

WATER RESOURCES DATA—CALIFORNIA, WATER YEAR 1999
VOLUME 4—NORTHERN CENTRAL VALLEY BASINS AND THE GREAT BASIN
FROM HONEY LAKE BASIN TO OREGON STATE LINE

By M.D. Webster, S.W. Anderson, G.L. Rockwell, J.R. Smithson, *and* M.F. Friebel

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 176 streamflow-gaging stations and 1 partial-record station; (2) stage and content records for 45 lakes and reservoirs; (3) gage-height records for 1 station; (4) precipitation records for 3 stations; and (5) water-quality records for 14 streamflow-gaging stations and 7 water-quality partial-record stations. Records included for stream stages are only a small fraction of those obtained during the water year.

The series of annual reports for California began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format changed to 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-99-4." 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:

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

Georgetown Divide Public Utility District, Marie E. Davis, General Manager.

Hidden Valley Lake Community Services District, Mel Aust, General Manager.

Placer County, Edward McCarthy, Senior Civil Engineer.

Sacramento County Department of Public Works, Mark Rains, Associate Civil Engineer.

Yolo County Flood Control and Water Conservation District, James F. Eagan, General Manager.

Yuba County Water Agency, Donn Wilson, Engineer-Administrator.

Assistance in the form of funds or services was given by the Bureau of Reclamation, U.S. Department of Interior.

The following organizations aided in collecting records: Arbuckle Mountain Project; California Department of Water Resources; Energy Growth Partnership I; Five Bears Hydro, Inc.; Malacha Power Project, Inc.; Nelson Creek Power Co.; Nevada and Oroville–Wyandotte Irrigation Districts; Pacific Gas and Electric Co.; Placer and Yuba County Water Agencies; Sacramento Municipal Utility District; Shasta Hydroelectric; Sithe Energies, Inc.; Snow Mountain Hydroelectric; South Sutter Water District; STS Hydropower; and Synergics, Inc.

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://wwwrvares.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 11396310, which appears just to the left of the station name, includes the two-digit part number "11" plus the six-digit downstream-order number "396310." 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).

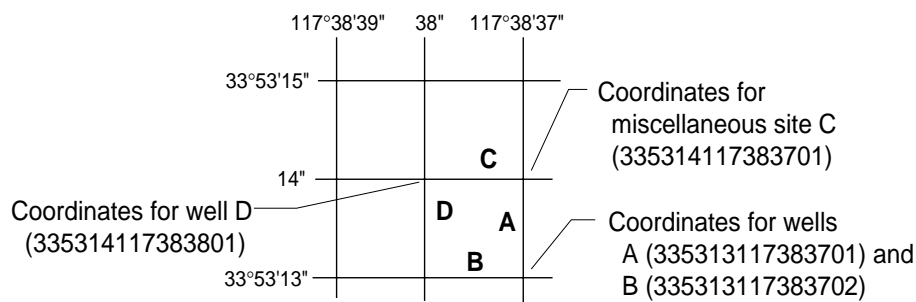


Figure 1. System for numbering miscellaneous sites (latitude and longitude).

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 23.

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 23.

Arrangement of Records

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

Onsite Measurements and Sample Collection

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

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

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

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

Historical and current (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—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—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—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—a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

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

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

Split sample—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, (ft³/s)/mi²] 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 (CaCO_3).

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

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

where I_o 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

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

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 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 (*Pyrrhophyta*) 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 (ft^3/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 ($7Q_{10}$, $7Q_{10}$) is the minimum flow averaged over 7 consecutive days that is expected to occur on average, once in any 10-year period. The $7Q_{10}$ 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. 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.

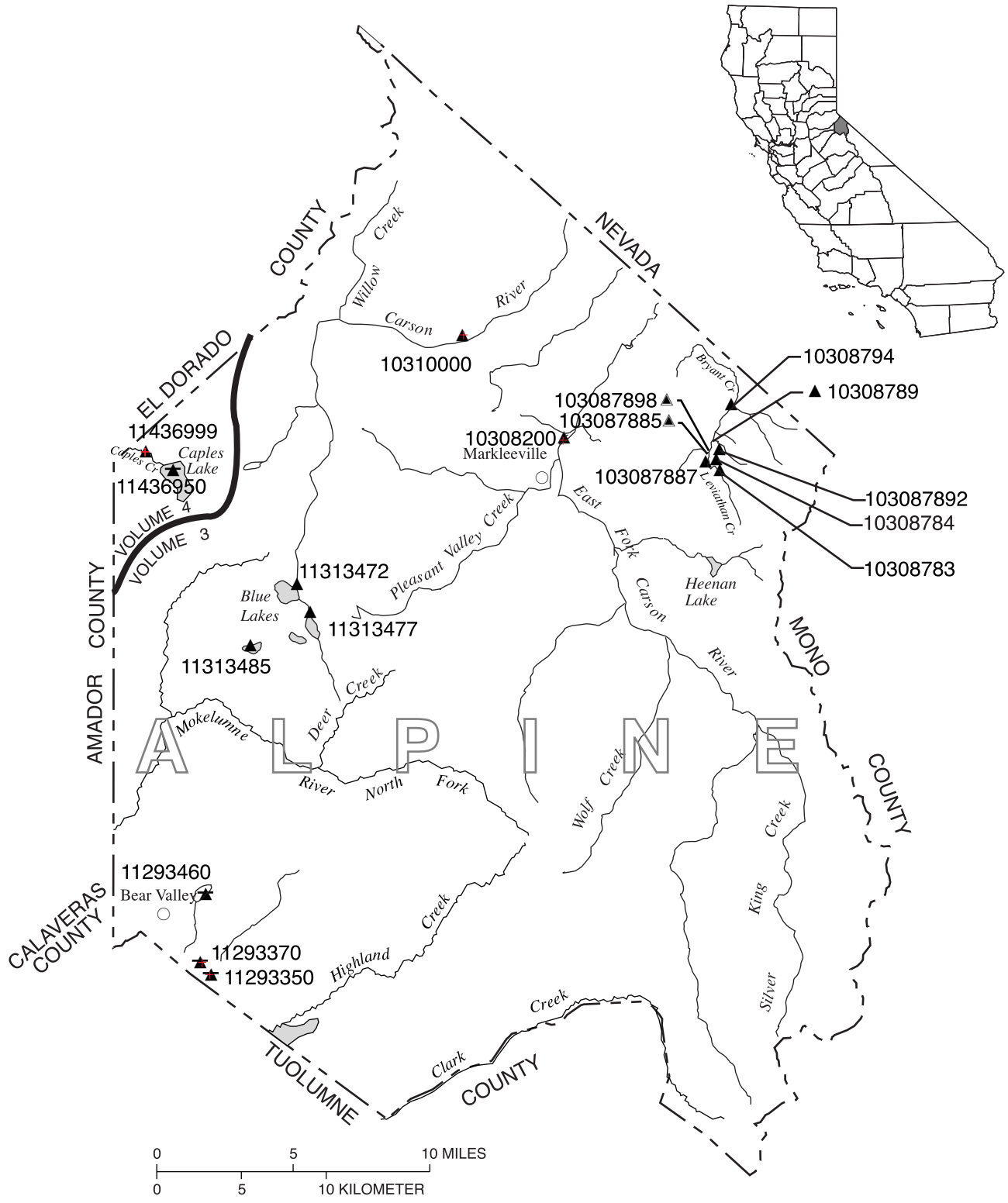
Section B. Instruments for Measurement of Discharge

- 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.



EXPLANATION

- ▲ GAGING STATION
- ▲ GAGING STATION (PARTIAL RECORD)
- ★ RESERVOIR SITE AND CONTENTS

Figure 2. Location of discharge stations in Alpine County.

(NOTE: Records for stations 10308200 through 10310000 and 11293350 through 11313485 published in volume 3.)

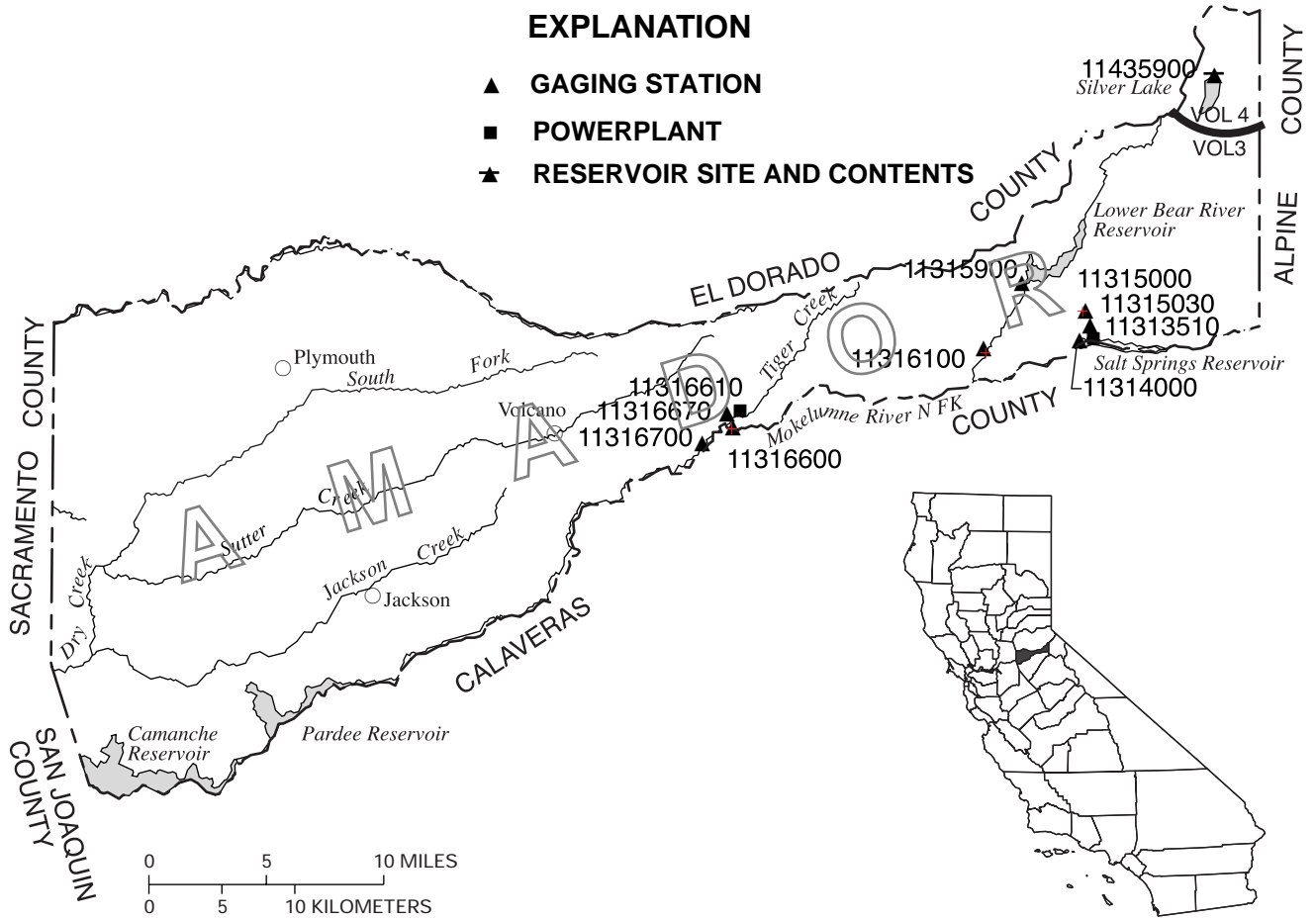


Figure 3. Location of discharge stations in Amador County.
 (NOTE: Records for stations 11313510 through 11316700 published in volume 3.)

EXPLANATION

- ▲ GAGING STATION
- ◆ GAGING AND WATER-QUALITY (TEMPERATURE) STATION WITH TELEMETRY
- POWERPLANT
- ★ RESERVOIR SITE AND CONTENTS

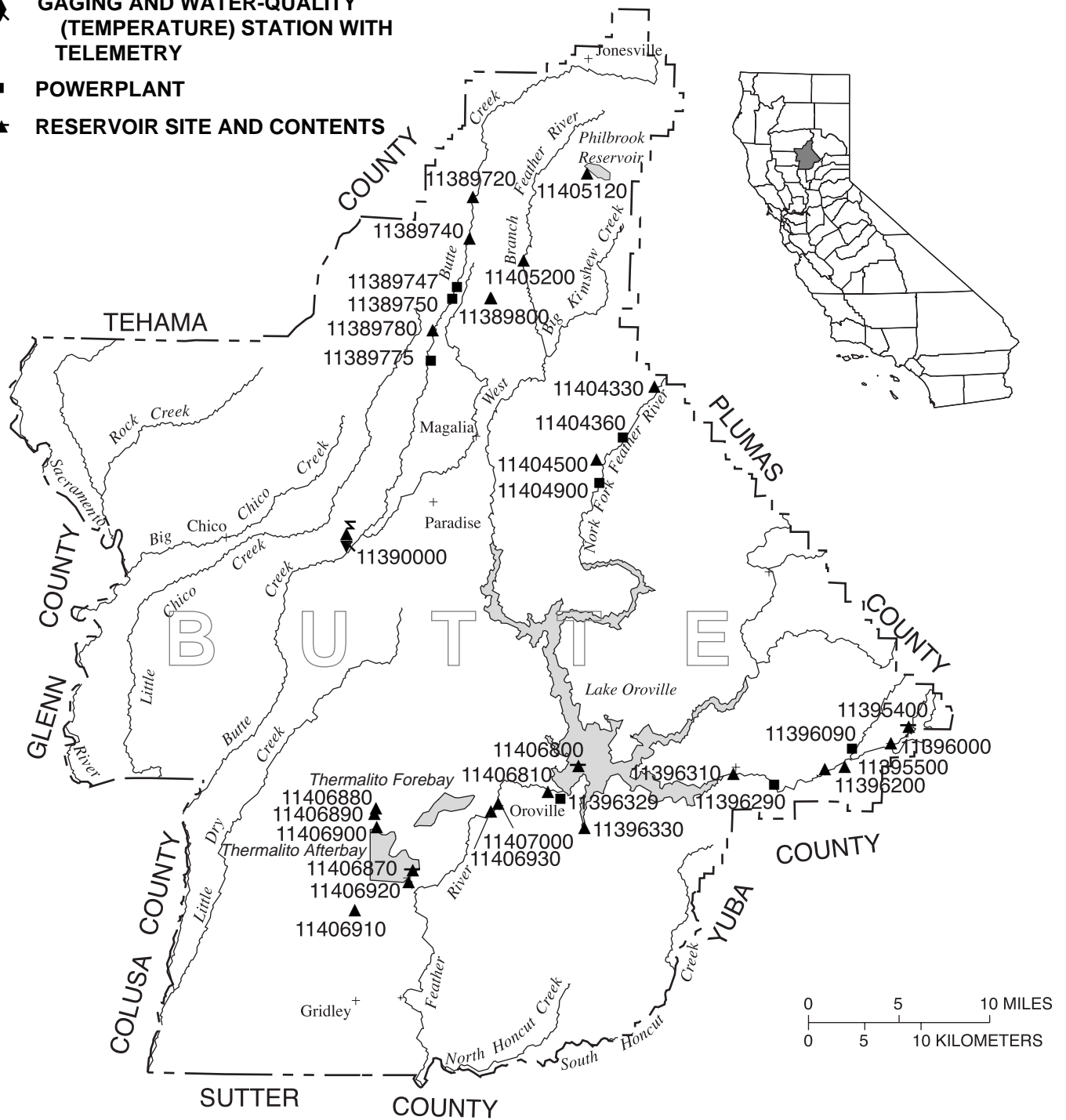






Figure 4. Location of discharge and water-quality stations in Butte County.

EXPLANATION

-  **GAGING STATION WITH TELEMETRY**
-  **GAGING AND WATER-QUALITY (TEMPERATURE) STATION WITH DATA COLLECTION PLATFORM**
-  **GAGING AND WATER-QUALITY (SEDIMENT, CHEMICAL) STATION WITH DATA COLLECTION PLATFORM**
-  **RESERVOIR SITE AND CONTENTS**

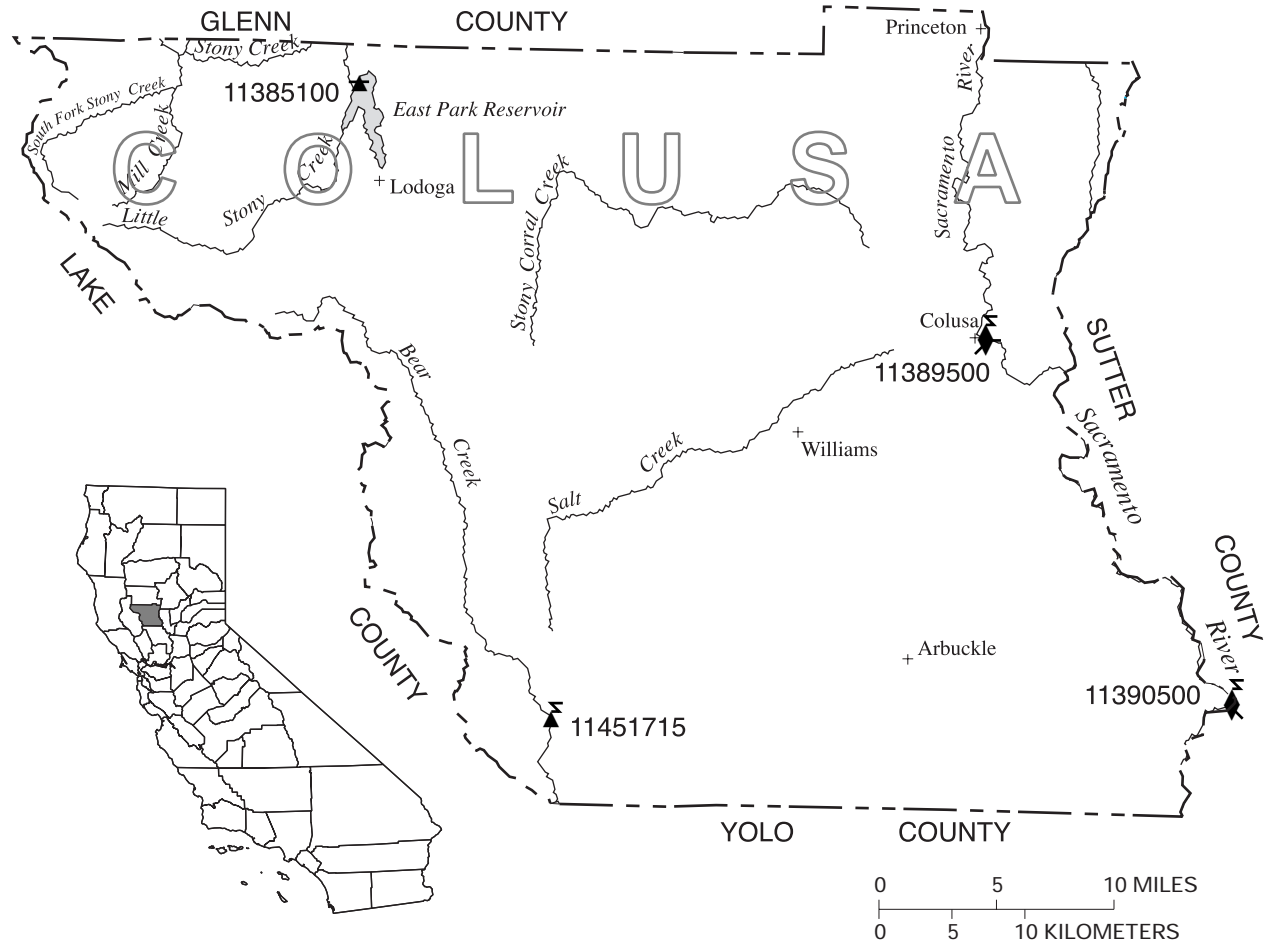
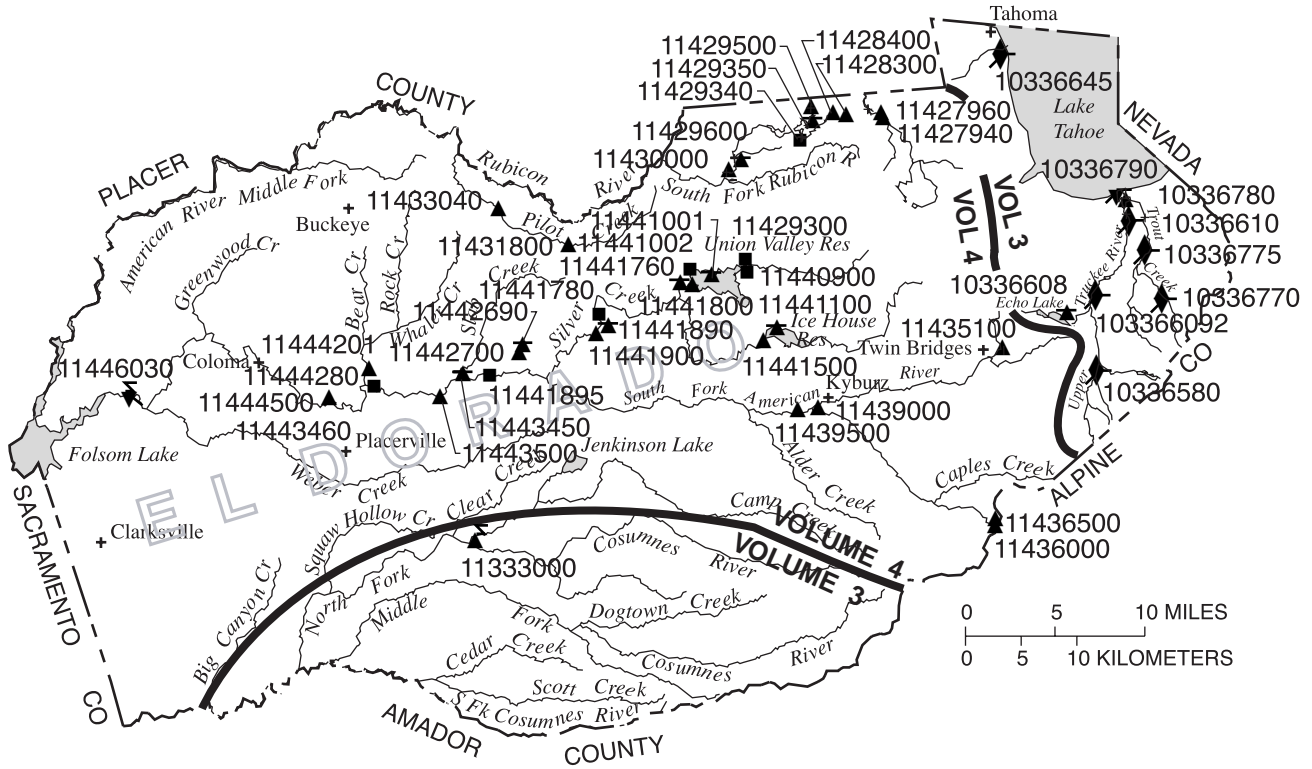


Figure 5. Location of discharge and water-quality stations in Colusa County.



EXPLANATION

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

Figure 6. Location of discharge and water-quality stations in El Dorado County.
 (NOTE: Records for stations 10336580 through 10336790 and 11333000 published in volume 3.)

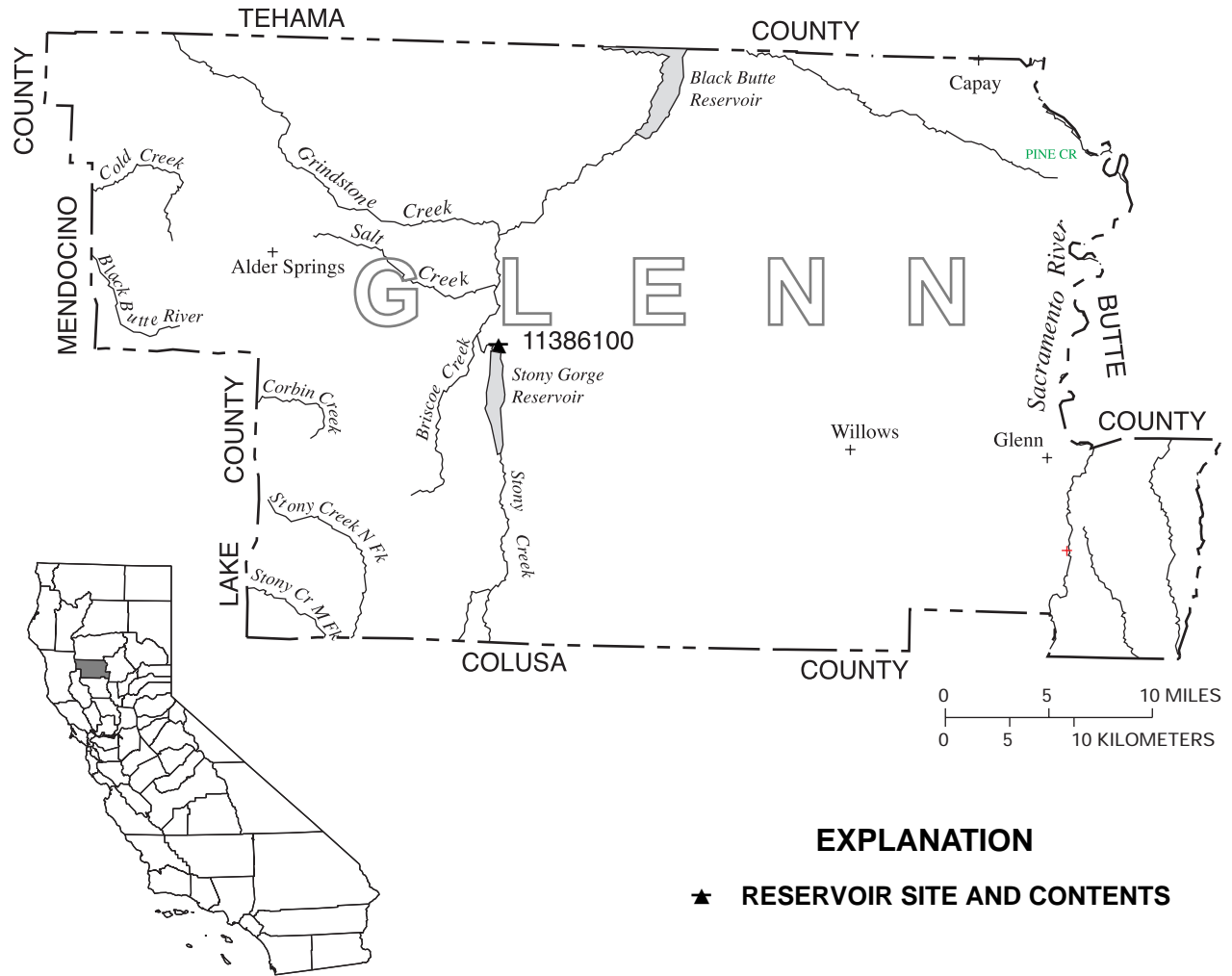


Figure 7. Location of discharge station in Glenn County.

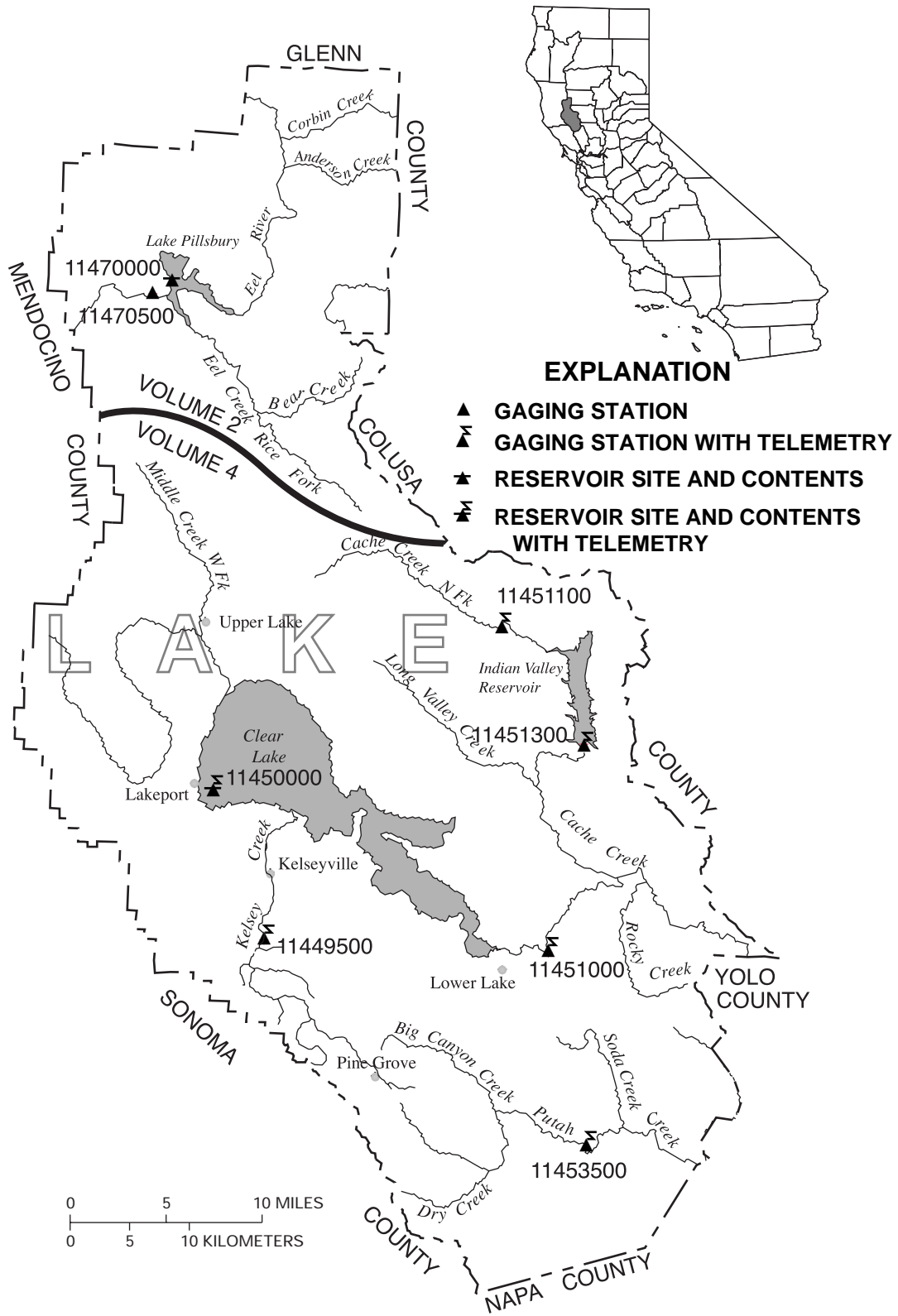


Figure 8. Location of discharge stations in Lake County.
(NOTE: Records for stations 11470000 and 11470500 published in volume 2.)

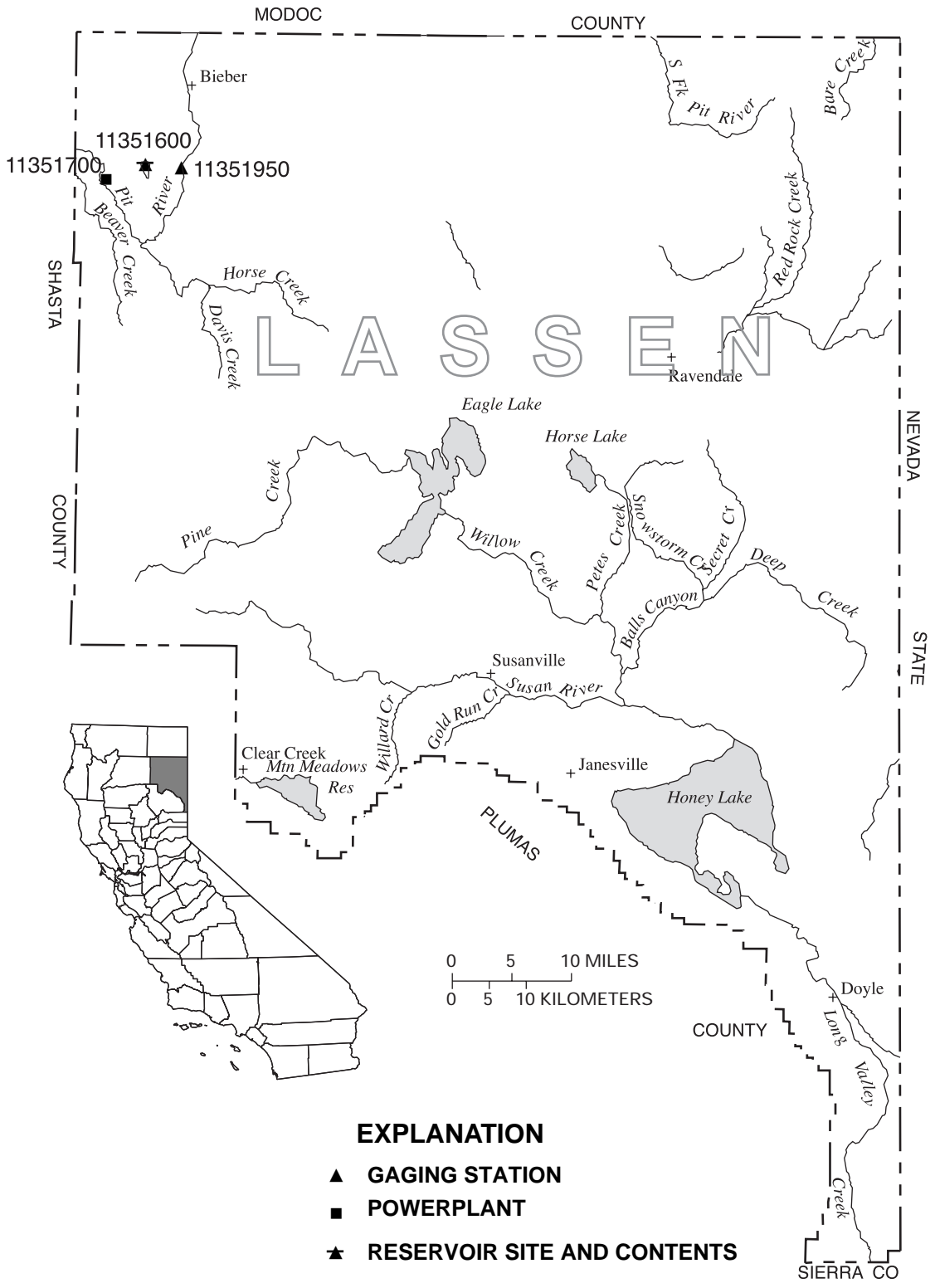
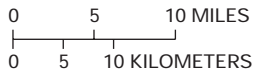
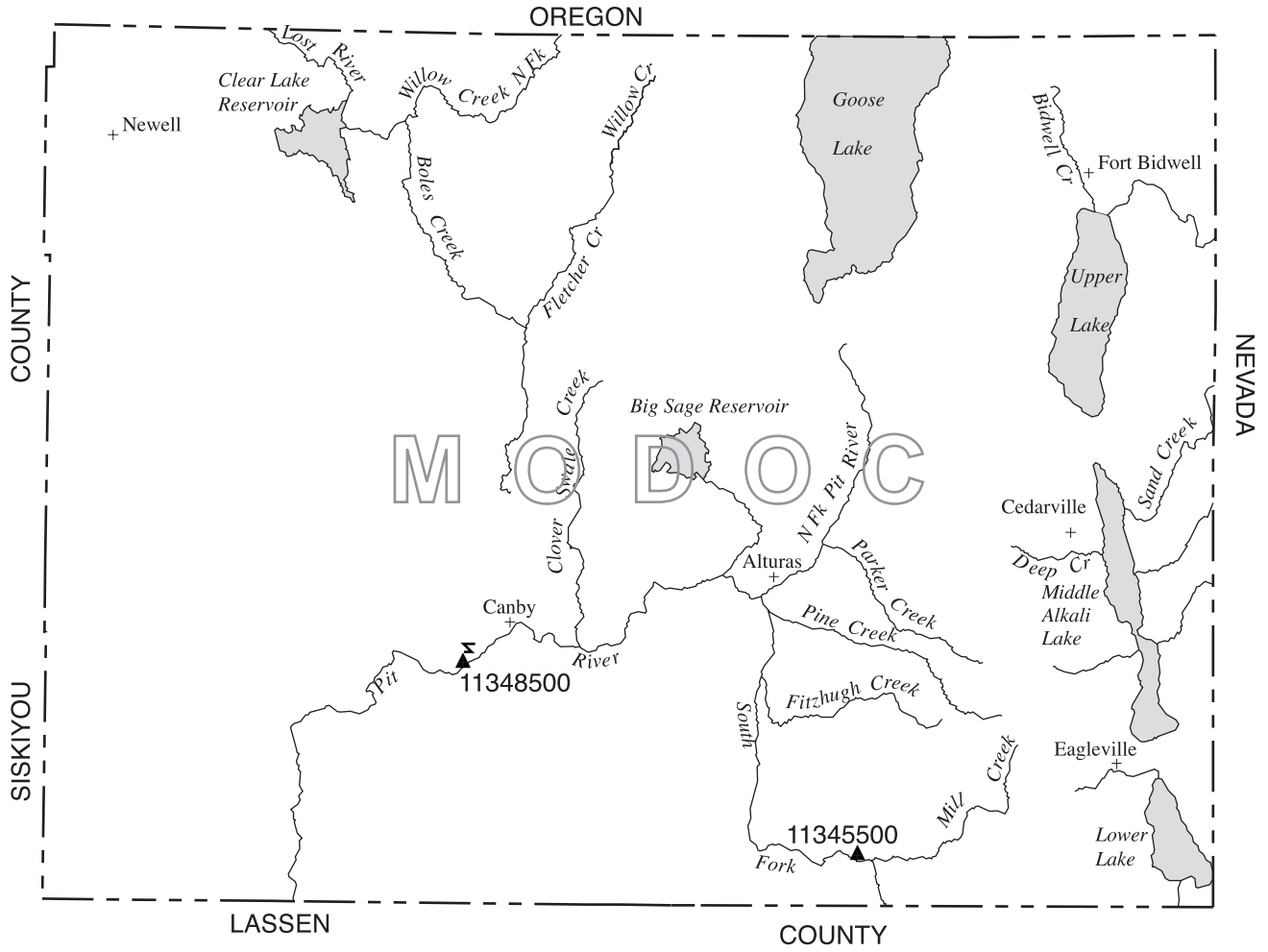


Figure 9. Location of discharge stations in Lassen County.



EXPLANATION

- ▲ GAGING STATION
- ▲ GAGING STATION WITH TELEMETRY



Figure 10. Location of discharge stations in Modoc County.

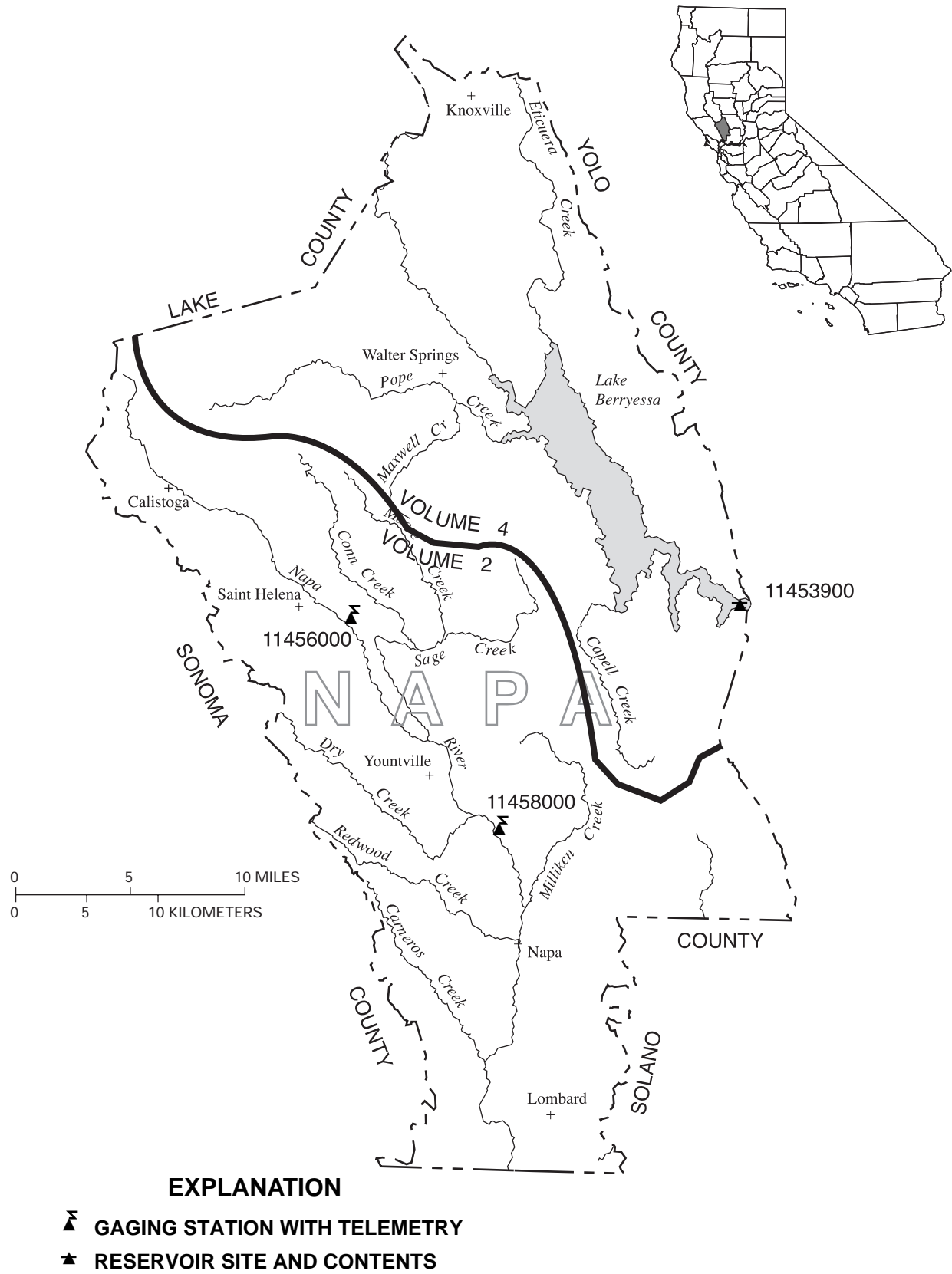


Figure 11. Location of discharge stations in Napa County.
 (NOTE: Records for stations 11456000 and 11458000 published in volume 2.)

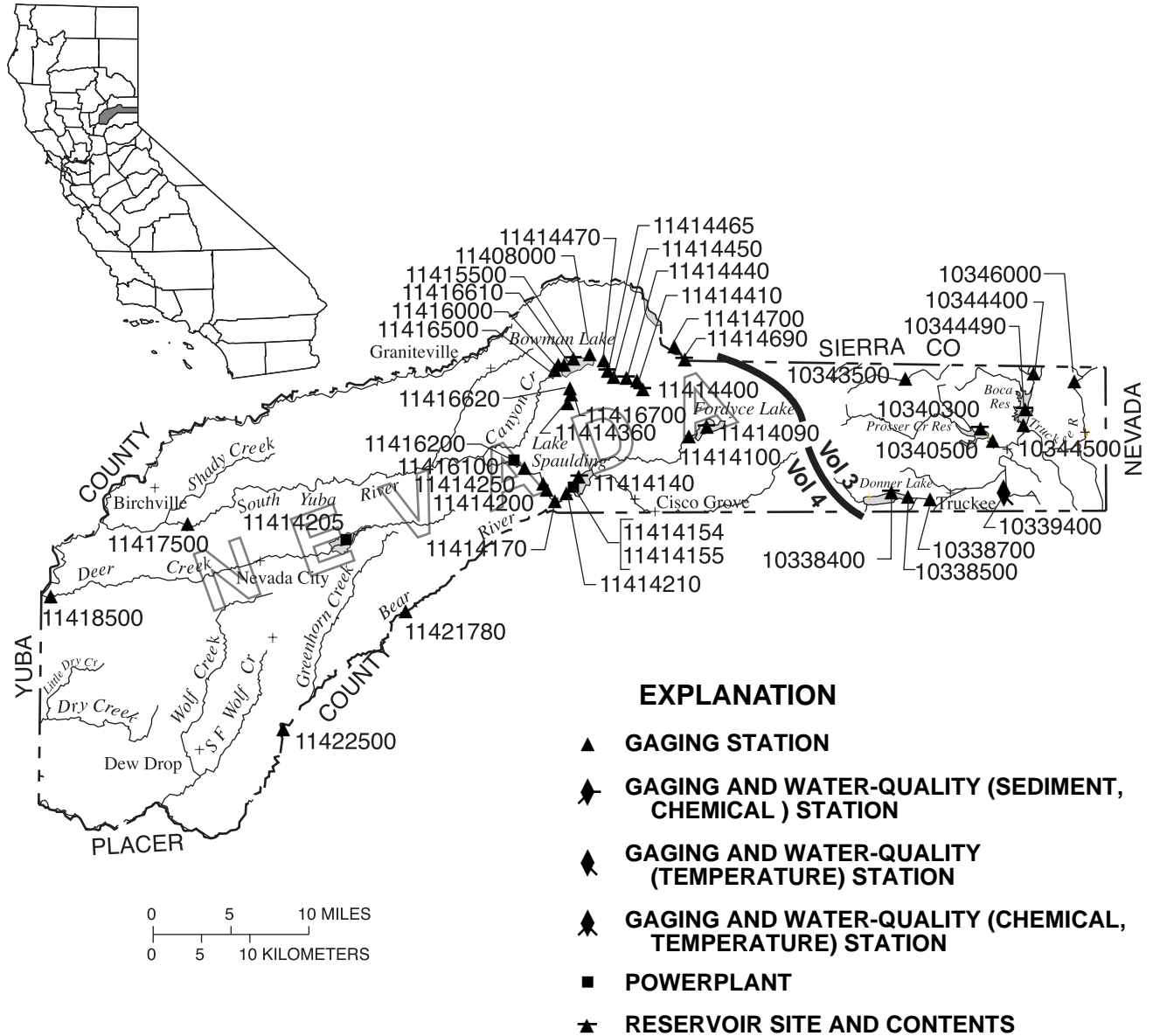


Figure 12. Location of discharge and water-quality stations in Nevada County.
 (NOTE: Records for stations 10338400 through 10346000 published in volume 3.)

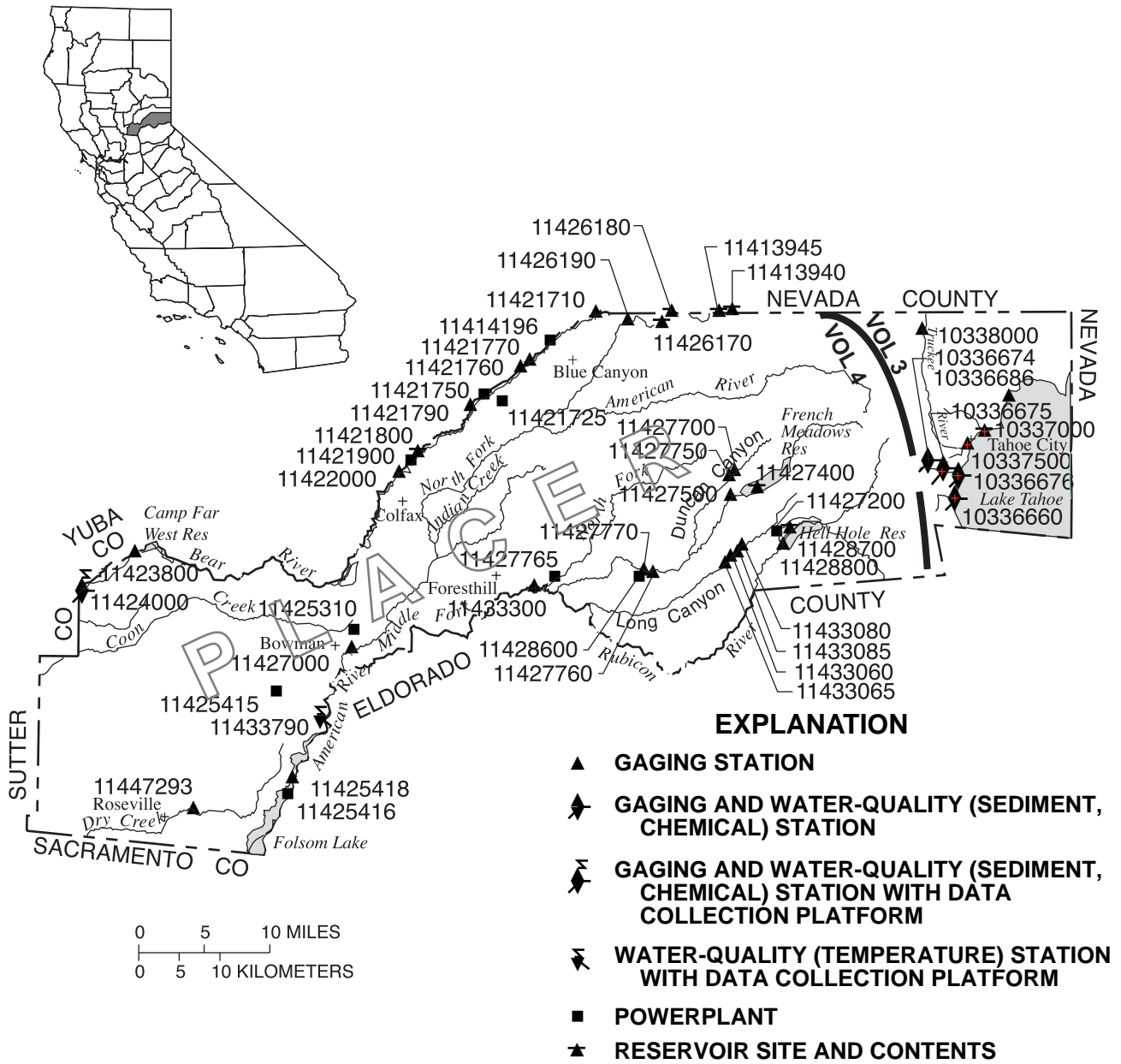


Figure 13. Location of discharge and water-quality stations in Placer County.
 (NOTE: Records for stations 10336660 through 10338000 published in volume 3.)

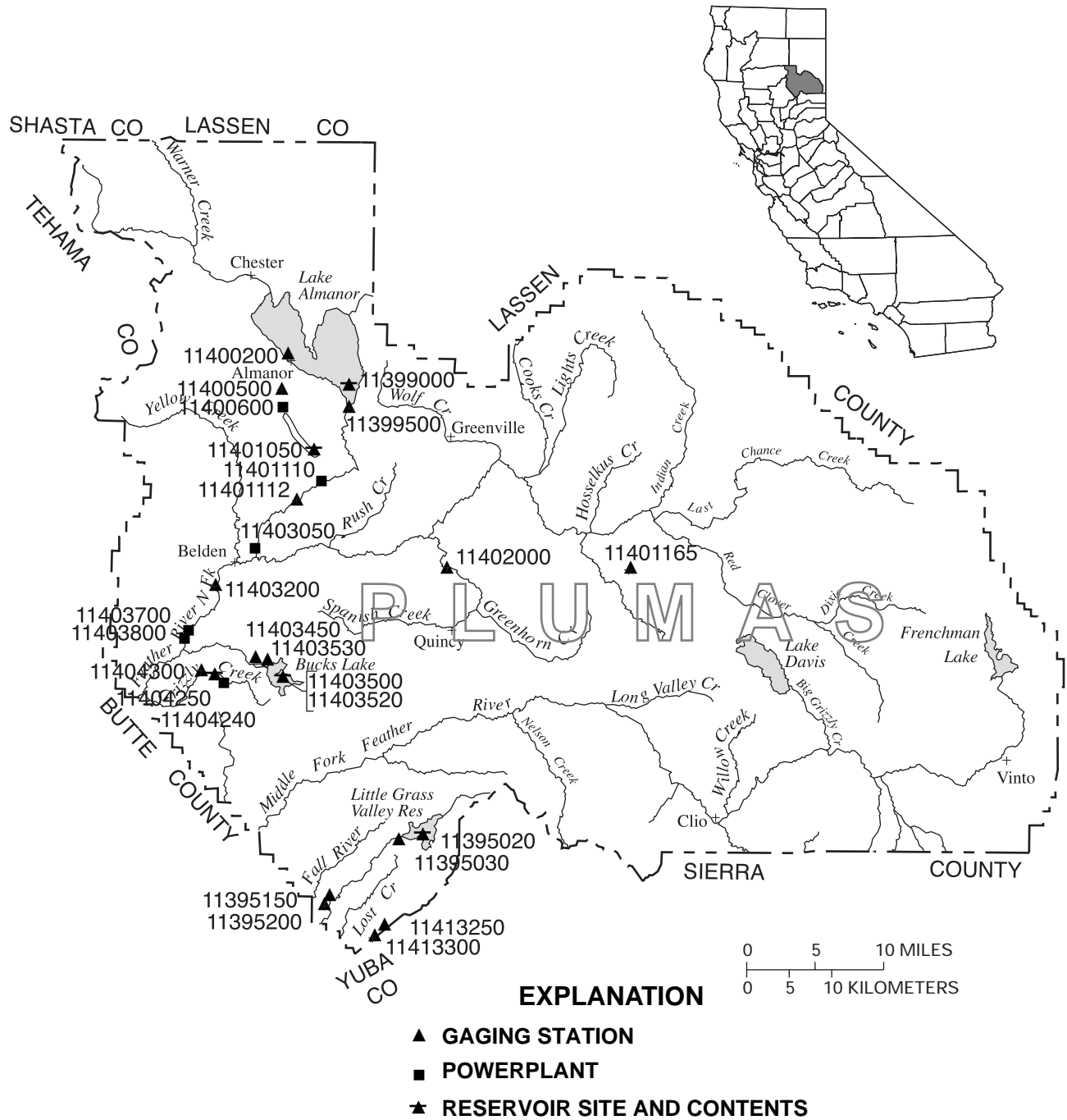


Figure 14. Location of discharge stations in Plumas County.

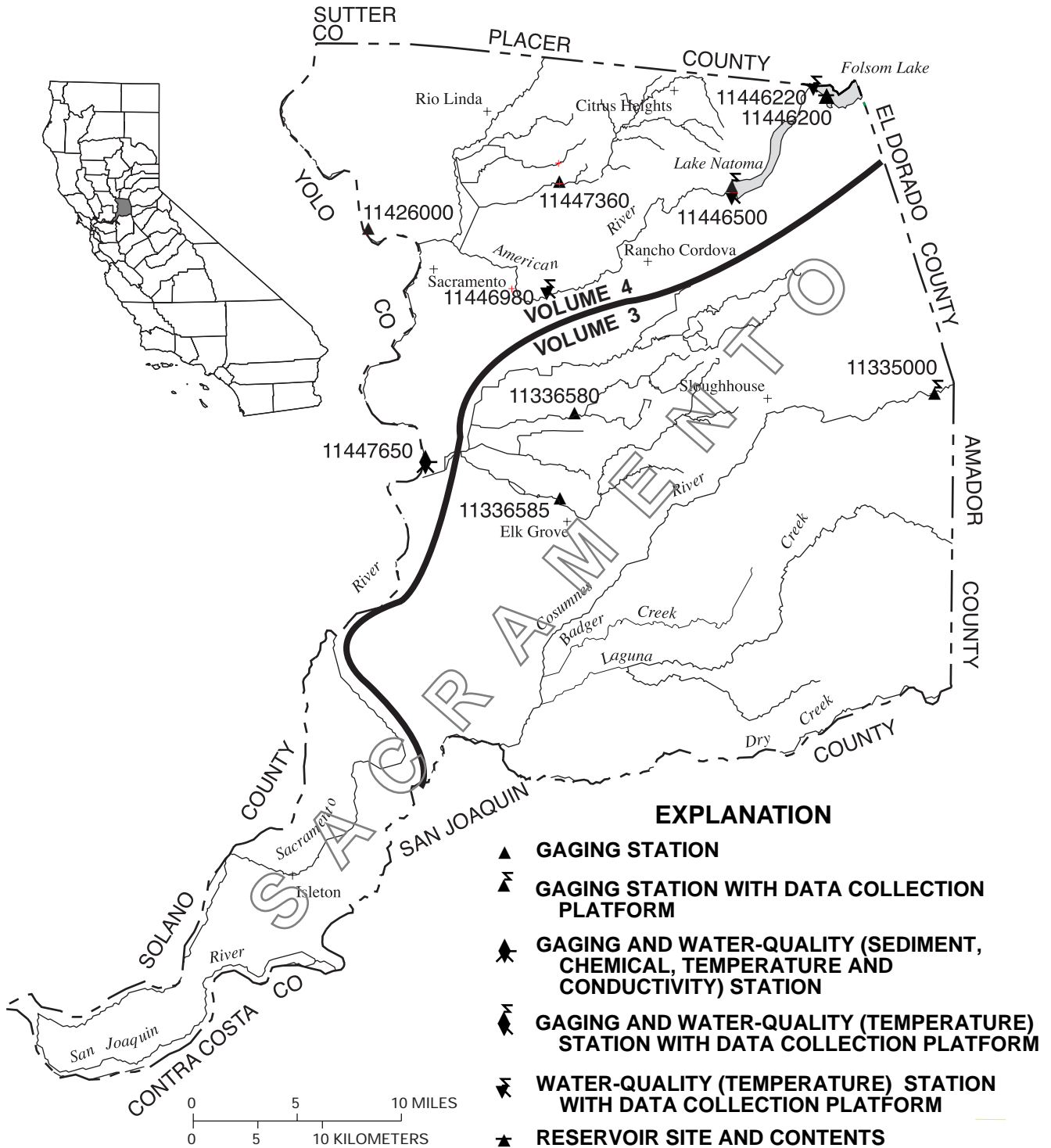
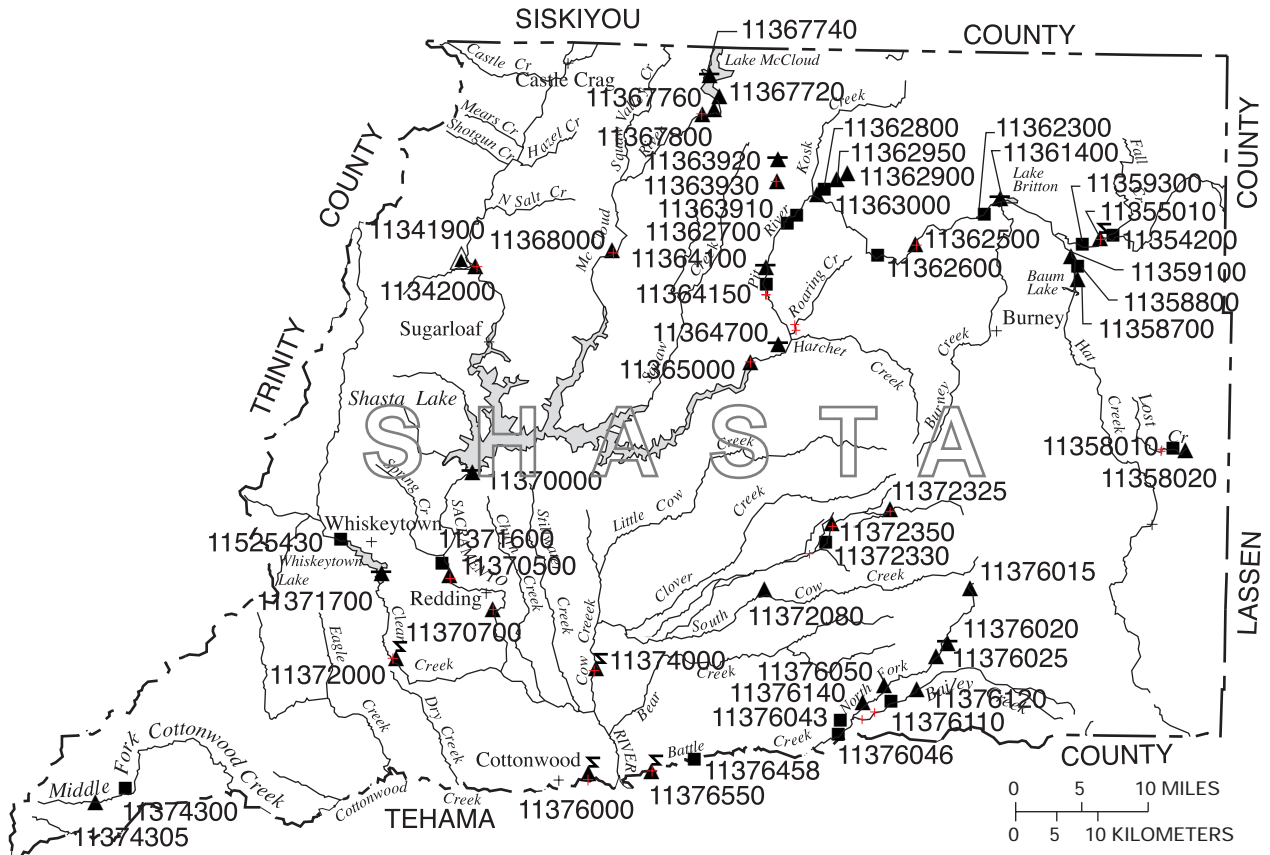


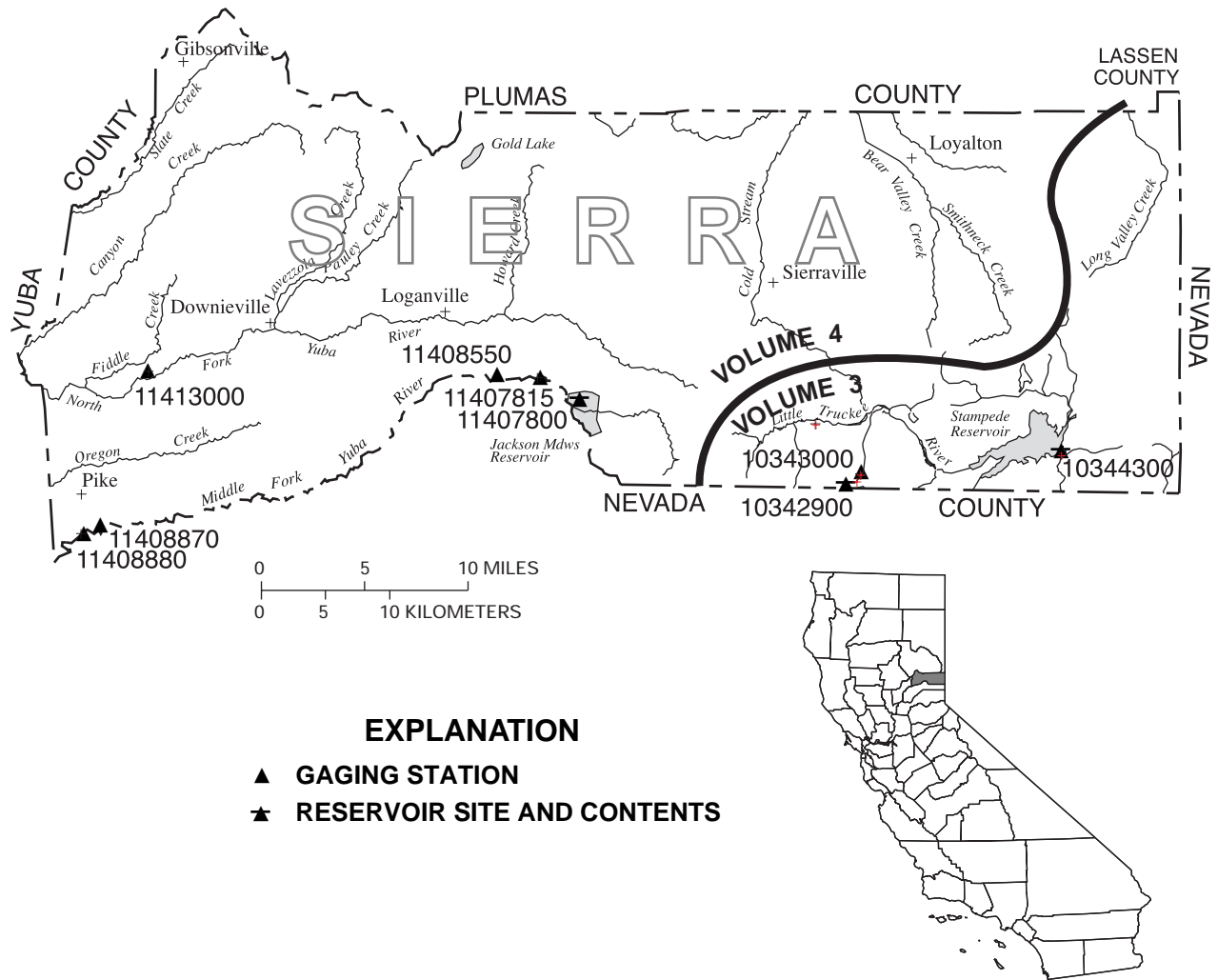
Figure 15. Location of discharge and water-quality stations in Sacramento County. (NOTE: Records for stations 11335000 through 11336585 published in volume 3.)



EXPLANATION

- ▲ GAGING STATION
- ▲ GAGING STATION WITH TELEMETRY
- ▲ GAGING STATION (PARTIAL RECORD)
- ▲ RESERVOIR SITE AND CONTENTS
- POWERPLANT

Figure 16. Location of discharge stations in Shasta County.



EXPLANATION

- ▲ GAGING STATION
- ★ RESERVOIR SITE AND CONTENTS

Figure 17. Location of discharge stations in Sierra County.
 (NOTE: Records for stations 10342900 through 10344300 published in volume 3.)

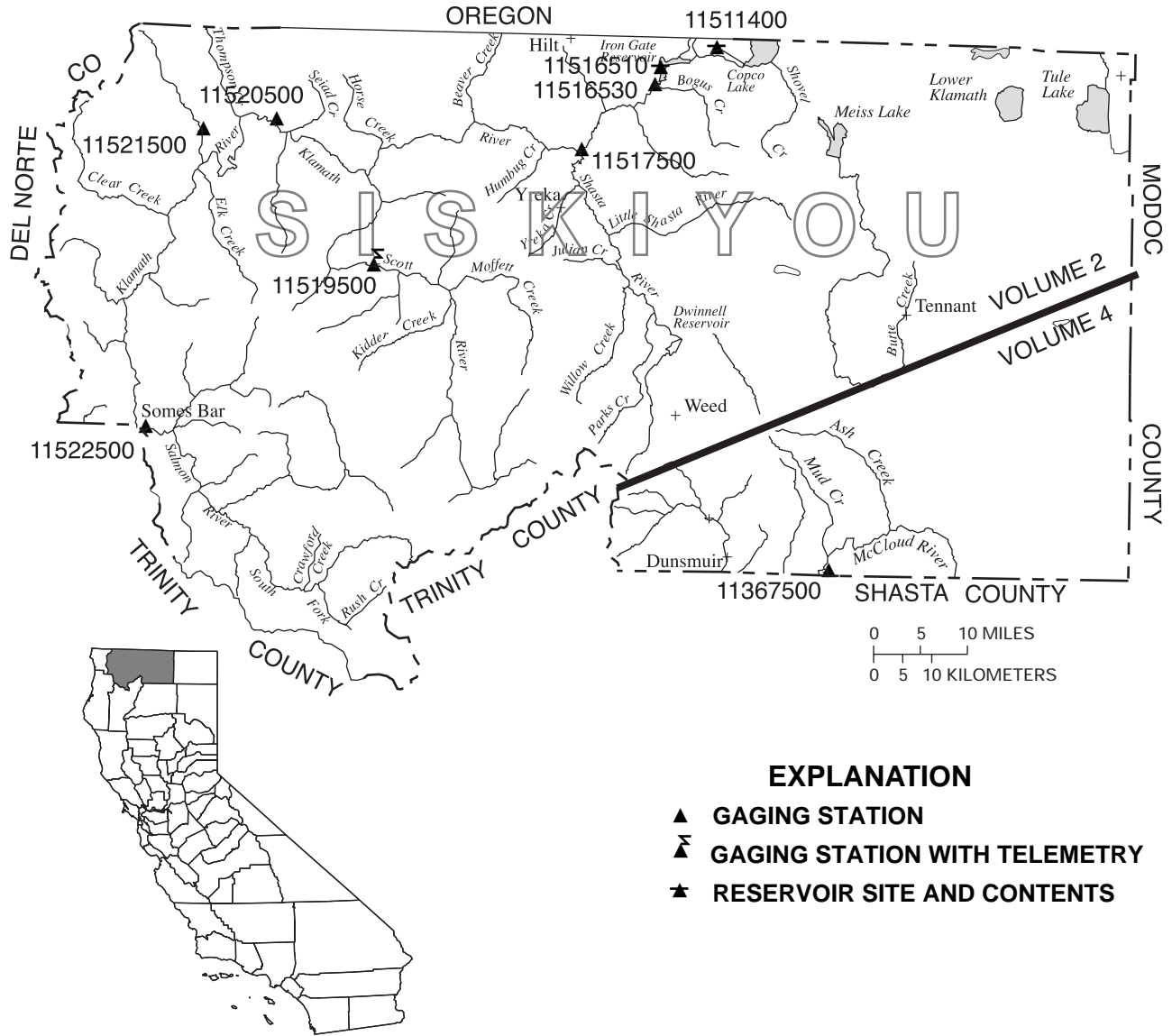


Figure 18. Location of discharge stations in Siskiyou County.
 (NOTE: Records for stations 11511400 through 11522500 published in volume 2.)

