00
28	.07	.70	.71	13	20	6.0	3.9	.96	.06	.00	.00	.00
29	.08	1.3	.67	10	---	5.8	3.8	.93	.04	.00	.00	.00
30	.07	2.8	.71	8.9	---	5.7	3.5	.96	.03	.00	.00	.00
31	.07	---	.71	36	---	10	---	.92	---	.00	.00	---
TOTAL	0.59	15.47	33.68	897.69	2415.2	379.4	263.1	66.57	15.89	0.03	0.00	0.00
MEAN	.019	.52	1.09	29.0	86.3	12.2	8.77	2.15	.53	.001	.000	.000
MAX	.12	2.8	3.7	253	489	36	27	7.1	1.3	.02	.00	.00
MIN	.00	.08	.59	.55	9.2	5.7	3.5	.92	.03	.00	.00	.00
AC-FT	1.2	31	67	1780	4790	753	522	132	32	.06	.00	.00

e Estimated.

SAN JOAQUIN RIVER BASIN

11299600 BLACK CREEK NEAR COPPEROPOLIS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.14	4.67	11.2	35.4	44.1	22.0	5.78	2.51	.51	.055	.000	.007
MAX	1.80	53.1	98.8	144	171	96.6	32.4	13.6	3.63	.46	.005	.11
(WY)	1992	1984	1997	1997	1998	1995	1998	1998	1998	1998	1998	1983
MIN	.000	.000	.000	.000	.16	.62	.62	.17	.000	.000	.000	.000
(WY)	1986	1991	1991	1991	1991	1988	1988	1992	1988	1984	1984	1984

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1983 - 1999	
ANNUAL TOTAL	10428.60		4087.62			
ANNUAL MEAN	28.6		11.2		10.4	
HIGHEST ANNUAL MEAN					28.6	
LOWEST ANNUAL MEAN					.32	
HIGHEST DAILY MEAN	1010	Jan 15	489	Feb 9	1400	Feb 17 1986
LOWEST DAILY MEAN	.00	Aug 6	.00	Oct 1	.00	Sep 16 1983
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 6	.00	Oct 1	.00	Jun 28 1984
INSTANTANEOUS PEAK FLOW			1930	Feb 9	5200	Feb 19 1986
INSTANTANEOUS PEAK STAGE			5.49	Feb 9	9.10	Feb 19 1986
ANNUAL RUNOFF (AC-FT)	20690		8110		7500	
10 PERCENT EXCEEDS	58		21		14	
50 PERCENT EXCEEDS	1.8		.64		.22	
90 PERCENT EXCEEDS	.00		.00		.00	

1129995 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 sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.—Reservoir is formed by gravity-type concrete dam completed in October 1957. Usable capacity, 56,840 acre-ft between elevations 431.0 ft, normal minimum water surface, and 511.0 ft, top of radial gates. Dead storage, 11,560 acre-ft. Reservoir is used for irrigation and power. Water passes down Stanislaus River, first passing through Tulloch Powerplant at dam. Part of flow is diverted at Goodwin Dam to Oakdale Canal (station 11301000) and South San Joaquin Canal (station 11300500). Records, including extremes, represent total contents at 2400 hours.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 69,500 acre-ft, Jan. 7, 1965, elevation, 512.0 ft; minimum, 4,580 acre-ft, Oct. 3, 1960, elevation, 404.0 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 66,400 acre-ft, Aug. 3, elevation, 509.51 ft; minimum, 49,500 acre-ft, Feb. 10, elevation, 494.41.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated October 1956)

404	4,580	430	11,100	475	33,100
411	6,020	445	16,400	490	45,300
420	8,200	460	23,600	512	69,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60300	56900	54800	56000	51400	51600	55200	60400	64600	66000	65000	65300
2	60800	56800	54500	55500	50500	50900	57200	61000	64600	66200	66000	65800
3	61100	56700	54000	54900	51000	50800	57400	61500	64600	65400	66400	65700
4	60300	56600	55300	54900	50700	50800	57600	62500	64600	65200	65400	65200
5	59500	56200	54900	55400	50700	51500	58500	62500	64500	65600	65700	64700
6	59200	55600	54900	55400	50700	51400	59500	62100	64400	66000	65200	64600
7	59800	55500	55200	55600	52400	50300	59300	62200	64300	65600	64300	64700
8	61100	55600	56200	55500	53600	50200	59500	62600	64100	64900	63900	65200
9	61400	55600	55200	55500	51000	50400	59600	62800	64200	64900	64800	65300
10	59800	55700	55600	54700	49500	50400	58900	62900	64400	65400	65200	65100
11	59100	55700	55600	53300	50200	50500	58600	63000	64400	65400	65100	65000
12	58600	55700	55600	51800	50300	50500	58800	62700	64400	65900	65200	64600
13	58600	55500	55400	50700	50400	50400	58800	62800	65000	66100	64900	64600
14	58900	55700	55800	50600	50200	50500	58600	62700	65000	65700	65400	64700
15	59000	55700	55600	50400	51200	52800	58600	62600	65500	65300	65100	64200
16	58900	55800	54700	50600	51000	54400	59400	63500	65600	64600	65200	63500
17	58800	56400	55400	50400	51600	54900	59200	63300	64800	64600	65000	62800
18	58700	56300	55700	51400	51400	54400	59300	62600	64000	64500	64600	62700
19	58500	56400	55700	52100	50400	54900	59000	62600	64600	64900	64400	62700
20	58700	55600	55800	50300	51500	55900	59100	63000	65200	64700	64300	63600
21	58400	56400	55800	50400	52300	55500	59100	63300	64800	65200	64400	63700
22	57700	56700	55800	51500	51500	55100	59100	63400	64900	65400	65100	61800
23	57600	55900	55000	52300	51000	55000	59500	63600	65000	65600	65500	63100
24	57300	54000	55800	51100	50100	55200	60400	63800	65200	65300	65400	62400
25	57200	53800	55800	50400	50000	55500	60300	63800	65000	64700	64700	61900
26	57500	53900	55600	51800	49900	55600	57100	63300	64800	64400	64200	62000
27	57200	54100	55200	50400	50700	56100	56500	63500	64600	64800	64500	63200
28	57200	54300	55100	51300	50700	56100	60000	63900	64600	64800	64300	62000
29	57100	54000	55400	51600	---	56300	60100	63800	64800	65600	64500	63400
30	57000	54400	55900	51400	---	55700	60300	64400	65200	65200	64600	62300
31	56900	---	56500	52000	---	54900	---	64400	---	64900	64900	---
MAX	61400	56900	56500	56000	53600	56300	60400	64400	65600	66200	66400	65800
MIN	56900	53800	54000	50300	49500	50200	55200	60400	64000	64400	63900	61800
a	501.44	499.14	501.06	496.85	495.58	499.60	504.47	507.89	508.54	508.32	508.32	506.17
b	-3500	-2500	+2100	-4500	-1300	+4200	+5400	+4100	+800	-300	0	-2600

CAL YR 1998 b +2700

WTR YR 1999 b +1900

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA

LOCATION.—Lat 37°52'34", long 120°36'15", in Rancheria del Rio Estanislao Grant, T.1 S., R.12 E., on Calaveras–Tuolumne County line, Hydrologic Unit 18040010, temperature recorder in south corner of Tulloch Powerplant at downstream side of Tulloch Dam, 5.2 mi northeast of Knights Ferry.

DRAINAGE AREA.—980 mi².

PERIOD OF RECORD.—June 1972 to current year.

WATER TEMPERATURE: June 1972 to current year.

PERIOD OF DAILY RECORD.—June 1972 to current year.

WATER TEMPERATURE: June 1972 to current year.

INSTRUMENTATION.—Water-temperature recorder since June 1972.

REMARKS.—Water temperature is affected by regulation from Tulloch Powerplant.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 27.5°C, Aug. 30, 1977; minimum recorded, 5.0°C, Jan. 13, 1973.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 12.5°C, many days in August and September; minimum recorded, 9.5°C, many days from December to April.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11.5	11.5	11.0	11.0	11.5	11.0	9.5	9.5	10.0	10.0	10.0	9.5
2	11.5	11.5	11.0	11.0	11.5	11.0	9.5	9.5	10.0	10.0	10.0	9.5
3	11.5	11.5	11.0	11.0	11.0	11.0	9.5	9.5	10.0	10.0	10.0	9.5
4	11.5	11.5	11.0	11.0	11.5	11.0	9.5	9.5	10.0	10.0	10.0	9.5
5	11.5	11.5	11.0	11.0	11.0	11.0	9.5	9.5	10.0	10.0	9.5	9.5
6	11.5	11.5	11.0	11.0	11.0	11.0	9.5	9.5	10.0	10.0	9.5	9.5
7	11.5	11.5	11.0	11.0	11.0	11.0	9.5	9.5	10.0	10.0	9.5	9.5
8	11.5	11.5	11.5	11.0	11.0	11.0	9.5	9.5	10.0	10.0	9.5	9.5
9	11.5	11.5	11.0	11.0	11.0	10.5	9.5	9.5	10.0	10.0	9.5	9.5
10	11.5	11.5	11.0	11.0	11.0	10.5	9.5	9.5	10.0	10.0	9.5	9.5
11	11.5	11.5	11.0	11.0	10.5	10.5	9.5	9.5	10.0	10.0	9.5	9.5
12	11.5	11.5	11.0	11.0	10.5	10.5	9.5	9.5	10.0	10.0	9.5	9.5
13	11.5	11.5	11.0	11.0	10.5	10.5	9.5	9.5	10.0	10.0	9.5	9.5
14	11.5	11.5	11.0	11.0	10.5	10.5	9.5	9.5	10.0	10.0	9.5	9.5
15	11.5	11.5	11.0	11.0	10.5	10.5	9.5	9.5	10.0	10.0	9.5	9.5
16	11.5	11.5	11.0	11.0	10.5	10.5	9.5	9.5	10.0	10.0	10.0	9.5
17	11.5	11.5	11.0	11.0	10.5	10.5	9.5	9.5	10.0	10.0	10.0	9.5
18	11.5	11.0	11.0	11.0	10.5	10.5	9.5	9.5	10.0	10.0	9.5	9.5
19	11.5	11.0	11.0	11.0	10.5	10.5	9.5	9.5	10.0	10.0	9.5	9.5
20	11.5	11.0	11.0	11.0	10.5	10.0	10.0	9.5	10.0	10.0	9.5	9.5
21	11.5	11.0	11.0	11.0	10.0	10.0	10.0	10.0	10.0	10.0	9.5	9.5
22	11.5	11.0	11.0	11.0	10.0	10.0	10.0	10.0	10.0	10.0	9.5	9.5
23	11.5	11.0	11.0	11.0	10.0	10.0	10.0	10.0	10.0	9.5	10.0	9.5
24	11.5	11.0	11.0	11.0	10.0	10.0	10.0	10.0	10.0	9.5	9.5	9.5
25	11.5	11.0	11.0	11.0	10.0	9.5	10.0	10.0	10.0	10.0	9.5	9.5
26	11.5	11.0	11.5	11.0	9.5	9.5	10.5	10.0	10.0	10.0	9.5	9.5
27	11.5	11.0	11.0	11.0	9.5	9.5	10.5	10.5	10.0	10.0	9.5	9.5
28	11.0	11.0	11.0	11.0	9.5	9.5	10.5	10.5	10.0	10.0	10.0	9.5
29	11.0	11.0	11.0	11.0	9.5	9.5	10.5	10.0	---	---	9.5	9.5
30	11.0	11.0	11.5	11.0	9.5	9.5	10.5	10.0	---	---	10.0	9.5
31	11.0	11.0	---	---	9.5	9.5	10.0	10.0	---	---	10.0	9.5
MONTH	11.5	11.0	11.5	11.0	11.5	9.5	10.5	9.5	10.0	9.5	10.0	9.5

11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.0	9.5	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5
2	10.0	9.5	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5
3	9.5	9.5	10.0	10.0	11.0	11.0	12.0	11.5	12.5	12.0	12.5	12.5
4	9.5	9.5	10.0	10.0	11.0	11.0	12.0	11.5	12.0	12.0	12.5	12.5
5	9.5	9.5	10.0	10.0	11.0	11.0	12.0	11.5	12.0	12.0	12.5	12.5
6	9.5	9.5	10.0	10.0	11.0	11.0	12.0	11.5	12.5	12.0	12.5	12.0
7	9.5	9.5	10.5	10.0	11.0	11.0	12.0	11.5	12.5	12.0	12.5	12.0
8	9.5	9.5	10.5	10.0	11.0	11.0	12.0	11.5	12.5	12.0	12.5	12.0
9	9.5	9.5	10.5	10.5	11.5	11.0	12.0	12.0	12.5	12.0	12.5	12.5
10	9.5	9.5	10.5	10.5	11.0	11.0	12.0	12.0	12.5	12.0	12.5	12.5
11	9.5	9.5	10.5	10.5	11.0	11.0	12.0	12.0	12.5	12.5	12.5	12.5
12	9.5	9.5	10.5	10.5	11.5	11.0	12.0	12.0	12.5	12.5	12.5	12.0
13	9.5	9.5	10.5	10.5	11.5	11.0	12.0	12.0	12.5	12.0	12.5	12.0
14	9.5	9.5	10.5	10.5	11.5	11.0	12.0	12.0	12.5	12.0	12.5	12.0
15	9.5	9.5	11.0	10.5	11.5	11.0	12.0	12.0	12.5	12.5	12.5	12.0
16	9.5	9.5	11.0	10.5	11.5	11.0	12.0	12.0	12.5	12.5	12.5	12.0
17	9.5	9.5	11.0	10.5	11.5	11.0	12.0	12.0	12.5	12.5	12.5	12.5
18	9.5	9.5	11.0	10.5	11.5	11.0	12.0	12.0	12.5	12.5	12.5	12.5
19	10.0	9.5	11.0	11.0	11.5	11.0	12.0	12.0	12.5	12.5	12.5	12.5
20	10.0	9.5	11.0	10.5	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.0
21	10.0	9.5	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.0
22	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.5
23	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.0
24	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.5
25	10.0	10.0	11.0	11.0	11.5	11.0	12.0	12.0	12.5	12.5	12.5	12.5
26	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.5
27	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.0
28	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.0
29	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.0
30	10.0	10.0	11.0	11.0	11.5	11.5	12.0	12.0	12.5	12.5	12.5	12.0
31	---	---	11.0	11.0	---	---	12.0	12.0	12.5	12.5	---	---
MONTH	10.0	9.5	11.0	10.0	11.5	11.0	12.0	11.5	12.5	12.0	12.5	12.0

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 sea level (levels by Oakdale Irrigation District). Prior to Mar. 12, 1915, nonrecording gage 100 ft downstream. Mar. 12, 1915, to July 1, 1921, nonrecording gage at present site and datum.

REMARKS.—Canal diverts from right bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale and South San Joaquin Irrigation Districts.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,320 ft³/s, Aug. 10–17, 1978; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	672	445	445	393	.00	.00	691	903	1010	1070	1120	928
2	672	446	445	393	1.0	.00	698	914	1010	1080	1050	888
3	672	446	445	393	3.3	.00	709	927	1020	1090	1010	791
4	671	446	445	393	3.6	.00	688	926	1030	1070	1000	738
5	636	446	445	393	3.7	.00	689	916	1030	1070	1000	731
6	606	447	445	387	2.2	.00	670	917	1020	1080	1050	726
7	608	447	426	159	.00	.00	656	917	937	1120	1070	725
8	480	446	394	.00	.00	.00	619	913	897	1140	1070	721
9	423	383	394	.00	.00	.00	607	901	883	1140	1070	715
10	423	352	393	.00	.00	.00	607	901	876	1140	1080	705
11	423	352	393	.00	.00	.00	608	901	876	1150	1080	699
12	417	352	393	.00	.00	.00	613	902	876	1150	1060	698
13	415	352	393	.00	.00	.00	648	889	865	1140	1010	698
14	400	352	393	.00	.00	.00	682	885	864	1140	997	756
15	388	352	393	.00	.00	.00	655	890	864	1140	996	787
16	375	351	393	.00	.00	.00	610	892	874	1140	996	787
17	362	383	393	.00	.00	.00	642	899	893	1140	1000	787
18	352	397	393	2.8	.00	115	645	902	899	1140	1000	786
19	363	397	393	4.4	.00	204	657	901	899	1140	997	784
20	379	397	392	4.4	.00	204	766	900	908	1130	995	785
21	514	397	392	4.4	.00	204	835	914	913	1130	999	868
22	577	397	391	2.4	.00	341	834	912	913	1120	1000	935
23	598	397	391	.00	.00	506	855	908	965	1110	999	950
24	583	396	392	.00	.00	570	875	909	988	1120	999	950
25	508	428	393	.00	.00	578	886	958	1030	1130	1000	964
26	444	445	393	.00	.00	580	871	998	1060	1120	1010	970
27	382	446	393	.00	.00	582	591	1000	1060	1120	1010	821
28	361	446	393	.00	.00	584	624	1000	1060	1120	1010	733
29	353	446	393	.00	---	548	894	997	1060	1120	1010	725
30	415	446	393	.00	---	461	903	1000	1070	1120	1010	472
31	445	---	393	.00	---	700	---	1000	---	1120	998	---
TOTAL	14917	12233	12523	2529.40	13.80	6177.00	21328	28692	28650	34740	31696	23623
MEAN	481	408	404	81.6	.49	199	711	926	955	1121	1022	787
MAX	672	447	445	393	3.7	700	903	1000	1070	1150	1120	970
MIN	352	351	391	.00	.00	.00	591	885	864	1070	995	472
AC-FT	29590	24260	24840	5020	27	12250	42300	56910	56830	68910	62870	46860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 1999, BY WATER YEAR (WY)

MEAN	157	55.1	31.1	76.6	122	245	686	895	936	875	759	481
MAX (WY)	490	408	404	363	456	1087	1160	1265	1259	1260	1251	1031
MIN (WY)	1981	1999	1999	1987	1985	1972	1984	1975	1978	1967	1978	1967
MIN (WY)	.000	.000	.000	.000	.000	.000	41.9	84.0	147	78.2	70.9	5.55
MIN (WY)	1920	1920	1920	1916	1916	1930	1995	1977	1924	1924	1924	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1914 - 1999

ANNUAL TOTAL	189129.47	217122.20		
ANNUAL MEAN	518	595	449	
HIGHEST ANNUAL MEAN			684	1984
LOWEST ANNUAL MEAN			114	1977
HIGHEST DAILY MEAN	1200	Jul 2	1150	Jul 11
LOWEST DAILY MEAN	.00	Feb 27	.00	Jan 8
ANNUAL SEVEN-DAY MINIMUM	.00	Mar 9	.00	Jan 8
ANNUAL RUNOFF (AC-FT)	375100	430700	325200	
10 PERCENT EXCEEDS	1140	1070	1080	
50 PERCENT EXCEEDS	419	613	342	
90 PERCENT EXCEEDS	1.4	.00	.00	

11301000 OAKDALE CANAL NEAR KNIGHTS FERRY, CA

LOCATION.—Lat 37°51'32", long 120°37'56", in SW 1/4 SE 1/4 sec.10, T.1 S., R.12 E., Tuolumne County, Hydrologic Unit 18040010, on left bank 0.3 mi downstream from headgate at Goodwin Dam and 3.4 mi northeast of Knights Ferry.

PERIOD OF RECORD.—May 1914 to current year. Records for water years 1933–36 incomplete; monthly and yearly estimates published in WSP 1315-A.

GAGE.—Water-stage recorder. Elevation of gage is 350 ft above sea level, from topographic map. Prior to Apr. 29, 1916, nonrecording gage at site 1,000 ft upstream at different datum. Apr. 29, 1916, to July 3, 1925, nonrecording gage and July 4, 1925, to Apr. 3, 1949, water-stage recorder at present site at datum 0.18 ft higher.

REMARKS.—Canal diverts water from left bank of Stanislaus River at Goodwin Dam 0.3 mi upstream for irrigation in Oakdale Irrigation District.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, 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, 556 ft³/s, July 8–11, 1967; maximum discharge, 595 ft³/s, June 10, 1991, gage height, 10.09 ft, result of damage to canal due to vandalism; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	346	.00	.00	.00	.00	.00	186	343	383	460	474	466
2	347	.00	.00	.00	.00	.00	193	344	375	442	456	455
3	347	.00	.00	.00	.00	.00	204	301	371	435	442	455
4	347	.00	.00	.00	.00	.00	229	303	364	436	443	455
5	346	.00	.00	.00	.00	.00	214	322	357	436	461	445
6	346	.00	.00	.00	.00	.00	152	333	357	441	466	437
7	346	.00	.00	.00	.00	.00	152	366	357	444	470	420
8	346	.00	.00	.00	.00	.00	68	382	358	458	482	413
9	346	.00	.00	.00	.00	.00	.00	385	357	476	482	416
10	347	.00	.00	.00	.00	.00	.00	375	357	488	475	431
11	347	.00	.00	.00	.00	.00	.00	375	366	489	476	427
12	336	.00	.00	.00	.00	.00	.00	373	380	489	475	403
13	326	.00	.00	.00	.00	.00	105	384	380	489	475	398
14	319	.00	.00	.00	.00	.00	170	405	387	489	470	383
15	314	.00	.00	.00	.00	.00	217	415	400	490	466	380
16	313	.00	.00	.00	.00	.00	232	369	400	490	458	378
17	313	.00	.00	.00	.00	.00	282	343	400	490	455	379
18	313	.00	.00	.00	.00	.00	300	387	401	490	455	380
19	313	.00	.00	.00	.00	.00	303	407	398	490	455	371
20	313	.00	.00	.00	.00	.00	322	407	394	490	460	346
21	326	.00	.00	.00	.00	.00	332	418	394	490	477	317
22	332	.00	.00	.00	.00	.00	341	426	395	486	472	298
23	332	.00	.00	.00	.00	.00	350	426	395	483	467	292
24	294	.00	.00	.00	.00	.00	333	426	398	480	467	304
25	228	.00	.00	.00	.00	.00	317	428	416	473	462	315
26	183	.00	.00	.00	.00	.00	317	430	416	463	457	314
27	46	.00	.00	.00	.00	.00	316	412	416	459	459	314
28	.00	.00	.00	.00	.00	.00	338	406	421	464	478	313
29	.00	.00	.00	.00	---	.00	359	404	435	475	485	309
30	.00	.00	.00	.00	---	98	347	391	451	481	485	310
31	.00	---	.00	.00	---	170	---	382	---	481	480	---
TOTAL	8412.00	0.00	0.00	0.00	0.00	268.00	6679.00	11868	11679	14647	14485	11324
MEAN	271	.000	.000	.000	.000	8.65	223	383	389	472	467	377
MAX	347	.00	.00	.00	.00	170	359	430	451	490	485	466
MIN	.00	.00	.00	.00	.00	.00	.00	301	357	435	442	292
AC-FT	16690	.00	.00	.00	.00	532	13250	23540	23170	29050	28730	22460

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 1999, BY WATER YEAR (WY)

MEAN	97.7	4.90	1.02	1.64	2.15	48.2	226	358	374	370	337	252
MAX	404	51.5	15.8	71.0	77.9	364	496	544	552	554	547	518
(WY)	1979	1940	1987	1987	1976	1972	1962	1965	1965	1967	1967	1958
MIN	.000	.000	.000	.000	.000	.000	.004	97.5	49.8	25.8	.62	1.20
(WY)	1995	1915	1916	1916	1915	1918	1983	1915	1924	1924	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1914 - 1999

ANNUAL TOTAL	70076.34	79362.00	
ANNUAL MEAN	192	217	175
HIGHEST ANNUAL MEAN			277
LOWEST ANNUAL MEAN			52.8
HIGHEST DAILY MEAN	503	490	556
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
ANNUAL RUNOFF (AC-FT)	139000	157400	127100
10 PERCENT EXCEEDS	490	467	475
50 PERCENT EXCEEDS	49	304	77
90 PERCENT EXCEEDS	.00	.00	.00

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA

LOCATION.—Lat 37°51'06", long 120°38'13", in Rancheria del Rio Estanislao Grant, Calaveras County, Hydrologic Unit 18040010, on right bank 250 ft upstream from Owl Creek, 0.9 mi downstream from Goodwin Dam, and 2.9 mi northeast of Knights Ferry.

DRAINAGE AREA.—986 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 sea level.

REMARKS.—Flow regulated by New Melones Reservoir (station 11299000) since 1978 and Tulloch Reservoir (station 11299995) since 1957. South San Joaquin Canal (station 11300500) and Oakdale Canal (station 11301000) divert at Goodwin Dam.

COOPERATION.—Records were provided by Oakdale and South San Joaquin Irrigation Districts, 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, 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1800	538	525	810	1730	3340	1250	1500	1260	848	602	431
2	1790	539	520	807	1930	2790	1260	1510	1340	847	602	397
3	1790	522	524	805	2230	2790	1280	1500	1340	840	601	400
4	1790	529	521	806	2430	2800	1250	1500	1340	843	590	401
5	1800	518	523	806	2800	2550	1260	1500	1330	844	532	405
6	1800	514	525	787	2790	2020	1240	1500	1340	684	495	403
7	1840	513	524	799	2830	1710	1240	1500	1430	610	490	401
8	1840	511	531	810	2910	1710	1250	1500	1490	597	493	396
9	1820	510	525	809	2910	1720	1240	1500	1490	604	491	395
10	1850	529	522	810	3410	1710	1250	1500	1490	604	494	391
11	1820	550	521	807	4100	1720	1260	1500	1500	601	497	398
12	1830	541	520	804	4340	1710	1250	1500	1500	598	494	397
13	1780	536	517	805	4320	1710	1260	1510	1500	595	489	402
14	1820	536	525	812	4330	1710	1340	1500	1500	595	493	405
15	1830	536	523	1020	4070	1720	1480	1500	1500	601	489	400
16	1830	536	517	1310	3510	1740	1500	1500	1500	594	494	400
17	1810	539	529	1310	3880	1750	1500	1500	1490	596	494	402
18	1810	539	528	1320	4110	1770	1490	1490	1490	596	493	401
19	1820	533	520	1530	4070	1760	1490	1490	1490	598	496	404
20	1800	535	514	1970	4160	1580	1500	1500	1500	601	496	400
21	1830	536	522	2660	3890	1380	1500	1500	1490	595	493	403
22	1830	539	516	3000	4090	1310	1490	1490	1490	596	493	404
23	1800	537	514	2960	4330	1290	1500	1490	1330	597	490	400
24	1800	532	695	2940	4220	1260	1510	1490	1080	594	493	399
25	1810	523	811	3060	4180	1270	1500	1500	995	598	490	400
26	1830	525	807	3500	4230	1270	1490	1490	990	599	493	400
27	1820	525	805	3730	4080	1270	1080	1490	987	594	494	396
28	1830	526	808	3490	3810	1270	1530	1290	928	595	499	397
29	1590	526	805	3010	---	1270	1520	1120	850	604	495	402
30	924	541	807	2470	---	1280	1500	1120	850	598	493	402
31	539	---	808	2020	---	1240	---	1110	---	598	494	---
TOTAL	53873	15914	18352	52577	99690	54420	41210	45090	39810	19864	15752	12032
MEAN	1738	530	592	1696	3560	1755	1374	1455	1327	641	508	401
MAX	1850	550	811	3730	4340	3340	1530	1510	1500	848	602	431
MIN	539	510	514	787	1730	1240	1080	1110	850	594	489	391
AC-FT	106900	31570	36400	104300	197700	107900	81740	89440	78960	39400	31240	23870

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1978, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	128	215	690	1194	1103	1060	1154	1651	1249	96.4	4.18	17.8
MAX	749	681	3521	5040	4309	3265	3686	6233	5100	1063	22.5	231
(WY)	1976	1966	1965	1969	1969	1969	1967	1969	1967	1967	1967	1969
MIN	.19	4.56	.40	11.5	2.19	4.74	2.48	1.52	1.35	1.60	1.09	.51
(WY)	1977	1977	1978	1977	1960	1960	1972	1961	1961	1960	1960	1960

SUMMARY STATISTICS

WATER YEARS 1957 - 1978

ANNUAL MEAN	725
HIGHEST ANNUAL MEAN	2131
LOWEST ANNUAL MEAN	6.47
HIGHEST DAILY MEAN	29400
LOWEST DAILY MEAN	.14
ANNUAL SEVEN-DAY MINIMUM	.15
INSTANTANEOUS PEAK FLOW	40200
INSTANTANEOUS PEAK STAGE	28.85
ANNUAL RUNOFF (AC-FT)	525500
10 PERCENT EXCEEDS	2300
50 PERCENT EXCEEDS	43
90 PERCENT EXCEEDS	1.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	512	425	792	1102	1303	1361	915	929	717	589	542	436
MAX	1738	2246	4581	6005	6036	4905	1936	2046	1798	1861	1791	1634
(WY)	1999	1984	1984	1997	1997	1986	1998	1998	1998	1998	1998	1998
MIN	172	161	140	132	140	143	236	275	185	229	157	155
(WY)	1991	1991	1992	1990	1990	1991	1991	1991	1984	1984	1991	1991

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1984 - 1999

ANNUAL TOTAL	625151	468584	
ANNUAL MEAN	1713	1284	800
HIGHEST ANNUAL MEAN			1893
LOWEST ANNUAL MEAN			185
HIGHEST DAILY MEAN	4150	Feb 9	4340
LOWEST DAILY MEAN	349	Jan 6	391
ANNUAL SEVEN-DAY MINIMUM	355	Jan 3	397
INSTANTANEOUS PEAK FLOW			4640
INSTANTANEOUS PEAK STAGE			13.25
ANNUAL RUNOFF (AC-FT)	1240000	929400	579700
10 PERCENT EXCEEDS	2450	2710	1710
50 PERCENT EXCEEDS	1800	1240	406
90 PERCENT EXCEEDS	525	492	161

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—February 1966 to current year.

WATER TEMPERATURE: February 1966 to current year.

PERIOD OF DAILY RECORD.—February 1966 to current year.

WATER TEMPERATURE: February 1966 to current year.

INSTRUMENTATION.—Temperature recorder since February 1966.

REMARKS.—Temperature recorder located 2,300 ft upstream from gaging station. Water temperature is affected by regulation from Goodwin Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 30.5°C, July 25, 1974; minimum recorded, 5.5°C, Feb. 3, 1972.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 13.0°C, on many days during the year; minimum recorded, 8.5°C, Dec. 24, Jan. 12–14.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.5	12.0	11.5	11.0	11.0	11.0	9.0	9.0	10.0	9.5	10.0	9.5
2	13.0	12.0	11.5	11.0	11.0	10.5	9.0	9.0	10.0	9.5	10.0	9.5
3	12.5	12.0	11.5	11.0	11.0	10.5	9.0	9.0	10.0	9.5	10.0	9.5
4	12.5	12.0	11.5	11.0	11.0	10.5	9.0	9.0	9.5	9.5	10.0	9.5
5	12.5	12.0	11.5	11.0	10.5	10.5	9.0	9.0	10.0	9.5	10.0	9.5
6	12.5	12.0	11.0	10.5	10.5	10.5	9.0	9.0	9.5	9.5	9.5	9.5
7	12.5	12.0	11.0	11.0	10.5	10.0	9.0	9.0	9.5	9.5	9.5	9.0
8	12.5	12.0	11.0	11.0	10.5	10.5	9.0	9.0	10.0	9.5	9.5	9.0
9	12.0	12.0	11.0	11.0	10.5	10.0	9.0	9.0	10.0	9.5	9.5	9.0
10	12.5	12.0	11.0	11.0	10.0	10.0	9.0	9.0	10.0	9.5	9.5	9.0
11	12.5	12.0	11.0	11.0	10.0	10.0	9.0	9.0	9.5	9.5	9.5	9.0
12	12.0	11.5	11.5	11.0	10.0	10.0	9.0	8.5	9.5	9.5	9.5	9.0
13	12.0	11.5	11.5	11.0	10.0	10.0	9.0	8.5	9.5	9.5	9.5	9.0
14	12.0	11.5	11.0	10.5	10.0	10.0	9.0	8.5	9.5	9.5	9.5	9.0
15	12.0	11.5	11.5	10.5	10.0	10.0	9.0	9.0	9.5	9.5	9.5	9.0
16	12.0	11.5	11.0	11.0	10.0	10.0	9.0	9.0	9.5	9.5	9.5	9.0
17	12.0	11.5	11.0	11.0	10.0	9.5	9.5	9.0	10.0	9.5	10.0	9.0
18	12.0	11.5	11.0	10.5	10.0	9.5	9.0	9.0	9.5	9.5	10.0	9.0
19	12.0	11.5	11.0	10.5	10.0	9.5	9.0	9.0	10.0	9.5	10.0	9.5
20	12.0	11.5	11.0	10.5	9.5	9.5	9.5	9.0	9.5	9.5	9.5	9.5
21	12.0	11.5	11.0	10.5	9.5	9.0	9.5	9.5	10.0	9.5	10.0	9.0
22	12.0	11.5	11.0	11.0	9.5	9.0	10.0	9.5	10.0	9.5	10.0	9.0
23	11.5	11.5	11.0	11.0	9.5	9.0	10.0	10.0	9.5	9.5	10.0	9.0
24	12.0	11.5	11.0	11.0	9.0	8.5	10.0	10.0	9.5	9.5	10.0	9.5
25	12.0	11.5	11.0	10.5	9.5	9.0	10.0	10.0	9.5	9.5	10.0	9.5
26	12.0	11.5	11.0	10.5	9.0	9.0	10.0	10.0	9.5	9.5	10.0	9.5
27	11.5	11.5	11.0	11.0	9.0	9.0	10.0	10.0	9.5	9.5	10.0	9.5
28	11.5	11.5	11.0	11.0	9.0	9.0	10.0	9.5	10.0	9.5	10.0	9.5
29	11.5	11.0	11.0	10.5	9.0	9.0	10.0	9.5	---	---	10.0	9.5
30	11.5	11.0	11.0	11.0	9.0	9.0	10.0	9.5	---	---	10.0	9.5
31	11.5	11.0	---	---	9.0	9.0	9.5	9.5	---	---	10.5	10.0
MONTH	13.0	11.0	11.5	10.5	11.0	8.5	10.0	8.5	10.0	9.5	10.5	9.0

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.5	10.0	11.0	10.5	11.0	10.5	12.0	11.0	13.0	11.5	12.5	12.0
2	10.5	10.0	11.0	10.5	11.0	10.5	12.0	11.0	13.0	12.0	12.5	11.5
3	10.0	10.0	10.5	10.0	11.0	10.0	12.0	11.0	13.0	11.5	12.5	11.5
4	10.5	10.0	10.5	10.0	11.0	10.5	12.0	10.5	12.5	11.5	12.5	12.0
5	10.0	9.5	10.5	10.0	11.0	10.5	12.0	11.0	12.5	11.5	12.5	12.0
6	10.0	9.5	10.5	10.0	11.0	10.5	12.0	11.0	12.5	11.5	12.5	11.5
7	10.0	9.5	11.0	10.0	11.0	10.5	12.0	10.5	12.5	11.5	12.5	11.5
8	9.5	9.5	11.0	10.5	11.5	10.5	12.0	11.0	12.5	11.5	13.0	12.0
9	10.0	9.0	11.0	10.5	11.0	10.5	12.0	11.0	12.5	11.5	12.5	12.0
10	9.5	9.0	11.0	10.5	11.0	10.5	12.0	11.0	12.5	12.0	13.0	12.0
11	9.5	9.5	11.0	10.5	11.0	10.5	12.5	11.0	13.0	12.0	12.5	12.0
12	10.5	9.5	11.0	10.5	11.5	10.5	12.5	11.5	13.0	12.0	12.5	12.0
13	10.5	9.5	11.0	10.5	11.5	10.5	12.5	11.5	12.5	11.5	12.5	12.0
14	10.5	9.5	11.0	10.5	11.5	11.0	12.0	11.5	12.5	11.5	12.5	12.0
15	11.0	10.0	11.0	10.5	11.5	11.0	12.5	11.5	13.0	11.5	12.5	12.0
16	11.0	10.0	11.0	10.5	11.5	11.0	12.5	11.5	13.0	12.0	12.5	12.0
17	11.0	10.5	11.0	10.5	11.5	11.0	12.5	11.0	13.0	12.0	12.5	12.0
18	11.0	10.5	11.0	10.5	11.5	11.0	12.5	11.5	13.0	12.0	12.5	12.0
19	11.0	10.5	11.0	10.5	11.5	11.0	12.5	11.5	13.0	12.0	12.5	12.0
20	11.0	10.5	11.0	10.5	11.5	11.0	12.5	11.5	13.0	12.0	13.0	12.0
21	11.5	10.5	11.0	10.5	11.5	11.0	12.5	11.5	13.0	12.0	13.0	12.0
22	11.5	10.5	11.0	10.5	11.5	11.0	12.5	11.5	13.0	12.0	13.0	12.0
23	11.5	11.0	11.0	10.5	11.5	11.0	12.5	11.5	13.0	12.0	13.0	12.0
24	11.0	10.5	11.0	10.5	11.5	10.5	12.5	11.5	13.0	12.0	13.0	12.0
25	11.0	10.5	11.0	10.5	11.0	10.5	13.0	11.5	13.0	12.0	13.0	12.0
26	11.0	10.5	11.5	11.0	11.5	10.5	13.0	11.5	12.5	12.0	13.0	12.0
27	11.0	10.0	11.0	10.5	11.5	10.5	13.0	11.5	13.0	12.5	12.5	12.0
28	11.5	10.0	11.0	10.5	12.0	10.5	12.5	11.5	13.0	12.0	13.0	12.0
29	11.0	10.5	11.0	10.5	12.0	11.0	12.5	11.5	13.0	12.0	13.0	12.0
30	11.0	10.5	11.0	10.5	12.0	11.0	12.5	11.5	13.0	12.0	13.0	12.0
31	---	---	11.0	10.5	---	---	12.5	11.5	13.0	12.0	---	---
MONTH	11.5	9.0	11.5	10.0	12.0	10.0	13.0	10.5	13.0	11.5	13.0	11.5

11302500 STANISLAUS RIVER AT OAKDALE, CA

LOCATION.—Lat 37°46'38", long 120°51'07", in Eight Square Leagues on Stanislaus River Grant, Stanislaus County, Hydrologic Unit 18040002, on left bank at State Highway 120 bridge, at Oakdale.

DRAINAGE AREA.—1,032 mi².

PERIOD OF RECORD.—August 1985 to current year.

WATER TEMPERATURE: August 1985 to current year.

PERIOD OF DAILY RECORD.—August 1985 to current year.

WATER TEMPERATURE: August 1985 to current year.

INSTRUMENTATION.—Water-temperature recorder since Aug. 28, 1985.

REMARKS.—Interruptions in record were due to malfunction of the recording instrument. Water temperature can be affected by releases from Woodward Reservoir Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 26.0°C, June 21, 22, 1992; minimum recorded, 5.0°C, Dec. 22–25, 1990.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 18.5°C, July 13; minimum recorded, 7.0°C, Dec. 23, 24.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

11302500 STANISLAUS RIVER AT OAKDALE, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

11303000 STANISLAUS RIVER AT RIPON, CA

LOCATION.—Lat 37°43'47", long 121°06'34", in NW 1/4 SE 1/4 sec.29, T.2 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 15 ft downstream from railroad bridge, 1.1 mi southeast of Ripon, and 15 mi upstream from mouth.

DRAINAGE AREA.—1,075 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1940 to current year. April to September 1940 in reports of California Department of Water Resources.

GAGE.—Water-stage recorder. Datum of gage is 0.72 ft above sea level. October 1940 to Nov. 17, 1953, at site 100 ft upstream at same datum.

REMARKS.—Records good. Flow regulated by reservoirs and powerplants upstream from station. South San Joaquin and Oakdale Canals (stations 11300500 and 11301000) divert at Goodwin Dam 34 mi upstream for irrigation in the vicinity of Oakdale. See REMARKS for Stanislaus River below Goodwin Dam, near Knights Ferry (station 11302000).

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 62,500 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1900	1090	948	1170	2380	3910	1350	1560	1210	868	676	632
2	1930	1040	933	1170	2050	3610	1330	1550	1320	853	696	573
3	1940	1080	956	1160	2110	3120	1330	1640	1380	869	685	531
4	1920	1050	968	1160	2320	3050	1370	1580	1390	883	674	537
5	1960	979	953	1160	2450	3000	1360	1540	1360	926	659	557
6	1980	1010	958	1160	2740	2810	1380	1540	1370	887	683	581
7	1950	1020	951	1130	2830	2380	1340	1560	1390	796	676	548
8	1970	1020	951	880	3070	2080	1340	1520	1440	738	666	523
9	2010	1010	939	827	3350	2040	1330	1550	1490	703	640	537
10	1970	974	915	816	3580	2070	1300	1580	1470	735	639	531
11	1960	978	914	812	3520	2050	1310	1540	1500	746	626	535
12	1950	944	934	807	3830	2010	1310	1530	1500	754	600	556
13	1970	915	921	801	4110	2000	1300	1530	1540	695	593	550
14	1890	895	919	800	4180	1980	1300	1550	1560	696	618	521
15	1920	886	904	808	4190	1940	1380	1560	1490	694	628	542
16	1970	885	897	987	4110	1940	1520	1590	1510	684	633	529
17	1950	896	890	1220	3750	1920	1520	1580	1510	689	626	538
18	1950	938	895	1270	3750	1950	1520	1570	1490	691	668	530
19	1940	940	893	1400	4070	1930	1550	1580	1490	703	627	554
20	1970	933	883	1800	4040	1940	1530	1560	1500	726	598	586
21	1920	933	878	2200	4200	1760	1520	1540	1530	745	591	536
22	1980	937	888	2520	4250	1550	1500	1570	1520	693	617	537
23	1980	941	882	2840	4160	1500	1540	1560	1520	668	640	554
24	2010	939	866	3040	4260	1470	1560	1560	1340	698	609	536
25	2140	929	1010	3020	4260	1440	1540	1510	1120	697	623	521
26	2070	923	1120	3000	4210	1420	1560	1520	1060	709	601	561
27	2030	930	1130	3260	4200	1400	1500	1540	1060	684	608	576
28	1990	958	1140	3530	4150	1380	1200	1570	1060	674	595	549
29	1940	948	1160	3480	---	1370	1500	1370	991	691	624	572
30	1970	940	1170	3150	---	1350	1570	1230	916	667	640	574
31	1460	---	1170	2700	---	1370	---	1220	---	674	611	---
TOTAL	60490	28861	29936	54078	100120	63740	42660	47400	41027	22936	19670	16507
MEAN	1951	962	966	1744	3576	2056	1422	1529	1368	740	635	550
MAX	2140	1090	1170	3530	4260	3910	1570	1640	1560	926	696	632
MIN	1460	885	866	800	2050	1350	1200	1220	916	667	591	521
AC-FT	120000	57250	59380	107300	198600	126400	84620	94020	81380	45490	39020	32740

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1999, BY WATER YEAR (WY)

MEAN	396	476	910	1245	1308	1431	1529	2038	1443	522	375	357
MAX	1951	4518	7602	6273	6499	5094	5047	7703	5531	3633	2834	2041
(WY)	1999	1951	1951	1997	1997	1943	1983	1952	1967	1983	1983	1983
MIN	6.34	20.3	26.0	77.8	64.3	47.5	41.0	42.8	25.1	9.88	.63	2.95
(WY)	1978	1978	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1941 - 1999	
ANNUAL TOTAL	692682		527425			
ANNUAL MEAN	1898		1445		1001	
HIGHEST ANNUAL MEAN					2548	
LOWEST ANNUAL MEAN					44.9	
HIGHEST DAILY MEAN	5120	Feb 9	4260	Feb 24	47000	Dec 24 1955
LOWEST DAILY MEAN	385	Jan 1	521	Sep 14	.11	Aug 4 1977
ANNUAL SEVEN-DAY MINIMUM	439	Jan 1	536	Sep 8	.13	Aug 2 1977
INSTANTANEOUS PEAK FLOW			4300		Feb 24	
INSTANTANEOUS PEAK STAGE			51.60		Feb 24	
ANNUAL RUNOFF (AC-FT)	1374000		1046000		725000	
10 PERCENT EXCEEDS	2600		2770		2660	
50 PERCENT EXCEEDS	1840		1300		402	
90 PERCENT EXCEEDS	932		609		139	

11303000 STANISLAUS RIVER AT RIPON, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water year 1985–88, 1993 to current year. Data for the period October 1985 to March 1987 are available in U.S.

Geological Survey Open-File Report 88-479. Data for the period April 1987 to September 1988 are available in U.S. Geological Survey Open-File Report 91-74.

CHEMICAL DATA: Water year 1985–88, 1994.

SPECIFIC CONDUCTANCE: Water years 1986–89. July 1997 to current year.

WATER TEMPERATURE: Water years 1986–89. October 1994 to current year.

SEDIMENT DATA: Water year 1985–88, 1994.

PERIOD OF DAILY RECORD.—Water years 1986–89. October 1994 to current year.

SPECIFIC CONDUCTANCE: Water years 1986–89. July 1997 to current year.

WATER TEMPERATURE: Water years 1986–89. October 1994 to current year.

INSTRUMENTATION.—Water-temperature recorder from October 1994 to June 1997, water-quality monitor since July 1997.

REMARKS.—Specific conductance and water temperature may be affected by upstream regulation.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 226 microsiemens, Feb. 26, 1988; minimum recorded, 38 microsiemens, Mar. 2, 1989.

WATER TEMPERATURE: Maximum recorded, 27.5°C, July 21, 1989; minimum recorded, 2.5°C, Dec. 11, 22, 1997.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 124 microsiemens, Nov. 16; minimum recorded, 64 microsiemens, Oct. 1.

WATER TEMPERATURE: Maximum recorded, 21.5°C, July 12–14; minimum recorded, 6.5°C, Dec. 23–25.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	67	64	119	108	115	101	95	88	113	98	93	88
2	66	65	117	106	115	102	97	89	114	102	92	86
3	68	66	118	100	111	100	97	88	109	97	90	79
4	67	66	110	99	108	99	98	89	107	98	79	75
5	69	67	118	101	113	100	98	88	108	100	76	72
6	70	68	115	99	101	98	97	89	104	98	80	72
7	71	69	109	99	111	98	97	89	102	99	89	76
8	71	69	114	102	107	98	111	94	108	100	84	79
9	71	68	111	100	111	98	114	100	108	105	94	77
10	71	69	113	101	111	99	114	99	111	107	87	75
11	71	69	110	98	112	98	111	99	110	99	81	74
12	72	69	111	100	110	95	112	100	105	99	83	74
13	73	70	119	102	108	98	112	99	106	101	79	77
14	72	70	118	102	108	97	112	99	108	104	79	77
15	72	70	123	102	112	98	113	99	108	103	82	77
16	73	71	124	102	107	99	110	86	107	102	96	78
17	73	72	112	100	112	99	91	86	107	101	81	78
18	73	71	110	98	114	100	91	86	105	100	84	77
19	74	71	112	100	111	99	102	87	104	98	85	77
20	74	71	115	99	111	100	105	97	105	98	84	77
21	73	72	102	100	113	99	102	91	105	97	84	77
22	72	71	117	100	113	100	92	87	108	103	94	82
23	80	71	112	101	111	99	89	86	107	103	90	83
24	74	72	114	100	112	100	94	87	106	102	91	83
25	79	73	112	100	112	89	95	91	104	102	90	84
26	79	74	114	100	95	88	95	90	105	102	89	82
27	83	73	118	101	96	88	95	91	103	96	88	82
28	81	73	109	100	100	89	96	92	96	92	95	83
29	78	73	115	104	99	89	96	93	---	---	95	82
30	80	74	118	103	97	89	100	94	---	---	96	84
31	111	80	---	---	97	89	102	95	---	---	92	82
MONTH	111	64	124	98	115	88	114	86	114	92	96	72

11303000 STANISLAUS RIVER AT RIPON, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	95	85	78	76	79	74	83	80	86	82	92	86
2	92	85	78	76	77	68	82	80	84	79	103	89
3	91	84	76	74	70	68	80	77	84	81	104	99
4	85	83	77	74	71	68	79	75	86	80	101	94
5	94	83	77	74	72	70	77	74	85	82	97	92
6	95	82	76	74	72	70	77	75	87	78	97	92
7	86	83	76	73	70	69	93	76	89	84	101	92
8	85	83	76	73	71	65	98	88	89	81	102	93
9	85	82	74	72	67	65	93	89	89	81	100	91
10	85	82	74	72	69	66	94	83	87	83	98	92
11	86	82	74	72	69	65	88	81	89	82	98	90
12	84	82	74	72	72	66	88	80	88	83	94	90
13	85	83	73	71	68	65	92	87	95	85	97	94
14	87	84	74	71	67	65	92	86	94	86	98	96
15	86	79	72	70	67	66	91	81	91	86	97	91
16	83	79	72	68	67	66	90	86	91	86	96	94
17	83	81	72	69	68	66	87	84	92	86	97	90
18	83	80	71	69	68	66	89	84	89	79	98	91
19	82	80	71	68	68	66	86	81	93	83	99	95
20	83	80	71	68	67	66	85	79	95	88	98	91
21	82	79	71	68	69	66	81	78	97	90	104	94
22	83	79	72	68	68	66	85	80	96	90	105	100
23	81	78	70	68	68	66	87	81	92	84	105	98
24	83	80	70	67	74	68	85	80	92	86	104	102
25	81	79	70	68	81	73	86	80	98	85	106	103
26	80	77	71	68	80	77	89	80	90	86	106	102
27	82	78	70	67	79	75	84	80	91	88	103	101
28	117	76	70	68	76	75	83	81	94	88	103	97
29	76	72	83	68	83	75	84	80	94	85	101	99
30	78	75	83	76	83	81	86	81	91	83	102	99
31	---	---	79	75	---	---	86	80	91	88	---	---
MONTH	117	72	83	67	83	65	98	74	98	78	106	86

11303000 STANISLAUS RIVER AT RIPON, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

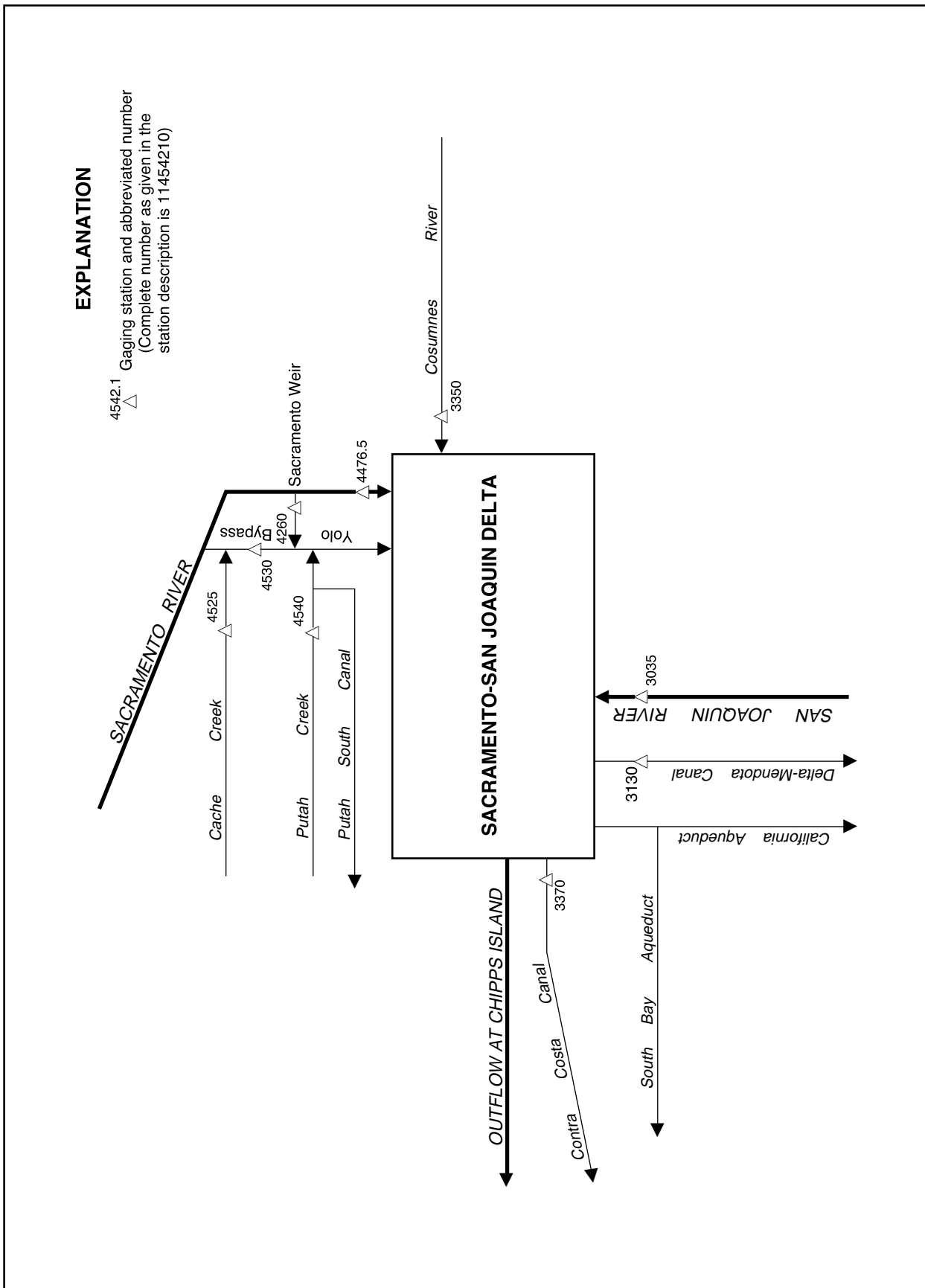


Figure 31. Principal inflows and diversions, Sacramento-San Joaquin Delta.