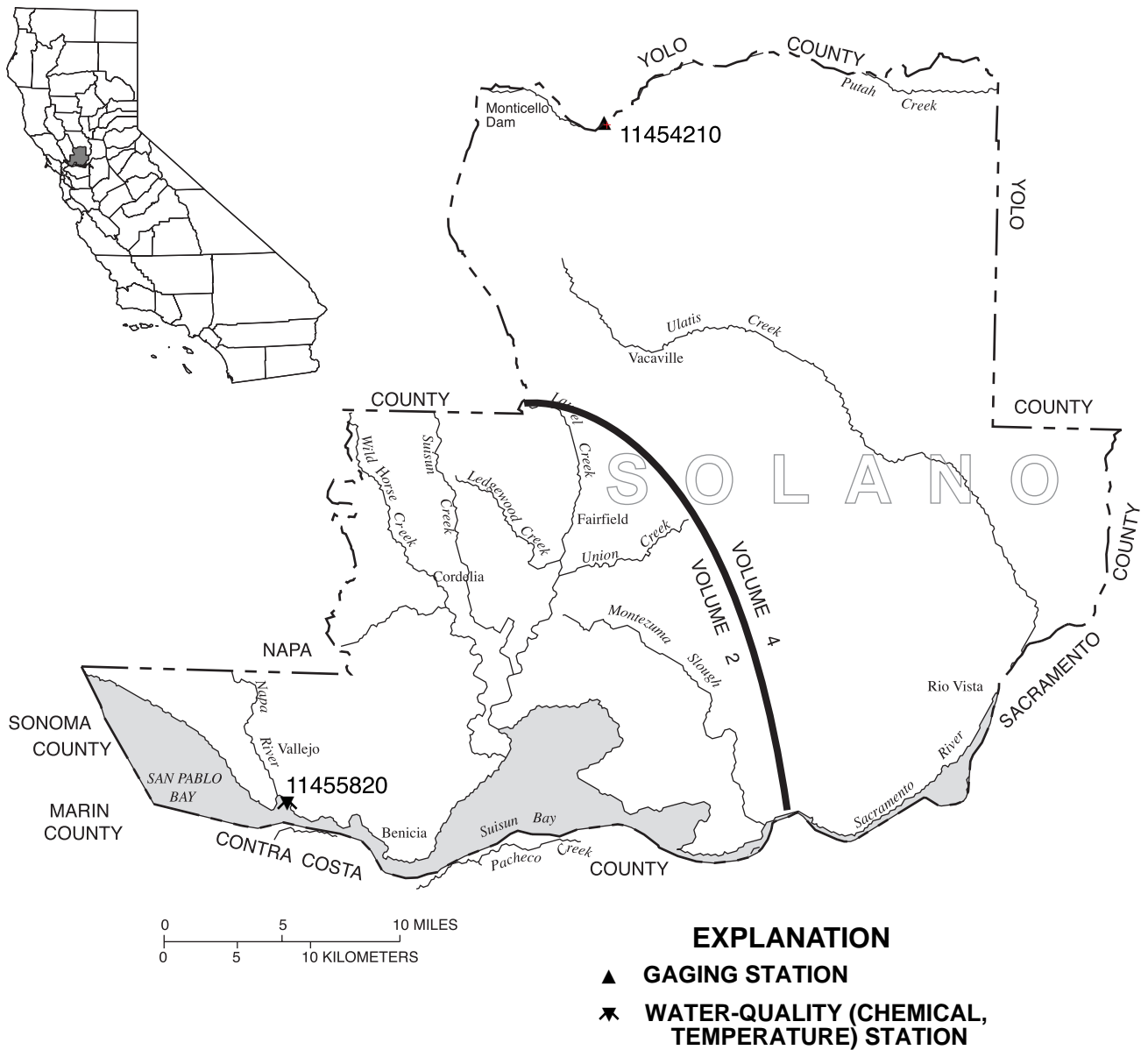


Figure 19. Location of discharge and water-quality stations in Solano County.
 (NOTE: Records for station 11455820 published in volume 2.)

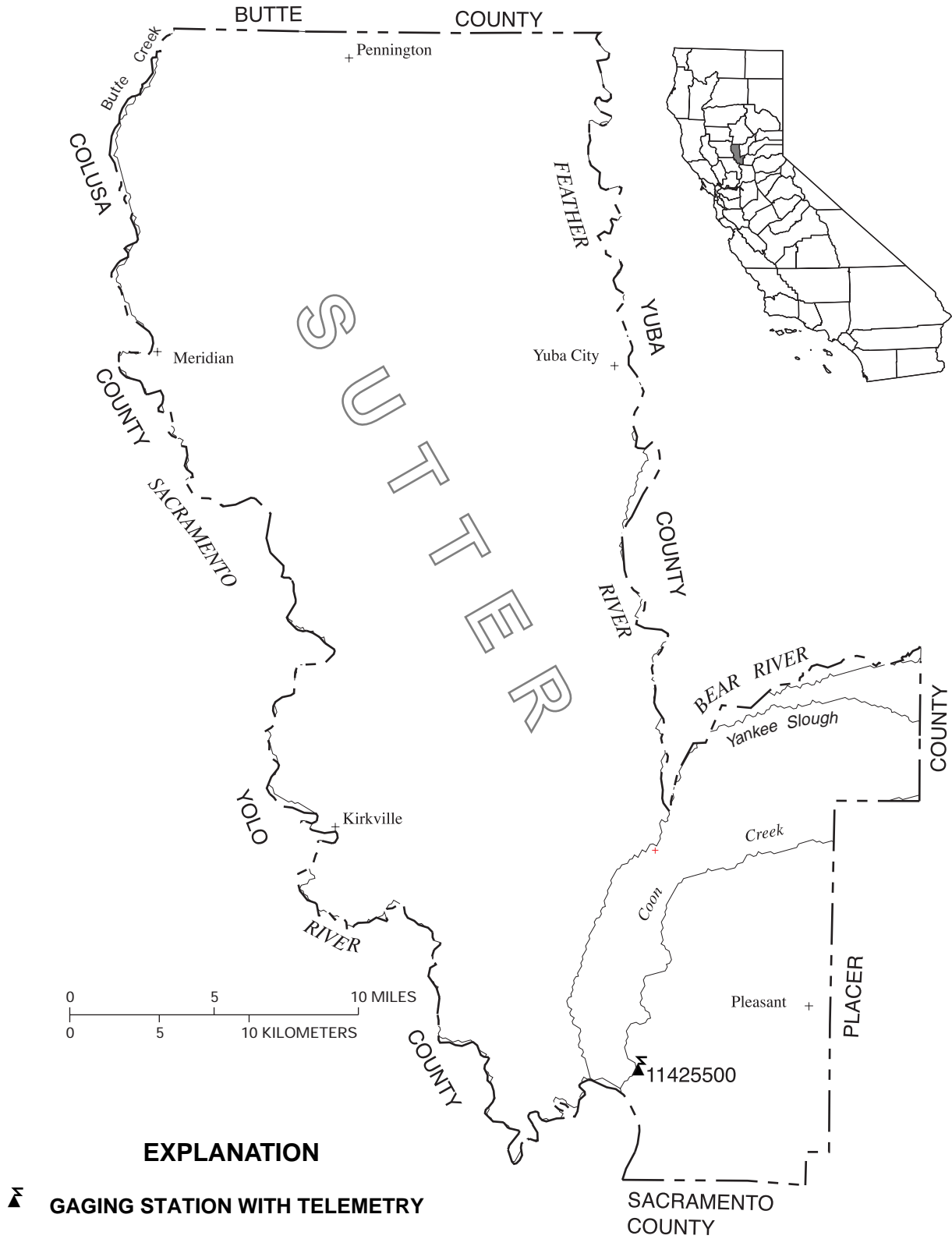


Figure 20. Location of discharge station in Sutter County.

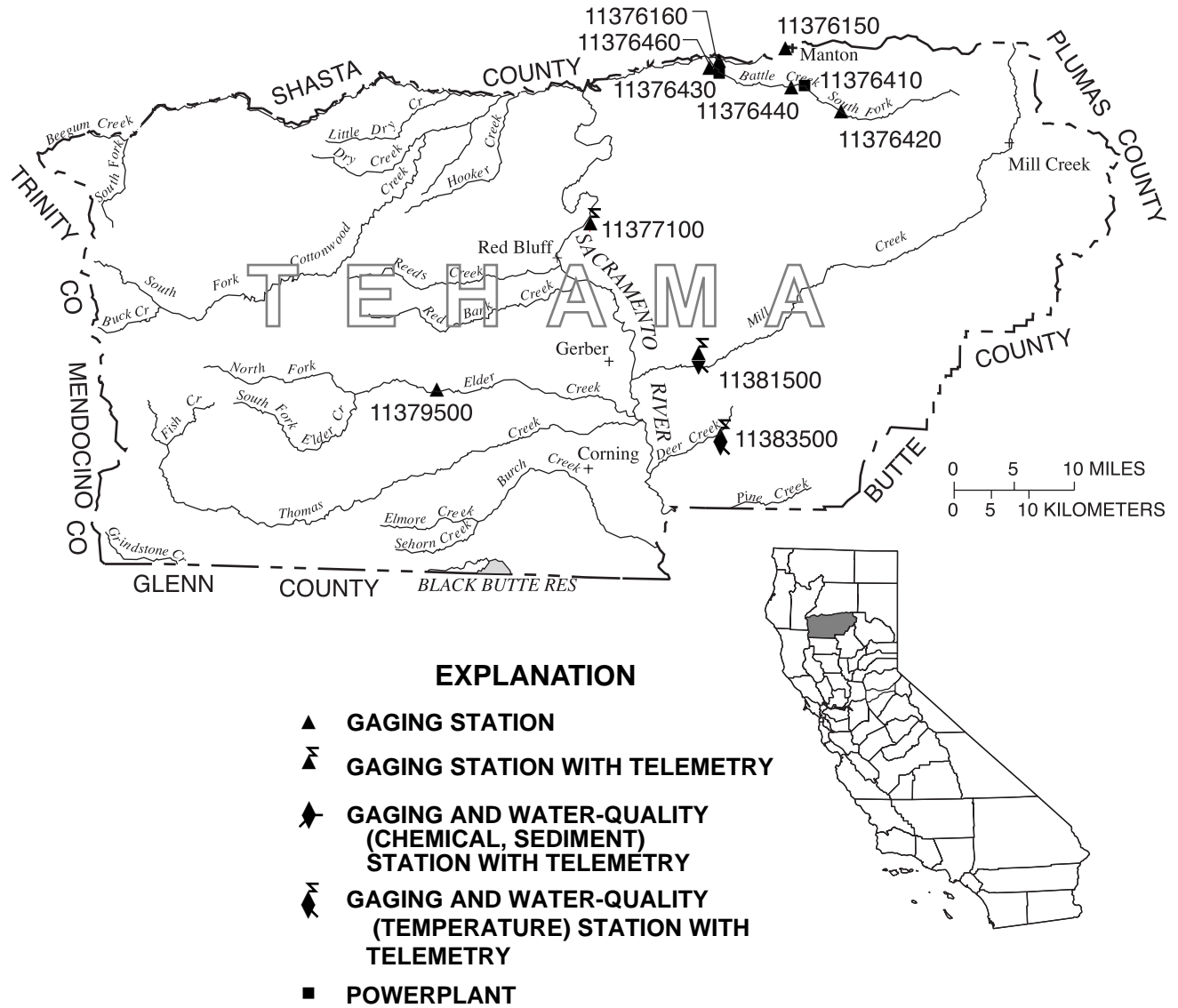
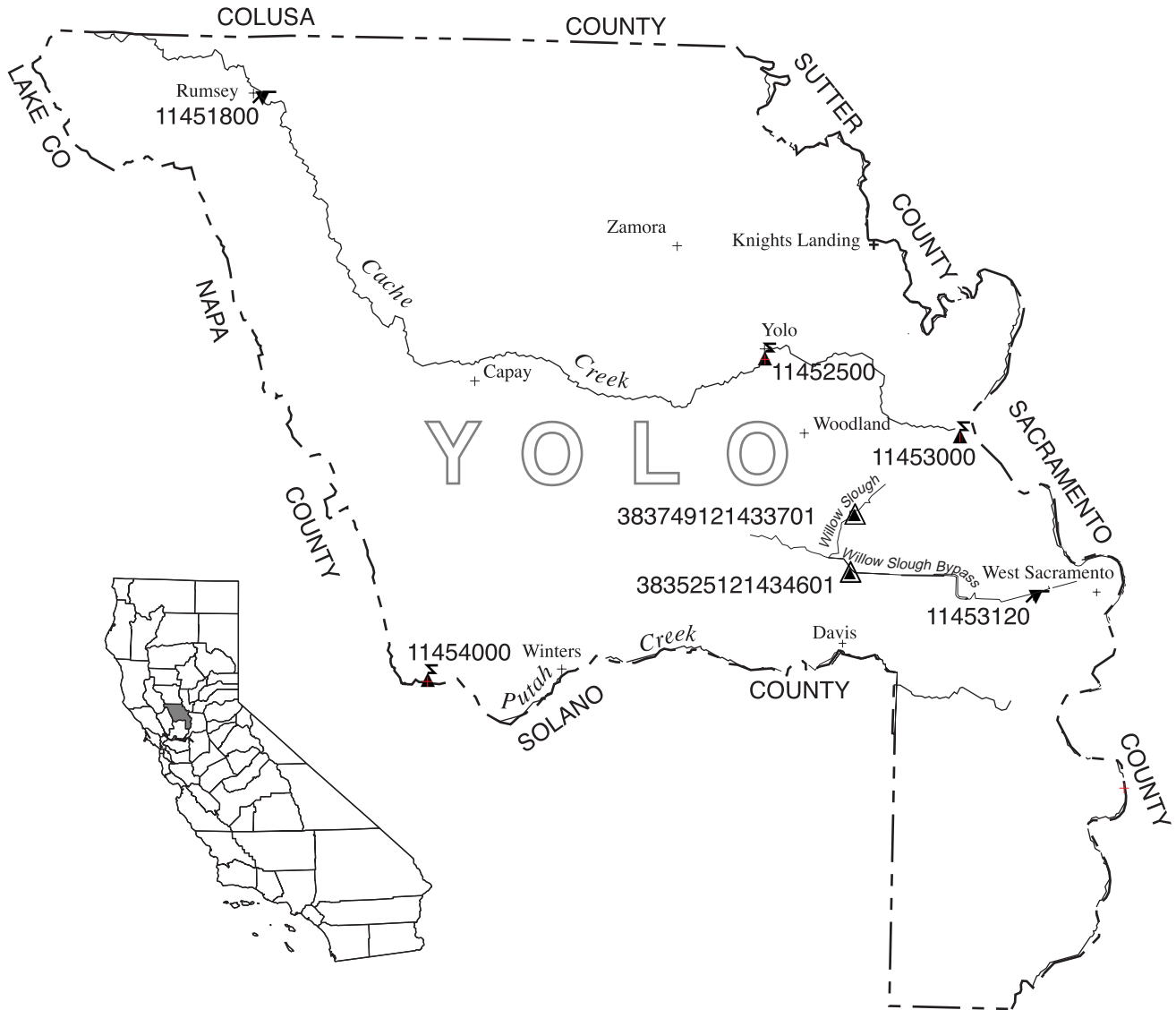


Figure 21. Location of discharge and water-quality stations in Tehama County.



EXPLANATION

- ▲ GAGING STATION (Partial Record)
- ▲ GAGING STATION WITH DATA COLLECTION PLATFORM
- WATER-QUALITY (CHEMICAL, SEDIMENT) STATION

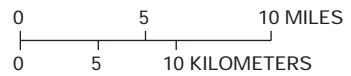


Figure 22. Location of discharge and water-quality stations in Yolo County.

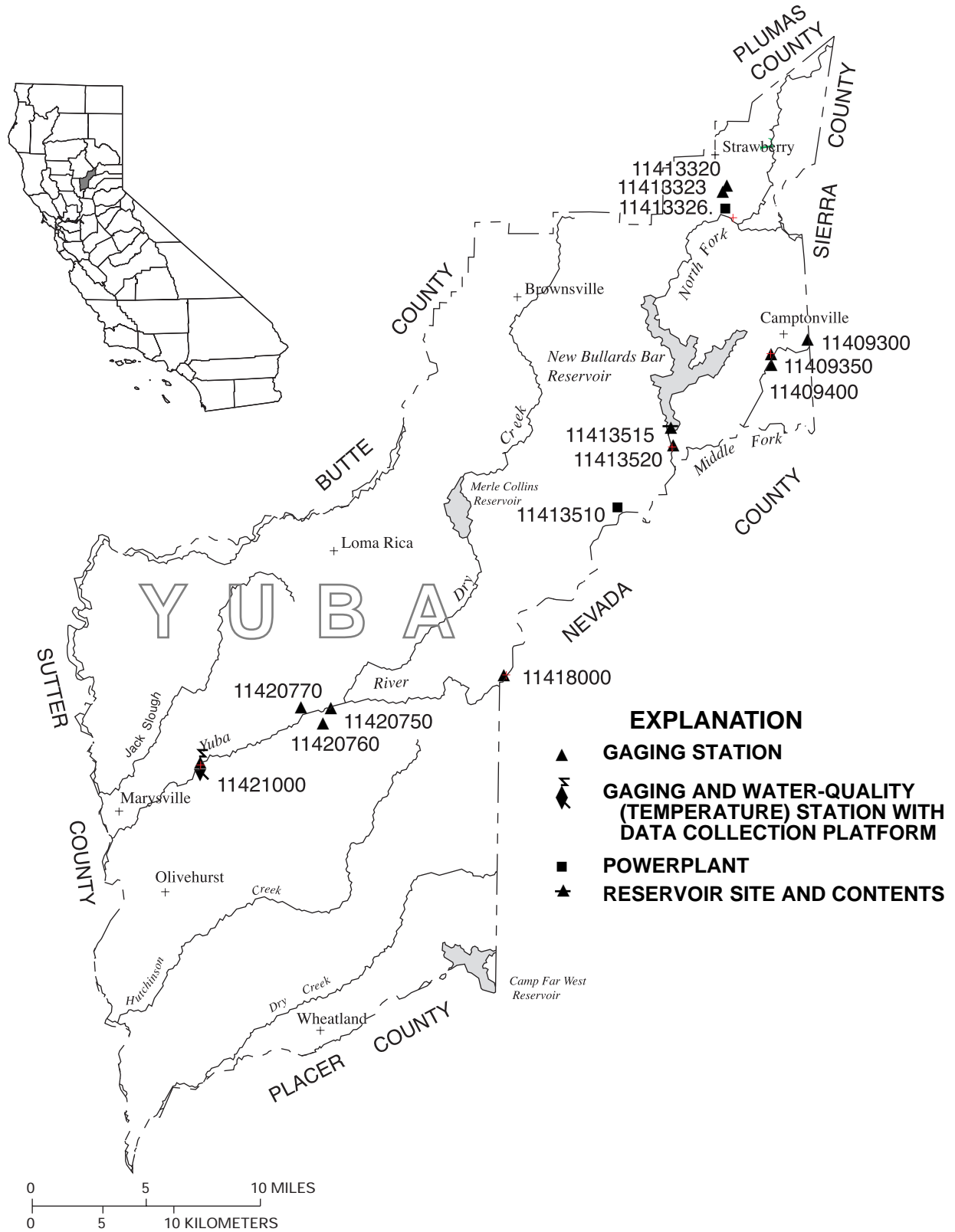


Figure 23. Location of discharge and water-quality stations in Yuba County.

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).

SACRAMENTO RIVER BASIN

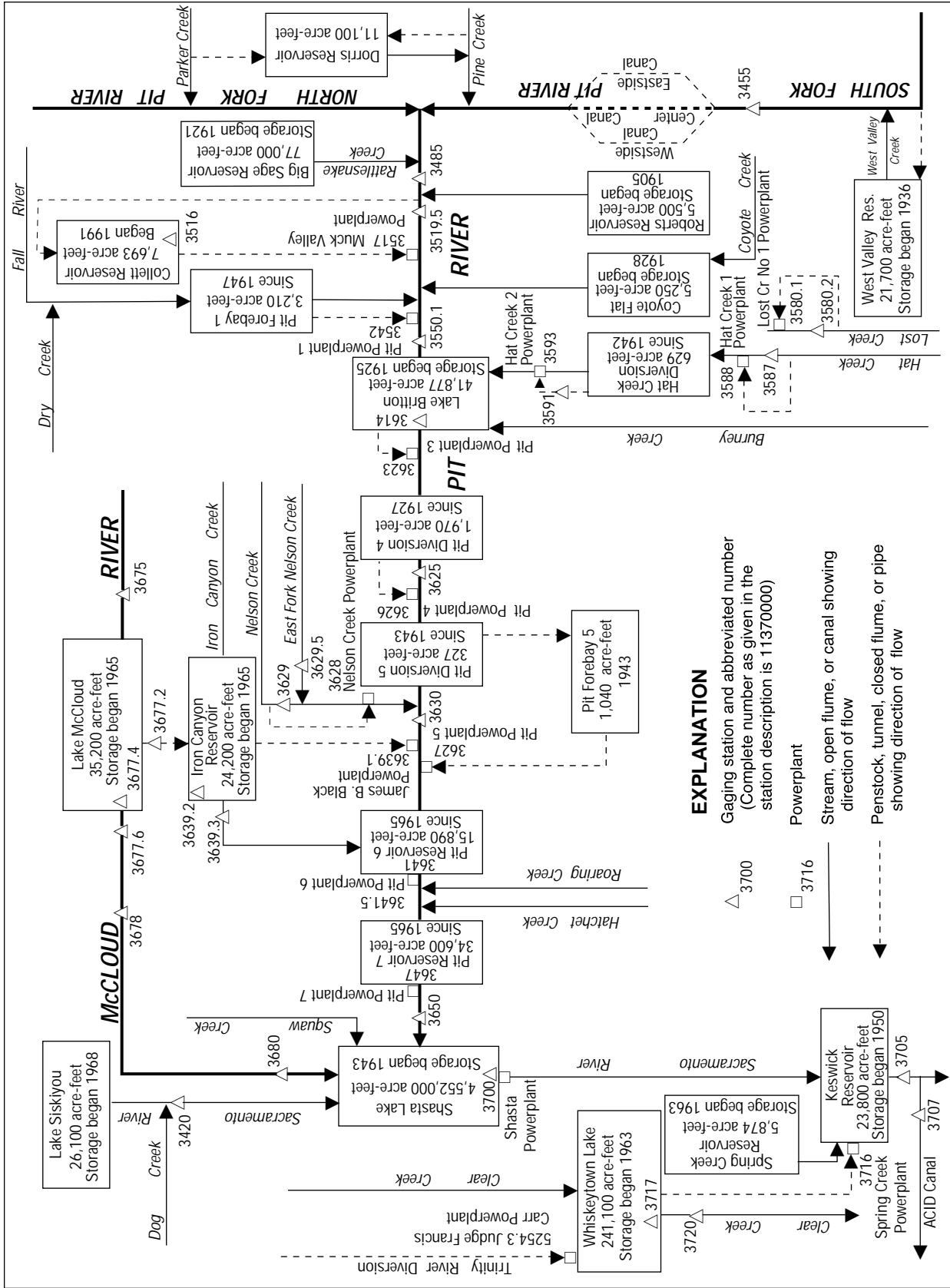


Figure 24. Diversions and storage in Pit and McCloud River Basins.

11342000 SACRAMENTO RIVER AT DELTA, CA

LOCATION.—Lat 40°56'23", long 122°24'58", in SW 1/4 NW 1/4 sec.35, T.36 N., R.5 W, Shasta County, Hydrologic Unit 18020005, U.S. Bureau of Reclamation property, on left bank, 0.2 mi downstream from Dog Creek, 0.6 mi southeast of Delta, 2.8 mi south of Lamoine, and 29 mi downstream from Lake Siskiyou.

DRAINAGE AREA.—425 mi².

PERIOD OF RECORD.—October 1944 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1951–81.

WATER TEMPERATURE: Water years 1951, 1954–57, 1963–79.

REVISED RECORDS.—WSP 1395: 1951(M). WDR-CA-94-4: 1993(P).

GAGE.—Water-stage recorder. Datum of gage is 1,075.00 ft above sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Records excellent. Some regulation by Lake Siskiyou, capacity, 26,100 acre-ft, since December 1968. Some minor diversions for irrigation upstream from station. See schematic diagram of Pit and McCloud River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 69,800 ft³/s, Jan. 16, 1974, gage height, 27.20 ft in gage well, 28.7 ft from floodmarks, from rating curve extended above 19,000 ft³/s on basis of slope-area measurements at gage height 19.50 ft, and of peak flow; minimum daily, 117 ft³/s, Aug. 5, 6, 12–15, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 8,000 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	1330	8,310	10.13	Nov. 30	1230	13,000	11.59

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	318	343	5130	555	905	4920	1850	2310	1670	475	292	247
2	317	347	3450	539	857	3760	1700	2540	1550	449	291	245
3	317	351	4320	528	823	4010	1580	2270	1310	435	288	242
4	314	357	2880	517	801	3130	1540	2040	1170	431	286	238
5	311	362	2240	505	765	2550	1500	1930	1160	433	285	237
6	308	365	1870	499	1640	2160	1450	2070	1150	430	286	235
7	304	629	1380	495	5140	1930	1440	2270	1060	414	297	233
8	303	538	1130	494	3120	1920	2730	2110	996	402	301	231
9	303	456	1050	486	3090	1780	2200	1930	946	393	288	230
10	303	481	955	477	2390	1660	2050	1780	915	383	285	231
11	303	522	895	473	1920	1630	1980	1740	893	379	292	229
12	303	483	856	470	1620	1560	2040	1850	900	363	287	225
13	303	453	934	468	1440	1520	2170	1870	904	356	280	225
14	303	426	953	461	1350	1600	2270	1740	906	355	278	224
15	301	423	863	477	1240	1620	2360	1610	887	345	276	222
16	298	438	822	705	1620	1610	2500	1550	834	336	267	222
17	297	620	829	1210	2140	1640	2850	1590	793	332	240	223
18	295	524	836	2910	2530	1710	3340	1840	763	332	235	223
19	292	438	794	2300	2630	1730	3670	1970	723	331	245	222
20	291	394	758	2470	2150	1780	3500	2110	693	325	260	222
21	289	1400	678	2300	2060	1770	3130	2150	665	322	255	222
22	286	1370	665	2990	2130	1700	2770	2190	637	318	254	221
23	286	4190	645	3900	2780	1880	2560	2360	628	315	254	221
24	317	2280	637	2460	3110	3530	2650	2540	605	312	255	221
25	400	1780	609	1890	5490	5820	2790	2640	577	310	251	220
26	371	2090	598	1610	3550	4150	2920	2490	554	307	248	216
27	331	1860	592	1340	2840	3200	2730	2420	536	304	249	216
28	328	1190	582	1190	5380	2680	2340	2420	510	287	252	217
29	330	1220	573	1090	---	2360	2100	2280	494	280	249	217
30	331	7780	566	1020	---	2190	2100	1960	479	291	246	218
31	333	---	564	990	---	2010	---	1730	---	293	247	---
TOTAL	9686	34110	39654	37819	65511	75510	70810	64300	25908	11038	8319	6795
MEAN	312	1137	1279	1220	2340	2436	2360	2074	864	356	268	226
MAX	400	7780	5130	3900	5490	5820	3670	2640	1670	475	301	247
MIN	286	343	564	461	765	1520	1440	1550	479	280	235	216
AC-FT	19210	67660	78650	75010	129900	149800	140500	127500	51390	21890	16500	13480

11342000 SACRAMENTO RIVER AT DELTA, 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	355	790	1357	1880	2306	2257	2004	1694	827	345	236	233
MAX	1837	6075	5770	7162	9557	7957	4264	4216	3741	1198	462	514
(WY)	1951	1974	1997	1995	1958	1983	1963	1983	1998	1998	1983	1957
MIN	150	187	197	214	226	243	264	410	229	145	122	154
(WY)	1945	1992	1977	1991	1977	1977	1977	1977	1977	1977	1977	1991

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1945 - 1999	
ANNUAL TOTAL	952429		449460			
ANNUAL MEAN	2609		1231		1184	
HIGHEST ANNUAL MEAN					2715	
LOWEST ANNUAL MEAN					228	
HIGHEST DAILY MEAN	21300	Mar 23	7780	Nov 30	53900	Jan 16 1974
LOWEST DAILY MEAN	286	Oct 22	216	Sep 26	117	Aug 5 1977
ANNUAL SEVEN-DAY MINIMUM	291	Oct 17	218	Sep 24	117	Aug 11 1977
INSTANTANEOUS PEAK FLOW			13000		69800	
INSTANTANEOUS PEAK STAGE			11.59		27.20	
ANNUAL RUNOFF (AC-FT)	1889000		891500		858000	
10 PERCENT EXCEEDS	5400		2700		2660	
50 PERCENT EXCEEDS	1870		758		532	
90 PERCENT EXCEEDS	324		249		199	

11345500 SOUTH FORK PIT RIVER NEAR LIKELY, CA

LOCATION.—Lat 41°13'51", long 120°26'10", in NE 1/4 SE 1/4 sec.11, T.39 N., R.13 E., Modoc County, Hydrologic Unit 18020002, on left bank, 250 ft downstream from highway bridge, 1.4 mi downstream from West Valley Creek, and 3.5 mi east of Likely.

DRAINAGE AREA.—247 mi².

PERIOD OF RECORD.—October 1928 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1951–79.

WATER TEMPERATURE: Water years 1965–79.

SEDIMENT DATA: Water years 1957–61, 1967–70.

REVISED RECORDS.—WSP 1931: Drainage area, 1932(M), 1938(M), 1952(M). WDR CA-88-4: 1983(M).

GAGE.—Water-stage recorder. Datum of gage is 4,507.74 ft above sea level. Prior to Oct. 1, 1931, at site 1,000 ft downstream at different datum.

REMARKS.—Records fair. Considerable regulation by West Valley Reservoir on West Valley Creek beginning in May 1937, usable capacity, 21,700 acre-ft. Diversions for irrigation of about 3,800 acres upstream from station. See schematic diagram of Pit and McCloud River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 1,620 ft³/s, June 2, 1971, gage height, 6.05 ft; minimum, 0.2 ft³/s, Feb. 3, 1941.

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	48	41	45	e23	e21	93	28	235	320	164	163	103
2	47	42	39	e21	e27	66	30	261	315	151	171	110
3	47	38	35	e20	e21	62	33	278	331	148	180	126
4	46	25	35	e19	e19	53	26	265	361	145	191	147
5	46	18	e35	e18	e22	47	36	247	365	141	216	145
6	45	17	e30	e17	e19	45	52	240	351	140	220	145
7	44	20	e25	e17	e28	45	66	250	322	133	211	141
8	44	25	e30	e17	e46	43	81	259	298	127	201	121
9	43	25	e35	e17	e57	40	92	260	270	125	186	99
10	43	25	e39	e17	e51	40	109	260	251	115	157	85
11	42	26	e40	e17	e51	40	117	254	238	107	128	76
12	42	25	e41	e17	e42	42	118	256	224	112	95	74
13	42	25	42	e17	e36	51	119	265	212	136	83	72
14	41	26	45	e17	e34	48	124	262	205	155	75	64
15	42	26	35	e22	e34	44	127	260	195	157	75	57
16	42	28	31	e29	e34	37	129	255	190	175	72	59
17	41	28	29	e25	e35	26	138	257	182	209	71	56
18	41	29	26	e35	e35	27	158	270	178	209	87	57
19	41	25	e22	e31	e36	30	171	287	183	208	104	58
20	40	25	e18	e31	e36	32	193	300	212	196	119	56
21	39	25	e15	e30	e37	30	216	310	204	183	143	63
22	39	33	e14	e27	e37	27	207	321	194	177	145	81
23	38	34	e14	e26	e38	25	195	336	185	172	146	82
24	38	35	e15	e26	e40	24	200	356	176	171	144	82
25	42	33	e17	e35	e42	25	215	380	170	170	143	85
26	42	29	e19	e36	e43	31	231	395	163	162	146	86
27	42	35	e24	e31	e45	31	247	396	156	144	158	85
28	43	46	e30	e28	66	28	242	392	145	141	154	86
29	44	43	e28	e26	---	27	225	379	147	148	149	81
30	42	40	e26	e23	---	27	221	359	173	164	132	73
31	40	---	e24	e24	---	27	---	336	---	165	110	---
TOTAL	1316	892	903	739	1032	1213	4146	9181	6916	4850	4375	2655
MEAN	42.5	29.7	29.1	23.8	36.9	39.1	138	296	231	156	141	88.5
MAX	48	46	45	36	66	93	247	396	365	209	220	147
MIN	38	17	14	17	19	24	26	235	145	107	71	56
AC-FT	2610	1770	1790	1470	2050	2410	8220	18210	13720	9620	8680	5270

e Estimated.

11345500 SOUTH FORK PIT RIVER NEAR LIKELY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	31.9	28.0	28.6	31.2	35.3	48.7	110	236	181	93.0	117	58.2
MAX	63.4	57.8	107	98.5	101	219	385	570	643	238	236	159
(WY)	1997	1985	1965	1997	1965	1972	1952	1984	1998	1995	1995	1975
MIN	15.7	5.17	3.28	5.99	4.07	4.63	16.9	25.7	12.1	7.70	9.97	10.5
(WY)	1932	1980	1980	1941	1978	1977	1991	1931	1931	1931	1934	1931

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1929 - 1999	
ANNUAL TOTAL	58826.0		38218			
ANNUAL MEAN	161		105		83.4	
HIGHEST ANNUAL MEAN					183	
LOWEST ANNUAL MEAN					27.3	
HIGHEST DAILY MEAN	995	Jun 12	396	May 27	1220	Jun 2 1971
LOWEST DAILY MEAN	7.5	Jan 7	14	Dec 22	.80	Mar 19 1940
ANNUAL SEVEN-DAY MINIMUM	12	Jan 4	16	Dec 20	1.1	Feb 3 1941
INSTANTANEOUS PEAK FLOW			400		1620	Jun 2 1971
INSTANTANEOUS PEAK STAGE			3.86		6.05	Jun 2 1971
ANNUAL RUNOFF (AC-FT)	116700		75810		60410	
10 PERCENT EXCEEDS	507		252		191	
50 PERCENT EXCEEDS	46		53		43	
90 PERCENT EXCEEDS	23		25		12	

11348500 PIT RIVER NEAR CANBY, CA

LOCATION.—Lat 41°24'22", long 120°55'36", in NW 1/4 SW 1/4 sec.10, T.41 N., R.9 E., Modoc County, Hydrologic Unit 18020002, on right bank, at lower end of Warm Spring Valley, and 3.9 mi southwest of Canby.

DRAINAGE AREA.—1,431 mi², excluding Goose Lake Basin.

PERIOD OF RECORD.—January 1904 to December 1905, May 1929 to current year (1929–31 incomplete).

CHEMICAL DATA: Water years 1951–79.

WATER TEMPERATURE: Water years 1965–79.

SEDIMENT DATA: Water years 1957–61, 1967–70.

REVISED RECORDS.—WSP 1445: 1904, 1935(M), 1936, 1937(M). WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 4,266.0 ft above sea level. January 1904 to December 1905, nonrecording gage and May 6, 1929, to Sept. 30, 1931, water-stage recorder, at site 100 ft upstream at different datum.

REMARKS.—Records good. Low flow regulated by many small reservoirs, total capacity about 144,000 acre-ft. Diversions for irrigation of about 39,000 acres upstream from station. See schematic diagram of Pit and McCloud River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge observed, 13,000 ft³/s, Mar. 8, 1904, gage height, 15.0 ft, site and datum then in use; minimum daily, 0.1 ft³/s, several days in April 1934 and August 1935.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 800 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	1915	1,320	5.43	Feb. 10	1900	2,320	6.85
Dec. 14	2015	1,140	5.14	Mar. 3	0200	3,100	7.82
Jan. 24	1500	836	4.59	Apr. 21	2345	921	4.65

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	386	246	1220	295	249	2180	591	568	461	59	51	86
2	330	199	1070	234	223	3000	559	640	432	91	45	121
3	247	198	708	157	225	3000	539	769	491	76	40	103
4	237	193	600	143	253	2650	525	835	621	49	33	98
5	241	178	528	165	265	1960	491	850	752	40	34	101
6	243	152	413	149	275	1350	505	775	788	38	39	98
7	251	154	286	145	751	1060	512	715	738	39	44	99
8	239	175	e275	135	1270	905	512	664	588	43	49	133
9	238	193	e280	120	1640	795	449	660	452	56	64	138
10	245	195	e300	128	2010	742	446	665	301	36	74	160
11	238	240	e320	138	2160	701	450	620	320	35	92	210
12	237	282	e360	139	1540	659	461	603	272	32	143	201
13	241	251	452	142	875	626	508	599	249	28	247	202
14	245	246	961	148	669	661	457	584	258	29	225	194
15	239	227	895	156	606	686	440	602	235	27	179	182
16	238	222	598	190	570	647	480	488	166	26	138	175
17	239	226	470	239	615	678	521	509	126	27	119	159
18	234	246	411	417	928	688	598	399	107	28	114	144
19	247	235	340	700	1180	688	677	301	132	37	95	140
20	241	215	240	575	1000	687	776	232	147	32	69	139
21	226	210	161	544	763	700	853	308	147	25	56	147
22	225	295	e150	497	630	668	889	364	100	15	41	129
23	229	664	e160	664	617	630	766	407	84	25	40	159
24	247	843	e180	798	781	601	661	425	62	57	43	155
25	254	687	e220	682	1290	593	656	461	60	59	41	159
26	241	532	247	529	1410	606	701	501	69	74	44	148
27	242	666	270	432	1100	636	734	547	54	81	47	156
28	248	957	294	341	1150	614	661	585	26	85	47	158
29	267	754	331	291	---	565	656	499	16	76	43	156
30	283	788	345	295	---	567	607	490	18	65	44	122
31	276	---	307	285	---	603	---	508	---	61	53	---
TOTAL	7794	10669	13392	9873	25045	31146	17681	17173	8272	1451	2393	4372
MEAN	251	356	432	318	894	1005	589	554	276	46.8	77.2	146
MAX	386	957	1220	798	2160	3000	889	850	788	91	247	210
MIN	225	152	150	120	223	565	440	232	16	15	33	86
AC-FT	15460	21160	26560	19580	49680	61780	35070	34060	16410	2880	4750	8670

e Estimated.

11348500 PIT RIVER NEAR CANBY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	80.0	107	195	318	437	558	477	479	284	67.4	44.9	66.3
MAX	1068	418	1225	1684	2249	1749	2774	2176	1746	312	125	201
(WY)	1963	1982	1938	1970	1986	1972	1952	1995	1971	1971	1983	1998
MIN	.26	12.7	31.0	14.7	19.2	5.83	1.29	2.32	3.53	4.62	.22	.28
(WY)	1935	1935	1937	1937	1937	1934	1934	1992	1992	1931	1934	1934

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1904 - 1999	
ANNUAL TOTAL	222220		149261			
ANNUAL MEAN	609		409		258	
HIGHEST ANNUAL MEAN					676	
LOWEST ANNUAL MEAN					22.4	
HIGHEST DAILY MEAN	3870	May 13	3000	Mar 2	8580	Feb 19 1986
LOWEST DAILY MEAN	59	Sep 6	15	Jul 22	.10	Apr 18 1934
ANNUAL SEVEN-DAY MINIMUM	73	Jul 15	27	Jul 17	.13	Apr 17 1934
INSTANTANEOUS PEAK FLOW			3100		13000	
INSTANTANEOUS PEAK STAGE			7.82		15.00	
ANNUAL RUNOFF (AC-FT)	440800		296100		186700	
10 PERCENT EXCEEDS	1650		778		656	
50 PERCENT EXCEEDS	299		254		96	
90 PERCENT EXCEEDS	108		48		16	

11351600 COLLETT RESERVOIR NEAR LITTLE VALLEY, CA

LOCATION.—Lat 40°58'00", long 121°13'00", unsurveyed, Lassen County, Hydrologic Unit 18020003, on right bank, 1.9 mi east of Muck Valley Powerplant, 5.5 mi northwest of Little Valley, and 9.1 mi southwest of Nubieber.

PERIOD OF RECORD.—October 1991 to September 1992; October 1993 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Lake is formed by earth and rockfill dam. Storage began Dec. 31, 1990. Water is diverted from the Pit River through a tunnel to the reservoir. Operating pool from elevation 4,030 ft, capacity 155 acre-ft, to 4,065 ft, capacity 7,693 acre-ft. Crest of spillway is at elevation 4,065 ft. Reservoir is used for power generation. Figures given represent total contents. Data not published below the minimum operating level at elevation 4,030 ft, capacity 155 acre-ft. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Records were provided by Malacha Hydro Limited Partnership, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Malacha Hydro Limited Partnership, dated November 1991)

4,030	155	4,040	1,899
4,032	395	4,050	4,052
4,035	931	4,065	7,693

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	4035	6532	656	1788	5004	6186	6509	5960	6889	3655	399	297
2	4433	6296	656	1788	4876	6300	6472	6253	6785	3362	389	269
3	4984	5769	675	1788	4732	6383	6436	6309	6668	3362	383	255
4	5457	5228	678	1748	4606	6347	6400	6201	6629	3362	347	255
5	5712	4680	683	1674	4678	6314	6367	6150	7414	3362	297	243
6	5877	4124	683	1599	5405	6282	6329	6049	7368	3061	271	237
7	5972	4139	814	1541	5863	6269	6293	5974	7225	2782	271	237
8	6011	4146	814	1477	5754	6238	6266	6257	7090	2542	271	237
9	6058	3625	738	1477	5730	6213	6231	6533	6962	2300	257	237
10	6463	3163	720	1477	5733	6180	6198	6535	6836	2300	257	237
11	6878	3178	680	1509	5736	6147	6163	6417	6685	2300	257	237
12	6651	2741	907	1524	5729	6110	6124	6308	6974	2081	257	237
13	6403	2377	914	1518	5856	6075	6093	6198	7184	1869	257	237
14	5995	2384	918	1514	6076	6043	6053	6122	7054	1655	257	255
15	5648	2388	1060	1542	6365	6025	6018	6258	6913	1446	257	505
16	5527	1954	1511	2168	6271	6127	5986	6384	6770	1218	257	726
17	6019	1534	1787	2914	6239	6241	5952	6334	6488	1218	257	681
18	6522	1155	1787	3113	6143	6344	5918	6228	6202	1218	257	681
19	6373	781	1783	3057	6005	6450	5758	6164	6202	1099	257	681
20	6171	531	1783	3079	5971	6726	5601	6514	6202	982	289	701
21	6042	550	1783	3098	5948	6923	5449	6647	5967	867	319	660
22	5855	556	1783	3183	5827	6881	5302	7167	5641	745	319	640
23	5632	576	1783	4028	5941	6842	5208	7580	5331	603	335	664
24	6066	576	1783	5097	6046	6805	5550	7509	5012	603	335	682
25	6522	576	1783	5363	6166	6765	5880	7476	4688	603	335	682
26	6361	592	1783	5386	6250	6728	6282	7349	4688	497	335	682
27	5985	604	1783	5392	6217	6689	6104	7224	4688	425	297	688
28	5793	604	1783	5348	6191	6646	5930	7101	4373	425	297	632
29	5629	618	1783	5199	---	6613	5763	7058	4079	399	297	586
30	5473	650	1788	5199	---	6584	5665	7028	3958	399	297	554
31	5997	---	1788	5199	---	6548	---	7002	---	399	297	---
MAX	6878	6532	1788	5392	6365	6923	6509	7580	7414	3655	399	726
MIN	4035	531	656	1477	4606	6025	5208	5960	3958	399	257	237
a	12650	26090	32120	22671	31370	37320	36170	30680	15340	3700	1250	3400

a Discharge, in acre-feet, for Muck Valley Powerplant (station 11351700), provided by Malacha Hydro Limited Partnership.

11351950 PIT RIVER BELOW DIVERSION TO MUCK VALLEY POWERPLANT, NEAR BIEBER, CA

LOCATION.—Lat 41°00'55", long 121°09'13", in NE 1/4 SW 1/4 sec.27, T.37 N., R.7 E., Lassen County, Hydrologic Unit 18020003, on right bank, 1.7 mi upstream from North Gulch, 2.2 mi upstream from Spring Gulch, and 7.4 mi south of Bieber.

DRAINAGE AREA.—2,475 mi², excluding Goose Lake Basin.

PERIOD OF RECORD.—October 1994 to current year.

GAGE.—Acoustic velocity meter measures minimum bypass flow; water-stage recorder and Ogee weir for spillway. Elevation of gage is 4,120 ft above sea level, from topographic map.

REMARKS.—Flow at this station has two components which are combined for publication: low-flow release (station 11351946) and flow over Ogee weir (station 11351948). Water is diverted upstream of weir through a tunnel to Collett Reservoir (station 11351600), for power generation. During powerplant operation, the minimum release is 50 ft³/s. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Records were provided by Malacha Hydro Limited Partnership, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 16,800 ft³/s, Jan. 3, 1997; no flow many days during 1995 and 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	53	53	1630	53	86	2750	931	470	54	11	2.0	2.0
2	53	53	2110	53	55	3760	890	419	53	5.0	2.0	2.0
3	53	53	2040	53	54	4590	786	558	53	2.0	2.0	2.0
4	53	53	1630	53	54	5440	667	685	54	2.0	2.0	2.0
5	53	53	1120	53	54	5320	667	766	134	2.0	2.0	2.0
6	53	53	706	54	54	4200	631	667	102	2.0	2.0	2.0
7	53	54	336	53	421	2950	685	595	267	2.0	2.0	12
8	53	54	284	54	1460	2060	725	385	215	2.0	2.0	2.0
9	53	54	54	54	2110	1790	705	282	102	2.0	2.0	2.0
10	53	53	55	54	2390	1630	631	248	54	4.0	2.0	2.0
11	53	53	54	54	3020	1460	649	265	54	2.0	2.0	2.0
12	54	53	102	53	2950	1370	746	282	54	2.0	2.0	2.0
13	53	53	232	54	2490	1330	631	164	54	2.0	2.0	2.0
14	52	53	542	54	1900	1060	558	85	54	2.0	2.0	13
15	52	53	913	53	1350	1150	453	53	54	2.0	2.0	54
16	53	53	971	53	1240	1210	402	53	54	2.0	2.0	54
17	53	53	665	53	1170	1330	282	53	53	2.0	2.0	52
18	53	53	435	54	1490	1350	368	53	51	2.0	2.0	19
19	53	53	214	632	1880	1390	505	54	12	2.0	2.0	27
20	53	53	54	850	1970	1420	705	54	5.0	2.0	20	49
21	53	53	54	996	1810	1370	828	54	21	2.0	24	34
22	53	54	53	954	1580	1330	952	54	7.0	2.0	2.0	35
23	53	55	53	1510	1330	1330	1040	54	21	2.0	22	38
24	53	1020	53	1930	1440	1260	890	54	37	2.0	2.0	38
25	53	1460	53	1830	1900	1210	685	54	15	2.0	16	12
26	53	1100	53	1510	2510	1190	685	54	18	2.0	18	9.0
27	53	1020	53	1020	2420	1190	725	54	12	16	2.0	27
28	53	1260	53	707	2220	1120	766	54	9.0	24	2.0	27
29	53	1330	53	455	---	995	705	54	12	5.0	2.0	26
30	53	1330	53	198	---	911	667	54	24	18	17	28
31	53	---	53	182	---	869	---	54	---	2.0	16	---
TOTAL	1642	9745	14731	13736	41408	60335	20560	6785	1709.0	131.0	181.0	578.0
MEAN	53.0	325	475	443	1479	1946	685	219	57.0	4.23	5.84	19.3
MAX	54	1460	2110	1930	3020	5440	1040	766	267	24	24	54
MIN	52	53	53	53	54	869	282	53	5.0	2.0	2.0	2.0
AC-FT	3260	19330	29220	27250	82130	119700	40780	13460	3390	260	359	1150

11351950 PIT RIVER BELOW DIVERSION TO MUCK VALLEY POWERPLANT, NEAR BIBBER, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	39.5	106	230	1340	1510	1712	924	1472	514	29.7	10.0	27.2
MAX	53.0	325	475	3344	3089	3316	1677	3679	1903	69.1	31.4	43.0
(WY)	1999	1999	1999	1997	1996	1995	1995	1995	1998	1998	1998	1998
MIN	21.5	46.3	52.5	336	588	366	248	102	47.1	4.23	2.65	19.3
(WY)	1995	1998	1998	1996	1998	1997	1997	1997	1997	1999	1997	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1995 - 1999	
ANNUAL TOTAL	285413.0		171541.0			
ANNUAL MEAN	782		470		656	
HIGHEST ANNUAL MEAN					997	
LOWEST ANNUAL MEAN					470	
HIGHEST DAILY MEAN	5100	May 19	5440	Mar 4	16800	Jan 3 1997
LOWEST DAILY MEAN	6.0	Sep 9	2.0	Jul 3	.00	Oct 1 1994
ANNUAL SEVEN-DAY MINIMUM	22	Aug 10	2.0	Jul 3	.00	Aug 3 1995
ANNUAL RUNOFF (AC-FT)	566100		340300		475200	
10 PERCENT EXCEEDS	2190		1450		1920	
50 PERCENT EXCEEDS	351		54		54	
90 PERCENT EXCEEDS	37		2.0		5.0	

11354200 PIT NO. 1 POWERPLANT NEAR FALL RIVER MILLS, CA

LOCATION.—Lat 40°59'28", long 121°29'49", in SE 1/4 NE 1/4 sec.10, T.37 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on right bank of Pit River, 2.3 mi downstream from Pit River Falls, and 3.2 mi southwest of Fall River Mills.

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1973–86 available in files of the U.S. Geological Survey. Fragmentary record for water years 1922–72 available in files of the Pacific Gas & Electric Co.

GAGE.—Discharge computed from powerplant output.

REMARKS.—Water is diverted from Fall River at Pit No. 1 Forebay at NW 1/4 SW 1/4 sec.25, T.37 N., R.4 E., through a tunnel to powerplant and then into Pit River. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 2,490 ft³/s, Mar. 13, 1995; no flow several 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	1310	1530	1960	1480	1580	2080	1990	1800	1640	1440	1240	.00
2	1320	1340	1900	1500	1410	2060	1870	1670	1650	1320	1250	1260
3	1260	1450	1940	1440	1230	2040	1840	1840	1790	1310	1100	1280
4	1360	1370	2140	1430	1230	2120	1820	2090	1740	1380	412	1570
5	1520	1420	1830	1420	1360	2120	1720	2010	1700	1410	1020	1240
6	1370	1410	1890	1410	1410	2040	1800	1910	1660	1390	1480	1320
7	1370	1510	1320	1450	1560	1920	1790	1800	1640	1170	1120	1510
8	1460	1540	1120	1480	2130	1890	1740	1880	1520	1320	1320	1340
9	1360	1560	997	1270	2140	1990	1850	1860	1290	1320	1660	1330
10	1390	1500	1140	1580	2100	2000	1850	1780	1450	1380	1380	1310
11	1370	1490	1120	1450	2060	2030	1840	1780	1580	1350	1380	1310
12	1390	1510	1160	1440	1920	1870	1780	1780	1580	1360	1220	1290
13	1330	1450	1790	1530	1820	1920	1750	1780	1510	1260	1500	1270
14	1430	1380	1650	1400	1680	1860	1810	1960	1470	1200	1370	1340
15	1460	1460	1590	1370	1910	1920	2020	2040	1550	1290	1300	1310
16	1460	1330	1670	1440	1710	1890	2070	1820	1610	1280	1210	1290
17	1390	1470	1360	1490	2000	1820	1790	1770	1010	1270	1270	1320
18	1650	1410	1610	1610	2060	1790	1880	1760	1120	1290	1370	1200
19	1340	1410	1510	1840	2100	1770	1830	1740	1470	1190	1300	1350
20	1340	1440	1630	1960	2030	1820	1990	1770	1480	1360	1260	1410
21	1250	1310	1360	2070	1960	1850	1850	1770	1480	1260	1330	1340
22	1500	1510	1450	2160	1940	1860	1940	1820	1480	1210	1300	1280
23	1430	1690	1490	2100	1950	1860	2080	1680	1430	1280	1340	1300
24	1380	1790	1460	2140	1950	1840	1640	1660	1350	1200	1410	1350
25	1390	1720	1440	1810	2040	1870	1790	1680	1370	1350	1380	1270
26	1380	1720	1420	1810	2130	1850	1820	1720	1450	1270	1300	1440
27	1370	1920	1610	1820	2130	1910	1880	1820	1450	1280	1400	1260
28	1320	1740	1610	1770	2020	1820	1900	1660	1410	1330	1340	1160
29	1470	1680	1530	1720	---	1820	1920	1720	1480	1250	1230	1160
30	1450	1750	1310	1670	---	1800	1920	1720	1310	1300	1370	1250
31	1390	---	1520	1670	---	1860	---	1660	---	1180	1250	---
TOTAL	43210	45810	47527	50730	51560	59290	55770	55750	44670	40200	39812	38060.00
MEAN	1394	1527	1533	1636	1841	1913	1859	1798	1489	1297	1284	1269
MAX	1650	1920	2140	2160	2140	2120	2080	2090	1790	1440	1660	1570
MIN	1250	1310	997	1270	1230	1770	1640	1660	1010	1170	412	.00
AC-FT	85710	90860	94270	100600	102300	117600	110600	110600	88600	79740	78970	75490

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	1135	1161	1155	1248	1298	1469	1443	1362	1199	1097	1075	1093
MAX	1394	1527	1533	1720	1871	1972	1927	1939	1698	1412	1379	1269
(WY)	1999	1999	1999	1998	1998	1995	1995	1998	1998	1998	1998	1999
MIN	941	971	987	996	749	1053	1014	947	914	844	835	900
(WY)	1995	1995	1995	1992	1994	1992	1994	1992	1994	1992	1992	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1987 - 1999
ANNUAL TOTAL	592096.00	572389.00	
ANNUAL MEAN	1622	1568	1227
HIGHEST ANNUAL MEAN			1572
LOWEST ANNUAL MEAN			955
HIGHEST DAILY MEAN	2140	Apr 15	2160
LOWEST DAILY MEAN	.00	Sep 12	.00
ANNUAL SEVEN-DAY MINIMUM	774	Sep 9	1070
ANNUAL RUNOFF (AC-FT)	1174000		889300
10 PERCENT EXCEEDS	2010		1660
50 PERCENT EXCEEDS	1570		1170
90 PERCENT EXCEEDS	1320		947

11355010 PIT RIVER BELOW PIT NO. 1 POWERPLANT, NEAR FALL RIVER MILLS, CA

LOCATION.—Lat 40°59'00", long 121°30'39", in NE 1/4 NW 1/4 sec.15, T.36 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on left bank, 0.9 mi downstream from Pit No. 1 Powerplant, and 4 mi southwest of Fall River Mills.

DRAINAGE AREA.—3,761 mi², excluding Goose Lake Basin.

PERIOD OF RECORD.—August 1975 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 2,798.21 ft above sea level (levels by Pacific Gas and Electric Co.).

REMARKS.—Records good. Low flow regulated by many small reservoirs (total usable reservoir capacity, 210,000 acre-ft) and Pit No. 1 Powerplant. Many diversions upstream from station for irrigation. See schematic diagram of Pit and McCloud River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 30,000 ft³/s, Feb. 20, 1986, gage height, 17.03 ft; minimum daily, 535 ft³/s, Sept. 11, 1994.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of January 1974 reached a stage of 14.8 ft, from floodmarks on right bank, discharge 22,600 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)
Nov. 30	2245	6,390	9.50	Mar. 5	0245	8,930	10.77
Feb. 9	1430	7,490	10.07				

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	1650	1700	5410	2210	2510	5940	3900	3140	2360	1740	1420	1180
2	1690	1630	5230	2200	2350	6470	3780	2880	2440	1620	1400	1790
3	1530	2140	5430	2110	2080	7390	3650	3110	2550	1570	1450	1460
4	1550	2050	5220	2020	2110	8250	3540	3650	2520	1530	1440	1720
5	1730	2030	4190	1970	2220	8580	3380	3660	2130	1550	1360	1440
6	1690	2000	3720	1980	1910	7710	3450	3560	2360	1520	1590	1480
7	1720	2000	2790	1980	2050	6470	3420	3450	2590	1580	1380	1640
8	1770	1860	3120	1980	4140	5460	3390	3310	2660	1570	1460	1540
9	1670	2030	2690	1720	6470	4990	3520	3090	2590	1580	1480	1520
10	1670	2110	2670	2010	6030	4760	3470	3040	2400	1580	1530	1500
11	1540	2030	2440	1880	6200	4590	3490	3150	2230	1510	1530	1500
12	1720	2010	2480	1840	6170	4300	3490	3160	1910	1510	1410	1470
13	1890	2090	2920	1970	5670	4200	3440	3130	1670	1440	1650	1460
14	1940	2020	3250	1850	4930	4030	3420	3170	1680	1540	1500	1510
15	1970	1900	3350	1830	4380	4040	3610	3190	1880	1550	1460	1490
16	1980	1900	3550	1850	4000	4000	3500	2820	1940	1520	1390	1510
17	1730	2120	3080	1730	4160	3940	3250	2790	1760	1510	1390	1670
18	1790	2130	3090	1940	4610	3980	3320	2770	1750	1460	1540	1540
19	1680	2070	2690	2930	5150	4010	3370	2600	1730	1370	1500	1560
20	1880	2130	2570	3430	5200	4080	3670	2390	1610	1510	1440	1610
21	1760	1840	2270	3790	5020	4120	3700	2210	1590	1440	1500	1680
22	2020	2230	2350	3900	4750	4240	3830	2190	1690	1410	1520	1650
23	1860	2690	2230	4090	4350	4190	4110	1890	1740	1460	1520	1630
24	1780	3500	2100	4370	4240	4090	3500	2300	1630	1390	1640	1660
25	1640	4100	2050	4280	4780	4050	3380	2260	1650	1510	1570	1600
26	1710	3860	2030	4250	5680	3990	3090	2460	1690	1410	1520	1660
27	1900	4110	2200	3690	5860	4060	3510	2600	1570	1410	1620	1410
28	1970	3980	2230	3340	5490	3950	3670	2420	1520	1480	1560	1450
29	1950	3900	2180	3060	---	3880	3670	2550	1720	1530	1450	1580
30	1900	4630	1580	2820	---	3760	3510	2500	1560	1500	1590	1640
31	1770	---	2250	2670	---	3740	---	2350	---	1400	1470	---
TOTAL	55050	74790	93360	81690	122510	151260	106030	87790	59120	46700	46280	46550
MEAN	1776	2493	3012	2635	4375	4879	3534	2832	1971	1506	1493	1552
MAX	2020	4630	5430	4370	6470	8580	4110	3660	2660	1740	1650	1790
MIN	1530	1630	1580	1720	1910	3740	3090	1890	1520	1370	1360	1180
AC-FT	109200	148300	185200	162000	243000	300000	210300	174100	117300	92630	91800	92330

11355010 PIT RIVER BELOW PIT NO. 1 POWERPLANT, NEAR FALL RIVER MILLS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1391	1633	1836	2345	2951	3309	2621	2368	1711	1323	1277	1316
MAX	1776	3181	3834	6060	8539	6539	5614	6883	4582	1809	1618	1628
(WY)	1999	1982	1984	1997	1986	1993	1982	1995	1998	1998	1998	1998
MIN	939	1133	1214	1222	1268	1294	1173	1050	1012	954	828	784
(WY)	1995	1993	1993	1991	1994	1992	1992	1992	1992	1994	1994	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1975 - 1999	
ANNUAL TOTAL	1139640		971130			
ANNUAL MEAN	3122		2661		2000	
HIGHEST ANNUAL MEAN					2914	
LOWEST ANNUAL MEAN					1149	
HIGHEST DAILY MEAN	8080	May 18	8580	Mar 5	28800	Feb 20 1986
LOWEST DAILY MEAN	1360	Sep 7	1180	Sep 1	535	Sep 11 1994
ANNUAL SEVEN-DAY MINIMUM	1520	Sep 5	1420	Jul 30	663	Sep 7 1994
INSTANTANEOUS PEAK FLOW			8930	Mar 5	30000	Feb 20 1986
INSTANTANEOUS PEAK STAGE			10.77	Mar 5	17.03	Feb 20 1986
ANNUAL RUNOFF (AC-FT)	2260000		1926000		1449000	
10 PERCENT EXCEEDS	5330		4260		3400	
50 PERCENT EXCEEDS	2920		2110		1510	
90 PERCENT EXCEEDS	1610		1500		1160	

11358020 LOST CREEK BELOW DIVERSION TO LOST CREEK POWERPLANT NO. 1, NEAR OLD STATION, CA

LOCATION.—Lat 40°45'35", long 121°24'46", in NW 1/4 SW 1/4 sec.34, T.34 N., R.5 E., Shasta County, Hydrologic Unit 18020003, on right bank, 0.4 mi downstream from Lost Creek Diversion Dam, 2.5 mi downstream from Porcupine Reservoir, 6.0 mi north of Old Station, and 13.2 mi southeast of Cassel.

DRAINAGE AREA.—7.53 mi².

PERIOD OF RECORD.—October 1989 to September 1997; October 1998 to September 1999 (operated as low-flow station only).

GAGE.—Water-stage recorder and sharp-crested weir. Elevation of gage is 3,900 ft above sea level, from topographic map.

REMARKS.—During times of powerplant operation, the minimum release requirement is 15 ft³/s; flow is computed to 80 ft³/s. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Records were collected by Snow Mountain Hydro, 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	16	16	17	16	17	22	16	17	22	16	16	17
2	16	17	16	16	16	17	16	16	17	17	16	16
3	16	16	17	17	16	25	16	17	17	16	16	17
4	17	17	22	20	17	17	16	16	17	17	16	16
5	16	25	16	17	17	17	17	17	17	17	16	16
6	16	17	17	17	17	20	17	16	17	17	23	17
7	16	17	17	16	31	18	17	16	17	16	17	16
8	16	22	17	17	17	16	17	16	19	19	17	17
9	16	16	17	17	24	16	17	17	16	17	16	16
10	16	16	17	17	17	17	16	17	16	17	19	17
11	17	19	21	17	17	17	16	16	17	16	17	16
12	17	17	17	16	17	16	17	16	17	17	17	17
13	17	17	17	17	17	16	17	16	16	22	16	17
14	19	16	16	17	17	17	17	17	17	19	17	17
15	20	16	16	19	16	16	17	17	17	16	17	17
16	16	16	16	17	17	16	17	17	17	16	16	17
17	16	16	16	22	18	17	17	21	17	16	23	26
18	16	17	16	17	17	17	17	16	16	16	17	17
19	16	16	17	16	17	17	17	17	17	16	16	17
20	17	16	16	17	17	21	17	19	16	17	36	17
21	17	16	17	20	17	21	19	17	16	37	16	16
22	17	17	17	17	17	17	16	16	16	25	16	22
23	17	19	16	17	19	16	17	17	16	17	23	17
24	16	16	16	16	18	16	16	17	16	16	19	16
25	17	16	17	16	17	17	16	17	16	17	16	16
26	17	17	17	16	17	17	16	17	16	21	17	16
27	19	19	17	17	18	18	16	17	16	20	16	17
28	21	16	16	17	27	17	16	17	16	17	19	17
29	16	16	16	17	---	16	17	17	18	17	16	17
30	17	26	17	17	---	17	16	17	18	17	24	17
31	17	---	16	16	---	17	---	17	---	16	23	---
TOTAL	523	523	523	531	509	544	499	523	506	560	569	514
MEAN	16.9	17.4	16.9	17.1	18.2	17.5	16.6	16.9	16.9	18.1	18.4	17.1
MAX	21	26	22	22	31	25	19	21	22	37	36	26
MIN	16	16	16	16	16	16	16	16	16	16	16	16
AC-FT	1040	1040	1040	1050	1010	1080	990	1040	1000	1110	1130	1020
a	3090	3010	3230	3210	3200	3710	3310	3160	3060	3040	2980	3020

a Discharge, in acre-feet, for Lost Creek No. 1 Powerplant (station 11358010), provided by Snow Mountain Hydro.

11358700 HAT CREEK BELOW HAT NO. 1 DIVERSION DAM, NEAR BURNEY, CA

LOCATION.—Lat 40°55'08", long 121°33'02", in NW 1/4 SW 1/4 sec.5, T.36 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on right bank, at Hat No. 1 Diversion Dam on Hat Creek, 6.5 mi northeast of Burney.

DRAINAGE AREA.—347 mi².

PERIOD OF RECORD.—Oct. 1 to Dec. 8, 1987 (fragmentary), Dec. 9, 1987, to current year (operated as a low-flow station only). Unpublished fragmentary records for water years 1980–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and Cipolletti weir. Elevation of gage is 3,180 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. The minimum release requirement is 2.0 ft³/s at all times. Flow is computed to 9.0 ft³/s. See schematic diagram of Pit and McCloud River Basins.

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	3.2	3.1	3.1	3.3	3.1	2.9	3.2	3.2	3.0	3.0	2.8	3.0
2	3.1	3.1	3.1	3.2	3.0	2.9	3.2	3.2	3.0	3.0	2.9	3.0
3	3.0	3.1	3.1	3.2	3.0	2.9	3.2	3.2	3.0	3.0	3.0	3.0
4	3.0	3.0	3.1	3.2	3.0	3.0	3.2	3.2	3.0	3.0	3.0	3.0
5	3.1	3.0	3.1	3.2	3.1	2.9	3.2	3.0	3.0	3.0	2.9	3.0
6	3.1	3.0	3.1	3.1	3.2	2.9	3.1	3.0	2.9	2.9	3.0	3.0
7	3.1	3.0	3.1	3.1	3.2	2.9	3.2	3.0	2.9	2.9	3.0	3.0
8	3.2	3.0	3.1	3.1	3.2	2.9	3.3	3.0	2.8	2.9	2.9	3.0
9	3.2	3.0	3.1	3.2	3.2	3.0	3.4	3.0	2.8	2.9	3.1	3.0
10	3.1	3.0	3.0	3.1	3.0	3.0	3.4	3.1	2.9	2.8	3.2	3.0
11	3.2	3.0	3.0	3.1	2.9	2.9	3.3	3.1	2.9	2.8	3.2	3.0
12	3.2	3.0	3.0	3.1	2.9	2.9	3.3	3.1	2.9	2.8	3.2	3.3
13	3.2	3.0	3.0	3.1	2.8	2.9	3.2	3.2	2.9	3.4	3.2	3.5
14	3.2	3.0	3.0	3.0	2.8	3.0	3.3	3.2	3.0	3.0	3.2	3.1
15	3.2	3.0	3.0	3.0	2.8	5.9	3.2	3.2	3.3	3.1	3.2	3.0
16	3.2	3.0	3.0	3.0	2.9	7.2	3.0	3.2	---	3.2	3.1	2.8
17	3.2	3.0	3.0	3.0	3.0	6.9	3.1	3.2	6.8	3.2	3.1	5.2
18	3.2	3.0	3.0	3.0	3.0	5.5	3.1	3.1	3.3	3.2	3.0	6.2
19	3.2	3.0	3.0	3.0	3.0	2.8	3.1	3.1	3.3	3.1	2.9	6.2
20	3.2	3.0	3.0	3.0	2.9	2.8	3.1	3.2	3.2	3.1	2.9	4.9
21	3.1	2.9	3.0	3.0	2.9	2.8	3.1	3.2	3.2	3.1	2.9	2.9
22	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.2	3.1	2.9	3.0
23	3.0	3.0	3.0	3.1	3.0	3.2	3.1	3.1	3.2	3.0	---	3.0
24	3.0	3.0	3.0	3.1	2.9	3.2	3.1	3.0	3.3	3.0	4.6	3.0
25	3.0	3.0	3.1	3.0	2.9	3.2	3.0	2.9	3.3	3.0	3.0	2.9
26	3.0	3.0	3.3	3.0	2.9	3.2	3.0	3.0	3.3	3.0	3.1	3.0
27	3.0	3.0	3.3	3.0	2.9	3.2	3.0	3.0	3.3	2.9	3.1	3.0
28	3.0	3.0	3.3	3.1	2.9	3.2	3.0	3.1	3.1	2.9	3.0	3.0
29	3.1	3.0	3.3	3.1	---	3.2	3.0	3.1	3.1	2.9	3.0	3.0
30	3.0	3.1	3.3	3.1	---	3.2	3.0	3.1	3.0	2.9	3.0	3.0
31	3.1	---	3.3	3.1	---	3.2	---	3.0	---	2.8	3.0	---
TOTAL	96.4	90.3	95.8	95.6	83.4	106.7	94.5	96.1	---	92.9	---	101.0
MEAN	3.11	3.01	3.09	3.08	2.98	3.44	3.15	3.10	---	3.00	---	3.37
MAX	3.2	3.1	3.3	3.3	3.2	7.2	3.4	3.2	---	3.4	---	6.2
MIN	3.0	2.9	3.0	3.0	2.8	2.8	3.0	2.9	---	2.8	---	2.8
AC-FT	191	179	190	190	165	212	187	191	---	184	---	200

11358800 HAT CREEK NO. 1 POWERPLANT NEAR BURNEY, CA

LOCATION.—Lat 40°55'45", long 121°32'37", in SW 1/4 SW 1/4 sec.32, T.36 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on right bank of Hat Creek, at the upper end of Baum Lake, and 7.4 mi northeast of Burney.

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1981–86 available in files of the U.S. Geological Survey. Fragmentary records for water years 1921–80 available in the files of the Pacific Gas & Electric Co.

GAGE.—Discharge computed from powerplant output.

REMARKS.—Water is diverted from left bank of Hat Creek at NW 1/4 SW 1/4 sec.5, T.36 N., R.8 W., through a canal to powerplant and then into Hat Creek. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 518 ft³/s, Nov. 2, 1998; no flow several 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	398	426	470	420	411	435	424	372	397	355	329	357
2	398	518	457	415	410	438	425	358	394	352	335	354
3	398	420	458	415	412	442	421	354	408	350	335	354
4	398	420	455	414	413	438	422	342	419	351	341	351
5	398	415	449	415	412	436	424	336	411	350	337	351
6	398	420	443	415	417	433	426	320	406	340	341	348
7	375	420	436	429	432	433	422	326	417	334	340	345
8	375	432	435	413	431	434	421	335	391	336	338	338
9	409	420	476	413	467	438	423	339	393	337	344	332
10	409	443	430	413	453	435	423	337	387	336	336	339
11	409	443	432	413	438	434	425	330	372	343	340	345
12	387	426	434	413	433	397	423	340	370	342	338	340
13	387	426	434	413	431	432	421	346	363	285	333	335
14	364	432	437	411	432	431	420	350	368	341	333	335
15	364	426	436	413	432	135	418	362	381	344	333	331
16	387	422	433	418	432	.00	418	360	370	352	332	343
17	387	464	432	418	432	.00	418	355	370	356	334	84
18	387	464	431	424	434	136	419	345	375	360	340	.00
19	409	414	428	423	434	428	408	351	386	350	330	.00
20	398	424	429	421	430	430	396	329	381	357	331	94
21	409	427	402	419	430	430	385	371	374	346	334	320
22	409	435	417	418	430	429	.00	340	381	345	332	334
23	420	446	416	428	430	428	375	340	384	339	89	332
24	420	450	415	423	432	429	392	339	395	337	105	332
25	420	441	416	418	441	415	386	346	404	335	328	332
26	432	438	419	420	436	431	368	349	405	331	330	326
27	420	448	422	418	435	427	363	364	394	331	341	328
28	420	445	423	415	435	426	370	375	391	330	344	332
29	420	438	421	414	---	426	382	373	391	330	350	328
30	420	461	419	413	---	430	384	381	369	327	361	325
31	420	---	410	414	---	428	---	388	---	329	356	---
TOTAL	12445	13104	13415	12929	12055	11884.00	11802.00	10853	11647	10551	9990	8965.00
MEAN	401	437	433	417	431	383	393	350	388	340	322	299
MAX	432	518	476	429	467	442	426	388	419	360	361	357
MIN	364	414	402	411	410	.00	.00	320	363	285	89	.00
AC-FT	24680	25990	26610	25640	23910	23570	23410	21530	23100	20930	19820	17780
a	33290	33040	33230	33890	31070	33850	28970	30530	32020	29650	28820	27740

a Discharge, in acre-feet, for Hat Creek No. 2 Powerplant (station 11359300), provided by Pacific Gas & Electric Co.

11359100 HAT NO. 2 POWER CANAL DIVERSION TO HAT CREEK, NEAR BURNEY, CA

LOCATION.—Lat 40°57'01", long 121°32'39", in SE 1/4 NW 1/4 sec.29, T.36 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on right bank of Hat No. 2 Power Canal, 75 ft downstream from Hat No. 2 Diversion Dam on Hat Creek, 7.9 mi northeast of Burney.

PERIOD OF RECORD.—Oct. 1 to Dec. 9, 1987 (fragmentary), Dec. 10, 1987, to current year (operated as a low-flow station only). Unpublished fragmentary records for water years 1979–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 2,980 ft sea level, from topographic map.

REMARKS.—This station records fishwater release only. The minimum release requirement is 8.0 ft³/s at all times. Flow is computed to 15 ft³/s. See schematic diagram of Pit and McCloud River Basins.

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	9.7	9.5	9.5	10	9.4	8.7	9.6	9.7	9.7	9.0	9.3	9.3
2	9.7	9.5	9.5	9.9	9.4	8.9	9.7	9.7	9.5	9.6	9.4	9.3
3	9.7	9.6	9.5	9.9	9.4	8.9	9.6	9.8	9.5	9.7	9.5	9.4
4	9.7	9.6	9.5	9.9	9.4	9.0	9.5	9.7	9.4	9.9	9.5	9.2
5	9.6	9.6	9.5	9.6	9.4	9.1	9.5	9.6	9.3	9.7	9.3	9.1
6	9.4	9.5	9.5	9.2	9.4	9.1	9.5	9.3	9.1	9.7	9.3	9.1
7	9.4	9.6	9.4	9.2	9.6	9.1	9.4	9.5	9.2	10	9.1	9.2
8	9.5	9.7	9.4	9.2	9.7	9.1	9.4	9.6	9.2	9.5	9.1	9.0
9	9.6	9.6	9.4	9.2	9.5	9.1	9.6	9.7	9.1	9.0	9.4	9.3
10	9.4	9.5	9.3	9.1	9.3	9.1	9.7	9.7	9.0	9.1	9.4	9.1
11	9.5	9.6	9.3	9.1	9.4	9.1	9.5	9.5	8.9	9.3	9.4	9.1
12	9.5	9.5	9.4	9.1	9.1	9.1	9.4	9.6	9.0	9.1	9.4	9.5
13	9.5	9.5	9.4	9.1	9.1	9.1	9.4	9.4	8.7	9.0	9.4	9.6
14	9.6	9.5	9.5	9.1	9.1	9.1	9.6	9.3	9.2	9.7	9.3	9.6
15	9.6	9.4	9.5	9.3	9.1	9.1	9.5	9.5	9.4	9.3	9.2	9.6
16	9.6	9.4	---	9.4	9.1	9.2	9.6	9.6	9.2	9.3	9.0	9.7
17	9.7	9.4	9.3	9.4	9.1	9.3	9.6	9.7	9.0	9.5	9.2	9.5
18	9.7	9.4	9.2	9.4	9.1	9.2	9.5	9.6	9.1	9.7	9.5	9.7
19	9.8	9.4	9.1	9.4	9.1	9.1	---	9.6	9.5	9.8	9.3	9.6
20	9.6	9.4	9.2	9.4	9.1	9.1	---	9.5	9.3	9.7	9.3	9.7
21	9.3	9.4	9.2	9.4	9.1	9.1	---	9.4	9.1	8.8	9.1	9.7
22	9.3	9.5	9.2	9.4	9.1	9.1	---	9.2	9.0	9.2	9.1	9.9
23	9.2	9.7	9.3	9.4	9.1	9.1	9.5	9.1	9.1	9.8	9.2	10
24	9.3	9.7	e9.4	9.4	9.1	9.1	9.2	9.2	9.0	9.4	9.6	10
25	9.4	9.6	e9.8	9.4	9.2	9.1	9.2	9.3	9.7	9.4	9.5	10
26	9.4	9.5	e9.9	9.4	9.0	9.1	9.1	9.3	9.4	9.3	9.7	10
27	9.4	9.7	e9.9	9.4	8.8	9.1	9.1	9.5	9.2	9.2	9.5	10
28	9.4	9.6	9.9	9.3	8.8	9.1	9.3	9.8	9.3	9.4	9.1	10
29	9.4	9.5	9.9	9.4	---	9.1	9.4	9.7	9.4	9.7	9.2	10
30	9.4	9.7	9.8	9.4	---	9.6	9.6	9.7	9.3	9.5	9.1	10
31	9.5	---	10	9.4	---	9.4	---	9.7	---	9.4	9.2	---
TOTAL	294.8	286.1	---	291.2	258.0	282.4	---	295.5	276.8	292.7	288.6	287.2
MEAN	9.51	9.54	---	9.39	9.21	9.11	---	9.53	9.23	9.44	9.31	9.57
MAX	9.8	9.7	---	10	9.7	9.6	---	9.8	9.7	10	9.7	10
MIN	9.2	9.4	---	9.1	8.8	8.7	---	9.1	8.7	8.8	9.0	9.0
AC-FT	585	567	---	578	512	560	---	586	549	581	572	570

e Estimated.

NOTE: Canal out of service Dec. 16 and Apr. 19–22 and all flow remained in the natural channel.

RESERVOIRS IN PIT AND McCLOUD RIVER BASINS, CA

11361400 LAKE BRITTON NEAR BURNEY

LOCATION.—Lat 41°1'20", long 121°40'32", in SW 1/4 SW 1/4 sec.19, T.37 N., R.3 E., Shasta County, Hydrologic Unit 18020003, Shasta National Forest, at control house on right bank, 200 ft upstream from dam on Pit River, 1.1 mi downstream from Clark Creek, 1.3 mi northwest of Burney Falls, and 9 mi north of Burney.

DRAINAGE AREA.—4,607 mi², excluding Goose Lake Basin.

PERIOD OF RECORD, October 1965 to current year (monthend contents only). Fragmentary records for water years 1925–65 in files of the Pacific Gas & Electric Co.

GAGE, remote telemark read once daily. Datum of gage is 19.53 ft above sea level (levels by Pacific Gas & Electric Co.). Monthend contents based on capacity table dated Dec. 1, 1976, provided by Pacific Gas & Electric Co.

REMARKS.—Reservoir is formed by gravity-type concrete dam. Storage began July 15, 1925. Usable capacity, 41,877 acre-ft between elevations 2,665.0 ft, invert of sluice gate, and 2,758.0 ft, top of flash boards. Dead storage, 30 acre-ft. Normal operating pool is from elevation 2,744.0 ft, capacity, 26,183 acre-ft, to 2,757.0 ft, capacity, 40,626 acre-ft. Figures given represent total contents. Lake is used for power generation and recreation. See schematic diagram of Pit and McCloud River Basins. Records prior to water year 1977 reported usable contents only.

COOPERATION.—Record of contents 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 (AT 2400 HOURS) FOR PERIOD OF RECORD.—Maximum total contents, 47,922 acre-ft, Feb. 20, 1986, elevation, 2,762.50 ft; minimum total contents, 26,755 acre-ft, Oct. 9, 1976, elevation, 2,744.60 ft.

EXTREMES (AT 2400 HOURS) FOR CURRENT YEAR.—Maximum contents, 49,427 acre-ft, Nov. 24, elevation, 2,756.84 ft; minimum, 30,482 acre-ft, Nov. 10, elevation, 2,748.29 ft.

11363920 IRON CANYON RESERVOIR NEAR BIG BEND

LOCATION.—Lat 41°02'41", long 121°58'52", in SW 1/4 SE 1/4 sec.21, T.37 N., R.1 W., Shasta County, Hydrologic Unit 18020003, Shasta National Forest, in control house on left bank, 500 ft upstream from Iron Canyon Dam on Iron Canyon Creek, and 3.7 mi northwest of Big Bend.

DRAINAGE AREA, 11.1 mi². PERIOD OF RECORD, December 1965 to current year (monthend contents only).

GAGE, water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.). Monthend contents based on capacity table dated May 17, 1965, provided by Pacific Gas & Electric Co.

REMARKS.—Reservoir is formed by a rockfill dam completed in 1965. Usable capacity is 24,197 acre-ft between elevations 2,525.00 ft, invert of sluice pipe, and 2,665.00 ft, crest of spillway. Dead storage, 44 acre-ft. Normal operating pool is from elevation 2,565.0 ft, capacity, 990 acre-ft, to 2,664.0 ft, capacity, 23,738 acre-ft. Water is diverted from Lake McCloud (station 11367740) through a tunnel to Iron Canyon Reservoir and then into the Pit River via James B. Black Powerplant (station 11363910). Figures given represent total contents. Water is used for power generation and recreation. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Record of contents 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 (AT 2400 HOURS) FOR PERIOD OF RECORD.—Maximum contents, 23,539 acre-ft, May 16, 22, 1977, elevation, 2,663.60 ft; normal minimum since reservoir first filled, 2,860 acre-ft, May 23, 24, 29, June 2, 7, 9, 14, 23, 24, 1966, elevation, 2,590.00 ft. Contents reduced to 195 acre-ft, elevation, 2,540.00 ft, Feb. 10, 1971, when reservoir was drained for inspection.

EXTREMES (AT 2400 HOURS) FOR CURRENT YEAR.—Maximum contents, 13,207 acre-ft, Oct. 11, elevation, 2,638.50 ft; minimum, 3,344 acre-ft, Jan. 30, elevation, 2,594.20 ft.

11367740 LAKE McCLOUD NEAR McCLOUD

LOCATION.—Lat 41°08'06", long 122°04'26", in SE 1/4 SW 1/4 sec.22, T.38 N., R.2 W., Shasta County, Hydrologic Unit 18020004, Shasta National Forest, on McCloud Dam near spillway on McCloud River, 200 ft downstream from Panther Creek, and 8.8 mi southeast of McCloud.

DRAINAGE AREA, 403 mi². PERIOD OF RECORD, October 1965 to current year (monthend contents only).

GAGE, water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.). Monthend contents based on capacity table dated June 29, 1965, provided by Pacific Gas & Electric Co.

REMARKS.—Reservoir is formed by a rockfill dam completed in 1965. Usable capacity, 35,231 acre-ft between elevations 2,471.30 ft, invert of sluice pipe, and 2,680.00 ft, maximum operational water surface. Dead storage, 3 acre-ft. Normal operating pool is from elevation 2,635.00 ft, capacity, 16,425 acre-ft, to 2,680.00 ft, capacity, 35,234 acre-ft. Water is diverted from Lake McCloud (station 11367740) through a diversion tunnel to Iron Canyon Reservoir (station 11363920) and then into the Pit River via James B. Black Powerplant (station 11363910). Figures given represent total contents. Water is used for power generation and recreation. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Record of contents 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 (AT 2400 HOURS) FOR PERIOD OF RECORD.—Maximum contents, 35,967 acre-ft, Jan. 15, 1974, elevation, 2,681.40 ft; minimum since reservoir first filled, 13,017 acre-ft, Oct. 14–22, 1981, elevation, 2,632.50 ft.

EXTREMES (AT 2400 HOURS) FOR CURRENT YEAR.—Maximum contents, 34,849 acre-ft, Apr. 25, elevation, 2,679.30 ft; minimum, 16,518 acre-ft, Nov. 13, elevation, 2,635.30 ft.

RESERVOIRS IN PIT AND McCLOUD RIVER BASINS, CA—Continued

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	11361400 LAKE BRITTON			11363920 IRON CANYON RESERVOIR			11367740 LAKE McCLOUD		
	Elevation (ft)	Contents (acre- ft)	Change in contents (acre- ft)	Elevation (ft)	Contents (acre- ft)	Change in contents (acre- ft)	Elevation (ft)	Contents acre- ft)	Change in contents (acre- ft)
Sept. 30	2,752.50	35,154	—	2,625.30	9,290	—	2,660.40	25,961	—
Oct. 31	2,749.60	31,889	-3,265	2,606.70	5,182	-4,108	2,653.00	22,898	-3,063
Nov. 30	2,755.84	39,167	+7,278	2,607.50	5,325	+143	2,656.10	24,159	-1,261
Dec. 31	2,753.38	36,185	-2,982	2,612.10	6,195	+870	2,649.30	21,454	-2,705
CAL YR 1998			+2,350			-2,394			+453
Jan. 31	2,756.17	39,581	+3,396	2,598.70	3,931	-2,264	2,661.30	26,365	+4,911
Feb. 28	2,756.04	39,417	-164	2,612.20	6,221	+2,290	2,661.70	26,534	+169
Mar. 31	2,755.27	38,469	-948	2,608.60	5,530	-691	2,673.70	32,031	+5,497
Apr. 30	2,756.26	39,694	+1,225	2,619.30	7,765	+2,235	2,678.00	34,217	+2,186
May 31	2,755.90	39,242	-452	2,616.90	7,226	-539	2,677.70	34,084	-133
June 30	2,753.34	36,138	-3,104	2,622.10	8,460	+1,234	2,671.90	31,207	-2,877
July 31	2,753.64	36,491	+353	2,622.50	8,559	+99	2,660.10	25,837	-5,370
Aug. 31	2,755.54	38,792	+2,301	2,627.40	9,860	+1,301	2,650.40	21,874	-3,963
Sept. 30	2,752.12	34,717	-4,075	2,616.40	7,118	-2,742	2,643.60	19,338	-2,536
WTR YR 1999			-437			-2,172			-6,623

11362500 PIT RIVER BELOW PIT NO. 4 DAM, CA

LOCATION.—Lat 40°58'25", long 121°46'42", unsurveyed, T.36 N., R.2 E., Shasta County, Hydrologic Unit 18020003, Shasta National Forest, on right bank, 0.6 mi downstream from Ruling Creek, 1.3 mi downstream from Pit No. 4 Dam, and 2.7 mi downstream from Pit No. 3 Powerplant.

DRAINAGE AREA.—4,648 mi², excluding Goose Lake Basin.

PERIOD OF RECORD.—May 1922 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Pecks Bridge" April to October 1922, and as "at Lindsay Flat" November 1922 to June 1927.

REVISED RECORDS.—WSP 843: 1935(M). WSP 1315-A: 1928(M). WDR CA-75-4: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 2,358 ft above sea level, from river-profile map. Prior to November 1922, water-stage recorder at site at Pecks Bridge 7.4 mi upstream at different datum. November 1922 to June 20, 1927, at site at Lindsay Flat 1.8 mi upstream at different datum. June 20, 1927, to Sept. 5, 1990, at site 200 ft downstream at datum 0.15 ft lower.

REMARKS.—Low flow completely regulated by small reservoirs and powerplants, total usable reservoir capacity, 253,000 acre-ft. Many diversions upstream from station; diversion to Pit No. 4 Powerplant began June 9, 1955. See schematic diagram of Pit and McCloud River Basins.

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, 33,700 ft³/s, Feb. 20, 1986, gage height, 18.70 ft; minimum daily, prior to diversion to Pit No. 4 Powerplant in 1955, 234 ft³/s, Sept. 13, 1953. Minimum daily, since diversion to Pit No. 4 Powerplant, 22 ft³/s Dec. 2–4, 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	165	164	6150	163	162	3690	1160	407	173	180	181	178
2	182	165	5220	165	162	4380	1020	406	176	182	186	177
3	182	167	5510	163	162	5340	907	419	454	177	188	179
4	177	166	6050	163	164	6190	774	851	635	178	185	179
5	176	162	4580	162	163	6430	266	1630	461	177	181	177
6	166	167	3610	162	169	5500	548	782	179	180	178	176
7	172	166	2420	165	164	4560	802	617	181	189	180	180
8	170	164	181	164	163	4650	947	389	185	185	186	182
9	169	163	169	163	6140	5100	486	196	191	185	186	182
10	176	174	172	160	4750	4190	163	161	191	189	184	180
11	167	184	163	163	4170	2420	393	159	191	192	189	183
12	169	168	169	167	4030	1950	1250	169	192	1470	187	181
13	168	161	165	161	3440	1740	295	174	187	1460	190	182
14	385	160	164	163	2780	1300	396	165	183	214	188	180
15	1030	160	167	160	1730	2850	981	165	183	202	187	177
16	161	160	627	162	1450	3600	448	163	186	203	190	182
17	163	161	596	161	1090	3400	390	160	184	198	197	179
18	164	162	166	169	2260	3340	482	163	181	199	203	179
19	167	163	163	161	2800	1580	539	160	182	191	205	182
20	165	163	164	1420	2810	1570	935	162	183	190	202	178
21	164	175	161	1400	2740	1620	1260	160	182	191	196	185
22	164	164	164	1900	2420	1350	1260	162	184	197	194	185
23	164	166	165	1940	1850	1590	1450	164	186	192	196	184
24	172	163	179	2250	1630	1420	1180	167	188	191	188	184
25	169	2000	167	1600	2320	1290	875	553	189	184	181	181
26	162	1950	163	1880	3390	1750	332	185	186	181	181	183
27	168	1600	163	1020	3620	1480	156	171	183	189	181	182
28	163	1610	164	661	3210	1660	510	612	181	184	189	188
29	164	1470	163	265	---	1960	819	181	181	187	189	183
30	164	3240	167	167	---	1270	631	172	179	181	180	178
31	165	---	163	164	---	1230	---	173	---	180	175	---
TOTAL	6293	15838	38425	17764	59939	90400	21655	10198	6517	8398	5823	5426
MEAN	203	528	1240	573	2141	2916	722	329	217	271	188	181
MAX	1030	3240	6150	2250	6140	6430	1450	1630	635	1470	205	188
MIN	161	160	161	160	162	1230	156	159	173	177	175	176
AC-FT	12480	31410	76220	35230	118900	179300	42950	20230	12930	16660	11550	10760
a	133900	144800	170900	157400	158800	174300	162300	140700	142400	111800	110200	113000
b	156900	173400	186100	199500	209500	210300	227900	203900	158300	120100	120300	125700

a Discharge, in acre-feet, for Pit No. 3 Powerplant (station 11362300), provided by Pacific Gas & Electric Co.

b Diversion, in acre-feet, to Pit No. 4 Powerplant (station 11362600), provided by Pacific Gas & Electric Co.

11362500 PIT RIVER BELOW PIT NO. 4 DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1954, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1945	2102	2458	2700	3338	3799	3766	2877	2307	1925	1833	1865
MAX	2385	2544	5968	5523	6872	8510	11400	5507	4096	2652	2146	2318
(WY)	1954	1954	1938	1953	1942	1938	1952	1938	1953	1952	1954	1953
MIN	1571	1666	1745	1698	1742	1895	1730	1635	1612	1569	1509	1541
(WY)	1935	1934	1935	1937	1933	1934	1934	1934	1934	1934	1934	1934

SUMMARY STATISTICS

WATER YEARS 1927 - 1954

ANNUAL MEAN	2572
HIGHEST ANNUAL MEAN	4066
LOWEST ANNUAL MEAN	1703
HIGHEST DAILY MEAN	26200
LOWEST DAILY MEAN	234
ANNUAL SEVEN-DAY MINIMUM	1450
INSTANTANEOUS PEAK FLOW	a30200
INSTANTANEOUS PEAK STAGE	17.90
ANNUAL RUNOFF (AC-FT)	1863000
10 PERCENT EXCEEDS	3810
50 PERCENT EXCEEDS	2170
90 PERCENT EXCEEDS	1630

a From rating curve extended above 12,000 ft³/s on basis of velocity-area studies.

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	233	228	438	1011	1098	1217	805	559	276	166	164	160
MAX	2189	2436	3791	7250	7657	5545	3416	4770	2788	490	458	268
(WY)	1955	1955	1965	1970	1986	1995	1982	1995	1998	1955	1992	1973
MIN	96.8	66.4	49.8	50.0	49.0	49.7	88.3	128	128	137	120	79.8
(WY)	1962	1957	1979	1981	1981	1981	1961	1961	1961	1964	1955	1955

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1955 - 1999

ANNUAL TOTAL	471323	286676	
ANNUAL MEAN	1291	785	527
HIGHEST ANNUAL MEAN			1868
LOWEST ANNUAL MEAN			98.4
HIGHEST DAILY MEAN	6510	Jan 19	6430
LOWEST DAILY MEAN	158	Jan 27	156
ANNUAL SEVEN-DAY MINIMUM	161	Nov 13	161
INSTANTANEOUS PEAK FLOW			10000
INSTANTANEOUS PEAK STAGE			11.60
ANNUAL RUNOFF (AC-FT)	934900	568600	381800
10 PERCENT EXCEEDS	3590	2360	1310
50 PERCENT EXCEEDS	199	184	157
90 PERCENT EXCEEDS	163	163	59

11362900 NELSON CREEK BELOW DIVERSION TO NELSON CREEK POWERPLANT, NEAR BIG BEND, CA

LOCATION.—Lat 41°02'32", long 121°52'34", in NE 1/4 NE 1/4 sec.29, T.37 N., R.1 E., Shasta County, Hydrologic Unit 18020003, on right bank, 400 ft upstream from Snowslide Creek, 0.3 mi downstream from Bull Creek, and 2.3 mi northeast of Big Bend.

DRAINAGE AREA.—13.2 mi².

PERIOD OF RECORD.—October 1993 to September 1996; October 1996 to current year (operated as a low-flow station only).

GAGE.—Water-stage recorder and broad-crested weir; water-stage recorder and sharp-crested weir. Elevation of gages is 2,320 ft above sea level, from topographic map.

REMARKS.—Records fair. Flow at this station has two components which are combined for publication: flow over a broad-crested weir (station 11362880) and flow over a sharp-crested weir (station 11362890). Water is diverted upstream of weirs through a tunnel to Nelson Creek Powerplant (station 11362800), returning to Nelson Creek at its confluence with the Pit River. Flow is computed to 100 ft³/s. See schematic diagram of Pit and McCloud River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 623 ft³/s, Feb. 19, 1996; minimum daily, 7.4 ft³/s, Sept. 8, 21, 22, 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	16	15	---	17	26	---	78	72	16	15	17	15
2	16	15	---	17	22	---	78	75	18	15	17	15
3	17	15	---	17	17	---	79	---	16	15	17	14
4	16	14	77	16	16	---	69	83	15	15	17	14
5	16	14	46	16	16	---	69	77	15	15	16	14
6	15	15	30	16	24	---	64	75	15	15	17	14
7	15	25	21	19	---	---	62	74	15	15	17	14
8	15	20	23	16	---	---	71	70	16	15	17	14
9	15	16	19	15	---	---	61	64	15	15	16	14
10	15	17	18	16	---	---	60	57	16	15	16	14
11	15	16	17	16	---	---	59	57	16	15	16	14
12	15	17	15	16	---	---	62	51	16	15	16	14
13	15	17	15	16	86	---	68	48	16	15	16	14
14	15	17	15	16	80	---	74	43	15	15	16	14
15	15	16	16	19	73	---	78	40	16	15	16	14
16	15	18	16	22	70	---	81	40	15	15	16	14
17	15	40	16	41	71	---	87	41	15	15	15	14
18	15	18	16	77	80	---	---	43	16	15	15	14
19	15	15	16	---	82	---	---	37	16	15	15	13
20	15	17	16	---	77	76	---	34	16	15	15	13
21	14	20	19	---	75	76	---	34	15	16	15	13
22	14	72	20	---	71	76	---	43	15	15	15	13
23	14	---	18	---	80	76	90	38	16	15	15	13
24	15	---	17	---	90	90	83	34	15	15	15	13
25	15	51	17	---	---	---	85	32	15	15	15	13
26	15	53	16	---	---	---	88	31	15	15	15	13
27	15	50	16	67	---	---	86	31	15	15	15	13
28	16	23	16	54	---	---	80	26	15	15	15	13
29	15	19	16	44	---	90	74	22	15	15	15	13
30	15	---	16	38	---	85	72	17	15	16	15	13
31	15	---	21	33	---	83	---	15	---	17	15	---
TOTAL	469	---	---	---	---	---	---	---	465	469	488	410
MEAN	15.1	---	---	---	---	---	---	---	15.5	15.1	15.7	13.7
MAX	17	---	---	---	---	---	---	---	18	17	17	15
MIN	14	---	---	---	---	---	---	---	15	15	15	13
AC-FT	930	---	---	---	---	---	---	---	922	930	968	813
a	.00	286	1300	1220	2740	2080	3020	3010	1380	283	.00	.00

a Discharge, in acre-feet, for Nelson Creek Powerplant (station 11362800), provided by Sierra Pacific Industries.

11362950 EAST FORK NELSON CREEK BELOW DIVERSION TO NELSON CREEK, NEAR BIG BEND, CA

LOCATION.—Lat 41°02'25", long 121°52'28", in NE 1/4 NE 1/4 sec.29, T.37 N., R.1 E., Shasta County, Hydrologic Unit 18020003, on right bank 700 ft upstream from Nelson Creek and 2.3 mi northeast of Big Bend.

DRAINAGE AREA.—8.18 mi².

PERIOD OF RECORD.—October 1993 to September 1996. October 1996 to current year (operated as a low-flow station only).

GAGE.—Water-stage recorder and broad-crested weir; water-stage recorder and sharp-crested weir. Elevation of gages is 2,360 ft above sea level, from topographic map.

REMARKS.—Records good. Flow at this station has two components which are combined for publication: flow over a broad-crested weir (station 11362940) and flow over a sharp-crested weir (station 11362945). Water is diverted upstream of weirs through a pipe to Nelson Creek (station 11362900). Flows computed to 50 ft³/s. See schematic diagram of Pit and McCloud River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 267 ft³/s, Mar. 15, 1995; minimum daily, 0.07 ft³/s, Aug. 12 to Sept. 23, 1994, and Oct. 11, 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	6.1	5.7	---	9.8	21	36	26	27	12	9.8	6.0	4.7
2	6.0	5.6	---	9.6	21	35	26	28	14	9.5	5.9	4.6
3	5.9	5.5	36	9.4	21	35	26	31	14	9.4	5.8	4.6
4	5.8	5.6	27	9.0	21	34	25	29	13	9.3	5.7	4.5
5	5.6	5.6	20	8.9	21	32	26	28	12	9.0	5.6	4.5
6	5.5	5.7	19	8.9	22	32	25	28	12	8.9	5.8	4.5
7	5.5	6.1	19	8.9	35	31	25	28	11	8.7	6.0	4.3
8	5.5	6.1	17	8.6	34	31	25	27	11	8.5	5.8	4.3
9	5.5	5.8	16	8.6	45	30	24	26	11	8.2	5.5	4.2
10	5.5	5.7	17	8.6	37	29	24	25	11	8.3	5.5	4.3
11	5.5	5.0	16	8.6	33	28	24	25	11	7.9	5.6	4.0
12	5.5	5.4	16	8.6	31	28	25	25	11	7.4	5.5	3.6
13	5.5	5.4	15	8.4	30	27	25	24	11	7.3	5.5	3.5
14	5.5	5.3	14	8.3	29	27	25	23	11	7.3	5.4	3.5
15	5.5	5.6	14	9.2	27	27	26	22	11	7.2	5.3	3.4
16	5.4	5.6	13	11	28	27	27	21	11	7.1	5.2	3.4
17	5.4	9.3	13	16	29	27	27	20	11	7.1	5.2	3.3
18	5.4	6.5	13	22	31	27	28	20	11	6.9	5.1	3.3
19	5.6	5.8	13	26	29	27	29	20	11	6.8	5.0	3.3
20	5.7	5.6	12	35	27	27	29	19	11	6.7	5.0	3.3
21	5.8	12	12	33	27	27	29	19	11	6.8	4.9	3.3
22	5.7	14	12	32	26	27	29	18	11	6.7	4.9	3.3
23	5.6	21	12	37	27	27	28	18	11	6.6	4.8	3.3
24	6.2	---	12	33	27	29	28	17	11	6.5	4.9	3.2
25	6.0	16	12	31	30	30	29	17	11	6.3	4.8	3.2
26	5.7	15	11	29	28	30	30	16	11	6.2	4.8	3.1
27	5.7	16	11	26	29	30	29	16	11	6.2	4.7	3.0
28	6.0	13	11	24	35	30	28	15	10	6.2	4.7	3.0
29	5.8	12	10	23	---	28	27	14	10	6.1	4.5	3.0
30	5.7	20	10	22	---	28	27	13	9.9	5.9	4.7	3.0
31	5.6	---	10	22	---	27	---	12	---	5.9	4.7	---
TOTAL	175.7	---	---	555.4	801	910	801	671	337.9	230.7	162.8	110.5
MEAN	5.67	---	---	17.9	28.6	29.4	26.7	21.6	11.3	7.44	5.25	3.68
MAX	6.2	---	---	37	45	36	30	31	14	9.8	6.0	4.7
MIN	5.4	---	---	8.3	21	27	24	12	9.9	5.9	4.5	3.0
AC-FT	349	---	---	1100	1590	1800	1590	1330	670	458	323	219

11363000 PIT RIVER AT BIG BEND, CA

LOCATION.—Lat 41°01'10", long 121°54'36", in NW 1/4 SW 1/4 sec.31, T.37 N., R.1 E., Shasta County, Hydrologic Unit 18020003, on left bank at Big Bend, 0.4 mi downstream from Nelson Creek, 1.5 mi upstream from Kosk Creek, and 3.1 mi downstream from Pit No. 5 Dam.

DRAINAGE AREA.—4,711 mi², excluding Goose Lake Basin.

PERIOD OF RECORD.—October 1910 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Henderson" 1910–23.

REVISED RECORDS.—WSP 1345: 1911, 1914(M), 1916(M), 1917, 1928, 1935–36(M). WDR CA-75-4: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 1,674.47 ft above sea level. Prior to Dec. 28, 1912, nonrecording gage; Dec. 28, 1912, to June 21, 1924, water-stage recorder at same site, at datum 7.69 ft higher. June 22, 1924, to Sept. 30, 1988, at site 200 ft downstream at same datum.

REMARKS.—Low flow completely regulated by many reservoirs and powerplants, total usable reservoir capacity, about 253,000 acre-ft. Many diversions upstream from station; diversion to Pit No. 5 Powerplant (station 11362700) began May 1, 1944. See schematic diagram of Pit and McCloud River Basins.

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, 49,000 ft³/s, Jan. 25, 1970, gage height, 18.17 ft in gage well, 19.0 ft from floodmarks, site then in use, from rating curve extended above 17,000 ft³/s; maximum gage height, 18.70 ft, Feb. 20, 1986, site then in use; minimum daily, 692 ft³/s, July 9, 1925; since diversion to Pit No. 5 Powerplant, minimum daily, 34 ft³/s, Mar. 29, 1955.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 6,000 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	1015	9,060	12.15	Feb. 17	0945	6,350	11.17
Feb. 9	1745	13,900	13.56	Mar. 4	1800	7,970	11.78

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	150	152	4900	165	714	4620	1540	998	208	157	145	153
2	151	161	4030	170	1280	5110	1480	767	217	156	144	143
3	156	162	4650	173	1170	6060	1360	1080	216	161	145	146
4	174	172	4320	171	1230	6990	1160	1270	207	154	144	144
5	175	176	3260	163	1060	7130	683	1490	200	153	158	145
6	148	184	2180	162	351	6240	769	1330	198	152	149	138
7	144	203	1270	160	1120	5240	1240	1260	196	154	150	139
8	148	185	437	162	1610	3900	1450	1040	195	154	149	138
9	150	187	451	155	8150	3610	1170	654	187	157	145	139
10	152	193	247	152	6950	3000	803	487	186	156	145	145
11	177	187	212	163	5610	3210	845	434	185	147	146	137
12	145	185	204	180	4670	2680	1710	494	186	148	145	142
13	145	200	205	159	3960	1930	843	435	184	149	139	140
14	142	190	239	175	3280	1940	707	581	176	150	144	157
15	520	204	296	177	2300	1410	1430	620	181	150	140	164
16	144	236	573	183	1840	1520	1180	532	178	150	145	148
17	149	341	1320	262	1770	1370	944	335	181	152	147	142
18	152	269	638	341	2560	1430	1040	245	176	147	140	146
19	145	268	432	437	3280	1650	1120	250	170	148	147	144
20	149	279	276	1690	3330	1600	1480	240	167	145	148	158
21	142	434	227	2020	3290	1970	1640	233	170	150	140	150
22	143	472	182	2490	2950	2060	1500	229	170	150	139	145
23	144	608	180	2650	2520	2310	1700	227	169	150	139	157
24	155	432	180	2800	2220	2010	1410	229	169	144	143	144
25	146	2140	177	2100	2880	1910	1330	247	159	141	141	148
26	146	2610	177	2310	4010	1920	826	225	154	145	143	144
27	154	2190	182	1670	4190	1980	754	226	155	146	147	144
28	153	2150	183	1160	4260	1710	1000	261	163	149	140	144
29	140	2030	176	872	---	1820	1220	216	156	146	143	152
30	140	2290	172	505	---	1660	1290	214	162	145	142	141
31	145	---	171	427	---	1640	---	210	---	148	140	---
TOTAL	5024	19490	32147	24404	82555	91630	35624	17059	5421	4654	4472	4377
MEAN	162	650	1037	787	2948	2956	1187	550	181	150	144	146
MAX	520	2610	4900	2800	8150	7130	1710	1490	217	161	158	164
MIN	140	152	171	152	351	1370	683	210	154	141	139	137
AC-FT	9970	38660	63760	48410	163700	181700	70660	33840	10750	9230	8870	8680

11363000 PIT RIVER AT BIG BEND, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1943, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2206	2373	2676	3000	3927	4449	4446	3229	2520	2214	2100	2107
MAX	3021	3186	6792	7675	7989	9953	11410	6216	3763	3218	2987	2975
(WY)	1912	1912	1938	1914	1942	1938	1917	1938	1911	1911	1911	1911
MIN	1607	1740	1764	1750	1746	2051	1860	1734	1672	1584	1526	1565
(WY)	1935	1934	1935	1937	1933	1931	1934	1934	1934	1934	1934	1934

SUMMARY STATISTICS

WATER YEARS 1911 - 1943

ANNUAL MEAN	2931
HIGHEST ANNUAL MEAN	4597 1938
LOWEST ANNUAL MEAN	1787 1934
HIGHEST DAILY MEAN	30300 Dec 12 1937
LOWEST DAILY MEAN	692 Jul 9 1925
ANNUAL SEVEN-DAY MINIMUM	915 Jul 4 1925
INSTANTANEOUS PEAK FLOW	a34200 Dec 12 1937
INSTANTANEOUS PEAK STAGE	16.26 Dec 12 1937
ANNUAL RUNOFF (AC-FT)	2123000
10 PERCENT EXCEEDS	4520
50 PERCENT EXCEEDS	2440
90 PERCENT EXCEEDS	1750

a From rating extended above 11,000 ft³/s on basis of velocity-area studies.

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	205	219	499	1085	1259	1444	1131	678	288	134	131	125
MAX	2322	2469	3889	8804	9457	6658	8441	5420	3052	203	448	284
(WY)	1944	1944	1965	1970	1986	1995	1952	1995	1998	1998	1992	1986
MIN	58.8	56.0	45.0	51.4	57.1	52.6	49.9	114	78.5	63.5	60.9	60.1
(WY)	1949	1979	1979	1949	1977	1977	1977	1977	1944	1944	1944	1945

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1944 - 1999

ANNUAL TOTAL	573072	326857	
ANNUAL MEAN	1570	895	597
HIGHEST ANNUAL MEAN			1638 1995
LOWEST ANNUAL MEAN			86.5 1977
HIGHEST DAILY MEAN	8370	Jan 19	8150 Feb 9 36500 Feb 21 1986
LOWEST DAILY MEAN	140	Oct 29	137 Sep 11 34 Mar 29 1955
ANNUAL SEVEN-DAY MINIMUM	146	Sep 18	140 Sep 6 40 Dec 7 1978
INSTANTANEOUS PEAK FLOW			13900 Feb 9 49000 Jan 25 1970
INSTANTANEOUS PEAK STAGE			13.56 Feb 9 18.70 Feb 20 1986
ANNUAL RUNOFF (AC-FT)	1137000	648300	432300
10 PERCENT EXCEEDS	4290	2500	1650
50 PERCENT EXCEEDS	608	195	140
90 PERCENT EXCEEDS	150	144	74

11363910 JAMES B. BLACK POWERPLANT NEAR BIG BEND, CA

LOCATION.—Lat 40°59'12", long 121°58'35", in SW 1/4 SE 1/4 sec.9, T.36 N., R.1 W., Shasta County, Hydrologic Unit 18020003, at powerplant on right bank of Pit River and 5.8 mi downstream from Big Bend.

PERIOD OF RECORD.—December 1965 to current year.

GAGE.—Discharge computed from powerplant output.

REMARKS.—Water is diverted from Lake McCloud (station 11367740) at SE 1/4 SW 1/4 sec.22, T.38 N., R.2 W., through McCloud–Iron Canyon Diversion Tunnel (station 11367720) to Iron Canyon Reservoir (station 11363920), then through the penstock for powerplant and into the Pit River. Records are combined flow of diversion from McCloud River at McCloud Dam plus Iron Canyon Creek. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 2,420 ft³/s, July 15, 1966; no flow several 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	1300	821	1590	1010	1290	1230	1660	1320	1170	1020	897	818
2	1020	1270	1920	1100	1280	1500	1800	1590	1040	1110	1010	765
3	.00	1190	1920	1290	1260	1610	1450	1300	1200	114	1250	681
4	.00	1140	1420	521	1170	1630	992	1270	1200	688	760	820
5	1320	1590	1910	1140	1530	1750	1380	1230	1330	1080	758	1360
6	1500	1160	1280	1430	1410	1650	1380	1160	1200	868	727	1150
7	1580	1050	1340	1360	1270	1560	1630	1130	1340	408	460	1090
8	1300	1140	1260	1200	1430	1380	1560	1320	1130	1210	893	1100
9	787	1150	.00	1270	1430	1240	1250	1220	969	1290	1240	845
10	.00	1140	1110	639	1460	1330	1480	1300	1390	1430	1080	850
11	.00	911	1130	687	1380	1280	1250	1420	1180	1540	1320	701
12	1310	1010	1460	687	1340	1690	1300	1280	1020	1300	557	772
13	1580	612	1340	918	1390	1390	1240	1320	634	1970	880	1110
14	1200	617	1180	967	1330	1210	591	1300	1090	1970	578	1060
15	480	38	1320	1240	1330	1320	1420	1390	907	1090	540	916
16	1710	866	1360	953	958	1420	1410	1300	1380	188	1240	826
17	1190	1110	1350	1140	1420	1320	1400	1090	1020	511	1130	442
18	1310	965	1360	1160	1390	1450	1320	1160	1460	1010	1220	456
19	1300	946	237	1340	1420	1290	1240	1050	1120	1320	1160	782
20	1070	845	794	1480	1380	1400	224	1030	1000	1110	1250	875
21	1190	899	1870	1330	1340	1500	620	1560	1030	1400	453	1210
22	1230	928	1770	1740	1390	1300	1120	1500	1170	1110	625	1170
23	1440	902	1360	1470	1210	1380	1840	1320	1430	775	985	956
24	1350	1360	1100	1450	1320	1620	1360	1200	1390	644	887	699
25	1250	1770	1170	1100	1050	1460	1260	1360	1170	848	1210	928
26	1260	1560	1090	895	1060	1010	1340	1220	1250	1370	910	523
27	1290	1470	1160	964	1170	1320	1220	1240	975	1440	873	928
28	1160	1240	1210	1200	1110	1170	1360	1260	1100	1320	994	1020
29	1200	705	941	1890	---	1370	1130	1140	1180	1080	1110	789
30	1070	1160	732	1820	---	1620	1280	1180	1160	1570	402	900
31	876	---	792	1110	---	1690	---	1310	---	346	351	---
TOTAL	33273.00	31565	38476.00	36501	36518	44090	38507	39470	34635	33130	27750	26542
MEAN	1073	1052	1241	1177	1304	1422	1284	1273	1154	1069	895	885
MAX	1710	1770	1920	1890	1530	1750	1840	1590	1460	1970	1320	1360
MIN	.00	38	.00	521	958	1010	224	1030	634	114	351	442
AC-FT	66000	62610	76320	72400	72430	87450	76380	78290	68700	65710	55040	52650
a	175600	194500	226300	215300	206800	247600	238500	231400	185800	144800	142500	146000

a Discharge, in acre-feet, for Pit No. 5 Powerplant (station 11362700), provided by Pacific Gas & Electric Co.

11363930 IRON CANYON CREEK BELOW IRON CANYON DAM, NEAR BIG BEND, CA

LOCATION.—Lat 41°02'22", long 121°59'03", in NW 1/4 NW 1/4 sec.28, T.37 N., R.1 W., Shasta County, Hydrologic Unit 18020003, on left bank 0.2 mi downstream from Iron Canyon Dam and 4.2 mi west of Big Bend.

DRAINAGE AREA.—11.2 mi².

PERIOD OF RECORD.—August 1966 to current year (beginning October 1994, operated as a low-flow station only).

REVISED RECORDS.—WDR CA-95-4: Drainage area.

GAGE.—Water-stage recorder, 60° sharp-crested V-notch weir, and concrete control with flashboards in 2- by 10-ft opening. Datum of gage is 2,461.52 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Flow is completely regulated by Iron Canyon Reservoir (station 11363920). There is an interbasin diversion from Lake McCloud (station 11367740) to Iron Canyon Reservoir and then through a tunnel to James B. Black Powerplant on the Pit River (station 11363910). This station records fishwater release only. The minimum release requirement is 3.0 ft³/s at all times. Flow is computed to 12.0 ft³/s. See schematic diagram of Pit and McCloud River Basins.

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, 650 ft³/s, Feb. 5, 1986, gage height unknown (flashboards removed from weir), from equation for a 4- by 4-ft slide gate. Flow was the result of full travel test of slide gate at Iron Canyon Dam; maximum gage height, 3.24 ft, Feb. 25, 1978 (flashboards in weir), was the result of failure of the James B. Black Penstock; no flow, July 15–18, 1967.

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	5.2	4.0	6.1	4.7	3.9	7.8	4.9	4.5	4.3	3.8	3.9	4.6
2	4.9	4.2	5.6	4.7	3.9	7.2	4.2	4.6	4.5	3.9	3.9	4.3
3	5.1	4.0	6.2	4.4	3.9	7.1	3.8	4.6	4.6	4.1	3.8	4.4
4	5.7	3.9	5.2	4.7	3.9	6.5	4.0	4.5	4.5	4.2	3.8	4.5
5	6.2	3.7	4.6	4.7	3.8	5.9	4.7	4.5	4.5	4.3	3.9	4.4
6	5.9	3.5	3.9	4.4	4.9	5.5	4.7	4.5	4.4	4.3	4.0	4.2
7	5.7	3.7	4.0	4.2	7.4	4.9	4.2	4.5	4.4	4.3	4.1	3.9
8	5.5	3.6	4.0	3.9	6.7	4.9	4.6	4.5	4.4	4.4	4.1	3.7
9	5.4	3.5	4.0	3.8	9.1	5.2	4.4	4.6	4.5	4.3	4.1	3.7
10	5.7	3.5	4.3	3.9	7.2	---	4.5	4.6	4.4	4.2	4.1	3.9
11	6.3	3.3	4.6	4.3	6.1	5.1	4.2	4.5	4.4	4.1	4.0	3.9
12	6.3	3.5	4.3	4.7	5.7	4.9	e4.2	4.5	4.4	4.0	3.9	4.0
13	6.3	3.7	4.0	4.7	5.5	4.7	4.1	4.5	4.4	3.9	4.0	4.0
14	6.1	3.9	4.0	4.7	5.0	4.8	4.4	4.5	4.2	3.9	4.0	3.9
15	6.1	4.2	4.0	4.7	4.8	4.8	4.5	4.4	4.3	4.0	4.1	3.8
16	6.2	4.7	4.1	4.6	5.0	4.8	4.6	4.4	4.3	4.2	4.1	3.8
17	5.7	4.9	4.0	5.5	5.3	4.8	4.4	4.4	4.3	4.3	4.0	3.9
18	5.5	4.6	3.8	6.4	5.6	4.7	4.5	4.4	4.3	4.3	3.9	4.1
19	5.3	4.6	4.3	6.5	5.2	4.7	4.5	4.4	4.3	4.3	3.9	4.1
20	5.2	4.6	4.9	6.9	4.9	4.7	4.8	4.5	4.3	4.2	3.7	4.1
21	5.2	5.8	4.9	6.7	4.7	4.6	6.3	4.5	4.3	4.2	3.7	4.1
22	4.9	5.5	4.3	6.7	4.7	4.7	5.1	4.3	4.2	4.1	3.8	3.9
23	4.9	---	3.9	6.6	5.1	4.7	4.5	4.2	4.0	4.1	3.9	3.8
24	4.8	6.0	3.9	6.2	5.4	4.9	4.5	4.2	4.0	4.2	3.9	3.9
25	4.3	4.9	3.9	5.7	6.1	4.9	4.5	4.2	4.0	4.2	3.8	3.8
26	4.1	4.4	3.8	5.4	6.2	4.6	4.6	4.2	3.9	4.1	4.0	3.9
27	3.9	3.8	3.9	5.2	6.3	4.9	4.6	4.2	4.0	4.0	4.2	4.2
28	3.8	3.6	3.8	5.2	7.8	5.1	4.6	4.2	4.0	3.9	4.2	3.9
29	3.9	3.9	3.9	5.0	---	5.2	4.6	4.4	3.9	3.9	4.2	3.9
30	3.8	7.2	4.0	4.3	---	5.2	4.5	4.3	3.9	3.7	4.3	3.9
31	4.0	---	4.6	3.9	---	5.4	---	4.3	---	3.7	4.5	---
TOTAL	161.9	---	134.8	157.3	154.1	---	136.0	136.9	127.9	127.1	123.8	120.5
MEAN	5.22	---	4.35	5.07	5.50	---	4.53	4.42	4.26	4.10	3.99	4.02
MAX	6.3	---	6.2	6.9	9.1	---	6.3	4.6	4.6	4.4	4.5	4.6
MIN	3.8	---	3.8	3.8	3.8	---	3.8	4.2	3.9	3.7	3.7	3.7
AC-FT	321	---	267	312	306	---	270	272	254	252	246	239

e Estimated.

11365000 PIT RIVER NEAR MONTGOMERY CREEK, CA

LOCATION.—Lat 40°50'38", long 122°00'05", in NE 1/4 SW 1/4 sec.32, T.35 N., R.1 W., Shasta County, Hydrologic Unit 18020003, Shasta National Forest, on left bank 0.7 mi downstream from Pit No. 7 Dam and Powerplant, 1.4 mi upstream from Potem Creek, and 4.1 mi west of town of Montgomery Creek.

DRAINAGE AREA.—4,952 mi², excluding Goose Lake Basin.

PERIOD OF RECORD.—October 1944 to current year (monthly discharge only December 1964 to May 1965). Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1951, 1953, 1955–81.

WATER TEMPERATURE: Water years 1951, 1954–57, 1959.

REVISED RECORDS.—WSP 1931: Drainage area. WDR CA-86-4: 1983 (M).

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 1,000.00 ft above sea level (levels by Pacific Gas & Electric Co.). October 1944 to Feb. 17, 1963, at site 0.7 mi upstream at different datum. Feb. 17, 1963, to May 21, 1965, at site 1.5 mi upstream at different datum. May 21, 1965, to June 20, 1981, at site 0.9 mi downstream at datum 1,036.00 ft above sea level.

REMARKS.—Low flow completely regulated by many reservoirs and powerplants, total usable reservoir capacity, 337,000 acre-ft. Many diversions upstream from station for irrigation. Diversion from McCloud River to Iron Canyon Reservoir (station 11363920) began December 1965. See schematic diagram of Pit and McCloud River Basins.

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, 73,000 ft³/s, Jan. 24, 1970, gage height, 32.36 ft, site and datum then in use; maximum gage height, 74.65 ft, Feb. 19, 1986; minimum daily, 30 ft³/s, July 12, 27, 1975, result of construction work below Pit No. 7 Powerplant.

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	e6870	5430	12900	3930	6170	14300	8030	e7150	e5950	e3260	2700	3460
2	4760	2900	11600	3380	6550	14500	8800	e8680	e5020	e4310	4340	2930
3	890	3060	15400	6090	5620	14500	8180	e7610	e5620	e2450	4140	3740
4	1010	3990	11800	4900	5580	15500	7480	e7500	e5670	e4000	3830	3780
5	4550	4350	10700	4770	7580	15300	7240	e7320	e6190	e4270	3370	4780
6	4720	4930	9010	5670	6860	14000	7210	e7420	e5640	e3120	3400	3930
7	6320	5720	8460	6450	11100	12500	7280	e7530	e4880	e3590	1560	3780
8	6200	5430	6520	5230	9390	10800	8390	e7050	e5210	e3220	3060	3870
9	6170	5280	7230	4480	20700	10700	e7660	e6380	e5120	e4030	4960	3960
10	232	5430	5430	3420	15200	9680	e8230	e7000	e5530	e4910	4140	3540
11	602	5540	6560	4330	12700	9960	e7810	e6700	e5430	e4870	3660	3540
12	3340	4250	6580	3690	12500	9580	e8280	e6230	e5610	e5220	3900	2890
13	2480	3770	6160	4350	10800	9190	e7540	e6590	e4170	e8240	3710	4050
14	5070	3680	6680	4320	11300	7800	e7280	e7140	e5640	e7860	2210	3920
15	5130	3430	5780	4300	8860	8760	e7170	e6670	e5540	e4390	3810	3790
16	4360	3950	7420	3790	8730	8680	e7430	e6420	e4730	e1360	4830	3270
17	5170	4490	7470	5550	9520	8300	e7750	e6530	e4330	e2990	4060	3160
18	4940	4060	5750	7690	10300	7860	e9660	e4660	e5390	e4020	3300	2510
19	5270	3730	4910	8300	10900	8350	e7600	e5510	e3730	e3660	3710	1760
20	4880	5390	5810	11400	11100	8480	e9060	e6450	e3600	e3800	4350	3200
21	4440	4860	7460	10500	10900	8930	e5650	e7060	e3660	e4570	2410	4770
22	4530	4630	6840	10500	9760	7890	e7720	e3780	e4850	e5000	4250	5350
23	4960	7950	5960	12000	11100	8470	e7650	e6540	e4900	e2920	4060	3030
24	4600	8490	5220	10200	9410	9700	e9790	e4900	e4710	e1540	3720	3600
25	3630	8550	5820	9080	12200	9520	e7990	e5570	e4360	2730	3030	4280
26	5480	8800	5460	8530	11600	8230	e7750	e5540	e2990	4530	3180	4410
27	5340	8970	5610	8000	11400	8770	e7170	e5110	e3200	4420	4050	3430
28	4200	8670	5290	7670	14500	8920	e6830	e5660	e4550	4630	2450	3810
29	4860	7620	4360	7870	---	7840	e6550	e5790	e3650	4630	1740	4130
30	5240	11000	3890	7420	---	8560	e7550	e4660	e4300	5310	2870	3780
31	6500	---	3180	6470	---	8780	---	e5310	---	1410	2590	---
TOTAL	136744	168350	221260	204280	292330	314350	232730	196460	144170	125260	107390	110450
MEAN	4411	5612	7137	6590	10440	10140	7758	6337	4806	4041	3464	3682
MAX	6870	11000	15400	12000	20700	15500	9790	8680	6190	8240	4960	5350
MIN	232	2900	3180	3380	5580	7800	5650	3780	2990	1360	1560	1760
AC-FT	271200	333900	438900	405200	579800	623500	461600	389700	286000	248500	213000	219100
a	14531	15407	15153	14634	14522	14115	15018	15255	15171	14515	14930	11568
b	255300	295800	348400	342200	328000	413500	389000	356600	279400	237200	209400	209800
c	32080	33058	33099	32317	33200	33523	33946	33578	31807	32030	33403	29770

e Estimated.

a Contents, in acre-feet, at end of month for Pit No. 6 Reservoir (station 11364100), provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, for Pit No. 6 Powerplant (station 11364150), provided by Pacific Gas & Electric Co.

c Contents, in acre-feet, at end of month for Pit No. 7 Reservoir (station 11364700), provided by Pacific Gas & Electric Co.

11365000 PIT RIVER NEAR MONTGOMERY CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1965, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2643	2828	3821	4320	5592	5331	5711	4297	3127	2376	2231	2284
MAX	5999	3710	9541	11240	12970	8212	13350	7380	5044	3037	2651	2744
(WY)	1963	1951	1956	1956	1958	1956	1952	1952	1953	1958	1958	1959
MIN	2112	2232	2219	2137	2500	3225	3404	2299	2353	1935	1971	1899
(WY)	1950	1950	1950	1949	1948	1964	1947	1947	1950	1949	1947	1949

SUMMARY STATISTICS

WATER YEARS 1945 - 1965

ANNUAL TOTAL	
ANNUAL MEAN	3704
HIGHEST ANNUAL MEAN	5529 1956
LOWEST ANNUAL MEAN	2658 1947
HIGHEST DAILY MEAN	32100 Dec 23 1955
LOWEST DAILY MEAN	150 Jul 19 1965
ANNUAL SEVEN-DAY MINIMUM	1610 Jul 19 1965
INSTANTANEOUS PEAK FLOW	37100 Dec 23 1955
INSTANTANEOUS PEAK STAGE	14.12 Dec 23 1955
ANNUAL RUNOFF (AC-FT)	2684000
10 PERCENT EXCEEDS	6080
50 PERCENT EXCEEDS	3010
90 PERCENT EXCEEDS	1740

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3417	4151	4801	6676	7284	8161	6676	5550	4089	3312	3119	3127
MAX	5865	8683	9814	20890	18670	16030	12920	11900	8911	4633	4187	4257
(WY)	1997	1997	1982	1970	1986	1983	1982	1995	1998	1998	1983	1998
MIN	2286	2533	2408	2632	2784	3241	2626	2404	2268	2291	2049	1428
(WY)	1993	1993	1991	1991	1991	1977	1977	1992	1992	1994	1992	1966

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1966 - 1999

ANNUAL TOTAL	2746758	2253774	
ANNUAL MEAN	7525	6175	5019
HIGHEST ANNUAL MEAN			7693 1974
LOWEST ANNUAL MEAN			2808 1992
HIGHEST DAILY MEAN	19200	Jan 19	20700 Feb 9 53900 Jan 23 1970
LOWEST DAILY MEAN	232	Oct 10	232 Oct 10 30 Jul 12 1975
ANNUAL SEVEN-DAY MINIMUM	3030	Oct 10	2830 Aug 28 939 Sep 5 1966
INSTANTANEOUS PEAK FLOW			24700 Feb 9 73000 Jan 24 1970
INSTANTANEOUS PEAK STAGE			68.55 Feb 9 74.65 Feb 19 1986
ANNUAL RUNOFF (AC-FT)	5448000	4470000	3636000
10 PERCENT EXCEEDS	11900	10100	8590
50 PERCENT EXCEEDS	6960	5460	4070
90 PERCENT EXCEEDS	3710	3210	2110

11367500 McCLOUD RIVER NEAR McCLOUD, CA

LOCATION.—Lat 41°11'18", long 122°03'52", in NW 1/4 NE 1/4 sec.34, T.39 N., R.2 W., Siskiyou County, Hydrologic Unit 18020004, on right bank 0.4 mi downstream from Angel Creek and 6 mi southeast of McCloud.

DRAINAGE AREA.—358 mi².

PERIOD OF RECORD.—April 1931 to current year.

REVISED RECORDS.—WSP 843: 1936(M). WSP 1445: 1940(M). WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 2,711.2 ft above sea level, from river-profile map.

REMARKS.—Two small diversions upstream from station for irrigation and one 22-in. pipeline for town of McCloud. See schematic diagram of Pit and McCloud River Basins.

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, 15,400 ft³/s, Jan. 1, 1997, gage height, 11.22 ft, from rating curve extended above 8,800 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 524 ft³/s, Nov. 23, 24, 1932.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,500 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	2045	1,940	3.13	Mar. 1	0145	1,500	2.78
Nov. 30	2115	2,700	3.90	Apr. 27	0530	1,600	2.89
Jan. 21	0145	1,550	2.84				

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	1010	989	2180	981	1040	1470	1190	1450	1340	1030	961	939
2	1020	985	1690	977	1030	1370	1180	1500	1400	1030	960	939
3	1010	984	2090	973	1020	1440	1170	1530	1360	1020	959	936
4	1010	981	1750	972	1020	1380	1160	1500	1280	1020	959	934
5	1010	980	1520	972	1020	1290	1170	1440	1260	1020	959	932
6	1010	980	1420	972	1030	1260	1150	1430	1260	1010	958	932
7	1010	993	1360	970	1110	1220	1150	1450	1240	1010	959	930
8	1010	983	1310	964	1170	1200	1200	1430	1210	1010	958	929
9	1010	979	1280	960	1130	1190	1170	1390	1200	1000	955	928
10	1010	982	1260	960	1100	1160	1160	1360	1180	999	956	928
11	1000	979	1240	960	1080	1130	1150	1350	1180	998	955	927
12	1000	975	1270	959	1060	1120	1160	1350	1180	997	952	927
13	1000	973	1300	959	1050	1110	1170	1360	1180	996	950	926
14	1000	972	1300	959	1040	1110	1190	1340	1170	993	948	924
15	1000	977	1280	963	1030	1110	1230	1310	1150	989	947	923
16	1000	976	1270	982	1030	1110	1270	1300	1140	987	946	923
17	999	994	1270	1020	1030	1110	1300	1300	1130	985	946	921
18	998	979	1260	1350	1070	1110	1380	1330	1120	985	944	920
19	996	972	1250	1350	1080	1130	1440	1360	1110	983	944	918
20	994	972	1250	1450	1060	1130	1500	1360	1100	982	942	917
21	994	1020	1240	1450	1050	1140	1510	1370	1090	980	941	916
22	992	1080	1230	1300	1040	1150	1470	1370	1090	977	940	916
23	992	1390	1130	1270	1040	1150	1440	1390	1080	975	941	915
24	1010	1450	998	1210	1070	1200	1460	1420	1070	973	941	916
25	999	1170	998	1160	1170	1280	1480	1450	1070	972	940	915
26	992	1130	998	1130	1140	1290	1540	1430	1060	972	940	914
27	992	1170	998	1100	1120	1280	1580	1430	1050	971	940	914
28	993	1110	996	1090	1270	1250	1490	1440	1040	969	940	912
29	991	1080	992	1070	---	1240	1440	1430	1040	966	940	913
30	989	1860	990	1060	---	1240	1430	1380	1030	965	940	912
31	989	---	987	1050	---	1220	---	1350	---	963	939	---
TOTAL	31030	32065	40107	33543	30100	37590	39330	43300	34810	30727	29400	27696
MEAN	1001	1069	1294	1082	1075	1213	1311	1397	1160	991	948	923
MAX	1020	1860	2180	1450	1270	1470	1580	1530	1400	1030	961	939
MIN	989	972	987	959	1020	1110	1150	1300	1030	963	939	912
AC-FT	61550	63600	79550	66530	59700	74560	78010	85890	69050	60950	58310	54940

11367500 McCLOUD RIVER NEAR McCLOUD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	765	791	867	910	977	1052	1128	1129	955	838	798	776
MAX	1030	1569	1879	2348	2155	2220	1896	2182	1574	1219	1101	1059
(WY)	1984	1974	1956	1970	1958	1983	1974	1938	1998	1983	1983	1983
MIN	536	537	534	539	549	568	674	606	574	561	556	544
(WY)	1933	1933	1933	1933	1933	1935	1994	1992	1992	1934	1992	1932

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1931 - 1999	
ANNUAL TOTAL	471076		409698			
ANNUAL MEAN	1291		1122		917	
HIGHEST ANNUAL MEAN					1406	
LOWEST ANNUAL MEAN					589	
HIGHEST DAILY MEAN	4420	Mar 24	2180	Dec 1	11900	Jan 1 1997
LOWEST DAILY MEAN	780	Jan 1	912	Sep 28	524	Nov 23 1932
ANNUAL SEVEN-DAY MINIMUM	866	Jan 5	914	Sep 24	528	Nov 20 1932
INSTANTANEOUS PEAK FLOW			2700		15400	
INSTANTANEOUS PEAK STAGE			3.90		11.22	
ANNUAL RUNOFF (AC-FT)	934400		812600		664600	
10 PERCENT EXCEEDS	1720		1420		1260	
50 PERCENT EXCEEDS	1160		1040		840	
90 PERCENT EXCEEDS	992		940		608	

11367720 McCLOUD-IRON CANYON DIVERSION TUNNEL NEAR McCLOUD, CA

LOCATION.—Lat 41°08'06", long 122°04'26", in SE 1/4 SW 1/4 sec.22, T.38 N., R.2 W., Shasta County, Hydrologic Unit 18020004, Shasta National Forest, on left bank of Lake McCloud, and 8.8 mi southeast of McCloud.

PERIOD OF RECORD.—December 1965 to current year.

REVISED RECORDS.—WDR CA-75-4: 1973.

GAGE.—None. Water-stage recorders on Iron Canyon Reservoir and Lake McCloud (stations 11363920 and 11367740) used to compute record.

REMARKS.—Water is diverted from Lake McCloud (station 11367740) via tunnel to Iron Canyon Reservoir (station 11363920) and then via penstock into James B. Black Powerplant (station 11363910) on the Pit River. Diversion began Dec. 1, 1965. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,890 ft³/s, several days during May and June 1967; no flow several days in 1965-68, 1971, 1978.

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	942	934	1140	934	1210	1100	1280	1180	1180	1070	926	733
2	929	965	1150	943	1200	1140	1340	1210	1160	1060	919	716
3	825	974	1190	972	1190	1190	1350	1210	1160	971	955	701
4	825	973	1210	972	1170	1230	1280	1210	1150	936	918	711
5	791	1040	1300	923	1200	1290	1280	1190	1160	945	890	776
6	855	1030	1270	984	1210	1320	1290	1190	1160	932	861	803
7	915	1000	1270	1030	1180	1320	1330	1180	1170	878	813	830
8	938	993	1250	1040	1200	1330	1350	1180	1170	909	813	858
9	907	1000	1230	1050	1190	1300	1350	1170	1140	936	850	842
10	805	1010	1230	958	1200	1300	1340	1180	1160	978	871	827
11	717	954	1230	899	1200	1270	1310	1190	1160	1020	906	798
12	717	932	1230	856	1190	1310	1300	1190	1150	1020	850	785
13	717	853	1230	855	1200	1300	1280	1200	1100	1040	851	819
14	717	793	1150	868	1200	1270	1270	1210	1080	1040	815	836
15	821	661	1140	908	1200	1260	1270	1220	1060	965	778	829
16	895	706	1160	907	1140	1270	1280	1220	1080	903	821	811
17	918	756	1160	923	1160	1260	1290	1190	1080	860	846	746
18	944	773	1160	980	1180	1270	1280	1190	1100	872	879	694
19	960	782	1020	1040	1200	1260	1290	1170	1100	908	904	694
20	948	781	976	1110	1210	1260	1280	1160	1080	912	933	707
21	953	793	1070	1140	1200	1280	1230	1200	1070	949	862	772
22	969	806	1150	1220	1210	1270	1180	1220	1080	957	827	823
23	1000	806	1150	1220	1180	1270	1190	1220	1090	924	839	832
24	1020	930	1150	1230	1190	1310	1210	1210	1110	894	849	814
25	1040	1040	1150	1190	1140	1320	1210	1220	1110	887	881	828
26	1030	1110	1150	1130	1110	1240	1210	1210	1100	922	873	788
27	1050	1160	1150	1090	1100	1230	1200	1210	1080	965	861	812
28	1050	1150	1070	1100	1090	1200	1200	1210	1080	986	867	834
29	1050	1050	1030	1190	---	1200	1190	1200	1090	986	887	798
30	1050	1070	978	1270	---	1190	1180	1190	1090	1040	803	799
31	1050	---	978	1220	---	1240	---	1200	---	942	735	---
TOTAL	28348	27825	35722	32152	33050	39000	38040	37130	33500	29607	26683	23616
MEAN	914	928	1152	1037	1180	1258	1268	1198	1117	955	861	787
MAX	1050	1160	1300	1270	1210	1330	1350	1220	1180	1070	955	858
MIN	717	661	976	855	1090	1100	1180	1160	1060	860	735	694
AC-FT	56230	55190	70850	63770	65550	77360	75450	73650	66450	58730	52930	46840

11367760 McCLOUD RIVER BELOW McCLOUD DAM, NEAR McCLOUD, CA

LOCATION.—Lat 41°07'44", long 122°04'08", in SW 1/4 NE 1/4 sec.27, T.38 N., R.2 W., Shasta County, Hydrologic Unit 18020004, Shasta National Forest, on left bank 0.1 mi downstream from Lizard Creek, 0.6 mi downstream from McCloud Dam, and 9 mi southeast of McCloud.

DRAINAGE AREA.—404 mi².

PERIOD OF RECORD.—April 1966 to current year (operated as a low-flow station only).

GAGE.—Water-stage recorder. Datum of gage is 2,398.76 ft above sea level (levels by Pacific Gas & Electric Co.). Prior to Apr. 7, 1972, at datum 3.00 ft higher.

REMARKS.—Low flow regulated by Lake McCloud (station 11367740) since November 1965. Most of McCloud River runoff is diverted from reservoir through tunnel to Iron Canyon Reservoir (station 11363920) in Pit River Basin. This station records fishwater release. The minimum release requirement is 40 ft³/s at all times. Prior to water year 1974, flow was computed up to 400 ft³/s. During water years 1975–81, because of channel changes, flow was computed up to 200 ft³/s. Currently, because of maximum required release, flow is computed to 220 ft³/s. See schematic diagram of Pit and McCloud River Basins.

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	184	184	75	128	81	74	77	---	---	174	179	195
2	185	184	64	123	84	73	77	---	---	174	179	194
3	184	184	60	123	87	74	76	---	---	174	179	194
4	185	184	68	123	87	74	75	---	---	174	179	194
5	185	185	73	123	91	74	75	---	---	174	182	195
6	185	184	78	124	91	73	81	---	215	176	182	194
7	185	184	92	128	60	72	83	---	161	175	182	195
8	185	183	110	129	57	72	84	---	160	176	181	194
9	184	183	123	133	59	72	84	---	161	175	181	194
10	184	186	136	133	56	71	84	---	162	175	181	193
11	185	187	138	133	54	---	83	---	162	177	181	194
12	185	187	137	126	53	77	83	---	164	181	181	193
13	185	186	144	124	53	77	83	220	165	180	182	193
14	185	186	149	131	53	76	84	220	165	180	181	193
15	185	187	148	135	60	72	84	220	164	181	181	193
16	185	187	113	131	62	76	84	220	165	180	182	193
17	185	188	108	123	62	75	85	220	165	180	181	193
18	185	188	112	58	64	75	85	219	165	180	181	193
19	184	188	113	55	65	75	86	220	165	180	181	193
20	184	188	114	56	64	75	86	---	165	180	181	193
21	184	190	121	56	63	75	94	---	165	180	180	193
22	184	190	131	57	63	75	---	---	164	180	181	193
23	186	147	131	60	63	74	---	---	165	180	180	193
24	186	81	131	57	64	77	---	---	166	180	180	192
25	185	90	128	56	67	81	---	---	167	180	180	193
26	185	112	130	55	66	80	---	---	169	180	181	193
27	184	115	131	55	65	79	---	---	173	180	181	193
28	183	121	130	55	71	78	---	---	173	179	181	193
29	188	129	130	63	---	78	---	---	173	179	182	194
30	187	144	131	68	---	78	---	---	173	179	181	194
31	185	---	131	74	---	77	---	---	---	178	186	---
TOTAL	5731	5032	3580	2995	1865	---	---	---	---	5521	5610	5804
MEAN	185	168	115	96.6	66.6	---	---	---	---	178	181	193
MAX	188	190	149	135	91	---	---	---	---	181	186	195
MIN	183	81	60	55	53	---	---	---	---	174	179	192
AC-FT	11370	9980	7100	5940	3700	---	---	---	---	10950	11130	11510

11367800 McCLOUD RIVER AT AH-DI-NA, NEAR McCLOUD, CA

LOCATION.—Lat 41°06'39", long 122°05'42", in NE 1/4 SW 1/4 sec.33, T.38 N., R.2 W., Shasta County, Hydrologic Unit 18020004, Shasta National Forest, on right bank at Ah-Di-Na, 1.8 mi downstream from Squirrel Creek, 3.9 mi downstream from McCloud Dam, and 9.6 mi south of McCloud.

DRAINAGE AREA.—427 mi².

PERIOD OF RECORD.—October 1964 to current year.

REVISED RECORDS.—WDR CA-98-4: 1997 (m).

GAGE.—Water-stage recorder. Elevation of gage is 2,160 ft above sea level, from topographic map.

REMARKS.—Low flow completely regulated by Lake McCloud (station 11367740) 3.9 mi upstream since November 1965. Diversion to Iron Canyon Reservoir (station 11363920) through McCloud–Iron Canyon diversion tunnel (station 11367720) started Dec. 1, 1965. This station records fishwater release. The minimum release requirements range from 160 to 210 ft³/s per schedule outlined in Federal Energy Regulatory Commission License 2106. See schematic diagram of Pit and McCloud River Basins.

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.—Prior to completion of McCloud Dam in 1965, maximum discharge, 9,660 ft³/s, Dec. 22, 1964, gage height, 9.43 ft, from rating curve extended above 2,500 ft³/s; minimum daily, 86 ft³/s, Oct. 1–26, 1964. Since completion of McCloud Dam, maximum discharge, 31,700 ft³/s, Jan. 1, 1997, gage height, 14.77 ft, from rating curve extended above 8,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 41 ft³/s, Dec. 18–20, 1971 (caused by valve malfunction at McCloud Dam).