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA

LOCATION.—Lat 37°40'34", long 121°15'55", in El Pescadero Grant, San Joaquin County, Hydrologic Unit 18040003, on left bank 12 ft downstream from Durham Ferry highway bridge, 2.6 mi downstream from Stanislaus River, and 3.2 mi northeast of Vernalis.

DRAINAGE AREA.—13,536 mi², includes about 2,100 mi² in James Bypass.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—July 1922 to current year (1922–23 and 1925–29, low-flow records only).

REVISED RECORDS.—WSP 831: 1936. WSP 931: 1940. WSP 1930: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is sea level. See WSP 2130 for history of changes prior to Nov. 30, 1967.

REMARKS.—Records good except for estimated daily discharges, which are fair. 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. See schematic diagram of Sacramento–San Joaquin Delta.

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, 34.88 ft, Jan. 5, 1997; minimum discharge, 19 ft³/s, Aug. 10, 1961.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6710	4540	3030	3480	7590	11600	5770	7130	3060	2310	2180	1880
2	6850	4310	3150	3440	7050	11100	5560	6930	3050	2170	2150	1930
3	6790	4310	3100	3390	6430	10700	5280	7250	3140	2160	2080	1920
4	6530	4300	3240	3370	6350	10300	5210	7340	3160	2430	2040	1960
5	6460	4160	3700	3340	6700	9970	5130	7290	3190	2550	1940	2010
6	6410	4000	4100	3280	6890	9650	5150	7200	3190	2390	1900	2030
7	6360	3920	4300	3130	6770	9170	5400	7060	3190	2300	1960	1940
8	6460	3740	4520	2930	6780	8640	5800	6920	3170	2200	2100	1790
9	6870	3470	4520	2760	7840	8480	6040	7170	3190	e2080	2120	1790
10	6950	3330	4620	2730	10100	8640	6230	7200	3190	e2190	1970	1860
11	6970	3270	4940	2750	11900	8920	6700	7030	3110	2100	1980	1910
12	7230	3180	5230	2750	13300	9200	6920	6810	3070	2210	1930	2120
13	7330	3070	5260	2730	15100	9340	6990	6950	3120	e2010	1930	2240
14	7100	2990	5160	2730	16000	9060	6840	7260	3190	e1940	1940	2140
15	6990	2930	5100	2740	15900	8830	6640	7330	3140	e1880	2020	2060
16	6880	2880	5120	2790	15400	8540	6640	7070	3130	1860	2020	2040
17	6670	2840	5230	3030	14900	8190	6630	5980	3090	2010	1880	2000
18	6300	2840	5160	3150	13800	7950	6780	4750	e3100	2040	1850	2060
19	5830	2840	4900	3370	14000	7790	6930	4110	e3000	2100	1900	2200
20	5400	2850	4620	3610	14100	7730	6880	3900	e3100	1990	1840	2270
21	5080	2840	4640	4380	14300	7790	6790	3860	e3230	2020	1790	2170
22	4800	2890	5100	4950	15000	7560	6810	3780	e3090	2060	1940	2110
23	4740	2910	5050	6260	15600	7300	6940	3740	3040	1960	2030	2060
24	4870	2900	4840	7800	15000	7070	7120	3720	2940	1900	1940	2020
25	5430	2900	4050	8940	13800	6830	7110	3640	2720	1980	1890	2010
26	5480	2870	3780	8960	12800	6580	6930	3630	2610	2070	1880	2060
27	5320	2870	3680	9080	12200	6470	6790	3550	2640	1970	1850	2220
28	5480	2920	3580	9220	11900	6440	6730	3570	2720	2010	1930	2180
29	5660	2910	3550	8930	---	6340	7090	3450	2510	2000	2040	2040
30	5550	2910	3520	8450	---	6120	7280	3210	2390	1980	2090	2100
31	5250	---	3470	8170	---	5980	---	3260	---	2040	1930	---
TOTAL	190750	98690	134260	146640	327500	258280	193110	172090	90470	64910	61040	61120
MEAN	6153	3290	4331	4730	11700	8332	6437	5551	3016	2094	1969	2037
MAX	7330	4540	5260	9220	16000	11600	7280	7340	3230	2550	2180	2270
MIN	4740	2840	3030	2730	6350	5980	5130	3210	2390	1860	1790	1790
AC-FT	378400	195800	266300	290900	649600	512300	383000	341300	179400	128700	121100	121200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999, BY WATER YEAR (WY)

MEAN	2294	2322	3671	5269	7391	7601	7295	7805	6652	2668	1434	1784
MAX	13320	10680	25130	30380	35060	40040	36450	31770	36650	19230	9035	11310
(WY)	1984	1984	1951	1997	1997	1983	1983	1983	1938	1983	1983	1983
MIN	246	430	506	804	758	444	200	380	118	92.8	124	179
(WY)	1978	1978	1978	1962	1991	1961	1961	1961	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1924 - 1999	
ANNUAL TOTAL	4495510		1798860			
ANNUAL MEAN	12320		4928		4664	
HIGHEST ANNUAL MEAN					21280	
LOWEST ANNUAL MEAN					575	
HIGHEST DAILY MEAN	35000		Feb 13		70000	
LOWEST DAILY MEAN	1810		Jan 1		30	
ANNUAL SEVEN-DAY MINIMUM	1940		Jan 1		59	
INSTANTANEOUS PEAK FLOW			16100		Feb 14	
INSTANTANEOUS PEAK STAGE			20.98		Feb 14	
ANNUAL RUNOFF (AC-FT)	8917000		3568000		3379000	
10 PERCENT EXCEEDS	22900		8720		12900	
50 PERCENT EXCEEDS	9550		3740		2100	
90 PERCENT EXCEEDS	3310		1980		665	

e Estimated.

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.

SEDIMENT DATA: Water years 1957 to current year.

SPECIFIC CONDUCTANCE: Water years 1951–63, 1973–82, 1985 to current year.

TURBIDITY: Water years 1972–84.

WATER TEMPERATURE: Water years 1951 to current year.

PERIOD OF DAILY RECORD.—March 1951 to current year.

CHEMICAL DATA: 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 December 1972 to May 1985. Water-quality monitor since June 1985.

REMARKS.—Mean daily specific-conductance records, January 1973 to October 1981, provided by U.S. Bureau of Reclamation. Maximum and minimum specific-conductance values, June 1985 to September 1988, are available in files of the U.S. Geological Survey. Interruptions in record were due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum daily, 2,350 microsiemens, Aug. 11, 1961; minimum daily, 60 microsiemens, June 21, 1953.

WATER TEMPERATURE: Maximum recorded, 35.5°C, Aug. 9, 1990; minimum recorded, 2.0°C, Dec. 26, 1987.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,590 mg/L, Dec. 25, 1964; minimum daily mean, 6 mg/L, Jan. 1, 1991.

SEDIMENT LOAD: Maximum daily, 54,100 tons, Dec. 25, 1964; minimum daily, 2 tons, Aug. 10, 1961.

EXTREMES FOR CURRENT YEAR.—

SPECIFIC CONDUCTANCE: Maximum recorded, 673 microsiemens, Sept. 27; minimum recorded, 134 microsiemens, Feb. 12.

WATER TEMPERATURE: Maximum recorded, 28.0°C, July 12, 13; minimum recorded, 6.5°C, Dec. 24–28.

SEDIMENT CONCENTRATION: Maximum daily mean, 179 mg/L, Feb. 12; minimum daily mean, 21 mg/L, Jan. 14.

SEDIMENT LOAD: Maximum daily, 6,420 tons, Feb. 12; minimum daily, 152 tons, Jan. 14.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT AS CACO3) (MG/L) (00301)	HARD- NESS NONCARB FLD. AS CACO3 (MG/L) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT												
19...	1230	5820	301	7.7	14.2	760	9.8	96	76	19	18	7.7
NOV												
09...	1130	3470	520	7.7	12.9	764	9.2	87	120	34	28	13
DEC												
22...	1130	5100	341	7.8	7.1	767	11.5	94	73	24	16	8.0
JAN												
15...	1100	2730	620	8.1	8.4	766	10.9	93	140	46	30	15
FEB												
12...	1100	13300	166	7.6	9.3	768	10.6	92	45	--	9.9	4.8
MAR												
10...	1100	8590	315	7.6	10.5	762	10.7	96	70	26	16	7.6
APR												
07...	1100	5340	503	7.8	11.5	761	11.1	102	110	50	24	13
MAY												
04...	1100	7390	232	7.7	13.5	763	--	--	56	18	12	6.0
JUN												
02...	1040	3010	549	7.8	19.2	756	8.8	96	120	54	27	13
JUL												
09...	1230	e2080	611	8.3	23.6	762	12.7	150	140	57	31	15
AUG												
04...	1210	2050	568	8.2	23.4	760	9.3	110	140	58	33	15
SEP												
22...	1120	2170	546	7.8	21.8	759	7.6	87	130	55	30	14

e Estimated.

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT.DIS GRAN T. FIELD CACO3 (MG/L) (29802)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT												
19... 29		45	1	1.9	57	32	31	.1	13	172	175	.23
NOV												
09... 58		49	2	3.1	90	63	64	<.1	15	321	301	.44
DEC												
22... 32		49	2	1.4	49	40	35	<.1	11	179	181	.24
JAN												
15... 70		52	3	2.6	92	79	78	<.1	14	363	355	.49
FEB												
12... 15		42	1	1.8	--	19	14	<.1	11	110	101	.15
MAR												
10... 30		48	2	1.3	44	42	33	<.1	10	192	170	.26
APR												
07... 56		52	2	1.9	62	69	63	<.1	12	299	282	.41
MAY												
04... 21		45	1	1.3	38	28	23	<.1	10	--	129	.18
JUN												
02... 54		48	2	2.0	69	65	68	<.1	13	331	284	.45
JUL												
09... 62		48	2	2.2	85	84	71	.1	14	356	341	.48
AUG												
04... 61		47	2	2.4	87	77	66	.1	16	342	334	.47
SEP												
22... 56		47	2	3.1	79	59	64	.1	17	325	304	.44

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	2,6-DI- ETHYL ANILINE 0.7 U GF, REC (UG/L) (82660)
OCT												
19... .01		1.1	.12	.4	.2	.12	.07	.06	14	15	<1	<.003
NOV												
09... <.01		<.05	<.02	<.1	<.1	<.05	<.05	<.01	e10	47	1	<.003
DEC												
22... .02		.79	.06	.3	.1	.09	e.03	.05	<10	20	<1	<.003
JAN												
15... .02		1.8	.13	.5	.3	.18	.12	.10	13	60	<1	<.003
FEB												
12... <.01		.44	.06	.5	.3	.21	.08	.07	18	13	1	<.003
MAR												
10... .01		.73	.04	.3	.2	.11	.05	.05	e10	10	2	<.003
APR												
07... .01		1.2	<.02	.4	2.1	.13	.06	.05	10	22	<1	<.003
MAY												
04... .01		.80	.06	.4	.6	.13	.07	.07	11	6	<1	<.003
JUN												
02... <.01		<.05	.03	.6	.2	.19	.08	<.01	e9	16	<1	<.003
JUL												
09... .04		2.2	<.02	.8	.3	.26	.12	.09	<10	10	<1	<.003
AUG												
04... .05		2.5	<.02	.7	.2	.24	.14	.12	e9	9	<1	<.003
SEP												
22... .05		2.6	.06	.6	.3	.27	.17	.16	e10	13	--	<.003

e Estimated.

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

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)
	OCT 19..	<.002	<.002	<.002	e.004	<.002	<.002	<.003	<.003	<.004	<.004	<.002
NOV 09..	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002	<.002
DEC 22..	<.002	<.002	<.002	e.003	<.002	<.002	<.003	<.003	<.004	.014	<.002	<.002
JAN 15..	<.002	<.002	<.002	e.003	<.002	<.002	e.004	<.003	<.010	.244	<.002	<.002
FEB 12..	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	.066	<.002	<.002
MAR 10..	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	.042	<.002	<.002
APR 07..	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.010	<.002	<.002
MAY 04..	<.002	<.002	<.002	<.001	<.002	<.002	e.012	<.003	<.004	<.004	<.002	<.002
JUN 02..	<.002	<.002	<.002	<.010	<.002	<.002	e.012	<.020	<.010	<.004	<.002	<.002
JUL 09..	<.002	<.002	<.002	<.001	<.002	<.002	e.026	<.003	<.004	<.020	<.002	<.002
AUG 04..	<.002	<.002	<.002	<.001	<.002	<.002	e.007	<.003	<.004	.017	<.002	<.002
SEP 22..	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	.0056	<.004	<.002	<.002
DATE	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFO S WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)
	OCT 19..	<.002	<.001	<.017	.010	<.004	<.003	<.003	<.004	<.002	<.005	<.001
NOV 09..	<.002	<.001	<.017	.026	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
DEC 22..	.010	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
JAN 15..	.034	<.001	<.017	e.003	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
FEB 12..	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
MAR 10..	.018	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
APR 07..	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
MAY 04..	.007	<.001	<.017	.015	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
JUN 02..	.009	<.001	<.017	.010	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
JUL 09..	<.002	<.001	<.017	.044	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
AUG 04..	.012	<.001	<.017	.091	<.004	<.003	<.003	<.004	<.002	<.005	<.020	<.006
SEP 22..	.004	<.001	<.017	.018	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006

e Estimated.

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

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	METO- LACHLOR WATER	METRI- BUZIN WATER	MOL- INATE WATER	NAPROP- AMIDE WATER	P, P' DDE	PARA- THION, DIS-	PEB- ULATE WATER	PENDI- METH- ALIN	PER- METHRIN CIS	PHORATE WATER	PRO- METON, WATER, DISS, REC
	DISSOLV (UG/L) (39415)	DISSOLV (UG/L) (82630)	FLTRD 0.7 U GF, REC (82671)	FLTRD 0.7 U GF, REC (82684)	DISSOLV (UG/L) (34653)	SOLVED (UG/L) (39542)	FILTRD 0.7 U GF, REC (82669)	WAT FLT 0.7 U GF, REC (82683)	WAT FLT 0.7 U GF, REC (82687)	FLTRD 0.7 U GF, REC (82664)	FLTRD 0.7 U GF, REC (04037)
OCT											
19...	.007	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
NOV											
09...	.007	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
DEC											
22...	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
JAN											
15...	<.010	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
FEB											
12...	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
MAR											
10...	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
APR											
07...	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
MAY											
04...	.026	<.004	<.004	<.003	<.006	<.004	.023	<.004	<.005	<.002	<.018
JUN											
02...	.078	<.004	e.004	<.003	<.006	<.004	.011	<.004	<.005	<.002	<.018
JUL											
09...	.105	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
AUG											
04...	.073	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
SEP											
22...	.007	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
DATE	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (82676)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (82685)	PROP- CHLOR, WATER, DISS, REC (04024)	SI- MAZINE, WATER, DISS, REC (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (82661)
OCT											
19...	<.003	<.004	<.013	<.007	.008	<.010	<.007	<.013	<.002	<.001	<.002
NOV											
09...	<.003	<.004	<.013	<.007	.013	<.010	<.007	<.013	<.002	<.001	<.002
DEC											
22...	<.003	<.004	<.013	<.007	.007	<.010	<.007	<.013	<.002	<.001	<.002
JAN											
15...	<.003	<.004	<.013	<.007	.019	<.010	<.007	<.013	<.002	<.001	e.004
FEB											
12...	<.003	<.004	<.013	<.007	.020	<.010	<.007	<.013	<.002	<.001	<.002
MAR											
10...	<.003	<.004	<.013	<.007	.064	<.010	<.007	<.013	<.002	<.001	<.002
APR											
07...	<.003	<.004	<.013	<.007	.030	<.010	<.007	<.013	<.002	<.001	<.002
MAY											
04...	<.003	<.004	<.013	<.007	.014	<.010	<.007	<.013	<.002	<.001	.015
JUN											
02...	<.003	<.004	<.013	<.007	.020	<.010	<.007	<.013	<.002	<.001	.012
JUL											
09...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	<.002	<.001	.010
AUG											
04...	<.003	<.004	<.030	<.007	<.010	<.010	<.007	<.013	<.002	<.001	.013
SEP											
22...	<.003	<.004	<.013	<.007	.011	<.010	<.007	<.013	<.002	<.001	<.002

e Estimated.

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

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. THAN .062 MM (70331)
OCT						
01...	1130	6750	17.5	82	1490	54
19...N	1230	5820	14.2	40	629	78
NOV						
09...N	1130	3470	12.9	35	328	80
10...	1415	3330	11.5	42	378	70
DEC						
03...	1445	3100	13.0	50	418	80
JAN						
08...	1330	2900	8.5	21	164	74
15...N	1100	2730	8.4	17	125	97
FEB						
11...	1530	12000	10.0	176	5700	58
12...N	1100	13300	9.3	181	6500	56
MAR						
10...N	1100	8590	10.5	49	1140	65
12...	1500	9280	12.0	72	1800	61
APR						
07...N	1100	5340	11.5	44	634	81
28...	1515	6650	14.5	72	1290	78
MAY						
04...N	1100	7390	13.5	69	1380	66
21...	1400	3880	18.5	62	650	82
JUN						
02...N	1040	3010	19.2	67	545	89
18...	1315	3070	21.5	60	497	86
JUL						
09...N	1230	e2080	23.6	88	494	94
AUG						
04...N	1210	2050	23.4	96	531	97
12...	1300	1940	22.0	88	461	94
SEP						
10...	1515	1870	23.5	81	409	92
22...N	1120	2170	21.8	70	410	94

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	NUMBER OF SAM- PLING POINTS (COUNT) (00063)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)
JAN											
08...	1430	1	2890	8.5	--	1	40	91	98	100	--
08...	1432	1	2890	8.5	--	2	45	97	100	--	--
08...	1435	1	2890	8.5	--	2	33	89	99	100	--
08...	1440	1	2890	8.5	--	2	28	71	94	99	100
08...	1442	1	2890	8.5	--	4	50	95	100	--	--
FEB											
16...	1310	1	15300	10.5	--	--	9	56	90	98	100
16...	1325	1	15300	10.5	--	1	41	96	100	--	--
16...	1330	1	15300	10.5	--	2	43	93	99	100	--
16...	1335	1	15300	10.5	--	8	71	98	100	--	--
16...	1340	1	15300	10.5	--	4	51	93	99	100	--
AUG											
12...	1354	1	1930	22.0	--	1	39	87	97	99	100
12...	1357	1	1930	22.0	--	2	32	81	97	100	--
12...	1400	1	1930	22.0	--	1	55	98	100	--	--
12...	1403	1	1930	22.0	--	3	44	92	100	--	--
12...	1405	1	1930	22.0	1	14	67	98	100	--	--

e Estimated.

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	234	218	405	365	612	578	531	515	---	---	239	225
2	224	215	411	397	588	548	537	514	---	---	250	225
3	250	215	397	366	548	492	554	528	---	---	265	237
4	251	217	372	355	558	506	539	530	---	---	285	265
5	225	215	399	370	541	407	536	521	---	---	307	285
6	239	224	426	399	407	382	551	525	---	---	304	289
7	234	222	429	419	394	352	568	533	---	---	318	304
8	234	217	491	429	362	332	---	---	---	---	350	318
9	222	208	535	491	351	330	---	---	---	---	344	326
10	221	216	549	527	351	336	---	---	---	---	326	300
11	228	220	568	540	349	306	---	---	---	---	300	292
12	228	215	583	537	311	291	---	---	173	134	315	279
13	222	215	606	575	330	291	---	---	177	158	297	279
14	230	222	606	598	337	315	---	---	184	174	299	272
15	232	226	610	594	---	---	---	---	188	182	313	284
16	234	228	615	591	---	---	---	---	193	187	333	310
17	247	229	634	596	---	---	---	---	194	179	343	333
18	273	247	633	608	---	---	---	---	207	194	357	337
19	339	273	609	593	---	---	---	---	200	194	340	320
20	347	324	613	597	419	362	---	---	200	190	368	332
21	383	342	612	573	411	378	---	---	194	174	361	343
22	394	362	615	580	391	320	---	---	188	180	358	342
23	390	376	618	587	375	320	---	---	183	177	343	306
24	416	367	600	580	385	365	---	---	208	183	410	320
25	392	347	600	583	452	385	---	---	216	206	457	396
26	361	347	590	554	463	452	---	---	232	216	491	451
27	357	338	575	498	489	461	---	---	236	228	451	426
28	356	338	578	523	513	489	---	---	237	231	434	415
29	342	326	600	564	540	510	---	---	---	---	427	406
30	335	325	604	---	526	502	---	---	---	---	427	397
31	365	321	---	---	530	522	---	---	---	---	430	397
MONTH	416	208	634	---	---	---	---	---	---	---	491	225
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	503	423	264	250	537	499	529	381	548	516	607	588
2	526	480	287	261	553	517	561	478	544	---	607	---
3	541	521	279	236	524	487	600	561	567	544	573	---
4	566	531	236	233	519	488	586	517	581	559	594	557
5	562	524	237	228	531	501	534	456	595	566	584	535
6	542	506	244	235	512	478	591	498	598	573	553	464
7	527	453	250	235	515	476	557	418	579	543	545	477
8	464	412	258	245	537	486	596	410	595	555	600	545
9	416	395	245	226	514	474	617	585	588	554	599	570
10	411	368	240	231	495	466	611	---	631	557	625	578
11	385	319	240	230	489	462	---	---	614	579	646	570
12	319	300	256	237	476	448	---	---	613	562	582	529
13	337	299	267	244	476	432	---	---	632	584	573	534
14	341	311	244	228	490	437	---	---	596	543	561	481
15	315	300	235	227	507	454	---	---	591	555	564	501
16	318	304	252	225	493	441	---	---	601	559	566	517
17	317	305	370	252	466	437	599	---	612	567	580	---
18	310	294	439	370	447	415	574	536	608	553	620	483
19	304	285	494	435	466	439	576	527	581	538	607	567
20	296	282	510	482	476	446	563	526	590	548	592	500
21	291	279	516	484	474	438	570	---	603	561	600	---
22	285	278	499	468	515	442	---	---	623	567	---	---
23	285	261	473	445	453	359	534	---	598	555	---	---
24	261	235	483	437	509	449	571	525	592	---	544	---
25	249	232	522	481	549	495	596	570	584	---	632	---
26	262	225	491	457	559	478	582	537	533	---	621	598
27	262	248	471	446	497	455	597	571	590	510	673	---
28	274	252	465	449	496	412	600	559	603	---	608	572
29	263	244	490	450	452	397	565	525	639	---	592	546
30	251	237	527	490	432	381	546	527	633	554	593	536
31	---	---	522	496	---	---	553	529	610	567	---	---
MONTH	566	225	527	225	559	359	---	---	639	---	---	---

SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.5	17.0	15.0	14.0	13.0	12.5	9.5	8.5	---	---	12.0	11.5
2	17.5	17.0	15.0	14.0	13.0	12.5	9.5	8.5	---	---	12.5	11.5
3	17.0	16.5	15.0	14.0	13.0	12.0	9.0	9.0	---	---	12.5	12.0
4	17.0	16.0	15.0	14.0	12.0	11.0	9.0	8.5	---	---	12.0	11.5
5	17.0	16.0	15.0	14.0	11.0	10.0	8.5	8.5	---	---	11.5	11.0
6	17.0	16.0	14.0	13.5	10.0	9.5	8.5	8.0	---	---	11.5	11.0
7	17.0	16.0	13.5	12.0	9.5	9.0	8.0	7.5	---	---	11.0	10.5
8	17.0	16.0	13.5	12.5	9.5	9.0	---	---	---	---	11.0	10.5
9	16.5	16.0	13.5	12.5	9.5	9.0	---	---	---	---	11.0	10.5
10	16.5	16.0	13.0	12.5	9.0	8.5	---	---	---	---	11.5	10.5
11	16.0	15.5	12.5	12.0	9.0	9.0	---	---	---	---	11.5	10.5
12	15.5	15.5	13.0	12.0	9.0	9.0	---	---	10.0	9.5	12.0	11.0
13	16.0	15.0	13.0	12.0	9.5	9.0	---	---	10.0	9.5	12.0	11.5
14	16.0	15.0	13.0	12.0	10.0	9.0	---	---	10.5	10.0	12.0	11.5
15	15.5	15.0	13.5	12.0	---	---	---	---	11.0	10.0	12.0	11.0
16	15.0	14.0	13.5	13.0	---	---	---	---	11.0	10.5	12.0	11.5
17	14.5	13.5	14.0	13.0	---	---	---	---	11.5	10.5	12.0	11.0
18	14.5	13.5	13.5	13.0	---	---	---	---	11.5	11.0	12.5	11.5
19	14.5	14.0	13.0	12.0	---	---	---	---	11.0	10.5	12.5	12.0
20	15.0	14.0	12.5	11.5	9.5	8.5	---	---	11.0	10.5	12.5	12.0
21	15.0	14.5	13.0	11.5	8.5	7.0	---	---	10.5	10.0	12.5	12.0
22	15.5	14.5	13.5	12.5	7.5	7.0	---	---	11.0	10.5	13.0	12.5
23	15.5	14.5	13.5	13.0	7.5	7.0	---	---	11.0	10.5	13.0	12.5
24	15.0	14.5	14.0	13.0	7.0	6.5	---	---	11.5	10.5	13.0	13.0
25	14.5	14.0	14.0	13.0	7.0	6.5	---	---	11.5	11.0	14.5	13.0
26	14.5	14.0	13.5	12.5	7.0	6.5	---	---	11.5	11.0	15.0	14.0
27	15.0	14.0	13.0	13.0	7.5	6.5	---	---	11.5	11.0	14.5	14.0
28	14.5	14.5	13.0	12.5	7.5	6.5	---	---	11.5	11.0	14.0	13.5
29	15.0	14.5	12.5	12.0	8.0	7.0	---	---	---	---	14.0	13.0
30	14.5	14.0	13.5	12.0	8.5	7.5	---	---	---	---	13.5	12.5
31	14.5	14.0	---	---	9.0	8.0	---	---	---	---	13.5	13.0
MONTH	17.5	13.5	15.0	11.5	---	---	---	---	---	---	15.0	10.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.5	12.5	16.0	15.0	21.0	19.5	26.5	24.0	23.5	21.0	22.0	20.0
2	13.5	12.5	16.0	14.5	20.0	18.0	25.5	23.5	24.0	21.5	22.5	19.5
3	13.0	12.0	14.5	14.0	18.5	17.5	24.5	22.5	24.5	22.0	22.5	20.0
4	12.5	11.5	14.5	13.5	18.5	17.0	23.5	21.5	25.0	22.5	22.5	20.5
5	12.5	12.0	15.5	13.5	20.0	17.5	23.5	21.5	24.0	22.0	23.5	20.5
6	12.5	11.5	16.0	15.0	20.5	18.5	23.5	21.5	23.5	22.0	24.0	21.5
7	12.0	11.5	16.0	15.5	20.0	18.5	23.5	21.0	23.0	21.0	24.0	21.5
8	11.5	11.0	16.0	15.5	19.5	18.0	24.5	21.5	23.5	21.0	24.0	22.0
9	12.0	10.5	15.5	15.0	20.0	17.5	25.5	22.5	23.0	21.5	24.0	22.0
10	12.0	11.0	15.5	14.5	20.0	18.0	25.5	23.0	23.0	21.0	23.5	21.5
11	12.0	11.5	16.0	15.0	20.5	18.5	26.5	23.5	23.0	21.0	23.5	21.0
12	13.0	11.5	17.0	16.0	20.5	18.5	28.0	25.0	24.0	21.0	23.5	21.5
13	14.5	12.5	16.5	16.0	21.0	19.0	28.0	26.0	24.0	21.5	23.5	21.5
14	15.5	14.5	16.5	15.0	21.5	19.5	27.5	25.5	23.5	21.5	23.0	21.0
15	17.0	15.5	15.5	15.0	21.0	20.0	26.5	24.5	23.5	21.0	23.0	21.0
16	18.0	16.5	16.0	15.0	21.5	19.5	25.5	23.5	24.5	21.5	23.0	21.0
17	18.5	17.0	17.0	15.5	22.0	19.5	24.5	22.5	25.0	22.5	22.5	20.5
18	18.5	17.5	18.0	16.5	22.0	20.0	24.5	22.0	24.5	22.5	22.5	20.5
19	18.0	17.0	18.5	16.5	21.5	20.0	24.0	22.0	24.0	21.5	22.0	20.5
20	17.5	17.0	18.5	17.0	22.0	20.0	23.5	21.5	24.5	22.0	22.0	20.0
21	17.0	16.5	19.0	17.0	22.0	20.5	23.5	21.0	24.5	22.0	23.0	20.0
22	16.5	16.0	19.5	18.0	22.5	21.0	24.0	21.5	25.5	22.5	23.5	19.5
23	16.5	15.0	20.5	18.5	23.0	21.0	24.0	22.0	26.0	23.5	24.0	22.0
24	16.5	15.5	20.5	19.0	23.0	21.5	23.5	21.0	26.0	23.5	24.0	22.0
25	17.0	15.5	20.5	19.0	23.0	21.0	24.0	21.5	26.0	23.5	24.0	22.0
26	16.5	16.0	21.5	19.5	23.5	21.0	24.5	22.0	25.0	23.5	23.0	21.5
27	16.0	15.0	21.5	20.0	23.5	21.0	24.5	22.0	25.0	22.5	22.0	19.0
28	15.0	14.5	21.0	19.5	24.0	21.5	24.0	22.0	25.5	23.0	21.5	19.5
29	14.5	13.5	20.5	19.0	25.0	22.5	24.0	21.5	25.5	23.5	22.0	19.5
30	15.0	13.5	21.0	19.0	26.0	23.5	24.0	21.5	24.0	22.5	22.5	20.5
31	---	---	21.5	19.5	---	---	23.5	21.5	22.5	20.5	---	---
MONTH	18.5	10.5	21.5	13.5	26.0	17.0	28.0	21.0	26.0	20.5	24.0	19.0

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MEAN	MEAN	SEDIMENT DISCHARGE (TONS/DAY)	MEAN	MEAN	SEDIMENT DISCHARGE (TONS/DAY)	MEAN	MEAN	SEDIMENT DISCHARGE (TONS/DAY)
	DISCHARGE (CFS)	CONCENTRATION (MG/L)		DISCHARGE (CFS)	CONCENTRATION (MG/L)		DISCHARGE (CFS)	CONCENTRATION (MG/L)	
OCTOBER			NOVEMBER			DECEMBER			
1	6710	84	1520	4540	55	673	3030	41	333
2	6850	88	1630	4310	56	648	3150	50	422
3	6790	89	1630	4310	57	659	3100	51	428
4	6530	86	1510	4300	55	637	3240	53	465
5	6460	68	1180	4160	60	673	3700	62	615
6	6410	74	1280	4000	62	666	4100	72	796
7	6360	88	1500	3920	60	637	4300	75	867
8	6460	101	1770	3740	48	484	4520	74	905
9	6870	87	1620	3470	45	423	4520	68	834
10	6950	84	1570	3330	45	403	4620	66	824
11	6970	86	1610	3270	53	466	4940	70	928
12	7230	92	1790	3180	46	396	5230	76	1070
13	7330	93	1830	3070	42	346	5260	69	985
14	7100	94	1800	2990	40	326	5160	59	821
15	6990	73	1390	2930	42	330	5100	57	784
16	6880	74	1380	2880	42	327	5120	55	763
17	6670	74	1690	2840	43	332	5230	70	982
18	6300	74	1260	2840	48	366	5160	63	878
19	5830	55	865	2840	46	354	4900	50	661
20	5400	58	847	2850	42	319	4620	47	581
21	5080	67	917	2840	43	327	4640	50	628
22	4800	81	1060	2890	46	360	5100	52	717
23	4740	61	783	2910	49	382	5050	44	595
24	4870	55	718	2900	45	356	4840	43	556
25	5430	59	858	2900	39	306	4050	34	377
26	5480	72	1060	2870	42	323	3780	34	349
27	5320	60	868	2870	46	355	3680	31	303
28	5480	70	1030	2920	46	365	3580	24	234
29	5660	73	1120	2910	54	422	3550	24	226
30	5550	63	950	2910	43	340	3520	23	219
31	5250	61	860	---	---	---	3470	28	267
TOTAL	190750	---	39896	98690	---	13001	134260	---	19413
JANUARY			FEBRUARY			MARCH			
1	3480	27	251	7590	68	1400	11600	64	2020
2	3440	28	260	7050	74	1410	11100	67	2020
3	3390	30	272	6430	67	1160	10700	67	1930
4	3370	31	280	6350	68	1170	10300	70	1950
5	3340	31	278	6700	79	1420	9970	67	1820
6	3280	28	246	6890	66	1220	9650	67	1730
7	3130	24	205	6770	83	1510	9170	59	1460
8	2930	22	172	6780	71	1300	8640	62	1440
9	2760	24	180	7840	96	2040	8480	70	1610
10	2730	23	172	10100	127	3460	8640	55	1280
11	2750	24	178	11900	169	5420	8920	61	1460
12	2750	25	182	13300	179	6420	9200	70	1730
13	2730	23	166	15100	148	6010	9340	64	1610
14	2730	21	152	16000	110	4750	9060	52	1270
15	2740	23	170	15900	74	3190	8830	44	1050
16	2790	30	226	15400	81	3390	8540	41	950
17	3030	33	271	14900	78	3150	8190	43	958
18	3150	37	314	13800	69	2580	7950	42	909
19	3370	52	474	14000	84	3160	7790	43	913
20	3610	61	590	14100	64	2440	7730	45	936
21	4380	83	985	14300	66	2530	7790	46	961
22	4950	90	1200	15000	79	3210	7560	51	1040
23	6260	107	1800	15600	70	2930	7300	56	1100
24	7800	152	3210	15000	69	2780	7070	47	903
25	8940	144	3490	13800	70	2600	6830	52	966
26	8960	145	3510	12800	65	2250	6580	56	990
27	9080	132	3240	12200	69	2290	6470	59	1030
28	9220	123	3050	11900	66	2120	6440	59	1020
29	8930	102	2470	---	---	---	6340	52	883
30	8450	90	2050	---	---	---	6120	54	887
31	8170	76	1670	---	---	---	5980	55	887
TOTAL	146640	---	31714	327500	---	77310	258280	---	39713

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MEAN	MEAN	SEDIMENT DISCHARGE (TONS/DAY)	MEAN	MEAN	SEDIMENT DISCHARGE (TONS/DAY)	MEAN	MEAN	SEDIMENT DISCHARGE (TONS/DAY)
	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)		DISCHARGE (CFS)	CONCEN- TRATION (MG/L)		DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	
	APRIL			MAY			JUNE		
1	5770	48	748	7130	58	1110	3060	77	636
2	5560	46	689	6930	57	1060	3050	78	639
3	5280	48	681	7250	59	1160	3140	76	646
4	5210	44	613	7340	56	1120	3160	68	580
5	5130	38	521	7290	58	1150	3190	70	605
6	5150	38	535	7200	62	1210	3190	65	562
7	5400	45	649	7060	55	1060	3190	63	544
8	5800	51	792	6920	62	1160	3170	63	542
9	6040	45	729	7170	66	1270	3190	67	577
10	6230	51	857	7200	59	1150	3190	61	522
11	6700	62	1110	7030	51	971	3110	64	533
12	6920	57	1060	6810	57	1040	3070	74	610
13	6990	53	995	6950	61	1140	3120	63	534
14	6840	64	1180	7260	65	1270	3190	74	641
15	6640	64	1150	7330	65	1290	3140	69	587
16	6640	67	1190	7070	60	1150	3130	67	563
17	6630	69	1230	5980	63	1020	3090	68	565
18	6780	64	1160	4750	59	754	e3100	60	505
19	6930	66	1240	4110	63	703	e3000	71	577
20	6880	61	1140	3900	71	749	e3100	74	617
21	6790	60	1090	3860	64	664	e3230	70	609
22	6810	57	1040	3780	66	677	e3090	75	624
23	6940	67	1260	3740	65	654	3040	74	607
24	7120	70	1340	3720	85	855	2940	77	607
25	7110	64	1230	3640	73	722	2720	91	672
26	6930	62	1160	3630	72	708	2610	94	660
27	6790	62	1140	3550	65	626	2640	87	623
28	6730	69	1250	3570	67	645	2720	94	692
29	7090	68	1300	3450	55	509	2510	101	682
30	7280	60	1180	3210	60	521	2390	97	628
31	---	---	---	3260	65	571	---	---	---
TOTAL	193110	---	30259	172090	---	28689	90470	---	17989
	JULY			AUGUST			SEPTEMBER		
1	2310	102	636	2180	102	600	1880	96	488
2	2170	98	572	2150	102	592	1930	86	448
3	2160	99	578	2080	107	602	1920	80	414
4	2430	104	684	2040	99	545	1960	83	441
5	2550	101	695	1940	100	526	2010	85	461
6	2390	94	605	1900	97	499	2030	82	450
7	2300	94	584	1960	84	445	1940	81	423
8	2200	96	572	2100	114	645	1790	71	341
9	e2080	101	567	2120	106	604	1790	78	375
10	e2190	99	587	1970	89	473	1860	82	413
11	2100	90	509	1980	90	481	1910	75	386
12	2210	82	491	1930	87	452	2120	81	462
13	e2010	82	443	1930	95	497	2240	83	503
14	e1940	105	548	1940	102	533	2140	93	540
15	e1880	97	491	2020	85	464	2060	82	458
16	1860	94	472	2020	98	532	2040	76	419
17	2010	93	507	1880	85	434	2000	74	402
18	2040	108	595	1850	78	390	2060	81	449
19	2100	114	648	1900	84	432	2200	75	443
20	1990	102	548	1840	88	438	2270	68	420
21	2020	93	508	1790	91	439	2170	65	380
22	2060	97	538	1940	91	477	2110	67	384
23	1960	89	471	2030	85	465	2060	68	378
24	1900	91	466	1940	77	404	2020	63	341
25	1980	100	533	1890	66	339	2010	69	374
26	2070	106	590	1880	84	426	2060	66	369
27	1970	102	544	1850	84	417	2220	69	412
28	2010	98	533	1930	84	435	2180	68	399
29	2000	94	506	2040	70	385	2040	64	350
30	1980	79	424	2090	74	418	2100	61	348
31	2040	94	520	1930	82	425	---	---	---
TOTAL	64910	---	16965	61040	---	14814	61120	---	12471
YEAR	1798860		342234						

e Estimated.

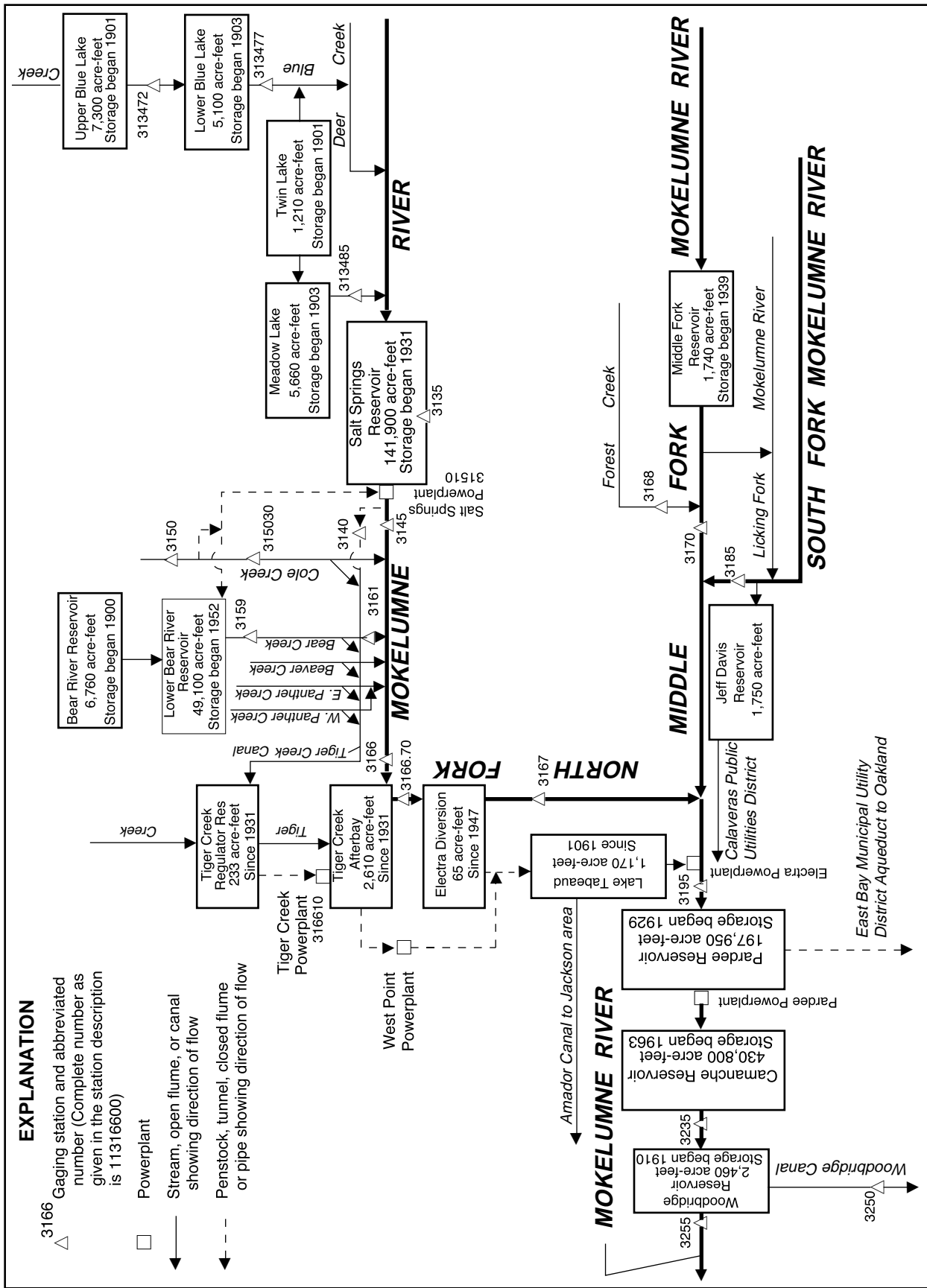


Figure 32. Diversions and storage in Mokelumne River Basin.

11313477 LOWER BLUE LAKE OUTLET NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°36'24", long 119°55'31", in SW 1/4 NE 1/4 sec.30, T.9 N., R.19 E., Alpine County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 800 ft downstream from Lower Blue Lake Dam and 10.0 mi southwest of Markleeville.

DRAINAGE AREA.—4.66 mi².

PERIOD OF RECORD.—October 1987 to current year. Unpublished records for water years 1981–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 7,870 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage at same site and datum.

REMARKS.—Records not computed for winter months or above 75 ft³/s. Low and medium flow regulated by Lower Blue Lake (capacity, 5,100 acre-ft) 800 ft upstream. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	42	8.9	---	---	---	---	---	21	22	52	23
2	52	42	5.7	---	---	---	---	---	20	22	52	23
3	51	41	3.4	---	---	---	---	---	19	22	51	23
4	51	40	3.6	---	---	---	---	---	20	22	51	23
5	51	39	3.6	---	---	---	---	---	20	22	51	23
6	50	38	3.8	---	---	---	---	---	21	22	51	23
7	50	37	3.8	---	---	---	---	---	21	21	51	23
8	52	36	3.8	---	---	---	---	---	21	21	50	23
9	54	35	3.8	---	---	---	---	---	21	21	50	23
10	54	33	3.8	---	---	---	---	---	21	21	50	20
11	53	32	3.8	---	---	---	---	---	21	21	49	16
12	53	30	3.8	---	---	---	---	---	22	21	49	16
13	53	29	3.8	---	---	---	---	---	22	36	48	16
14	53	27	3.9	---	---	---	---	---	22	57	48	16
15	52	26	3.9	---	---	---	---	---	23	56	48	17
16	52	24	---	---	---	---	---	---	23	56	47	17
17	51	22	---	---	---	---	---	21	23	56	47	17
18	51	21	---	---	---	---	---	20	23	56	47	17
19	50	19	---	---	---	---	---	20	23	56	47	17
20	50	17	---	---	---	---	---	19	23	56	47	14
21	49	16	---	---	---	---	---	19	23	55	47	9.6
22	48	14	---	---	---	---	---	17	23	55	47	21
23	48	14	---	---	---	---	---	18	23	54	46	43
24	47	12	---	---	---	---	---	18	23	54	46	42
25	47	11	---	---	---	---	---	19	23	54	46	42
26	46	10	---	---	---	---	---	19	23	53	45	41
27	46	9.0	---	---	---	---	---	19	23	53	46	41
28	45	8.2	---	---	---	---	---	19	23	53	45	41
29	45	7.9	---	---	---	---	---	20	23	53	45	40
30	44	8.4	---	---	---	---	---	20	22	53	44	40
31	43	---	---	---	---	---	---	20	---	52	32	---
TOTAL	1543	740.5	---	---	---	---	---	---	659	1276	1475	750.6
MEAN	49.8	24.7	---	---	---	---	---	---	22.0	41.2	47.6	25.0
MAX	54	42	---	---	---	---	---	---	23	57	52	43
MIN	43	7.9	---	---	---	---	---	---	19	21	32	9.6
AC-FT	3060	1470	---	---	---	---	---	---	1310	2530	2930	1490

11313485 MEADOW LAKE OUTLET NEAR MARKLEEVILLE, CA

LOCATION.—Lat 38°35'53", long 119°58'40", in SE 1/4 SE 1/4 sec.27, T.9 N., R.18 E., Alpine County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 700 ft downstream from Meadow Lake Dam and 12.5 mi southwest of Markleeville.

DRAINAGE AREA.—5.66 mi².

PERIOD OF RECORD.—October 1987 to current year. Unpublished records for water years 1981–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 7,660 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage at same site and datum.

REMARKS.—Records not computed for winter months or above 60 ft³/s. Low and medium flow regulated by Meadow Lake, capacity, 5,660 acre-ft. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	15	5.9	---	---	---	---	---	55	46	33	28
2	40	12	5.8	---	---	---	---	---	56	49	33	27
3	39	9.0	5.7	---	---	---	---	---	56	48	32	27
4	39	6.2	5.7	---	---	---	---	---	56	48	32	27
5	38	5.0	5.7	---	---	---	---	---	55	48	32	27
6	47	5.1	5.7	---	---	---	---	---	55	43	32	27
7	52	5.3	5.7	---	---	---	---	---	55	39	32	27
8	51	5.4	5.7	---	---	---	---	---	54	39	31	27
9	50	5.4	5.7	---	---	---	---	---	54	38	31	27
10	49	5.5	5.7	---	---	---	---	---	53	37	31	26
11	48	5.6	5.7	---	---	---	---	---	55	36	31	26
12	47	5.6	5.7	---	---	---	---	---	57	34	31	26
13	47	5.8	5.7	---	---	---	---	---	60	36	30	26
14	46	5.6	5.7	---	---	---	---	---	39	38	30	26
15	45	5.6	5.7	---	---	---	---	---	16	38	30	26
16	44	5.8	5.7	---	---	---	---	---	16	39	30	26
17	43	5.8	5.7	---	---	---	---	---	16	39	30	26
18	42	5.7	5.7	---	---	---	---	---	17	38	30	26
19	41	5.6	5.7	---	---	---	---	---	17	38	29	26
20	40	5.5	5.7	---	---	---	---	50	17	37	29	26
21	39	5.5	5.7	---	---	---	---	52	18	36	29	25
22	38	5.4	---	---	---	---	---	54	18	36	29	25
23	36	5.5	---	---	---	---	---	57	19	36	29	25
24	35	5.5	---	---	---	---	---	60	---	35	29	25
25	33	5.7	---	---	---	---	---	---	---	34	28	25
26	32	5.7	---	---	---	---	---	---	---	34	28	25
27	30	5.7	---	---	---	---	---	---	18	34	28	24
28	28	5.7	---	---	---	---	---	---	17	33	28	24
29	25	5.8	---	---	---	---	---	---	17	33	28	24
30	22	5.9	---	---	---	---	---	54	42	33	28	24
31	19	---	---	---	---	---	---	55	---	33	28	---
TOTAL	1226	186.9	---	---	---	---	---	---	---	1185	931	776
MEAN	39.5	6.23	---	---	---	---	---	---	---	38.2	30.0	25.9
MAX	52	15	---	---	---	---	---	---	---	49	33	28
MIN	19	5.0	---	---	---	---	---	---	---	33	28	24
AC-FT	2430	371	---	---	---	---	---	---	---	2350	1850	1540

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.—Water-stage recorder. Prior to Oct. 1, 1991, nonrecording gage read once daily. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—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 (station 11313510) just downstream from dam and discharged into Tiger Creek Powerplant Conduit (station 11314000). Figures given, including extremes, represent total contents. See schematic diagram of Mokelumne River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 142,208 acre-ft, June 22, 1999, elevation, 3,958.36 ft; no contents at times in 1932–33, 1945, 1962.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 142,208 acre-ft, June 22, elevation, 3,958.36 ft; minimum, 7,314 acre-ft, Apr. 9, 11, elevation, 3,739.95 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated October 1964)

3,700	1,251	3,720	3,519	3,740	7,324	3,800	28,017
3,705	1,679	3,725	4,324	3,750	9,799	3,850	54,852
3,710	2,199	3,730	5,229	3,760	12,689	3,900	90,786
3,715	2,812	3,735	6,230	3,780	19,632	3,960	143,788

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84685	65585	52298	39858	26155	18851	7971	32318	138231	142081	121830	103224
2	84089	65100	51951	39347	25398	18512	7597	33839	138370	142071	120844	102674
3	83461	64519	52016	38739	24609	18724	7329	34783	137371	141984	119881	102060
4	82783	63911	51880	37878	23966	18681	7324	35302	136778	141669	118910	101173
5	82019	63260	51610	37016	23237	18232	7324	36131	137268	141187	117976	100186
6	81330	62708	51423	36094	22675	17686	7324	37946	138546	140607	116982	99380
7	80602	62345	51023	35127	23615	17099	7316	40897	138832	139975	115961	98732
8	79971	62002	50756	34247	24310	16633	7316	43763	138463	139657	115066	98247
9	79262	61500	50260	33428	25816	16237	7314	46165	138398	138999	114635	97778
10	78601	60918	49778	32581	26261	15579	7324	48247	138943	138416	114343	e96730
11	77955	60368	49310	31922	25943	14940	7314	51005	139512	137849	113840	96229
12	77263	59789	48862	31157	25897	14314	7316	54707	139782	137315	113497	95072
13	76630	59200	48461	29988	24953	13685	7316	58621	140023	136787	113078	94309
14	76645	58607	48043	29196	24404	13202	7392	60951	139965	136360	112278	93711
15	76129	57972	47775	28474	23796	12644	8230	63042	139763	135768	111478	93096
16	75545	57383	47361	27923	23307	12056	9282	65044	139580	135055	111059	92498
17	74956	56851	46931	27533	23771	11491	10722	67718	e139460	134297	110757	91826
18	74077	56228	46526	27883	23665	11077	12583	69774	140740	133561	110417	90933
19	73261	55525	46081	28946	23208	10792	14759	74397	140100	132831	110098	89998
20	72639	54914	45824	29965	22848	10496	17020	77955	140883	132092	109766	89388
21	72354	54246	45484	30152	23038	10062	19216	82095	142188	131327	109202	88847
22	71712	53802	44991	29965	22926	9663	20845	87174	142208	130533	108534	88329
23	71115	53711	44496	30049	22290	9305	21925	93186	140883	129672	108050	87848
24	70595	53545	43987	29908	21657	9017	22828	98847	140892	128848	107566	87259
25	70010	53113	43463	30175	21041	8752	24093	105908	141385	128000	107129	86385
26	69128	52608	42939	29862	20547	8686	26296	112278	141385	127149	106770	85498
27	68575	52063	42452	29327	19944	8750	26627	118786	141357	126266	106341	84825
28	68036	51487	41949	28556	19382	8691	25533	124936	141650	125350	105638	84236
29	67468	51111	41429	27872	---	8539	30515	129595	141896	124486	104871	83655
30	66871	52093	40881	27246	---	8335	31342	133534	142139	123626	104319	83080
31	66250	---	40326	26830	---	8208	---	136579	---	122732	103858	---
MAX	84685	65585	52298	39858	26261	18851	31342	136579	142208	142081	121830	103224
MIN	66250	51111	40326	26830	19382	8208	7314	32318	136778	122732	103858	83080
a	3867.13	3845.55	3824.91	3797.36	3779.34	3743.73	3806.70	3852.42	3858.29	3837.43	3815.82	3790.13
b	-19081	-14157	-11767	-13496	-7448	-11174	+23134	+105237	+5560	-19407	-18874	-20778
c	10870	11240	11660	1190	0	0	2030	14040	13490	14340	12230	8550
CAL YR 1998	MAX 139446	MIN 9669	b +30112	c 109800								
WTR YR 1999	MAX 142208	MIN 7314	b -2251	c 99640								

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Release, in acre-feet, through Salt Springs Powerplant, provided by Pacific Gas & Electric Co.