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 21, 1955, reached a stage of 12.5 ft, discharge, 17,800 ft³/s, from rating curve extended above 2,500 ft³/s.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 3,000 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2115	1,330	3.75				

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	225	225	674	186	175	517	232	449	393	229	226	242
2	225	225	397	179	175	403	220	449	382	228	226	242
3	225	224	520	179	175	396	212	449	375	227	225	242
4	225	223	361	179	174	355	203	449	372	227	246	242
5	225	225	286	178	176	312	203	554	342	227	248	242
6	225	225	246	178	203	282	200	572	290	228	249	242
7	225	236	231	183	313	259	201	571	231	228	249	241
8	225	228	235	184	286	247	238	566	227	227	249	239
9	225	225	235	188	309	233	226	559	228	227	249	239
10	225	230	241	186	271	216	220	491	229	226	249	239
11	225	231	237	186	231	390	216	359	227	228	249	239
12	225	229	231	179	206	204	218	354	228	233	249	239
13	225	228	235	176	190	198	231	350	229	232	249	239
14	225	228	238	182	179	195	250	347	229	233	249	239
15	225	231	234	191	176	191	262	343	227	233	249	239
16	225	231	193	189	179	196	276	339	229	233	248	239
17	225	253	184	235	186	202	300	336	228	233	248	239
18	225	237	185	319	229	210	334	336	227	230	247	239
19	225	233	186	343	254	219	350	335	226	230	247	239
20	225	231	186	405	234	227	349	394	225	230	246	239
21	223	296	188	355	216	232	332	411	225	229	246	239
22	222	285	201	335	204	233	589	521	224	229	246	239
23	222	452	202	390	213	233	433	523	224	228	246	239
24	222	279	198	305	240	300	509	521	225	228	245	239
25	222	237	194	255	364	466	609	520	225	228	245	239
26	222	238	193	223	317	391	721	516	227	228	245	239
27	222	238	193	199	278	340	762	514	232	227	246	239
28	224	225	193	190	470	302	661	514	231	227	246	239
29	227	227	193	184	---	278	449	514	230	226	246	239
30	228	739	191	181	---	263	449	514	230	225	247	239
31	225	---	191	181	---	246	---	422	---	225	250	---
TOTAL	6959	7814	7672	7023	6623	8736	10455	14092	7617	7089	7605	7190
MEAN	224	260	247	227	237	282	348	455	254	229	245	240
MAX	228	739	674	405	470	517	762	572	393	233	250	242
MIN	222	223	184	176	174	191	200	335	224	225	225	239
AC-FT	13800	15500	15220	13930	13140	17330	20740	27950	15110	14060	15080	14260

11367800 McCLOUD RIVER AT AH-DI-NA, NEAR McCLOUD, 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	251	284	315	465	413	487	361	357	265	226	223	234
MAX	919	1140	1863	2211	1770	2107	2102	1498	1173	1035	992	954
(WY)	1966	1974	1965	1970	1986	1983	1965	1965	1965	1965	1965	1965
MIN	180	182	93.2	93.4	119	167	166	162	160	159	155	182
(WY)	1978	1978	1972	1972	1972	1977	1968	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1965 - 1999	
ANNUAL TOTAL	183470		98875			
ANNUAL MEAN	503		271		323	
HIGHEST ANNUAL MEAN					1326	
LOWEST ANNUAL MEAN					168	
HIGHEST DAILY MEAN	6580	Mar 24	762	Apr 27	25200	Jan 1 1997
LOWEST DAILY MEAN	173	Jan 1	174	Feb 4	41	Dec 18 1971
ANNUAL SEVEN-DAY MINIMUM	189	Dec 16	177	Jan 30	42	Dec 15 1971
INSTANTANEOUS PEAK FLOW			1330		31700	
INSTANTANEOUS PEAK STAGE			3.75		14.77	
ANNUAL RUNOFF (AC-FT)	363900		196100		234100	
10 PERCENT EXCEEDS	1020		415		514	
50 PERCENT EXCEEDS	243		233		207	
90 PERCENT EXCEEDS	222		191		168	

11368000 McCLOUD RIVER ABOVE SHASTA LAKE, CA

LOCATION.—Lat 40°57'30", long 122°13'07", unsurveyed, T.36 N., R.3 W., Shasta County, Hydrologic Unit 18020004, on right bank just upstream from Shasta Lake, 0.2 mi downstream from Big Bollibokka Creek, and 11.3 mi east of Lamoine.

DRAINAGE AREA.—604 mi².

PERIOD OF RECORD.—October 1945 to current year. Prior to 1950, published as "above Shasta Reservoir."

TEMPERATURE: Water years 1956–59.

REVISED RECORDS.—WSP 1445: 1953(M). WSP 1931: Drainage area. WDR CA-94-4: 1993(P).

GAGE.—Water-stage recorder. Datum of gage is 1,100.00 ft above sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Low flow completely regulated by Lake McCloud (station 11367740) 16.5 mi upstream since Nov. 3, 1965. Diversions to Iron Canyon Reservoir (station 11363920) began Dec. 1, 1965. See schematic diagram of Pit and McCloud River Basins.

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, 51,300 ft³/s, Jan. 1, 1997, gage height, 29.00 ft, from rating curve extended above 15,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 109 ft³/s, Dec. 16–20, 1971. Minimum prior to regulation by Lake McCloud, 825 ft³/s, Jan. 3, 1950.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 4,500 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2100	7,750	17.06				

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	354	354	4200	418	647	3240	1010	1260	637	402	340	349
2	354	346	2340	404	615	2450	941	1090	654	397	340	348
3	354	346	3100	398	594	2220	888	1040	649	394	339	343
4	353	345	2000	391	577	1840	841	1110	631	393	338	343
5	353	346	1380	389	561	1570	853	1100	609	388	340	343
6	349	350	1080	386	1010	1380	812	1000	539	386	345	343
7	346	472	916	386	3520	1230	811	988	474	383	352	340
8	351	392	837	384	2430	1190	1260	973	451	379	352	339
9	350	365	765	383	2910	1140	1200	952	443	378	344	338
10	348	397	722	383	2200	1070	1100	894	441	376	345	340
11	348	398	689	380	1560	1170	1040	768	437	374	352	336
12	346	379	656	372	1260	960	1010	727	434	378	347	336
13	352	369	652	362	1070	928	1010	717	433	375	341	336
14	349	364	652	365	964	928	1030	704	427	376	338	335
15	345	388	613	391	879	916	1020	688	428	374	339	334
16	345	385	569	429	958	905	1020	677	427	373	336	334
17	345	527	531	726	1170	906	1040	667	427	373	335	336
18	345	423	523	2080	1470	918	1100	660	428	371	335	336
19	340	388	512	1900	1670	924	1120	655	428	368	333	336
20	336	376	502	2240	1440	936	1090	697	423	367	329	336
21	336	791	479	1840	1320	941	1040	722	421	365	327	335
22	336	806	484	1990	1360	927	1240	801	416	362	328	333
23	338	2100	479	3040	1660	949	1070	822	412	361	326	331
24	393	1330	471	1930	1820	1440	1100	821	411	358	328	332
25	371	926	463	1410	2860	2910	1190	810	410	359	327	331
26	352	867	457	1150	2280	2210	1290	799	407	357	324	331
27	346	891	449	959	1770	1720	1350	795	413	354	324	331
28	350	729	444	849	2880	1450	1240	790	409	355	325	331
29	348	728	437	777	---	1280	1050	800	405	350	326	331
30	349	4450	430	729	---	1180	1230	783	403	343	329	334
31	347	---	427	696	---	1080	---	701	---	341	332	---
TOTAL	10829	21328	28259	28537	43455	42908	31996	26011	13927	11510	10416	10101
MEAN	349	711	912	921	1552	1384	1067	839	464	371	336	337
MAX	393	4450	4200	3040	3520	3240	1350	1260	654	402	352	349
MIN	336	345	427	362	561	905	811	655	403	341	324	331
AC-FT	21480	42300	56050	56600	86190	85110	63460	51590	27620	22830	20660	20040

11368000 McCLOUD RIVER ABOVE SHASTA LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1965, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1121	1252	2080	2077	2617	2177	2467	1965	1460	1159	1059	1020
MAX	1899	2162	6513	4525	7493	3966	4599	2978	2248	1715	1489	1395
(WY)	1951	1951	1956	1953	1958	1958	1963	1958	1958	1958	1958	1958
MIN	856	870	856	903	1040	1265	1320	1085	1069	901	852	839
(WY)	1950	1950	1950	1949	1948	1964	1964	1947	1949	1950	1950	1950

SUMMARY STATISTICS

WATER YEARS 1946 - 1965

ANNUAL MEAN	1699
HIGHEST ANNUAL MEAN	2703
LOWEST ANNUAL MEAN	1213
HIGHEST DAILY MEAN	36100
LOWEST DAILY MEAN	825
ANNUAL SEVEN-DAY MINIMUM	826
INSTANTANEOUS PEAK FLOW	a45200
INSTANTANEOUS PEAK STAGE	28.20
ANNUAL RUNOFF (AC-FT)	1231000
10 PERCENT EXCEEDS	2670
50 PERCENT EXCEEDS	1270
90 PERCENT EXCEEDS	928

a from rating curve extended above 6,400 ft³/s on basis of slope-area measurement of peak flow.

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	308	588	866	1488	1500	1648	959	694	440	325	285	290
MAX	468	4068	3681	6043	5118	5825	2794	1930	1379	540	409	366
(WY)	1990	1974	1997	1970	1986	1983	1982	1983	1998	1998	1998	1998
MIN	206	227	235	222	232	248	226	232	215	200	192	200
(WY)	1992	1992	1977	1991	1977	1977	1977	1977	1977	1977	1991	1991

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1967 - 1999

ANNUAL TOTAL	533826	279277		
ANNUAL MEAN	1463	765	779	
HIGHEST ANNUAL MEAN			1720	1974
LOWEST ANNUAL MEAN			230	1977
HIGHEST DAILY MEAN	12900	Mar 24	4450	Nov 30
LOWEST DAILY MEAN	336	Oct 20	324	Aug 26
ANNUAL SEVEN-DAY MINIMUM	339	Oct 17	326	Aug 23
INSTANTANEOUS PEAK FLOW			7750	Nov 30
INSTANTANEOUS PEAK STAGE			17.06	Nov 30
ANNUAL RUNOFF (AC-FT)	1059000	553900	564700	
10 PERCENT EXCEEDS	3200	1440	1530	
50 PERCENT EXCEEDS	936	444	364	
90 PERCENT EXCEEDS	355	336	248	

11370000 SHASTA LAKE NEAR REDDING, CA

LOCATION.—Lat 40°43'08", long 122°25'12", in SE 1/4 NW 1/4 sec.15, T.33 N., R.5 W., Shasta County, Hydrologic Unit 18020005, in Shasta Dam on Sacramento River near right bank, 2 mi downstream from Squaw Creek, and 9.5 mi north of Redding.

DRAINAGE AREA.—6,421 mi², excluding Goose Lake Basin.

PERIOD OF RECORD.—November 1942 to current year. Prior to 1950, published as Shasta Reservoir near Redding.

CHEMICAL DATA: Water years 1978–80.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by U.S. Bureau of Reclamation). Prior to July 10, 1944, nonrecording gage at various sites near dam at same datum. Contents based on capacity table dated May 8, 1967, provided by U.S. Bureau of Reclamation.

REMARKS.—Lake is formed by concrete gravity-type dam completed in 1949; regulation began Dec. 30, 1943. Usable capacity, 4,436,400 acre-ft between elevations 737.75 ft, invert of lowest set of river outlets, and 1,067.0 ft, top of flashboard gates on drum-type spillway gates. Operating pool from elevation, 840.0 ft, capacity, 587,127 acre-ft to 1,067.0 ft, capacity, 4,552,090 acre-ft. Dead storage, 115,800 acre-ft. Installation of flashboard gates on top of drum gates completed Nov. 12, 1964. All water passes down the Sacramento River, most of which is through powerplant at dam. Figures given represent total contents at 2400 hours. Lake is used for flood control, power generation, irrigation, and recreation. See schematic diagram of Pit and McCloud River Basins.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400 HOURS) FOR PERIOD OF RECORD.—Maximum contents, 4,550,300 acre-ft, May 19, 1967, elevation, 1,066.94 ft; minimum since first filling, 562,600 acre-ft, Sept. 13, 1977, elevation, 836.68 ft.

EXTREMES (AT 2400 HOURS) FOR CURRENT YEAR.—Maximum contents, 4,314,588 acre-ft, May 21, elevation, 1,058.89 ft; minimum, 3,248,975 acre-ft, Dec. 21, elevation, 1018.42 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by U.S. Bureau of Reclamation, dated May 8, 1967)

830	515,543	870	843,589	910	1,291,854	950	1,876,996	990	2,616,622	1,030	3,533,478
840	587,127	880	943,929	920	1,424,780	960	2,046,829	1,000	2,828,544	1,050	4,063,108
850	665,511	890	1,051,713	930	1,566,238	970	2,226,093	1,010	3,051,750	1,067	4,552,090
860	751,027	900	1,167,888	940	1,717,255	980	2,416,019	1,020	3,286,929		

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	3443059	3406196	3472688	3277302	3593240	3722696	3880983	4263107	4303058	4104544	3701511	3430405
2	3439830	3403492	3494965	3284762	3598104	3722171	3899788	4273150	4300464	4091991	3690808	3422989
3	3429663	3400787	3533985	3294399	3601431	3724534	3913820	4280611	4297872	4076157	3677285	3416318
4	3419284	3399310	3542600	3299942	3599382	3721124	3924882	4287498	4295852	4064220	3664818	3411621
5	3415082	3398325	3542600	3305244	3590169	3711169	3941146	4293258	4295563	4053160	3653687	3407916
6	3410631	3398325	3506509	3310303	3604502	3693157	3953892	4297872	4294409	4039896	3643865	3402260
7	3414092	3407178	3480428	3316356	3659890	3673648	3967516	4302481	4291238	4024746	3630710	3397343
8	3416319	3407178	3451752	3320475	3686895	3657306	3989352	4306517	4288934	4011820	3620936	3393161
9	3409150	3407178	3426450	3323382	3745278	3640250	4007969	4307094	4285204	3999755	3615276	3388490
10	3399556	3412611	3396851	3324108	3772722	3615018	4026945	4308536	4282334	3989352	3609875	3383572
11	3391195	3414587	3371584	3326773	3782258	3590937	4042935	4307960	4280324	3979230	3601431	3378924
12	3387752	3409892	3345232	3327742	3782789	3573586	4058132	4306517	4277455	3968607	3594264	3372563
13	3382839	3402261	3323867	3328710	3776697	3562384	4068107	4305940	4272579	3954438	3588122	3369382
14	3384554	3393161	3309099	3331376	3770074	3552990	4076157	4306517	4268561	3940061	3576642	3366935
15	3385047	3384308	3296086	3334040	3746861	3553498	4085044	4305078	4264830	3927318	3569769	3363266
16	3384554	3376233	3286929	3336955	3732925	3556538	4094501	4305940	4258240	3911930	3565439	3358378
17	3387013	3368158	3276821	3354240	3715876	3559073	4105103	4307094	4253385	3896563	3558564	3354240
18	3388490	3355457	3266473	3385782	3700205	3563148	4117377	4307671	4248244	3883403	3550961	3348640
19	3390210	3341824	3256158	3418542	3688460	3569514	4128863	4309398	4240536	3868915	3542854	3342068
20	3391441	3331133	3250172	3457713	3683778	3579698	4145399	4313146	4231114	3856622	3536519	3337685
21	3389964	3328710	3248975	3473187	3681182	3594776	4159190	4314588	4220026	3845930	3526417	3337199
22	3389718	3320717	3249934	3494965	3683778	3608338	4171864	4308822	4211500	3835554	3519609	3338172
23	3390457	3349127	3253047	3527679	3687155	3625564	4182601	4309687	4201275	3822252	3512804	3338416
24	3395620	3359108	3255680	3541839	3691592	3661702	4199292	4310264	4190240	3806090	3504248	3334766
25	3393654	3364977	3259510	3547670	3713517	3708036	4212068	4311996	4179489	3791794	3495467	3333555
26	3396359	3372074	3262383	3553498	3711949	3741588	4224860	4312858	4166512	3780936	3486686	3333798
27	3397343	3375254	3264788	3557804	3704121	3771132	4236538	4311130	4151026	3769279	3479428	3328468
28	3397343	3374765	3266953	3562638	3712733	3796561	4243963	4310842	4139514	3757140	3469442	3327499
29	3397343	3382104	3268156	3571296	---	3819060	4249673	4311130	4126342	3745014	3456967	3327742
30	3399310	3435606	3269361	3579698	---	3841938	4256240	4306228	4116822	3734500	3447528	3327499
31	3403984	---	3269602	3588122	---	3863036	---	4304500	---	3716927	3437843	---
MAX	3443059	3435606	3542600	3588122	3782789	3863036	4256240	4314588	4303058	4104544	3701511	3430405
MIN	3382839	3320717	3248975	3277302	3590169	3552990	3880983	4263107	4116822	3716927	3437843	3327499
a	1024.81	1036.09	1019.28	1032.15	1036.97	1042.65	1056.86	1058.54	1051.93	1037.13	1026.18	1021.68
b	-37089	+31622	-166004	+318520	+124611	+150303	+393204	+48260	-187678	-399895	-279084	-110344

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

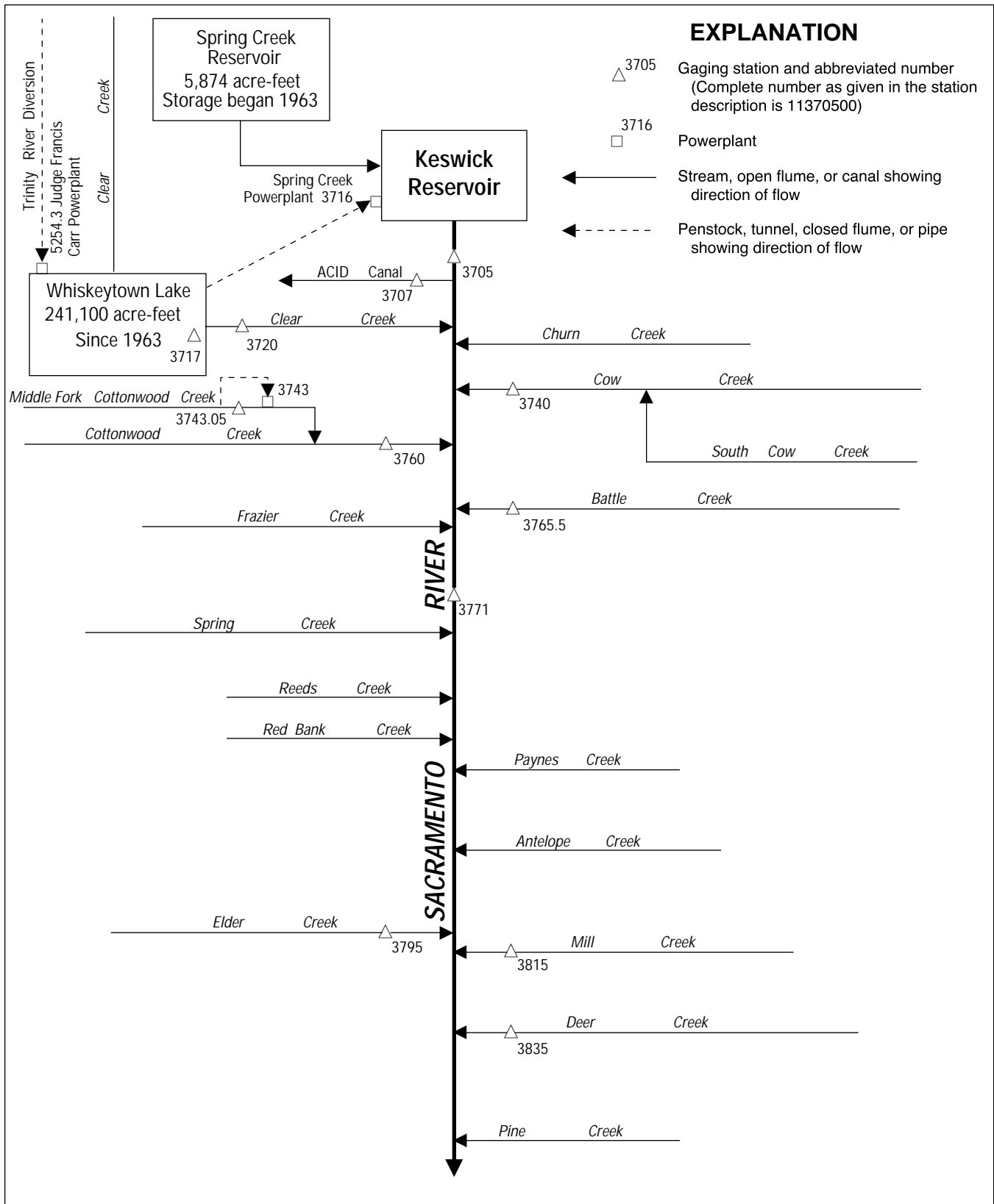


Figure 25. Diversions and storage in upper Sacramento River Basin.

11370500 SACRAMENTO RIVER AT KESWICK, CA

LOCATION.—Lat 40°36'04", long 122°26'36", in SW 1/4 NW 1/4 sec.28, T.32 N., R.5 W., Shasta County, Hydrologic Unit 18020101, on right bank 0.4 mi upstream from Middle Creek, 0.8 mi downstream from Keswick Dam, 1.6 mi downstream from Keswick, and 10 mi downstream from Shasta Dam.

DRAINAGE AREA.—6,468 mi², excluding Goose Lake Basin.

PERIOD OF RECORD.—October 1938 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1951–94. Published as "near Keswick" in 1951 and 1953, and as "at Keswick Dam, near Keswick" in 1968–69.

BIOLOGICAL DATA: Water years 1979–81.

SPECIFIC CONDUCTANCE: Water years 1978–94.

WATER TEMPERATURE: Water years 1978–94.

SEDIMENT DATA: Water years 1978–94.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 479.81 ft above sea level. Prior to Oct. 1, 1939, at site 1.5 mi upstream at datum 20.2 ft higher and Oct. 1, 1939, to Apr. 30, 1942, at site 1.5 mi upstream at datum 15.2 ft higher. Aug. 20, 1960, to July 3, 1973, auxiliary water-stage recorder at city of Redding pumping plant 2.1 mi downstream.

REMARKS.—Records excellent. Flow completely regulated by Shasta Lake (station 11370000) beginning Dec. 30, 1943. Minor regulation by Keswick Reservoir since 1950, total capacity, 23,800 acre-ft, operational capacity, 4,170 acre-ft, between normal operating elevations of 579.0 ft and 586.0 ft. No diversion between Shasta Dam and station at Keswick. Since December 1963, water is released from Whiskeytown Lake (station 11371700), through a tunnel to Spring Creek Powerplant (station 11371600), and then into Keswick Reservoir. See schematic diagrams of upper Sacramento River Basin and Pit and McCloud River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 186,000 ft³/s, Feb. 23, 1940, gage height, 47.2 ft, site and datum then in use, from rating curve extended above 75,000 ft³/s on basis of peak discharge at Kennet, plus 4,000 ft³/s estimated inflow; minimum observed, 2,730 ft³/s, Aug. 22, 1939. Since regulation by Shasta Dam in 1943, maximum discharge, 81,400 ft³/s, Apr. 1, 1974, gage height, 31.92 ft; maximum gage height, 32.71 ft, Jan. 4, 1997; minimum discharge, 154 ft³/s, May 15, 1948.

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	8130	6040	14700	5600	7530	27700	5540	9990	11100	13300	13100	9580
2	8000	6000	14700	5560	7560	27800	5550	10000	11100	13200	13100	9560
3	8040	5980	14800	5550	6470	27600	5560	10000	11200	13000	13100	9130
4	8050	5960	18300	5560	11500	28900	5570	10000	11100	13100	12600	9130
5	8060	5940	25100	5580	15900	30200	5560	10000	10600	13200	12100	9120
6	8150	7090	25200	5580	16500	30100	5510	11000	10500	13300	11600	9080
7	8070	7150	25200	5540	17500	30100	5570	11000	10600	13400	11000	8690
8	7610	7020	25300	5410	16300	30000	5780	11000	10600	13300	11000	8690
9	7770	6930	22700	5450	13800	30300	7220	11000	10600	13300	11000	8660
10	7530	6970	22200	5550	14800	30300	8190	10900	10600	13300	10400	8610
11	7040	6970	22200	5570	16700	29600	8020	11000	10700	13200	10400	8070
12	6750	8260	21900	5570	19700	25400	7980	11000	10600	13400	10100	8070
13	6580	9350	19000	5580	19800	21900	9850	10100	10600	14000	9950	8090
14	6310	9550	16000	5600	19900	18600	9960	10400	11100	13500	10000	8080
15	6100	9590	14700	5560	24900	15600	9950	11000	11200	13700	9580	8090
16	5990	9750	14600	5570	25400	14500	9960	10100	11200	13600	9590	8090
17	6010	14200	14800	5610	28200	14200	9960	9620	11300	13600	9600	8080
18	6010	14700	14400	5570	30200	12200	9970	9280	11700	13500	9590	7580
19	6030	14900	12900	5590	26200	10400	9940	9080	11800	13600	9590	7580
20	6030	14700	11100	9690	25900	9070	8730	9410	12200	13500	9610	7600
21	6050	14700	9690	15400	25700	7720	8540	9990	12200	13100	9580	7600
22	6080	14400	8260	15300	22100	6700	8560	11000	12300	13100	9600	7120
23	6090	14800	7140	15100	21300	6070	8580	11100	13000	13100	9600	7130
24	6070	14800	6940	14800	21400	6190	8570	10200	13100	13300	9590	7100
25	6100	14900	6960	14500	22000	6220	8560	10100	13300	13100	9600	7100
26	6090	14800	6920	13000	27600	5690	8560	10600	13200	13100	9590	7080
27	6090	14700	7000	12100	28200	5530	8580	11200	13700	13100	9570	7070
28	6050	14600	7110	10300	28000	5550	9860	11600	13600	13200	9580	6600
29	6070	14800	6120	9170	---	5540	9930	11600	13600	13100	9530	6610
30	6070	15100	5810	8030	---	5560	9980	11400	13200	13400	9530	6620
31	6080	---	5660	7530	---	5550	---	11100	---	13500	9580	---
TOTAL	209100	324650	447410	250520	561060	530790	244090	325770	351600	413100	322360	239610
MEAN	6745	10820	14430	8081	20040	17120	8136	10510	11720	13330	10400	7987
MAX	8150	15100	25300	15400	30200	30300	9980	11600	13700	14000	13100	9580
MIN	5990	5940	5660	5410	6470	5530	5510	9080	10500	13000	9530	6600
AC-FT	414700	643900	887400	496900	1113000	1053000	484200	646200	697400	819400	639400	475300

11370500 SACRAMENTO RIVER AT KESWICK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1962, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5992	5603	6611	10610	11700	6564	6714	8212	8564	9951	10030	7331
MAX	8572	8970	16680	32870	44170	14490	21180	13400	10300	11810	11870	10030
(WY)	1959	1958	1951	1953	1958	1957	1958	1948	1948	1951	1958	1958
MIN	4785	4064	3726	3234	3060	2546	2830	5247	6437	7480	7057	5239
(WY)	1948	1952	1960	1962	1950	1950	1950	1951	1947	1947	1947	1947

SUMMARY STATISTICS

WATER YEARS 1946 - 1962

ANNUAL MEAN	8141
HIGHEST ANNUAL MEAN	13910
LOWEST ANNUAL MEAN	5364
HIGHEST DAILY MEAN	75800
LOWEST DAILY MEAN	2360
ANNUAL SEVEN-DAY MINIMUM	2440
INSTANTANEOUS PEAK FLOW	78800
INSTANTANEOUS PEAK STAGE	31.55
INSTANTANEOUS LOW FLOW	154
ANNUAL RUNOFF (AC-FT)	5898000
10 PERCENT EXCEEDS	11600
50 PERCENT EXCEEDS	7000
90 PERCENT EXCEEDS	3720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6192	7283	10010	11730	13680	11570	9010	10590	11460	12630	11640	8287
MAX	10290	23430	27340	41600	40420	47170	26840	17410	15590	14870	14700	11800
(WY)	1984	1974	1974	1997	1998	1983	1974	1995	1998	1997	1998	1971
MIN	3431	3182	2847	3258	3268	2869	3096	6953	7342	7754	8070	4564
(WY)	1978	1993	1978	1993	1990	1991	1991	1992	1992	1992	1992	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1964 - 1999

ANNUAL TOTAL	5927830	4220060	
ANNUAL MEAN	16240	11560	10330
HIGHEST ANNUAL MEAN			18230
LOWEST ANNUAL MEAN			5390
HIGHEST DAILY MEAN	55800	Feb 9	30300
LOWEST DAILY MEAN	4270	Jan 8	5410
ANNUAL SEVEN-DAY MINIMUM	4340	Jan 4	5520
INSTANTANEOUS PEAK FLOW			30900
INSTANTANEOUS PEAK STAGE			23.01
INSTANTANEOUS LOW FLOW			154
ANNUAL RUNOFF (AC-FT)	11760000	8370000	7483000
10 PERCENT EXCEEDS	31100	19800	15000
50 PERCENT EXCEEDS	14600	10000	8610
90 PERCENT EXCEEDS	6090	5950	4020

11370700 ANDERSON-COTTONWOOD IRRIGATION DISTRICT CANAL AT SHARON STREET, AT REDDING, CA

LOCATION.—Lat 40°34'08", long 122°22'49", unsurveyed, Shasta County, Hydrologic Unit 18020101, on right bank of canal 10 ft upstream from Sharon Street, 900 ft downstream from Parkview Avenue, and 0.75 mi southwest of Mercy Hospital.

PERIOD OF RECORD.—April to September 1989, April 1991 to current year (beginning October 1994, irrigation season only).

GAGE.—Water-stage recorder and acoustic-velocity meter. Elevation of gage is 480 ft above sea level, from topographic map.

REMARKS.—Records good. Canal diverts from Sacramento River 0.3 mi downstream from Southern Pacific Railroad bridge and 0.1 mi upstream from Highway 273; water is used for irrigation. See schematic diagrams for upper Sacramento River Basin and Pit and McCloud River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 370 ft³/s, June 9, 1989; 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	241	---	---	---	---	---	---	295	331	245	281	249
2	239	---	---	---	---	---	---	301	310	260	280	245
3	237	---	---	---	---	---	---	304	219	278	279	239
4	235	---	---	---	---	---	---	310	250	284	274	245
5	233	---	---	---	---	---	---	308	253	285	270	246
6	233	---	---	---	---	---	---	311	290	285	267	246
7	232	---	---	---	---	---	---	314	297	282	267	246
8	231	---	---	---	---	---	24	322	312	278	265	245
9	237	---	---	---	---	---	59	321	316	277	268	243
10	234	---	---	---	---	---	64	319	315	281	274	244
11	227	---	---	---	---	---	61	314	312	284	269	241
12	219	---	---	---	---	---	104	306	315	288	265	240
13	219	---	---	---	---	---	175	294	322	295	262	239
14	218	---	---	---	---	---	176	282	331	290	264	235
15	215	---	---	---	---	---	175	289	325	285	258	231
16	211	---	---	---	---	---	175	289	299	282	256	235
17	208	---	---	---	---	---	173	297	300	281	253	236
18	206	---	---	---	---	---	167	297	303	285	252	231
19	204	---	---	---	---	---	215	296	295	285	251	229
20	204	---	---	---	---	---	238	296	322	279	248	239
21	204	---	---	---	---	---	249	299	325	275	251	248
22	205	---	---	---	---	---	248	303	320	275	252	246
23	206	---	---	---	---	---	252	306	314	272	257	248
24	197	---	---	---	---	---	269	297	327	276	265	248
25	146	---	---	---	---	---	269	292	325	278	263	246
26	e78	---	---	---	---	---	270	290	328	279	261	245
27	---	---	---	---	---	---	270	252	334	280	260	246
28	---	---	---	---	---	---	286	286	254	280	260	245
29	---	---	---	---	---	---	301	321	114	278	259	246
30	---	---	---	---	---	---	296	324	250	280	258	245
31	---	---	---	---	---	---	---	329	---	281	255	---
TOTAL	---	---	---	---	---	---	---	9364	8908	8663	8144	7267
MEAN	---	---	---	---	---	---	---	302	297	279	263	242
MAX	---	---	---	---	---	---	---	329	334	295	281	249
MIN	---	---	---	---	---	---	---	252	114	245	248	229
AC-FT	---	---	---	---	---	---	---	18570	17670	17180	16150	14410

e Estimated.

11525430 JUDGE FRANCIS CARR POWERPLANT NEAR FRENCH GULCH, CA

LOCATION.—Lat 40°38'49", long 122°37'34", Shasta County, Hydrologic Unit 18010212, at powerplant 1.6 mi downstream from Mill Creek and 3.8 mi south of French Gulch.

PERIOD OF RECORD.—April 1963 to current year.

GAGE.—Recorded powerplant output.

REMARKS.—Water is diverted from Trinity River at NW 1/4 SE 1/4 sec.8, T.33 N., R.8 W., through a tunnel to powerplant and then into Whiskeytown Lake (station 11371700). See schematic diagram of upper Sacramento and Pit and McCloud River Basins.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 4,000 ft³/s, Oct. 18, 1987; no flow for 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	952	331	0	2820	1035	1651	0	2024	1869	2310	2243	1833
2	967	301	0	3227	296	1652	0	2164	2023	2301	2165	2093
3	946	292	0	3327	0	1685	468	2163	2184	2235	1966	1634
4	972	328	0	2958	1686	1645	504	1568	1998	2289	2156	1896
5	932	355	0	1714	1667	1654	499	1951	2099	2406	2161	1877
6	1123	299	0	1708	1698	1659	1015	1158	1921	2376	2330	1766
7	934	307	0	1143	1686	1670	1018	1681	2147	2271	2111	1751
8	1089	334	698	1177	569	1680	1033	1677	2223	2451	2254	1530
9	1055	330	527	1160	58	1602	936	1549	1976	2405	1869	1472
10	986	328	0	1162	0	1626	988	1494	2023	2381	1909	1676
11	1007	334	0	1143	0	1496	1002	1164	2188	2401	2083	1725
12	945	300	0	1287	281	1695	892	617	2247	2520	2332	1940
13	1037	324	0	983	0	1633	837	642	2035	2380	1547	1699
14	943	300	2	1134	0	1636	857	759	2040	2454	1120	1748
15	671	300	677	1148	0	1647	1406	803	1877	2293	1768	1317
16	746	1348	1214	1134	0	1250	949	992	2024	2395	1716	1735
17	753	3146	1310	1108	0	1621	844	874	2058	2342	1685	1740
18	813	3113	1194	1121	0	1634	993	852	2211	2537	1169	1961
19	748	3134	1178	1269	0	538	1567	1034	2370	2480	1367	1871
20	758	3149	1366	1652	1012	505	1282	1075	2089	2535	1324	1599
21	436	3140	1068	1668	1071	538	1352	998	1980	2359	1187	1580
22	0	3098	1007	1666	1004	499	2881	1053	2149	2450	1179	1700
23	743	3094	957	835	987	505	3093	1198	2115	2495	1200	1781
24	749	3114	799	1001	1047	214	3019	1139	1796	2290	1235	1930
25	798	3115	1108	1014	982	500	2672	1274	2486	2297	1135	1842
26	798	3130	2119	1007	1681	352	1549	1730	2162	2328	1170	1275
27	365	3141	1151	1047	1644	0	1769	1713	1987	1974	1294	1711
28	327	3138	1134	1008	1633	10	1602	1738	2270	1955	1203	1779
29	300	3117	772	1001	---	0	1599	1462	2424	1973	1230	1398
30	300	969	1111	1007	---	0	2309	2030	2168	1999	1226	1704
31	300	---	1760	970	---	0	---	1849	---	2499	892	---
TOTAL	23493	47709	21152	44599	20037	32797	38935	42425	63139	72381	50226	51563
MEAN	758	1590	682	1439	716	1058	1298	1369	2105	2335	1620	1719
MAX	1123	3149	2119	3327	1698	1695	3093	2164	2486	2537	2332	2093
MIN	0	292	0	835	0	0	0	617	1796	1955	892	1275
AC-FT	46600	94630	41950	88460	39740	65050	77230	84150	125200	143600	99620	10230

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1320	842	672	607	798	864	1191	1341	1840	2371	2229	2074
MAX	3363	2158	2891	2755	3223	3111	3220	3513	3662	3589	3236	3504
(WY)	1988	1967	1979	1982	1974	1974	1970	1974	1969	1968	1977	1988
MIN	166	18.0	.16	.000	.34	.000	.000	.097	.63	253	507	415
(WY)	1994	1992	1993	1986	1988	1988	1978	1991	1993	1978	1992	1997

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR			FOR 1999 WATER YEAR			WATER YEARS 1963 - 1999		
ANNUAL TOTAL	494360			508456					
ANNUAL MEAN	1354			1393			1360		
HIGHEST ANNUAL MEAN							2485		
LOWEST ANNUAL MEAN							301		
HIGHEST DAILY MEAN	3402			Apr 28			3327		
LOWEST DAILY MEAN	0			Jan 1			0		
ANNUAL SEVEN-DAY MINIMUM	.00			Jan 4			.00		
ANNUAL RUNOFF (AC-FT)	980600			1009000			985200		
10 PERCENT EXCEEDS	3130			2390			3130		
50 PERCENT EXCEEDS	1010			1350			1110		
90 PERCENT EXCEEDS	.00			300			.00		

11371600 SPRING CREEK POWERPLANT AT KESWICK, CA

LOCATION.—Lat 40°37'41", long 122°27'59", in NE 1/4 SE 1/4 sec.18, T.32 N., R.5 W., Shasta County, Hydrologic Unit 18020112, at powerplant on Spring Creek, 0.4 mi northwest of Keswick, and 4.9 mi northwest of Redding.

PERIOD OF RECORD.—December 1963 to current year.

GAGE.—Discharge computed from powerplant output.

REMARKS.—Water is released from Whiskeytown Lake (station 11371700) through a tunnel to powerplant and then into Keswick Reservoir. Spring Creek Reservoir releases into Keswick Reservoir at Spring Creek Powerplant. See schematic diagrams of upper Sacramento River and Pit and McCloud River Basins.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 4,800 ft³/s, May 2, 1983; no flow for 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	1114	937	2252	3871	1082	3293	2154	1951	1976	2438	2059	1595
2	1152	905	276	3809	269	2109	2136	1967	2033	2344	2099	1597
3	1004	898	1134	2728	263	2542	348	1995	2013	2184	2104	1573
4	935	620	932	2068	1729	3999	234	1977	2124	2130	2012	1595
5	888	530	1083	2447	1414	2259	266	1958	2136	2465	2003	1596
6	973	492	684	1436	2607	1737	683	1984	2289	2286	2167	1593
7	1729	688	274	969	3875	2068	427	1971	2255	2107	2077	1481
8	0	886	595	1017	3244	2872	476	1960	1991	2377	1996	1546
9	612	1078	166	958	1064	3410	2061	1722	2244	2362	2105	1545
10	1224	1163	215	1078	818	2198	2076	1622	2178	2241	2142	1504
11	1262	1131	281	1328	377	1854	2052	1168	2133	2437	2132	1536
12	954	890	285	1024	661	1476	2070	1005	2131	2570	1811	1500
13	960	762	91	1030	372	2399	2053	695	2389	2562	1550	1487
14	1097	263	274	1088	349	2427	2072	802	2347	2548	1582	1512
15	634	252	273	981	343	2259	2038	863	1741	2200	1577	1495
16	1002	724	665	967	329	2535	1886	940	2226	2234	1555	1510
17	1172	3421	1966	1538	517	2370	1891	892	1991	2272	1560	1490
18	1335	3485	1452	2016	1450	2023	1933	1576	2102	2708	1363	1485
19	1240	4124	1285	1188	733	1162	1899	1323	2616	2335	1063	1495
20	1261	3563	1177	1859	1424	1132	1935	1395	2183	2664	1044	1462
21	1134	2737	1088	3249	2278	1180	1954	1027	2010	2372	1085	1585
22	627	2966	1136	1755	2286	1175	1948	1222	2019	2511	1100	1530
23	676	4069	1266	1718	1817	1384	2097	1335	1920	2652	1087	1709
24	972	4201	1332	1964	1419	1603	1987	1375	2008	2098	1079	1269
25	944	4162	922	1350	3151	1838	1954	1331	2455	2036	1253	1558
26	1339	4144	1084	1116	3530	2180	1999	1997	2536	2161	1080	1045
27	1009	3165	1386	1164	3243	2157	1953	1943	1966	2034	1082	1668
28	1046	4156	1390	1932	2687	1991	1963	1942	1984	2078	1092	1749
29	611	3528	1063	1383	---	2074	1934	2017	2530	2068	1054	1476
30	922	3006	1054	1070	---	2074	1939	1921	2462	2085	1138	1690
31	887	---	1366	1321	---	2074	---	2080	---	2051	1121	---
TOTAL	30715	62946	28447	51422	43331	65854	50418	47956	64988	71610	48172	45876
MEAN	991	2098	918	1659	1548	2124	1681	1547	2166	2310	1554	1529
MAX	1729	4201	2252	3871	3875	3999	2154	2080	2616	2708	2167	1749
MIN	0	252	91	958	263	1132	234	695	1741	2034	1044	1045
AC-FT	60920	124900	56420	102000	85950	130600	100000	95120	128900	142000	95550	91000
a	171	958	1880	1100	4180	2750	3000	635	379	93	159	0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1601	1283	1101	1373	1633	1648	1411	1571	2001	2434	2310	2208
MAX	3691	3174	4032	4532	4498	4364	4405	4265	3866	3886	3654	3526
(WY)	1989	1967	1974	1974	1974	1983	1983	1983	1969	1968	1977	1988
MIN	265	.87	1.55	2.10	3.36	86.6	5.23	5.45	158	250	467	416
(WY)	1978	1992	1992	1991	1991	1988	1987	1991	1989	1978	1992	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1964 - 1999	
ANNUAL TOTAL	823422		611735			
ANNUAL MEAN	2256		1676		1714	
HIGHEST ANNUAL MEAN					3389	
LOWEST ANNUAL MEAN					748	
HIGHEST DAILY MEAN	4266		Mar 2		4800	
LOWEST DAILY MEAN	0		Oct 8		0	
ANNUAL SEVEN-DAY MINIMUM	226		Dec 9		.00	
ANNUAL RUNOFF (AC-FT)	1633000		1213000		1242000	
10 PERCENT EXCEEDS	4050		2540		3500	
50 PERCENT EXCEEDS	2170		1600		1580	
90 PERCENT EXCEEDS	607		680		32	

a Discharge, in acre-feet, from Spring Creek Reservoir, provided by U.S. Bureau of Reclamation.

11371700 WHISKEYTOWN LAKE NEAR IGO, CA

LOCATION.—Lat 40°37'03", long 122°31'31", unsurveyed, Shasta County, Hydrologic Unit 18010112, Whiskeytown–Shasta–Trinity National Recreation Area, at outlet works to Spring Creek Powerplant on Clear Creek, 1.8 mi downstream from Whiskey Creek, and 7.8 mi northeast of Igo.

DRAINAGE AREA.—200 mi².

PERIOD OF RECORD.—May 1963 to current year. Prior to October 1964 published as Whiskeytown Reservoir near Igo.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by U.S. Bureau of Reclamation). Contents based on capacity table dated April 1962 provided by U.S. Bureau of Reclamation.

REMARKS.—Lake is formed by earth and rockfill dam. Storage began in May 1963. Usable capacity, 241,088 acre-ft between elevations 972.0 ft, invert of sluice pipe, and 1,210.00 ft, crest of glory hole spillway. Dead storage 8 acre-ft. Normal operating pool is from elevation 1,197.0 ft, capacity, 201,288 acre-ft, to 1,210.0 ft, capacity, 241,096 acre-ft. Transbasin water enters the reservoir through Judge Francis Carr Powerplant (station 11525430) and is released through Spring Creek Tunnel to Spring Creek Powerplant (station 11371600) and Keswick Reservoir. Figures given represent total contents at 2400 hours. Lake is used for power generation and recreation. See schematic diagrams of upper Sacramento River Basin and Pit and McCloud River Basins.

COOPERATION.—Records were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400 HOURS) FOR PERIOD OF RECORD.—Maximum contents, 258,600 acre-ft, Mar. 2, 1983, elevation, 1,215.34 ft; minimum since first filling, 145,562 acre-ft, Dec. 27, 1992, elevation, 1,176.05 ft.

EXTREMES (AT 2400 HOURS) FOR CURRENT YEAR.—Maximum contents, 239,143 acre-ft, Oct. 9, elevation, 1,209.39 ft; minimum, 204,063 acre ft, Dec. 7, elevation, 1,197.95 ft.

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

1,015	714	1,040	3,055	1,080	15,076	1,140	73,960
1,020	994	1,050	4,898	1,100	27,542	1,180	155,276
1,030	1,797	1,060	7,418	1,120	46,701	1,220	274,389

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	238023	218598	205329	205417	204946	204680	207957	235925	237831	237704	237609	237069
2	237831	217139	206625	204621	205181	206389	205211	237260	238311	237514	237577	237768
3	237895	215804	206448	205888	204739	206978	206713	238279	238759	237418	237450	237577
4	238119	215110	205947	206006	204769	204268	208313	238375	238823	237863	237609	237927
5	238183	214628	204916	204621	205564	204828	210155	239047	238951	237831	238087	238343
6	238343	214175	204151	204975	207541	206124	212221	238215	238311	238087	238119	238439
7	236624	214296	204063	205328	207274	206625	214869	238183	238215	238247	238439	238631
8	238503	213179	204828	205564	204651	206477	218263	237863	238759	238375	238823	238279
9	239143	211532	205829	205800	205004	204504	218051	238087	238471	238439	238279	237736
10	238311	210215	205682	205829	204916	204769	218415	238471	238215	238727	237768	237673
11	237641	208640	205299	205387	205270	205446	218841	238855	238439	238599	237577	237545
12	237482	207274	205946	205653	205446	206919	218871	238471	238823	238599	238759	238023
13	237418	206301	205004	205417	205623	206507	218871	238567	238215	238119	238791	238087
14	236878	206301	204739	205505	205682	206242	218658	238759	237673	237863	237545	238151
15	236687	206301	205653	205829	205594	206389	219726	238727	237641	238119	237609	237418
16	235893	207541	207067	206183	206124	205270	219757	239047	237355	238503	237641	237450
17	234844	207274	206212	206183	206566	205240	219267	239015	237704	238567	237736	237482
18	233708	206772	206036	205417	205653	206036	219084	238087	238215	238407	237132	237959
19	232540	204946	205829	206389	205888	206065	220278	237895	237959	238567	237545	238247
20	231280	204209	206507	206860	206860	206212	220553	237673	237895	238439	237959	238023
21	229652	205888	206566	204739	206301	206330	220798	237927	237895	238247	238023	237545
22	228214	206860	206743	205947	205358	206360	223842	237927	238343	238055	237959	237386
23	228151	209086	206419	206242	205800	206448	226877	238023	238759	237704	238023	237164
24	228027	208254	205564	205417	207126	210245	229715	237959	238247	237831	238247	237959
25	227561	206890	206006	205741	206418	215834	231941	238375	238471	238151	237863	238055
26	226349	205888	206094	206360	205741	217352	232224	238631	237736	238407	237736	238055
27	224891	206802	205770	206654	204710	216926	233076	238375	237673	238247	237704	237673
28	223349	205358	205446	205270	205299	215714	233423	238055	238407	237673	237641	237260
29	222670	206124	205034	204857	---	214145	233423	237069	238471	237228	237704	236846
30	221135	207214	205211	205034	---	212341	235035	237577	237959	236815	237514	236433
31	219879	---	206654	204739	---	210275	---	237800	---	237418	236878	---
a	1203.23	1199.02	1198.83	1198.18	1198.37	1200.05	1208.10	1208.97	1209.02	1208.85	1208.68	1208.54
b	-18432	-12665	-560	-1915	+560	+4976	+24760	+2765	+159	-541	-540	-445
MAX	239143	218598	207067	206860	207541	217352	235035	239047	238951	238727	238823	238631
MIN	219879	204209	204063	204621	204651	204268	205211	235925	237355	236815	236878	236433

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11372000 CLEAR CREEK NEAR IGO, CA

LOCATION.—Lat 40°30'48", long 122°31'23", unsurveyed, Shasta County, Hydrologic Unit 18020112, on left bank at old highway bridge on Redding-Igo Road, 1.0 mi northeast of Igo, 7.0 mi downstream from Whiskeytown Dam, 8.3 mi southwest of Redding, and 10.4 mi upstream from mouth.

DRAINAGE AREA.—228 mi².

PERIOD OF RECORD.—October 1940 to current year.

CHEMICAL DATA: Water years 1958–79.

WATER TEMPERATURE: Water years 1965–79.

REVISED RECORDS.—WSP 1345: Drainage area. WSP 1395: 1941(M).

GAGE.—Water-stage recorder. Datum of gage is 672.99 ft above sea level.

REMARKS.—Records excellent. Low flow completely regulated by Whiskeytown Lake (station 11371700) since May 1963. Transbasin diversion from Trinity River through Judge Francis Carr Powerplant (station 11525430) to Whiskeytown Lake began in April 1963. Diversions from Whiskeytown Lake to Spring Creek Powerplant (station 11371600) began in December 1963. See schematic diagrams of upper Sacramento River and Pit and McCloud River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 24,500 ft³/s, Dec. 21, 1955, gage height, 13.75 ft; minimum daily, 9.0 ft³/s, Sept. 4–7, 1950. Since completion of Whiskeytown Dam in 1963, maximum discharge, 19,200 ft³/s, Mar. 3, 1983, gage height, 12.73 ft, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 30 ft³/s, Oct. 10, 11, 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	50	204	466	219	252	399	320	260	201	153	148	152
2	50	203	468	218	248	375	307	267	176	154	148	152
3	50	203	595	217	245	355	298	264	177	154	148	152
4	50	203	359	217	243	331	291	259	174	153	148	152
5	119	205	305	217	239	316	331	254	172	152	149	152
6	203	212	280	216	998	306	315	252	174	152	149	152
7	203	284	267	216	1500	296	304	252	171	151	149	173
8	205	226	262	216	600	391	348	249	170	151	148	200
9	207	216	252	216	496	433	317	246	168	151	148	200
10	206	238	247	216	402	368	392	245	167	151	152	227
11	205	235	242	216	354	340	512	245	167	151	153	251
12	206	218	239	216	327	322	448	245	167	151	154	252
13	206	214	239	216	314	313	392	241	166	150	154	252
14	206	213	237	217	307	327	358	242	165	150	155	252
15	206	212	233	219	293	321	338	240	165	149	152	252
16	206	212	230	222	485	306	325	239	164	149	152	252
17	206	219	230	299	605	300	318	237	164	149	152	252
18	205	214	227	364	479	295	310	238	160	150	152	252
19	204	213	227	299	412	289	303	235	160	149	152	252
20	204	211	226	301	455	316	297	234	161	150	152	252
21	203	238	224	287	509	309	291	233	162	150	152	252
22	203	233	223	655	503	305	286	230	160	149	152	252
23	203	828	222	620	487	366	280	229	160	149	152	252
24	214	305	222	378	454	942	277	229	160	149	152	252
25	206	259	222	319	524	867	275	228	162	149	152	252
26	204	260	222	303	432	566	273	227	160	149	152	252
27	205	251	222	280	390	460	269	226	160	149	152	252
28	205	239	220	270	418	404	266	225	159	149	152	252
29	204	482	219	262	---	372	263	226	155	148	152	252
30	203	723	219	258	---	354	261	225	149	148	152	252
31	204	---	219	262	---	336	---	224	---	148	152	---
TOTAL	5651	8173	8265	8631	12971	11980	9565	7446	4976	4657	4687	6751
MEAN	182	272	267	278	463	386	319	240	166	150	151	225
MAX	214	828	595	655	1500	942	512	267	201	154	155	252
MIN	50	203	219	216	239	289	261	224	149	148	148	152
AC-FT	11210	16210	16390	17120	25730	23760	18970	14770	9870	9240	9300	13390

11372000 CLEAR CREEK NEAR IGO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1962, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	76.7	150	597	807	1226	834	676	347	161	63.4	35.1	32.8
MAX	373	427	2336	2513	5753	2595	2431	773	289	126	64.6	89.7
(WY)	1951	1951	1956	1941	1958	1941	1941	1957	1953	1941	1941	1957
MIN	25.8	39.0	47.0	65.5	142	168	172	87.6	66.5	24.3	14.3	13.4
(WY)	1950	1960	1950	1947	1948	1955	1944	1947	1950	1950	1950	1944

SUMMARY STATISTICS

WATER YEARS 1941 - 1962

ANNUAL MEAN	413
HIGHEST ANNUAL MEAN	1092 1941
LOWEST ANNUAL MEAN	128 1944
HIGHEST DAILY MEAN	15100 Mar 1 1941
LOWEST DAILY MEAN	9.0 Sep 4 1950
ANNUAL SEVEN-DAY MINIMUM	9.5 Sep 1 1950
INSTANTANEOUS PEAK FLOW	24500 Dec 21 1955
INSTANTANEOUS PEAK STAGE	13.75 Dec 21 1955
ANNUAL RUNOFF (AC-FT)	299000
10 PERCENT EXCEEDS	929
50 PERCENT EXCEEDS	133
90 PERCENT EXCEEDS	27

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	73.2	145	203	304	305	339	163	102	72.1	59.7	57.3	57.0
MAX	317	299	625	1358	1612	3437	668	419	249	150	151	225
(WY)	1993	1974	1965	1970	1998	1983	1974	1982	1993	1999	1999	1999
MIN	38.8	70.7	94.2	54.3	49.8	51.3	50.7	48.6	42.9	39.2	37.9	37.9
(WY)	1978	1969	1977	1977	1977	1977	1977	1966	1966	1966	1966	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1965 - 1999

ANNUAL TOTAL	127304	93753	
ANNUAL MEAN	349	257	157
HIGHEST ANNUAL MEAN			570 1983
LOWEST ANNUAL MEAN			57.9 1977
HIGHEST DAILY MEAN	8150	Feb 8	15000 Feb 7 15000 Mar 3 1983
LOWEST DAILY MEAN	50	Sep 13	30 Oct 10 1977
ANNUAL SEVEN-DAY MINIMUM	50	Sep 13	31 Oct 5 1977
INSTANTANEOUS PEAK FLOW			2710 Feb 6 19200 Mar 3 1983
INSTANTANEOUS PEAK STAGE			6.94 Feb 6 12.73 Mar 3 1983
ANNUAL RUNOFF (AC-FT)	252500	186000	114100
10 PERCENT EXCEEDS	659	391	256
50 PERCENT EXCEEDS	230	227	73
90 PERCENT EXCEEDS	51	151	49

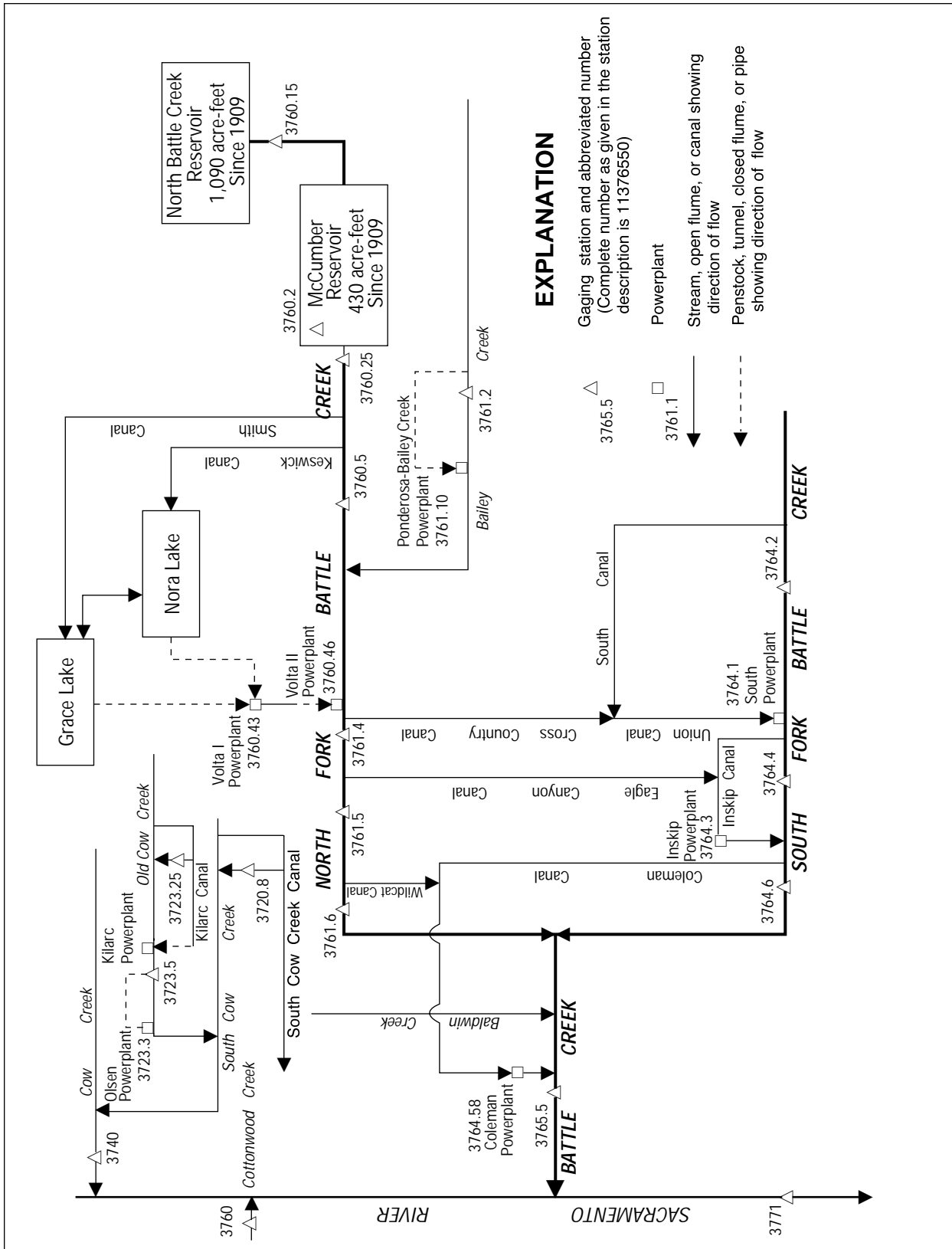


Figure 26. Diversions and storage in Battle Creek and Cow Creek Basins.

11372080 SOUTH COW CREEK CANAL DIVERSION TO SOUTH COW CREEK, NEAR WHITMORE, CA

LOCATION.—Lat 40°35'35", long 121°58'53", in NE 1/4 NW 1/4 sec.33, T.32 N., R.1 W., Shasta County, Hydrologic Unit 18020118, on left bank, 2.5 mi northeast of Cow Creek Powerplant, and 4.3 mi southwest of Whitmore.

PERIOD OF RECORD.—October 1986 to current year (operated as a low-flow station only). Unpublished records for water years 1984–86 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Elevation of gage is 1,560 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. The minimum release requirements are 2.0 ft³/s during dry years and 4.0 ft³/s during normal years. Flow is computed to 7.8 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

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	5.5	5.5	5.6	5.6	6.5	---	6.2	6.6	6.3	5.5	5.4	5.4
2	5.5	5.5	5.7	5.6	6.4	7.3	6.2	6.9	6.7	5.5	5.4	5.3
3	5.5	5.5	6.9	5.6	6.3	7.3	6.1	6.9	6.5	5.5	5.4	5.3
4	5.5	5.5	5.8	5.6	6.3	6.6	6.1	6.8	6.4	5.5	5.4	5.3
5	5.5	5.5	5.5	5.6	5.9	6.3	6.2	6.6	6.3	5.5	5.4	5.3
6	5.5	5.5	5.5	5.6	6.4	6.1	6.1	6.6	6.2	5.4	5.4	5.3
7	5.5	6.8	5.6	5.6	6.9	6.1	6.0	6.6	6.2	5.3	5.4	5.3
8	5.5	6.5	5.9	5.6	6.7	6.3	6.6	6.5	6.2	5.7	5.4	5.3
9	5.5	5.5	6.1	5.6	---	6.4	6.3	6.4	6.3	7.1	5.4	5.4
10	5.5	5.8	6.0	5.6	6.7	6.1	6.5	6.4	6.2	6.0	5.4	5.4
11	5.5	5.8	5.9	5.6	6.8	6.0	6.5	6.3	6.2	---	5.4	5.4
12	5.5	5.5	5.9	5.6	6.3	5.9	6.4	6.4	6.2	7.8	5.4	5.4
13	5.4	5.5	5.9	5.6	6.1	5.9	6.4	6.4	6.1	7.4	5.4	5.4
14	5.5	5.5	6.2	5.6	6.1	5.8	6.3	6.4	6.1	7.5	5.4	5.4
15	5.5	5.5	5.9	6.2	5.8	5.8	6.3	6.3	6.1	6.7	5.4	5.4
16	5.5	5.5	5.8	6.9	6.5	6.1	6.4	6.3	6.1	5.6	5.4	5.4
17	5.5	6.2	5.7	7.2	7.2	6.3	6.5	6.2	6.0	5.6	5.4	5.4
18	5.5	5.6	5.6	7.4	6.8	6.3	6.6	6.1	5.9	5.6	5.4	5.4
19	5.5	5.5	5.6	6.8	6.6	6.3	6.7	6.2	5.8	5.6	5.6	5.4
20	5.5	5.5	5.6	7.0	6.8	6.3	6.7	6.2	5.7	5.6	5.4	5.4
21	5.5	6.5	5.5	7.0	6.8	6.3	6.7	6.3	5.7	5.6	5.4	5.4
22	5.5	5.6	5.5	6.9	6.4	6.3	6.6	6.3	5.6	5.6	5.4	5.4
23	5.4	6.8	5.7	---	6.3	6.3	6.6	6.5	5.6	5.6	5.4	5.4
24	5.4	5.9	6.1	7.5	6.5	6.6	6.6	6.5	5.6	5.6	5.4	5.4
25	6.0	5.8	6.2	7.1	---	6.8	6.6	6.6	5.6	5.6	5.4	5.3
26	5.5	6.3	6.2	7.2	6.6	6.6	6.7	6.6	5.6	5.6	5.4	5.4
27	5.5	6.7	6.3	7.0	5.9	6.5	6.7	6.6	5.5	5.6	5.4	5.4
28	5.5	5.6	6.2	6.8	7.1	6.4	6.6	6.6	5.5	5.5	5.4	5.4
29	5.5	5.9	6.0	6.6	---	6.4	6.5	6.5	5.5	5.4	5.4	5.5
30	5.5	5.2	5.8	6.5	---	6.4	6.6	6.4	5.5	5.4	5.4	5.4
31	5.5	---	5.9	6.6	---	6.4	---	6.4	---	5.4	5.4	---
TOTAL	170.7	174.0	182.1	---	---	---	193.3	200.4	179.2	---	167.6	161.3
MEAN	5.51	5.80	5.87	---	---	---	6.44	6.46	5.97	---	5.41	5.38
MAX	6.0	6.8	6.9	---	---	---	6.7	6.9	6.7	---	5.6	5.5
MIN	5.4	5.2	5.5	---	---	---	6.0	6.1	5.5	---	5.4	5.3
AC-FT	339	345	361	---	---	---	383	397	355	---	332	320

11372325 KILARC CANAL DIVERSION TO OLD COW CREEK, NEAR WHITMORE, CA

LOCATION.—Lat 40°41'13", long 121°48'27", in SW 1/4 NE 1/4 sec.25, T.32 N., R.1 E., Shasta County, Hydrologic Unit 18020118, on right bank of Kilarc Canal, 3.6 mi upstream of Kilarc Powerplant, and 6.9 mi northeast of Whitmore.

PERIOD OF RECORD.—October 1986 to current year (operated as a low-flow station only). Unpublished records for water years 1983–86 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and Cipolletti weir. Elevation of gage is 3,840 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. The minimum release requirement is 2.0 ft³/s during dry or normal years. Flow is computed to 5.0 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

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	2.9	2.9	4.0	3.2	3.3	3.7	3.5	3.9	3.6	---	2.8	3.0
2	2.9	2.9	4.1	3.1	3.2	3.6	3.5	3.9	3.7	3.0	2.8	3.0
3	2.9	2.9	4.2	3.1	3.3	3.6	3.4	3.9	3.7	3.0	3.0	3.1
4	2.9	2.9	3.8	3.1	3.5	3.5	3.4	3.8	3.6	3.0	3.1	3.1
5	2.9	2.9	3.7	3.1	3.5	3.5	3.4	3.8	3.5	2.9	3.1	3.1
6	2.9	2.9	3.7	3.0	3.6	3.4	3.4	3.8	3.5	2.9	3.0	3.1
7	2.9	3.0	3.7	3.0	3.7	3.4	3.4	3.8	3.5	2.9	3.1	3.1
8	2.9	2.9	3.7	3.0	3.6	3.3	3.4	3.8	3.5	2.9	3.1	3.1
9	2.9	2.9	3.5	3.0	3.7	3.3	3.4	3.8	3.6	2.9	3.1	3.1
10	2.9	2.9	3.5	3.0	3.5	3.3	3.4	3.8	3.7	2.9	3.0	3.1
11	2.9	2.9	3.3	3.0	3.6	3.2	3.4	3.7	3.7	2.9	3.0	3.1
12	---	2.9	3.0	2.9	3.7	3.2	3.4	3.8	3.7	2.9	3.0	3.1
13	---	2.9	3.2	2.9	3.6	3.2	3.4	3.6	3.7	3.0	3.0	3.1
14	---	2.9	3.1	2.9	3.6	3.2	3.5	3.7	3.6	3.0	3.0	3.1
15	---	2.9	3.0	3.8	3.6	3.2	3.5	3.6	3.6	3.0	3.1	3.1
16	3.3	2.9	3.0	3.7	3.6	3.3	3.6	3.7	3.6	3.1	---	3.1
17	2.9	2.9	3.1	3.5	3.8	3.5	3.7	3.7	3.6	3.0	---	3.1
18	2.9	2.9	3.0	3.7	3.7	3.5	3.7	3.7	3.5	3.0	3.1	3.0
19	2.9	2.9	2.9	3.5	3.6	3.5	3.8	3.7	3.5	3.1	3.0	3.3
20	2.9	2.9	2.9	3.5	3.6	3.5	3.8	3.7	3.4	3.0	3.0	3.1
21	2.9	3.1	3.0	3.5	3.6	3.5	3.8	3.7	3.4	3.0	3.1	3.1
22	2.9	4.0	3.0	3.5	3.5	3.5	3.7	3.7	3.3	3.1	3.1	3.1
23	2.9	3.9	3.0	3.6	3.5	3.5	3.7	3.7	3.3	3.0	3.1	3.1
24	3.0	3.8	3.0	3.5	3.5	3.5	3.8	3.7	3.2	3.0	3.1	3.1
25	3.2	3.8	3.0	3.4	3.5	3.5	3.8	3.7	3.2	3.0	3.1	3.0
26	2.9	3.8	3.2	3.4	3.4	3.6	3.9	3.7	3.1	3.0	3.1	3.1
27	2.9	4.0	3.3	3.3	3.4	3.5	3.8	3.7	3.0	3.0	3.1	3.1
28	2.9	3.7	3.3	3.3	3.8	3.5	3.8	3.7	---	2.9	3.2	3.2
29	2.9	3.3	3.2	3.3	---	3.5	3.8	3.6	---	2.9	3.1	3.1
30	2.9	4.0	3.2	3.3	---	3.5	3.9	3.5	---	2.9	3.1	3.1
31	2.9	---	3.3	3.3	---	3.5	---	3.5	---	2.8	3.1	---
TOTAL	---	95.5	102.9	101.4	99.5	106.5	108.0	115.4	---	---	---	92.9
MEAN	---	3.18	3.32	3.27	3.55	3.44	3.60	3.72	---	---	---	3.10
MAX	---	4.0	4.2	3.8	3.8	3.7	3.9	3.9	---	---	---	3.3
MIN	---	2.9	2.9	2.9	3.2	3.2	3.4	3.5	---	---	---	3.0
AC-FT	---	189	204	201	197	211	214	229	---	---	---	184

NOTE: Canal out of service Oct. 12–15, June 28 to July 1, and Aug. 16–17 and all flow remained in the natural channel.

11372350 OLD COW CREEK BELOW DIVERSION TO OLSEN POWERPLANT, NEAR WHITMORE, CA

LOCATION.—Lat 40°40'10", long 121°53'27", in NW 1/4 SW 1/4 sec.32, T.33 N., R.1 E., Shasta County, Hydrologic Unit 18020118, on right bank, 1.2 mi downstream from Kilarc Powerhouse, 2.2 mi upstream from Glendenning Creek, and 3.0 mi north of Whitmore.

DRAINAGE AREA.—32.6 mi².

PERIOD OF RECORD.—January 1990 to September 1992, (operated as low-flow station only). October 1996 to September 1997; October 1998 to September 1999.

GAGE.—Water-stage recorder. Elevation of gage is 2,340 ft above sea level, from topographic map.

REMARKS.—This station records regulated bypass flow or natural flow only. During times of powerplant operation the minimum release requirement is 30 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

COOPERATION.—Records were collected by Synergics Incorporated, 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, 2,280 ft³/s, Jan. 1, 1997, gage-height, 7.29 ft; minimum daily, 6.9 ft³/s, Aug. 7, 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	41	37	109	34	35	189	40	63	47	40	44	38
2	41	37	68	34	35	118	39	90	71	40	44	38
3	40	36	160	34	35	138	39	94	59	40	43	38
4	40	36	59	34	34	97	40	68	44	40	43	37
5	39	36	37	34	35	77	43	60	43	40	43	38
6	37	38	36	35	35	62	42	60	43	40	44	37
7	38	45	36	35	37	47	41	63	44	40	45	37
8	39	42	36	34	38	40	45	54	44	40	43	36
9	35	38	36	34	160	41	43	48	44	40	44	37
10	35	38	39	34	69	55	44	44	43	40	43	38
11	36	36	35	35	42	42	42	42	40	40	43	36
12	36	37	35	35	40	40	41	44	42	40	45	36
13	33	37	35	34	40	38	42	40	42	40	42	37
14	35	37	35	34	40	38	41	38	46	39	41	36
15	35	38	34	35	40	38	43	41	51	47	41	36
16	36	38	34	36	44	39	41	43	46	44	36	36
17	35	45	34	37	62	40	60	43	41	42	41	35
18	36	37	34	39	43	40	63	43	40	44	40	34
19	35	36	35	35	40	39	97	43	40	43	40	36
20	35	37	35	36	42	40	90	43	41	44	40	36
21	36	47	40	36	41	40	105	43	41	46	39	35
22	35	50	35	36	40	41	97	42	41	44	40	35
23	36	94	34	54	39	40	103	43	40	45	37	35
24	36	75	35	35	40	41	85	43	40	43	42	35
25	36	38	34	35	45	40	58	43	40	45	39	30
26	39	42	36	36	41	40	83	43	40	43	38	36
27	37	64	33	35	40	41	77	45	40	43	39	35
28	38	38	35	35	122	40	63	46	40	45	38	34
29	38	40	35	35	---	40	54	45	40	46	38	35
30	36	103	34	35	---	40	60	44	40	45	40	35
31	37	---	34	35	---	41	---	43	---	45	39	---
TOTAL	1141	1352	1347	1105	1354	1702	1761	1544	1313	1313	1274	1077
MEAN	36.8	45.1	43.5	35.6	48.4	54.9	58.7	49.8	43.8	42.4	41.1	35.9
MAX	41	103	160	54	160	189	105	94	71	47	45	38
MIN	33	36	33	34	34	38	39	38	40	39	36	30
AC-FT	2260	2680	2670	2190	2690	3380	3490	3060	2600	2600	2530	2140
a	0	783	2100	2190	4370	5640	4770	6750	2860	256	0	0

a Discharge, in acre-feet, for Olsen Powerplant (station 11372330), provided by Synergics Incorporated.

11374000 COW CREEK NEAR MILLVILLE, CA

LOCATION.—Lat 40°30'19", long 122°13'56", in NE 1/4 NW 1/4 sec.32, T.31 N., R.3 W., Shasta County, Hydrologic Unit 18020101, on right bank, 2.9 mi upstream from mouth, 4.2 mi southwest of Millville, and 4.3 mi downstream from Little Cow Creek.

DRAINAGE AREA.—425 mi².

PERIOD OF RECORD.—October 1949 to current year.

CHEMICAL DATA: Water years 1959–66.

WATER TEMPERATURE: Water years 1966–71, 1973–76, 1978–79.

SEDIMENT DATA: Water year 1978.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 385.7 ft above sea level. Prior to June 11, 1987, at datum 3.00 ft higher.

REMARKS.—Records good. Numerous small diversions upstream from station for irrigation. See schematic diagrams of upper Sacramento River Basin and Battle Creek and Cow Creek Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 48,700 ft³/s, Nov. 16, 1981, gage height, 24.22 ft, present datum; maximum gage height, 24.55 ft, Dec. 27, 1951, present datum; minimum daily, 0.02 ft³/s, July 29, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of 1937 or 1940 reached a stage of 26.8 ft from floodmarks, present datum; probable backwater effect from high flows on the Sacramento River.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 13,900 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	0245	18,100	15.41	Feb. 9	0745	31,800	20.01

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	137	173	3660	296	585	4120	922	650	410	129	74	65
2	141	168	3640	279	512	2560	819	732	494	124	74	64
3	141	171	6910	271	486	2620	760	780	579	117	70	62
4	135	168	2310	266	487	1950	709	705	477	120	67	61
5	135	168	1420	263	455	1620	786	642	420	119	66	54
6	130	173	1150	258	1940	1420	828	615	383	119	65	57
7	127	338	991	252	5590	1270	736	622	354	111	85	57
8	134	412	1050	241	4250	1170	937	592	332	108	81	57
9	140	274	841	233	14800	2090	941	547	318	98	79	57
10	141	284	692	231	3710	1580	985	529	304	109	80	58
11	139	548	620	230	2250	1300	1710	511	288	101	91	65
12	140	270	568	231	1680	1150	1030	495	277	102	89	56
13	142	225	584	229	1340	1050	887	501	275	90	90	60
14	135	208	1020	230	1450	984	814	499	270	83	86	62
15	138	198	639	254	1190	916	781	474	262	81	83	59
16	140	200	545	462	3850	849	774	431	254	88	76	63
17	137	1050	503	2560	5460	804	782	411	243	90	56	62
18	135	487	470	3380	2950	787	791	406	237	84	54	63
19	131	304	430	1900	2200	760	792	416	227	90	53	59
20	127	245	407	2310	3230	789	814	425	213	82	54	60
21	121	976	353	1870	6400	781	803	432	216	87	51	59
22	124	2160	361	1180	2930	812	760	437	204	83	45	59
23	127	3090	334	2780	2150	808	728	461	186	85	47	57
24	202	2000	323	1570	1740	2400	725	473	181	80	47	61
25	266	816	322	1080	3480	2970	729	494	178	84	53	64
26	180	2000	321	1040	2100	1550	758	500	176	76	49	59
27	171	3890	311	885	1760	1180	813	496	168	74	53	59
28	171	1220	301	730	3870	1000	744	489	163	69	52	51
29	178	4070	294	648	---	925	668	483	150	71	53	53
30	166	9440	288	591	---	961	649	461	128	72	51	58
31	165	---	296	614	---	1030	---	425	---	75	58	---
TOTAL	4596	35726	31954	27364	82845	44206	24975	16134	8367	2901	2032	1781
MEAN	148	1191	1031	883	2959	1426	832	520	279	93.6	65.5	59.4
MAX	266	9440	6910	3380	14800	4120	1710	780	579	129	91	65
MIN	121	168	288	229	455	760	649	406	128	69	45	51
AC-FT	9120	70860	63380	54280	164300	87680	49540	32000	16600	5750	4030	3530

11374000 COW CREEK NEAR MILLVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	127	489	1138	1761	1681	1385	865	560	238	65.5	38.9	48.5
MAX	1057	2539	3929	5593	5636	5275	3012	2375	1386	324	148	130
(WY)	1963	1982	1984	1970	1998	1983	1963	1998	1998	1998	1998	1983
MIN	19.4	58.3	76.1	80.7	103	118	63.0	54.1	13.5	.63	.74	3.19
(WY)	1992	1992	1991	1991	1977	1977	1977	1992	1992	1977	1977	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1950 - 1999	
ANNUAL TOTAL	621398		282881			
ANNUAL MEAN	1702		775		695	
HIGHEST ANNUAL MEAN					1634	
LOWEST ANNUAL MEAN					66.8	
HIGHEST DAILY MEAN	18500	Feb 3	14800	Feb 9	32500	Dec 27 1951
LOWEST DAILY MEAN	104	Sep 17	45	Aug 22	.02	Jul 29 1977
ANNUAL SEVEN-DAY MINIMUM	107	Sep 14	49	Aug 21	.09	Jul 23 1977
INSTANTANEOUS PEAK FLOW			31800	Feb 9	48700	Nov 16 1981
INSTANTANEOUS PEAK STAGE			20.01	Feb 9	24.55	Dec 27 1951
ANNUAL RUNOFF (AC-FT)	1233000		561100		503900	
10 PERCENT EXCEEDS	4490		2000		1650	
50 PERCENT EXCEEDS	991		323		191	
90 PERCENT EXCEEDS	130		62		25	

11374305 MIDDLE FORK COTTONWOOD CREEK BELOW DIVERSION TO ARBUCKLE MOUNTAIN POWERPLANT, NEAR PLATINA, CA

LOCATION.—Lat 40°24'35", long 122°52'52", in NW 1/4 SE 1/4 sec.4, T.29 N., R.9 W., Shasta County, Hydrologic Unit 18020113, on left bank, 1.2 mi downstream from Cow Gulch, 1.0 mi upstream from Knob Gulch, and 2.4 mi northeast of the town of Platina.

DRAINAGE AREA.—46.0 mi².

PERIOD OF RECORD.—October 1997 to current year (low-flow records only, collected only seasonally during period of upstream diversion for power generation).

GAGE.—Water-stage recorder and V-notched weir. Elevation of gage is 2,050 ft above sea level, from topographic map.

REMARKS.—No records computed above 32 ft³/s. Record is only collected during the part of the year when flow is generally high enough to allow for upstream diversion of water to Arbuckle Mountain Powerplant (station 11374300). This year, record was collected Nov. 24, 1998, to June 6, 1999. Flow was above 32 ft³/s for many days during this period. During times of powerplant operation, the minimum release requirement is 5.0 ft³/s. See schematic diagram of upper Sacramento River Basin.

COOPERATION.—Records were collected by Arbuckle Mountain Hydro, LLC, 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	---	---	---	20	12	---	---	12	16	---	---	---
2	---	---	28	15	12	---	---	12	27	---	---	---
3	---	---	---	18	12	---	26	12	---	---	---	---
4	---	---	---	18	12	---	14	11	20	---	---	---
5	---	---	---	16	12	---	13	9.4	16	---	---	---
6	---	---	---	14	24	---	13	7.0	18	---	---	---
7	---	---	---	15	---	---	11	8.1	---	---	---	---
8	---	---	---	17	---	---	12	6.6	---	---	---	---
9	---	---	28	15	---	---	13	24	---	---	---	---
10	---	---	10	13	---	19	16	---	---	---	---	---
11	---	---	9.0	13	---	13	---	31	---	---	---	---
12	---	---	6.9	14	15	13	---	14	---	---	---	---
13	---	---	7.9	14	27	17	---	---	---	---	---	---
14	---	---	12	13	12	26	---	---	---	---	---	---
15	---	---	8.6	10	11	---	---	---	---	---	---	---
16	---	---	7.5	10	24	---	---	30	---	---	---	---
17	---	---	5.8	16	---	---	---	24	---	---	---	---
18	---	---	5.9	24	---	---	---	23	---	---	---	---
19	---	---	12	12	---	---	32	24	---	---	---	---
20	---	---	21	12	---	---	18	22	---	---	---	---
21	---	---	21	11	---	---	11	20	---	---	---	---
22	---	---	19	17	---	---	16	18	---	---	---	---
23	---	---	19	---	---	---	11	16	---	---	---	---
24	---	---	17	14	---	---	11	19	---	---	---	---
25	---	22	17	11	---	---	11	---	---	---	---	---
26	---	18	17	15	---	---	12	31	---	---	---	---
27	---	14	17	11	---	---	12	---	---	---	---	---
28	---	12	18	12	---	---	12	14	---	---	---	---
29	---	17	16	12	---	---	25	29	---	---	---	---
30	---	---	15	12	---	---	5.8	30	---	---	---	---
31	---	---	15	12	---	---	---	15	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---
a	---	367	698	1330	2350	5480	5200	1450	129	---	---	---

a Discharge, in acre-feet, for Arbuckle Mountain Powerplant (station 11374300), provided by Arbuckle Mountain Hydro, LLC.

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, CA

LOCATION.—Lat 40°23'14", long 122°14'15", in NE 1/4 NE 1/4 sec.7, T.29 N., R.3 W., Shasta County, Hydrologic Unit 18020102, on left bank, 2.2 mi east of Cottonwood, and 2.5 mi upstream from mouth.

DRAINAGE AREA.—927 mi².

PERIOD OF RECORD.—October 1940 to current year.

CHEMICAL DATA: Water years 1982–85.

WATER TEMPERATURE: Water years 1963–67, 1977–85.

SEDIMENT DATA: Water years 1957–67, 1977–85.

REVISED RECORDS.—WSP 1345: 1943, 1944(M), 1946–47, 1949(M), 1951–52. WSP 1931: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 363.80 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to July 26, 1963, on right bank at datum 3.59 ft higher. July 26, 1963, to Sept. 13, 1972, at site 250 ft downstream on right bank at present datum. Sept. 21, 1967, to Jan. 14, 1968, supplementary gage at a site 1,450 ft downstream on right bank at datum 2.35 ft higher.

REMARKS.—Records fair. Small diversions for irrigation upstream from station. At times during irrigation season, Cottonwood Creek receives water from the Sacramento River by way of Anderson–Cottonwood Irrigation District Canal. See schematic diagrams of upper Sacramento River Basin and Battle Creek and Cow Creek Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 86,000 ft³/s, Mar. 1, 1983, gage height, 21.59 ft from rating curve extended above 34,000 ft³/s on basis of runoff comparisons with upstream stations then in use; minimum, 15 ft³/s several days during September 1945.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 11,000 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	Unknown	e11,000	Unknown	Mar. 24	2100	12,900	10.96
Feb. 7	0500	11,300	10.51				

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	126	131	e3200	300	671	3700	2110	1240	566	178	84	61
2	128	135	e3500	289	565	2940	1890	1260	586	168	86	60
3	134	134	e5400	280	527	2780	1710	1250	622	159	83	62
4	131	129	e3600	273	503	2460	1560	1170	559	156	83	65
5	121	129	e2000	268	473	2100	1630	1090	510	164	77	68
6	122	131	e1300	266	2650	1850	2470	1050	473	165	76	69
7	125	194	e1020	265	8990	1640	1930	1030	437	149	80	70
8	126	e430	825	259	4500	1610	1780	1010	415	142	87	66
9	117	e340	733	252	4480	2470	1620	963	408	146	102	62
10	120	e310	655	248	2930	1710	1600	908	403	146	93	60
11	129	e480	607	245	2020	1480	5180	907	390	147	103	57
12	121	e310	575	238	1590	1320	3250	903	381	140	104	56
13	125	e270	579	231	1330	1240	2770	913	374	134	94	63
14	121	e260	664	227	1420	1360	2690	858	363	122	87	57
15	130	e260	572	238	1210	2700	2600	788	364	119	78	54
16	121	e280	512	291	2940	1900	2540	757	365	111	71	54
17	124	e440	486	511	6150	1740	2580	734	338	110	70	57
18	121	e960	471	1310	3760	1670	2710	703	323	116	65	64
19	112	e470	455	1450	4140	1600	2690	726	308	125	71	60
20	105	e410	433	979	3510	1990	2530	717	297	116	75	61
21	110	e780	402	1020	4730	2050	2280	693	293	116	70	59
22	117	e1050	369	911	3020	1850	2080	667	275	118	64	54
23	116	e2500	364	3400	2460	1880	1880	667	262	117	68	56
24	266	e1600	349	1950	2190	5900	1760	690	252	114	87	55
25	311	e1150	371	1310	2980	9220	1700	717	238	115	94	56
26	269	e1750	354	1100	2630	5520	1730	713	232	105	74	54
27	167	e3400	339	926	2320	4140	1650	686	221	100	62	58
28	140	e2400	326	760	2510	3340	1530	661	214	88	59	53
29	132	e1700	317	709	---	2840	1380	634	207	106	55	55
30	126	e7200	308	624	---	2570	1290	602	190	93	54	54
31	125	---	304	654	---	2390	---	585	---	84	61	---
TOTAL	4338	29733	31390	21784	77199	81960	65120	26292	10866	3969	2417	1780
MEAN	140	991	1013	703	2757	2644	2171	848	362	128	78.0	59.3
MAX	311	7200	5400	3400	8990	9220	5180	1260	622	178	104	70
MIN	105	129	304	227	473	1240	1290	585	190	84	54	53
AC-FT	8600	58980	62260	43210	153100	162600	129200	52150	21550	7870	4790	3530

e Estimated.

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, 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	129	359	1218	2182	2457	1956	1192	653	328	120	71.2	77.3
MAX	805	1828	5428	9193	12430	10770	4270	2447	2082	495	178	164
(WY)	1958	1985	1984	1995	1998	1983	1941	1983	1998	1998	1998	1983
MIN	50.6	52.2	49.8	60.3	76.3	146	136	165	74.5	36.8	26.4	30.8
(WY)	1995	1991	1991	1991	1977	1977	1977	1977	1977	1994	1945	1945

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1941 - 1999	
ANNUAL TOTAL	912495		356848			
ANNUAL MEAN	2500		978		888	
HIGHEST ANNUAL MEAN					2714	
LOWEST ANNUAL MEAN					94.4	
HIGHEST DAILY MEAN	32900		9220		54300	
LOWEST DAILY MEAN	100		53		15	
ANNUAL SEVEN-DAY MINIMUM	108		55		16	
INSTANTANEOUS PEAK FLOW			12900		86000	
INSTANTANEOUS PEAK STAGE			10.96		21.59	
ANNUAL RUNOFF (AC-FT)	1810000		707800		643200	
10 PERCENT EXCEEDS	7270		2640		2100	
50 PERCENT EXCEEDS	1080		390		228	
90 PERCENT EXCEEDS	126		69		57	

11376015 NORTH FORK BATTLE CREEK BELOW NORTH BATTLE CREEK DAM, NEAR MANZANITA LAKE, CA

LOCATION.—Lat 40°36'10", long 121°39'17", in SE 1/4 SE 1/4 sec.20, T.32 N., R.3 E., Shasta County, Hydrologic Unit 18020118, Lassen National Forest, on left bank, 300 ft downstream from North Battle Creek Dam, and 6.7 mi northwest of Manzanita Lake.

DRAINAGE AREA.—6.40 mi².

PERIOD OF RECORD.—October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978–87 available in files of the U.S. Geological Survey. Fragmentary records for water years 1920–77 in files of the Pacific Gas & Electric Co.

GAGE.—Water-stage recorder and a compound weir consisting of a 5-ft rectangular and V-notch weir. Elevation of gage is 5,560 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. The minimum release requirement is 0.30 ft³/s Oct. 1–31 and Apr. 1 to Sept. 30. No license requirement Nov. 1 to Mar. 31, records not computed. Each fall, North Battle Creek Reservoir is drafted and flows may exceed the rated limits of the weirs; flow is computed to 60 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

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	3.6	---	---	---	---	---	4.6	18	30	1.7	1.1	1.3
2	5.0	---	---	---	---	---	3.9	22	37	1.4	1.1	1.2
3	5.1	---	---	---	---	---	4.0	19	31	1.4	1.3	1.2
4	5.1	---	---	---	---	---	3.7	15	26	1.2	1.6	1.1
5	5.2	---	---	---	---	---	4.7	14	23	1.1	1.9	1.1
6	5.0	---	---	---	---	---	4.2	16	22	1.3	1.7	1.1
7	4.8	---	---	---	---	---	3.7	19	20	1.3	1.5	1.1
8	4.8	---	---	---	---	---	5.5	19	9.8	1.2	1.5	1.1
9	4.8	---	---	---	---	---	4.5	18	4.1	1.3	1.4	2.9
10	4.8	---	---	---	---	---	4.2	17	4.1	1.3	1.3	4.6
11	4.8	---	---	---	---	---	4.0	17	4.1	1.6	.94	4.4
12	5.0	---	---	---	---	---	3.9	19	4.1	1.7	.84	7.3
13	11	---	---	---	---	---	4.4	20	2.6	1.6	.77	9.3
14	15	---	---	---	---	---	5.1	19	1.6	1.6	.75	9.2
15	15	---	---	---	---	---	5.5	18	1.5	1.5	.73	9.1
16	15	---	---	---	---	---	6.4	18	1.5	1.4	.71	8.9
17	15	---	---	---	---	---	7.9	19	1.3	1.3	1.4	8.8
18	15	---	---	---	---	---	9.2	22	1.1	1.2	1.5	8.8
19	15	---	---	---	---	---	10	24	1.1	1.3	1.6	8.8
20	15	---	---	---	---	---	12	25	1.2	1.6	1.5	8.8
21	15	---	---	---	---	---	12	26	1.2	1.6	1.3	8.8
22	14	---	---	---	---	---	12	30	1.5	1.6	1.2	9.5
23	14	---	---	---	---	---	12	32	1.7	1.6	1.3	10
24	14	---	---	---	---	---	13	35	1.7	1.5	1.4	10
25	21	---	---	---	---	---	15	36	1.5	1.5	1.5	10
26	26	---	---	---	---	---	21	37	1.5	1.4	1.5	10
27	25	---	---	---	---	---	21	37	1.5	1.4	1.3	18
28	25	---	---	---	---	---	17	36	1.3	1.5	1.3	22
29	24	---	---	---	---	---	15	35	1.3	1.3	1.1	22
30	24	---	---	---	---	---	16	32	1.7	1.1	1.2	22
31	23	---	---	---	---	---	---	29	---	1.1	1.3	---
TOTAL	399.0	---	---	---	---	---	265.4	743	242.0	43.6	39.54	242.4
MEAN	12.9	---	---	---	---	---	8.85	24.0	8.07	1.41	1.28	8.08
MAX	26	---	---	---	---	---	21	37	37	1.7	1.9	22
MIN	3.6	---	---	---	---	---	3.7	14	1.1	1.1	.71	1.1
AC-FT	791	---	---	---	---	---	526	1470	480	86	78	481

11376025 NORTH FORK BATTLE CREEK BELOW MCCUMBER DAM, NEAR MANZANITA LAKE, CA

LOCATION.—Lat 40°32'15", long 121°43'53", in SW 1/4 SE 1/4 sec.15, T.31 N., R.2 E., Shasta County, Hydrologic Unit 18020118, on right bank, 300 ft downstream from McCumber Dam, 3.0 mi northwest of Viola, and 9.0 mi west of Manzanita Lake.

DRAINAGE AREA.—27.6 mi².

PERIOD OF RECORD.—October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978–87 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch weir. Elevation of gage is 4,080 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. Prior to water year 1995 flow computed to 211 ft³/s. The minimum release requirement is 0.30 ft³/s at all times; flow is computed to 800 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

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	62	76	86	57	80	343	100	119	100	48	41	40
2	64	76	90	59	78	284	97	132	116	48	41	39
3	64	76	91	60	73	304	96	128	113	48	41	39
4	64	75	92	59	70	265	89	117	102	47	41	39
5	63	75	91	55	69	228	96	111	94	47	41	38
6	63	75	90	52	69	155	95	108	91	46	42	36
7	62	74	88	53	71	134	92	110	84	47	43	36
8	61	68	86	53	80	123	96	108	81	47	42	36
9	61	64	83	53	89	126	92	104	70	47	41	35
10	60	64	77	53	136	114	91	102	68	46	43	39
11	60	64	74	54	107	106	95	100	67	45	42	40
12	60	63	71	55	94	104	99	102	65	45	41	52
13	60	61	66	55	90	104	99	104	64	44	40	55
14	60	61	66	55	90	102	100	102	60	44	40	54
15	60	57	66	55	89	100	103	99	57	44	40	53
16	61	57	66	56	88	98	108	97	57	44	40	53
17	61	60	66	60	88	99	113	97	57	43	40	52
18	61	63	66	70	101	98	121	101	56	43	40	52
19	61	63	65	80	102	97	124	103	55	43	40	52
20	62	64	64	83	92	98	126	105	55	43	40	51
21	62	59	62	83	94	99	126	105	54	43	40	51
22	66	58	60	83	90	99	118	107	53	43	40	51
23	70	64	60	85	90	98	111	109	54	43	40	57
24	70	74	61	87	90	99	117	112	54	44	40	60
25	74	79	61	87	90	99	121	113	53	43	39	53
26	77	77	61	86	90	90	132	113	52	43	39	52
27	77	77	60	86	90	86	135	111	51	43	40	61
28	77	77	60	85	220	89	122	110	49	43	40	67
29	77	76	60	84	---	102	115	109	45	42	39	58
30	77	78	60	83	---	105	115	105	48	41	39	51
31	76	---	60	81	---	104	---	100	---	41	40	---
TOTAL	2033	2055	2209	2107	2610	4152	3244	3343	2025	1378	1255	1452
MEAN	65.6	68.5	71.3	68.0	93.2	134	108	108	67.5	44.5	40.5	48.4
MAX	77	79	92	87	220	343	135	132	116	48	43	67
MIN	60	57	60	52	69	86	89	97	45	41	39	35
AC-FT	4030	4080	4380	4180	5180	8240	6430	6630	4020	2730	2490	2880
a	299	191	110	207	428	436	436	436	436	436	436	122

a Contents, in acre-feet, at end of month for McCumber Reservoir (station 11376020), provided by Pacific Gas & Electric Co.

POWERPLANTS IN BATTLE CREEK AND COW CREEK BASINS

- 11376043 VOLTA NO. 1 POWERPLANT NEAR MANTON, CA, in NW 1/4 NE 1/4 sec.16, T.30 N., R.1 E., Shasta County, Hydrologic Unit 18020118, 1.7 mi north of Manton. Powerplant consists of one unit with a total of 8,550 KW normal operating capacity. See schematic diagram of Battle Creek and Cow Creek Basins.
- 11376046 VOLTA NO. 2 POWERPLANT NEAR MANTON, CA, in NE 1/4 SW 1/4 sec.16, T.30 N., R.1 E., Shasta County, Hydrologic Unit 18020118, 1.2 mi northeast of Manton. Powerplant consists of one unit with a total of 956 KW normal operating capacity. See schematic diagram of Battle Creek and Cow Creek Basins.
- 11376410 SOUTH POWERPLANT NEAR MANTON, CA, in NE 1/4 SE 1/4 sec.5, T.29 N., R.1 E., Tehama County, Hydrologic Unit 18020118, 2.7 mi south of Manton. Powerplant consists of one unit with a total of 6,750 KW normal operating capacity. See schematic diagram of Battle Creek and Cow Creek Basins.
- 11376430 INSKIP POWERPLANT NEAR MANTON, CA, in NE 1/4 NW 1/4 sec.3, T.29 N., R.1 W., Tehama County, Hydrologic Unit 18020118, 5.5 mi southwest of Manton. Powerplant consists of one unit with a total of 7,650 KW normal operating capacity. See schematic diagram of Battle Creek and Cow Creek Basins.
- 11376458 COLEMAN POWERPLANT NEAR COTTONWOOD, CA, in SW 1/4 SW 1/4 sec.32, T.30 N., R.2 W., Shasta County, Hydrologic Unit 18020006, 8.5 mi east of Cottonwood. Powerplant consists of one unit with a total of 12,150 KW normal operating capacity. See schematic diagram of Battle Creek and Cow Creek Basins.

MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Volta No. 1	Volta No. 2	South	Inskip	Coleman
Oct.	6,500	7,240	13,580	17,020	17,850
Nov.	6,100	6,310	12,540	16,150	13,150
Dec.	6,730	6,770	12,900	16,680	14,980
Jan.	6,800	6,850	13,160	17,150	19,110
Feb.	6,460	6,250	11,890	15,330	17,280
Mar.	7,050	6,860	11,900	14,820	19,200
Apr.	7,050	6,600	12,840	16,660	16,380
May	5,670	5,560	12,920	17,180	19,170
June	6,730	5,990	12,750	16,540	17,630
July	6,040	5,920	13,090	16,730	17,830
Aug.	5,350	5,910	12,580	15,020	15,420
Sept.	5,260	5,830	11,620	13,740	14,090

Note.—Records were provided by Pacific Gas & Electric Co., in connection with a Federal Energy Regulatory Commission project.

Unpublished records for water years 1979–86 available in files of U.S.Geological Survey. Fragmentary records prior to water year 1979 available in files of Pacific Gas & Electric.

11376050 NORTH FORK BATTLE CREEK BELOW DIVERSION TO KESWICK DITCH, NEAR MANTON, CA

LOCATION.—Lat 40°30'00", long 121°48'29", in NW 1/4 NE 1/4 sec.36, T.31 N., R.1 E., Shasta County, Hydrologic Unit 18020118, on right bank, 4.2 mi east of Shingletown, and 5.5 mi northeast of Manton.

PERIOD OF RECORD.—October 1986 to current year (operated as a low-flow station only). Unpublished records for water years 1978–86 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 3,600 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. The minimum release requirement is 3.0 ft³/s at all times; flow is computed to 5.6 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

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	3.6	3.6	3.6	3.7	3.7	4.1	4.6	4.9	3.6	3.7	3.5	3.5
2	3.7	3.6	3.6	3.7	3.7	4.6	4.7	4.9	3.5	3.6	3.5	3.5
3	3.7	3.5	3.6	3.7	3.7	4.4	4.7	---	3.4	3.5	3.5	3.4
4	3.7	3.5	3.6	3.7	3.7	4.5	4.7	---	3.4	3.5	3.5	3.4
5	3.7	3.5	3.6	3.7	3.7	4.6	4.7	---	3.4	3.5	3.5	3.4
6	3.7	3.5	3.6	3.7	3.7	4.3	4.7	---	3.4	3.5	3.5	3.4
7	3.6	3.4	3.6	3.7	3.6	4.3	4.7	---	3.5	3.5	3.5	3.4
8	3.6	3.5	3.6	3.7	3.6	4.4	4.7	---	3.5	3.5	3.5	3.4
9	3.7	3.8	3.6	3.7	3.6	4.4	4.7	---	3.5	3.5	3.6	3.4
10	3.7	3.9	3.6	3.7	3.7	4.4	4.7	---	3.5	3.5	3.6	3.5
11	3.7	3.9	3.6	3.7	3.7	4.5	4.7	---	3.7	3.5	3.6	3.5
12	3.6	3.9	3.6	3.7	3.7	4.6	4.7	---	3.8	3.5	3.6	3.6
13	3.6	3.9	3.6	3.7	3.7	4.6	4.7	---	3.8	3.5	3.6	3.5
14	3.6	3.9	3.6	3.7	3.7	4.8	4.7	3.6	3.7	3.5	3.6	3.5
15	3.6	3.9	3.7	3.7	3.7	5.4	4.8	3.6	3.7	3.5	3.6	3.5
16	3.6	3.9	3.7	3.7	3.7	5.5	4.8	3.6	3.7	3.5	3.5	3.5
17	3.6	3.9	3.7	3.7	3.7	5.3	4.8	3.6	3.7	3.5	3.5	3.6
18	3.6	3.9	3.7	3.7	3.7	5.3	4.8	3.5	3.7	3.4	3.5	3.6
19	3.6	3.9	3.7	3.7	3.7	5.4	4.8	3.5	3.7	3.4	3.5	3.6
20	3.6	3.9	3.7	3.7	3.7	5.6	4.9	3.5	3.7	3.4	3.5	3.6
21	3.6	3.9	3.6	3.7	3.7	---	4.9	3.5	3.7	3.4	3.5	3.6
22	3.6	3.8	3.6	3.7	3.7	5.6	4.8	3.5	3.6	3.4	3.5	3.6
23	3.6	3.8	3.6	3.7	3.8	5.6	4.9	3.4	3.7	3.5	3.5	3.6
24	3.5	3.8	3.7	3.7	3.7	5.6	4.9	3.5	3.7	3.6	3.5	3.7
25	3.5	3.8	3.7	3.7	3.7	5.6	4.9	3.4	3.7	3.6	3.5	3.6
26	3.5	3.8	3.6	3.7	3.8	5.6	4.9	3.4	3.7	3.5	3.5	3.6
27	3.5	3.8	3.6	3.7	3.8	5.5	4.8	3.5	3.7	3.5	3.5	3.6
28	3.5	3.8	3.6	3.7	3.7	5.1	4.9	3.6	3.6	3.5	3.5	3.6
29	3.5	3.8	3.6	3.7	---	4.7	4.9	3.6	3.6	3.4	3.5	3.6
30	3.5	3.7	3.7	3.7	---	4.7	4.9	3.6	3.7	3.4	3.5	3.5
31	3.6	---	3.7	3.7	---	4.6	---	3.6	---	3.4	3.5	---
TOTAL	111.7	112.8	112.6	114.7	103.6	---	143.4	---	108.6	108.2	109.2	105.8
MEAN	3.60	3.76	3.63	3.70	3.70	---	4.78	---	3.62	3.49	3.52	3.53
MAX	3.7	3.9	3.7	3.7	3.8	---	4.9	---	3.8	3.7	3.6	3.7
MIN	3.5	3.4	3.6	3.7	3.6	---	4.6	---	3.4	3.4	3.5	3.4
AC-FT	222	224	223	228	205	---	284	---	215	215	217	210

NOTE: Canal was out of service May 3–13 and all flow remained in the natural channel.

11376120 BAILEY CREEK BELOW DIVERSION TO PONDEROSA—BAILEY CREEK POWERPLANT, NEAR MANTON, CA

LOCATION.—Lat 40°27'59", long 121°59'20", in NE 1/4 SE 1/4 sec.11, T.30 N., R.1 E., Shasta County, Hydrologic Unit 18020118, on right bank, 250 ft downstream from Spring Creek, 0.4 mi upstream from Ponderosa Way, 3.3 mi northeast of Manton, and 3.9 mi southeast of Shingletown..

DRAINAGE AREA.—29.6 mi².

PERIOD OF RECORD.—January 1990 to current year (operated as a low-flow station only).

GAGE.—Water-stage recorder and V-notch weir. Elevation of gage is 2,650 ft above sea level, from topographic map.

REMARKS.—During times of powerplant operation the minimum release requirement is 17 ft³/s; flow is computed to 109 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

COOPERATION.—Records were collected by Snow Mountain Hydro, 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 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	15	21	22	19	18	18	21	47	89	19	14
2	16	15	20	19	23	20	18	52	58	93	16	14
3	16	15	20	18	---	21	18	32	103	95	16	14
4	16	15	20	18	29	18	18	28	83	104	17	14
5	16	15	20	21	19	18	18	29	83	95	17	14
6	16	15	21	25	23	18	18	31	78	98	17	14
7	16	14	20	26	20	18	19	28	82	68	17	14
8	16	15	18	23	18	18	18	67	93	55	15	14
9	18	16	21	25	18	18	18	---	78	70	15	14
10	19	16	22	21	18	18	18	80	---	82	14	14
11	18	16	22	31	17	18	18	58	---	75	14	14
12	17	16	21	76	18	18	18	54	---	72	14	14
13	16	16	21	21	22	18	18	39	---	80	14	18
14	16	16	23	22	29	18	18	34	---	84	14	20
15	16	16	25	55	18	18	18	41	102	83	14	24
16	16	16	24	23	18	18	18	73	---	79	14	24
17	16	16	19	102	18	18	18	61	79	93	14	24
18	16	17	18	93	18	18	18	43	80	93	14	24
19	16	19	22	68	18	18	18	30	---	79	14	24
20	15	20	24	18	18	18	18	30	---	82	14	24
21	15	20	23	18	19	18	18	21	---	84	14	23
22	16	20	20	19	19	83	18	18	---	85	14	23
23	15	22	21	18	19	71	18	18	109	72	14	23
24	15	20	22	18	19	78	18	21	107	76	14	23
25	15	18	20	18	18	64	16	83	---	74	14	23
26	15	23	20	24	18	39	18	67	---	70	14	24
27	16	23	21	23	18	30	18	66	104	66	14	24
28	15	21	21	18	18	26	18	96	93	57	14	24
29	15	21	22	19	---	21	18	79	98	51	14	23
30	15	23	21	18	---	20	18	54	94	39	14	23
31	15	---	21	17	---	22	---	46	---	23	14	---
TOTAL	494	530	654	937	684	837	539	---	---	2366	457	583
MEAN	15.9	17.7	21.1	30.2	24.4	27.0	18.0	---	---	76.3	14.7	19.4
MAX	19	23	25	102	155	83	19	---	---	104	19	24
MIN	15	14	18	17	17	18	16	---	---	23	14	14
AC-FT	980	1050	1300	1860	1360	1660	1070	---	---	4690	906	1160
a	0	24	63	2280	2950	2820	3220	4050	3720	4040	2610	228

a Discharge, in acre-feet, for Ponderosa—Bailey Creek Powerplant (station 11376110), provided by Snow Mountain Hydro.

11376120 BAILEY CREEK BELOW DIVERSION TO PONDEROSA–BAILEY CREEK POWERPLANT, NEAR MANTON, CA—Continued

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	23	22	18	18	18	50	18	18	23	18	23	e19
2	23	22	18	18	18	21	18	18	58	18	23	e19
3	23	22	27	18	18	26	18	18	22	17	23	e18
4	23	23	18	18	18	18	18	18	18	17	e22	e19
5	22	23	18	18	18	18	18	18	18	17	e22	e19
6	22	23	18	18	18	18	18	18	18	17	e22	e19
7	22	25	19	18	18	18	18	18	19	17	e21	e18
8	22	25	18	18	18	20	18	18	18	17	e21	e18
9	22	24	18	18	25	18	18	18	18	17	e21	e18
10	22	32	18	18	18	18	18	18	18	17	e20	e18
11	22	32	18	18	18	18	18	18	18	17	e20	e18
12	22	21	18	18	18	18	18	18	21	17	e20	e18
13	22	18	18	18	18	18	18	18	18	17	e20	e18
14	22	18	18	18	18	18	18	18	18	17	e20	e18
15	22	18	18	18	18	18	18	18	18	17	e19	e18
16	22	e19	18	18	18	18	18	18	18	17	e19	e18
17	22	e31	18	18	18	18	18	18	18	17	e19	e18
18	22	18	17	18	18	18	18	18	19	17	e19	e17
19	22	18	18	18	18	18	18	18	20	17	e19	17
20	21	18	18	18	18	18	18	18	19	17	e19	e17
21	e21	20	22	18	18	18	18	18	18	17	e19	e18
22	e20	18	18	18	18	18	18	18	21	17	e19	e17
23	20	24	18	18	18	18	18	18	23	17	e19	e18
24	24	19	18	18	18	18	18	19	26	17	e19	e18
25	23	18	18	18	18	18	18	31	27	17	e19	e18
26	17	18	18	18	18	18	18	41	20	17	e19	e17
27	19	18	18	18	18	18	20	41	17	17	e19	e17
28	24	18	18	18	37	18	18	37	17	17	e19	e17
29	23	18	18	18	---	18	18	36	17	17	e19	e17
30	21	29	18	18	---	18	18	24	17	16	e19	e17
31	21	---	18	18	---	18	---	22	---	17	e19	---
TOTAL	676	652	571	558	530	603	542	665	620	528	621	536
MEAN	21.8	21.7	18.4	18.0	18.9	19.5	18.1	21.5	20.7	17.0	20.0	17.9
MAX	24	32	27	18	37	50	20	41	58	18	23	19
MIN	17	18	17	18	18	18	18	18	17	16	19	17
AC-FT	1340	1290	1130	1110	1050	1200	1080	1320	1230	1050	1230	1060
a	0	625	1250	768	1750	2240	1890	2570	3520	1760	0	0

e Estimated.

a Discharge, in acre-feet, for Ponderosa–Bailey Creek Powerplant (station 11376110), provided by Snow Mountain Hydro.

11376150 NORTH FORK BATTLE CREEK BELOW DIVERSION TO EAGLE CANYON CANAL, NEAR MANTON, CA

LOCATION.—Lat 40°25'26", long 121°55'09", in NW 1/4 SE 1/4 sec.25, T.30 N., R.1 W., Tehama County, Hydrologic Unit 18020118, on left bank, at diversion dam to Eagle Canyon Canal, and 2.8 mi southwest of Manton.

DRAINAGE AREA.—186 mi².

PERIOD OF RECORD.—October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978–87 available in files of the U.S. Geological Survey. Fragmentary records for water year 1977 available in files of Pacific Gas & Electric Co.

GAGE.—Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 1,400 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. Prior to water year 1996 flow computed to 7.2 ft³/s. The minimum release requirement is 3.0 ft³/s at all times; flow is computed to 50 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

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	---	---	---	---	---	---	---	---	---	---	e33	e33
2	---	---	---	---	---	---	---	---	---	---	e33	e33
3	---	---	---	---	---	---	---	---	---	---	e34	e33
4	---	---	---	---	---	---	---	---	---	---	e34	e33
5	---	---	---	---	---	---	---	---	---	---	e34	e33
6	---	---	---	---	---	---	---	---	---	---	e34	e33
7	---	---	---	---	---	---	---	---	---	---	e34	e33
8	---	---	---	---	---	---	---	---	---	---	e32	e33
9	---	---	---	---	---	---	---	---	---	---	e33	e33
10	---	---	---	---	---	---	---	---	---	---	e33	e33
11	---	---	---	---	---	---	---	---	---	---	e33	e33
12	---	---	---	---	---	---	---	---	---	---	e33	e33
13	---	---	---	---	---	---	---	---	---	---	e33	e33
14	---	---	---	---	---	---	---	---	---	---	e31	e32
15	---	---	---	---	---	---	---	---	---	---	e31	e33
16	---	---	---	---	---	---	---	---	---	---	e32	e33
17	---	---	---	---	---	---	---	---	---	---	e32	e33
18	---	---	---	---	---	---	---	---	---	e46	e32	e33
19	---	---	---	---	---	---	---	---	---	e41	e32	e33
20	---	---	---	---	---	---	---	---	---	e37	e32	e33
21	---	---	---	---	---	---	---	---	---	e36	e33	e33
22	---	---	---	---	---	---	---	---	---	e33	e33	e33
23	---	---	---	---	---	---	---	---	---	e32	e33	e34
24	---	---	---	---	---	---	---	---	---	e32	e31	e34
25	---	---	---	---	---	---	---	---	---	e31	e31	e34
26	---	---	---	---	---	---	---	---	---	e29	e32	e34
27	---	---	---	---	---	---	---	---	---	e31	e32	e35
28	---	---	---	---	---	---	---	---	---	e36	e32	e34
29	---	---	---	---	---	---	---	---	---	e34	e32	e36
30	---	---	---	---	---	---	---	---	---	e34	e32	e35
31	---	---	---	---	---	---	---	---	---	e34	e33	---
TOTAL	---	---	---	---	---	---	---	---	---	---	1009	1001
MEAN	---	---	---	---	---	---	---	---	---	---	32.5	33.4
MAX	---	---	---	---	---	---	---	---	---	---	34	36
MIN	---	---	---	---	---	---	---	---	---	---	31	32
AC-FT	---	---	---	---	---	---	---	---	---	---	2000	1990

e Estimated.

11376160 NORTH FORK BATTLE CREEK BELOW DIVERSION TO WILDCAT CANAL, NEAR MANTON, CA

LOCATION.—Lat 40°25'14", long 121°57'36", in SE 1/4 SW 1/4 sec.27, T.30 N., R.1 W., Tehama County, Hydrologic Unit 18020118, on left bank, at diversion dam to Wildcat Canal, and 4.9 mi west of Manton.

DRAINAGE AREA.—189 mi².

PERIOD OF RECORD.—October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978–87 available in files of the U.S. Geological Survey. Fragmentary records for water year 1977 available in files of Pacific Gas & Electric Co.

GAGE.—Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 1,080 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. The minimum release requirement is 3.0 ft³/s at all times; flow is computed to 60 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

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	---	---	---	---	---	---	---	---	---	---	36	36
2	---	---	---	---	---	---	---	---	---	---	36	36
3	---	---	---	---	---	---	---	---	---	---	37	36
4	---	---	---	---	---	---	---	---	---	---	37	36
5	---	---	---	---	---	---	---	---	---	---	37	36
6	---	---	---	58	---	---	---	---	---	---	37	36
7	---	---	---	58	---	---	---	---	---	---	37	36
8	---	---	---	56	---	---	---	---	---	---	36	36
9	---	---	---	54	---	---	---	---	---	---	36	36
10	---	---	---	55	---	---	---	---	---	---	37	36
11	---	---	---	54	---	---	---	---	---	59	36	36
12	---	---	---	56	---	---	---	---	---	---	36	36
13	60	---	---	56	---	---	---	---	---	---	36	36
14	---	---	---	54	---	---	---	---	---	---	36	35
15	---	---	---	---	---	---	---	---	---	---	36	36
16	---	---	---	---	---	---	---	---	---	---	36	36
17	60	---	---	---	---	---	---	---	---	54	36	36
18	60	---	---	---	---	---	---	---	---	49	35	36
19	---	---	---	---	---	---	---	---	---	44	36	36
20	---	---	---	---	---	---	---	---	---	40	36	36
21	59	---	---	---	---	---	---	---	---	39	36	36
22	---	---	---	---	---	---	---	---	---	36	36	36
23	---	---	---	---	---	---	---	---	---	35	36	37
24	---	---	---	---	---	---	---	---	---	35	34	37
25	---	---	---	---	---	---	---	---	---	34	34	37
26	---	---	---	---	---	---	---	---	---	32	35	37
27	---	---	---	---	---	---	---	---	---	34	35	38
28	---	---	---	---	---	---	---	---	---	39	35	37
29	---	---	---	---	---	---	---	---	---	37	35	39
30	---	---	---	---	---	---	---	---	---	37	35	38
31	---	---	---	---	---	---	---	---	---	37	36	---
TOTAL	---	---	---	---	---	---	---	---	---	---	1112	1091
MEAN	---	---	---	---	---	---	---	---	---	---	35.9	36.4
MAX	---	---	---	---	---	---	---	---	---	---	37	39
MIN	---	---	---	---	---	---	---	---	---	---	34	35
AC-FT	---	---	---	---	---	---	---	---	---	---	2210	2160

11376440 SOUTH FORK BATTLE CREEK BELOW DIVERSION TO INSKIP CANAL, NEAR MANTON, CA

LOCATION.—Lat 40°23'43", long 121°52'57", in NW 1/4 SE 1/4 sec.5, T.29 N., R.1 E., Tehama County, Hydrologic Unit 18020118, on left bank, at diversion dam to Inskip Canal, and 2.8 mi south of Manton.

DRAINAGE AREA.—88.3 mi².

PERIOD OF RECORD.—October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978–87 available in files of the U.S. Geological Survey. Fragmentary records for water year 1977 available in files of Pacific Gas & Electric Co.

GAGE.—Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 1,440 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. The minimum release requirement is 5.0 ft³/s at all times. Prior to Feb. 6, 1998, flow computed to 12 ft³/s; flow computed to 60 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

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	17	20	---	36	---	---	---	---	---	30	16	13
2	17	19	---	31	e57	---	---	---	---	30	16	13
3	18	17	---	29	e58	---	---	---	---	31	16	12
4	17	17	---	28	e56	---	---	---	---	30	15	12
5	17	18	---	e28	e51	---	---	---	---	31	15	12
6	16	18	---	e25	---	---	---	---	---	28	15	12
7	17	30	---	e28	---	---	---	---	---	27	16	12
8	15	54	---	e26	---	---	---	---	---	47	15	12
9	14	24	---	e23	---	---	---	---	---	24	15	12
10	14	24	---	e24	---	---	---	---	---	22	17	11
11	14	25	---	e22	---	---	---	---	---	21	18	11
12	14	22	---	e23	---	---	---	---	---	21	15	11
13	14	22	---	e20	---	---	---	---	---	21	15	11
14	14	22	---	e20	---	---	---	---	---	20	15	11
15	14	24	---	e28	---	---	---	---	---	20	14	11
16	14	27	---	---	---	---	---	---	---	19	14	11
17	13	50	---	---	---	---	---	---	---	19	14	11
18	13	41	---	---	---	---	---	---	---	19	14	11
19	14	26	---	---	---	---	---	---	---	19	14	11
20	14	22	56	---	---	---	---	---	---	18	14	11
21	14	60	42	---	---	---	---	---	60	18	13	11
22	14	---	42	---	---	---	---	---	59	17	14	11
23	14	---	37	---	---	---	---	---	56	17	14	11
24	29	---	39	---	---	---	---	---	53	17	14	11
25	36	---	40	---	---	---	---	---	49	17	13	11
26	23	---	43	---	---	---	---	---	47	17	13	11
27	21	---	41	---	---	---	---	---	45	16	13	10
28	19	---	41	---	---	---	---	---	41	16	13	7.7
29	19	---	34	---	---	---	---	---	40	16	12	6.8
30	18	---	33	---	---	---	---	---	38	16	13	7.0
31	18	---	39	---	---	---	---	---	---	16	13	---
TOTAL	525	---	---	---	---	---	---	---	---	680	448	328.5
MEAN	16.9	---	---	---	---	---	---	---	---	21.9	14.5	10.9
MAX	36	---	---	---	---	---	---	---	---	47	18	13
MIN	13	---	---	---	---	---	---	---	---	16	12	6.8
AC-FT	1040	---	---	---	---	---	---	---	---	1350	889	652

e Estimated.

11376460 SOUTH FORK BATTLE CREEK BELOW DIVERSION TO COLEMAN DITCH, NEAR MANTON, CA

LOCATION.—Lat 40°24'10", long 121°58'02", in NW 1/4 NW 1/4 sec.3, T.29 N., R.1 W., Tehama County, Hydrologic Unit 18020118, on right bank, 7.5 mi southwest of Shingletown, and 5.7 mi southwest of Manton.

DRAINAGE AREA.—102 mi².

PERIOD OF RECORD.—October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978–86 available in files of the U.S. Geological Survey. Fragmentary records for water year 1977 available in files of Pacific Gas & Electric Co.

GAGE.—Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 980 ft above sea level, from topographic map.

REMARKS.—This station records fishwater release only. Prior to water year 1996 flow computed to 10 ft³/s. The minimum release requirement is 5.0 ft³/s at all times; flow is computed to 45 ft³/s. See schematic diagram of Battle Creek and Cow Creek Basins.

COOPERATION.—Records were collected by the Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

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

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	32	---	34	43	---	---	---	---	37	36	35
2	34	32	---	34	41	---	---	---	---	37	36	35
3	33	32	---	34	39	---	---	---	---	37	36	35
4	33	32	---	34	37	---	---	---	---	37	36	35
5	33	32	---	34	35	---	---	---	---	37	36	35
6	33	32	---	34	---	---	---	---	---	38	37	35
7	33	33	---	35	---	---	---	---	---	---	38	35
8	33	31	---	35	---	---	---	---	---	40	39	35
9	33	31	---	35	---	---	---	---	---	35	37	35
10	33	33	---	35	---	---	---	---	---	36	37	35
11	33	33	---	35	---	---	---	---	---	36	37	35
12	33	33	---	35	---	---	---	---	---	35	36	35
13	33	33	---	35	---	---	---	---	---	35	36	35
14	33	33	---	35	---	---	---	---	---	35	36	35
15	32	33	---	37	---	---	---	---	---	35	36	35
16	32	33	---	---	---	---	---	---	---	35	37	35
17	32	35	---	---	---	---	---	---	---	36	38	35
18	32	33	---	---	---	---	---	---	40	36	37	35
19	32	33	44	---	---	---	---	---	37	35	35	35
20	32	32	35	---	---	---	---	---	---	36	35	35
21	32	---	32	---	---	---	---	---	42	36	36	35
22	32	---	32	---	---	---	---	---	37	35	36	35
23	32	---	31	---	---	---	---	---	37	35	36	35
24	34	---	---	---	---	---	---	---	37	36	36	35
25	35	---	41	---	---	---	---	---	37	36	35	35
26	32	---	34	---	---	---	---	---	38	36	34	35
27	32	---	34	---	---	---	---	---	37	36	35	35
28	32	---	34	---	---	---	---	---	39	36	35	35
29	32	---	34	---	---	---	---	---	38	36	35	35
30	32	---	34	---	---	---	---	---	38	36	35	35
31	32	---	34	---	---	---	---	---	---	36	35	---
TOTAL	1013	---	---	---	---	---	---	---	---	---	1119	1050
MEAN	32.7	---	---	---	---	---	---	---	---	---	36.1	35.0
MAX	35	---	---	---	---	---	---	---	---	---	39	35
MIN	32	---	---	---	---	---	---	---	---	---	34	35
AC-FT	2010	---	---	---	---	---	---	---	---	---	2220	2080

11376550 BATTLE CREEK BELOW COLEMAN FISH HATCHERY, NEAR COTTONWOOD, CA

LOCATION.—Lat 40°23'54", long 122°08'43", in SW 1/4 NE 1/4 sec.1, T.29 N., R.3 W., Shasta County, Hydrologic Unit 18020101, U.S. Fish and Wildlife Service land, on right bank, 3.7 mi downstream from Spring Branch, 5.7 mi upstream from mouth, and 7.0 mi east of Cottonwood.

DRAINAGE AREA.—357 mi².

PERIOD OF RECORD.—October 1961 to September 1996. October 1996 to September 1997 (operated as a low flow station only). October 1997 to current year. October 1940 to September 1961 at site 0.6 mi upstream published as "near Cottonwood"; low-flow records not equivalent owing to Coleman Fish Hatchery diversion, maximum flows considered equivalent.

CHEMICAL DATA: Water years 1962–66.

WATER TEMPERATURE: Water years 1966–79.

SEDIMENT DATA: Water years 1962–70.

GAGE.—Water-stage recorder. Elevation of gage is 415 ft above sea level, from topographic map.

REMARKS.—Records excellent. Some regulation at low flows by five small powerplants, several small reservoirs, and Coleman Fish Hatchery. Coleman Fish Hatchery diverts from 50 to 90 ft³/s and pumps ground water for temperature control, which is returned above the station. At times, 10 ft³/s diverted upstream from station for irrigation. Flow is computed to 540 ft³/s. See schematic diagrams of Battle Creek and Cow Creek Basins and upper Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 24,300 ft³/s, Jan. 24, 1970, gage height, 14.75 ft, from rating curve extended above 4,200 ft³/s on basis of slope-area measurement of peak flow; minimum, 52 ft³/s, Aug. 8, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.—Maximum stage known, 15.8 ft, Dec. 11, 1937, from floodmarks, site and datum then in use, discharge, 35,000 ft³/s by slope-area measurement.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 3,100 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	1615	4,230	5.94	Feb. 9	0545	6,600	7.71

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	430	439	1640	470	548	1890	693	742	713	450	329	304
2	429	419	944	455	528	1350	667	787	812	445	326	303
3	433	427	2070	457	519	1540	650	779	776	441	329	301
4	418	420	1060	452	512	1240	628	702	701	435	330	299
5	415	418	791	449	504	1060	657	668	652	424	332	298
6	429	432	793	445	825	977	633	677	643	414	331	296
7	428	488	720	440	1000	916	601	707	617	407	344	297
8	432	520	689	437	896	878	651	695	590	394	335	297
9	438	461	628	433	3200	909	640	678	571	391	335	297
10	435	469	588	433	1300	870	654	661	548	385	336	300
11	431	499	560	433	948	820	696	649	543	385	345	302
12	436	441	545	433	819	789	690	663	544	383	334	301
13	445	429	585	435	747	768	699	684	543	386	330	318
14	434	430	883	430	736	765	706	665	543	389	327	314
15	435	434	626	455	696	738	711	637	541	389	326	312
16	443	436	579	548	1320	726	721	621	527	386	323	311
17	432	489	573	585	1850	726	735	625	522	380	318	316
18	432	523	553	806	1300	726	771	643	519	374	317	315
19	436	461	539	654	1140	731	796	662	516	369	317	317
20	429	445	520	632	1220	747	815	667	512	364	314	319
21	422	603	493	658	1630	734	809	656	492	361	309	318
22	418	883	486	578	1050	708	778	675	503	357	311	320
23	415	1240	477	948	920	697	746	724	499	354	312	322
24	487	983	468	786	869	766	752	760	497	356	315	332
25	501	596	489	666	1150	1020	773	801	496	355	308	323
26	460	897	486	666	1010	821	861	812	480	352	305	318
27	447	1190	483	613	923	762	887	799	463	345	305	319
28	456	676	481	582	1220	710	793	789	458	339	306	334
29	464	717	477	555	---	705	738	773	453	342	303	334
30	442	2220	471	546	---	708	723	747	448	334	301	324
31	435	---	472	562	---	711	---	718	---	331	302	---
TOTAL	13587	19085	21169	17042	29380	27508	21674	21866	16722	11817	9955	9361
MEAN	438	636	683	550	1049	887	722	705	557	381	321	312
MAX	501	2220	2070	948	3200	1890	887	812	812	450	345	334
MIN	415	418	468	430	504	697	601	621	448	331	301	296
AC-FT	26950	37860	41990	33800	58280	54560	42990	43370	33170	23440	19750	18570

11376550 BATTLE CREEK BELOW COLEMAN FISH HATCHERY, NEAR COTTONWOOD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	298	415	556	771	750	755	657	633	501	339	270	264
MAX	589	1058	1602	2434	1919	1802	1160	1578	1453	817	540	449
(WY)	1963	1982	1984	1970	1986	1983	1995	1998	1998	1998	1998	1998
MIN	139	205	224	234	260	266	231	266	207	168	160	154
(WY)	1993	1993	1992	1991	1977	1977	1977	1977	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1962 - 1999	
ANNUAL TOTAL	360033		219166			
ANNUAL MEAN	986		600		517	
HIGHEST ANNUAL MEAN					926	
LOWEST ANNUAL MEAN					238	
HIGHEST DAILY MEAN	6640		3200		10900	
LOWEST DAILY MEAN	415		296		102	
ANNUAL SEVEN-DAY MINIMUM	426		298		110	
INSTANTANEOUS PEAK FLOW			6600		24300	
INSTANTANEOUS PEAK STAGE			7.71		14.75	
ANNUAL RUNOFF (AC-FT)	714100		434700		374500	
10 PERCENT EXCEEDS	1820		891		902	
50 PERCENT EXCEEDS	846		519		372	
90 PERCENT EXCEEDS	437		319		224	

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, CA

LOCATION.—Lat 40°17'19", long 122°11'08", in NW 1/4 NE 1/4 sec.15, T.28 N., R.3 W., Tehama County, Hydrologic Unit 18020103, on left bank, 2.7 mi upstream from Bend Bridge, and 8.1 mi northeast of Red Bluff.

DRAINAGE AREA.—8,900 mi², excluding Goose Lake Basin.

PERIOD OF RECORD.—1879–88 annual observed maximums only, published in WSP 1315-A. January 1892 to current year. Monthly discharges only for some periods and yearly estimates for some incomplete years, published in WSP 1315-A. Published as "at Red Bluff" 1894–96, as "at Jellys Ferry" 1895–1902, and as "near Red Bluff" 1903–68 (station 11378000).

CHEMICAL DATA: Water years 1955–81, 1996–98.

SPECIFIC CONDUCTANCE: Water years 1955–63.

WATER TEMPERATURE: Water years 1955–80.

SEDIMENT DATA: Water year 1958–70, 1996–98.

REVISED RECORDS.—WSP 861: 1904, 1907, 1909, 1914–15, 1927–28. WSP 1315-A: 1916(M), 1918(M), 1941(M). WSP 1931: Drainage area. WDR CA-69-2: 1965.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 285.77 ft above sea level. See WSP 2131 for history of changes prior to September 1968.

REMARKS.—Records excellent. Flow completely regulated by Shasta Lake (station 11370000), 52 mi upstream, since Dec. 30, 1943. Diversions, in addition to those on tributaries, for irrigation of about 22,000 acres between stations at Keswick and above Bend Bridge. Transbasin diversion from Trinity River to Whiskeytown Lake (station 11371700) via Judge Francis Carr Powerplant (station 11525430) started in April 1963. See schematic diagrams of upper Sacramento River Basin and Battle Creek and Cow Creek Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 291,000 ft³/s, Feb. 28, 1940, gage height, 38.9 ft, site and datum then in use, from rating curve extended above 170,000 ft³/s on basis of velocity-area studies; minimum (water years 1892–1999), 2,000 ft³/s, Mar. 29, 1944. Since regulation by Shasta Lake in 1943, maximum discharge, 170,000 ft³/s, Dec. 22, 1964, gage height, 28.15 ft, site and datum then in use; maximum gage height, 36.60 ft, Jan. 24, 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	9190	7510	28900	7750	10200	41200	10300	12500	12600	13800	13400	9690
2	8910	7570	22900	7690	9900	36800	9900	12600	12700	13700	13200	9670
3	8940	7590	32700	7630	9280	36800	9630	12800	13100	13400	13200	9410
4	8930	7560	25000	7610	10500	35700	9410	12600	12800	13400	12900	9280
5	8880	7510	28600	7610	18200	36400	9410	12400	12300	13600	12400	9270
6	8990	8060	29900	7610	22000	35600	10500	12900	11900	13600	11900	9270
7	8990	8940	29200	7600	43900	35400	9630	13300	11800	13700	11400	9030
8	8810	9190	29300	7420	30100	34700	9750	13100	11700	13600	11200	8950
9	8670	8660	27400	7400	48200	38400	10300	13100	11600	13600	11200	8940
10	8660	8610	25400	7460	26900	36500	11800	12900	11600	13600	10900	8920
11	8390	9380	25300	7510	23100	35300	17200	12900	11600	13600	10600	8660
12	8100	9220	24800	7500	25900	31900	14100	13000	11500	13500	10400	8510
13	7940	10100	23200	7480	25100	28000	14100	12400	11500	14200	10100	8550
14	7750	10500	22000	7490	25200	24500	14600	12000	11800	13800	10200	8520
15	7530	10600	18400	7540	27800	23000	14400	12700	12100	14200	9920	8510
16	7360	10500	17800	7900	34100	20100	14200	12100	12100	13900	9750	8480
17	7280	e16100	17600	10100	47800	19200	14200	11400	12000	13900	9770	8510
18	7260	e16800	17200	13700	40600	17500	14300	11100	12400	13800	9730	8240
19	7240	e16500	15900	12600	37800	15500	14200	10700	12500	13900	9710	8100
20	7230	e16300	14000	12700	34900	14300	13300	10900	12900	13800	9730	8100
21	7200	e17900	12300	21400	47200	13200	12400	11400	12900	13400	9710	8100
22	7230	e18900	10600	19700	34500	11800	12100	12200	12900	13300	9700	7850
23	7260	e20000	9500	26500	30300	11000	11800	12800	13400	13300	9720	7710
24	7740	e19100	8940	22000	28700	15600	11600	12200	13800	13400	9700	7670
25	7900	18800	8920	19400	32900	26900	11600	12000	13800	13400	9720	7680
26	7740	19300	8890	18000	34100	16700	11700	12200	13800	13300	9720	7650
27	7670	23800	8880	16200	35100	13600	11700	12700	14100	13300	9670	7640
28	7570	18500	8940	14000	36300	12100	12300	13200	14300	13400	9700	7390
29	7560	20900	8530	12400	---	11300	12600	13300	14300	13200	9680	7210
30	7520	38300	8010	10900	---	10900	12500	13200	13700	13500	9650	7230
31	7520	---	7870	10300	---	10800	---	12600	---	13600	9690	---
TOTAL	247960	422700	576880	361100	830580	750700	365530	385200	379500	421700	328270	252740
MEAN	7999	14090	18610	11650	29660	24220	12180	12430	12650	13600	10590	8425
MAX	9190	38300	32700	26500	48200	41200	17200	13300	14300	14200	13400	9690
MIN	7200	7510	7870	7400	9280	10800	9410	10700	11500	13200	9650	7210
AC-FT	491800	838400	1144000	716200	1647000	1489000	725000	764000	752700	836400	651100	501300

e Estimated.

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1892 - 1943, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4853	7538	11940	18960	24760	22210	18280	12310	7635	5127	4381	4404
MAX	10910	21420	42780	72340	69240	73280	38810	27910	17640	10170	9050	8481
(WY)	1905	1904	1893	1909	1902	1904	1904	1896	1906	1893	1893	1893
MIN	2847	3300	3618	4142	4778	4434	4014	3253	2969	2622	2505	2551
(WY)	1933	1937	1937	1937	1920	1924	1924	1924	1924	1931	1931	1934

SUMMARY STATISTICS

WATER YEARS 1892 - 1943

ANNUAL MEAN	11800
HIGHEST ANNUAL MEAN	22180
LOWEST ANNUAL MEAN	4096
HIGHEST DAILY MEAN	261000
LOWEST DAILY MEAN	2400
ANNUAL SEVEN-DAY MINIMUM	2470
INSTANTANEOUS PEAK FLOW	291000
INSTANTANEOUS PEAK STAGE	38.9
ANNUAL RUNOFF (AC-FT)	8545000
10 PERCENT EXCEEDS	24000
50 PERCENT EXCEEDS	6500
90 PERCENT EXCEEDS	3520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1962, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6501	6932	11440	16840	19340	11950	10210	10260	9469	10030	10030	7510
MAX	10490	11180	29530	52620	76870	24840	32420	17830	12930	11630	11800	10230
(WY)	1958	1958	1956	1956	1958	1958	1958	1948	1948	1951	1958	1958
MIN	5468	4681	4336	5104	4579	4727	5335	6788	7253	7476	7080	5289
(WY)	1960	1960	1960	1957	1948	1955	1950	1947	1947	1947	1947	1947

SUMMARY STATISTICS

WATER YEARS 1946 - 1962

ANNUAL MEAN	10840
HIGHEST ANNUAL MEAN	20330
LOWEST ANNUAL MEAN	6690
HIGHEST DAILY MEAN	125000
LOWEST DAILY MEAN	3640
ANNUAL SEVEN-DAY MINIMUM	3830
INSTANTANEOUS PEAK FLOW	139000
INSTANTANEOUS PEAK STAGE	24.98
ANNUAL RUNOFF (AC-FT)	7852000
10 PERCENT EXCEEDS	16900
50 PERCENT EXCEEDS	8430
90 PERCENT EXCEEDS	5190

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6828	9261	14190	19150	20630	18070	12370	12370	12300	12890	11720	8542
MAX	10600	29690	43350	61060	68400	75830	35110	22920	21150	16760	15790	11900
(WY)	1984	1974	1984	1970	1998	1983	1974	1995	1998	1998	1998	1998
MIN	3935	4068	4296	4573	4700	5476	4804	7322	7431	7811	7998	5323
(WY)	1978	1993	1977	1992	1990	1994	1991	1992	1992	1992	1992	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1964 - 1999

ANNUAL TOTAL	8468490	5322860	
ANNUAL MEAN	23200	14580	13170
HIGHEST ANNUAL MEAN			25450
LOWEST ANNUAL MEAN			6494
HIGHEST DAILY MEAN	88800	Feb 3	48200
LOWEST DAILY MEAN	6120	Jan 1	7200
ANNUAL SEVEN-DAY MINIMUM	7240	Oct 17	7240
INSTANTANEOUS PEAK FLOW			66200
INSTANTANEOUS PEAK STAGE			21.33
ANNUAL RUNOFF (AC-FT)	16800000	10560000	9538000
10 PERCENT EXCEEDS	53600	27900	20900
50 PERCENT EXCEEDS	16600	12300	10100
90 PERCENT EXCEEDS	8670	7660	5510

11379500 ELDER CREEK NEAR PASKENTA, CA

LOCATION.—Lat 40°01'29", long 122°30'31", in SE 1/4 NW 1/4 sec.14, T.25 N., R.6 W., Tehama County, Hydrologic Unit 18020103, on left bank, 2.5 mi downstream from South Fork Elder Creek, 8.2 mi northwest of Flournoy, and 10 mi north of Paskenta.

DRAINAGE AREA.—92.4 mi².

PERIOD OF RECORD.—October 1948 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1959–66.

WATER TEMPERATURE: Water year 1963.

SEDIMENT DATA: Water years 1963–70.

REVISED RECORDS.—WSP 1515: 1956. WDR CA-70-2: 1967(P). WDR CA-75-4: 1966–67(P), 1969–71(P), 1973(P). WDR CA-78-4: Drainage area. WDR CA-94-4: 1993(P).

GAGE.—Water-stage recorder. Datum of gage is 718.1 ft above sea level. Prior to Aug. 13, 1965, water-stage recorder at site 300 ft downstream at datum 5.13 ft lower.

REMARKS.—Records good. No regulation or large diversion upstream from station. See schematic diagram of upper Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 17,700 ft³/s, Feb. 28, 1983, gage height, 12.10 ft, from rating curve extended above 5,200 ft³/s on basis of slope-area measurements at gage height 11.34 ft and of peak flow; maximum gage height, 13.90 ft, Feb. 24, 1958, site and datum then in use; no flow at times some years.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,000 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 24	Unknown	2,600	6.38				

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	9.3	12	170	22	42	302	178	165	45	14	6.1	3.3
2	9.7	12	104	21	39	234	163	171	60	13	6.2	3.4
3	10	12	142	20	37	251	152	157	61	13	6.3	3.4
4	9.8	12	105	20	36	211	141	144	53	13	5.9	3.3
5	9.1	12	79	20	34	181	166	134	46	13	6.0	3.1
6	8.4	13	68	19	652	163	197	139	42	12	6.5	3.0
7	8.4	33	60	19	996	147	177	144	39	12	8.0	3.0
8	8.7	23	74	19	308	315	191	132	38	11	7.6	2.9
9	9.3	17	61	19	464	252	164	120	36	11	6.9	2.7
10	9.3	16	51	19	231	175	287	112	35	10	6.6	2.8
11	9.2	22	47	18	164	149	895	112	34	9.5	7.5	3.2
12	9.1	17	45	18	133	135	380	116	32	8.5	7.3	2.8
13	9.4	15	45	18	116	129	346	110	31	8.1	6.8	2.5
14	9.8	15	47	18	111	240	333	103	30	8.3	6.4	2.7
15	9.5	16	41	19	96	251	309	96	29	8.3	6.0	2.4
16	9.3	16	37	27	269	188	299	89	29	8.5	5.5	2.4
17	9.2	24	36	26	395	170	321	85	27	8.7	5.2	2.2
18	9.1	21	36	81	318	161	336	86	26	8.7	4.9	2.1
19	8.9	17	34	59	279	153	332	87	24	8.2	4.7	2.4
20	8.4	16	32	56	260	166	306	87	23	8.0	4.5	2.4
21	8.4	18	30	66	227	160	266	82	22	8.3	4.2	2.5
22	8.4	28	32	76	180	157	240	78	21	8.2	3.8	2.3
23	8.6	258	34	266	162	192	215	75	19	7.8	3.4	2.3
24	15	148	37	127	158	e1130	209	74	19	7.7	3.3	2.3
25	16	59	28	93	202	e1270	216	70	18	7.7	3.4	2.2
26	12	49	26	77	166	530	226	66	17	7.4	3.2	2.1
27	11	58	25	62	151	358	210	62	17	7.2	3.1	1.7
28	11	41	25	54	257	281	185	57	16	7.0	3.4	1.5
29	11	104	23	48	---	241	166	54	15	6.6	3.1	1.5
30	11	466	23	45	---	219	158	50	14	6.3	3.2	1.8
31	11	---	23	48	---	200	---	46	---	6.2	3.2	---
TOTAL	307.3	1570	1620	1500	6483	8711	7764	3103	918	287.2	162.2	76.2
MEAN	9.91	52.3	52.3	48.4	232	281	259	100	30.6	9.26	5.23	2.54
MAX	16	466	170	266	996	1270	895	171	61	14	8.0	3.4
MIN	8.4	1.2	23	18	34	129	141	46	14	6.2	3.1	1.5
AC-FT	610	3110	3210	2980	12860	17280	15400	6150	1820	570	322	151

e Estimated.