11314500 NORTH FORK MOKELUMNE RIVER BELOW SALT SPRINGS DAM, CA

LOCATION.—Lat 38°29'37", long 120°13'12", in NE 1/4 NW 1/4 sec.4, T.7 N., R.16 E., Calaveras County, Hydrologic Unit 18040012, Stanislaus National Forest, on left bank 0.5 mi downstream from Salt Springs Dam, 1.3 mi upstream from Cole Creek, and 18 mi northeast of West Point.

DRAINAGE AREA.—170 mi².

PERIOD OF RECORD.—September 1926 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "above Moore Creek" 1926–30.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 3,590 ft above sea level, from topographic map. Prior to Sept. 12, 1928, at site 100 ft upstream and Sept. 12, 1928, to Sept. 23, 1940, at present site at datum 2.0 ft higher.

REMARKS.—Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 0.5 mi upstream. Water is imported from Bear River and Cole Creek to Salt Springs No. 2 Powerplant (station 11313510) upstream from station since December 1952. Then most of the water bypasses station through Tiger Creek Powerplant Conduit (station 11314000). See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 17,000 ft³/s, May 16, 1996, gage height, 17.66 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. 17, 23, 31, and Apr. 1, 1931.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	34	22	23	22	22	24	68	1400	575	294	45
2	79	27	22	23	22	22	25	116	1810	514	309	43
3	94	21	22	23	22	23	24	126	1640	464	314	43
4	122	22	22	23	22	23	23	131	1150	463	316	44
5	132	23	23	22	22	23	24	134	692	460	609	44
6	135	23	23	22	23	23	24	133	755	450	301	44
7	130	23	23	22	23	23	24	145	1290	747	284	44
8	124	22	23	23	23	22	24	167	1340	208	339	44
9	133	23	22	23	23	23	25	185	1160	310	72	45
10	140	22	22	23	23	24	24	194	1110	271	44	49
11	138	24	22	22	22	23	25	201	1360	250	154	45
12	139	22	22	22	22	24	24	214	1700	220	28	44
13	157	22	22	23	22	23	28	231	1920	231	28	44
14	176	22	23	22	22	23	24	241	2290	241	28	44
15	36	22	23	22	22	24	24	249	2330	258	31	44
16	36	22	22	23	23	24	24	261	2200	271	37	44
17	35	23	22	22	22	23	24	489	1850	274	33	44
18	35	23	22	23	22	23	23	504	1800	269	30	44
19	35	22	22	23	22	24	24	516	1730	253	29	44
20	35	23	22	22	22	24	24	529	1190	239	30	43
21	37	22	23	22	22	24	24	538	905	241	30	43
22	35	22	23	22	24	24	24	551	1450	246	30	52
23	36	23	23	23	22	24	23	561	2040	257	29	361
24	36	23	23	22	22	24	23	568	1330	269	29	37
25	35	23	23	22	23	24	23	580	809	274	29	41
26	34	23	23	23	23	23	24	594	788	279	29	42
27	34	23	23	22	22	23	44	526	669	282	29	42
28	34	23	23	22	22	23	154	409	504	280	29	43
29	34	23	23	23	---	23	278	422	451	328	29	43
30	34	23	23	23	---	24	35	499	451	279	37	211
31	34	---	23	22	---	24	---	895	---	286	377	---
TOTAL	2374	693	699	697	626	723	1137	10977	40114	9989	3987	1800
MEAN	76.6	23.1	22.5	22.5	22.4	23.3	37.9	354	1337	322	129	60.0
MAX	176	34	23	23	24	24	278	895	2330	747	609	361
MIN	34	21	22	22	22	22	23	68	451	208	28	37
AC-FT	4710	1370	1390	1380	1240	1430	2260	21770	79570	19810	7910	3570
a	32000	31140	32010	28970	26960	30920	17980	29310	28160	31940	29040	30690

a Diversion, in acre-feet, to Tiger Creek Powerplant Conduit, provided by Pacific Gas & Electric Co.

11314500 NORTH FORK MOKELUMNE RIVER BELOW SALT SPRINGS DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1999, BY WATER YEAR (WY)

MEAN	43.4	54.0	81.9	79.9	103	124	240	752	931	191	67.0	52.8
MAX	320	802	1390	665	710	969	1502	2473	3267	1887	406	330
(WY)	1996	1951	1951	1997	1942	1928	1938	1982	1983	1995	1983	1965
MIN	1.33	1.11	.73	.94	.91	1.87	1.55	3.11	3.77	3.02	2.89	2.80
(WY)	1941	1941	1944	1944	1944	1944	1944	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1927 - 1999	
ANNUAL TOTAL	147818		73816			
ANNUAL MEAN	405		202		226	
HIGHEST ANNUAL MEAN					710 1983	
LOWEST ANNUAL MEAN					4.27 1977	
HIGHEST DAILY MEAN	3310	Jun 19	2330	Jun 15	11400	May 16 1996
LOWEST DAILY MEAN	21	Nov 3	21	Nov 3	.30	Mar 17 1931
ANNUAL SEVEN-DAY MINIMUM	22	Nov 10	22	Jan 30	.39	Mar 19 1931
INSTANTANEOUS PEAK FLOW			2430	Jun 14	17000	May 16 1996
INSTANTANEOUS PEAK STAGE			7.80	Jun 14	17.66	May 16 1996
ANNUAL RUNOFF (AC-FT)	293200		146400		164100	
ANNUAL DIVERSION (AC-FT) a	313300		349100			
10 PERCENT EXCEEDS	955		543		616	
50 PERCENT EXCEEDS	103		29		22	
90 PERCENT EXCEEDS	23		22		4.4	

a Diversion, in acre-feet, to Tiger Creek Powerplant Conduit, provided by Pacific Gas & Electric Co.

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 sea level, from topographic map. Prior to Oct. 30, 1974, at site 0.4 mi upstream at different datum.

REMARKS.—Occasional pumping upstream from station for domestic use in summer-home tract began in September 1961. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 6,140 ft³/s, Dec. 23, 1964, gage height, 10.21 ft, site and datum then in use, from rating curve extended above 900 ft³/s on basis of slope-area measurement at gage height 9.69 ft, site and datum then in use; no flow for many days in some years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	1.2	62	15	30	49	56	208	348	71	1.0	e.15
2	2.8	3.0	42	14	35	68	50	220	279	64	.94	e.15
3	1.9	3.1	75	15	31	74	41	140	173	55	.85	e.15
4	1.4	1.9	64	15	42	62	45	110	138	47	.93	e.15
5	1.1	1.5	46	14	33	48	39	136	178	45	.73	e.15
6	.84	1.4	34	15	28	42	38	248	257	40	.71	e.15
7	.69	2.2	40	15	58	37	36	323	243	31	.82	e.15
8	.60	2.9	24	13	96	34	31	296	219	23	.78	.15
9	.54	4.1	29	12	108	33	37	253	215	18	.75	.15
10	.50	3.2	21	13	77	41	35	242	237	15	e.70	.15
11	.47	3.7	25	14	82	29	32	334	273	14	e.70	.17
12	.42	6.0	25	14	45	35	34	425	289	14	e.70	.17
13	.39	6.0	33	15	41	37	53	357	307	12	.66	.15
14	.37	7.8	27	15	39	46	103	255	312	10	.59	.14
15	.37	9.3	23	23	40	40	119	218	316	8.9	.54	.14
16	.37	6.7	40	51	34	38	149	243	281	7.6	.51	.13
17	.35	7.9	49	79	50	52	191	324	263	6.7	.45	.13
18	.33	12	44	137	47	73	224	341	239	5.9	.42	.14
19	.31	9.3	38	124	47	80	250	333	217	5.1	.39	.15
20	.29	8.0	30	134	37	67	252	376	202	4.5	.37	.15
21	.28	5.6	51	72	32	51	228	441	188	4.2	.35	.15
22	.28	10	35	52	31	47	179	558	192	3.8	.32	.15
23	.28	30	34	47	31	51	143	624	187	3.5	.31	.15
24	.46	32	26	51	31	51	144	551	163	3.2	.27	e.15
25	.67	17	17	39	34	53	212	606	129	2.9	.25	e.15
26	.54	16	15	36	32	88	237	596	99	2.6	e.25	.15
27	.47	12	15	43	30	105	219	572	84	2.3	e.20	.15
28	.43	11	14	42	38	90	192	516	80	2.0	e.20	.14
29	.43	13	14	40	---	78	124	394	80	1.9	e.20	.14
30	.46	156	15	35	---	62	128	373	74	1.3	e.20	.14
31	.72	---	15	28	---	54	---	366	---	1.3	e.20	---
TOTAL	23.86	403.8	1022	1232	1259	1715	3621	10979	6262	526.7	16.29	4.44
MEAN	.77	13.5	33.0	39.7	45.0	55.3	121	354	209	17.0	.53	.15
MAX	4.8	156	75	137	108	105	252	624	348	71	1.0	.17
MIN	.28	1.2	14	12	28	29	31	110	74	1.3	.20	.13
AC-FT	47	801	2030	2440	2500	3400	7180	21780	12420	1040	32	8.8

e Estimated.

SAN JOAQUIN RIVER BASIN

11315000 COLE CREEK NEAR SALT SPRINGS DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999, BY WATER YEAR (WY)

MEAN	4.17	22.2	38.1	38.9	42.5	65.1	143	254	152	22.0	1.42	.92
MAX	88.3	368	361	292	228	212	242	509	564	263	25.2	15.6
(WY)	1983	1951	1965	1997	1982	1986	1936	1969	1983	1983	1983	1983
MIN	.045	.10	.14	.30	.30	1.87	38.9	50.1	5.22	.38	.013	.000
(WY)	1967	1960	1960	1933	1933	1933	1975	1934	1992	1976	1931	1931

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1928 - 1999	
ANNUAL TOTAL	35408.73		27065.09			
ANNUAL MEAN	97.0		74.2		65.4	
HIGHEST ANNUAL MEAN					131 1983	
LOWEST ANNUAL MEAN					16.6 1977	
HIGHEST DAILY MEAN	785	Mar 24	624	May 23	3760	Dec 23 1964
LOWEST DAILY MEAN	.28	Oct 21	.13	Sep 16	.00	Aug 1 1931
ANNUAL SEVEN-DAY MINIMUM	.30	Oct 17	.14	Sep 13	.00	Aug 1 1931
INSTANTANEOUS PEAK FLOW			965	May 23	6140	Dec 23 1964
INSTANTANEOUS PEAK STAGE			3.94	May 23	10.21	Dec 23 1964
ANNUAL RUNOFF (AC-FT)	70230		53680		47390	
10 PERCENT EXCEEDS	322		243		203	
50 PERCENT EXCEEDS	32		31		15	
90 PERCENT EXCEEDS	.53		.25		.17	

11315030 COLE CREEK BELOW DIVERSION DAM, NEAR SALT SPRINGS DAM, CA

LOCATION.—Lat 38°30'54", long 120°12'53", in NW 1/4 SE 1/4 sec.28, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 200 ft downstream from diversion dam, 1.1 mi north of Salt Springs Dam, and 6.7 mi southwest of Mokelumne Peak.

DRAINAGE AREA.—21.8 mi².

PERIOD OF RECORD.—December 1987 to current year (low-flow records only). Unpublished records for water years 1981–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and broad-crested weir. Elevation of gage is 5,830 ft above sea level, from topographic map. Prior to Dec. 3, 1987, nonrecording gage at same site and datum.

REMARKS.—No records computed above 3.9 ft³/s. Flow regulated by Cole Creek Diversion Dam. Water is diverted for power since December 1952 to a tunnel from Lower Bear River Reservoir to Salt Springs Powerplant No. 2 (station 11313510) on North Fork Mokelumne River. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	.78	3.1	---	---	---	---	---	---	3.3	1.5	e.30
2	3.3	.78	3.1	---	---	---	---	---	---	---	1.4	e.30
3	2.4	.78	3.1	---	---	---	---	---	---	3.2	1.3	e.30
4	1.7	.78	3.1	---	---	---	---	---	---	3.2	1.2	e.30
5	1.4	.78	3.1	---	---	---	---	---	---	3.2	1.1	e.30
6	1.1	.78	3.0	---	---	---	---	---	---	3.2	1.1	e.30
7	.93	.78	3.0	---	---	---	---	---	---	3.2	1.2	e.30
8	.80	.72	3.0	---	---	---	---	---	---	3.2	1.2	e.30
9	.71	.63	3.0	---	---	---	---	---	---	3.2	1.2	e.30
10	.67	.55	3.0	---	---	---	---	---	---	3.2	1.3	e.30
11	.63	.50	3.0	---	---	---	---	---	---	3.2	1.2	e.30
12	.56	.49	3.0	---	---	---	---	---	---	3.2	1.1	e.30
13	.52	.51	3.0	---	---	---	---	---	---	3.2	.99	e.30
14	.51	.86	---	---	---	---	---	---	---	3.2	.89	e.30
15	.52	1.4	---	---	---	---	---	---	---	3.2	.84	e.30
16	.52	2.4	---	---	---	---	---	---	---	3.2	.78	e.30
17	.47	2.9	---	---	---	---	---	---	---	3.2	.72	e.30
18	.45	2.3	---	---	---	---	---	---	---	3.0	.63	e.30
19	.41	1.6	---	---	---	---	---	---	---	3.1	.58	e.30
20	.37	1.6	---	---	---	---	---	---	---	3.1	.57	e.20
21	.35	2.4	---	---	---	---	---	---	---	3.1	.50	e.20
22	.34	2.9	---	---	---	---	---	---	---	3.1	.49	e.20
23	.34	2.9	---	---	---	---	---	---	---	3.1	.47	e.20
24	.54	3.0	---	---	---	---	---	---	---	3.1	.41	e.20
25	.83	3.0	---	---	---	---	---	---	---	3.0	.40	e.20
26	.81	3.0	---	---	---	---	---	---	3.3	2.6	.39	e.20
27	.81	3.0	---	---	---	---	---	---	3.3	2.4	.64	e.20
28	.81	3.1	---	---	---	---	---	---	3.3	2.1	.57	e.20
29	.81	3.1	---	---	---	---	---	---	3.3	1.9	.44	e.20
30	.80	3.1	---	---	---	---	---	---	3.3	1.7	.35	e.20
31	.78	---	---	---	---	---	---	---	---	1.6	.32	---
TOTAL	28.49	51.42	---	---	---	---	---	---	---	---	25.78	7.90
MEAN	.92	1.71	---	---	---	---	---	---	---	---	.83	.26
MAX	3.3	3.1	---	---	---	---	---	---	---	---	1.5	.30
MIN	.34	.49	---	---	---	---	---	---	---	---	.32	.20
AC-FT	57	102	---	---	---	---	---	---	---	---	51	16

e Estimated.

11315900 BEAR RIVER BELOW LOWER BEAR RIVER DAM, CA

LOCATION.—Lat 38°32'11", long 120°15'24", in NW 1/4 NW 1/4 sec.19, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 250 ft downstream from outlet valve on Lower Bear River Reservoir, 0.2 mi below Lower Bear River Reservoir Dam, 1.4 mi upstream from Rattlesnake Creek, and 3.5 mi northwest of Salt Springs Dam.

DRAINAGE AREA.—37.4 mi².

PERIOD OF RECORD.—December 1987 to current year (low-flow records only). Unpublished records for water years 1981–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 5,500 ft above sea level, from topographic map. Prior to Dec. 3, 1987, nonrecording gage at same site and datum.

REMARKS.—No records computed above 5.9 ft³/s. Flow regulated since 1900 by Bear River Reservoir, capacity, 6,760 acre-ft, and since December 1952 by Lower Bear River Reservoir 0.2 mi upstream, capacity, 49,100 acre-ft. Water diverted for power since December 1952 from Lower Bear River Reservoir through tunnel to Salt Springs Powerplant No. 2 (station 11313510) on North Fork Mokelumne River. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	4.6	3.2	2.3	4.7	4.4	4.6	5.7	---	---	4.7	4.9
2	4.8	4.0	2.9	2.3	4.7	4.5	4.6	5.9	---	---	4.7	4.9
3	4.8	2.7	3.5	2.3	4.8	4.5	4.6	---	---	---	4.7	4.9
4	4.9	2.3	2.9	2.3	4.8	4.5	4.6	---	---	---	4.7	5.0
5	4.8	2.3	2.7	3.6	4.8	4.4	4.5	---	---	---	4.7	4.9
6	4.9	2.5	2.7	4.7	4.8	4.5	4.5	---	---	---	4.7	4.9
7	4.8	3.0	2.6	4.6	4.8	4.4	4.5	---	---	---	4.7	4.9
8	4.8	2.6	2.6	4.6	4.8	4.4	4.6	---	---	---	4.7	4.9
9	4.8	2.5	2.5	4.7	4.7	4.4	4.6	---	---	---	4.8	4.9
10	4.8	2.5	2.5	4.6	4.8	4.4	4.5	---	---	---	4.9	4.9
11	4.7	2.6	2.5	4.6	4.7	4.4	4.6	---	---	---	4.9	4.9
12	4.7	2.4	2.5	4.6	4.7	4.4	---	---	---	---	4.8	4.9
13	---	2.4	2.6	4.6	4.7	4.4	---	---	---	---	4.9	4.9
14	---	2.4	2.6	4.5	4.8	4.4	---	---	---	---	4.9	4.7
15	4.8	2.4	2.6	4.6	4.7	4.4	---	---	---	---	4.8	4.6
16	4.8	2.5	2.7	4.6	4.7	4.3	---	---	---	---	4.8	4.5
17	4.7	2.6	2.6	4.6	4.6	4.3	---	---	---	---	5.0	4.5
18	4.7	2.5	2.5	4.6	4.7	4.3	---	---	---	---	5.2	4.5
19	4.7	2.5	2.5	4.6	4.7	4.3	---	---	---	5.8	4.7	4.5
20	4.7	2.5	2.4	4.6	4.7	4.3	---	---	---	5.7	4.5	4.5
21	4.7	2.5	2.4	4.6	4.7	4.3	---	---	---	5.5	4.5	4.5
22	4.6	2.7	2.4	4.6	4.8	4.3	---	---	---	5.4	4.5	4.6
23	4.6	3.1	2.4	4.6	4.8	4.3	---	---	---	5.2	4.5	4.6
24	4.7	2.9	2.4	4.6	4.7	4.3	---	---	---	5.1	4.5	4.7
25	4.6	2.5	2.4	4.6	4.6	4.2	---	---	---	5.0	4.4	4.7
26	4.6	2.5	2.4	4.6	4.5	4.2	---	---	---	4.8	4.5	4.7
27	4.6	2.5	2.4	4.6	4.5	4.3	---	---	---	4.7	4.5	---
28	4.6	2.6	2.4	4.6	4.5	4.3	5.8	---	---	4.7	4.5	---
29	4.6	3.5	2.3	4.7	---	4.3	5.8	---	---	4.7	4.5	---
30	4.6	4.1	2.3	4.7	---	4.5	5.7	---	---	4.7	---	4.9
31	4.5	---	2.4	4.7	---	4.6	---	---	---	4.7	---	---
TOTAL	---	82.7	79.8	132.8	131.8	135.5	---	---	---	---	---	---
MEAN	---	2.76	2.57	4.28	4.71	4.37	---	---	---	---	---	---
MAX	---	4.6	3.5	4.7	4.8	4.6	---	---	---	---	---	---
MIN	---	2.3	2.3	2.3	4.5	4.2	---	---	---	---	---	---
AC-FT	---	164	158	263	261	269	---	---	---	---	---	---

11316600 NORTH FORK MOKELUMNE RIVER ABOVE TIGER CREEK, NEAR WEST POINT, CA

LOCATION.—Lat 38°26'48", long 120°29'21", in SW 1/4 NE 1/4 sec.24, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 0.4 mi upstream from Tiger Creek and Tiger Creek Powerplant, 3.9 mi northeast of West Point, 18.3 mi downstream from Salt Springs Dam, and at mile 106.4.

DRAINAGE AREA.—333 mi².

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for water years 1970–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 2,337.50 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 18.3 mi upstream. Some water is diverted through Tiger Creek Powerplant Conduit (station 11314000). Additional water is diverted out of the Bear River and several smaller tributaries into Tiger Creek Powerplant Conduit. All the water enters the North Fork Mokelumne River at Tiger Creek Powerplant (station 11316610) 0.4 mi downstream. Water is occasionally diverted at the weir for cooling at the Tiger Creek Powerplant. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 38,500 ft³/s, Jan. 2, 1997, gage height, 12.49 ft; minimum daily, 29 ft³/s, Jul. 26, 1996.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	90	268	111	229	490	321	e688	2460	568	267	164
2	140	89	162	107	222	505	275	e1000	2690	603	280	79
3	141	79	175	106	219	694	289	e933	2250	502	285	79
4	168	75	174	104	220	545	282	e699	1540	498	288	79
5	187	76	134	104	213	492	302	709	1020	494	574	79
6	189	79	129	103	229	451	300	621	1270	488	305	77
7	189	99	116	103	926	419	286	650	1970	782	263	77
8	176	108	119	100	e1050	413	308	674	2050	312	315	77
9	181	86	118	99	e1190	397	309	659	1890	264	171	77
10	193	82	109	97	e879	367	295	639	1720	305	71	86
11	189	91	107	98	e728	351	307	e653	1920	256	171	77
12	189	86	107	98	654	341	317	e771	2470	231	70	77
13	197	82	110	92	593	332	379	e807	2660	224	65	76
14	244	79	120	87	476	305	459	753	3050	234	63	75
15	140	79	129	95	412	323	448	760	3120	245	62	74
16	88	79	138	161	560	316	505	773	2940	260	77	74
17	85	98	173	154	819	315	587	e1200	2620	263	81	74
18	85	93	165	315	672	323	640	e1250	2430	261	75	74
19	85	85	152	643	618	381	700	e1310	2310	245	74	76
20	84	82	141	700	586	392	748	e1620	1690	233	73	74
21	82	82	147	577	550	355	735	e2100	1010	228	74	74
22	82	97	264	371	509	322	677	e2410	1640	231	73	74
23	82	100	265	481	492	318	577	e2640	2470	237	72	377
24	91	165	234	378	480	322	558	e2490	1790	252	71	111
25	98	105	153	297	533	340	592	e2630	1040	258	72	63
26	88	93	122	267	479	324	731	e2740	837	259	72	65
27	86	89	112	261	461	360	728	e1840	826	263	75	65
28	85	94	109	262	460	340	770	1890	553	261	72	75
29	86	111	107	249	---	319	766	1700	515	306	70	88
30	88	272	109	238	---	298	590	1490	500	261	71	141
31	85	---	114	247	---	373	---	1880	---	261	401	---
TOTAL	4046	2925	4582	7105	15459	11823	14781	40979	55251	10085	4753	2758
MEAN	131	97.5	148	229	552	381	493	1322	1842	325	153	91.9
MAX	244	272	268	700	1190	694	770	2740	3120	782	574	377
MIN	82	75	107	87	213	298	275	621	500	224	62	63
AC-FT	8030	5800	9090	14090	30660	23450	29320	81280	109600	20000	9430	5470
a	31180	30750	31320	29340	28910	32850	28430	29150	27270	30850	28040	29500

e Estimated.

a Diversion, in acre-feet, to Tiger Creek Powerplant, provided by Pacific Gas & Electric Co.