SACRAMENTO RIVER BASIN

11379500 ELDER CREEK NEAR PASKENTA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9.30	48.3	134	255	294	239	150	83.8	32.1	8.98	3.47	3.13
MAX	102	310	649	1208	1636	1176	497	463	262	49.6	17.5	11.3
(WY)	1958	1974	1984	1995	1958	1983	1958	1998	1998	1998	1998	1978
MIN	.66	2.89	4.06	5.38	7.00	22.6	13.8	13.4	2.52	.32	.002	.14
(WY)	1992	1991	1991	1991	1977	1964	1977	1977	1977	1977	1994	1991

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1949 - 1999

ANNUAL TOTAL	104211.0	32501.9	
ANNUAL MEAN	286	89.0	104
HIGHEST ANNUAL MEAN			303
LOWEST ANNUAL MEAN			6.69
HIGHEST DAILY MEAN	3450	Feb 7	7650
LOWEST DAILY MEAN	8.4	Oct 6	.00
ANNUAL SEVEN-DAY MINIMUM	8.6	Sep 16	.00
INSTANTANEOUS PEAK FLOW			17700
INSTANTANEOUS PEAK STAGE			13.90
ANNUAL RUNOFF (AC-FT)	206700	64470	75450
10 PERCENT EXCEEDS	742	240	243
50 PERCENT EXCEEDS	104	29	19
90 PERCENT EXCEEDS	9.8	3.4	1.6

11381500 MILL CREEK NEAR LOS MOLINOS, CA

LOCATION.—Lat 40°03'17", long 122°01'23", in NE 1/4 NW 1/4 sec.6, T.25 N., R.1 W., Tehama County, Hydrologic Unit 18020103, on right bank 4.5 mi northeast of Los Molinos, and 5.5 mi upstream from mouth.

DRAINAGE AREA.—131 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—September 1909 to August 1913 (fragmentary), October 1928 to current year.

REVISED RECORDS.—WSP 1315-A: 1929(M). WSP 1931: Drainage area. WSP 2131: 1938(M).

GAGE.—Water-stage recorder. Elevation of gage is 385 ft above sea level, from topographic map. Prior to September 1913, nonrecording gage at site 0.3 mi downstream at different datum.

REMARKS.—Records good. No storage or large diversion upstream from station. See schematic diagram of upper Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD (water years 1929–99).—Maximum discharge, 36,400 ft³/s, Dec. 11, 1937, gage height, 23.4 ft, from floodmarks, from rating curve extended above 14,000 ft³/s on basis of step-backwater computation and slope-area measurement of peak flow; minimum, 49 ft³/s, Dec. 13, 1932.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,400 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	1930	2,650	6.59	Feb. 9	1030	5,120	8.85
Nov. 30	1515	3,960	7.86				

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	159	157	1160	175	287	1300	352	477	516	311	156	129
2	159	154	595	170	270	920	335	514	552	303	154	129
3	160	151	1410	168	262	1210	323	491	481	287	154	127
4	161	150	796	166	257	919	309	435	417	277	153	126
5	155	152	516	164	241	709	312	399	405	263	152	126
6	152	154	434	164	397	595	303	408	438	251	152	126
7	150	182	365	164	864	518	295	464	421	243	154	125
8	149	205	334	162	761	468	368	450	400	226	152	124
9	149	179	300	160	2720	527	360	428	385	220	152	124
10	150	173	272	160	1170	467	348	410	373	214	153	124
11	149	179	257	161	719	427	367	400	380	210	156	124
12	148	171	245	159	557	398	375	427	390	208	151	122
13	148	168	305	157	473	380	390	454	396	206	149	122
14	150	168	479	153	431	374	417	426	406	204	147	122
15	148	168	307	188	385	357	425	393	419	197	147	122
16	146	169	270	262	599	350	435	379	404	190	147	124
17	144	210	257	257	979	351	458	383	386	185	145	124
18	144	198	248	605	842	356	521	414	396	181	144	124
19	143	175	238	475	749	363	547	438	397	178	144	124
20	142	169	221	528	851	372	572	446	383	174	137	125
21	141	201	199	571	1240	368	567	440	370	173	132	129
22	140	444	197	438	664	357	526	482	384	170	131	125
23	139	1080	188	1100	541	345	486	522	385	168	131	124
24	167	722	188	769	493	387	492	568	377	166	132	125
25	191	342	183	561	985	632	513	629	372	165	129	124
26	168	321	184	470	626	501	608	648	337	164	130	126
27	165	544	181	395	530	479	622	626	316	162	130	124
28	164	384	179	345	879	430	519	605	307	162	132	124
29	165	414	177	313	---	401	462	575	304	160	129	123
30	156	1980	175	291	---	385	444	530	308	158	128	125
31	150	---	176	303	---	378	---	524	---	157	129	---
TOTAL	4752	9864	11036	10154	19772	16024	13051	14785	11805	6333	4432	3742
MEAN	153	329	356	328	706	517	435	477	394	204	143	125
MAX	191	1980	1410	1100	2720	1300	622	648	552	311	156	129
MIN	139	150	175	153	241	345	295	379	304	157	128	122
AC-FT	9430	19570	21890	20140	39220	31780	25890	29330	23420	12560	8790	7420

11381500 MILL CREEK NEAR LOS MOLINOS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	125	201	352	455	481	452	433	445	333	181	119	107
MAX	684	1039	1365	1837	1744	1278	862	923	790	510	230	168
(WY)	1963	1974	1965	1970	1986	1983	1982	1938	1998	1998	1983	1983
MIN	76.0	75.1	87.4	96.8	98.6	107	112	122	94.9	67.8	61.4	65.4
(WY)	1930	1930	1977	1977	1977	1977	1977	1977	1931	1931	1931	1931

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1929 - 1999	
ANNUAL TOTAL	194167		125750			
ANNUAL MEAN	532		345		306	
HIGHEST ANNUAL MEAN					576	
LOWEST ANNUAL MEAN					93.6	
HIGHEST DAILY MEAN	4000	Feb 3	2720	Feb 9	14400	Jan 1 1997
LOWEST DAILY MEAN	138	Jan 1	122	Sep 12	52	Dec 12 1932
ANNUAL SEVEN-DAY MINIMUM	142	Oct 17	123	Sep 9	60	Jul 28 1931
INSTANTANEOUS PEAK FLOW			5120	Feb 9	36400	Dec 11 1937
INSTANTANEOUS PEAK STAGE			8.85	Feb 9	23.40	Dec 11 1937
ANNUAL RUNOFF (AC-FT)	385100		249400		221700	
10 PERCENT EXCEEDS	1030		597		587	
50 PERCENT EXCEEDS	444		287		180	
90 PERCENT EXCEEDS	159		131		91	

11381500 MILL CREEK NEAR LOS MOLINOS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—October 1998 to September 1999.

WATER TEMPERATURE: October 1998 to September 1999.

PERIOD OF DAILY RECORD.—October 1998 to September 1999.

WATER TEMPERATURE: October 1998 to September 1999.

INSTRUMENTATION.—Temperature recorder since Oct. 5, 1998.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 23.5°C, July 13, 14, and Aug. 23, 1999; minimum recorded, 0.5°C, Dec. 23, 1998.

EXTREME FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 23.5°C, July 13, 14, and Aug. 23; minimum recorded, 0.5°C, Dec. 23.

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	---	---	11.0	9.5	9.0	8.5	7.0	6.0	6.0	5.0	9.0	7.5
2	---	---	10.5	9.5	10.0	8.5	6.5	5.5	6.0	5.0	8.5	7.0
3	---	---	11.0	9.5	10.0	8.0	7.0	6.0	6.5	5.5	9.0	7.5
4	---	---	11.0	10.0	8.0	6.0	6.5	6.0	7.0	6.5	7.5	6.5
5	14.0	12.5	10.5	9.5	6.0	4.5	6.0	5.5	7.0	6.0	7.5	6.0
6	14.5	12.5	9.5	9.0	4.5	3.5	5.5	5.0	7.0	6.5	7.5	6.5
7	14.5	13.0	9.0	8.5	5.0	3.5	5.5	5.0	8.5	7.0	7.5	6.0
8	15.0	13.0	8.5	7.5	6.0	5.0	5.5	5.0	8.0	7.0	7.5	6.5
9	14.5	13.0	7.5	6.5	6.0	5.0	6.0	5.5	9.0	6.0	6.5	6.0
10	13.0	11.5	8.0	6.5	6.0	5.0	6.0	5.5	6.0	5.0	7.0	5.0
11	12.5	11.0	8.5	7.5	6.5	5.5	6.0	5.5	5.5	4.5	8.0	5.5
12	12.5	11.0	8.0	7.0	8.0	6.5	6.5	5.5	6.5	5.0	8.5	6.5
13	14.0	11.5	8.5	7.5	8.5	8.0	7.0	6.0	7.0	6.0	9.5	7.5
14	13.5	12.5	8.5	7.5	8.5	7.5	7.5	6.5	8.0	7.0	9.5	8.5
15	12.5	11.0	9.5	8.0	8.5	7.0	9.0	7.0	7.5	6.5	10.0	7.5
16	11.5	10.0	9.0	9.0	9.0	8.0	9.5	9.0	8.0	7.0	10.5	8.5
17	11.5	9.5	10.0	9.0	9.0	8.5	9.5	8.5	9.0	8.0	11.0	9.5
18	11.5	10.0	9.5	8.0	8.5	7.0	9.5	8.5	9.0	8.0	11.0	9.5
19	13.0	10.5	8.0	7.5	7.0	5.0	8.5	8.0	8.0	6.5	10.5	9.0
20	13.0	11.5	8.0	7.0	5.5	3.5	8.5	8.0	7.5	6.5	10.0	9.5
21	13.0	11.5	10.0	8.0	3.5	1.5	8.0	6.5	7.5	6.5	10.0	8.0
22	13.0	11.5	10.0	9.5	1.5	1.0	8.0	7.0	8.0	7.0	9.0	8.0
23	12.5	11.0	11.5	9.5	1.5	.5	8.0	6.5	9.5	7.5	9.0	8.0
24	12.0	11.5	10.0	8.5	2.0	1.0	6.5	4.5	9.5	8.5	9.5	8.5
25	12.0	11.0	9.0	8.5	4.5	2.0	6.0	4.5	9.0	7.5	11.0	9.0
26	12.0	11.0	9.5	8.0	5.5	4.5	6.5	6.0	8.5	6.5	11.5	10.0
27	12.5	11.0	10.0	9.0	5.5	5.0	6.5	5.0	9.0	8.0	10.5	8.5
28	12.5	11.5	9.0	8.5	6.0	5.5	6.0	5.0	10.0	8.5	9.0	7.0
29	12.5	11.5	9.0	8.0	6.0	5.0	6.0	4.5	---	---	9.0	7.5
30	11.5	10.0	11.0	8.5	6.0	5.0	5.5	4.5	---	---	8.5	7.5
31	10.0	9.5	---	---	7.0	6.0	6.0	5.5	---	---	8.0	6.0
MONTH	---	---	11.5	6.5	10.0	.5	9.5	4.5	10.0	4.5	11.5	5.0

11381500 MILL CREEK NEAR LOS MOLINOS, 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	8.5	6.0	14.0	12.0	15.5	14.5	22.0	19.0	22.0	19.5	17.5	15.5
2	9.5	6.5	13.5	9.5	14.5	11.0	21.5	18.5	22.5	20.0	18.0	15.0
3	9.5	8.0	11.0	9.0	11.0	10.0	20.0	17.0	23.0	20.0	18.5	15.5
4	8.5	6.5	11.5	8.0	14.5	9.5	18.5	16.0	23.0	20.5	19.0	16.0
5	8.5	7.5	13.5	9.5	17.0	13.5	19.0	16.0	21.5	20.0	19.0	16.5
6	9.0	6.5	15.0	12.0	16.5	14.5	20.0	17.0	20.0	19.0	20.0	17.0
7	10.0	7.5	14.0	12.0	15.0	12.5	19.5	18.0	20.5	18.0	20.0	17.5
8	10.0	7.0	12.5	10.5	15.0	12.0	20.5	18.0	20.5	17.5	20.5	17.5
9	8.0	5.0	12.0	10.0	14.5	12.0	21.0	18.5	21.0	18.5	20.0	18.0
10	8.0	6.5	12.0	10.0	16.0	12.5	21.5	19.0	20.5	19.0	20.0	18.0
11	10.5	7.0	15.0	11.0	17.0	13.5	22.5	20.0	21.5	19.0	21.0	18.0
12	12.0	9.0	15.0	13.0	17.5	14.5	23.0	21.5	22.0	19.5	20.5	18.0
13	12.5	10.0	14.0	11.0	18.0	14.5	23.5	22.0	21.5	19.0	20.0	17.5
14	13.0	10.5	12.5	10.0	18.5	15.5	23.5	22.0	21.0	18.5	20.5	18.0
15	13.0	10.0	12.5	9.5	18.0	16.0	22.5	21.0	21.0	18.0	20.0	17.5
16	13.0	11.0	13.5	10.5	18.5	15.0	21.5	20.0	21.0	18.0	20.0	17.5
17	14.0	11.5	14.5	11.5	18.5	15.5	21.0	19.5	21.5	18.5	19.5	17.0
18	13.5	11.5	15.5	12.5	19.0	16.0	20.5	18.5	21.5	18.5	18.5	17.0
19	13.0	11.5	15.0	12.5	19.0	15.5	20.0	18.5	21.0	18.5	19.5	17.0
20	12.5	11.5	14.5	12.5	18.5	16.0	20.5	18.0	21.0	18.0	20.0	17.5
21	12.0	10.5	15.5	13.0	20.0	16.0	20.0	18.0	22.0	18.5	20.5	18.0
22	12.0	10.0	16.0	13.5	20.5	17.0	20.5	18.0	23.0	19.5	20.5	18.0
23	12.5	9.5	16.5	14.5	21.0	17.5	21.0	18.5	23.5	20.5	20.5	18.0
24	13.5	11.0	16.0	15.0	20.5	18.0	21.0	18.5	23.0	21.0	20.5	18.0
25	13.0	11.5	16.5	14.5	19.5	16.5	21.0	18.0	22.0	20.0	20.0	18.0
26	13.5	12.0	16.0	14.5	18.5	15.5	22.5	19.5	21.5	19.5	18.5	16.5
27	12.0	10.0	16.5	15.0	19.5	15.5	21.5	19.5	21.0	19.5	17.5	15.5
28	10.5	8.5	16.0	14.5	20.5	16.5	21.5	19.0	22.0	19.0	16.5	14.5
29	12.0	8.0	15.5	14.0	21.5	17.5	22.0	19.5	22.5	20.0	16.5	14.0
30	13.0	10.5	16.0	13.0	22.0	19.0	22.0	19.0	21.0	19.0	17.0	15.0
31	---	---	15.5	14.5	---	---	21.5	19.0	19.0	16.5	---	---
MONTH	14.0	5.0	16.5	8.0	22.0	9.5	32.5	16.0	23.5	16.5	21.0	14.0

11383500 DEER CREEK NEAR VINA, CA

LOCATION.—Lat 40°00'51", long 121°56'50", in NW 1/4 NE 1/4 sec.23, T.25 N., R.1 W., Tehama County, Hydrologic Unit 18020103, on left bank 0.5 mi upstream from irrigation diversion dam and 7.9 mi northeast of Vina.

DRAINAGE AREA.—208 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1911 to September 1915, March 1920 to current year. December 1937 to January 1939 first published in WDR CA-94-4. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1315-A: 1940–42(M). WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 479.2 ft above sea level, from river-profile survey. Prior to Oct. 9, 1928, nonrecording gage at site 0.8 mi downstream at different datum. Oct. 9, 1928, to Jan. 19, 1939, water-stage recorder at present site at datum 2.64 ft higher.

REMARKS.—Records good. No storage or large diversions upstream from station. See schematic diagram of upper Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 24,000 ft³/s, Jan. 1, 1997, gage height, 15.56 ft, from rating curve extended above 9,200 ft³/s; maximum gage height, 19.20 ft, Dec. 10, 1937; minimum, 43 ft³/s, Dec. 13, 1932.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,500 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	1700	2,710	6.52	Feb. 9	0730	7,120	9.57
Nov. 30	1345	5,190	8.39	Feb. 21	0315	2,570	6.40

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	148	140	1510	191	348	2000	505	517	271	145	127	125
2	148	140	741	182	321	1510	479	529	285	144	128	127
3	148	136	1510	176	309	1780	456	552	286	143	128	127
4	148	136	984	174	301	1460	428	526	273	142	127	125
5	144	134	632	168	290	1170	434	469	251	142	127	123
6	141	138	512	168	521	1000	418	455	239	140	127	121
7	141	183	427	165	1280	856	410	462	227	139	132	123
8	141	208	379	162	1140	773	542	445	223	139	132	122
9	141	172	340	159	4480	850	510	428	216	137	131	122
10	141	156	305	158	2140	734	500	410	209	135	131	123
11	140	165	284	158	1290	659	528	399	203	135	142	125
12	138	153	273	156	966	614	582	400	197	135	135	123
13	137	147	355	155	786	587	596	400	193	133	131	123
14	138	145	474	155	695	572	597	388	188	132	128	123
15	138	143	333	180	604	541	594	370	182	131	127	123
16	136	150	299	263	704	533	599	356	180	131	126	124
17	136	192	286	252	1210	528	612	347	176	132	126	124
18	136	211	273	528	1180	532	661	345	172	132	125	124
19	134	167	264	502	1140	533	677	343	168	132	125	125
20	131	151	251	679	1240	530	697	336	168	133	124	123
21	129	158	229	820	1710	523	695	329	168	132	125	122
22	129	397	222	578	1050	506	643	326	164	134	125	120
23	129	1230	210	1430	889	488	594	328	159	134	126	120
24	158	883	210	1010	821	543	589	330	156	133	127	121
25	187	351	206	762	1460	818	581	333	155	134	125	120
26	151	282	205	641	1020	690	655	332	154	133	125	117
27	141	492	203	530	866	674	689	327	153	131	125	115
28	136	375	200	461	1160	606	600	319	149	133	127	114
29	137	373	197	411	---	566	548	309	147	132	124	114
30	136	2630	190	375	---	550	519	300	145	130	123	116
31	134	---	189	377	---	536	---	283	---	129	127	---
TOTAL	4372	10338	12693	12126	29921	24262	16938	11993	5857	4187	3958	3654
MEAN	141	345	409	391	1069	783	565	387	195	135	128	122
MAX	187	2630	1510	1430	4480	2000	697	552	286	145	142	127
MIN	129	134	189	155	290	488	410	283	145	129	123	114
AC-FT	8670	20510	25180	24050	59350	48120	33600	23790	11620	8300	7850	7250

SACRAMENTO RIVER BASIN

11383500 DEER CREEK NEAR VINA, 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	114	197	380	552	641	588	535	395	204	119	98.7	95.6
MAX	775	984	1825	2458	2600	2105	1494	1193	674	267	194	174
(WY)	1963	1974	1956	1970	1986	1983	1982	1995	1998	1983	1983	1983
MIN	63.4	65.2	82.5	87.4	95.3	109	99.5	77.2	66.1	55.8	53.3	55.2
(WY)	1935	1930	1931	1991	1977	1977	1977	1924	1924	1931	1931	1931

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1912 - 1999	
ANNUAL TOTAL	226603		140299			
ANNUAL MEAN	621		384		326	
HIGHEST ANNUAL MEAN					700	
LOWEST ANNUAL MEAN					86.2	
HIGHEST DAILY MEAN	6920	Feb 3	4480	Feb 9	20100	Jan 1 1997
LOWEST DAILY MEAN	129	Oct 21	114	Sep 28	52	Aug 25 1931
ANNUAL SEVEN-DAY MINIMUM	132	Oct 17	117	Sep 24	53	Aug 21 1931
INSTANTANEOUS PEAK FLOW			7120	Feb 9	24000	Jan 1 1997
INSTANTANEOUS PEAK STAGE			9.57	Feb 9	19.20	Dec 10 1937
ANNUAL RUNOFF (AC-FT)	449500		278300		235800	
10 PERCENT EXCEEDS	1320		799		690	
50 PERCENT EXCEEDS	397		205		146	
90 PERCENT EXCEEDS	141		125		79	

11383500 DEER CREEK NEAR VINA, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—October 1998 to September 1999.

WATER TEMPERATURE: October 1998 to September 1999.

PERIOD OF DAILY RECORD.—October 1998 to September 1999.

WATER TEMPERATURE: October 1998 to September 1999.

INSTRUMENTATION.—Temperature recorder since Oct. 5, 1998.

REMARKS.—Interruption in record due to malfunction of the recording equipment.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 25.5°C, July 12–14, 1999; minimum recorded, 0.5°C, Dec. 23, 24, 1998.

EXTREME FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 25.5°C, July 12–14; minimum recorded, 0.5°C, Dec. 23, 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	---	---	11.0	9.5	8.5	8.0	---	---	5.5	4.5	8.5	7.5
2	---	---	10.5	9.5	9.5	8.5	---	---	5.5	4.5	8.5	7.0
3	---	---	11.0	9.5	9.5	7.0	---	---	6.0	5.0	8.5	7.5
4	---	---	11.0	10.0	7.0	6.0	---	---	7.0	6.0	7.5	6.5
5	14.5	13.0	10.5	9.5	6.0	5.0	---	---	6.5	5.5	7.0	6.0
6	14.5	13.0	9.5	9.0	5.0	4.0	---	---	7.0	6.0	7.0	6.5
7	14.5	12.5	9.5	9.0	4.5	3.5	5.5	4.5	8.5	7.0	7.5	6.0
8	15.0	13.0	9.0	8.0	5.5	4.5	5.5	4.0	8.0	7.5	7.0	6.5
9	14.5	13.0	8.0	7.0	5.5	4.5	5.5	4.5	8.5	5.5	7.0	6.0
10	13.5	12.0	8.0	7.0	5.5	5.0	5.0	5.0	5.5	5.0	7.0	5.0
11	12.5	11.5	8.5	7.5	6.0	5.0	5.5	4.5	5.5	5.0	7.5	5.5
12	12.5	11.5	8.0	7.0	7.0	6.0	6.0	4.5	6.5	5.0	8.0	6.0
13	14.0	12.0	8.0	7.0	8.5	7.0	6.0	5.5	6.5	6.0	9.0	7.0
14	13.0	12.0	8.0	7.0	8.5	7.5	6.5	5.5	7.5	6.5	9.0	8.0
15	12.5	11.0	9.0	8.0	7.5	6.5	8.0	6.5	7.0	6.0	9.5	7.5
16	11.5	10.5	9.0	8.5	8.5	7.5	9.0	8.0	7.5	6.5	10.0	8.0
17	11.5	10.0	9.5	9.0	9.0	8.0	9.0	8.5	8.0	7.5	11.0	9.0
18	11.5	9.5	9.5	8.0	8.0	6.5	9.5	8.5	8.0	7.5	10.5	9.0
19	12.5	10.5	8.0	7.0	6.5	5.0	8.5	8.0	7.5	6.5	10.0	9.0
20	12.5	11.5	8.0	6.5	5.0	3.5	8.5	7.5	7.0	6.5	10.0	9.0
21	12.5	11.5	9.5	8.0	3.5	1.5	7.5	6.5	7.0	6.0	9.5	8.0
22	12.5	11.5	9.5	9.0	1.5	1.0	7.5	6.5	8.0	6.5	9.0	7.5
23	12.0	11.0	11.0	9.5	1.5	.5	7.5	6.0	9.0	7.0	9.0	8.0
24	12.0	11.5	9.5	8.5	2.0	.5	6.0	5.0	8.5	8.0	9.5	8.5
25	12.0	11.0	9.0	8.5	4.0	1.5	5.5	4.5	8.5	7.5	10.5	9.0
26	12.0	10.5	9.5	8.0	4.5	4.0	6.5	5.5	8.0	6.5	11.5	9.5
27	12.0	11.0	9.5	9.0	5.0	4.0	6.0	5.0	9.0	7.5	10.0	8.0
28	12.5	11.5	9.0	8.5	5.5	5.0	5.5	5.0	10.0	8.5	9.0	7.0
29	12.0	11.0	8.5	8.0	5.0	4.5	5.5	4.5	---	---	9.0	7.0
30	11.5	10.5	10.5	8.5	5.5	4.0	5.0	4.0	---	---	8.5	7.0
31	10.5	9.5	---	---	6.5	5.5	5.5	5.0	---	---	8.0	6.0
MONTH	---	---	11.0	6.5	9.5	.5	---	---	10.0	4.5	11.5	5.0

SACRAMENTO RIVER BASIN

11383500 DEER CREEK NEAR VINA, 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	8.0	6.0	15.0	11.5	18.0	16.0	24.5	22.0	22.5	20.0	18.0	16.5
2	9.0	6.0	13.5	11.0	17.0	14.0	24.0	21.5	23.0	20.5	18.0	15.5
3	9.0	7.5	11.5	9.5	14.0	12.0	23.0	20.5	23.5	20.5	18.5	16.0
4	8.5	6.0	11.5	8.0	15.0	11.0	21.5	19.0	23.5	21.0	19.0	16.5
5	8.5	7.5	13.5	9.5	17.5	14.0	21.5	18.5	23.0	21.0	19.0	17.0
6	9.0	6.5	15.0	11.5	18.5	15.5	22.0	19.0	21.5	20.0	19.5	17.5
7	9.5	7.0	14.5	12.0	17.0	15.0	22.0	19.5	21.5	19.0	20.0	17.5
8	9.5	7.0	13.5	10.5	17.0	14.0	22.5	19.5	21.0	18.5	20.0	18.0
9	7.5	5.0	13.0	10.0	16.0	14.0	23.0	20.0	21.5	19.0	20.0	18.5
10	7.0	6.0	12.5	10.0	17.5	14.0	23.5	20.5	20.5	19.0	20.0	18.0
11	10.0	6.5	15.0	11.0	18.5	15.0	24.5	21.5	22.0	19.5	21.0	18.5
12	11.0	8.0	15.5	13.0	19.0	16.0	25.5	22.5	22.0	19.5	20.5	18.5
13	12.0	9.0	14.5	11.5	20.0	17.0	25.5	23.5	21.5	19.5	20.0	18.5
14	12.5	10.0	13.5	10.5	21.0	17.5	25.5	23.0	21.5	19.0	20.5	18.0
15	13.0	10.0	13.5	10.0	20.5	18.0	24.5	22.0	21.0	18.5	20.0	18.0
16	13.5	10.5	14.0	10.5	21.0	17.5	23.5	21.5	21.5	18.5	20.0	18.0
17	14.0	11.0	14.5	11.5	21.0	18.0	22.5	20.5	21.5	19.0	19.5	17.5
18	14.0	11.5	16.0	13.0	21.0	18.5	22.0	19.5	21.5	19.0	18.5	17.5
19	13.5	11.0	16.0	13.5	21.5	18.5	22.0	19.5	21.5	18.5	19.5	17.0
20	13.5	11.0	16.0	13.5	21.0	18.5	21.5	19.0	21.0	18.5	20.0	18.0
21	12.5	10.5	17.0	13.5	22.5	19.0	21.5	19.0	21.5	19.0	20.5	18.0
22	12.0	9.5	18.0	14.5	23.0	20.0	21.5	19.0	22.5	20.0	20.0	18.0
23	13.0	9.5	19.0	15.5	24.0	21.0	21.5	19.0	23.5	21.0	20.5	18.5
24	13.5	10.5	19.0	16.0	23.5	21.0	21.5	19.0	23.5	21.5	20.5	18.5
25	13.5	11.0	20.0	17.0	22.5	20.0	22.0	19.0	22.5	20.5	20.0	18.5
26	14.5	12.0	20.5	17.5	21.5	19.0	23.0	20.0	21.5	20.0	19.0	17.0
27	13.0	10.5	20.5	17.5	21.5	19.0	22.5	20.0	21.5	20.5	17.5	16.0
28	11.0	8.5	20.0	17.0	22.5	19.5	22.5	19.5	22.5	20.0	17.0	15.5
29	12.0	8.0	19.0	16.5	23.5	20.5	22.5	20.0	22.5	20.5	17.5	15.5
30	13.5	10.0	18.5	15.5	24.5	21.5	22.5	20.0	21.5	19.5	17.5	15.5
31	---	---	19.0	16.0	---	---	22.5	19.5	19.5	17.5	---	---
MONTH	14.5	5.0	20.5	8.0	24.5	11.0	25.5	18.5	23.5	17.5	21.0	15.5

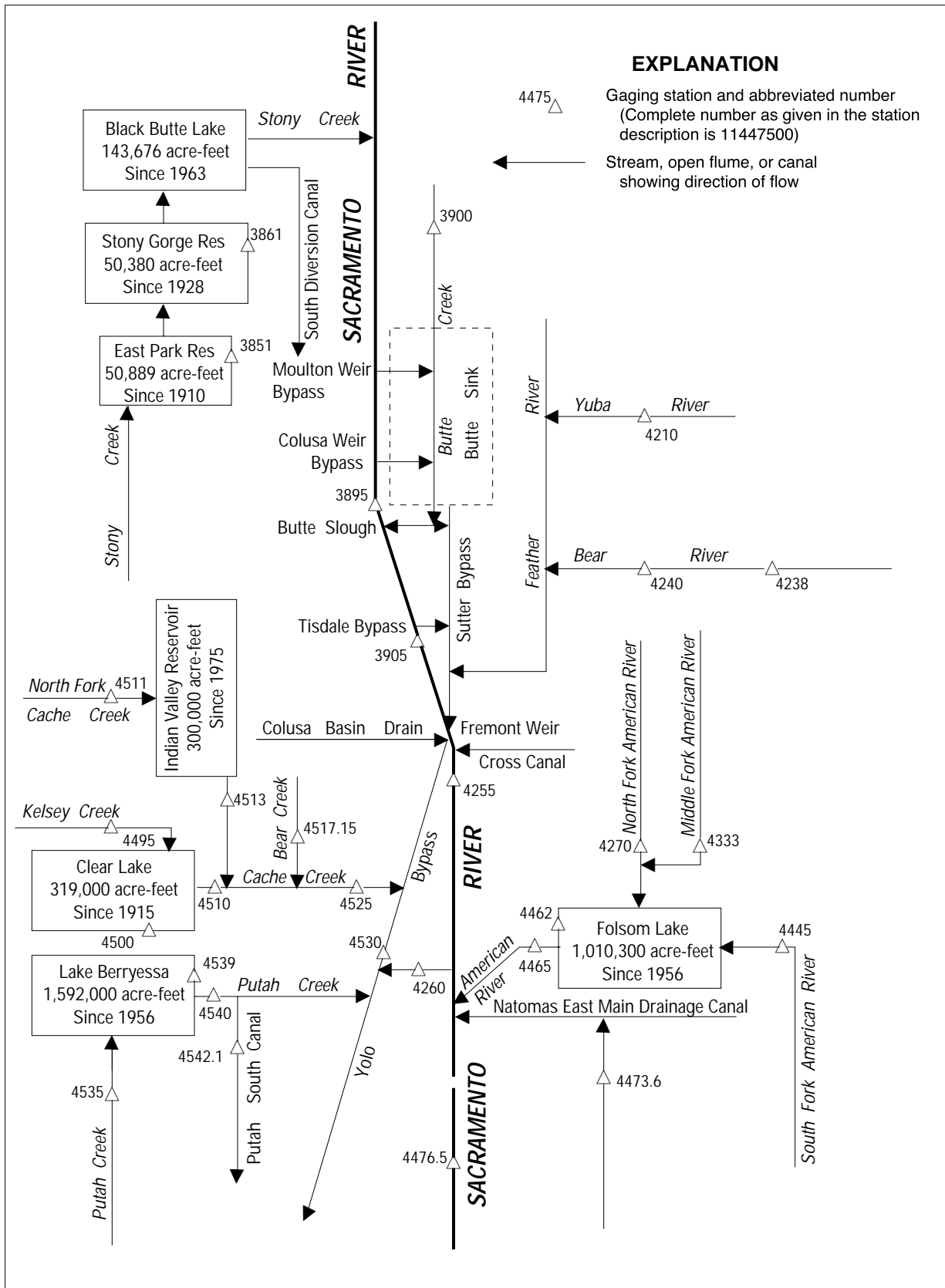


Figure 27. Diversions and storage in lower Sacramento River Basin.

RESERVOIRS IN STONY CREEK BASIN, CA

11385100 EAST PARK RESERVOIR NEAR STONYFORD

LOCATION.—Lat 39°21'24", long 122°30'53", in SW 1/4 NE 1/4 sec.3, T.17 N., R.6 W., Colusa County, Hydrologic Unit 18020115, near south side of spillway section on East Park Dam on Little Stony Creek, 1.9 mi southeast of Stonyford.

DRAINAGE AREA.—98.2 mi².

PERIOD OF RECORD.—October 1969 to current year.

GAGE.—Nonrecording gage read once daily. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Reservoir is formed by a concrete arch-type dam. Storage began in 1910. Capacity, 48,210 acre-ft, between elevations 1,131.68 ft, invert of sluice pipe, and 1,198.18 ft, crest of spillway. Capacity increased to 50,889 acre-ft with the addition of flashboards to an elevation of 1,199.68 ft. Dead storage, 279 acre-ft. Records of contents provided by U.S. Bureau of Reclamation. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 53,500 acre-ft, Mar. 30, 1974, elevation, 1,201.10 ft; minimum, 280 acre-ft, Aug. 8 to Oct. 31, 1972, Apr. 30 to Nov. 1, 1977, elevation, 1,131.68 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 49,990 acre-ft, Feb. 9, elevation, 1,199.18 ft; minimum, 42,680 acre-ft, Sept. 30, elevation, 1,194.92 ft.

11386100 STONY GORGE RESERVOIR NEAR ELK CREEK

LOCATION.—Lat 39°35'09", long 122°31'54", in NE 1/4 SE 1/4 sec.16, T.20 N., R.6 W., Glenn County, Hydrologic Unit 18020115, on south end of Stony Gorge Dam on Stony Creek, 1.3 mi southeast of Elk Creek.

DRAINAGE AREA.—301 mi².

PERIOD OF RECORD.—October 1969 to current year.

GAGE.—Nonrecording gage read once daily. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Reservoir is formed by slab and buttress-type dam. Storage began in 1928. Capacity, 50,380 acre-ft between elevations 728.0 ft, top of low intake, and 841.0 ft, crest of spillway. No dead storage. Records of contents provided by U.S. Bureau of Reclamation. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 54,630 acre-ft, Mar. 26, 1971, elevation, 844.20 ft; minimum, 3,810 acre-ft, Nov. 6, 1971, elevation, 779.20 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 50,383 acre-ft, Apr. 19, elevation, 841.00 ft; minimum, 35,055 acre-ft, Sept. 29, elevation, 828.01 ft.

MONTHEND ELEVATION AND CONTENTS AT 0800 HOURS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (ft)	Contents (acre-ft)	Change in contents (acre-ft)	Elevation (ft)	Contents (acre-ft)	Change in contents (acre-ft)
11385100 EAST PARK RESERVOIR			11386100 STONY GORGE RESERVOIR			
Sept. 30	1,196.64	45,553	-1,199	829.34	36,485	-5,587
Oct. 31	1,196.14	44,705	-848	829.59	36,758	273
Nov. 30	1,196.69	45,637	932	830.11	37,326	568
Dec. 31	1,198.22	48,284	2,647	832.31	39,791	2,465
CAL YR 1998	—	—	25,251	—	—	6,771
Jan. 31	1,198.33	48,479	195	831.40	38,761	-1,030
Feb. 28	1,198.51	48,798	319	833.90	41,626	2,865
Mar. 31	1,198.51	48,798	0	838.97	47,785	6,159
Apr. 30	1,198.35	48,514	-284	840.44	49,661	1,876
May 31	1,198.16	48,178	-336	840.40	49,610	-51
June 30	1,197.78	47,514	-664	837.81	46,336	-3,274
July 31	1,196.72	45,688	-1,826	838.31	46,958	622
Aug. 31	1,195.86	44,236	-1,452	838.50	47,197	239
Sept. 30	1,194.92	42,680	-1,556	828.03	35,076	-12,121
WTR YR 1999	—	—	-2,873	—	—	-1,409

11389500 SACRAMENTO RIVER AT COLUSA, CA

LOCATION.—Lat 39°12'51", long 121°59'57", at north end of Jimeno Grant, Colusa County, Hydrologic Unit 18020104, on right bank 60 ft downstream from highway bridge at Colusa and at mile 89.4 upstream from Sacramento.

DRAINAGE AREA.—12,090 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—April 1921 to current year (prior to October 1940, low-water periods only).

REVISED RECORDS.—WSP 1345: 1952. WDR CA-77-4: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 2.95 ft below sea level. Prior to December 1930, water-stage recorder in center fender pier 50 ft upstream from bridge at same datum.

REMARKS.—Records good. Natural flow of stream affected by storage reservoirs, including Shasta Lake (station 11370000) since 1943, power development, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas. When discharge exceeds about 30,000 ft³/s, flow begins over Colusa Weir, 2.5 mi upstream on left bank, into Butte Sink and Sutter Bypass. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge (water years 1941–99), 51,800 ft³/s, Mar. 4, 1983, gage height, 68.50 ft; maximum gage height, 69.20 ft, Feb. 18, 1942; minimum recorded, 820 ft³/s, July 25, 26, 1931, gage height, 34.79 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	9150	6610	35400	9730	13400	35300	15300	12100	10700	9480	9560	6920
2	9020	7040	34900	9510	12900	37300	14400	12000	10500	9130	9590	7070
3	8660	7030	29700	9360	12400	36500	13700	12100	10900	8920	9330	7070
4	8560	6820	34100	9200	12000	36200	13100	12100	11400	8720	9270	7030
5	8490	6690	32100	9050	11700	35700	12800	11800	11700	8770	9130	6900
6	8420	6600	31400	8960	16000	35300	12700	11400	11500	8910	8680	7170
7	8370	7140	32100	8900	22400	34800	13500	11400	10900	8920	8370	7210
8	8280	7940	31600	8830	36000	34500	13100	11700	10500	8900	8050	7010
9	8160	8480	31400	8720	35200	34300	13100	11500	10200	8850	7900	6930
10	7910	8190	30400	8590	39700	35200	13600	11300	9930	8710	7910	7200
11	7870	7920	27900	8560	37800	35000	14600	11100	9620	8730	7810	7310
12	7710	8760	26900	8580	32800	34300	20100	10900	9170	8920	7520	7130
13	7430	8530	26500	8560	31900	33200	20800	11000	8960	8850	7450	6860
14	7230	9050	26400	8540	31000	31600	18900	10900	8840	9110	7250	6910
15	7000	9680	27300	8560	29800	29400	18800	10500	8770	9140	7240	6910
16	e6850	e9940	23300	8760	30200	27500	18500	9640	9000	9120	7100	7350
17	e6650	e10100	21000	9100	34100	25000	18600	9810	8940	9190	6800	7400
18	e6500	e10800	19900	9960	38800	23400	18600	9490	8920	9310	6600	7370
19	e6400	e13900	19300	14200	38300	22100	18200	9460	9050	9530	6530	7240
20	e6350	e14700	18400	14900	37300	20100	17700	9390	9160	9660	6570	6980
21	6260	14600	16700	15000	36300	18500	17300	9450	9240	9630	6570	7000
22	6160	15300	15000	20000	39500	17500	16000	9840	9370	9530	6540	6950
23	6050	18700	13500	21700	37000	16000	14900	10400	9300	9120	6450	6880
24	e6100	22800	12400	27700	34300	15100	14000	11000	9380	9100	6510	6670
25	e6500	27500	11600	27600	33200	19500	13200	10800	9760	9180	6610	6690
26	e7150	22100	11300	24500	34700	33000	12900	10400	9540	9310	6670	6700
27	e7100	20900	11200	22500	34800	30000	12800	10300	9570	9330	6730	6600
28	e7100	25400	11000	20300	34800	25200	12800	10700	9730	9290	6720	6520
29	6770	22500	11000	17900	---	21800	12500	10900	9970	9360	6760	6360
30	6740	22600	10700	15800	---	18900	12500	11000	9910	9350	6870	6080
31	6570	---	10000	14400	---	16400	---	11100	---	9460	6840	---
TOTAL	227510	388320	694400	417970	838300	868600	459000	335480	294430	283530	231930	208420
MEAN	7339	12940	22400	13480	29940	28020	15300	10820	9814	9146	7482	6947
MAX	9150	27500	35400	27700	39700	37300	20800	12100	11700	9660	9590	7400
MIN	6050	6600	10000	8540	11700	15100	12500	9390	8770	8710	6450	6080
AC-FT	451300	770200	1377000	829000	1663000	1723000	910400	665400	584000	562400	460000	413400

e Estimated.

11389500 SACRAMENTO RIVER AT COLUSA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6550	8827	13800	17860	19890	17340	12710	10680	9055	8643	8289	7239
MAX	12040	27000	38000	39720	45500	44450	31490	26680	24590	13890	12320	10850
(WY)	1958	1974	1984	1997	1998	1983	1982	1983	1998	1998	1998	1998
MIN	3219	3860	4141	5193	5147	5852	4966	5015	4852	5073	5081	4322
(WY)	1978	1993	1977	1991	1991	1977	1994	1947	1992	1992	1947	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1946 - 1999	
ANNUAL TOTAL	7871990		5247890			
ANNUAL MEAN	21570		14380		11700	
HIGHEST ANNUAL MEAN					21790	
LOWEST ANNUAL MEAN					5671	
HIGHEST DAILY MEAN	49600	Feb 5	39700	Feb 10	51300	Mar 4 1983
LOWEST DAILY MEAN	6050	Oct 23	6050	Oct 23	2620	Oct 16 1977
ANNUAL SEVEN-DAY MINIMUM	6260	Oct 18	6260	Oct 18	2690	Oct 12 1977
INSTANTANEOUS PEAK FLOW			41300		51800	
INSTANTANEOUS PEAK STAGE			64.88		68.67	
ANNUAL RUNOFF (AC-FT)	15610000		10410000		8478000	
10 PERCENT EXCEEDS	41900		32000		24700	
50 PERCENT EXCEEDS	19000		9940		8350	
90 PERCENT EXCEEDS	8330		6830		5350	

11389500 SACRAMENTO RIVER AT COLUSA, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1959–66, 1973–80, 1996 to current year.

CHEMICAL DATA: Water years 1959–66, 1996 to current year.

SPECIFIC CONDUCTANCE: Water years 1995–98.

WATER TEMPERATURE: Water years 1975, 1977–80, 1995–98.

SEDIMENT: Water years 1973–80, 1996 to current year.

PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Water years 1995–98.

WATER TEMPERATURE: Water years 1995–98.

INSTRUMENTATION.—Water-quality monitor since October 1995.

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) (00301)	ALKA- LILITY WAT.DIS GRAN T. FIELD CACO3 (MG/L) (29802)	
OCT									
21...	1200	6250	143	7.9	14.6	758	10.2	101	64
NOV									
12...	1020	8920	137	8.0	11.3	767	10.6	96	50
DEC									
29...	1130	11000	156	7.9	8.8	763	11.7	101	59
JAN									
20...	1100	15100	121	7.9	10.6	756	10.8	98	41
FEB									
17...	1100	33500	126	7.6	8.8	766	11.3	97	51
MAR									
11...	1040	35100	120	7.8	8.7	761	11.5	99	48
APR									
08...	1030	13200	170	7.9	11.2	765	10.9	99	62
MAY									
06...	1030	11400	137	7.8	15.5	758	--	--	54
JUN									
03...	1040	10800	124	7.5	14.7	760	8.9	88	48
JUL									
20...	1100	9670	117	8.0	17.6	761	10.1	106	45
AUG									
17...	1000	6820	131	8.1	19.4	762	4.6	50	58
SEP									
09...	1130	6920	127	8.1	18.5	756	7.7	83	52

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, DIS- SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
21... N	1200	6250	14.6	41	692	85
NOV						
12... N	1020	8920	11.3	57	1370	77
DEC						
29... N	1130	11000	8.8	50	1480	87
JAN						
20... N	1100	15100	10.6	123	5010	75
FEB						
17... N	1100	33500	8.8	52	4700	90
MAR						
11... N	1040	35100	8.7	54	5120	79
APR						
08... N	1030	13200	11.2	83	2960	70
MAY						
06... N	1030	11400	15.5	50	1540	85
JUN						
03... N	1040	10800	14.7	50	1460	60
JUL						
20... N	1100	9670	17.6	28	731	62
AUG						
17... N	1000	6820	19.4	34	626	76
SEP						
09... N	1130	6920	18.5	37	691	58

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

11389720 BUTTE CREEK BELOW DIVERSION DAM, NEAR STIRLING CITY, CA

LOCATION.—Lat 39°58'53", long 121°35'15", unsurveyed, T.25 N., R.3 E., Butte County, Hydrologic Unit 18020120, on left bank 400 ft downstream from diversion dam, 0.1 mi upstream from Haw Creek, and 6.2 mi northwest of Stirling City.

DRAINAGE AREA.—61.3 mi².

PERIOD OF RECORD.—January to February 1986, June 1986 to current year (low-flow records only).

GAGE.—Water-stage recorder. Elevation of gage is 2,840 ft above sea level, from topographic map.

REMARKS.—No records computed above 40 ft³/s. Flow regulated by diversion dam 400 ft upstream. Most of the water is diverted at diversion dam to Butte Creek Canal and then to De Sabla Powerplant (station 11389750).

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	19	20	---	---	---	---	---	---	---	22	20	21
2	19	20	---	---	---	---	---	---	---	23	20	21
3	20	20	---	40	---	---	---	---	---	23	20	21
4	20	20	---	34	---	---	---	---	---	23	20	21
5	19	20	---	28	---	---	---	---	---	24	20	21
6	19	30	---	25	---	---	---	---	---	24	20	21
7	19	---	---	24	---	---	---	---	---	23	20	21
8	19	---	---	23	---	---	---	---	---	22	20	20
9	19	---	---	22	---	---	---	---	---	20	20	20
10	20	40	---	22	---	---	---	---	---	20	20	20
11	19	40	---	21	---	---	---	---	---	19	21	21
12	19	31	---	21	---	---	---	---	---	19	21	22
13	20	25	---	20	---	---	---	---	---	19	21	22
14	20	25	---	21	---	---	---	---	---	20	21	22
15	20	25	---	---	---	---	---	---	---	20	21	22
16	20	26	---	---	---	---	---	---	---	20	20	22
17	20	---	---	---	---	---	---	---	---	20	20	22
18	20	38	---	---	---	---	---	---	---	20	20	22
19	19	30	---	---	---	---	---	---	---	20	20	22
20	19	27	---	---	---	---	---	---	---	20	20	22
21	19	---	---	---	---	---	---	---	---	20	20	22
22	19	---	---	---	---	---	---	---	---	20	20	22
23	19	---	---	---	---	---	---	---	34	20	20	22
24	34	---	---	---	---	---	---	---	29	20	21	22
25	---	---	---	---	---	---	---	---	27	22	21	22
26	36	---	---	---	---	---	---	---	26	20	20	21
27	29	---	---	---	---	---	---	---	25	20	20	21
28	21	---	---	---	---	---	---	---	24	20	20	21
29	20	---	---	---	---	---	---	---	21	20	20	22
30	20	---	---	---	---	---	---	---	22	20	21	22
31	20	---	---	---	---	---	---	---	---	20	20	---
TOTAL	---	---	---	---	---	---	---	---	---	643	628	643
MEAN	---	---	---	---	---	---	---	---	---	20.7	20.3	21.4
MAX	---	---	---	---	---	---	---	---	---	24	21	22
MIN	---	---	---	---	---	---	---	---	---	19	20	20
AC-FT	---	---	---	---	---	---	---	---	---	1280	1250	1280

11389740 BUTTE CREEK BELOW FORKS OF BUTTE DIVERSION DAM, NEAR DE SABLA, CA

LOCATION.—Lat 39°54'05", long 121°37'24", in NW 1/4 NE 1/4 sec.34, T.24 N., R.3 E., Butte County, Hydrologic Unit 18020120, on left bank 30 ft downstream from diversion dam, 0.2 mi upstream from American Ravine, and 2.0 mi north of De Sabla.

DRAINAGE AREA.—96.4 mi².

PERIOD OF RECORD.—April 1992 to current year (low-flow records only).

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 1,900 ft above sea level, from topographic map.

REMARKS.—No records computed above 60 ft³/s. Flow regulated by Forks of Butte Diversion Dam 30 ft upstream. Water is diverted out of creek to Butte Canal 7.4 mi upstream by Pacific Gas and Electric Co. Water is diverted 30 ft upstream to Forks of Butte Powerplant (station 11389747).

COOPERATION.—Records were collected by Energy Growth Partnership I, 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	44	43	---	48	48	---	---	---	48	53	41	38
2	44	43	---	48	48	---	58	---	48	54	53	38
3	47	42	---	48	48	---	50	---	48	54	41	38
4	45	42	---	48	48	---	48	---	48	53	42	38
5	44	43	---	48	48	---	58	---	48	54	42	e38
6	43	47	---	48	47	---	48	---	48	53	43	e38
7	43	48	53	48	---	---	48	---	48	52	43	37
8	42	48	48	48	---	---	---	---	48	51	43	37
9	42	48	48	60	---	---	---	---	48	48	43	37
10	43	48	48	---	---	---	---	---	48	47	44	37
11	43	48	48	---	---	---	---	---	48	46	44	37
12	43	49	48	---	---	---	---	---	48	46	43	38
13	42	50	48	60	---	---	---	---	48	46	40	38
14	43	49	48	59	---	---	---	---	48	45	40	37
15	42	48	48	50	---	---	---	---	48	45	40	37
16	42	51	48	48	---	---	---	---	48	45	39	37
17	42	49	48	53	---	---	---	---	48	45	39	37
18	42	48	48	---	---	---	---	---	48	44	39	37
19	41	59	48	---	---	---	---	---	48	44	39	37
20	41	53	48	---	---	---	---	---	48	44	39	37
21	41	51	49	---	---	---	---	51	48	44	38	37
22	41	50	48	---	---	---	---	48	48	44	38	37
23	41	---	48	---	---	---	---	48	48	44	50	37
24	47	---	48	---	---	---	---	48	54	44	38	37
25	48	48	48	---	---	---	---	50	52	44	38	37
26	58	48	48	---	---	---	---	49	---	43	38	37
27	56	48	48	---	---	---	---	48	60	43	39	36
28	45	48	48	---	---	---	---	48	58	43	38	36
29	43	57	48	49	---	---	---	48	55	42	38	36
30	42	---	48	48	---	---	---	48	54	42	38	36
31	42	---	48	48	---	---	---	48	---	42	38	---
TOTAL	1362	---	---	---	---	---	---	---	---	1444	1268	1114
MEAN	43.9	---	---	---	---	---	---	---	---	46.6	40.9	37.1
MAX	58	---	---	---	---	---	---	---	---	54	53	38
MIN	41	---	---	---	---	---	---	---	---	42	38	36
AC-FT	2700	---	---	---	---	---	---	---	---	2860	2520	2210
a	87	3810	8810	7690	13030	15370	14750	14120	3530	0	0	0

e Estimated.

a Diversion, in acre-feet, to Forks of Butte Powerplant, provided by Energy Growth Partnership I.

11389780 BUTTE CREEK BELOW CENTERVILLE DIVERSION DAM, NEAR PARADISE, CA

LOCATION.—Lat 39°52'01", long 121°37'58", in SW 1/4 NW 1/4 sec.10, T.23 N., R.3 E., Butte County, Hydrologic Unit 18020120, on left bank 400 ft downstream from Centerville Diversion Dam, 0.2 mi downstream from De Sabla Powerplant, and 6.8 mi north of Paradise.

DRAINAGE AREA.—101 mi².

PERIOD OF RECORD.—November 1985 to February 1986, June 1986 to current year (low-flow records only).

GAGE.—Water-stage recorder. Elevation of gage is 1,130 ft above sea level, from topographic map.

REMARKS.—No records computed above 60 ft³/s. Flow regulated by several reservoirs and diversions upstream. Most of the water is diverted at Centerville Diversion Dam to the Centerville Powerplant (station 11389775).

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	46	---	---	---	---	---	---	---	---	56	47	45
2	46	---	---	---	---	---	---	---	---	56	47	45
3	47	---	---	---	---	---	---	---	---	56	51	45
4	46	---	---	---	---	---	---	---	---	56	51	45
5	46	---	---	---	---	---	---	---	---	56	50	45
6	46	---	---	---	---	---	---	---	---	56	50	45
7	46	---	---	---	---	---	---	---	---	51	51	45
8	46	---	---	---	---	---	---	---	---	48	50	45
9	46	---	---	---	---	---	---	---	---	48	50	45
10	46	---	---	---	---	---	---	---	---	48	51	45
11	46	---	---	---	---	---	---	---	---	46	52	45
12	46	---	---	---	---	---	---	---	---	48	52	45
13	46	---	---	---	---	---	---	---	---	52	51	45
14	46	---	---	---	---	---	---	---	---	46	51	45
15	46	---	---	---	---	---	---	---	---	46	51	45
16	46	---	---	---	---	---	---	---	---	46	51	45
17	46	---	---	---	---	---	---	---	---	46	---	45
18	46	---	---	---	---	---	---	---	---	46	---	45
19	46	---	---	---	---	---	---	---	---	46	49	45
20	46	---	---	---	---	---	---	---	---	45	45	49
21	46	---	---	---	---	---	---	---	---	46	45	45
22	46	---	---	---	---	---	---	---	---	47	45	45
23	---	---	---	---	---	---	---	---	---	47	45	45
24	---	---	---	---	---	---	---	---	---	47	45	45
25	---	---	---	---	---	---	---	---	---	47	45	45
26	---	---	---	---	---	---	---	---	---	47	45	45
27	---	---	---	---	---	---	---	---	---	47	45	45
28	---	---	---	---	---	---	---	---	---	47	45	45
29	---	---	---	---	---	---	---	---	---	58	47	45
30	---	---	---	---	---	---	---	---	---	57	47	45
31	---	---	---	---	---	---	---	---	---	47	45	---
TOTAL	---	---	---	---	---	---	---	---	---	1514	---	1354
MEAN	---	---	---	---	---	---	---	---	---	48.8	---	45.1
MAX	---	---	---	---	---	---	---	---	---	56	---	49
MIN	---	---	---	---	---	---	---	---	---	45	---	45
AC-FT	---	---	---	---	---	---	---	---	---	3000	---	2690
a	6260	1860	7890	6130	4370	4610	6750	7820	8230	6800	6250	5290

CAL YR 1998 a 83300
WTR YR 1999 a 72270

a Diversion, in acre-feet, to Centerville Powerplant, provided by Pacific Gas & Electric Co.

11389800 TOADTOWN CANAL ABOVE BUTTE CANAL, NEAR STIRLING CITY, CA

LOCATION.—Lat 39°53'09", long 121°36'35", in NE 1/4 NW 1/4 sec.2, T.23 N., R.3 E., Butte County, Hydrologic Unit 18020120, on right bank 600 ft upstream from Butte Canal and 4.6 mi west of Stirling City.

PERIOD OF RECORD.—October 1986 to current year. Monthly discharges for water years 1931–86 are published as a line item to Butte Creek near Chico (station 11390000).

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 2,790 ft above sea level, from topographic map.

REMARKS.—Canal diverts from right bank of West Branch Feather River, in sec.16, T.24 N., R.4 E. at Hendricks Diversion Dam to Hendricks Canal, flows through tunnel down Long Ravine to Toadtown Canal, and discharges into Butte Canal. Butte Canal flows to De Sabla Powerplant (station 11389750) on Butte Creek.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 127 ft³/s, Feb. 12, May 20, 1995, 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	86	43	68	92	89	90	96	102	112	79	66	66
2	86	42	90	90	95	93	102	102	112	77	65	66
3	92	42	104	88	95	97	102	45	111	75	62	67
4	88	42	101	86	95	102	96	2.0	110	73	59	66
5	86	43	98	84	85	108	90	2.3	109	71	58	66
6	85	44	72	83	70	107	89	6.0	109	69	58	65
7	86	68	77	82	75	107	99	4.5	110	68	59	66
8	86	66	88	80	74	103	78	4.4	111	67	58	69
9	83	52	94	78	76	97	75	4.4	114	65	58	69
10	83	50	99	78	80	96	72	4.3	115	64	61	69
11	82	50	99	77	78	103	72	4.2	112	63	71	68
12	81	48	93	76	87	109	91	4.1	114	62	67	67
13	81	47	90	75	90	103	116	4.0	113	89	66	67
14	78	46	100	75	90	97	115	4.3	113	89	65	66
15	76	46	109	87	90	106	115	4.4	113	87	65	66
16	71	48	109	85	85	113	115	4.3	113	62	65	68
17	62	71	109	87	84	109	115	4.2	113	60	64	67
18	61	58	110	87	81	105	114	4.6	114	60	64	67
19	59	50	99	81	77	105	115	58	114	59	63	67
20	57	48	87	73	80	100	115	118	114	59	67	46
21	61	53	83	70	72	96	115	112	113	60	67	34
22	60	80	70	72	83	96	109	112	107	60	67	33
23	48	97	70	84	97	96	104	111	101	59	69	33
24	57	74	66	73	98	97	103	111	99	59	67	33
25	59	88	67	84	100	105	103	111	98	58	68	33
26	46	90	67	99	96	109	103	112	96	58	68	33
27	43	93	67	97	95	107	108	112	93	70	68	32
28	43	91	79	97	97	108	108	112	88	69	67	32
29	43	92	96	98	---	109	102	112	85	69	66	32
30	42	77	95	92	---	103	102	112	81	68	66	32
31	41	---	95	85	---	96	---	112	---	67	66	---
TOTAL	2112	1839	2751	2595	2414	3172	3039	1716.0	3207	2095	2000	1645
MEAN	68.1	61.3	88.7	83.7	86.2	102	101	55.4	107	67.6	64.5	54.8
MAX	92	97	110	99	100	113	116	118	115	89	71	69
MIN	41	42	66	70	70	90	72	2.0	81	58	58	32
AC-FT	4190	3650	5460	5150	4790	6290	6030	3400	6360	4160	3970	3260
a	7540	7070	7660	8480	7350	9160	9170	4800	10010	7690	6900	5730

a Discharge, in acre-feet, at De Sabla Powerplant provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

11389800 TOADTOWN CANAL ABOVE BUTTE CANAL, NEAR STIRLING CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	33.6	38.0	54.8	63.9	75.4	96.4	101	94.4	80.5	67.1	50.6	30.9
MAX	68.1	61.3	91.8	95.8	118	117	119	118	119	114	99.7	73.7
(WY)	1999	1999	1997	1996	1995	1993	1992	1993	1995	1995	1995	1998
MIN	7.72	17.1	18.9	15.0	12.5	4.68	2.51	.95	39.2	41.3	12.0	2.24
(WY)	1989	1992	1991	1997	1997	1997	1997	1997	1987	1996	1991	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	30467.7		28585.0			
ANNUAL MEAN	83.5		78.3		65.5	
HIGHEST ANNUAL MEAN					83.8	
LOWEST ANNUAL MEAN					36.2	
HIGHEST DAILY MEAN	118	Jun 5	118	May 20	127	Feb 12 1995
LOWEST DAILY MEAN	1.9	Apr 19	2.0	May 4	.00	Sep 9 1987
ANNUAL SEVEN-DAY MINIMUM	2.6	Apr 14	4.0	May 4	.00	Sep 9 1987
ANNUAL RUNOFF (AC-FT)	60430		56700		47450	
ANNUAL DISCHARGE (AC-FT) a	94750		91550			
10 PERCENT EXCEEDS	112		111		115	
50 PERCENT EXCEEDS	91		81		64	
90 PERCENT EXCEEDS	46		45		12	

a Discharge, in acre-feet, at De Sabla Powerplant provided by Pacific Gas & Electric Co.

11390000 BUTTE CREEK NEAR CHICO, CA

LOCATION.—Lat 39°43'34", long 121°42'28", in NW 1/4 NW 1/4 sec.36, T.22 N., R.2 E., Butte County, Hydrologic Unit 18020105, on right bank 0.7 mi downstream from Little Butte Creek and 7.5 mi east of Chico.

DRAINAGE AREA.—147 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1930 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1445: 1953(M). WSP 1931: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 320 ft above sea level, from topographic map. Prior to Aug. 13, 1944, water-stage recorder at site 0.4 mi upstream at different datum. Aug. 13, 1944, to June 5, 1986, at datum 3.00 ft higher.

REMARKS.—Records excellent. Flow slightly regulated by storage in Magalia Reservoir, usable capacity, 2,640 acre-ft, and since 1957 by Paradise Reservoir, usable capacity, 11,500 acre-ft. Diversions upstream from station for irrigation and domestic use of about 7,000 acre-ft annually. Butte Creek receives water above station from West Branch Feather River by way of Toadtown Canal (11389800).

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 35,600 ft³/s, Jan. 1, 1997, gage height, 15.06 ft, in gage well, 15.7 ft from floodmarks, on basis of slope-area measurement of peak flow; maximum gage height, 17.52 ft, Feb. 17, 1986, present datum; minimum discharge, 10 ft³/s, Nov. 29, 1952.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,700 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1000	2,860	3.89	Feb. 9	0800	8,270	6.96
Jan. 23	0445	2,720	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	204	172	e1600	271	460	2080	592	586	458	229	188	167
2	205	169	e995	264	441	1650	573	596	465	218	196	168
3	224	165	1700	264	426	2060	553	551	443	206	205	168
4	213	166	1080	257	413	1650	528	455	445	207	191	167
5	205	170	711	255	390	1390	560	420	416	219	190	164
6	200	170	560	255	639	1220	539	407	394	230	203	164
7	199	324	464	254	2030	1080	535	425	372	224	193	163
8	202	277	428	246	1620	1020	702	439	373	209	170	168
9	199	208	397	237	4960	1050	666	437	357	206	168	167
10	200	195	374	240	2430	917	619	437	365	200	174	169
11	198	212	356	237	1640	845	688	434	353	195	196	166
12	193	191	344	237	1320	795	711	453	357	194	186	164
13	192	176	341	232	1110	751	750	427	337	223	181	164
14	191	172	376	226	995	737	757	417	325	228	177	163
15	188	168	354	242	872	711	728	385	316	226	176	161
16	185	172	347	294	1010	699	713	380	308	199	173	164
17	170	262	334	364	1740	669	703	375	302	187	168	164
18	164	231	326	819	1550	637	709	386	310	179	174	163
19	160	193	321	764	1520	602	702	409	302	173	168	166
20	154	182	299	1180	1410	619	710	495	303	175	171	147
21	160	197	290	1020	1720	613	713	477	302	182	172	124
22	159	385	294	780	1350	595	689	466	289	180	171	124
23	148	e1220	282	2070	1170	584	644	483	276	179	174	121
24	189	e870	277	1250	1050	638	628	474	262	174	172	121
25	236	404	269	886	1520	977	645	507	256	180	169	119
26	185	338	265	785	1230	846	703	499	262	174	169	120
27	181	465	260	661	1080	763	709	504	266	179	170	121
28	171	395	264	582	1720	683	640	489	255	186	170	118
29	171	461	282	527	---	648	595	468	236	186	166	117
30	164	e2300	267	490	---	636	579	450	233	186	166	117
31	159	---	277	495	---	614	---	453	---	189	168	---
TOTAL	5769	11010	14734	16684	37816	28779	19583	14184	9938	6122	5515	4489
MEAN	186	367	475	538	1351	928	653	458	331	197	178	150
MAX	236	2300	1700	2070	4960	2080	757	596	465	230	205	169
MIN	148	165	260	226	390	584	528	375	233	173	166	117
AC-FT	11440	21840	29220	33090	75010	57080	38840	28130	19710	12140	10940	8900

e Estimated.

SACRAMENTO RIVER BASIN

11390000 BUTTE CREEK NEAR CHICO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	138	227	461	699	817	767	681	506	288	166	133	119
MAX	775	1269	2061	2847	2925	2601	1848	1314	773	356	223	183
(WY)	1963	1974	1956	1997	1986	1995	1982	1995	1998	1998	1975	1998
MIN	65.8	77.8	89.5	91.0	114	123	114	134	79.4	54.4	46.1	51.9
(WY)	1992	1992	1991	1991	1977	1977	1977	1977	1977	1977	1931	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1931 - 1999	
ANNUAL TOTAL	275606		174623			
ANNUAL MEAN	755		478		415	
HIGHEST ANNUAL MEAN					834	
LOWEST ANNUAL MEAN					94.0	
HIGHEST DAILY MEAN	7040	Feb 3	4960	Feb 9	26600	Jan 1 1997
LOWEST DAILY MEAN	148	Oct 23	117	Sep 29	44	Aug 23 1931
ANNUAL SEVEN-DAY MINIMUM	159	Oct 17	119	Sep 24	44	Aug 23 1931
INSTANTANEOUS PEAK FLOW			8270		35600	
INSTANTANEOUS PEAK STAGE			6.96		17.52	
ANNUAL RUNOFF (AC-FT)	546700		346400		300500	
10 PERCENT EXCEEDS	1650		1020		861	
50 PERCENT EXCEEDS	505		302		209	
90 PERCENT EXCEEDS	177		167		101	

11390000 BUTTE CREEK NEAR CHICO, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1953–79, October 1998 to September 1999.

CHEMICAL DATA: Water years 1953–79.

WATER TEMPERATURE: Water years 1962–79, October 1998 to September 1999.

PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: November 1961 to January 1979, October 1998 to September 1999.

INSTRUMENTATION.—Temperature recorder since October 1998.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 26.0°C, July 21, 22, 1966, and on several days in 1977; minimum recorded, 0.5°C, Dec. 8, 31, 1978, Jan. 1, 1979.

EXTREME FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 24.5°C, July 12, 13; minimum recorded, 1.0°C, Dec. 22–24.

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

11390000 BUTTE CREEK NEAR CHICO, 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	9.0	5.5	14.5	10.5	16.5	14.0	23.5	19.0	22.0	17.0	18.5	14.5
2	9.5	5.5	12.0	9.5	15.0	12.5	23.0	19.0	22.5	17.5	19.0	14.0
3	8.5	6.5	12.0	9.0	12.5	11.0	21.5	18.5	23.0	17.5	19.0	14.0
4	9.5	5.5	13.0	8.5	14.0	10.0	21.0	17.0	23.0	18.0	19.0	14.0
5	7.5	6.0	14.0	9.0	15.5	11.5	21.5	16.5	21.5	18.0	19.5	14.5
6	9.0	5.5	15.5	11.0	17.0	13.0	21.5	16.0	20.5	18.0	20.0	15.0
7	9.0	6.0	15.0	11.0	16.0	13.0	21.5	16.5	21.0	16.5	20.0	15.0
8	8.0	6.0	14.0	9.5	16.0	12.0	22.0	16.5	21.0	16.5	20.5	15.5
9	9.0	5.0	13.5	9.5	15.0	12.0	22.5	17.0	20.5	17.0	19.0	16.5
10	7.0	6.0	13.0	9.5	16.0	12.0	23.0	17.5	19.0	17.0	20.5	16.0
11	10.5	6.5	15.0	10.0	17.0	12.5	23.5	18.5	21.5	17.0	20.0	16.0
12	12.0	7.5	16.0	12.0	17.5	13.5	24.5	19.5	22.0	16.5	21.0	16.0
13	12.5	8.5	14.5	11.0	18.5	14.5	24.5	20.5	21.5	16.5	20.5	16.5
14	13.0	9.0	14.0	10.0	18.5	15.0	24.0	20.0	21.5	16.0	21.0	16.0
15	13.0	9.5	14.0	9.5	18.5	15.5	23.5	19.5	21.0	15.5	20.5	16.0
16	13.5	10.0	14.0	9.5	19.0	15.5	23.0	18.5	21.5	15.5	20.0	16.0
17	14.5	11.0	14.5	10.5	19.0	15.5	22.5	18.0	22.0	16.0	20.0	15.5
18	14.0	11.0	16.5	11.5	19.5	16.0	22.0	17.0	21.5	16.5	19.0	15.5
19	14.0	11.0	16.0	11.5	20.0	16.0	21.5	17.0	21.5	15.5	20.0	16.0
20	14.0	11.0	15.5	12.0	19.5	16.0	21.5	16.5	21.5	15.5	20.0	15.5
21	13.0	10.0	16.5	11.5	20.5	16.5	21.5	16.5	22.0	16.0	21.0	16.5
22	13.0	9.5	17.5	12.5	21.0	17.0	21.5	16.5	22.5	17.0	21.0	16.5
23	13.0	9.0	18.0	13.0	22.0	17.5	21.5	16.5	23.5	18.5	21.0	17.0
24	14.0	10.0	18.0	13.5	21.5	18.0	21.5	16.5	23.0	18.5	21.0	17.0
25	14.0	10.5	18.0	14.0	21.5	18.0	21.5	16.5	22.0	18.0	21.0	16.5
26	14.5	11.0	19.0	14.5	20.5	17.0	22.5	17.0	20.5	17.5	20.0	15.5
27	13.0	9.5	19.0	15.0	20.5	16.5	21.5	17.0	22.5	18.0	19.0	15.0
28	10.0	8.0	18.5	14.5	21.5	16.5	22.0	17.5	23.0	18.0	18.0	14.5
29	12.0	7.5	17.5	14.0	22.0	17.5	22.0	17.0	23.0	18.0	19.0	14.5
30	13.5	9.0	17.5	13.5	23.0	18.5	22.0	17.0	21.0	17.5	19.0	14.5
31	---	---	18.0	13.5	---	---	22.0	17.0	20.0	15.5	---	---
MONTH	14.5	5.0	19.0	8.5	23.0	10.0	24.5	16.0	23.5	15.5	21.0	14.0

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CA

LOCATION.—Lat 39°00'36", long 121°49'25", in NW 1/4 NE 1/4 sec.2, T.13 N., R.1 E., Colusa County, Hydrologic Unit 18020104, on right bank 1,200 ft downstream from Wilkins Slough, 5.8 mi southeast of Grimes, and at mile 62.9 upstream from Sacramento.

DRAINAGE AREA.—12,926 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—August 1931 to current year (prior to October 1938, low-water periods only). Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1965, published as "below Wilkins Slough."

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 3.00 ft below sea level.

REMARKS.—Records good. Natural flow of stream affected by storage reservoirs, power development, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas. When discharge exceeds about 23,000 ft³/s, flow begins over Tisdale Weir, 1.0 mi upstream on left bank, into Sutter Bypass. Records tabulated below do not include flow over Tisdale Weir. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge (water years 1939–99), 32,700 ft³/s, Feb. 20, 1986, gage height, 52.50 ft; maximum gage height, 52.75 ft, Mar. 1, 1940; minimum daily, 645 ft³/s, Aug. 9, 1939.