11316600 NORTH FORK MOKELUMNE RIVER ABOVE TIGER CREEK, NEAR WEST POINT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

MEAN	108	82.3	140	376	396	506	554	1103	1164	360	123	114
MAX	323	301	948	3242	1702	1855	1602	2796	4265	2303	340	323
(WY)	1996	1997	1997	1997	1986	1986	1986	1996	1995	1995	1993	1995
MIN	39.4	44.2	46.9	49.8	51.4	76.8	87.3	70.0	49.8	37.0	36.2	34.2
(WY)	1989	1992	1994	1991	1991	1988	1988	1992	1987	1987	1987	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1986 - 1999	
ANNUAL TOTAL	289666		174547			
ANNUAL MEAN	794		478		418	
HIGHEST ANNUAL MEAN					1052	
LOWEST ANNUAL MEAN					59.9	
HIGHEST DAILY MEAN	4900	Jun 19	3120	Jun 15	25200	Jan 2 1997
LOWEST DAILY MEAN	75	Nov 4	62	Aug 15	29	Jul 26 1996
ANNUAL SEVEN-DAY MINIMUM	82	Oct 31	70	Aug 12	32	Aug 4 1987
INSTANTANEOUS PEAK FLOW			3430	Jun 15	38500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.62	Jun 15	12.49	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	574600		346200		303000	
ANNUAL DIVERSION (AC-FT) a	294200		357600			
10 PERCENT EXCEEDS	2130		1220		1190	
50 PERCENT EXCEEDS	347		261		86	
90 PERCENT EXCEEDS	93		77		44	

a Diversion, in acre-feet, to Tiger Creek Powerplant, provided by Pacific Gas & Electric Co.

11316700 NORTH FORK MOKELUMNE RIVER BELOW ELECTRA DIVERSION DAM, NEAR WEST POINT, CA

LOCATION.—Lat 38°25'15", long 120°32'56", in SW 1/4 NE 1/4 sec.33, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, on right bank 300 ft downstream from Electra Diversion Dam and 2.0 mi northwest of West Point.

DRAINAGE AREA.—365 mi².

PERIOD OF RECORD.—October 1985 to current year (low-flow records only). Unpublished records for water years 1982–84 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and sharp-crested weir since March 1987. Elevation of gage is 1,980 ft above sea level, from topographic map.

REMARKS.—No records computed above 30 ft³/s. Flow regulated since 1931 by numerous reservoirs and diversions upstream. Most of the water is diverted at Electra Diversion Dam to Electra Powerplant. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	18	---	13	14	---	---	---	---	---	17	17
2	18	16	13	13	16	---	---	---	---	---	17	17
3	18	13	14	13	16	---	---	---	---	---	17	17
4	18	13	13	13	15	---	---	---	---	---	17	17
5	18	13	13	13	15	---	---	---	---	---	17	17
6	18	13	13	13	15	---	---	---	---	---	17	17
7	18	12	13	13	---	---	---	---	---	---	17	17
8	18	12	13	13	---	---	---	---	---	---	17	17
9	18	12	13	13	---	---	---	---	---	26	17	17
10	18	12	13	13	---	---	18	---	---	---	17	17
11	18	12	13	13	---	---	17	---	---	28	17	17
12	18	12	13	13	---	---	17	---	---	25	17	17
13	18	12	13	13	---	---	24	---	---	17	17	17
14	18	12	13	14	---	---	---	---	---	---	17	17
15	18	12	13	14	---	---	---	---	---	18	17	17
16	18	12	13	14	---	---	---	---	---	18	17	17
17	18	12	13	14	---	---	---	---	---	22	17	17
18	19	12	13	30	---	---	---	---	---	21	17	17
19	19	12	13	---	---	---	---	---	---	17	17	17
20	19	12	13	---	---	---	---	---	---	17	17	17
21	18	12	13	---	---	---	---	---	---	18	17	17
22	18	12	13	---	---	---	---	---	---	18	17	17
23	18	12	13	---	---	---	---	---	---	18	17	17
24	18	12	13	---	---	---	---	---	---	18	17	17
25	18	12	13	21	---	---	---	---	---	18	17	17
26	18	12	13	20	---	---	---	---	---	18	17	17
27	18	13	13	15	---	---	---	---	---	17	16	17
28	18	14	13	27	---	---	---	---	---	17	17	17
29	18	14	13	---	---	---	---	---	---	18	18	17
30	18	14	13	18	---	---	---	---	---	17	17	17
31	18	---	13	14	---	---	---	---	---	17	17	---
TOTAL	561	381	---	---	---	---	---	---	---	---	527	510
MEAN	18.1	12.7	---	---	---	---	---	---	---	---	17.0	17.0
MAX	19	18	---	---	---	---	---	---	---	---	18	17
MIN	18	12	---	---	---	---	---	---	---	---	16	17
AC-FT	1110	756	---	---	---	---	---	---	---	---	1050	1010

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 sea level, from topographic map.

REMARKS.—No regulation. Minor diversions upstream from station for irrigation and domestic use. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by East Bay Municipal Utility District, under general supervision of the U.S. Geological Survey.

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, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0535	242	4.79	Feb. 25	0555	143	4.43
Feb. 9	0945	566	5.58	Mar. 3	1300	132	4.38
Feb. 17	0430	268	4.87				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	7.9	34	10	33	78	47	52	22	11	7.1	4.6
2	7.4	7.4	18	9.7	32	75	45	55	24	11	6.5	5.0
3	7.3	7.6	24	9.6	31	109	45	71	24	11	6.7	5.3
4	6.9	7.4	21	9.6	30	102	44	62	23	12	6.4	5.3
5	6.5	7.2	16	9.5	29	88	45	57	22	11	6.2	5.0
6	6.0	8.0	15	9.3	30	81	45	55	22	11	6.8	4.7
7	5.9	12	13	9.1	205	76	44	53	20	10	7.3	4.4
8	5.8	12	14	8.8	208	72	48	51	19	10	7.0	3.9
9	5.7	9.0	13	8.3	361	74	47	48	19	9.5	6.5	3.8
10	5.8	8.9	12	8.2	188	68	46	46	19	9.2	6.8	3.6
11	5.9	11	11	8.2	133	65	52	44	18	9.0	6.5	3.8
12	5.8	9.2	11	8.2	109	62	56	43	18	8.9	6.4	3.6
13	6.1	8.9	12	8.2	93	60	60	43	18	8.6	6.4	3.8
14	5.8	8.6	13	8.1	85	59	66	40	18	8.1	6.6	3.8
15	5.6	8.5	12	9.5	77	58	69	39	18	8.3	6.6	3.5
16	6.0	8.4	13	22	86	56	75	38	17	8.6	6.5	3.5
17	6.7	13	13	20	191	55	81	36	17	8.8	5.8	3.6
18	7.1	11	13	55	138	54	85	36	16	9.1	5.4	4.1
19	6.9	10	13	126	123	53	86	34	15	9.0	5.4	4.3
20	6.8	9.6	14	181	107	57	85	33	15	8.6	5.7	4.1
21	6.6	9.2	18	102	107	56	82	32	14	7.8	5.9	3.9
22	6.3	13	16	64	96	54	77	31	13	7.5	6.0	4.2
23	6.3	13	16	93	92	55	71	30	13	7.5	5.5	4.2
24	8.0	22	15	69	87	52	67	29	13	7.7	5.2	4.2
25	8.5	14	13	55	114	51	65	29	12	8.2	5.2	4.3
26	7.4	13	11	48	93	51	63	28	12	8.2	5.3	4.1
27	6.9	12	10	43	84	50	62	27	12	7.8	6.0	3.7
28	6.9	13	10	39	80	48	60	25	12	7.1	5.8	3.2
29	7.1	15	10	35	---	47	57	25	12	6.8	5.5	3.3
30	7.2	44	11	33	---	47	54	25	12	6.9	5.3	3.0
31	6.6	---	11	35	---	50	---	24	---	7.0	4.9	---
TOTAL	205.4	353.8	446	1154.3	3042	1963	1829	1241	509	275.2	189.2	121.8
MEAN	6.63	11.8	14.4	37.2	109	63.3	61.0	40.0	17.0	8.88	6.10	4.06
MAX	8.5	44	34	181	361	109	86	71	24	12	7.3	5.3
MIN	5.6	7.2	10	8.1	29	47	44	24	12	6.8	4.9	3.0
AC-FT	407	702	885	2290	6030	3890	3630	2460	1010	546	375	242

11316800 FOREST CREEK NEAR WILSEYVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.09	9.17	20.4	40.8	47.3	53.4	50.5	35.9	14.3	6.38	3.86	3.26
MAX	11.9	59.5	138	244	243	209	174	129	54.8	18.5	10.5	8.36
(WY)	1983	1984	1965	1997	1986	1983	1982	1995	1998	1998	1983	1983
MIN	.63	1.80	2.17	2.40	2.35	4.58	2.96	3.92	1.59	.46	.33	.50
(WY)	1978	1993	1977	1991	1991	1977	1977	1977	1977	1977	1977	1992

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	16940.3		11329.7			
ANNUAL MEAN	46.4		31.0		24.0	
HIGHEST ANNUAL MEAN					67.9	
LOWEST ANNUAL MEAN					2.39	
HIGHEST DAILY MEAN	441	Mar 25	361	Feb 9	1550	Jan 2 1997
LOWEST DAILY MEAN	5.6	Oct 15	3.0	Sep 30	.11	Aug 14 1977
ANNUAL SEVEN-DAY MINIMUM	5.8	Oct 9	3.7	Sep 10	.15	Aug 11 1977
INSTANTANEOUS PEAK FLOW			566	Feb 9	2020	Feb 19 1986
INSTANTANEOUS PEAK STAGE			5.58	Feb 9	8.12	Feb 19 1986
ANNUAL RUNOFF (AC-FT)	33600		22470		17380	
10 PERCENT EXCEEDS	103		77		62	
50 PERCENT EXCEEDS	22		13		8.0	
90 PERCENT EXCEEDS	7.2		5.4		2.1	

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 sea level, from topographic map. Prior to Oct. 6, 1926, nonrecording gage at site 1,200 ft upstream at different datum. Oct. 6, 1926, to Aug. 18, 1928, nonrecording gage at present site and datum.

REMARKS.—Flow slightly regulated by Schaads Reservoir, capacity, 1,740 acre-ft, 6 mi upstream from station, since January 1940. Maximum output of Schaads Powerplant is 35 ft³/s and is operational only when reservoir level is within 4 ft of spill gates. Several small diversions upstream from station. At times water is diverted 4 mi upstream from station to Licking Fork Mokelumne River via Middle Fork Ditch, capacity, 10 ft³/s; because of leakage, only 5 ft³/s may reach Licking Fork Mokelumne River. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by East Bay Municipal Utility District, under general supervision of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,040 ft³/s, Jan. 2, 1997, gage height, 9.28 ft, from rating curve extended above 4,010 ft³/s; no flow for many days in 1931 and Sept. 9, 1934.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 400 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0640	770	4.78	Feb. 17	0510	708	4.49
Feb. 9	1030	2,060	6.63				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	21	133	11	108	228	137	156	82	63	14	13
2	26	20	68	15	99	221	134	155	87	38	15	13
3	26	19	73	33	87	292	133	212	87	11	15	13
4	26	19	72	42	93	289	130	186	80	13	15	14
5	37	20	59	49	90	253	138	167	77	15	15	15
6	61	22	39	48	94	230	144	158	73	16	15	14
7	62	30	31	48	707	215	138	157	70	14	17	14
8	62	30	53	40	736	204	159	151	68	15	16	13
9	51	24	52	22	1280	217	156	142	65	14	16	14
10	20	22	60	22	626	196	153	133	64	14	17	16
11	20	26	58	22	414	189	170	125	63	15	19	14
12	20	24	57	22	335	181	174	124	62	30	16	14
13	21	27	56	22	290	176	188	121	60	52	30	13
14	23	30	42	22	264	173	204	111	60	50	48	14
15	23	31	16	36	240	170	211	105	60	50	48	13
16	23	37	16	73	247	166	222	101	57	38	47	12
17	23	47	15	59	535	163	240	98	60	17	31	12
18	22	46	14	172	387	157	242	98	59	17	13	13
19	22	44	14	398	362	155	239	96	59	18	13	14
20	22	44	14	590	307	162	240	94	59	17	13	14
21	21	44	11	332	331	161	231	92	60	16	14	13
22	21	50	13	204	287	154	215	93	59	15	14	13
23	21	35	12	294	275	155	208	95	58	15	14	14
24	23	24	25	228	257	151	194	96	59	16	13	13
25	24	18	44	172	326	147	189	95	59	16	13	14
26	38	17	42	151	282	151	188	94	59	32	12	15
27	67	17	40	132	253	147	182	91	60	56	15	14
28	66	17	28	116	235	141	179	89	61	56	15	12
29	47	18	12	105	---	137	169	89	63	42	15	12
30	19	60	11	99	---	135	159	85	65	16	15	12
31	19	---	12	114	---	147	---	82	---	16	14	---
TOTAL	983	883	1192	3693	9547	5663	5466	3691	1955	813	587	404
MEAN	31.7	29.4	38.5	119	341	183	182	119	65.2	26.2	18.9	13.5
MAX	67	60	133	590	1280	292	242	212	87	63	48	16
MIN	19	17	11	11	87	135	130	82	57	11	12	12
AC-FT	1950	1750	2360	7330	18940	11230	10840	7320	3880	1610	1160	801

11317000 MIDDLE FORK MOKELUMNE RIVER AT WEST POINT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.2	22.5	50.2	93.4	126	141	149	109	44.3	16.8	9.40	7.75
MAX	37.5	223	389	680	768	653	561	372	181	71.8	40.8	31.1
(WY)	1983	1951	1956	1997	1986	1983	1982	1983	1983	1998	1969	1969
MIN	.86	2.64	3.33	4.75	5.70	9.06	6.47	4.17	.95	.22	.071	.15
(WY)	1932	1930	1977	1977	1991	1977	1977	1931	1924	1924	1931	1931

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1912 - 1999	
ANNUAL TOTAL	48998		34877			
ANNUAL MEAN	134		95.6		64.7	
HIGHEST ANNUAL MEAN					218 1983	
LOWEST ANNUAL MEAN					5.25 1977	
HIGHEST DAILY MEAN	1240	Mar 25	1280	Feb 9	3740	Jan 2 1997
LOWEST DAILY MEAN	11	Dec 21	11	Dec 21	.00	Aug 23 1931
ANNUAL SEVEN-DAY MINIMUM	13	Dec 17	13	Sep 12	.00	Aug 23 1931
INSTANTANEOUS PEAK FLOW			2060	Feb 9	5040	Jan 2 1997
INSTANTANEOUS PEAK STAGE			6.63	Feb 9	9.28	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	97190		69180		46890	
10 PERCENT EXCEEDS	280		228		169	
50 PERCENT EXCEEDS	76		56		21	
90 PERCENT EXCEEDS	19		14		4.0	

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 sea level, from topographic map. October 1933 to Sept. 19, 1957, at site 1,100 ft downstream at different datum.

REMARKS.—The Middle Fork Ditch can divert 10 ft³/s from the Middle Fork Mokelumne River which, due to leakage, delivers about 5 ft³/s to the Licking Fork Mokelumne River. There are two pumps with a combined capacity of 8.9 ft³/s that can pump water to Jeff Davis Reservoir upstream from the station. There are other small diversions upstream from the station for irrigation and domestic use. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by East Bay Municipal Utility District, under general supervision of the U.S Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,610 ft³/s, Jan. 2, 1997, gage height, 12.72 ft, from rating curve extended above 2,700 ft³/s on basis of slope-area measurement of peak flow; no flow many days during August and September 1934.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 500 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0545	1,260	6.40	Feb. 17	0645	774	5.48
Feb. 9	1130	2,960	8.59				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	27	130	32	143	262	161	169	67	36	20	13
2	25	26	61	31	124	251	155	170	78	37	20	14
3	24	26	70	30	113	347	153	209	77	38	20	12
4	23	26	73	30	110	343	146	186	72	38	20	12
5	22	26	50	29	104	294	162	172	69	38	19	8.8
6	20	26	47	28	110	273	176	166	66	37	22	8.0
7	20	35	40	28	871	252	164	161	63	36	25	10
8	20	40	41	28	935	238	203	154	61	36	23	9.6
9	21	29	40	27	1810	263	204	147	60	35	21	12
10	20	27	38	27	883	232	197	135	59	35	18	13
11	20	32	37	27	571	220	221	127	58	35	19	9.8
12	19	29	36	27	433	208	213	125	56	33	18	8.4
13	19	27	36	27	352	204	224	119	54	29	17	9.9
14	19	27	41	27	305	201	244	115	53	28	17	9.4
15	19	26	39	29	265	195	264	110	52	27	17	9.3
16	20	26	38	62	260	191	282	107	51	27	17	9.0
17	19	34	38	49	603	188	300	102	50	27	16	9.5
18	19	32	38	166	466	185	301	99	49	26	15	8.8
19	20	28	36	589	446	182	292	96	47	27	14	9.2
20	20	27	38	916	381	191	283	93	46	26	14	9.5
21	19	27	32	484	440	186	269	91	44	26	14	11
22	18	33	34	275	375	178	253	87	44	26	13	14
23	19	34	36	434	341	181	233	84	43	25	13	14
24	22	60	36	327	307	178	218	83	42	24	12	14
25	28	37	35	235	380	175	208	82	41	23	12	14
26	26	32	32	199	332	173	205	78	41	23	13	11
27	26	30	32	167	296	172	197	75	40	22	16	12
28	25	32	32	144	275	168	193	71	40	22	14	13
29	26	35	32	129	---	162	186	69	38	22	13	12
30	26	102	32	119	---	158	174	68	37	21	13	12
31	26	---	32	161	---	177	---	66	---	20	13	---
TOTAL	674	998	1332	4883	12031	6628	6481	3616	1598	905	518	332.2
MEAN	21.7	33.3	43.0	158	430	214	216	117	53.3	29.2	16.7	11.1
MAX	28	102	130	916	1810	347	301	209	78	38	25	14
MIN	18	26	32	27	104	158	146	66	37	20	12	8.0
AC-FT	1340	1980	2640	9690	23860	13150	12860	7170	3170	1800	1030	659

11318500 SOUTH FORK MOKELUMNE RIVER NEAR WEST POINT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	13.7	30.9	74.2	137	179	191	185	123	47.6	21.9	12.6	10.2
MAX	41.6	270	465	907	959	825	704	461	163	62.9	36.1	31.6
(WY)	1983	1951	1956	1997	1986	1983	1982	1995	1983	1983	1952	1983
MIN	1.65	3.21	2.83	1.85	2.53	11.3	7.48	10.9	4.49	1.00	.039	.13
(WY)	1989	1991	1991	1991	1991	1977	1977	1977	1992	1934	1934	1934

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1934 - 1999	
ANNUAL TOTAL	60682		39996.2			
ANNUAL MEAN	166		110		84.9	
HIGHEST ANNUAL MEAN					264	
LOWEST ANNUAL MEAN					6.14	
HIGHEST DAILY MEAN	1590	Feb 3	1810	Feb 9	5780	Feb 17 1986
LOWEST DAILY MEAN	18	Oct 22	8.0	Sep 6	.00	Aug 6 1934
ANNUAL SEVEN-DAY MINIMUM	19	Sep 16	9.2	Sep 12	.00	Aug 12 1934
INSTANTANEOUS PEAK FLOW			2960	Feb 9	7610	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.59	Feb 9	12.72	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	120400		79330		61520	
10 PERCENT EXCEEDS	387		267		219	
50 PERCENT EXCEEDS	72		38		27	
90 PERCENT EXCEEDS	22		14		6.0	

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 sea level (levels by California Division of Highways). Jan. 1 to June 30, 1901, and May 11, 1903, to Dec. 31, 1904, nonrecording gage at site 3 mi upstream at different datum. Nov. 10, 1927, to Aug. 26, 1952, water-stage recorder at site 40 ft upstream at datum 5.00 ft higher. Aug. 27, 1952, to Oct. 14, 1977, at present site at datum 5.00 ft higher.

REMARKS.—Flow regulated by Salt Springs Reservoir (station 11313500) beginning in 1931, several smaller reservoirs, and four powerplants. Diversion upstream from station for irrigation and domestic use. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by East Bay Municipal Utility District, under general supervision of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 41,300 ft³/s, Jan. 2, 1997, gage height, 25.60 ft, present datum; minimum observed, 5 ft³/s, Aug. 13–15, 17, 18, 1904.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	814	638	1140	730	997	1680	1190	1530	3230	1150	880	630
2	702	667	947	825	969	1730	1150	1720	3560	1260	872	617
3	764	626	989	707	1020	1900	1190	1940	3270	1060	850	660
4	729	636	933	818	1010	1870	1170	1670	2420	1140	833	622
5	683	698	895	763	954	1870	1130	1630	1980	1150	858	629
6	818	647	765	804	981	1740	1160	1530	2030	1050	853	609
7	660	637	697	696	3280	1650	1120	1510	2690	993	876	671
8	849	659	734	721	4000	1600	1200	1520	2920	1050	874	655
9	723	648	746	762	6980	1480	995	1620	2690	822	847	357
10	733	624	794	621	3620	1590	1030	1550	2560	997	671	753
11	716	712	820	724	2440	1460	1030	1320	2570	904	524	692
12	725	624	863	615	2320	1420	1060	1620	3160	957	507	619
13	692	741	706	614	1990	1430	1200	1620	3510	891	712	612
14	423	656	802	528	1720	1430	1420	1530	3760	825	627	630
15	612	648	717	623	1640	1300	1620	1660	3810	984	636	580
16	597	712	858	751	1540	1320	1730	1460	3700	824	589	590
17	809	696	673	926	2900	1350	1620	1470	3290	907	619	534
18	570	764	833	1060	2290	1320	1920	1700	3030	903	453	587
19	576	662	749	2220	2300	1310	1840	1670	3070	888	579	531
20	730	798	776	3620	2080	1470	2000	1830	2420	862	581	614
21	407	646	646	2420	2210	1430	1870	2220	1470	880	368	570
22	497	731	751	1640	1620	1350	1770	2540	2100	883	579	596
23	641	761	667	1850	1910	1300	1700	2880	3200	849	512	532
24	716	700	730	1800	1810	1340	1670	3060	2650	860	516	614
25	611	790	740	1080	2050	1280	1490	2820	1740	877	593	625
26	756	644	758	1090	1940	1280	1720	2980	1430	888	549	607
27	613	777	865	1120	1790	1320	1660	2810	1570	888	517	602
28	803	777	723	1030	1700	1350	1810	2530	1210	898	654	620
29	680	716	754	1170	---	1330	1520	2730	1150	884	535	586
30	653	692	672	1080	---	1240	1470	2240	1150	892	555	654
31	636	---	733	1060	---	1230	---	2680	---	881	468	---
TOTAL	20938	20727	24476	34468	60061	45370	43455	61590	77340	29297	20087	18198
MEAN	675	691	790	1112	2145	1464	1448	1987	2578	945	648	607
MAX	849	798	1140	3620	6980	1900	2000	3060	3810	1260	880	753
MIN	407	624	646	528	954	1230	995	1320	1150	822	368	357
AC-FT	41530	41110	48550	68370	119100	89990	86190	122200	153400	58110	39840	36100

11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	513	584	772	935	1059	1180	1383	1920	1830	749	555	528
MAX	898	3275	4375	5659	4788	3950	4114	5092	6243	3384	1117	949
(WY)	1984	1951	1951	1997	1986	1983	1982	1952	1983	1983	1983	1983
MIN	8.97	25.3	70.1	65.5	100	115	221	273	262	106	77.5	67.7
(WY)	1978	1930	1931	1991	1977	1977	1977	1987	1977	1928	1930	1930

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1928 - 1999
ANNUAL TOTAL	628940	456007	
ANNUAL MEAN	1723	1249	999
HIGHEST ANNUAL MEAN			2511
LOWEST ANNUAL MEAN			208
HIGHEST DAILY MEAN	7040	Mar 25	6980
LOWEST DAILY MEAN	210	Jan 2	357
ANNUAL SEVEN-DAY MINIMUM	263	Jan 1	513
INSTANTANEOUS PEAK FLOW			11300
INSTANTANEOUS PEAK STAGE			15.96
ANNUAL RUNOFF (AC-FT)	1248000	904500	724100
10 PERCENT EXCEEDS	3510	2420	2200
50 PERCENT EXCEEDS	1030	903	621
90 PERCENT EXCEEDS	648	610	243

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 1906–07, 1965–66. Published as "at Clements" in 1906–07.

WATER TEMPERATURE: Water years 1962–68, 1970–76.

SEDIMENT DATA: Water years 1956–70. Prior to 1962 water year, published as "near Clements."

REVISED RECORDS.—WSP 751: Drainage area. WSP 881: 1905–09 (yearly summaries only). WSP 1445: 1911, 1917(M), 1925(M). WDR CA-94-3: 1993(M).

GAGE.—Water-stage recorder. Datum of gage is 82.71 ft above sea level. See WSP 1930 for history of changes prior to Oct. 1, 1961.

REMARKS.—Flow regulated by Camanche Reservoir (station 11322300) 1 mi upstream beginning December 1963, Salt Springs Reservoir (station 11313500) beginning March 1931, Pardee Reservoir (station 11320000) beginning March 1929, and several small reservoirs. East Bay Municipal Utility District aqueducts, maximum capacity 511 ft³/s with Pardee Reservoir full, are the largest of several diversions upstream from the station. See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by East Bay Municipal Utility District, under general supervision of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 28,800 ft³/s, Nov. 21, 1950, gage height, 24.40 ft, site and datum then in use; no flow on several days in 1924. Maximum discharge since construction of Camanche Dam in 1963, 6,060 ft³/s, Feb. 19, 1986, gage height, 11.21 ft; minimum daily, 23 ft³/s, Oct. 6, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	319	322	325	614	607	3050	1220	1230	1240	885	821	327
2	320	324	320	612	653	3050	1220	1230	1240	799	821	327
3	319	325	324	611	765	3050	1220	1240	1240	797	821	326
4	319	326	435	611	818	3050	1210	1240	1240	793	758	326
5	322	327	493	613	815	2950	1220	1240	1240	801	650	326
6	319	327	487	616	813	2780	1210	1230	1240	800	601	326
7	319	331	494	606	896	2590	1210	1230	1240	813	605	325
8	320	331	568	605	1400	2390	1210	1230	1240	813	605	325
9	319	331	611	607	2570	2180	1210	1230	1240	802	603	325
10	319	329	608	610	3070	1970	1220	1230	1240	806	596	325
11	320	329	612	608	3060	1760	1220	1230	1110	814	594	327
12	321	326	617	605	3060	1540	1220	1240	1010	821	600	330
13	321	326	619	581	3060	1330	1220	1240	1010	816	613	328
14	321	325	615	535	3060	1230	1220	1240	1010	815	611	330
15	319	328	618	515	3050	1230	1230	1240	1010	816	611	333
16	315	328	629	512	3060	1230	1230	1240	1010	815	607	332
17	322	331	633	509	3070	1230	1220	1240	1010	816	611	332
18	322	334	613	512	3060	1230	1220	1240	1020	815	607	331
19	321	329	614	515	3060	1230	1230	1240	1020	816	608	331
20	318	325	614	517	3060	1230	1220	1240	1010	817	612	331
21	318	326	613	512	3100	1230	1230	1240	966	819	612	332
22	319	329	614	507	3060	1220	1220	1240	959	820	611	332
23	321	325	607	516	3050	1220	1220	1250	959	821	610	332
24	320	326	612	515	3050	1220	1220	1240	957	821	611	332
25	318	328	612	508	3050	1220	1230	1240	956	821	609	331
26	325	331	611	556	3050	1220	1220	1250	955	821	608	331
27	325	329	613	599	3050	1220	1230	1250	958	821	608	332
28	325	327	612	598	3060	1220	1230	1240	959	821	605	331
29	319	328	608	593	---	1220	1230	1240	971	821	549	331
30	320	329	609	596	---	1220	1240	1240	971	822	451	331
31	323	---	610	627	---	1220	---	1240	---	822	361	---
TOTAL	9928	9832	17570	17641	67477	53730	36650	38390	32231	25300	19190	9878
MEAN	320	328	567	569	2410	1733	1222	1238	1074	816	619	329
MAX	325	334	633	627	3100	3050	1240	1250	1240	885	821	333
MIN	315	322	320	507	607	1220	1210	1230	955	793	361	325
AC-FT	19690	19500	34850	34990	133800	106600	72700	76150	63930	50180	38060	19590

11323500 MOKELUMNE RIVER BELOW CAMANCHE DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1963, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	450	543	710	745	883	913	1193	1608	1458	557	478	467
MAX	670	3188	4568	3529	2473	3155	3451	4217	3164	1194	691	678
(WY)	1939	1951	1951	1956	1938	1938	1938	1952	1952	1952	1962	1958
MIN	58.0	63.1	95.6	112	77.6	132	136	179	241	296	267	108
(WY)	1932	1932	1960	1962	1948	1931	1961	1961	1931	1961	1961	1931

SUMMARY STATISTICS

WATER YEARS 1931 - 1963

ANNUAL MEAN	832
HIGHEST ANNUAL MEAN	1669
LOWEST ANNUAL MEAN	221
HIGHEST DAILY MEAN	26900
LOWEST DAILY MEAN	35
ANNUAL SEVEN-DAY MINIMUM	49
INSTANTANEOUS PEAK FLOW	28800
INSTANTANEOUS PEAK STAGE	24.40
ANNUAL RUNOFF (AC-FT)	603000
10 PERCENT EXCEEDS	1890
50 PERCENT EXCEEDS	551
90 PERCENT EXCEEDS	213

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	564	486	521	858	1046	1078	988	1077	1044	841	670	551
MAX	2061	2157	2938	4978	4315	5117	3726	3889	3847	2932	1770	1447
(WY)	1966	1984	1984	1997	1997	1986	1983	1982	1995	1998	1998	1995
MIN	33.3	83.6	78.7	83.6	60.8	77.9	125	170	254	249	235	123
(WY)	1978	1989	1967	1967	1967	1989	1991	1988	1977	1991	1991	1992

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1965 - 1999

ANNUAL TOTAL	555296	337817	
ANNUAL MEAN	1521	926	809
HIGHEST ANNUAL MEAN			2400
LOWEST ANNUAL MEAN			172
HIGHEST DAILY MEAN	3670	Feb 14	3100
LOWEST DAILY MEAN	310	Sep 3	315
ANNUAL SEVEN-DAY MINIMUM	315	Sep 2	319
INSTANTANEOUS PEAK FLOW			3150
INSTANTANEOUS PEAK STAGE			7.58
ANNUAL RUNOFF (AC-FT)	1101000	670100	586200
10 PERCENT EXCEEDS	3140	1250	2040
50 PERCENT EXCEEDS	1620	758	475
90 PERCENT EXCEEDS	320	325	109

11325000 WOODBRIDGE CANAL AT WOODBRIDGE, CA

LOCATION.—Lat 38°09'07", long 121°18'00", in NE 1/4 SE 1/4 sec.34, T.4 N., R.6 E., San Joaquin County, Hydrologic Unit 18040005, on right bank at Woodbridge, at point of diversion from Woodbridge Reservoir.

PERIOD OF RECORD.—April 1926 to current year.

GAGE.—Water-stage recorder. Datum of gage is 32.18 ft above sea level (levels by East Bay Municipal Utility District). Prior to Mar. 15, 1931, water-stage recorder at site 0.2 mi downstream at different datum.

REMARKS.—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.

COOPERATION.—Records were collected by Woodbridge Irrigation District, under general supervision of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 482 ft³/s, July 8, 1953; no flow at times in each year. Lowest daily mean, -64 ft³/s, May 4, 1938 (the water level in Woodbridge Reservoir was drawn down and water from the canal drained back into the reservoir. In order that the figures may represent the net diverted flow, the reverse flow was indicated by negative figures).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	131	.00	.00	.00	.00	.00	125	185	186	230	159
2	134	50	.00	.00	.00	.00	.00	123	192	195	231	155
3	133	.00	.00	.00	.00	.00	.00	121	195	199	232	150
4	131	.00	.00	.00	.00	.00	.00	123	192	200	234	141
5	132	.00	.00	.00	.00	.00	.00	122	193	198	245	137
6	135	.00	.00	.00	.00	.00	.00	123	190	203	242	131
7	133	.00	.00	.00	.00	.00	.00	128	185	213	240	112
8	133	.00	.00	.00	.00	.00	.13	130	182	232	240	125
9	129	.00	.00	.00	.00	.00	.13	129	182	243	237	138
10	131	.00	.00	.00	.00	.00	.00	134	177	245	230	137
11	128	.00	.00	.00	.00	.00	.00	138	176	240	226	140
12	130	.00	.00	.00	.00	.00	20	149	178	238	224	140
13	132	.00	.00	.00	.00	.00	32	178	178	239	222	142
14	132	.00	.00	.00	.00	.00	39	174	183	239	217	144
15	130	.00	.00	.00	.00	.00	47	177	199	239	216	144
16	122	.00	.00	.00	.00	.00	48	179	208	241	207	143
17	112	.00	.00	.00	.00	.00	48	178	206	239	207	139
18	111	.00	.00	.00	.00	.00	55	183	210	234	205	139
19	108	.00	.00	.00	.00	.00	67	186	209	230	207	136
20	110	.00	.00	.00	.00	.00	75	185	205	229	206	140
21	116	.00	.00	.00	.00	.00	89	181	203	227	204	137
22	130	.00	.00	.00	.00	.00	100	177	206	226	199	130
23	150	.00	.00	.00	.00	.00	120	175	205	229	192	131
24	149	.00	.00	.00	.00	.00	131	174	207	228	188	130
25	120	.00	.00	.00	.00	.00	131	172	206	229	187	129
26	152	.00	.00	.00	.00	.00	131	175	203	229	185	128
27	115	.00	.00	.00	.00	.00	134	176	200	228	182	128
28	153	.00	.00	.00	.00	.00	136	177	196	230	181	129
29	121	.00	.00	.00	---	.00	126	178	192	232	175	130
30	146	.00	.00	.00	---	.00	120	176	184	232	165	129
31	149	---	.00	.00	---	.00	---	178	---	231	165	---
TOTAL	4043	181.00	0.00	0.00	0.00	0.00	1649.26	4924	5827	7003	6521	4093
MEAN	130	6.03	.000	.000	.000	.000	55.0	159	194	226	210	136
MAX	153	131	.00	.00	.00	.00	136	186	210	245	245	159
MIN	108	.00	.00	.00	.00	.00	.00	121	176	186	165	112
AC-FT	8020	359	.00	.00	.00	.00	3270	9770	11560	13890	12930	8120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 1999, BY WATER YEAR (WY)

	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	107	24.3	4.59	.23	.19	22.3	112	207	258	271	253	180																																																														
MAX	218	137	83.5	5.95	5.55	158	295	376	401	412	378	294																																																														
(WY)	1955	1959	1959	1931	1931	1953	1953	1950	1950	1953	1953	1948																																																														
MIN	.000	-.14	.000	.000	.000	.000	.000	64.6	95.9	63.0	66.8	5.37																																																														
(WY)	1978	1939	1927	1927	1927	1927	1927	1998	1926	1926	1926	1992																																																														

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1926 - 1999	
ANNUAL TOTAL	28952.30		34241.26			
ANNUAL MEAN	79.3		93.8		121	
HIGHEST ANNUAL MEAN					206	
LOWEST ANNUAL MEAN					49.2	
HIGHEST DAILY MEAN	252	Aug 13	245	Jul 10	482	Jul 8 1953
LOWEST DAILY MEAN	.00	Jan 1	.00	Nov 3	-64	May 4 1938
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Nov 3	-6.3	Oct 31 1938
ANNUAL RUNOFF (AC-FT)	57430		67920		87830	
10 PERCENT EXCEEDS	232		223		310	
50 PERCENT EXCEEDS	33		121		98	
90 PERCENT EXCEEDS	.00		.00		.00	

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA

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.

PERIOD OF RECORD.—Water years 1924–94 (low-flow records only 1924–25). October 1996 to current year.

CHEMICAL DATA: Water years 1951–94.

SPECIFIC CONDUCTANCE: Water years 1952–58, 1975–77.

WATER TEMPERATURE: Water years 1951–58, 1961–86.

SEDIMENT: Water years 1975–94.

REVISED RECORDS.—WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 14.9 ft above sea level (levels by East Bay Municipal Utility District). See WSP 2130 for history of changes prior to July 26, 1968.

REMARKS.—Concerning regulation and diversions see REMARKS for Mokelumne River below Camanche Dam (station 11323500). Between Woodbridge and Camanche Dam there are many additional diversions for irrigation, including Woodbridge Canal (station 11325000). See schematic diagram of Mokelumne River Basin.

COOPERATION.—Records were collected by East Bay Municipal Utility District, under general supervision of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 27,000 ft³/s, Nov. 22, 1950, gage height 29.58 ft, from rating curve extended above 6,200 ft³/s on basis of contracted-opening measurement of peak flow; minimum daily, 0.23 ft³/s, Nov. 15, 1977. Maximum discharge since construction of Camanche Dam in 1963, 5,340 ft³/s, Mar. 8, 1986, gage height, 23.19 ft; maximum gage height, 23.31 ft, Jan. 9, 1997.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	169	307	550	576	2830	1040	985	917	644	469	94
2	149	655	288	551	559	2830	1110	985	916	523	470	100
3	156	428	298	549	624	2830	1110	1000	909	503	467	98
4	124	306	297	548	712	2830	1120	994	922	494	443	98
5	126	298	424	549	732	2830	1140	991	913	505	365	96
6	134	292	455	551	749	2720	1130	988	922	504	306	101
7	132	306	457	550	834	2540	1120	976	931	481	285	115
8	133	306	463	545	860	2360	1130	965	934	460	284	105
9	134	298	528	544	1670	2180	1120	967	933	455	288	101
10	134	293	540	547	2490	2000	1120	953	928	452	293	103
11	136	297	542	550	2770	1820	1120	962	915	456	292	100
12	139	291	544	549	2810	1630	1110	947	759	473	285	99
13	140	291	548	549	2830	1450	1100	923	709	460	301	99
14	142	287	549	511	2830	1280	1080	904	694	458	297	98
15	139	286	549	479	2820	1230	1070	907	688	461	293	97
16	147	287	550	482	2820	1200	1080	900	696	470	305	104
17	150	285	551	455	2850	1190	1080	901	697	455	288	102
18	149	286	551	484	2850	1180	1060	899	695	457	290	102
19	149	287	548	490	2840	1170	1040	904	695	469	291	103
20	149	285	551	488	2850	1170	1040	899	700	480	297	107
21	147	282	551	463	2900	1160	1030	910	692	485	298	115
22	146	284	551	455	2870	1160	1000	902	640	487	295	118
23	148	296	552	459	2840	1160	1010	897	643	483	305	119
24	206	292	549	465	2840	1150	988	910	644	484	312	115
25	180	286	549	457	2840	1150	983	909	641	480	306	112
26	158	284	550	461	2820	1150	993	909	639	484	302	111
27	181	301	548	510	2820	1140	983	909	638	478	301	110
28	154	307	549	561	2820	1140	983	913	646	474	294	111
29	160	293	546	562	---	1140	992	910	651	472	288	110
30	159	324	545	548	---	1140	989	914	657	472	228	110
31	164	---	547	608	---	910	---	918	---	468	156	---
TOTAL	4598	9182	15577	16070	60826	51670	31871	28951	22964	14927	9694	3153
MEAN	148	306	502	518	2172	1667	1062	934	765	482	313	105
MAX	206	655	552	608	2900	2830	1140	1000	934	644	470	119
MIN	124	169	288	455	559	910	983	897	638	452	156	94
AC-FT	9120	18210	30900	31870	120600	102500	63220	57420	45550	29610	19230	6250

SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1963, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	277	469	655	713	870	848	989	1282	1121	200	133	198
MAX	571	2529	4283	3435	2341	3032	3278	3990	2958	728	309	400
(WY)	1939	1951	1951	1956	1938	1938	1938	1952	1952	1952	1931	1958
MIN	3.76	13.6	29.4	56.6	45.0	34.5	7.02	11.3	11.3	17.1	17.2	10.0
(WY)	1932	1932	1960	1962	1948	1961	1931	1931	1931	1955	1955	1931

SUMMARY STATISTICS

WATER YEARS 1931 - 1963

ANNUAL MEAN	644
HIGHEST ANNUAL MEAN	1507 1938
LOWEST ANNUAL MEAN	62.2 1960
HIGHEST DAILY MEAN	19600 Dec 9 1950
LOWEST DAILY MEAN	2.4 Oct 2 1931
ANNUAL SEVEN-DAY MINIMUM	2.4 Oct 2 1931
INSTANTANEOUS PEAK FLOW	27000 Nov 22 1950
INSTANTANEOUS PEAK STAGE	29.58 Nov 22 1950
ANNUAL RUNOFF (AC-FT)	466700
10 PERCENT EXCEEDS	1680
50 PERCENT EXCEEDS	346
90 PERCENT EXCEEDS	28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	424	451	471	818	937	873	723	695	574	389	280	278
MAX	1716	1979	2825	4746	4285	4711	3641	3522	2736	2561	1462	1067
(WY)	1966	1984	1984	1997	1997	1986	1983	1982	1983	1998	1998	1983
MIN	2.12	23.3	38.5	33.1	20.2	9.34	9.02	8.66	8.34	9.24	6.58	5.13
(WY)	1978	1978	1990	1977	1977	1989	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1965 - 1999

ANNUAL TOTAL	487585	269483	
ANNUAL MEAN	1336	738	574
HIGHEST ANNUAL MEAN			2170 1983
LOWEST ANNUAL MEAN			21.8 1977
HIGHEST DAILY MEAN	3470	Feb 15	2900 Feb 21 5240 Mar 8 1986
LOWEST DAILY MEAN	101	Sep 13	94 Sep 1 .23 Nov 15 1977
ANNUAL SEVEN-DAY MINIMUM	106	Sep 8	100 Sep 9 .24 Nov 12 1977
INSTANTANEOUS PEAK FLOW			2930 Feb 21 5340 Mar 8 1986
INSTANTANEOUS PEAK STAGE			17.47 Feb 21 23.31 Jan 9 1997
ANNUAL RUNOFF (AC-FT)	967100	534500	415900
10 PERCENT EXCEEDS	2910	1190	1670
50 PERCENT EXCEEDS	1520	547	216
90 PERCENT EXCEEDS	137	134	25

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 sea level, from topographic map. Feb. 1 to May 31, 1924, nonrecording gage at site 0.2 mi upstream at different datum.

REMARKS.—Records good. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft. Water is released from Jenkinson Lake through Camino Conduit for irrigation and domestic supply in North Fork Cosumnes and South Fork American River Basins. Seepage from North Fork Extension Ditch siphon could constitute a major part or all the flow at low stages. Some water is released from Jenkinson Lake for irrigation downstream from station.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 22,400 ft³/s, Jan. 2, 1997, gage height, 20.30 ft, from rating curve extended above 5,000 ft³/s; no flow Aug. 7–18, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	9.7	36	11	27	503	149	159	62	11	9.1	7.1
2	9.7	9.6	18	11	23	477	137	153	62	13	9.1	7.1
3	9.8	9.4	28	11	22	610	140	220	84	14	9.1	7.1
4	9.7	9.3	29	11	38	600	135	218	75	14	9.0	7.0
5	9.4	9.7	19	11	68	521	148	188	64	14	8.9	6.9
6	9.1	11	18	11	92	456	158	175	55	14	9.0	6.9
7	9.1	14	15	11	628	406	142	176	50	13	8.9	6.9
8	9.5	12	15	11	1050	371	176	178	46	12	8.9	6.9
9	9.4	11	15	11	1740	372	175	173	44	11	8.8	6.9
10	9.4	10	13	11	1060	319	155	162	42	11	8.8	7.1
11	9.4	13	13	11	714	285	160	154	38	11	8.9	7.0
12	9.2	11	13	11	548	259	167	154	31	10	8.7	6.7
13	9.2	10	13	11	432	241	189	157	31	10	8.6	6.6
14	9.2	9.8	19	11	378	229	236	151	29	10	8.6	6.6
15	9.2	9.7	15	12	327	214	271	143	24	10	8.3	6.6
16	9.1	9.6	14	24	326	199	304	124	25	10	8.3	6.6
17	8.9	12	13	21	711	189	337	107	25	10	8.3	6.6
18	9.0	12	12	68	642	179	376	99	23	10	8.2	6.6
19	8.9	10	12	140	593	174	377	97	20	10	8.0	6.6
20	8.8	10	13	132	509	183	355	105	17	9.7	8.0	6.6
21	8.6	10	11	78	540	178	332	112	16	9.3	7.8	6.4
22	8.6	16	12	42	434	168	303	117	14	9.1	7.6	6.2
23	8.6	14	12	85	393	167	264	121	13	9.1	7.6	6.2
24	11	23	12	58	368	164	236	131	13	9.0	7.5	6.2
25	11	13	12	40	422	160	221	160	13	9.0	7.6	6.2
26	9.7	11	12	34	395	158	226	164	12	9.0	7.6	6.2
27	9.4	11	11	30	373	157	215	151	12	8.9	7.6	6.2
28	9.4	12	11	27	367	149	210	138	12	8.9	7.4	6.2
29	9.4	13	11	24	---	142	179	118	12	8.8	7.3	6.2
30	9.4	35	11	22	---	140	164	88	12	8.9	7.3	6.2
31	9.2	---	11	27	---	172	---	68	---	9.1	7.1	---
TOTAL	290.3	370.8	469	1018	13220	8542	6637	4461	976	326.8	255.9	198.6
MEAN	9.36	12.4	15.1	32.8	472	276	221	144	32.5	10.5	8.25	6.62
MAX	11	35	36	140	1740	610	377	220	84	14	9.1	7.1
MIN	8.6	9.3	11	11	22	140	135	68	12	8.8	7.1	6.2
AC-FT	576	735	930	2020	26220	16940	13160	8850	1940	648	508	394
a	-847	+230	+718	+5308	+547	-45	-7	-26	-321	-1969	-2604	-1766
b	664	316	539	461	241	373	457	875	983	1450	1689	1132
c	86	14	19	13	4	35	83	181	209	268	217	186

a Change in contents, in acre-feet, in Jenkinson Lake.

b Diversion, in acre-feet, from Jenkinson Lake provided by U.S. Bureau of Reclamation.

c Total evaporation, in acre-feet, from Jenkinson Lake provided by U.S. Bureau of Reclamation; not reviewed by U.S. Geological Survey.

SAN JOAQUIN RIVER BASIN

11333000 CAMP CREEK NEAR SOMERSET, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.13	8.71	44.5	96.0	118	142	154	112	29.0	11.6	7.13	5.34
MAX	32.9	71.3	469	1095	820	745	621	452	220	37.2	23.7	17.2
(WY)	1983	1984	1984	1997	1986	1983	1982	1967	1998	1995	1972	1982
MIN	.71	1.62	2.01	2.82	2.43	2.84	1.59	2.42	.57	.51	.12	.67
(WY)	1978	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977	1988

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1955 - 1999	
ANNUAL TOTAL	48348.2		36765.4			
ANNUAL MEAN	132		101		61.1	
ANNUAL MEAN ^a	174		114		89.3	
HIGHEST ANNUAL MEAN					215	
LOWEST ANNUAL MEAN					1.89	
HIGHEST DAILY MEAN	1570	Mar 24	1740	Feb 9	10700	Jan 2 1997
LOWEST DAILY MEAN	6.4	Jan 1	6.2	Sep 22	.00	Aug 7 1977
ANNUAL SEVEN-DAY MINIMUM	8.6	Sep 16	6.2	Sep 22	.00	Aug 7 1977
INSTANTANEOUS PEAK FLOW			2330	Feb 9	22400	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.71	Feb 9	20.30	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	95900		72920		44240	
ANNUAL RUNOFF (AC-FT) ^a	125700		82600		64680	
10 PERCENT EXCEEDS	341		322		179	
50 PERCENT EXCEEDS	19		13		8.2	
90 PERCENT EXCEEDS	9.3		7.6		2.9	

^a Adjusted for change in contents, evaporation, and diversion from Jenkinson Lake.

11335000 COSUMNES RIVER AT MICHIGAN BAR, CA

LOCATION.—Lat 38°30'01", long 121°02'39", in NW 1/4 SE 1/4 sec.36, T.8 N., R.8 E., Sacramento County, Hydrologic Unit 18040013, on downstream side of midstream pier of county bridge at Michigan Bar, 5.5 mi southwest of Latrobe, and 12 mi downstream from confluence of north and middle Forks of Cosumnes River.

DRAINAGE AREA.—536 mi².

PERIOD OF RECORD.—October 1907 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1953–80.

WATER TEMPERATURE: Water years 1963–79.

SEDIMENT DATA: Water years 1958–74.

REVISED RECORDS.—WSP 331: 1911–12. WSP 1315-A: 1908–9, 1911(M). WSP 1930: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 168.09 ft above sea level. Prior to July 10, 1930, nonrecording gage at same site and datum.

REMARKS.—Records good. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft. See REMARKS for Camp Creek near Somerset (station 11333000) for diversion out of basin. Numerous small diversions upstream from station for irrigation and domestic use. See schematic diagram of Sacramento–San Joaquin Delta.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 93,000 ft³/s, Jan. 2, 1997, gage height, 18.54 ft, from rating curve extended above 34,000 ft³/s on basis of slope-area determination 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, estimated discharge, 71,000 ft³/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 4,000 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1130	5,080	7.82	Feb. 17	0715	6,910	8.45
Feb. 9	1415	22,400	11.85	Mar. 3	1315	4,110	7.32

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	67	757	139	907	2080	913	808	493	116	53	34
2	80	69	374	137	662	1970	828	814	470	113	54	33
3	76	74	309	131	579	3120	791	1000	506	109	53	34
4	75	72	525	128	537	2920	807	1060	451	107	51	34
5	71	69	329	125	530	2380	794	891	406	106	49	33
6	69	69	267	122	536	2090	1070	858	381	103	49	33
7	67	84	233	122	5980	1850	942	885	359	99	49	33
8	65	116	202	121	5960	1650	1110	892	340	94	51	31
9	61	133	203	118	13000	1890	1360	866	324	91	53	30
10	61	103	189	115	6310	1650	1170	815	309	85	54	30
11	61	99	175	114	3630	1460	1160	782	298	83	53	30
12	61	101	166	112	2690	1330	1120	798	289	81	55	30
13	61	96	161	112	2170	1250	1100	814	281	77	53	30
14	61	87	188	110	1860	1200	1140	771	279	75	50	29
15	61	83	207	112	1630	1150	1230	717	272	73	48	29
16	60	81	183	195	1560	1090	1330	674	265	72	47	29
17	60	83	178	297	5120	1050	1460	631	258	70	46	28
18	59	97	184	571	3330	1020	1560	633	245	68	44	27
19	58	109	182	3210	3270	1010	1600	614	231	67	41	27
20	58	91	175	4400	2620	1040	1540	614	217	67	40	28
21	57	86	170	2660	4950	1040	1460	623	207	67	38	29
22	55	94	134	1450	2860	1000	1350	642	194	66	37	29
23	55	133	138	2690	2290	970	1220	673	187	65	37	29
24	59	202	143	2130	1980	953	1120	710	177	62	37	28
25	70	241	162	1290	2370	935	1060	722	167	62	36	28
26	91	152	154	1050	2120	910	1060	756	157	61	34	27
27	76	131	148	900	1850	898	1030	731	148	60	34	27
28	70	166	143	735	1700	866	998	693	140	59	36	27
29	69	149	138	640	---	835	939	643	135	57	39	26
30	67	215	135	575	---	818	847	571	125	57	37	26
31	67	---	135	832	---	979	---	516	---	55	35	---
TOTAL	2048	3352	6787	25443	83001	43404	34109	23217	8311	2427	1393	888
MEAN	66.1	112	219	821	2964	1400	1137	749	277	78.3	44.9	29.6
MAX	91	241	757	4400	13000	3120	1600	1060	506	116	55	34
MIN	55	67	134	110	530	818	791	516	125	55	34	26
AC-FT	4060	6650	13460	50470	164600	86090	67660	46050	16480	4810	2760	1760

SAN JOAQUIN RIVER BASIN

11335000 COSUMNES RIVER AT MICHIGAN BAR, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	31.4	141	439	959	1198	1206	1070	695	257	61.4	20.7	14.8
MAX	335	2493	3380	7129	6610	5255	3992	2362	1111	346	114	82.0
(WY)	1963	1951	1965	1997	1986	1983	1982	1995	1998	1983	1983	1983
MIN	.000	7.90	18.3	21.4	35.9	43.5	33.7	48.5	4.42	.096	.000	.000
(WY)	1978	1930	1977	1991	1991	1977	1977	1977	1924	1977	1908	1924

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1908 - 1999	
ANNUAL TOTAL	396195		234380			
ANNUAL MEAN	1085		642		504	
HIGHEST ANNUAL MEAN					1687	
LOWEST ANNUAL MEAN					21.8	
HIGHEST DAILY MEAN	14700	Feb 3	13000	Feb 9	61600	Jan 2 1997
LOWEST DAILY MEAN	55	Oct 22	26	Sep 29	.00	Jul 25 1908
ANNUAL SEVEN-DAY MINIMUM	57	Oct 18	27	Sep 24	.00	Jul 25 1908
INSTANTANEOUS PEAK FLOW			22400	Feb 9	93000	Jan 2 1997
INSTANTANEOUS PEAK STAGE			11.85	Feb 9	18.54	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	785900		464900		365100	
10 PERCENT EXCEEDS	2580		1610		1300	
50 PERCENT EXCEEDS	374		167		103	
90 PERCENT EXCEEDS	67		37		7.0	

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.—August 1959 to September 1987, October 1997 to current year.