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	9150	6620	25600	9680	14200	26600	15400	10800	9660	8130	e8080	6210
2	9050	6680	26700	9490	13600	27100	14600	10600	9350	7660	e8100	6500
3	8840	6600	25100	9320	13000	27100	13800	10700	9630	7480	e8000	6620
4	8650	6620	25900	9210	12500	26900	13200	10900	10300	7310	7960	6630
5	8530	6690	26100	9050	11900	26900	12700	10600	10800	7270	7960	6500
6	8450	6610	25600	8960	14300	26700	12500	10100	10800	7340	7610	6770
7	8390	6540	25900	8920	18500	26600	13000	9700	10200	7410	7340	6950
8	8310	7420	25800	8860	26100	26500	13100	9940	9750	7330	7030	6910
9	8250	8220	25700	8790	26800	26400	12800	9920	9270	7330	6840	6780
10	8060	8270	25400	8690	27800	26600	13300	9560	8800	7260	6840	7100
11	7950	7940	24500	8640	28200	26600	13900	9240	8510	7240	6830	7310
12	7830	8340	24000	8660	26600	26400	17100	8950	8080	7400	6600	7270
13	7580	8550	23800	8650	26100	26100	19900	8980	7760	7420	6490	7010
14	7340	8690	23700	8630	25900	25700	18600	9090	7610	7480	6370	7010
15	7060	9320	24100	8640	25400	24900	18200	8750	7360	7720	6260	7040
16	6900	9680	22800	8780	25400	24200	17900	8280	7540	7540	6250	7120
17	6680	9850	20800	9020	26300	23300	17800	8180	7570	7690	5960	7400
18	6540	10500	19500	9550	27700	22500	17900	8020	7500	7820	5630	7440
19	6450	13500	18900	12700	27700	21700	17700	7910	7470	8010	5460	7340
20	6380	14400	18200	14900	27500	20000	17000	7930	7710	8120	5400	7140
21	6300	14500	16900	15100	27100	18500	16800	8000	7710	8180	5370	7080
22	6230	14600	15400	17900	27900	17500	15900	8350	7850	8120	5370	7060
23	6100	17100	13900	20500	27500	16200	14700	8770	7820	7810	5380	7060
24	6150	19300	12700	23600	26700	15100	13500	9280	7790	7670	5460	6870
25	6500	23700	11700	24400	26200	16100	12600	9440	8130	7700	5510	6870
26	7150	21700	11200	23400	26400	24600	12100	9020	8080	7890	5590	6910
27	7080	19500	11000	22400	26500	24800	11800	8850	8040	7880	5720	6830
28	6990	22400	10800	20800	26600	23300	11800	9060	8070	7810	5850	6660
29	6840	21900	10700	18700	---	21500	11500	9400	8250	7890	5890	6500
30	6780	20500	10600	16800	---	19100	11300	9720	8240	7960	6010	6260
31	6670	---	10100	15400	---	16700	---	9920	---	7930	6150	---
TOTAL	229180	366240	613100	408140	660400	722200	442400	287960	255650	237800	199310	207150
MEAN	7393	12210	19780	13170	23590	23300	14750	9289	8522	7671	6429	6905
MAX	9150	23700	26700	24400	28200	27100	19900	10900	10800	8180	8100	7440
MIN	6100	6540	10100	8630	11900	15100	11300	7910	7360	7240	5370	6210
AC-FT	454600	726400	1216000	809500	1310000	1432000	877500	571200	507100	471700	395300	410900

e Estimated.

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6563	8548	12450	15090	16850	15460	11550	9448	7889	7395	7300	7238
MAX	11800	20510	27430	27310	29090	29490	24920	23110	20670	12500	10940	10620
(WY)	1958	1974	1984	1997	1998	1983	1982	1983	1998	1998	1998	1967
MIN	3330	3839	4103	5281	5012	5152	4201	3397	3451	3784	4086	4065
(WY)	1978	1993	1977	1991	1991	1977	1994	1992	1992	1992	1947	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1946 - 1999	
ANNUAL TOTAL	6359130		4629530			
ANNUAL MEAN	17420		12680		10450	
HIGHEST ANNUAL MEAN					17980	
LOWEST ANNUAL MEAN					5109	
HIGHEST DAILY MEAN	31000		Feb 9		28200	
LOWEST DAILY MEAN	6100		Oct 23		5370	
ANNUAL SEVEN-DAY MINIMUM	6300		Oct 19		5420	
INSTANTANEOUS PEAK FLOW					28700	
INSTANTANEOUS PEAK STAGE					49.35	
ANNUAL RUNOFF (AC-FT)	12610000		9183000		7572000	
10 PERCENT EXCEEDS	28100		25800		22200	
50 PERCENT EXCEEDS	17700		9050		8010	
90 PERCENT EXCEEDS	8260		6620		5030	

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—October 1966 to current year.

PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: October 1966 to current year.

INSTRUMENTATION.—Water-temperature recorder since October 1966.

REMARKS.—Interruption in record due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 25.5°C, Sept. 6–8, 1977, June 3–5, 1992; minimum recorded, 3.5°C, Dec. 23–25, 1990.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 21.0°C, many days during June, July, and August; minimum recorded, 7.5°C, Dec. 24, 25.

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	---	---	13.0	13.0	12.5	12.5	10.0	10.0	9.5	8.5	10.5	9.5
2	---	---	13.0	12.5	12.5	12.5	10.5	10.0	9.5	9.0	10.5	10.0
3	---	---	13.0	12.5	13.0	12.5	10.0	10.0	9.5	9.0	10.5	10.0
4	---	---	13.5	12.5	13.0	12.5	10.0	10.0	9.5	9.0	10.5	10.0
5	---	---	13.5	13.0	12.5	11.0	10.0	9.5	9.5	9.0	10.0	9.5
6	---	---	13.0	13.0	11.0	10.5	9.5	9.0	9.5	9.0	9.5	9.0
7	---	---	13.0	12.5	11.0	10.5	9.0	8.5	9.5	9.0	9.5	9.0
8	---	---	12.5	12.0	11.5	11.0	9.0	8.5	9.5	9.0	9.0	9.0
9	---	---	12.0	11.5	11.5	11.0	9.0	8.5	10.0	9.0	9.0	8.5
10	---	---	12.0	12.0	11.5	11.5	8.5	8.5	10.0	9.0	9.0	9.0
11	---	---	12.0	11.5	12.0	11.5	8.5	8.5	9.0	8.5	9.0	8.5
12	---	---	12.0	11.5	12.0	12.0	9.0	8.5	8.5	8.0	9.5	9.0
13	---	---	12.5	12.0	12.5	12.0	9.5	9.0	8.5	8.0	10.0	9.5
14	---	---	12.5	12.0	12.5	12.5	9.5	9.0	9.0	8.5	10.0	10.0
15	---	---	13.0	12.0	12.5	12.0	10.0	9.5	9.0	9.0	10.5	10.0
16	---	---	13.0	12.5	12.5	12.0	10.5	10.0	9.5	9.0	10.5	10.0
17	---	---	13.0	12.5	12.5	12.5	11.0	10.5	9.5	9.0	11.0	10.5
18	---	---	13.5	12.5	12.5	12.5	12.0	11.0	9.5	9.0	11.5	11.0
19	---	---	13.0	13.0	12.5	12.0	12.0	11.5	10.0	9.0	11.5	11.0
20	---	---	13.0	12.5	12.0	10.5	12.0	11.5	9.5	9.0	11.5	11.0
21	---	---	13.0	12.5	10.5	8.5	11.5	11.5	9.0	8.5	11.5	11.0
22	---	---	13.0	13.0	8.5	8.0	11.5	10.5	9.0	8.5	12.0	11.5
23	---	---	13.5	13.0	8.0	8.0	10.5	10.0	9.5	9.0	11.5	11.0
24	---	---	13.5	13.0	8.0	7.5	10.5	10.0	10.0	9.5	11.0	10.5
25	---	---	13.0	12.5	8.0	7.5	10.0	9.0	10.0	10.0	11.5	10.5
26	---	---	12.5	12.5	8.5	8.0	9.0	8.5	10.0	9.5	11.5	11.0
27	---	---	13.0	12.5	9.0	8.5	8.5	8.5	9.5	9.5	12.5	11.5
28	14.0	14.0	13.0	13.0	10.0	9.0	9.0	8.5	9.5	9.5	12.5	12.0
29	14.5	14.0	13.0	12.5	10.0	10.0	9.0	9.0	---	---	12.0	11.5
30	14.0	13.5	12.5	12.5	10.0	10.0	9.0	8.5	---	---	12.0	11.0
31	13.5	13.0	---	---	10.5	10.0	9.0	8.5	---	---	11.5	11.0
MONTH	---	---	13.5	11.5	13.0	7.5	12.0	8.5	10.0	8.0	12.5	8.5

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, 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	11.5	10.5	16.0	14.0	19.0	18.0	21.0	19.5	19.5	18.5	19.0	18.5
2	11.5	10.5	16.0	15.0	18.0	17.0	21.0	20.0	19.5	18.5	18.5	18.0
3	12.0	11.0	16.0	15.0	17.0	15.5	21.0	19.5	20.0	19.0	18.0	17.5
4	11.5	11.0	15.5	14.5	15.5	15.0	20.5	19.0	20.5	18.0	18.0	17.5
5	11.5	11.0	15.5	14.5	16.5	15.0	20.0	19.0	20.5	19.5	18.5	18.0
6	11.5	10.5	16.5	15.0	17.5	16.0	20.0	19.0	20.0	18.5	18.5	18.0
7	11.5	9.5	17.0	15.5	18.5	17.0	20.0	19.0	19.5	18.5	19.0	18.5
8	12.0	11.0	17.0	16.0	19.0	17.5	20.0	19.0	19.0	18.0	19.0	18.5
9	12.0	11.0	16.0	15.0	19.0	17.5	20.5	19.5	19.0	18.5	19.0	19.0
10	12.0	11.0	15.5	14.5	19.0	18.0	20.5	19.5	19.0	18.5	19.0	19.0
11	11.5	10.5	16.5	14.5	19.5	18.0	21.0	19.5	18.5	18.0	19.0	19.0
12	12.0	11.0	17.5	15.5	19.5	18.5	21.0	20.0	19.0	18.0	19.0	19.0
13	13.0	11.5	18.0	16.0	20.0	19.0	21.0	20.0	19.5	19.0	19.0	19.0
14	14.5	13.0	17.0	16.0	20.5	19.5	21.0	20.0	20.0	19.5	19.5	19.0
15	15.0	14.0	16.5	15.0	20.5	19.5	21.0	20.0	20.0	19.5	19.5	19.0
16	15.0	14.5	16.5	14.5	21.0	19.5	20.5	19.5	20.0	20.0	19.5	19.0
17	15.5	14.5	17.0	15.5	21.0	20.0	20.5	19.0	20.5	18.5	19.0	18.5
18	16.0	15.0	17.5	16.5	21.0	19.0	20.0	19.0	20.5	20.0	19.0	18.0
19	16.0	15.5	18.0	17.0	20.5	19.5	20.0	18.5	20.0	19.5	18.5	18.0
20	16.5	15.5	18.0	17.5	20.5	19.5	19.5	18.5	20.0	20.0	18.5	18.0
21	16.0	15.5	18.5	17.5	20.5	19.5	19.0	18.0	20.0	19.5	18.5	18.0
22	16.0	15.0	19.0	18.0	20.5	19.5	19.5	18.0	20.5	20.0	19.0	18.5
23	15.0	14.5	19.0	18.0	21.0	19.5	19.5	18.5	20.5	20.0	19.0	19.0
24	15.5	14.5	19.5	18.0	21.0	20.0	19.5	18.0	21.0	20.5	19.0	19.0
25	16.0	15.0	19.5	18.0	21.0	19.0	19.5	18.5	21.0	20.0	19.5	19.0
26	16.0	15.5	20.5	18.5	21.0	19.5	19.5	18.5	21.0	20.5	19.5	18.5
27	16.5	15.5	20.5	19.0	20.5	19.5	19.5	18.5	20.5	20.0	19.0	17.5
28	16.0	15.0	20.5	19.0	20.5	19.0	19.5	18.5	20.0	19.5	17.5	16.5
29	15.0	14.0	20.0	19.0	21.0	19.0	19.5	18.5	20.0	20.0	17.0	16.0
30	15.0	13.5	19.5	18.5	21.0	19.5	19.5	18.5	20.0	19.0	17.0	16.5
31	---	---	19.5	18.0	---	---	19.5	18.5	19.5	19.0	---	---
MONTH	16.5	9.5	20.5	14.0	21.0	15.0	21.0	18.0	21.0	18.0	19.5	16.0

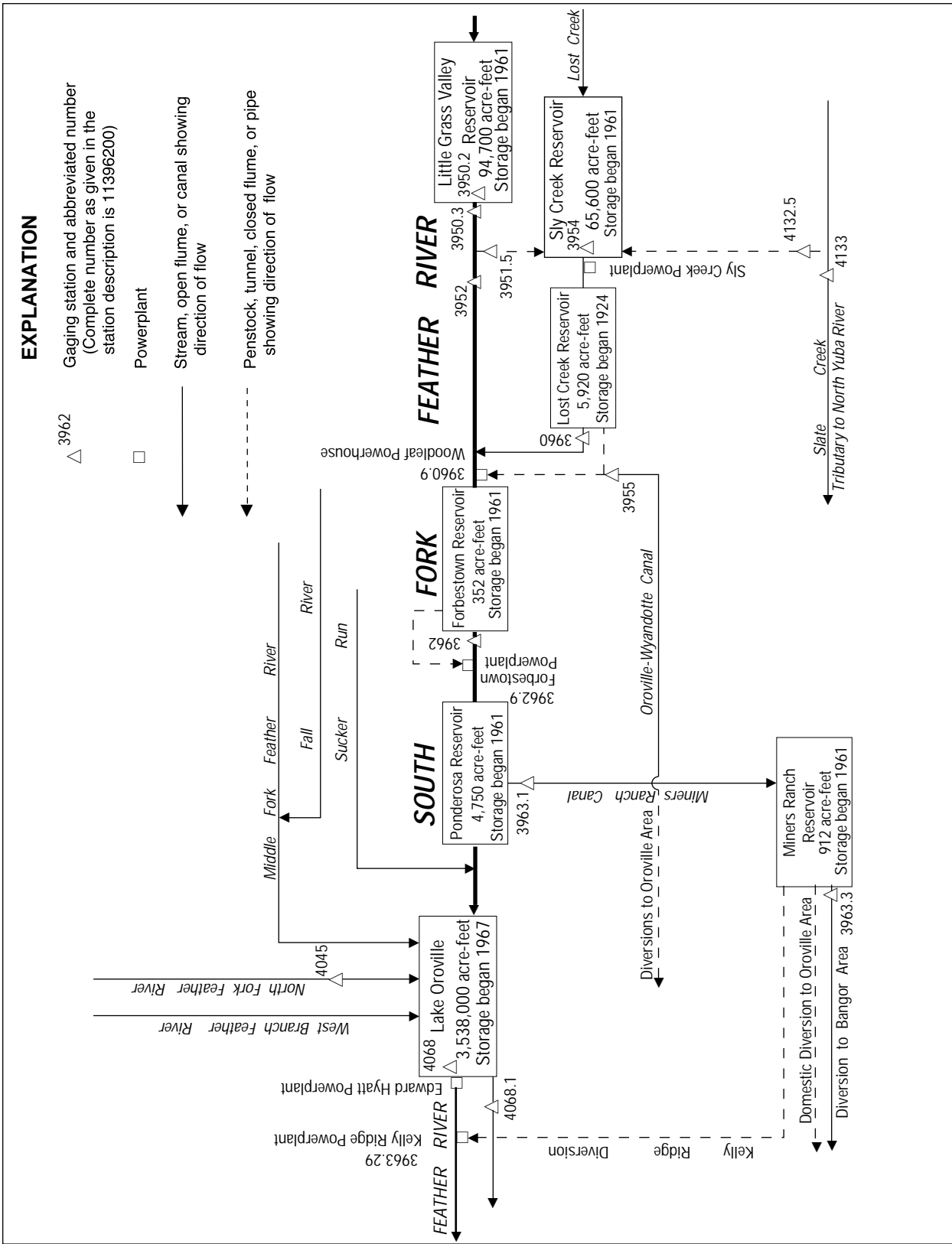


Figure 28. Diversions and storage in South Fork Feather River Basin.

11395020 LITTLE GRASS VALLEY RESERVOIR NEAR LA PORTE, CA

LOCATION.—Lat 39°43'25", long 121°01'10", in SE 1/4 NW 1/4 sec.31, T.22 N., R.9 E., Plumas County, Hydrologic Unit 18020123, Plumas National Forest, on right bank 300 ft upstream from dam on South Fork Feather River, and 3.3 mi northwest of La Porte.

DRAINAGE AREA.—25.8 mi².

PERIOD OF RECORD.—October 1961 to current year. Monthend elevation and contents only, October 1961 to October 1962.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Oroville–Wyandotte Irrigation District). Prior to Nov. 1, 1962, in valve chamber in dam at same datum.

REMARKS.—Reservoir is formed by rockfill dam. Storage began in October 1961. Total capacity, 94,700 acre-ft between elevations 4,876 ft, invert of release valve, and 5,047 ft, top of spillway gates, all of which is available for release. Water is released down South Fork Feather River for power development and irrigation. Records represent total contents at 2400 hours. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 98,000 acre-ft, May 1, 1995, and May 17, 1996, elevation, 5,049.0 ft; minimum since reservoir first filled, 30,300 acre-ft, many days during 1977, elevation, 4,994.8 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 84,400 acre-ft, several days in June, elevation, 5,040.6 ft; minimum, 47,600 acre-ft, Nov. 2–6, elevation, 5,012.8 ft.

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

(Based on survey by Pacific Gas & Electric Co. in 1963)

4,990	26,300	5,030	68,900
5,000	34,600	5,040	83,500
5,010	44,400	5,048	96,300
5,020	55,900	5,049	98,000

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	59300	47800	53700	61100	69300	72700	71100	70600	83300	82000	75500	68400
2	58700	47600	54300	61100	69500	73300	70800	71200	83500	81700	75200	68100
3	58400	47600	56100	61200	69600	74000	70300	71800	83600	81400	75000	67800
4	58000	47600	56900	61200	69600	74400	70100	72200	84000	81300	74700	67700
5	57400	47600	57400	61100	69600	74900	69900	72700	84100	81100	74400	67600
6	57100	47600	57800	60800	69800	75000	69600	73000	84100	81000	74100	67300
7	56700	47900	58200	60600	70500	75300	69200	73400	84100	80700	74000	67100
8	56300	47900	58500	60300	71100	75500	69000	73900	84300	80600	73900	66900
9	55900	47900	58700	60000	72500	75500	68600	74300	84300	80400	73600	66700
10	55500	47900	58900	59800	73100	75500	68400	74600	84400	80100	73300	66500
11	55100	47900	59000	59500	73300	75300	68100	75000	84400	80000	73100	66300
12	54700	47900	59100	59300	73300	75300	67800	75300	84400	79800	72800	66000
13	54300	47900	59400	59000	73000	75200	67500	75700	84400	79700	72700	65900
14	53900	47900	59500	58700	72800	75000	67200	76200	84400	79400	72500	65600
15	53600	47900	59700	58700	72700	75000	66900	76500	84400	79200	72200	65400
16	53100	47900	59800	58600	72700	75000	66800	76900	84400	79000	72000	65200
17	52700	48100	59900	58900	72700	74900	66700	77200	84300	78700	71800	65000
18	52200	48100	59900	60000	72700	74400	66700	77600	84100	78500	71500	64700
19	51900	48100	60000	61200	72500	74100	66700	78100	84000	78200	71200	64600
20	51500	48100	60200	62900	72500	73900	66800	78500	83800	78100	71100	64300
21	51100	48300	60300	63800	72400	73600	66900	79000	83800	77800	70800	64200
22	50600	48400	60400	65000	72200	73300	67100	79400	83700	77600	70600	63900
23	50300	49700	60400	66200	72000	73000	67200	79800	83500	77400	70300	63800
24	49900	49900	60600	66800	71700	72800	67600	80400	83200	77200	70200	63600
25	49600	50200	60600	67300	71500	72500	68000	81000	83000	76900	69900	63300
26	49100	50400	60700	67700	71400	72400	68500	81400	82900	76800	69800	63200
27	48800	50700	60800	68000	71400	72100	69000	82000	82800	76500	69500	62900
28	48300	51000	60800	68200	72100	71800	69600	82300	82600	76300	69300	62600
29	48000	51400	60800	68500	---	71700	69900	82600	82500	76000	69000	62500
30	47800	53000	61000	68600	---	71500	70300	82900	82300	75900	68900	62300
31	47800	---	61100	69000	---	71200	---	83200	---	75600	68600	---
MAX	59300	53000	61100	69000	73300	75500	71100	83200	84400	82000	75500	68400
MIN	47800	47600	53700	58600	69300	71200	66700	70600	82300	75600	68600	62300
a	5012.9	5017.5	5024.0	5030.1	5032.2	5031.6	5031.0	5039.8	5039.2	5034.6	5029.8	5024.9
b	-11900	+5200	+8100	+7900	+3100	-900	-900	+12900	-900	-6700	-7000	-6300

CAL YR 1998 b +5600

WTR YR 1999 b +2600

a Elevation, in feet, at end of month.

b change in contents, in acre-feet.

11395030 SOUTH FORK FEATHER RIVER BELOW LITTLE GRASS VALLEY DAM, CA

LOCATION.—Lat 39°43'26", long 121°01'16", in SW 1/4 NW 1/4 sec.31, T.22 N., R.9 E., Plumas County, Hydrologic Unit 18020123, Plumas National Forest, on left bank 0.1 mi downstream from Little Grass Valley Dam and 3.5 mi northwest of La Porte.

DRAINAGE AREA.—25.9 mi².

PERIOD OF RECORD.—October 1927 to September 1933 (published as "near La Porte"), October 1960 to current year.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 4,809.0 ft above sea level. Prior to Oct. 1, 1960, at site 0.4 mi upstream at different datum. Oct. 1, 1960, to Oct. 30, 1962, at present site and datum. Nov. 1, 1962, to May 31, 1966, at site on outlet works at base of Little Grass Valley Dam 0.1 mi upstream at datum 4,850.00 ft above sea level.

REMARKS.—Flow regulated by Little Grass Valley Reservoir (station 11395020) beginning in October 1961. No diversion upstream from station. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,370 ft³/s, Jan. 1, 1997, gage height, 14.80 ft; minimum daily, 0.2 ft³/s, Oct. 28–31, Nov. 2, 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	204	15	20	16	9.9	119	260	112	67	113	112	112
2	204	15	21	16	9.9	116	260	112	66	113	113	112
3	204	15	32	16	9.9	119	259	112	66	113	113	112
4	204	15	20	16	68	116	259	112	66	113	113	112
5	203	15	18	100	113	116	260	112	66	113	113	112
6	203	15	17	165	114	136	259	112	66	113	113	112
7	203	16	17	165	117	158	260	113	66	113	112	112
8	203	16	17	164	116	174	259	113	66	113	113	112
9	203	16	17	165	123	203	259	112	66	113	113	112
10	203	16	17	165	117	190	259	112	66	113	113	112
11	203	16	16	164	194	178	259	113	66	113	113	112
12	203	16	16	165	275	166	259	114	66	113	113	112
13	203	16	17	166	274	155	259	114	66	113	113	112
14	203	16	17	166	273	145	259	84	66	113	113	112
15	204	16	17	166	273	136	259	65	94	113	113	112
16	205	16	17	168	273	127	259	65	113	114	113	112
17	204	16	17	169	277	199	261	65	113	113	113	112
18	203	16	17	177	275	261	261	66	113	113	113	112
19	203	16	17	174	274	261	262	66	113	112	113	112
20	204	16	17	178	274	261	262	66	113	112	113	110
21	203	16	16	83	273	261	262	67	113	112	113	110
22	203	18	16	12	273	261	261	68	113	112	112	110
23	203	25	16	15	273	261	172	68	113	112	112	110
24	203	18	16	12	273	261	109	69	113	112	111	110
25	203	17	16	11	273	261	110	69	113	113	111	110
26	204	16	16	11	203	261	111	69	113	113	112	110
27	202	18	16	10	113	261	111	68	113	113	112	110
28	202	17	16	10	118	260	111	68	113	113	112	110
29	202	17	16	10	---	261	110	67	113	113	112	110
30	95	30	16	9.9	---	261	111	67	113	113	112	110
31	15	---	16	9.9	---	261	---	67	---	113	112	---
TOTAL	6004	506	540	2874.8	5258.7	6206	6662	2687	2714	3498	3489	3338
MEAN	194	16.9	17.4	92.7	188	200	222	86.7	90.5	113	113	111
MAX	205	30	32	178	277	261	262	114	113	114	113	112
MIN	15	15	16	9.9	9.9	116	109	65	66	112	111	110
AC-FT	11910	1000	1070	5700	10430	12310	13210	5330	5380	6940	6920	6620

11395030 SOUTH FORK FEATHER RIVER BELOW LITTLE GRASS VALLEY DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1933, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.56	19.5	47.6	26.3	45.2	134	181	201	78.8	7.70	1.74	1.35
MAX	6.62	94.5	206	51.3	94.7	386	301	384	169	13.7	2.54	1.72
(WY)	1932	1928	1930	1928	1930	1928	1930	1932	1933	1932	1932	1930
MIN	1.43	1.67	2.65	3.60	3.55	14.5	106	48.9	13.8	2.38	1.06	1.04
(WY)	1929	1930	1933	1933	1933	1933	1933	1931	1931	1931	1931	1931

SUMMARY STATISTICS

WATER YEARS 1928 - 1933

ANNUAL MEAN	62.3
HIGHEST ANNUAL MEAN	85.6
LOWEST ANNUAL MEAN	28.0
HIGHEST DAILY MEAN	1800
LOWEST DAILY MEAN	.90
ANNUAL SEVEN-DAY MINIMUM	.90
INSTANTANEOUS PEAK FLOW	2600
INSTANTANEOUS PEAK STAGE	7.00
ANNUAL RUNOFF (AC-FT)	45140
10 PERCENT EXCEEDS	202
50 PERCENT EXCEEDS	10
90 PERCENT EXCEEDS	1.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	100	74.0	72.1	104	111	110	84.2	138	101	117	146	167
MAX	305	404	420	725	694	586	317	489	403	350	344	389
(WY)	1970	1982	1982	1997	1986	1995	1989	1995	1998	1983	1968	1984
MIN	13.0	2.94	4.01	2.36	2.25	3.70	4.31	4.38	3.99	3.71	7.43	10.0
(WY)	1986	1976	1979	1964	1976	1964	1964	1977	1977	1977	1976	1981

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1963 - 1999

ANNUAL TOTAL	64704	43777.5	
ANNUAL MEAN	177	120	110
HIGHEST ANNUAL MEAN			250
LOWEST ANNUAL MEAN			29.5
HIGHEST DAILY MEAN	703	May 28	277
LOWEST DAILY MEAN	12	May 11	9.9
ANNUAL SEVEN-DAY MINIMUM	12	May 11	9.9
INSTANTANEOUS PEAK FLOW			284
INSTANTANEOUS PEAK STAGE			9.10
ANNUAL RUNOFF (AC-FT)	128300	86830	79890
10 PERCENT EXCEEDS	383	260	254
50 PERCENT EXCEEDS	195	113	54
90 PERCENT EXCEEDS	16	16	5.3

11395150 SOUTH FORK TUNNEL NEAR STRAWBERRY VALLEY, CA

LOCATION.—Lat 39°38'55", long 120°07'00", in NW 1/4 SW 1/4 sec.29, T.21 N., R.8 E., Plumas County, Hydrologic Unit 18020123, Plumas National Forest, 3.2 mi upstream from Rock Creek, and 5.8 mi north of Strawberry Valley.

PERIOD OF RECORD.—October 1973 to current year. Records of daily discharge for November 1961 to September 1973 are in files of the U.S. Geological Survey. Monthly diversion used to adjust South Fork Feather River below diversion dam near Strawberry Valley (station 11395200) since October 1961.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Tunnel diverts water from South Fork Feather River to Sly Creek Reservoir (station 11395400) for power development. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 570 ft³/s, Mar. 13, May 25–29, June 3, 1983; no flow many days in 1980–82, Mar. 11–28, 1995 and Jan. 1–9, 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	212	8.7	303	31	70	448	326	182	80	108	112	107
2	212	7.7	208	30	66	357	322	185	80	109	111	108
3	215	7.6	459	29	63	440	317	223	80	109	111	108
4	212	7.3	273	28	93	353	313	208	79	109	110	108
5	211	8.6	174	75	159	306	316	194	77	110	110	109
6	211	10	131	177	165	282	310	193	76	109	110	108
7	211	31	102	176	348	276	308	194	75	109	111	107
8	212	24	89	175	364	279	311	186	74	109	110	107
9	211	16	76	174	527	303	304	178	73	109	110	108
10	210	15	68	174	439	278	303	172	73	109	109	107
11	209	16	62	173	397	255	308	168	72	109	110	107
12	209	14	58	173	438	235	312	168	72	108	109	107
13	209	14	57	174	400	225	320	166	72	109	108	106
14	210	14	56	174	382	211	333	145	71	109	108	105
15	208	14	54	187	367	200	342	111	85	109	107	105
16	207	14	55	216	380	190	349	106	114	109	108	104
17	206	34	58	248	483	245	363	103	114	109	109	104
18	205	22	56	448	467	326	376	102	113	109	108	104
19	205	17	55	446	459	326	380	101	112	109	108	104
20	205	15	53	544	426	329	382	100	113	109	108	104
21	205	22	47	427	400	329	377	98	113	110	108	103
22	208	74	44	256	382	325	366	97	112	111	107	104
23	211	175	42	451	371	324	300	96	111	112	108	104
24	219	125	41	281	367	327	213	95	111	112	107	104
25	212	67	40	204	388	350	213	93	111	111	107	104
26	210	51	38	161	313	349	224	91	110	111	107	104
27	212	106	36	129	204	348	219	89	110	110	109	103
28	211	94	34	108	361	343	205	87	110	111	107	102
29	208	86	33	94	---	337	191	85	110	111	107	103
30	161	400	32	83	---	336	183	83	109	112	107	103
31	12	---	32	79	---	331	---	81	---	112	107	---
TOTAL	6259	1509.9	2866	6125	9279	9563	9086	4180	2812	3402	3368	3161
MEAN	202	50.3	92.5	198	331	308	303	135	93.7	110	109	105
MAX	219	400	459	544	527	448	382	223	114	112	112	109
MIN	12	7.3	32	28	63	190	183	81	71	108	107	102
AC-FT	12410	2990	5680	12150	18400	18970	18020	8290	5580	6750	6680	6270

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1999, BY WATER YEAR (WY)

MEAN	87.8	99.9	107	129	153	182	152	168	113	117	130	148
MAX	202	377	462	381	406	454	429	520	421	363	327	390
(WY)	1999	1982	1982	1974	1996	1983	1989	1993	1983	1983	1983	1978
MIN	6.21	4.14	3.36	5.99	8.49	9.71	8.68	16.4	7.22	4.43	4.03	.000
(WY)	1986	1977	1977	1977	1977	1977	1977	1977	1977	1977	1981	1981

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1974 - 1999	
ANNUAL TOTAL	84314.9		61610.9			
ANNUAL MEAN	231		169		132	
HIGHEST ANNUAL MEAN					294	
LOWEST ANNUAL MEAN					35.0	
HIGHEST DAILY MEAN	554	Mar 24	544	Jan 20	570	Mar 13 1983
LOWEST DAILY MEAN	7.3	Nov 4	7.3	Nov 4	.00	Jan 16 1980
ANNUAL SEVEN-DAY MINIMUM	8.8	Oct 31	8.8	Oct 31	.00	Jan 16 1980
ANNUAL RUNOFF (AC-FT)	167200		122200		95670	
10 PERCENT EXCEEDS	463		351		325	
50 PERCENT EXCEEDS	218		111		89	
90 PERCENT EXCEEDS	49		46		8.6	

11395200 SOUTH FORK FEATHER RIVER BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CA

LOCATION.—Lat 39°38'51", long 121°07'04", in NE 1/4 SE 1/4 sec.30, T.21 N., R.8 E., Plumas County, Hydrologic Unit 18020123, Plumas National Forest, on left bank 0.1 mi downstream from diversion dam, 3.1 mi upstream from Rock Creek, and 5.8 mi north of Strawberry Valley.

DRAINAGE AREA.—37.7 mi².

PERIOD OF RECORD.—October 1960 to current year.

REVISED RECORDS.—WDR CA-80-4: 1976(M).

GAGE.—Water-stage recorder and since May 8, 1987, sharp crested rectangular weir. Datum of gage is 3,535.02 ft above sea level (levels by Oroville–Wyandotte Irrigation District).

REMARKS.—Flow regulated by Little Grass Valley Reservoir (station 11395020) since October 1961. South Fork Diversion Tunnel, maximum capacity, about 600 ft³/s 500 ft upstream, diverts to Sly Creek Reservoir (station 11395400); diversion began in November 1961. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 11,300 ft³/s, Jan. 1, 1997, gage height unknown, from computation of peak flow over diversion dam; minimum daily, 0.3 ft³/s, Dec. 25, 1962, to Jan. 2, 1963, Mar. 1–3, 1963.

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	12	10	6.4	6.0	6.2	5.8	5.8	11	11	11	11	11
2	12	10	6.3	6.0	6.2	5.8	5.8	11	11	11	11	11
3	12	10	27	6.0	6.2	5.9	5.8	11	11	11	11	11
4	12	10	6.4	6.0	5.9	5.8	5.8	11	11	11	11	11
5	12	10	6.2	6.1	5.8	5.8	5.8	11	11	11	11	11
6	12	7.7	6.2	6.2	6.0	5.8	5.8	11	11	11	11	11
7	12	5.9	6.2	6.2	6.5	5.8	5.8	11	11	11	11	11
8	12	5.8	6.2	6.2	6.6	5.8	5.9	11	11	11	11	11
9	12	5.8	6.2	6.2	226	5.8	5.8	11	11	11	11	11
10	12	5.8	6.2	6.2	31	5.8	5.8	11	11	11	11	11
11	12	5.8	6.2	6.2	5.1	5.8	5.8	11	11	11	11	11
12	12	5.8	6.2	6.2	5.5	5.8	5.8	11	11	11	11	11
13	12	5.8	6.2	6.2	5.8	5.8	5.8	11	11	11	11	11
14	12	5.8	6.1	6.2	5.8	5.8	5.8	11	11	11	11	11
15	12	5.8	6.0	6.3	5.8	5.8	5.8	11	11	11	11	11
16	12	5.8	6.0	6.2	5.9	5.8	5.8	11	11	11	11	11
17	12	5.9	6.0	6.3	6.1	5.8	5.8	11	11	11	11	11
18	12	5.8	6.0	6.7	6.0	5.8	5.8	11	11	11	11	11
19	12	5.8	6.0	7.4	5.9	5.8	5.8	11	11	11	11	11
20	12	5.8	6.0	73	5.8	5.8	5.8	11	11	11	11	11
21	12	6.0	6.0	6.7	5.8	5.8	5.8	11	11	11	11	11
22	12	6.0	6.0	6.5	5.8	5.8	5.8	11	11	11	11	11
23	12	6.4	6.0	7.6	5.8	5.8	5.8	11	11	11	11	11
24	12	6.2	6.0	6.5	5.8	5.8	5.6	11	11	11	11	11
25	12	6.0	6.0	6.2	5.8	5.9	5.6	11	11	11	11	11
26	12	5.9	6.0	6.2	5.8	5.8	5.8	11	11	11	11	11
27	12	6.2	6.0	6.2	5.8	5.8	5.8	11	11	11	11	11
28	12	6.2	6.0	6.2	5.8	5.8	5.7	11	11	11	11	11
29	12	6.2	6.0	6.2	---	5.8	5.6	11	11	11	11	11
30	11	6.9	6.0	6.2	---	5.9	8.8	11	11	11	11	11
31	10	---	6.0	6.2	---	5.8	---	11	---	11	11	---
TOTAL	369	201.1	210.0	262.5	410.5	180.1	176.4	341	330	341	341	330
MEAN	11.9	6.70	6.77	8.47	14.7	5.81	5.88	11.0	11.0	11.0	11.0	11.0
MAX	12	10	27	73	226	5.9	8.8	11	11	11	11	11
MIN	10	5.8	6.0	6.0	5.1	5.8	5.6	11	11	11	11	11
AC-FT	732	399	417	521	814	357	350	676	655	676	676	655

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

MEAN	10.3	13.4	43.4	84.3	55.8	49.8	25.3	46.1	21.7	9.63	10.2	10.5
MAX	16.1	226	808	885	1113	741	317	417	230	13.3	18.5	18.8
(WY)	1982	1982	1965	1970	1986	1995	1982	1995	1998	1968	1973	1973
MIN	2.92	2.62	2.41	3.94	2.73	3.79	3.68	3.61	2.20	2.57	3.32	3.45
(WY)	1978	1978	1980	1976	1978	1980	1970	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1964 - 1999

ANNUAL TOTAL	15536.6	3492.6		
ANNUAL MEAN	42.6	9.57	31.7	
HIGHEST ANNUAL MEAN			120	1995
LOWEST ANNUAL MEAN			3.72	1977
HIGHEST DAILY MEAN	921	May 29	226	Feb 9
LOWEST DAILY MEAN	5.8	Jan 1	5.1	Feb 11
ANNUAL SEVEN-DAY MINIMUM	5.8	Nov 8	5.7	Apr 23
INSTANTANEOUS PEAK FLOW			1210	Feb 9
INSTANTANEOUS PEAK STAGE			9.10	Feb 9
ANNUAL RUNOFF (AC-FT)	30820	6930	22950	
10 PERCENT EXCEEDS	94	11	12	
50 PERCENT EXCEEDS	11	11	8.1	
90 PERCENT EXCEEDS	6.0	5.8	4.5	

11395400 SLY CREEK RESERVOIR NEAR STRAWBERRY VALLEY, CA

LOCATION.—Lat 39°35'01", long 121°06'59", in NE 1/4 NE 1/4 sec.19, T.20 N., R.8 E., Butte County, Hydrologic Unit 18020123, Plumas National Forest, on right bank 100 ft upstream from dam on Lost Creek, and 1.4 mi northwest of Strawberry Valley.

DRAINAGE AREA.—24.0 mi².

PERIOD OF RECORD.—November 1961 to current year (fragmentary prior to Mar. 14, 1962).

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Oroville–Wyandotte Irrigation District). Prior to Sept. 30, 1966, water-stage recorder in valve chamber inside dam at same datum. Oct. 1, 1966, to December 1974, nonrecording gage read once daily.

REMARKS.—Reservoir is formed by earthfill dam. Storage began in November 1961. Total capacity, 65,600 acre-ft between elevations 3,285 ft, invert of outlet, and 3,531 ft, top of spillway gate, all of which is available for release. Water is diverted into reservoir from South Fork Feather River through South Fork Diversion Tunnel and from North Yuba River Basin through Slate Creek Tunnel (station 11413250). Records represent total contents at 2400 hours. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 65,600 acre-ft, June 22, 1978, elevation, 3,530.9 ft; minimum observed under normal operating conditions since reservoir first filled, 860 acre-ft, Feb. 11, 1976, elevation, 3,320.0 ft. Reservoir completely drained for powerplant construction, Sept. 12 to Oct. 17, 1981.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 57,500 acre-ft, Mar. 3, elevation, 3,517.2 ft; minimum, 10,800 acre-ft, Jan. 14, elevation, unknown.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1946)

3,310	450	3,360	4,300	3,450	26,300
3,315	655	3,380	7,360	3,480	38,500
3,320	860	3,400	11,500	3,510	53,400
3,340	2,150	3,420	16,600	3,531	65,600

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	25900	20900	23800	e13800	33000	57200	49300	50000	56700	51900	41300	27000
2	26400	20500	25100	e13200	32500	57300	49000	50300	56600	51400	41100	26600
3	26800	20600	27800	e12500	32100	57500	48600	51100	56700	51400	40600	26300
4	27200	20700	29400	e11700	31800	57400	48100	51500	56600	51300	39700	26000
5	27600	20800	30200	e11500	31500	57100	48400	e51900	56600	51300	39500	26000
6	28000	20400	30300	e11400	31400	56900	47700	e52300	56700	50800	39300	26200
7	28400	19300	30200	e11100	33100	56700	47400	52900	56600	50400	39000	26000
8	28800	19100	29900	e11000	35200	56600	47300	53200	56500	50000	39200	25200
9	28800	17900	29500	e11300	e39500	56500	47000	53400	56400	49500	38500	24700
10	28000	17200	29000	e11600	42300	56300	46900	53600	56200	49100	38600	24400
11	27600	16100	28400	e11400	44100	55700	46500	53800	56200	48900	38500	24200
12	26800	15300	27800	e11100	45500	54900	46400	53900	56200	48300	37800	24400
13	26100	14300	27100	e11000	46500	54000	46200	54200	56300	47700	37100	24000
14	25800	13700	26400	e10800	47300	53100	46200	54200	56200	47200	36700	23500
15	25600	13500	25800	e11000	48000	52200	46200	54100	56400	47200	36300	23300
16	25700	13100	25200	e11300	48900	51300	46200	53900	56200	47100	35900	23200
17	25800	13200	24600	e12400	50900	50500	46300	53800	56000	46700	35200	23400
18	25800	13300	24000	e14700	52300	49900	46500	53900	55500	47000	35000	23600
19	25800	13200	23300	e18000	53600	49300	46400	54100	55400	46300	34600	23800
20	25900	13100	22500	e21600	54300	49500	46600	54300	55800	46100	34100	23900
21	26000	12800	e21900	e24000	54800	49600	46400	54500	55500	45500	33700	23900
22	26400	13300	e21100	e27200	e55100	49600	46300	55200	55100	45100	33200	23600
23	26000	15000	e20300	e29900	55200	49500	46500	55600	54700	44400	32300	23400
24	25400	16400	e19700	e31700	55300	49200	46900	55700	54300	44300	31600	23600
25	25200	16800	e19100	33200	55700	49300	47400	55800	53900	44600	30800	23500
26	24600	16800	e18500	33800	55700	49300	48100	55900	53800	44000	30400	23400
27	24000	17500	e17700	34000	55400	49400	48800	55700	54000	43400	29800	23000
28	23400	18100	e16900	34100	56300	49600	49400	55800	53700	42900	29200	22700
29	22700	18700	e15900	34000	---	49600	49600	55800	53200	42500	28700	22200
30	22100	21600	e15100	33700	---	49600	49700	56300	52800	42200	28100	22000
31	21600	---	e14400	33300	---	49500	---	56400	---	41900	27800	---
MAX	28800	21600	30300	34100	56300	57500	49700	56400	56700	51900	41300	27000
MIN	21600	12800	14400	10800	31400	49200	46200	50000	52800	41900	27800	22000
a	3436.3	3436.4	3411.8	3468.0	3415.1	3502.5	3503.0	3515.3	3508.7	3487.2	3453.9	3437.6
b	-3900	0	-7200	+18900	+23000	-6800	+200	+6700	-3600	-10900	-14100	-5800

CAL YR 1998 b -2100

WTR YR 1999 b -3500

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11395500 OROVILLE-WYANDOTTE CANAL NEAR CLIPPER MILLS, CA

LOCATION.—Lat 39°33'15", long 121°11'31", in NW 1/4 NE 1/4 sec.33, T.20 N., R.7 E., Butte County, Hydrologic Unit 18020123, in concrete valve house at head of canal and 2.5 mi north of Clipper Mills.

PERIOD OF RECORD.—October 1927 to September 1941 (published as Forbestown Ditch), October 1953 to current year. Monthly discharge only for October 1953 to September 1961, published with records for Lost Creek near Clipper Mills.

GAGE.—Water-stage recorder and Parshall flume. Datum of gage is 3,166.0 ft above sea level (levels by Oroville–Wyandotte Irrigation District). Prior to Sept. 30, 1941, nonrecording gages and Oct. 1, 1941, to Nov. 16, 1962, water-stage recorder at sites at different datums 4 mi upstream in abandoned part of canal, 0.3 mi downstream from Lost Creek Dam.

REMARKS.—Water is discharged to canal through valve in Woodleaf Penstock. Prior to Nov. 16, 1962, canal diverted from Lost Creek Dam. Water is used for irrigation and domestic supply. Demand for water reduced when a large lumber mill closed at Woodleaf in 1962. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 43 ft³/s, Aug. 9 to Sept. 9, 1937, Aug. 13–15, 1977; 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	19	.00	.00	.00	.00	.00	.00	.00	7.7	18	16	24
2	19	.00	.00	.00	.00	.00	.00	.00	7.8	18	16	24
3	19	.00	.00	.00	.00	.00	.00	.00	7.9	18	19	24
4	19	.00	.00	.00	.00	.00	.00	.00	7.9	18	21	24
5	14	.00	.00	.00	.00	.00	.00	.00	7.8	18	21	24
6	11	.00	.00	.00	.00	.00	.00	.00	7.7	18	21	24
7	11	.00	.00	.00	.00	.00	.00	.00	7.8	18	21	23
8	11	.00	.00	.00	.00	.00	.00	.00	7.8	18	21	24
9	11	.00	.00	.00	.00	.00	.00	.00	7.8	18	21	23
10	11	.00	.00	.00	.00	.00	.00	.00	7.8	18	21	24
11	11	.00	.00	.00	.00	.00	.00	.00	7.7	18	21	24
12	11	.00	.00	.00	.00	.00	.00	1.5	7.7	18	21	24
13	11	.00	.00	.00	.00	.00	.00	2.4	7.8	18	21	24
14	7.9	.00	.00	5.9	.00	.00	.00	5.7	7.8	18	21	24
15	3.8	.00	.00	9.1	.00	.00	.00	8.0	7.7	17	21	24
16	.00	7.0	.00	4.1	.00	.00	.00	7.8	7.8	16	21	24
17	.00	11	.00	.00	.00	.00	.00	7.7	7.8	16	22	22
18	.00	11	.00	.00	.00	.00	.00	7.8	7.8	16	24	21
19	.00	11	.00	.00	.00	.00	.00	7.8	7.7	16	23	21
20	.00	3.7	.00	.00	.00	.00	.00	7.8	7.7	16	24	21
21	.00	.00	.00	.00	.00	.00	.00	7.8	7.8	16	23	21
22	.00	.00	.00	.00	.00	.00	.00	7.8	7.7	16	23	21
23	.00	.00	.00	.00	.00	.00	.00	7.7	9.0	16	23	21
24	.00	.00	.00	.00	.00	.00	.00	7.7	9.6	16	23	21
25	.00	.00	.00	.00	.00	.00	.00	7.7	11	16	24	21
26	5.5	.00	.00	.00	.00	.00	.00	7.8	11	16	24	21
27	11	.00	.00	.00	.00	.00	.00	7.7	11	16	24	21
28	4.6	.00	5.3	.00	.00	.00	.00	7.8	11	16	24	22
29	.00	.00	11	.00	---	.00	.00	7.7	16	16	24	24
30	.00	.00	11	.00	---	.00	.00	7.7	18	16	24	24
31	.00	---	5.3	.00	---	.00	---	7.8	---	16	24	---
TOTAL	210.80	43.70	32.60	19.10	0.00	0.00	0.00	141.70	267.6	525	677	684
MEAN	6.80	1.46	1.05	.62	.000	.000	.000	4.57	8.92	16.9	21.8	22.8
MAX	19	11	11	9.1	.00	.00	.00	8.0	18	18	24	24
MIN	.00	.00	.00	.00	.00	.00	.00	.00	7.7	16	16	21
AC-FT	418	87	65	38	.00	.00	.00	281	531	1040	1340	1360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

MEAN	12.5	5.57	2.25	1.32	.76	.96	1.77	5.57	11.9	17.2	20.6	19.7
MAX	20.2	16.5	8.64	6.89	5.34	6.70	11.4	20.2	29.3	26.4	37.4	30.9
(WY)	1967	1968	1977	1968	1977	1964	1977	1963	1976	1976	1977	1977
MIN	3.75	.84	.000	.000	.000	.000	.000	.000	.88	7.60	9.47	9.29
(WY)	1990	1992	1982	1980	1963	1963	1963	1975	1998	1998	1965	1965

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1963 - 1999

ANNUAL TOTAL	1554.30	2601.50	
ANNUAL MEAN	4.26	7.13	8.39
HIGHEST ANNUAL MEAN			16.7 1977
LOWEST ANNUAL MEAN			4.33 1998
HIGHEST DAILY MEAN	19 Sep 8	24 Aug 18	43 Aug 13 1977
LOWEST DAILY MEAN	.00 Jan 1	.00 Oct 16	.00 Dec 12 1962
ANNUAL SEVEN-DAY MINIMUM	.00 Jan 1	.00 Oct 16	.00 Dec 15 1962
ANNUAL RUNOFF (AC-FT)	3080	5160	6080
10 PERCENT EXCEEDS	18	21	22
50 PERCENT EXCEEDS	.00	.00	5.4
90 PERCENT EXCEEDS	.00	.00	.00

11396000 LOST CREEK NEAR CLIPPER MILLS, CA

LOCATION.—Lat 39°34'25", long 121°08'26", in SE 1/4 SW 1/4 sec.24, T.20 N., R.7 E., Butte County, Hydrologic Unit 18020123, Plumas National Forest, on left bank 0.3 mi downstream from Lost Creek Reservoir, and 2.8 mi north of Clipper Mills.

DRAINAGE AREA.—30.0 mi².

PERIOD OF RECORD.—October 1927 to September 1941, October 1948 to current year. Records for Woodleaf Powerplant from February 1963 to September 1966 in files of the U.S. Geological Survey.

REVISED RECORDS.—WSP 1395: 1954. WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Sharp crested weir for low-water control since June 20, 1987. Elevation of gage is 3,170 ft above sea level, from topographic map. Prior to June 20, 1987, at site 100 ft downstream at same datum.

REMARKS.—Flow regulated by Sly Creek Reservoir (station 11395400) 1.5 mi upstream and Lost Creek Reservoir 0.3 mi upstream, usable capacity, 5,920 acre-ft with flashboards. Water is diverted into Sly Creek Reservoir through South Fork Diversion Tunnel from South Fork Feather River and through Slate Creek Tunnel (station 11413250) from North Yuba River Basin. Woodleaf Tunnel diverts from Lost Creek Reservoir to Woodleaf Powerplant. Oroville–Wyandotte Canal (station 11395500) diverts from Woodleaf Penstock for irrigation and domestic use. Records represent seepage, release, and spill from Lost Creek Reservoir to Lost Creek. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,760 ft³/s, Jan.1, 1997, gage height, 13.50 ft; no flow at times 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	8.4	9.6	6.5	5.5	5.9	547	8.6	12	8.6	8.8	8.5	8.2
2	8.4	9.6	5.9	5.5	5.9	756	8.6	13	8.6	8.8	8.5	8.4
3	8.4	9.0	7.7	5.5	5.9	895	8.7	13	8.6	8.7	8.4	8.7
4	8.4	8.4	6.3	5.5	5.9	873	8.8	14	8.6	8.6	8.4	8.8
5	8.4	8.3	6.0	5.5	5.8	754	9.0	14	8.9	8.5	8.5	8.7
6	8.4	8.2	5.8	5.5	6.5	639	9.0	12	9.1	8.4	8.6	8.3
7	8.4	8.8	5.6	5.5	9.4	529	9.0	9.8	9.6	8.4	8.7	8.2
8	8.4	8.5	5.5	5.5	9.2	447	9.1	8.7	9.8	8.4	8.7	8.3
9	8.4	7.1	5.5	5.5	14	409	9.1	8.6	9.6	8.4	8.4	8.5
10	8.9	5.5	5.5	5.5	9.7	339	9.1	8.6	9.3	8.4	8.5	9.4
11	9.2	5.9	5.5	5.5	8.0	304	9.3	8.6	8.9	8.4	8.6	9.8
12	10	5.7	5.5	5.5	7.2	297	9.3	8.6	8.7	8.4	8.6	9.3
13	12	6.1	5.6	5.5	6.9	293	9.4	8.6	8.6	8.5	8.6	8.4
14	10	6.7	5.5	5.5	6.7	288	9.3	8.6	8.6	8.5	9.2	8.8
15	8.5	6.7	5.5	5.6	6.4	284	9.3	9.1	8.6	8.6	9.0	9.5
16	8.3	6.8	5.5	5.5	6.9	279	9.3	12	8.6	8.6	8.7	9.3
17	8.2	6.9	5.5	6.0	7.8	274	9.1	11	8.6	8.5	8.6	8.5
18	8.2	6.7	5.5	6.7	11	270	9.1	10	8.6	8.4	8.5	8.2
19	8.3	6.7	5.5	8.1	206	269	9.1	9.2	8.7	8.3	8.2	8.2
20	8.9	6.7	5.5	8.8	365	64	9.1	8.8	8.9	8.4	8.4	8.2
21	11	6.9	5.5	7.3	361	6.0	9.4	8.6	8.6	8.4	8.6	8.2
22	10	6.8	5.5	7.0	357	5.9	12	8.6	8.6	8.4	8.6	8.2
23	8.4	8.1	5.6	9.1	341	5.9	14	8.4	8.6	8.7	8.6	8.4
24	8.6	7.2	5.5	7.4	315	5.9	19	8.4	8.7	8.9	9.1	8.6
25	8.6	6.0	5.5	6.7	332	6.0	21	8.4	8.7	8.5	10	8.6
26	8.6	5.5	5.5	6.4	302	5.9	20	8.4	8.9	8.3	10	8.5
27	8.5	6.1	5.5	6.1	297	5.9	16	8.5	8.8	8.2	9.3	8.4
28	8.4	5.8	5.4	6.0	344	5.9	11	8.7	8.6	8.3	9.1	8.3
29	8.5	6.1	5.4	5.9	---	5.7	11	8.6	8.6	8.4	9.1	8.2
30	9.2	7.7	5.4	5.9	---	5.8	12	8.7	8.7	8.3	8.8	8.2
31	9.3	---	5.5	5.9	---	7.0	---	8.6	---	8.2	8.4	---
TOTAL	275.2	214.1	175.7	191.4	3359.1	8875.9	326.7	302.1	264.3	262.6	271.2	257.3
MEAN	8.88	7.14	5.67	6.17	120	286	10.9	9.75	8.81	8.47	8.75	8.58
MAX	12	9.6	7.7	9.1	365	895	21	14	9.8	8.9	10	9.8
MIN	8.2	5.5	5.4	5.5	5.8	5.7	8.6	8.4	8.6	8.2	8.2	8.2
AC-FT	546	425	349	380	6660	17610	648	599	524	521	538	510
a	16040	15430	34720	22680	30890	34410	33290	31350	18070	19370	19620	12210

a Diversion, acre-feet, through Woodleaf Powerplant (station 11396090), provided by Oroville–Wyandotte Irrigation District.

11396000 LOST CREEK NEAR CLIPPER MILLS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1961, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.78	8.61	66.0	93.4	170	175	191	129	29.9	6.42	4.23	5.13
MAX	13.4	121	544	485	562	467	423	441	153	34.7	10.2	15.3
(WY)	1928	1951	1956	1956	1958	1938	1938	1952	1952	1952	1961	1960
MIN	.20	.000	.000	.15	.50	25.7	4.68	1.21	1.33	.20	.10	.10
(WY)	1935	1960	1960	1960	1937	1933	1931	1931	1934	1939	1934	1934

SUMMARY STATISTICS

WATER YEARS 1928 - 1961

ANNUAL MEAN	73.0
HIGHEST ANNUAL MEAN	167 1938
LOWEST ANNUAL MEAN	6.78 1931
HIGHEST DAILY MEAN	3840 Dec 22 1955
LOWEST DAILY MEAN	.00 Jul 30 1940
ANNUAL SEVEN-DAY MINIMUM	.00 Nov 1 1959
INSTANTANEOUS PEAK FLOW	5000 Dec 22 1955
INSTANTANEOUS PEAK STAGE	a6.90 Dec 22 1955
ANNUAL RUNOFF (AC-FT)	52890
10 PERCENT EXCEEDS	212
50 PERCENT EXCEEDS	8.4
90 PERCENT EXCEEDS	.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	13.1	6.88	43.9	57.2	73.6	82.8	56.5	48.0	41.4	3.98	3.50	3.80
MAX	392	179	417	674	512	573	410	454	750	16.0	22.2	34.4
(WY)	1963	1963	1998	1997	1986	1983	1993	1995	1995	1962	1966	1997
MIN	.006	.029	.094	.10	.35	.33	.22	.13	.097	.10	.000	.000
(WY)	1965	1975	1975	1962	1964	1964	1968	1968	1966	1963	1964	1963

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1962 - 1999

ANNUAL TOTAL	46730.1	14775.6	
ANNUAL MEAN	128	40.5	36.0
HIGHEST ANNUAL MEAN			200 1995
LOWEST ANNUAL MEAN			.49 1964
HIGHEST DAILY MEAN	750 Mar 25	895 Mar 3	4490 Jan 1 1997
LOWEST DAILY MEAN	5.4 Dec 28	5.4 Dec 28	.00 Oct 21 1961
ANNUAL SEVEN-DAY MINIMUM	5.5 Dec 24	5.5 Dec 24	.00 Oct 21 1961
INSTANTANEOUS PEAK FLOW		944 Mar 3	5760 Jan 1 1997
INSTANTANEOUS PEAK STAGE		8.31 Mar 3	13.50 Jan 1 1997
ANNUAL RUNOFF (AC-FT)	92690	29310	26110
TOTAL DIVERSION (AC-FT) b	327300	288100	
10 PERCENT EXCEEDS	412	14	17
50 PERCENT EXCEEDS	9.3	8.5	1.6
90 PERCENT EXCEEDS	6.0	5.5	.15

a Site then in use.

b Diversion, acre-feet, through Woodleaf Powerplant (station 11396090), provided by Oroville-Wyandotte Irrigation District.

11396200 SOUTH FORK FEATHER RIVER BELOW FORBESTOWN DAM, CA

LOCATION.—Lat 39°33'05", long 121°12'30", in SE 1/4 NE 1/4 sec.32, T.20 N., R.7 E., Butte County, Hydrologic Unit 18020123, Plumas National Forest, on right bank 500 ft downstream from Forbestown Dam, 0.4 mi upstream from Oroleve Creek, and 4.0 mi northeast of Forbestown.

DRAINAGE AREA.—87.5 mi².

PERIOD OF RECORD.—July 1962 to current year. Records for Forbestown Powerplant from February 1963 to September 1966 in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Elevation of gage is 1,690 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Little Grass Valley Reservoir (station 11395020), Sly Creek Reservoir (station 11395400), and smaller reservoirs. Water from North Yuba River Basin is imported through Slate Creek Tunnel (station 11413250) to Sly Creek Reservoir. Oroville–Wyandotte Canal (station 11395500) diverts upstream from station. Tunnel 600 ft upstream from station diverts most flow through Forbestown Powerplant (station 11396290) except fishwater releases and uncontrolled spill over Forbestown Dam. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 21,800 ft³/s, Jan. 1, 1997, gage height, 17.64 ft, from rating curve extended above 5,400 ft³/s on basis of flow-over-dam measurement of peak flow; minimum daily, 0.6 ft³/s, Apr. 4, 1963.

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	11	6.1	6.3	6.2	768	6.3	11	11	10	10	10
2	38	11	6.1	6.3	13	946	6.1	11	10	10	10	10
3	39	11	6.4	6.3	25	1150	6.1	11	10	10	10	10
4	39	11	6.1	6.2	6.3	1100	6.2	11	10	10	10	10
5	38	11	6.1	6.2	6.3	937	6.3	11	10	10	10	10
6	38	11	6.1	6.2	8.0	783	6.1	11	10	10	10	10
7	21	11	6.1	6.3	237	645	6.1	12	10	10	10	10
8	11	11	6.1	6.2	227	553	6.3	12	10	10	10	10
9	11	8.2	6.1	6.2	1030	513	6.4	12	10	10	10	10
10	11	5.9	6.1	6.2	360	431	6.5	12	10	10	10	10
11	11	6.1	6.1	6.3	189	384	6.5	11	10	10	13	10
12	11	6.1	6.1	6.3	130	369	6.5	11	10	10	10	10
13	11	6.1	6.1	6.3	90	360	6.5	11	10	10	10	10
14	11	6.0	6.2	6.3	69	352	6.5	10	10	10	10	10
15	11	6.1	6.2	6.3	52	342	6.4	10	10	10	10	10
16	11	6.0	6.1	6.3	87	333	6.3	11	10	10	10	10
17	11	6.1	6.2	6.4	233	325	6.4	11	10	10	10	10
18	11	6.1	6.2	6.5	163	318	6.3	11	10	10	10	10
19	11	6.1	6.1	6.8	291	309	6.3	11	10	10	10	10
20	11	6.1	6.1	6.6	443	26	6.3	11	10	10	10	22
21	11	6.1	6.1	7.9	449	6.1	6.3	11	10	10	10	35
22	11	6.1	6.3	6.4	418	6.1	6.3	10	10	10	10	110
23	11	6.3	6.3	6.6	405	6.1	13	11	10	10	10	35
24	11	6.1	6.3	6.3	389	6.3	6.5	11	10	10	10	21
25	11	6.1	6.3	6.3	472	6.2	6.5	11	10	10	10	10
26	11	6.0	6.2	6.3	411	6.1	6.5	11	10	10	10	10
27	11	6.2	6.2	6.3	388	6.1	6.5	10	10	10	10	10
28	11	6.1	6.3	6.3	517	6.1	6.5	10	10	10	10	10
29	11	6.1	6.2	13	---	6.1	6.4	11	10	10	10	10
30	11	6.4	6.3	6.3	---	6.1	8.8	10	10	10	10	10
31	11	---	6.3	6.3	---	6.3	---	11	---	10	10	---
TOTAL	516	224.4	191.5	204.5	7114.8	11011.6	199.7	339	301	310	313	473
MEAN	16.6	7.48	6.18	6.60	254	355	6.66	10.9	10.0	10.0	10.1	15.8
MAX	39	11	6.4	13	1030	1150	13	12	11	10	13	110
MIN	11	5.9	6.1	6.2	6.2	6.1	6.1	10	10	10	10	10
AC-FT	1020	445	380	406	14110	21840	396	672	597	615	621	938
a	16600	16520	38790	28350	36230	40010	38270	34300	19590	20410	20330	12220

a Diversion, in acre-feet, to Forbestown Powerplant (station 11396290), provided by Oroville–Wyandotte Irrigation District.

11396200 SOUTH FORK FEATHER RIVER BELOW FORBESTOWN DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	29.1	22.8	98.5	176	189	169	103	106	46.1	12.7	11.1	14.2
MAX	520	240	1262	2059	2000	1472	718	990	617	37.1	27.3	120
(WY)	1963	1982	1997	1997	1986	1995	1982	1996	1998	1962	1986	1996
MIN	4.21	3.68	3.37	4.06	4.46	4.47	4.06	4.02	2.90	4.04	3.37	3.84
(WY)	1978	1976	1976	1976	1972	1972	1964	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1962 - 1999	
ANNUAL TOTAL	64601.3		21198.5			
ANNUAL MEAN	177		58.1		80.9	
HIGHEST ANNUAL MEAN					325	
LOWEST ANNUAL MEAN					4.36	
HIGHEST DAILY MEAN	1560	May 30	1150	Mar 3	17300	Jan 1 1997
LOWEST DAILY MEAN	5.9	Apr 15	5.9	Nov 10	.60	Apr 4 1963
ANNUAL SEVEN-DAY MINIMUM	5.9	Apr 15	6.0	Nov 10	1.7	Mar 25 1980
INSTANTANEOUS PEAK FLOW			1680	Feb 9	21800	Jan 1 1997
INSTANTANEOUS PEAK STAGE			9.29	Feb 9	17.64	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	128100		42050		58630	
TOTAL DIVERSION (AC-FT) a	391000		321600			
10 PERCENT EXCEEDS	588		143		141	
50 PERCENT EXCEEDS	12		10		10	
90 PERCENT EXCEEDS	6.1		6.1		5.0	

a Diversion, in acre-feet, to Forbestown Powerplant (station 11396290), provided by Oroville-Wyandotte Irrigation District.

11396310 MINERS RANCH CANAL BELOW PONDEROSA DAM, NEAR FORBESTOWN, CA

LOCATION.—Lat 39°33'00", long 121°18'20", in SE 1/4 NW 1/4 sec.33, T.20 N., R.6 E., Butte County, Hydrologic Unit 18020123, on right bank 800 ft downstream from Ponderosa Dam and 3 mi northwest of Forbestown.

PERIOD OF RECORD.—October 1962 to current year.

REVISED RECORDS.—WDR CA-88-4: diversion only.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 975 ft above sea level, from topographic map.

REMARKS.—Canal diverts from South Fork Feather River at Ponderosa Dam. Water is used for power development and irrigation. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 314 ft³/s, May 13, 1984; 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	19	282	261	270	261	263	265	278	282	285	285	285
2	147	281	261	269	261	263	266	278	279	285	285	285
3	.00	281	261	269	261	261	267	279	257	285	285	285
4	.00	281	261	270	266	260	269	278	277	285	285	285
5	.00	255	261	267	269	261	268	278	277	285	285	285
6	.00	281	260	266	267	265	269	278	278	285	285	285
7	.00	281	262	266	264	266	269	278	279	285	285	285
8	.00	279	218	265	262	266	269	276	279	285	285	285
9	176	241	266	265	254	266	268	273	282	285	285	285
10	266	275	266	261	251	265	269	276	284	285	284	285
11	261	276	205	266	233	263	195	247	285	285	276	285
12	277	272	277	270	266	263	127	282	285	249	276	284
13	278	269	277	270	267	263	270	282	284	285	285	284
14	279	269	279	270	266	263	270	282	285	285	285	283
15	280	269	279	269	266	266	272	282	285	285	285	260
16	282	269	271	265	267	268	272	282	221	285	285	282
17	186	269	265	262	265	267	272	284	285	285	285	285
18	122	269	266	268	261	267	272	286	285	285	285	285
19	122	268	268	225	262	267	272	284	285	285	285	128
20	197	235	268	266	262	267	274	283	285	285	285	5.0
21	263	268	266	269	261	267	276	283	285	285	285	20
22	216	267	264	229	263	267	274	283	285	285	285	30
23	262	267	266	271	225	266	273	283	285	285	272	77
24	271	275	268	271	260	266	273	283	285	285	285	75
25	279	238	268	271	273	265	273	282	285	285	283	.00
26	282	261	269	271	269	264	274	283	285	256	285	.00
27	282	260	270	271	264	264	275	283	285	285	285	.00
28	282	269	270	269	263	264	276	282	250	285	285	.00
29	282	265	271	268	---	265	244	283	285	285	285	.00
30	282	261	270	266	---	265	278	283	285	285	285	84
31	281	---	269	239	---	265	---	283	---	285	285	---
TOTAL	5874.00	8033	8183	8194	7309	8208	7891	8677	8374	8770	8801	5517.00
MEAN	189	268	264	264	261	265	263	280	279	283	284	184
MAX	282	282	279	271	273	268	278	286	285	285	285	285
MIN	.00	235	205	225	225	260	127	247	221	249	272	.00
AC-FT	11650	15930	16230	16250	14500	16280	15650	17210	16610	17400	17460	10940
a	9430	15140	15370	15620	13730	15600	14680	15630	14730	15110	15210	9410

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

MEAN	170	188	197	198	212	214	210	217	234	245	245	186
MAX	263	269	264	264	262	269	276	280	283	284	289	270
(WY)	1980	1992	1999	1999	1996	1998	1987	1999	1992	1996	1986	1980
MIN	26.6	20.9	18.1	16.6	10.5	16.8	14.5	22.2	51.9	49.3	43.0	25.0
(WY)	1987	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977	1992

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1963 - 1999	
ANNUAL TOTAL	95248.00		93831.00			
ANNUAL MEAN	261		257		210	
HIGHEST ANNUAL MEAN					257	
LOWEST ANNUAL MEAN					52.2	
HIGHEST DAILY MEAN	285	Jul 9	286	May 18	314	May 13 1984
LOWEST DAILY MEAN	.00	Sep 28	.00	Oct 3	.00	Nov 21 1962
ANNUAL SEVEN-DAY MINIMUM	21	Oct 2	21	Oct 2	.00	Dec 6 1976
ANNUAL RUNOFF (AC-FT)	188900		186100		152200	
TOTAL DIVERSION (AC-FT) a	175000		169600			
10 PERCENT EXCEEDS	284		285		278	
50 PERCENT EXCEEDS	271		271		246	
90 PERCENT EXCEEDS	252		237		47	

a Discharge, in acre-feet, through Kelly Ridge Powerplant (station 11396329), provided by Oroville–Wyandotte Irrigation District.

11396330 BANGOR CANAL BELOW MINERS RANCH RESERVOIR, NEAR OROVILLE, CA

LOCATION.—Lat 39°30'15", long 121°27'16", in NE 1/4 SW 1/4 sec.18, T.19 N., R.5 E., Butte County, Hydrologic Unit 18020124, on left bank 400 ft downstream from outlet at Miners Ranch Dam and 5 mi east of Oroville.

PERIOD OF RECORD.—January 1963 to current year.