REVISED RECORDS.—WDR CA-72-2: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 7.60 ft above sea level. Prior to June 29, 1960, at site 650 ft downstream at datum 1.55 ft higher. June 29, 1960, to Sept. 12, 1965, at site 475 ft upstream at datum 2.71 ft higher.

REMARKS.—Records good. No regulation or diversion above station. Summer flow is sustained by waste-water from domestic and industrial use. During major storm events record can be affected by backwater from Beach Lake located 5.7 mi downstream from gage.

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 a base discharge of 400 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 24	1330	524	4.37	Feb. 7	0830	1,090	6.21
Nov. 30	1315	526	4.38	Mar. 8	2230	513	4.33
Jan. 31	0815	793	5.28				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	5.4	33	3.5	38	31	3.3	4.4	4.5	5.2	4.3	4.8
2	6.5	3.9	9.7	3.5	17	22	3.7	5.2	4.1	4.6	5.1	5.9
3	7.0	3.5	48	3.5	12	24	3.0	5.2	4.3	3.8	3.7	5.4
4	6.7	3.6	16	4.2	10	17	2.8	4.2	4.8	3.4	4.5	4.9
5	6.3	3.6	20	3.7	8.9	12	5.2	4.0	5.1	3.7	4.9	5.2
6	6.9	8.7	15	3.8	34	10	19	4.0	4.6	3.8	5.1	5.5
7	6.9	44	8.5	3.9	461	9.2	6.1	3.7	3.6	3.3	5.3	5.0
8	7.2	12	6.4	4.2	190	78	20	4.3	3.8	3.3	5.4	6.2
9	7.2	6.3	4.9	4.2	561	54	9.4	8.9	3.7	4.7	4.9	5.5
10	7.6	4.5	4.6	4.3	159	16	5.3	7.3	3.7	5.5	5.0	5.5
11	7.4	14	5.0	4.4	45	9.9	5.9	7.2	3.9	5.9	8.4	4.2
12	7.1	5.7	4.7	4.3	22	7.5	4.7	6.7	3.6	6.9	8.6	3.7
13	7.9	5.1	4.7	4.2	20	6.4	4.8	6.1	3.9	7.0	8.2	4.0
14	7.3	4.2	4.8	4.1	17	6.2	4.0	5.8	4.1	7.2	7.9	3.5
15	6.6	3.7	4.0	27	14	6.0	3.9	4.1	3.5	6.5	5.3	1.8
16	6.2	3.2	4.4	34	36	6.4	4.1	3.3	3.7	7.1	5.0	1.6
17	6.5	18	4.4	15	134	6.2	4.4	3.5	3.5	6.0	5.2	1.3
18	6.7	3.5	4.6	74	56	4.8	4.6	2.7	3.7	6.5	5.4	1.7
19	6.6	4.3	4.2	68	37	5.1	4.7	2.6	3.8	6.2	4.9	1.5
20	6.4	3.8	3.8	111	106	7.7	5.7	3.2	4.4	6.2	4.8	.93
21	7.2	3.9	3.4	29	212	6.9	5.4	3.9	4.7	5.5	4.5	1.2
22	6.6	20	3.6	14	65	5.2	6.4	3.9	4.6	5.5	5.5	1.7
23	6.9	51	3.3	46	31	5.3	7.1	3.7	4.9	5.4	5.6	1.6
24	132	19	3.2	18	20	16	6.4	4.2	4.4	5.8	4.5	1.4
25	25	8.3	3.3	10	30	13	4.0	4.0	4.7	6.0	5.9	1.8
26	6.4	4.6	3.0	24	20	4.0	6.2	4.3	3.2	6.0	6.8	1.4
27	8.5	33	3.9	13	15	3.7	5.0	4.2	3.9	6.0	7.1	2.3
28	4.3	61	3.7	8.7	18	3.5	4.3	4.5	4.3	5.3	6.3	3.4
29	4.1	20	3.6	7.5	---	3.4	3.9	4.3	4.3	4.7	6.5	2.7
30	3.7	106	3.5	7.0	---	3.7	4.5	4.4	5.4	5.0	6.0	3.4
31	4.0	---	3.4	190	---	8.0	---	4.1	---	4.3	5.3	---
TOTAL	345.7	487.8	248.6	752.0	2388.9	412.1	224.6	141.9	124.7	166.3	175.9	99.03
MEAN	11.2	16.3	8.02	24.3	85.3	13.3	7.49	4.58	4.16	5.36	5.67	3.30
MAX	132	106	48	190	561	78	52	8.9	5.4	7.2	8.6	6.2
MIN	3.7	3.2	3.0	3.5	8.9	3.4	2.8	2.6	3.2	3.3	3.7	.93
AC-FT	686	968	493	1490	4740	817	445	281	247	330	349	196

11336580 MORRISON CREEK NEAR SACRAMENTO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10.4	21.2	27.3	59.4	68.8	31.9	15.0	6.25	5.69	6.17	5.86	6.33
MAX	77.8	67.5	106	212	415	213	91.4	17.6	8.71	17.6	12.4	21.9
(WY)	1963	1982	1984	1969	1986	1983	1982	1998	1970	1974	1959	1981
MIN	2.59	3.16	3.32	4.24	6.26	6.72	2.45	3.68	2.62	2.09	2.37	3.20
(WY)	1978	1960	1976	1976	1964	1960	1977	1979	1977	1977	1977	1984

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1959 - 1999	
ANNUAL TOTAL	14501.4		5567.53			
ANNUAL MEAN	39.7		15.3		21.7	
HIGHEST ANNUAL MEAN					59.6	
LOWEST ANNUAL MEAN					4.76	
HIGHEST DAILY MEAN	1580	Feb 3	561	Feb 9	1940	Jan 5 1982
LOWEST DAILY MEAN	1.8	Sep 22	.93	Sep 20	.00	Jul 12 1960
ANNUAL SEVEN-DAY MINIMUM	2.4	Sep 19	1.4	Sep 16	.07	Jul 11 1960
INSTANTANEOUS PEAK FLOW			1090	Feb 7	2730	Feb 17 1986
INSTANTANEOUS PEAK STAGE			6.21	Feb 7	10.40	Feb 17 1986
ANNUAL RUNOFF (AC-FT)	28760		11040		15750	
10 PERCENT EXCEEDS	80		26		33	
50 PERCENT EXCEEDS	7.4		5.2		5.9	
90 PERCENT EXCEEDS	3.6		3.5		3.0	

11336585 LAGUNA CREEK NEAR ELK GROVE, CA

LOCATION.—Lat 38°25'24", long 121°21'08", in NE 1/4 NE 1/4. sec. 31, T.7 N, R.6 E in Sacramento County, Hydrologic Unit 18020109, on left bank 50 ft downstream from bridge on Waterman Road, at intersection with Bond Road, and 1 mi northeast of Elk Grove.

DRAINAGE AREA.—31.9 mi².

PERIOD OF RECORD.—October 1995 to current year.

GAGE.—Water-stage recorder. Datum of gage is 40 ft above sea level, from topographic map.

REMARKS.—Records poor due to beaver dam activity downstream of the station. Low summer flow sustained by residential and agricultural wastewater.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,020 ft³/s, Jan. 23, 1997, gage height, 7.54 ft; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than a base discharge of 500 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 9	2400	746	5.84				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.35	8.4	.00	86	15	.20	.00	.37	.00	1.2	.84
2	.12	.08	7.3	.00	18	17	.24	.00	.26	.00	2.0	1.1
3	.36	.01	6.1	.00	13	13	.42	.00	.46	.00	1.4	1.4
4	.47	.01	6.0	.00	11	11	.46	.00	.59	.47	1.5	2.3
5	.22	.00	5.5	.00	10	10	.84	.03	.41	.25	2.8	1.8
6	.10	.00	5.4	.00	11	8.6	2.3	.07	.39	.21	2.6	1.5
7	.02	.01	5.4	.00	290	7.2	1.4	.06	.34	1.4	2.6	.97
8	.01	.10	5.1	.00	302	6.3	1.5	.03	.21	1.5	3.3	.39
9	.10	.18	4.5	.00	522	8.7	1.9	.00	.15	1.6	2.8	1.7
10	.09	.08	4.0	.00	352	13	1.5	.00	.12	1.2	3.5	1.3
11	.06	.02	3.8	.00	54	9.2	1.0	.00	.07	.45	3.3	.69
12	.01	.00	3.6	.00	29	6.5	.71	.00	.01	.82	4.3	.98
13	.00	.00	3.3	.00	22	4.9	.57	.00	.00	1.0	3.1	.59
14	.00	.00	2.8	.00	21	4.0	.68	.00	.00	.18	.00	.38
15	.00	.00	2.4	.00	23	3.4	.61	.00	.00	.06	.00	.48
16	.00	.00	1.9	.00	22	3.1	.35	.00	.00	.01	.00	.17
17	.00	.05	1.5	.00	111	2.6	.17	.01	.00	.05	.00	.00
18	.00	.03	1.1	.00	68	1.8	.07	.05	.00	1.0	.00	.00
19	.00	.00	.78	5.4	37	.98	.02	.07	.00	.62	.03	.20
20	.02	.00	.49	73	31	.63	.00	.05	.00	.23	.02	.69
21	.83	.00	.29	43	292	.44	.00	.07	.00	.16	.01	.78
22	.77	.00	.16	9.9	90	.38	.00	.30	.00	.08	.17	.88
23	.61	.00	.08	9.8	32	.31	.00	.19	.00	.22	.15	.51
24	2.7	.00	.04	15	23	.72	.00	.37	.00	.63	.08	1.1
25	2.3	.00	.01	9.6	20	.27	.00	.39	.00	.79	.04	1.1
26	1.6	.04	.00	7.7	20	.16	.00	.42	.00	.80	.01	.77
27	1.7	.30	.00	7.4	17	.09	.00	.53	.00	1.6	.00	.45
28	.90	3.5	.00	6.9	15	.06	.00	.45	.00	1.6	.00	.28
29	1.4	2.4	.00	7.0	---	.02	.00	.33	.00	2.7	.01	.12
30	1.3	4.5	.00	7.0	---	.01	.00	.34	.00	1.5	.59	.09
31	.82	---	.00	30	---	.21	---	.31	---	1.1	.52	---
TOTAL	16.56	11.66	79.95	231.70	2542	149.58	14.94	4.07	3.38	22.23	36.03	23.56
MEAN	.53	.39	2.58	7.47	90.8	4.83	.50	.13	.11	.72	1.16	.79
MAX	2.7	4.5	8.4	73	522	17	2.3	.53	.59	2.7	4.3	2.3
MIN	.00	.00	.00	.00	10	.01	.00	.00	.00	.00	.00	.00
AC-FT	33	23	159	460	5040	297	30	8.1	6.7	44	71	47

SAN JOAQUIN RIVER BASIN

11336585 LAGUNA CREEK NEAR ELK GROVE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.32	.87	26.8	81.7	116	8.48	3.94	1.03	.26	.42	.67	.73
MAX	.62	1.67	92.1	206	263	21.9	8.91	2.24	.55	.72	1.20	.95
(WY)	1998	1998	1997	1997	1998	1996	1998	1998	1997	1999	1997	1996
MIN	.000	.000	2.58	7.47	3.51	.000	.39	.13	.000	.000	.048	.26
(WY)	1996	1996	1999	1999	1997	1997	1997	1999	1996	1996	1996	1997

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1996 - 1999	
ANNUAL TOTAL	10606.02		3135.66			
ANNUAL MEAN	29.1		8.59		19.6	
HIGHEST ANNUAL MEAN					29.6	
LOWEST ANNUAL MEAN					8.59	
HIGHEST DAILY MEAN	1530	Feb 3	522	Feb 9	1530	Feb 3 1998
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 13	.00	Oct 1 1995
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 23	.00	Oct 13	.00	Oct 1 1995
INSTANTANEOUS PEAK FLOW			746	Feb 9	2020	Jan 23 1997
INSTANTANEOUS PEAK STAGE			5.84	Feb 9	7.54	Jan 23 1997
ANNUAL RUNOFF (AC-FT)	21040		6220		14170	
10 PERCENT EXCEEDS	44		10		17	
50 PERCENT EXCEEDS	.77		.34		.34	
90 PERCENT EXCEEDS	.00		.00		.00	

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 September 1987, October 1993 to current year.

GAGE.—Water-stage recorder and acoustic-velocity meter. From Jan. 1, 1953, to Sept. 30, 1993, recording flow meters on pumps. Prior to Jan. 1, 1953, water-stage recorder at site 3.2 mi downstream at datum 121.72 ft above sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Water is diverted from Sacramento–San Joaquin Delta by way of Old River, Rock Slough, and a dredged channel. A series of four pumps lift the water 115 ft into the canal. Water is used for municipal, agricultural, and industrial purposes. The canal is a part of the Central Valley Project. See schematic diagram of Sacramento–San Joaquin Delta.

COOPERATION.—Records of daily discharge were provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 436 ft³/s, Aug. 19, 1995; no flow, on some days in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139	128	99	.00	33	5	18	8	93	212	222	.00
2	109	128	97	.00	34	.00	14	18	126	195	226	.00
3	107	118	103	2	38	.00	14	14	133	190	228	.00
4	115	116	95	2	41	.00	19	29	134	191	218	.00
5	114	129	98	.00	40	6	54	21	132	190	171	.00
6	125	99	97	.00	41	1	79	29	133	211	192	.00
7	132	118	96	.00	34	1	89	16	134	211	194	.00
8	135	112	96	.00	32	4	82	.00	130	199	176	.00
9	145	115	97	.00	27	1	84	.00	135	208	180	.00
10	142	104	96	.00	32	21	83	.00	128	208	180	.00
11	136	112	84	.00	37	40	79	.00	124	160	184	58
12	133	111	84	.00	31	35	96	.00	125	171	172	180
13	106	112	76	.00	29	30	97	.00	125	217	140	200
14	117	116	88	.00	36	30	104	.00	140	222	141	65
15	143	115	85	15	44	27	81	.00	157	224	151	3
16	153	107	86	15	40	30	85	.00	177	228	144	3
17	156	102	87	9	39	49	81	.00	176	226	144	4
18	158	104	78	9	29	94	92	.00	170	227	162	3
19	159	95	74	63	32	84	79	.00	177	220	180	3
20	156	93	76	98	28	81	94	.00	180	226	167	3
21	153	99	82	99	36	81	98	.00	171	233	159	3
22	157	100	91	100	34	57	68	.00	154	230	155	2
23	150	97	92	106	21	25	35	.00	165	221	149	2
24	149	106	82	100	11	18	44	.00	183	231	161	4
25	128	105	87	94	12	20	65	1	202	234	68	3
26	125	105	86	100	11	21	45	17	199	227	5	3
27	140	102	84	93	12	25	57	19	185	220	.00	2
28	126	103	84	56	6	21	42	22	159	222	.00	3
29	143	103	81	32	---	20	41	20	128	224	.00	2
30	148	105	120	32	---	15	36	20	106	225	.00	2
31	142	---	.00	30	---	21	---	21	---	226	.00	---
TOTAL	4241	3259	2681.00	1055.00	840	863.00	1955	255.00	4481	6629	4269.00	548.00
MEAN	137	109	86.5	34.0	30.0	27.8	65.2	8.23	149	214	138	18.3
MAX	159	129	120	106	44	94	104	29	202	234	228	200
MIN	106	93	.00	.00	6.0	.00	14	.00	93	160	.00	.00
AC-FT	8410	6460	5320	2090	1670	1710	3880	506	8890	13150	8470	1090

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1999, BY WATER YEAR (WY)

	117	89.9	74.1	68.0	67.9	72.9	96.3	127	161	176	176	147
MEAN	117	89.9	74.1	68.0	67.9	72.9	96.3	127	161	176	176	147
MAX (WY)	305	218	213	182	167	185	206	238	302	339	398	359
MIN (WY)	1995	1995	1995	1995	1995	1988	1988	1987	1995	1995	1995	1995
MIN (WY)	36.5	3.17	18.8	10.2	6.79	17.9	23.6	8.23	46.9	56.6	59.0	18.3
MIN (WY)	1953	1998	1998	1998	1998	1951	1950	1999	1952	1952	1952	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1950 - 1999	
ANNUAL TOTAL	34616.00		31076.00			
ANNUAL MEAN	94.8		85.1		116	
HIGHEST ANNUAL MEAN					253	
LOWEST ANNUAL MEAN					41.0	
HIGHEST DAILY MEAN	231	Aug 14	234	Jul 25	436	Aug 19 1995
LOWEST DAILY MEAN	.00	Jan 15	.00	Dec 31	.00	Mar 2 1994
ANNUAL SEVEN-DAY MINIMUM	1.0	Jan 29	.00	Jan 5	.00	Jan 5 1999
ANNUAL RUNOFF (AC-FT)	68660		61640		84040	
10 PERCENT EXCEEDS	177		190		211	
50 PERCENT EXCEEDS	99		85		102	
90 PERCENT EXCEEDS	4.0		.00		41	

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- or flood-flow analyses, depending on the type of data collected. In addition, discharge 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.

Discharge measurements made at miscellaneous sites during water year 1999

Station no.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
CARSON RIVER BASIN						
103087885	Leviathan Creek Channel Underdrain near Markleeville, CA	Lat 38°42'34", long 119°39'41", in SE 1/4 SW 1/4 sec.15, T.10 N., R.21 E., Alpine County, Hydrologic Unit 16050201, 2.1 mi north of Highway 89 and 6.5 mi east of Markleeville	—	1999	04-20-99	0.11
					05-19-99	.13
					06-25-99	.12
					07-20-99	.12
					08-20-99	.09
09-21-99	.08					
103087898	Aspen Creek above Leviathan Creek, near Markleeville, CA	Lat 38°42'02", long 119°39'30", in NE 1/4 NW 1/4 sec.15, T.10 N., R.21 E., Alpine County, Hydrologic Unit 16050201, 3.2 mi north of Highway 89 and 6.5 mi east of Markleeville	0.92	1999	10-23-98	0.42
					12-04-98	.34
					01-11-99	.54
					02-01-99	.48
					03-24-99	.65
					04-20-99	1.20
					05-19-99	1.05
					06-25-99	.57
					07-20-99	.50
					08-20-99	.41
09-21-99	.34					
SAN JOAQUIN RIVER BASIN						
37173012056 3300	Mud Slough at Highway 140, near Gustine, CA	Lat 37°17'30", long 120°56'33", in SE 1/4 SE 1/4 sec.26, T.7 S., R.9 E., Merced County, Hydrologic Unit 18040001, at State Highway 140, 3.5 mi northeast of Gustine.	—	1996-98	11-19-98	166
					11-19-98	168
					11-20-98	169
					11-20-98	172
					03-24-99	233
					03-24-99	245
					03-25-99	253
					03-25-99	260
					06-29-99	80.7
					06-29-99	77.4
					06-30-99	62.5
					06-30-99	69.9
					06-30-99	70.1
					08-17-99	65.6
08-17-99	69.2					
08-18-99	59.9					
08-18-99	61.0					

Records collected at crest-stage partial-record stations are presented in the following table.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage 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 year 1999

Station number	Station name	Location	Drainage area (mi ²)	Period of record	Date	Annual maximum	
						Gage height (ft)	Discharge (ft ³ /s)
TULARE LAKE BASIN							
11205690	Lewis Creek near Lindsay, CA	Lat 36°11'10", long 118°59'27", in NW 1/4 SW 1/4 sec.18, T.20 S., R.28 E., Tulare County, Hydrologic Unit 18030012, 0.3 mi upstream from culvert on Road 258, 40 ft. upstream from unnamed tributary, and 7.03 mi southeast of the town of Lindsay.	21.5	1969a, 1974-99	02-09-99	21.65	134

a Published as a miscellaneous measurement.

Water-quality partial-record stations are particular sites where chemical-quality, biological, and (or) sediment data are collected systematically over a period of years for use in hydrologic analyses. These data are collected usually less than quarterly. Samples collected at sites other than gaging stations and partial-record stations to give better areal coverage in a river basin are referred to as miscellaneous sites.

SAN JOAQUIN RIVER BASIN

375252121145401 FRENCH CAMP SLOUGH NEAR STOCKTON, CA

LOCATION.—Lat 37°52'52", long 121°14'54", in NE 1/4 SE 1/4 sec.26, T.1 S., R.7 E., San Joaquin County, Hydrologic Unit 18040002, French Camp Slough at Airport Way, 100 ft upstream from Department of Water Resources gaging station, near Stockton.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—September 1999.

CHEMICAL DATA: September 1999.

SEDIMENT DATA: September 1999.

REMARKS.—Flows consist of return water from irrigation areas. Discharge data furnished by Department of Water Resources (not reviewed by U.S. Geological Survey).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED SATUR- ATION) (00300) (00301)	OXYGEN, DIS- SOLVED (MG/L CACO3) (00900)	HARD- NESS TOTAL (MG/L AS CA) (00915)	CALCIUM DIS- SOLVED (MG/L AS MG) (00925)	MAGNE- SIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
SEP	22... 1320	143	112	7.4	21.2	760	7.3	82	40	9.5	4.0	4.7
DATE	SODIUM PERCENT (00932)	SODIUM RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT. DIS GRAN T. FIELD CACO3 (MG/L) (29802)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L AS SIO2) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L AS SIO2) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
SEP	22... 19	.3	3.7	42	3.7	3.2	<.1	14	93	73	.13	.01
DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)
SEP	22... .79	<.02	.7	.4	.40	.31	.29	59	13	<.003	<.002	<.002
DATE	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DPCA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	
SEP	22...	<.002	<.001	<.002	<.002	e.024	<.003	.036	.010	<.002	<.002	<.002

e Estimated.

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

SAN JOAQUIN RIVER BASIN

375252121145401 FRENCH CAMP SLOUGH NEAR STOCKTON, CA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DI-ELDRIN	DISUL-FOTON	EPTC	ETHAL-FLUR-ALIN	ETHO-PROP	FONOFOS	LINDANE	LIN-URON	MALA-THION,	METHYL-AZIN-PHOS	METHYL-PARA-THION
	DIS-SOLVED	WATER	WATER	WAT FLT	WATER	WATER	WATER	WATER	WATER	WAT FLT	WAT FLT
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
SEP 22...	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006
DATE	METO-LACHLOR	METRI-BUZIN	MOL-INATE	NAPROP-AMIDE	P,P'	PARA-THION,	PEB-ULATE	PENDI-METH-	PER-METHRIN	PHORATE	PRO-METON,
	WATER	WATER	WATER	WATER	DDE	THION,	WATER	ALIN	CIS	WATER	WATER,
	FLTRD	FLTRD	FLTRD	FLTRD		DIS-	FILTRD	WAT FLT	WAT FLT	FLTRD	DISS,
	0.7 U	0.7 U	0.7 U	0.7 U		0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
DATE	DISSOLV	DISSOLV	GF, REC	GF, REC	DISSOLV	SOLVED	GF, REC	GF, REC	GF, REC	GF, REC	REC
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
	(39415)	(82630)	(82671)	(82684)	(34653)	(39542)	(82669)	(82683)	(82687)	(82664)	(04037)
SEP 22...	.019	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
DATE	PRON-AMIDE	PRO-PANIL	PRO-PARGITE	PROP-CHLOR,	SI-MAZINE,	TEBU-THIURON	TER-BACIL	TER-BUFOS	THIO-BENCARB	TRIAL-LATE	TRI-FLUR-ALIN
	WATER	WATER	WATER	WATER,	WATER,	WATER	WATER	WATER	WATER	WATER	WATER
	FLTRD	FLTRD	FLTRD	DISS,	DISS,	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD	WAT FLT
	0.7 U	0.7 U	0.7 U	DISS,	DISS,	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
DATE	GF, REC	GF, REC	GF, REC	REC	REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
	(82676)	(82679)	(82685)	(04024)	(04035)	(82670)	(82665)	(82675)	(82681)	(82678)	(82661)
SEP 22...	<.003	<.004	<.013	<.007	.009	<.010	<.007	<.013	.006	<.001	<.002

PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE,	DIS-INST.	SEDI-TEMPER-	SEDI-MENT,	SEDI-CHARGE,	SED-SUSP.
		CUBIC	FEET	ATURE	MENT,	SUS-PENDE	SIEVE
		PER	PER	WATER	(T/DAY)	PENDE	DIAM.
		SECOND	SECOND	(DEG C)	(MG/L)	(T/DAY)	% FINER
		(00061)	(00010)	(80154)	(80155)	(70331)	.062 MM
SEP 22...	1320	143	21.2	58	22	97	

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

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