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 815 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Miners Ranch Reservoir, capacity, 912 acre-ft. Canal completed in November 1962. Water is used for irrigation. See schematic diagram of South Fork Feather River Basin.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 65 ft³/s, Aug. 17–20, 1963; no flow for several days in 1965, 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	19	14	7.0	8.8	7.0	7.4	7.7	11	13	17	18	18
2	19	14	7.0	8.8	6.8	7.5	7.7	11	13	17	18	19
3	19	14	7.0	8.8	6.7	7.3	7.7	11	13	17	18	19
4	19	13	7.0	8.8	8.2	7.1	7.7	11	13	17	18	18
5	19	11	7.0	7.9	8.3	7.0	8.0	11	13	17	18	18
6	19	10	7.0	7.2	7.2	7.0	8.0	11	13	17	18	18
7	19	10	6.5	7.2	7.5	7.2	8.0	11	13	17	18	18
8	19	10	6.1	7.2	7.5	7.7	8.0	11	13	17	18	17
9	19	10	6.1	7.2	7.5	7.7	7.9	11	13	17	18	17
10	19	9.1	6.2	7.2	7.5	7.7	7.7	11	13	17	18	17
11	19	8.2	6.0	7.2	7.3	7.7	7.8	11	13	17	18	17
12	19	8.2	5.8	7.2	7.2	7.7	7.8	11	13	17	18	17
13	18	8.3	6.0	7.2	7.2	7.7	7.7	11	13	17	18	17
14	17	8.4	6.0	7.2	7.2	7.7	7.7	12	14	17	18	17
15	17	8.2	6.0	7.2	7.2	7.7	7.9	13	15	18	18	17
16	17	8.2	6.0	7.2	7.2	7.7	7.7	13	15	18	18	17
17	17	8.2	6.0	7.2	7.5	7.7	7.7	13	17	18	18	17
18	17	8.2	6.0	7.2	7.5	7.7	8.0	13	20	18	18	17
19	17	8.2	6.0	7.3	7.5	8.0	7.9	13	20	18	18	17
20	17	8.2	5.8	7.2	7.5	8.0	9.1	13	20	19	18	17
21	18	8.2	5.8	7.2	7.5	8.0	10	13	20	18	18	17
22	17	8.2	6.7	7.1	7.2	8.0	11	13	19	18	18	17
23	17	7.7	8.1	7.0	7.2	8.0	13	13	19	18	18	17
24	17	7.0	8.5	7.1	7.2	8.0	13	13	18	18	18	17
25	17	7.2	8.5	7.2	7.2	8.0	14	13	18	18	18	17
26	17	7.2	8.5	7.0	7.5	8.0	13	13	18	18	18	17
27	18	7.2	8.5	7.0	7.4	7.8	13	13	18	18	18	17
28	16	7.2	8.5	7.0	7.2	7.7	12	13	18	18	18	17
29	14	7.1	8.5	7.0	---	7.7	11	14	19	18	18	17
30	14	7.0	8.5	7.0	---	7.7	11	14	18	18	18	17
31	14	---	8.7	7.0	---	7.7	---	14	---	18	18	---
TOTAL	544	271.4	215.3	228.8	205.9	237.8	278.7	379	475	545	558	519
MEAN	17.5	9.05	6.95	7.38	7.35	7.67	9.29	12.2	15.8	17.6	18.0	17.3
MAX	19	14	8.7	8.8	8.3	8.0	14	14	20	19	18	19
MIN	14	7.0	5.8	7.0	6.7	7.0	7.7	11	13	17	18	17
AC-FT	1080	538	427	454	408	472	553	752	942	1080	1110	1030

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

MEAN	16.9	7.92	5.58	4.60	4.20	4.59	8.69	16.1	21.7	24.2	24.4	22.1
MAX	29.7	14.3	11.2	12.0	7.68	8.27	20.3	27.8	42.0	56.4	53.4	36.2
(WY)	1965	1972	1975	1963	1980	1988	1970	1970	1963	1963	1963	1963
MIN	5.42	1.47	.035	.30	.25	.20	2.65	6.41	11.0	16.0	17.1	14.4
(WY)	1985	1969	1966	1966	1966	1966	1983	1995	1998	1982	1992	1993

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1963 - 1999	
ANNUAL TOTAL	4162.4		4457.9			
ANNUAL MEAN	11.4		12.2		13.2	
HIGHEST ANNUAL MEAN					18.0	
LOWEST ANNUAL MEAN					8.95	
HIGHEST DAILY MEAN	20	Aug 18	20	Jun 18	65	Aug 17 1963
LOWEST DAILY MEAN	2.5	Jan 13	5.8	Dec 12	.00	Jan 7 1965
ANNUAL SEVEN-DAY MINIMUM	3.6	Jan 13	5.9	Dec 15	.00	Jan 7 1965
ANNUAL RUNOFF (AC-FT)	8260		8840		9590	
10 PERCENT EXCEEDS	19		18		28	
50 PERCENT EXCEEDS	8.8		11		11	
90 PERCENT EXCEEDS	4.2		7.1		3.0	

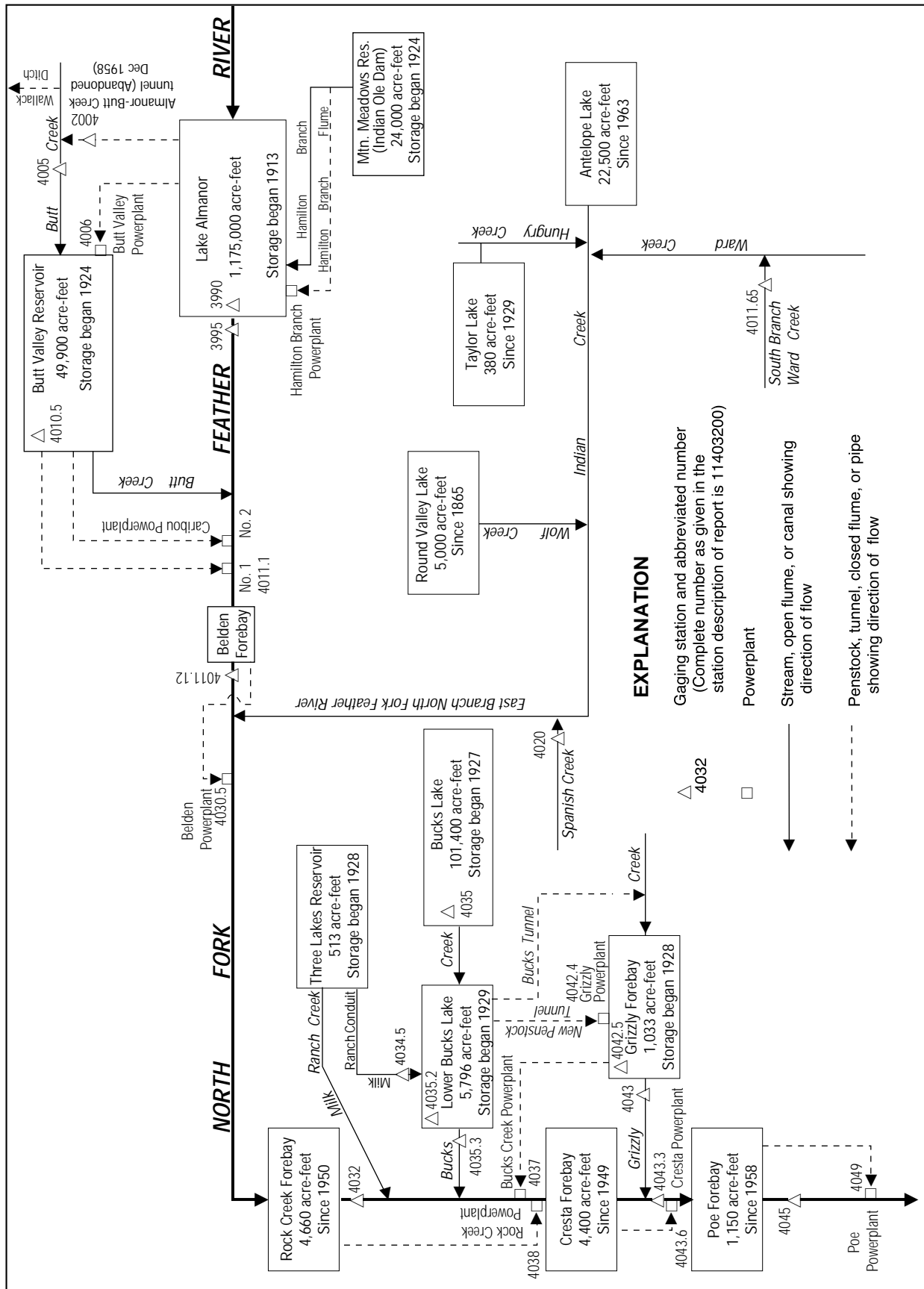


Figure 29. Diversions and storage in North Fork Feather River Basin.

11399000 LAKE ALMANOR AT PRATTVILLE, CA

LOCATION.—Lat 40°12'46", long 121°09'43", in SW 1/4 NE 1/4 sec.11, T.27 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Lassen National Forest, at intake tower to Butt Valley Tunnel at Prattville, 4.7 mi northwest of Lake Almanor Dam, and 5.6 mi northwest of Canyon Dam.

DRAINAGE AREA.—491 mi².

PERIOD OF RECORD.—July 1913 to current year. Monthly contents only for some periods, published in WSP 1315-A. Published as "near Prattville" 1937–60. Prior to October 1964, records published as usable contents.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Nonrecording gage read once daily. Datum of gage is 10.23 ft below sea level (levels by Pacific Gas & Electric Co.). Prior to June 1, 1965, nonrecording gage at site 4.7 mi southeast at same datum.

REMARKS.—Lake is formed by earthfill dam; storage began in July 1913; dam raised to gage height 4,455 ft in 1917 and 4,515 ft in 1927. Usable capacity, 1,174,887 acre-ft between gage heights 4,422 ft, invert of outlet, and 4,495.5 ft, maximum storage limit. Dead storage, 8,948 acre-ft. Water is diverted by tunnel and penstock to Butt Valley Powerplant (station 11400600) and then is used for power development in the North Fork Feather River. Figures given, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather 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, 1,142,960 acre-ft, June 8, 1982, gage height, 4,494.00 ft; minimum, 5,230 acre-ft, Feb. 5, 1918, gage height, 4,416.1 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 1,109,782 acre-ft, June 16, gage height, 4,492.77 ft; minimum, 821,074 acre-ft, Jan. 16, gage height, 4,481.42 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on surveys by Pacific Gas & Electric Co. in 1924 and 1926)

4,422	8,948	4,434	49,510	4,460	376,686
4,424	10,067	4,437	74,189	4,470	565,519
4,426	11,260	4,440	101,869	4,480	787,304
4,428	13,480	4,445	156,414	4,490	1,036,269
4,430	21,200	4,450	220,848	4,495.5	1,183,835
4,432	34,173	4,455	94,531		

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	951399	924945	903487	839832	860444	883952	954439	1012757	1080914	1102002	1053617	974781
2	948362	922190	903735	838383	860200	888634	956214	1015619	1084914	1100128	1050978	975293
3	945834	919438	905475	837418	860444	892091	957229	1017963	1088923	1101199	1048869	976317
4	943308	916439	903984	835731	860444	895306	958498	1019527	1091853	1100664	1046500	976830
5	940785	913194	903239	833803	863125	898525	960785	1020831	1093985	1098257	1042982	977599
6	938516	912446	901501	832840	867030	901005	962565	1022657	1096654	1096921	1040197	978624
7	937005	911698	899021	830675	870208	903487	964092	1024746	1098806	1095853	1037316	978624
8	935494	911698	897286	829713	873391	905972	968170	1026314	1100931	1093027	1034165	977599
9	933984	909456	894069	829232	878297	909954	969701	1028668	1102994	1091415	1032850	977599
10	931973	908211	891597	828992	878297	911698	971745	1030761	1104949	1091146	1030487	976830
11	929963	905475	888881	828031	877560	913693	973535	1031809	1107096	1088215	1028652	976573
12	927955	902494	886415	826110	877560	915690	974814	1032071	1107096	1087854	1025771	975805
13	926199	899764	883706	822991	878542	917438	977120	1032071	1108707	1084381	1022633	974781
14	924945	899021	881737	822512	880754	919438	978658	1032071	1108976	1081980	1019761	973502
15	923192	896543	879279	822033	881983	921189	980967	1033381	1109244	1082513	1017155	972735
16	920188	894069	878051	821074	882229	923192	982509	1032857	1109782	1080381	1014292	970946
17	918438	892832	876333	824190	881737	923442	984308	1034168	1108976	1078251	1011953	969159
18	919688	890115	873636	826830	882229	925697	986367	1036528	1108438	1075858	1008061	968904
19	920438	887401	870942	831637	881000	927453	987654	1038891	1108170	1075061	1005730	967119
20	921438	884444	868252	834767	881000	930214	990231	1042044	1107901	1075326	1002110	966101
21	922941	881983	865565	837177	880016	931973	992294	1044410	1107633	1073998	1000045	964319
22	923943	881983	861418	840314	877560	934488	994875	1045200	1107364	1072671	996933	963810
23	925196	884937	860687	844907	875842	936501	996167	1048622	1106291	1071611	993308	961777
24	927704	888141	860931	847086	874616	939524	999011	1052577	1104145	1069490	991240	962793
25	928708	888141	854363	849267	874126	941542	1000046	1056008	1104345	1069755	988916	961777
26	930214	891597	850964	850964	875842	943308	1003412	1060500	1103073	1068166	986853	960761
27	931470	893821	848297	852905	877560	945076	1005486	1064204	1103264	1065786	983248	959746
28	932476	893574	845875	853877	881000	946592	1008080	1068444	1103609	1063672	980678	959239
29	933733	895553	842489	854849	---	948109	1008859	1071363	1103073	1061820	978624	957971
30	930968	902990	840314	856307	---	950385	1014418	1075348	1103073	1059435	976061	957211
31	928206	---	839107	857523	---	952665	---	1078539	---	1056755	975549	---
MAX	951399	924945	905475	857523	882229	952665	1014418	1078539	1109782	1102002	1053617	978624
MIN	918438	881983	839107	821074	860200	883952	954439	1012757	1080914	1056755	975549	957211
a	4485.79	4484.78	4482.17	4482.93	4483.89	4486.76	4489.01	4491.60	4492.52	4490.77	4487.66	4486.94
b	-24966	-25216	-63883	+18416	+23477	+71665	+61753	+64121	+24534	-46318	-81206	-18338
CAL YR 1998	MAX 1123508	MIN 625736	b +214881									
WTR YR 1999	MAX 1109782	MIN 821074	b +4039									

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

b Change in contents, in acre-feet.

11399500 NORTH FORK FEATHER RIVER NEAR PRATTVILLE, CA

LOCATION.—Lat 40°10'06", long 121°05'31", in NE 1/4 SW 1/4 sec.28, T.27 N., R.8 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 0.4 mi downstream from Almanor Dam, 4.5 mi southeast of Prattville, and 9 mi upstream from Butt Creek.

DRAINAGE AREA.—493 mi².

PERIOD OF RECORD.—June 1905 to current year. Published as "below Prattville" prior to 1911. No record for January, February, or March 1911. Estimated mean discharge for water year 1911 published in WSP 1315-A.

REVISED RECORDS.—WSP 1245: 1951 (yearly summaries). WSP 1285: 1952 (yearly summaries). WDR CA-88-4: 1987 (monthly and yearly totals for Butt Valley Powerplant).

GAGE.—Water-stage recorder and broad-crested weir. Datum of gage is 4,379.86 ft above sea level. Prior to Oct. 1, 1936, nonrecording gages or water-stage recorders at several sites within 0.5 mi of present site at various datums.

REMARKS.—Flow regulated since 1913 by Lake Almanor (station 11399000) 0.5 mi upstream and since 1924 by Mountain Meadows Reservoir, capacity, 24,000 acre-ft, 12 mi upstream on Hamilton Branch. Water diverted from Lake Almanor to Butt Valley Reservoir (station 11401050) through old Almanor–Butt Creek Tunnel from May 1921 to December 1958, for use at Caribou Powerplant. Old tunnel closed Dec. 30, 1958, and diversion began Dec. 31, 1958, to Butt Valley Powerplant (station 11400600) at upstream end of Butt Valley Reservoir. See schematic diagram of North Fork Feather 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, 10,000 ft³/s, Mar. 19, 1907, before construction of dam, gage height, 16.2 ft, at former site, from rating curve extended above 3,700 ft³/s; no flow at times during 1914, 1919, 1923.

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	38	35	38	38	38	38	40	34	37	38	37	37
2	38	35	38	38	38	38	40	36	37	38	37	37
3	38	35	38	38	38	39	40	36	37	38	37	37
4	38	35	38	38	38	39	40	36	37	38	37	37
5	38	35	38	38	38	39	40	36	37	38	37	37
6	38	35	38	38	38	39	40	36	37	37	37	37
7	37	35	38	38	38	39	40	36	37	37	37	37
8	37	35	38	38	38	39	40	36	37	37	37	37
9	37	37	38	38	39	39	40	36	37	37	37	37
10	37	38	38	38	39	39	40	36	37	37	37	37
11	37	38	38	38	39	39	40	36	37	37	37	37
12	37	38	38	38	39	39	40	36	37	37	37	37
13	37	38	38	38	39	39	40	36	37	37	37	37
14	37	38	38	38	38	39	40	37	38	37	37	37
15	36	38	38	38	38	40	40	37	38	37	37	37
16	36	38	38	38	38	40	40	37	38	37	37	37
17	36	38	38	38	38	40	40	37	38	37	37	36
18	36	38	38	38	38	40	40	37	38	37	37	36
19	36	38	38	38	38	40	40	37	38	37	37	36
20	36	38	38	38	38	40	40	36	38	37	37	36
21	36	38	38	38	38	40	40	37	38	37	37	36
22	36	38	38	38	38	40	40	37	38	37	37	36
23	36	38	38	39	38	40	41	37	37	37	37	36
24	36	38	38	38	38	40	41	37	37	37	37	36
25	36	38	38	38	38	40	41	37	37	37	37	36
26	36	38	38	38	38	40	41	37	37	37	37	36
27	36	38	38	38	38	40	39	37	37	37	37	36
28	35	38	38	38	38	40	35	37	37	37	37	36
29	35	38	38	38	---	40	35	37	37	37	37	36
30	35	39	38	38	---	40	34	37	37	37	37	36
31	35	---	38	38	---	40	---	37	---	37	37	---
TOTAL	1132	1116	1178	1179	1069	1224	1187	1131	1119	1152	1147	1096
MEAN	36.5	37.2	38.0	38.0	38.2	39.5	39.6	36.5	37.3	37.2	37.0	36.5
MAX	38	39	38	39	39	40	41	37	38	38	37	37
MIN	35	35	38	38	38	38	34	34	37	37	37	36
AC-FT	2250	2210	2340	2340	2120	2430	2350	2240	2220	2280	2280	2170
a	68830	102800	131900	42310	42800	417	12330	37040	42840	82170	107800	41950

a Diversion, in acre-feet, to Butt Valley Powerplant, provided by Pacific Gas & Electric Co.

11399500 NORTH FORK FEATHER RIVER NEAR PRATTVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1958, BY WATER YEAR (WY)

MEAN	498	393	371	282	349	272	318	327	349	479	602	569
MAX	1607	1414	1418	1489	2124	1609	1852	2206	1065	1280	1755	1762
(WY)	1931	1931	1938	1946	1938	1929	1938	1938	1935	1929	1929	1929
MIN	3.80	3.32	3.41	3.20	3.20	3.61	2.63	2.02	2.11	8.02	3.72	3.16
(WY)	1942	1940	1937	1944	1944	1944	1939	1939	1939	1943	1937	1937

SUMMARY STATISTICS

WATER YEARS 1925 - 1958

ANNUAL TOTAL	
ANNUAL MEAN	401
HIGHEST ANNUAL MEAN	1061 1929
LOWEST ANNUAL MEAN	27.1 1937
HIGHEST DAILY MEAN	2670 May 17 1942
LOWEST DAILY MEAN	.50 Apr 28 1949
ANNUAL SEVEN-DAY MINIMUM	.87 Apr 25 1949
INSTANTANEOUS PEAK FLOW	2710 May 22 1941
INSTANTANEOUS PEAK STAGE	6.95 May 22 1941
ANNUAL RUNOFF (AC-FT)	290600
10 PERCENT EXCEEDS	1060
50 PERCENT EXCEEDS	60
90 PERCENT EXCEEDS	4.4

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

MEAN	47.3	44.9	33.1	80.2	78.7	37.4	42.0	49.9	68.1	63.3	59.6	44.8
MAX	510	546	59.6	1901	1800	163	293	352	660	688	596	415
(WY)	1997	1997	1997	1997	1997	1997	1983	1996	1996	1996	1996	1996
MIN	17.3	8.65	7.47	8.67	10.0	9.90	10.1	15.7	16.0	15.4	14.9	15.0
(WY)	1978	1960	1960	1960	1962	1964	1964	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1960 - 1999

ANNUAL TOTAL	13955	13730	
ANNUAL MEAN	38.2	37.6	54.0
HIGHEST ANNUAL MEAN			459 1997
LOWEST ANNUAL MEAN			22.3 1962
HIGHEST DAILY MEAN	43 Jan 17	41 Apr 23	2140 Jan 5 1997
LOWEST DAILY MEAN	35 Jul 1	34 Apr 30	2.9 Jan 9 1960
ANNUAL SEVEN-DAY MINIMUM	35 Jul 1	35 Oct 28	4.7 Oct 26 1966
INSTANTANEOUS PEAK FLOW		41 Apr 22	10000 Mar 19 1907
INSTANTANEOUS PEAK STAGE		2.57 Apr 22	16.20 Mar 19 1907
ANNUAL RUNOFF (AC-FT)	27680	27230	39100
ANNUAL DIVERSION (AC-FT) a	785600	713100	
10 PERCENT EXCEEDS	41	40	40
50 PERCENT EXCEEDS	38	38	36
90 PERCENT EXCEEDS	36	36	33

a Diversion, in acre-feet, to Butt Valley Powerplant, provided by Pacific Gas & Electric Co.

11400500 BUTT CREEK BELOW ALMANOR–BUTT CREEK TUNNEL, NEAR PRATTVILLE, CA

LOCATION.—Lat 40°11'14", long 121°11'13", in NE 1/4 NW 1/4 sec.22, T.27 N., R.7 E., Plumas County, Hydrologic Unit 18020121, on right bank 500 ft downstream from outlet of old Almanor–Butt Creek Tunnel, and 2.2 mi southwest of Prattville.

DRAINAGE AREA.—69.3 mi².

PERIOD OF RECORD.—October 1936 to September 1959, October 1964 to current year. Published as "below tunnel No. 1" 1938–40. Records for water years 1937–38 published in WSP 1515. Records prior to 1964 not equivalent owing to inflow from Almanor–Butt Creek Tunnel.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 4,300 ft above sea level, from topographic map. Prior to Oct. 5, 1937, at site 200 ft downstream at datum 4 ft lower.

REMARKS.—No regulation upstream from station. Howell–Bunger valve in conduit from Lake Almanor (station 11399000) to Butt Valley Powerplant (station 11400600) is opened for short periods several times a year, causing sharp peaks. Wallack Ditch upstream from station diverts about 3 ft³/s during each irrigation season into Yellow Creek Basin. Some inflow 500 ft upstream that is the leakage from the abandoned Almanor–Butt Creek Tunnel at Outlet (station 11400200) is included in the table below. See schematic diagram of North Fork Feather River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 4,080 ft³/s, Jan. 1, 1997, gage height, 6.22 ft, from rating curve extended above 1,400 ft³/s; minimum daily, 26 ft³/s, several days during May and June 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	62	64	181	69	84	224	133	215	155	72	58	56
2	62	63	143	68	82	178	127	220	160	71	57	57
3	62	63	262	67	82	252	124	212	152	71	57	55
4	62	63	147	67	82	196	119	192	140	71	58	55
5	62	63	114	66	80	169	121	181	133	71	58	55
6	62	64	101	66	79	155	119	190	128	71	59	54
7	62	73	96	66	136	143	116	202	122	70	59	53
8	62	72	92	65	131	136	118	191	118	69	58	53
9	62	66	86	65	287	131	116	183	115	66	59	52
10	62	66	83	65	198	123	113	178	109	66	63	53
11	62	66	81	65	152	120	121	180	103	66	63	51
12	62	65	81	65	134	118	137	192	99	65	61	50
13	63	65	81	65	123	121	140	192	97	65	59	50
14	62	65	83	66	117	120	146	180	96	64	58	50
15	62	66	79	81	110	119	152	170	91	64	58	50
16	62	66	77	114	113	123	160	167	88	63	57	50
17	62	81	77	98	156	131	180	166	87	63	56	50
18	62	69	77	170	146	139	202	171	86	63	55	50
19	62	65	74	131	135	141	214	173	84	64	55	50
20	62	64	71	163	123	144	225	172	83	62	55	51
21	62	74	63	148	119	141	226	172	82	59	55	53
22	62	132	69	123	113	137	214	184	80	59	54	52
23	62	193	72	186	111	137	206	193	77	60	55	50
24	69	134	73	131	112	152	211	205	78	59	54	50
25	68	86	76	116	118	168	219	214	77	58	54	50
26	65	87	78	109	106	170	320	212	77	58	54	50
27	63	134	78	100	106	165	264	207	76	59	55	50
28	63	97	75	95	165	152	223	195	75	59	56	50
29	63	88	74	91	---	148	204	184	75	60	56	50
30	63	285	72	88	---	148	204	172	74	59	57	50
31	62	---	72	88	---	141	---	161	---	58	57	---
TOTAL	1943	2639	2888	2957	3500	4642	5174	5826	3017	1985	1770	1550
MEAN	62.7	88.0	93.2	95.4	125	150	172	188	101	64.0	57.1	51.7
MAX	69	285	262	186	287	252	320	220	160	72	63	57
MIN	62	63	63	65	79	118	113	161	74	58	54	50
AC–FT	3850	5230	5730	5870	6940	9210	10260	11560	5980	3940	3510	3070
a	526	498	501	498	462	517	511	542	527	538	530	499

a Inflow, in acre-feet, from Almanor–Butt Creek Tunnel at Outlet, provided by Pacific Gas & Electric Co.

11400500 BUTT CREEK BELOW ALMANOR—BUTT CREEK TUNNEL, NEAR PRATTVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1999, BY WATER YEAR (WY)

MEAN	372	345	357	303	300	334	341	379	371	390	382	378
MAX	995	1073	1419	1098	1025	1050	1178	1176	1092	1038	1019	990
(WY)	1943	1938	1959	1953	1941	1953	1952	1956	1958	1953	1953	1953
MIN	32.3	39.2	39.3	39.4	38.0	47.8	47.5	42.7	32.9	28.7	27.8	29.4
(WY)	1989	1992	1991	1992	1937	1977	1977	1976	1976	1977	1977	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1937 - 1999	
ANNUAL TOTAL	53539		37891			
ANNUAL MEAN	147		104		355	
HIGHEST ANNUAL MEAN					974	
LOWEST ANNUAL MEAN					40.1	
HIGHEST DAILY MEAN	715	Mar 24	320	Apr 26	2830	Feb 17 1986
LOWEST DAILY MEAN	52	Jan 1	50	Sep 12	26	May 26 1976
ANNUAL SEVEN-DAY MINIMUM	59	Jan 4	50	Sep 12	26	May 30 1976
INSTANTANEOUS PEAK FLOW			567		4080	
INSTANTANEOUS PEAK STAGE			2.23		6.22	
ANNUAL RUNOFF (AC-FT)	106200		75160		257000	
ANNUAL INFLOW (AC-FT) a	6210		6150			
10 PERCENT EXCEEDS	334		188		989	
50 PERCENT EXCEEDS	88		79		101	
90 PERCENT EXCEEDS	62		55		43	

a Inflow, in acre-feet, from Almanor-Butt Creek Tunnel at Outlet, provided by Pacific Gas & Electric Co.

11401050 BUTT VALLEY RESERVOIR NEAR CARIBOU, CA

LOCATION.—Lat 40°06'59", long 121°08'42", in SE 1/4 SW 1/4 sec.12, T.26 N., R.7 E., Plumas County, Hydrologic Unit 18020121, on center intake tower in Butt Valley Reservoir, 2.5 mi north of Caribou, and 5.4 mi southwest of Canyon Dam.

DRAINAGE AREA.—83.5 mi².

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for water years 1983–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is 10.23 ft below sea level (levels by Great Western Power Co.).

REMARKS.—Lake is formed by earthfill dam. Storage began in 1924. Usable capacity, 49,930 acre-ft between elevations 4,075.9 ft, invert of outlet tunnel, and 4,132.1 ft, crest of spillway. Water is diverted by tunnel and penstock to Caribou Powerplants (station 11401110). Figures given, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather 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, 52,667 acre-ft, Feb. 18, 19, 1986, elevation, 4,133.80 ft; minimum, 4,284 acre-ft, Mar. 3, 1997, elevation, 4,094.95 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 49,529 acre-ft, Sept. 1, elevation, 4,131.85 ft; minimum, 24,536 acre-ft, Feb. 26, elevation, 4,114.86 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on surveys by Great Western Power Co. in 1923 and 1924)

4,090	1,754	4,120	31,592
4,100	8,024	4,130	46,591
4,110	18,395	4,137	57,891

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	45178	44710	41620	42233	37919	26330	32519	29891	46544	43173	40949	49529
2	45021	44632	41544	41544	40248	27036	32162	29557	46560	42418	40491	48876
3	44710	45492	42772	40324	37919	27828	31877	29139	46371	41650	39841	48126
4	44476	46120	43080	39358	35394	28447	31451	28861	46765	41376	39841	46293
5	44165	47066	43157	38516	32176	28958	31522	28861	46765	41696	39826	45209
6	44554	45806	43080	38666	29515	29417	31451	29209	46702	41727	40248	43142
7	44710	46041	42772	39358	28420	29849	31169	30634	46860	41833	40476	42757
8	44710	45335	42541	39267	26466	30465	31169	31550	46876	42803	40128	42495
9	45021	45413	43157	39191	27966	30887	31028	31820	46908	43342	39629	42541
10	46120	45649	43157	38741	28255	31254	30887	32775	47414	43419	40037	42341
11	46120	45884	43003	38591	28516	31592	30817	33912	46876	43590	40082	41849
12	46434	45413	43157	38965	28722	31948	30747	36141	46277	43808	39795	42094
13	47224	45099	43932	39418	27828	32290	30592	38696	45932	42880	39478	42464
14	47303	43854	44554	39569	27691	32633	30394	40399	46010	43127	40644	42772
15	47699	43311	44477	39493	27457	32975	30338	41772	45947	42957	41513	43327
16	48016	42772	44399	39946	27622	33263	30507	43204	45822	42418	41987	44181
17	48413	42695	44943	38591	27650	33522	30507	44025	45869	42849	42880	44725
18	45492	42772	45099	39071	26873	33811	31550	43745	45994	42865	43388	44492
19	46670	43003	45413	39403	26262	34186	32219	43265	46230	42295	44337	45492
20	46434	42926	45492	40188	25791	33897	33090	42680	46465	41330	44072	46293
21	46434	43080	44865	40022	25724	33782	32875	42772	46860	41544	44445	47240
22	46434	43080	44865	40399	26262	33594	31806	44134	46971	40598	44928	46923
23	46512	43621	45696	41162	26466	33594	31240	44508	46908	40537	46497	48349
24	46591	43699	45492	41544	25590	33450	31169	45194	47240	41681	46214	47129
25	46670	41620	45649	41849	25804	33378	30887	46246	46955	41528	45256	46828
26	46749	38889	46041	42618	24536	33450	31042	46591	46340	40857	44368	46844
27	46749	39342	46120	43080	24908	33306	30831	46797	46246	40689	43917	46828
28	46591	39418	46355	42387	25590	33017	30239	46987	45476	41112	43652	45900
29	46277	39493	46670	42156	---	32889	30408	47003	44399	39811	45775	46387
30	44943	40248	46670	42079	---	32832	30352	46844	43435	39539	47905	46512
31	45256	---	45413	42002	---	32690	---	46860	---	40445	48142	---
MAX	48413	47066	46670	43080	40248	34186	33090	47003	47414	43808	48142	49529
MIN	44165	38889	41544	38516	24536	26330	30239	28861	43435	39539	39478	41849
a	4129.15	4125.90	4129.25	4127.05	4115.65	4120.77	4119.12	4130.17	4127.98	4126.03	4130.98	4129.95
b	+78	-5008	+5165	-3411	-16412	+7100	-2338	+16508	-3425	-2990	+7697	-1630
c	18090	30160	34480	17450	17730	258	1680	2570	9810	23880	33220	296

CAL YR 1998 MAX 49370 MIN 33811 b +5618 c 645900

WTR YR 1999 MAX 49529 MIN 24536 b +1334 c 189600

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Discharge, in acre-feet, through Caribou Powerplants, provided by Pacific Gas & Electric Co.

11401112 NORTH FORK FEATHER RIVER BELOW BELDEN DAM, CA

LOCATION.—Lat 40°04'17", long 121°09'49", in NE 1/4 NW 1/4 sec.35, T.26 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 0.4 mi downstream from Belden Dam, 0.5 mi upstream from Deadwood Canyon, and 6.4 mi northeast of Belden.

DRAINAGE AREA.—612 mi².

PERIOD OF RECORD.—October 1969 to current year. July 1959 to September 1969 in files of Pacific Gas & Electric Co.

REVISED RECORDS.—WDR CA-78-4: 1977 (monthly and yearly summaries).

GAGE.—Water-stage recorder. Datum of gage is 2,800.77 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Flow regulated by Butt Valley Reservoir (station 11401050), Lake Almanor (station 11399000), Belden Reservoir, and Mountain Meadows Reservoir, combined capacity, 1,267,000 acre-ft. Diversion to Belden Powerplant (station 11403050) began on Aug. 27, 1969. See schematic diagram of North Fork Feather 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, 3,460 ft³/s, Jan. 1, 1997, gage height, 9.17 ft; minimum daily, 2.3 ft³/s, Oct. 25, 1981.

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	63	64	63	63	63	157	407	144	144	146	143	143
2	64	64	62	63	67	162	405	144	143	142	144	143
3	64	65	63	63	69	254	399	144	143	143	143	143
4	64	65	63	63	67	292	417	145	143	142	143	143
5	63	64	62	63	66	242	398	144	143	143	143	143
6	63	64	62	63	66	197	386	144	143	143	143	119
7	64	64	62	64	65	175	399	144	143	144	143	62
8	64	64	62	63	65	156	405	144	143	144	144	62
9	64	65	62	63	105	191	395	145	143	143	144	63
10	63	63	62	62	68	170	400	144	143	143	143	62
11	64	61	62	63	66	150	407	144	142	142	143	63
12	64	61	62	63	65	152	402	144	144	143	143	62
13	64	61	63	63	66	153	405	144	145	144	143	63
14	63	61	63	62	65	152	399	144	142	143	144	63
15	64	61	62	62	65	151	392	144	143	143	143	63
16	64	62	63	63	65	151	397	144	143	143	143	63
17	65	61	63	64	65	151	405	144	143	143	143	63
18	72	62	63	64	65	151	399	144	143	144	144	64
19	146	62	62	64	66	210	397	144	143	143	143	63
20	147	61	63	65	64	359	251	144	143	143	143	64
21	149	62	63	64	65	405	148	144	142	144	143	64
22	150	62	63	64	65	398	148	145	143	143	144	63
23	160	62	64	64	65	391	148	144	143	144	148	64
24	162	66	63	63	65	381	146	145	144	143	144	63
25	155	65	64	63	65	397	146	144	143	143	144	64
26	153	64	64	64	127	403	148	144	143	144	143	63
27	150	65	64	63	153	387	146	143	142	143	144	63
28	150	62	64	62	154	399	145	145	143	142	144	62
29	149	61	63	63	---	402	144	144	144	142	144	63
30	87	63	63	63	---	399	147	144	143	143	143	64
31	64	---	63	63	---	392	---	144	---	143	143	---
TOTAL	2978	1887	1947	1959	2112	8130	9331	4468	4292	4438	4449	2347
MEAN	96.1	62.9	62.8	63.2	75.4	262	311	144	143	143	144	78.2
MAX	162	66	64	65	154	405	417	145	145	146	148	143
MIN	63	61	62	62	63	150	144	143	142	142	143	62
AC-FT	5910	3740	3860	3890	4190	16130	18510	8860	8510	8800	8820	4660
a	64050	106200	118000	59490	86320	0	16620	30240	46350	81130	94740	48720

a Diversion, in acre-feet, to Belden Powerplant, provided by Pacific Gas & Electric Co.

11401112 NORTH FORK FEATHER RIVER BELOW BELDEN DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1999, BY WATER YEAR (WY)

MEAN	134	143	122	138	113	109	167	170	147	139	136	124
MAX	1414	2487	1664	1200	616	591	743	549	374	199	173	1134
(WY)	1975	1975	1975	1997	1997	1975	1983	1995	1995	1970	1970	1987
MIN	57.8	38.4	45.2	51.6	51.2	50.0	63.1	62.2	56.5	64.2	89.0	61.9
(WY)	1985	1981	1976	1976	1976	1976	1972	1971	1971	1971	1972	1976

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1970 - 1999	
ANNUAL TOTAL	36248		48338			
ANNUAL MEAN	99.3		132		137	
HIGHEST ANNUAL MEAN					745	
LOWEST ANNUAL MEAN					76.3	
HIGHEST DAILY MEAN	500	Feb 3	417	Apr 4	2800	Nov 20 1974
LOWEST DAILY MEAN	61	Nov 11	61	Nov 11	2.3	Oct 25 1981
ANNUAL SEVEN-DAY MINIMUM	61	Nov 11	61	Nov 11	3.5	Oct 25 1981
INSTANTANEOUS PEAK FLOW			552		3460	Apr 4 1997
INSTANTANEOUS PEAK STAGE			5.23		9.17	Apr 4 1997
ANNUAL RUNOFF (AC-FT)	71900		95880		99250	
ANNUAL DIVERSION (AC-FT) a	867700		751800			
10 PERCENT EXCEEDS	144		202		150	
50 PERCENT EXCEEDS	66		143		68	
90 PERCENT EXCEEDS	63		63		60	

a Diversion, in acre-feet, to Belden Powerplant, provided by Pacific Gas & Electric Co.

11401165 SOUTH BRANCH WARD CREEK BELOW DIVERSION DAM, NEAR GENESEE, CA

LOCATION.—Lat 40°00'07", long 120°42'07", in SE 1/4 NE 1/4 sec.26, T.25 N., R.11 E., Plumas County, Hydrologic Unit 18020122, on left bank 20 ft downstream from diversion dam, 30 ft downstream from Nye Creek, 3.5 mi upstream from Indian Creek, and 3.8 mi southeast of Genesee.

DRAINAGE AREA.—6.74 mi².

PERIOD OF RECORD.—October 1990 to current year (low-flow records only).

GAGE.—Water-stage recorder and V-notch sharp-crested weir in concrete control. Elevation of gage is 5,300 ft above sea level, from topographic map.

REMARKS.—No records computed above 12 ft³/s. Flow regulated at diversion dam 20 ft upstream. Some water is diverted to Five Bears Powerplant and bypasses this gage. See schematic diagram of North Fork Feather River Basin.

COOPERATION.—Records were collected by Five Bears Hydro, Inc., 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	3.2	3.2	3.9	3.2	3.2	4.9	10	12	---	3.3	3.2	3.2
2	3.2	3.2	3.9	3.2	3.2	11	10	12	12	3.3	3.2	3.2
3	3.2	3.2	6.9	3.2	3.2	11	11	11	10	3.3	3.2	3.2
4	3.2	3.2	6.0	3.2	3.2	10	10	11	10	3.2	3.2	3.2
5	3.2	3.2	5.4	3.2	3.2	10	10	11	10	3.2	3.2	3.2
6	3.2	3.2	4.9	3.2	3.2	10	9.5	12	11	3.2	3.2	3.2
7	3.2	3.3	4.7	3.2	3.5	10	9.4	12	11	3.2	3.2	3.2
8	3.2	3.2	4.6	3.2	3.4	10	9.3	12	11	3.3	3.2	3.2
9	3.2	3.2	4.5	3.2	4.3	10	8.8	12	11	3.2	3.2	3.2
10	3.2	3.2	4.4	3.2	4.0	9.4	8.7	11	11	3.2	3.2	3.2
11	3.2	3.2	4.4	3.2	3.8	9.0	9.0	11	10	3.2	3.2	3.2
12	3.2	3.2	4.4	3.2	3.7	8.7	9.6	12	10	3.2	3.2	3.2
13	3.2	3.2	4.4	3.2	3.6	8.8	11	12	10	3.2	3.2	3.2
14	3.2	3.2	4.3	3.2	3.6	8.8	11	11	10	3.2	3.2	3.2
15	3.2	3.2	4.1	3.2	3.6	9.0	11	11	10	3.2	3.2	3.2
16	3.2	3.2	4.1	3.3	3.6	9.2	11	11	10	3.2	3.2	3.2
17	3.2	3.2	4.7	3.3	3.9	9.6	11	11	5.1	3.3	3.2	3.2
18	3.2	3.2	4.7	3.6	3.9	10	12	11	3.6	3.3	3.2	3.2
19	3.2	3.2	3.9	3.7	3.8	11	---	12	3.7	3.3	3.2	3.2
20	3.2	3.2	3.2	4.2	3.8	11	---	12	3.7	3.2	3.2	3.2
21	3.2	3.7	4.2	3.6	4.2	11	---	12	3.6	3.2	3.2	3.2
22	3.2	4.2	5.0	3.5	3.5	11	12	---	3.6	3.2	3.2	3.2
23	3.2	4.4	3.4	3.7	3.5	11	11	---	3.6	3.2	3.4	3.2
24	3.2	3.7	3.2	3.6	3.6	11	12	---	4.3	3.3	3.2	3.2
25	3.2	3.4	3.2	3.5	3.8	11	12	---	3.5	3.2	3.2	3.2
26	3.2	3.4	3.2	3.4	3.7	11	---	---	3.4	3.2	3.2	3.2
27	3.2	3.4	3.2	3.3	3.6	10	---	---	3.3	3.2	3.2	3.2
28	3.2	4.1	3.2	3.3	3.8	10	---	---	4.1	3.2	3.2	3.2
29	3.2	3.4	3.2	3.3	---	10	11	---	4.9	3.2	3.2	3.2
30	3.2	3.9	3.2	3.2	---	10	11	---	3.5	3.2	3.2	3.6
31	3.2	---	3.2	3.2	---	10	---	---	---	3.2	3.2	---
TOTAL	99.2	101.7	129.6	103.7	101.4	307.4	---	---	---	100.0	99.4	96.4
MEAN	3.20	3.39	4.18	3.35	3.62	9.92	---	---	---	3.23	3.21	3.21
MAX	3.2	4.4	6.9	4.2	4.3	11	---	---	---	3.3	3.4	3.6
MIN	3.2	3.2	3.2	3.2	3.2	4.9	---	---	---	3.2	3.2	3.2
AC-FT	197	202	257	206	201	610	---	---	---	198	197	191

11402000 SPANISH CREEK ABOVE BLACKHAWK CREEK, AT KEDDIE, CA

LOCATION.—Lat 40°00'11", long 120°57'12", in SE 1/4 NE 1/4 sec.27, T.25 N., R.9 E., Plumas County, Hydrologic Unit 18020122, on right bank 200 ft upstream from Blackhawk Creek and 0.9 mi southeast of Keddie.

DRAINAGE AREA.—184 mi².

PERIOD OF RECORD.—October 1933 to current year.

REVISED RECORDS.—WSP 1041: 1938(M).

GAGE.—Water-stage recorder. Datum of gage is 3,129.86 ft above sea level.

REMARKS.—Records good. Low flow regulated by five small reservoirs having a combined capacity of 800 acre-ft. Approximately 4,600 acres irrigated upstream from station (from information provided by U.S. Forest Service). City of Quincy diverts about 450 acre-ft annually for municipal supply. See schematic diagram of North Fork Feather River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 22,100 ft³/s, Jan. 2, 1997, gage height, 15.68 ft, from rating curve extended above 5,200 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 3.0 ft³/s, Sept. 4, 5, 1988.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,700 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	1900	3,170	6.43	Feb. 9	1115	8,340	a10.08
Jan. 20	2015	2,750	6.05	Feb. 28	2315	1,970	5.22

a From high-water mark in well.

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	62	66	1260	124	265	1580	343	486	309	76	42	34
2	61	65	560	119	245	1150	322	537	292	74	39	43
3	66	64	1600	116	234	1600	310	492	294	72	36	44
4	67	63	911	113	228	1190	291	444	290	78	31	47
5	63	65	497	113	217	912	302	406	256	76	35	41
6	58	69	373	112	262	756	299	424	246	67	40	35
7	59	95	295	111	1710	643	297	489	235	60	48	39
8	60	123	261	110	1700	569	340	471	220	64	44	30
9	60	89	232	106	5390	556	325	436	205	62	43	30
10	61	81	210	103	2040	473	316	410	201	56	36	39
11	60	81	197	104	1180	430	357	398	191	63	57	32
12	59	77	189	104	850	400	414	422	189	59	52	32
13	56	76	182	104	675	386	450	441	184	52	47	39
14	60	75	190	103	565	383	502	397	175	56	46	34
15	60	74	178	122	473	374	514	362	168	50	46	40
16	59	73	171	211	483	368	525	343	164	52	46	35
17	59	124	168	218	1170	369	589	343	152	58	41	39
18	59	109	166	992	1060	387	684	350	140	57	30	36
19	57	87	164	1000	1040	406	713	366	137	53	30	38
20	51	80	157	2040	794	414	732	375	136	45	35	37
21	54	78	133	1540	761	390	719	376	e132	43	37	35
22	57	200	147	874	627	369	615	399	134	49	38	40
23	61	635	136	1960	579	358	537	432	117	52	37	39
24	68	609	156	1130	553	359	535	450	118	48	36	35
25	89	251	141	758	934	422	573	481	110	48	34	34
26	71	180	141	575	727	431	694	481	112	48	30	35
27	66	411	139	444	603	444	667	449	106	44	35	40
28	68	336	137	375	1030	403	571	409	96	48	41	33
29	65	290	132	334	---	376	473	377	90	42	43	38
30	65	1630	128	303	---	375	441	359	85	42	37	36
31	64	---	128	288	---	369	---	337	---	43	30	---
TOTAL	1925	6256	9479	14706	26395	17642	14450	12942	5284	1737	1222	1109
MEAN	62.1	209	306	474	943	569	482	417	176	56.0	39.4	37.0
MAX	89	1630	1600	2040	5390	1600	732	537	309	78	57	47
MIN	51	63	128	103	217	358	291	337	85	42	30	30
AC-FT	3820	12410	18800	29170	52350	34990	28660	25670	10480	3450	2420	2200

e Estimated.

11402000 SPANISH CREEK ABOVE BLACKHAWK CREEK, AT KEDDIE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1999, BY WATER YEAR (WY)

MEAN	58.8	131	288	447	527	568	566	433	176	53.2	29.2	30.9
MAX	702	1015	1498	2657	2843	2043	1715	1301	755	187	74.6	63.8
(WY)	1963	1982	1956	1997	1986	1995	1952	1938	1983	1983	1983	1983
MIN	18.4	34.9	35.3	37.5	50.5	56.1	44.3	50.6	18.6	10.8	5.10	7.57
(WY)	1989	1991	1977	1937	1991	1977	1977	1977	1977	1934	1934	1934

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1934 - 1999	
ANNUAL TOTAL	169823		113147			
ANNUAL MEAN	465		310		274	
HIGHEST ANNUAL MEAN					641	
LOWEST ANNUAL MEAN					34.1	
HIGHEST DAILY MEAN	4510	Feb 3	5390	Feb 9	18000	Jan 2 1997
LOWEST DAILY MEAN	41	Sep 15	30	Aug 18	3.0	Sep 4 1988
ANNUAL SEVEN-DAY MINIMUM	46	Sep 14	34	Sep 8	4.4	Aug 18 1934
INSTANTANEOUS PEAK FLOW			8340	Feb 9	22100	Jan 2 1997
INSTANTANEOUS PEAK STAGE			10.08	Feb 9	15.68	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	336800		224400		198800	
10 PERCENT EXCEEDS	1000		688		656	
50 PERCENT EXCEEDS	323		152		90	
90 PERCENT EXCEEDS	54		39		24	

11403200 NORTH FORK FEATHER RIVER BELOW ROCK CREEK DIVERSION DAM, CA

LOCATION.—Lat 39°58'49", long 121°16'33", in SW 1/4 NW 1/4 sec.35, T.25 N., R.6 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 0.7 mi downstream from Rock Creek Diversion Dam and 5.0 mi northeast of Storrie.

DRAINAGE AREA.—1,773 mi².

PERIOD OF RECORD.—October 1985 to February 1986, October 1986 to current year. Unpublished records for water years 1982–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Elevation of gage is 2,120 ft above sea level, from topographic map.

REMARKS.—Low and medium flow regulated by Rock Creek Forebay 0.7 mi upstream. Most of the flow is diverted to Rock Creek Powerplant (station 11403800). Diversion to Rock Creek Powerplant began Feb. 28, 1950. See schematic diagram of North Fork Feather 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, 91,600 ft³/s, Jan. 2, 1997, gage height, 31.85 ft; minimum daily, 50 ft³/s, Feb. 7, 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	146	146	3420	83	84	3270	831	794	174	132	125	164
2	146	118	1220	81	82	2490	96	889	175	139	125	164
3	155	80	4210	84	82	3730	93	788	168	140	128	170
4	155	81	3200	82	81	3160	97	406	168	137	131	245
5	149	81	1670	82	80	1830	93	236	446	132	131	209
6	142	79	1110	85	80	1120	92	233	953	130	133	170
7	145	81	710	85	1650	578	93	223	493	131	129	151
8	146	81	506	84	4610	231	98	218	230	131	130	165
9	150	79	235	84	15400	193	95	203	143	135	129	175
10	145	76	90	82	9220	128	90	189	148	132	130	188
11	149	74	93	81	5150	70	89	176	145	124	125	191
12	149	72	95	81	3650	140	97	186	152	131	122	176
13	148	73	93	83	2050	211	96	186	152	132	120	180
14	151	73	88	80	121	212	94	176	152	136	124	170
15	158	76	87	82	72	176	84	179	151	135	120	170
16	150	74	88	84	767	153	95	170	143	134	123	149
17	160	83	86	86	2040	154	133	172	149	135	121	184
18	151	78	84	90	2590	152	680	181	148	126	120	194
19	161	77	87	86	2830	166	1060	182	147	128	122	180
20	155	77	83	2440	2120	164	1170	177	139	132	119	196
21	140	75	82	2880	1940	165	1680	179	146	131	123	226
22	127	80	81	457	1500	157	1340	185	148	124	120	246
23	138	860	82	2740	1390	138	1130	179	146	131	125	502
24	178	528	85	1440	1460	126	1030	177	146	130	120	311
25	175	391	84	225	2360	124	1070	181	141	130	118	181
26	170	435	84	88	1470	109	2800	190	147	128	122	181
27	150	291	84	86	667	380	3060	190	144	129	114	178
28	138	80	84	84	815	397	1160	174	141	127	107	179
29	134	81	84	86	---	774	885	168	137	129	115	188
30	158	2290	84	85	---	1360	687	183	127	125	307	198
31	156	---	83	84	---	1210	---	179	---	125	607	---
TOTAL	4675	6770	18172	12280	64361	23268	20118	7949	5999	4061	4485	5981
MEAN	151	226	586	396	2299	751	671	256	200	131	145	199
MAX	178	2290	4210	2880	15400	3730	3060	889	953	140	607	502
MIN	127	72	81	80	72	70	84	168	127	124	107	149
AC-FT	9270	13430	36040	24360	127700	46150	39900	15770	11900	8050	8900	11860
a	91450	154000	182100	155800	147000	161800	156900	173000	115100	107900	117800	64940

a Diversion, in acre-feet, to Rock Creek Powerplant, provided by Pacific Gas & Electric Co.

11403200 NORTH FORK FEATHER RIVER BELOW ROCK CREEK DIVERSION DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	117	93.4	342	1304	826	1527	911	946	475	118	117	131
MAX	175	226	3012	12700	3378	8612	5384	7371	2684	164	178	313
(WY)	1987	1999	1997	1997	1996	1995	1995	1995	1995	1998	1997	1997
MIN	52.7	53.2	52.4	52.0	52.9	52.9	54.2	55.3	55.7	55.3	53.0	53.0
(WY)	1988	1988	1995	1992	1994	1994	1990	1987	1987	1987	1987	1987

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	290785		178119			
ANNUAL MEAN	797		488		576	
HIGHEST ANNUAL MEAN					2333	
LOWEST ANNUAL MEAN					77.7	
HIGHEST DAILY MEAN	13900	Mar 24	15400	Feb 9	74400	Jan 2 1997
LOWEST DAILY MEAN	66	Apr 15	70	Mar 11	50	Feb 7 1989
ANNUAL SEVEN-DAY MINIMUM	70	Apr 13	74	Nov 10	51	Dec 22 1993
INSTANTANEOUS PEAK FLOW			24700	Feb 9	91600	Jan 2 1997
INSTANTANEOUS PEAK STAGE			19.60	Feb 9	31.85	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	576800		353300		417000	
ANNUAL DIVERSION (AC-FT) a	1907000		1628000			
10 PERCENT EXCEEDS	2390		1270		994	
50 PERCENT EXCEEDS	149		146		108	
90 PERCENT EXCEEDS	79		82		53	

a Diversion, in acre-feet, to Rock Creek Powerplant, provided by Pacific Gas & Electric Co.

11403450 MILK RANCH CONDUIT AT OUTLET, NEAR BUCKS LODGE, CA

LOCATION.—Lat 39°54'09", long 121°13'36", in SW 1/4 SW 1/4 sec.29, T.24 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 150 ft upstream from right abutment of Lower Bucks Lake Dam, 200 ft upstream from outlet, and 3.4 mi northwest of Bucks Lodge.

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1981–84 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder in 3-ft steel pipe. Elevation of gage is 5.050 ft above sea level.

REMARKS.—Conduit diverts from channel below Three Lakes Reservoir, capacity, 513 acre-ft, and from 12 additional diversions along the conduit. Water is used for power at Bucks Creek Powerplant (station 11403700) and Grizzly Powerplant (station 11404240). See schematic diagram of North Fork Feather River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 71 ft³/s, Apr. 29, 1995, May 17, 1996; minimum daily, no flow for many days in the 1997, 1998, and 1999 water 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	.00	9.6	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	9.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	9.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	9.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	9.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	9.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	9.2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	9.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	9.2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	9.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	9.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	8.9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	8.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.10	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	3.1	.01	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	9.7	.02	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	9.6	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	22.50	235.89	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.73	7.86	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	9.7	24	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	45	468	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	3.08	4.01	6.19	5.76	8.99	16.5	26.9	28.1	14.3	6.14	2.97	2.96
MAX	6.96	8.15	27.5	19.2	38.7	42.7	59.6	66.6	57.3	30.5	7.35	6.82
(WY)	1994	1990	1997	1995	1996	1989	1989	1993	1993	1995	1992	1990
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1998	1998	1998	1998	1997	1997	1997	1997	1997	1997	1997	1997

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1987 - 1999

ANNUAL TOTAL	258.41	258.41		
ANNUAL MEAN	.71	.71	10.5	
HIGHEST ANNUAL MEAN			21.6	1993
LOWEST ANNUAL MEAN			.000	1998
HIGHEST DAILY MEAN	24	Nov 23	71	Apr 29 1995
LOWEST DAILY MEAN	.00	Jan 1	.00	Jan 2 1997
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	513	513	7590	
10 PERCENT EXCEEDS	.00	.00	33	
50 PERCENT EXCEEDS	.00	.00	4.5	
90 PERCENT EXCEEDS	.00	.00	.00	

11403500 BUCKS LAKE NEAR BUCKS LODGE, CA

LOCATION.—Lat 39°53'45", long 121°12'08", in SE 1/4 NW 1/4 sec.33, T.24 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, in outlet structure 100 ft upstream from dam on Bucks Creek, 2.0 mi northwest of Bucks Lodge, and 15 mi west of Quincy.

DRAINAGE AREA.—28.6 mi².

PERIOD OF RECORD.—1927–28 (year-end contents only, published in WSP 1315-A), October 1928 to current year. Prior to October 1954, published as Bucks Creek Reservoir near Bucks Ranch.

GAGE.—Water-stage recorder. Datum of gage is 3.50 ft below sea level (levels by Feather River Power Co.).

REMARKS.—Reservoir is formed by concrete-faced, rockfill dam, completed in 1927; storage began in May 1927. Capacity, 101,400 acre-ft between elevations 5,064.75 ft, sill of outlet gate, and 5,154.85 ft, spillway crest. Storage of 274 acre-ft is not available for release. Released water flows down Bucks Creek to Lower Bucks Lake (station 11403520), where most of the water is diverted to Bucks Creek Tunnel or Grizzly Powerplant (station 11304240), which discharges into Grizzly Creek. Figures given, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather 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, 107,278 acre-ft, May 17, 1996, elevation, 5,157.9 ft; minimum, 12,330 acre-ft, Feb. 27, 1929, elevation, 5,090.7 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 100,833 acre-ft, July 2, 3, elevation, 5,154.4 ft; minimum, 49,814 acre-ft, Jan. 16, elevation, 5,123.1 ft.

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

(Based on survey by Feather River Power Co. in 1927)

5,090	11,742	5,130	59,997
5,095	16,183	5,140	75,894
5,100	21,180	5,150	92,950
5,110	32,519	5,160	111,220
5,120	45,472		

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	74580	61994	58782	54007	55483	63233	64952	71001	91719	100651	89795	75730
2	74089	61530	59238	53714	55632	63857	64637	71649	92071	100833	89273	75730
3	73763	61223	60917	53422	55632	64481	64481	72297	92598	100833	88752	75730
4	73273	60764	61223	53130	55483	64794	64481	72784	93127	100651	88752	75730
5	72947	60304	61070	52691	55188	65109	64325	73273	93658	100287	87885	75730
6	72459	59997	60917	52401	55335	65109	64169	73763	94189	99743	87367	75730
7	71973	59997	60610	51967	56079	65266	63857	74416	94720	99382	86851	75730
8	71487	59845	60304	51678	56973	65581	64013	74909	95076	99201	86334	75730
9	71001	59541	59997	51389	58328	65581	63857	75566	95433	99020	85818	75730
10	70679	58934	59845	51100	58630	65738	63857	76059	95789	98659	85475	75894
11	70197	58630	59541	51100	58934	65424	64013	76556	96324	98118	84962	75730
12	69714	58177	59238	50814	59238	65424	63857	77217	96682	97759	84619	75730
13	69232	57726	58934	50386	59238	65266	63545	77881	97041	97220	84107	75894
14	68913	57425	58934	50100	59541	65266	63545	78381	97400	96861	83597	75730
15	68434	56973	58782	49957	59693	65424	63545	78880	97759	96324	83087	75894
16	67955	56675	58782	49814	60304	65266	63701	79548	97938	96324	82577	75894
17	67478	56526	58478	50386	60610	65266	64013	80051	98297	95433	82239	75730
18	67003	56079	58177	51389	61070	65266	64481	80721	98478	94898	81733	75894
19	66527	56632	57726	51823	61223	65109	64952	81227	98659	94366	81227	75894
20	66053	55335	57726	52837	61685	65109	65424	81902	98839	94012	80721	75894
21	65738	55188	57565	53130	61994	65109	65895	82747	99201	93825	80386	75894
22	65266	55040	57124	53714	62149	64952	66210	83427	99382	93481	79883	75894
23	64794	56377	56824	54450	61839	64794	66686	84277	99563	93304	79381	75894
24	64637	56824	56526	54893	61839	64637	67161	85304	99743	93127	78880	75894
25	64325	56675	56228	54893	61839	64637	67795	86334	99924	92774	78381	75894
26	64325	56526	55930	54745	61530	64637	68434	87195	100105	92423	78048	75894
27	64013	56675	55632	54745	61685	64794	69073	88059	100105	91895	77548	75566
28	63701	56675	55483	54893	62613	64952	69553	89099	100469	91719	77052	75566
29	63233	56526	55188	55188	---	64794	69875	89795	100469	91192	76556	75401
30	62922	58328	54745	55335	---	65109	70357	90668	100651	90668	76059	74909
31	62458	---	54450	55483	---	64952	---	91368	---	90319	75730	---
MAX	74580	61994	61223	55483	62613	65738	70357	91368	100651	100833	89795	75894
MIN	62458	55040	54450	49814	55188	63233	63545	71001	91719	90319	75730	74909
a	5131.6	5128.9	5126.3	5127.0	5131.7	5133.2	5136.6	5149.1	5154.3	5148.5	5139.9	5139.4
b	-12615	-4130	-3878	+1033	+7130	+2339	+5405	+21011	+9283	-10332	-14589	-821
CAL YR 1998	MAX 104867	MIN 45611	b +8839									
WTR YR 1999	MAX 100833	MIN 49814	b -164									

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11403520 LOWER BUCKS LAKE NEAR BUCKS LODGE, CA

LOCATION.—Lat 39°53'59", long 121°13'32", in NE 1/4 NW 1/4 sec.32, T.24 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, in outlet tower for Bucks Creek Tunnel 900 ft upstream from Buck Diversion Dam, 1.3 mi downstream from Bucks Lake Dam, and 3.2 mi northwest of Bucks Lodge.

DRAINAGE AREA.—31.3 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. Datum of gage is 3.50 ft below sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Lake is formed by concrete dam. Storage began in October 1929. Usable capacity, 5,796 acre-ft between elevations 4,952 ft, point of lowest drawdown, and 5,021.95 ft, crest of spillway. Water is received from Bucks Lake (station 11403500) and from Milk Ranch Conduit (station 11403450). Most of the water is diverted through Bucks Creek Tunnel or Grizzly Powerplant (station 11404240) and discharges into Grizzly Creek for power development downstream. Figures given, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather 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, 6,203 acre-ft, May 18, 1996, elevation, 5,024.6 ft; minimum, 99 acre-ft, Sept. 9, 1993, elevation, 4,956.1 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 5,414 acre-ft, July 20, elevation, 5,018.8 ft; minimum, 3,524 acre-ft, July 3, elevation, 5,003.2 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Feather River Power Co. in 1928)

4,950	24	5,000	3,175
4,960	194	5,010	4,307
4,970	624	5,020	5,573
4,980	1,314	5,030	6,981
4,990	2,171		

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	4118	4001	4785	4355	4660	4710	4404	3805	3817	3579	4685	5166
2	4036	3931	4562	4319	4673	4735	4513	3828	4071	3557	4673	5166
3	3955	3989	4648	4452	4319	4685	4428	3862	4071	3524	4501	5166
4	3955	4071	4428	4428	4200	4598	4440	3862	4048	3897	4464	5153
5	3920	4094	4452	4392	4379	4464	4404	3862	4048	4236	4488	5153
6	3908	4416	4379	4355	4685	4537	4355	3885	4048	4525	4623	5140
7	3897	4513	4296	4260	4735	4416	4525	3908	4036	4860	4697	5127
8	3851	4440	4200	4319	4773	4452	4416	3920	4024	4611	4623	5127
9	3794	4355	4094	4392	4872	4501	4440	3931	4013	4488	4673	5114
10	3943	4392	3989	4635	4885	4343	4513	3943	3760	4537	4697	5114
11	3943	4416	3874	4379	4885	4488	4379	3966	3760	4697	4574	5101
12	3978	4189	4153	4319	4440	4440	4452	3989	3748	4660	4598	5101
13	3931	4094	4598	4549	5025	4598	4404	4013	3737	4722	4452	5089
14	3897	4001	4525	4331	5037	4476	4513	4024	3680	4673	4367	5089
15	3874	3828	4586	4284	5037	4343	4367	3966	3658	4697	4284	5076
16	3828	3726	4392	4611	5050	4501	4404	3931	3658	4885	4260	5063
17	3680	3658	4367	4476	4999	4440	4416	3862	3647	4986	4200	5063
18	3851	3613	4331	4476	5025	4319	4428	3874	3726	5114	4212	5050
19	3714	3591	4513	4598	4923	4392	4440	3839	3714	5231	4106	5050
20	3636	3591	4488	4598	4722	4416	4452	3760	3692	5414	3978	5037
21	3579	3874	4236	4611	4452	4307	4464	3760	3680	5153	4106	5037
22	3613	4165	4272	4635	4319	4452	4379	3771	3680	5140	3989	5025
23	3955	4673	4307	4673	4476	4488	4296	3771	3692	5166	4416	4999
24	4404	4476	4392	4685	4440	4537	4236	3760	3703	4872	4537	4974
25	4513	4367	4452	4537	4464	4428	4260	3624	3703	5089	4355	4948
26	4416	4392	4501	4598	4623	4673	4212	3624	3703	4860	4212	4936
27	4549	4549	4611	4489	4673	4549	4236	3624	3714	5025	4331	5114
28	4319	4319	4464	4452	4735	4476	4249	3624	3714	4885	4118	4986
29	4236	4612	4416	4452	---	4574	3771	3624	3726	4697	4331	4936
30	4141	4772	4392	4440	---	4416	3782	3624	3726	4785	4797	5140
31	4094	---	4367	4440	---	4537	---	3591	---	4722	5179	---
MAX	4549	4772	4785	4685	5050	4735	4525	4024	4071	5414	5179	5166
MIN	3579	3591	3874	4260	4200	4307	3771	3591	3647	3524	3978	4936
a	5008.2	5013.8	5010.5	5011.1	5013.5	5011.9	5005.5	5003.8	5005.0	5013.4	5017.0	5016.7
b	-36	+678	-405	+73	+295	-198	-755	-191	+135	+996	+457	-39
CAL YR 1998	MAX 5884	MIN 3579	b +273									
WTR YR 1999	MAX 5414	MIN 3524	b +1010									

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11403530 BUCKS CREEK BELOW DIVERSION DAM, NEAR BUCKS LODGE, CA

LOCATION.—Lat 39°54'16", long 121°13'47", in NW 1/4 SW 1/4 sec.29, T.24 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 20 ft upstream from unnamed tributary, 0.2 mi downstream from diversion dam, and 3.6 mi northwest of Bucks Lodge.

DRAINAGE AREA.—31.5 mi².

PERIOD OF RECORD.—October 1990 to current year. Unpublished records for water years 1981–90 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and concrete control with V-notch sharp-crested weir Sept. 19, 1990, to Sept. 24, 1998. Ultrasonic velocity meter since Sept. 24, 1998. Elevation of gage is 4,850 ft above sea level, from topographic map.

REMARKS.—Flow regulated by diversion dam at lower Bucks Lake 0.2 mi upstream, where most of the flow is diverted to Grizzly Creek via Bucks Creek Tunnel outlet or Grizzly Powerplant (station 11404240). Prior to Sept. 19, 1990, low flows regulated by fixed-plate orifice at outlet of diversion dam. See schematic diagram of North Fork Feather 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	3.7	3.7	2.9	1.5	1.5	1.5	2.7	2.6	3.6	3.6	3.8	3.9
2	3.7	3.6	1.5	1.5	1.5	1.5	2.7	2.6	3.6	3.5	3.8	3.9
3	3.7	3.6	1.5	1.5	1.5	1.5	2.7	2.6	3.7	3.5	3.8	3.9
4	3.6	3.7	1.5	1.5	1.5	1.5	2.7	2.6	3.7	3.6	3.8	3.9
5	3.6	3.7	1.5	1.5	1.5	1.5	2.7	2.6	3.7	3.7	3.8	3.9
6	3.6	3.7	1.5	1.5	1.5	1.5	2.7	2.6	3.7	3.7	3.8	3.9
7	3.6	3.8	1.5	1.5	1.5	1.5	2.7	2.6	3.7	3.8	3.8	3.9
8	3.6	3.8	1.5	1.5	1.5	1.5	2.7	2.6	3.7	3.8	3.8	3.9
9	3.6	3.8	1.5	1.5	1.5	1.5	2.7	2.6	3.7	3.8	3.8	3.9
10	3.6	3.7	1.4	1.5	1.5	1.5	2.8	2.6	3.6	3.8	3.8	3.9
11	3.6	3.8	1.4	1.5	1.5	1.5	2.7	2.6	3.6	3.8	3.8	3.9
12	3.7	3.7	1.4	1.5	1.5	1.5	2.7	3.3	3.6	3.8	3.8	3.9
13	3.6	3.7	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.8	3.8	3.9
14	3.6	3.7	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.8	3.8	3.9
15	3.6	3.6	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.8	3.7	3.9
16	3.6	3.6	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.7	3.9
17	3.6	3.6	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.7	3.9
18	3.6	3.6	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.7	3.9
19	3.6	3.6	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.7	3.9
20	3.6	3.6	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.7	3.9
21	3.6	3.6	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.7	3.9
22	3.6	3.7	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.7	3.9
23	3.6	3.8	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.7	3.9
24	3.7	3.8	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.8	3.9
25	3.8	3.7	1.5	1.5	1.5	1.5	2.7	3.6	3.6	3.9	3.8	3.9
26	3.8	3.7	1.5	1.5	1.5	1.5	2.7	3.5	3.6	3.9	3.7	3.9
27	3.8	3.8	1.5	1.5	1.5	1.5	2.7	3.5	3.6	3.9	3.7	3.9
28	3.8	3.8	1.5	1.5	1.5	1.5	2.7	3.5	3.6	3.9	3.7	3.9
29	3.7	3.8	1.5	1.5	---	1.5	2.7	3.5	3.6	3.8	3.7	3.9
30	3.7	3.8	1.5	1.5	---	1.5	2.6	3.5	3.6	3.8	3.8	3.9
31	3.7	---	1.5	1.5	---	2.1	---	3.5	---	3.9	3.9	---
TOTAL	113.2	111.1	47.6	46.5	42.0	47.1	81.0	99.7	108.7	118.0	116.6	117.0
MEAN	3.65	3.70	1.54	1.50	1.50	1.52	2.70	3.22	3.62	3.81	3.76	3.90
MAX	3.8	3.8	2.9	1.5	1.5	2.1	2.8	3.6	3.7	3.9	3.9	3.9
MIN	3.6	3.6	1.4	1.5	1.5	1.5	2.6	2.6	3.6	3.5	3.7	3.9
AC-FT	225	220	94	92	83	93	161	198	216	234	231	232
a	12850	11210	10740	7540	3640	7440	7270	593	377	10310	13870	649

CAL YR 1998 a 126000

WTR YR 1999 a 86480

a Diversion, in acre-feet, to Grizzly Powerplant, provided by Pacific Gas & Electric Co.

11404250 GRIZZLY FOREBAY NEAR STORRIE, CA

LOCATION.—Lat 39°53'32", long 121°17'25", in SW 1/4 NE 1/4 sec.34, T.24 N., R.6 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, in outlet tower for Bucks Creek Powerplant 100 ft upstream from Grizzly Diversion Dam, 2.4 mi southeast of Storrie, and 6.2 mi west of Bucks Lodge.

DRAINAGE AREA.—14.4 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. Datum of gage is 3.50 ft below sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Lake is formed by concrete dam. Storage began in July 1928. Usable capacity, 1,033 acre-ft between elevations 4,271 ft, bottom of diversion tunnel, and 4,316.0 ft, crest of spillway. Water is received from Bucks Creek via Bucks Creek Tunnel and Grizzly Powerplant (station 11404240) which enter Grizzly Creek upstream. Most of the water is diverted through tunnel to Bucks Creek Powerplant (station 11403700) for power development downstream on North Fork Feather River. Figures given, including extremes, represent total contents. See schematic diagram of North Fork Feather 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, 1,329 acre-ft, Dec. 30, 1996, elevation, 4,321.5 ft; minimum, 216 acre-ft, Sept. 20, 1991, elevation, 4,282.8 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 1,143 acre-ft, Nov. 30, elevation, 4,316.8 ft; minimum, 721 acre-ft, June 30, elevation, 4,304.5 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Feather River Power Co. in 1928)

4,290	350	4,305	736
4,295	464	4,310	898
4,300	592	4,320	1,268

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	970	871	932	981	792	1027	877	967	847	864	901	1053
2	999	1027	928	1017	789	770	877	949	851	854	871	1060
3	1042	1038	1097	942	844	953	824	991	792	877	1009	1068
4	999	1020	1017	977	891	953	821	946	821	911	1049	1071
5	963	1060	1009	984	824	995	918	918	818	956	1049	1079
6	1017	844	1009	1002	749	988	1020	904	837	956	1057	1082
7	1009	894	1013	1057	981	949	928	908	767	811	1006	1090
8	1038	871	1006	977	755	981	967	991	742	861	1027	1094
9	1049	921	984	1002	1112	984	887	960	758	1024	981	1101
10	828	891	956	1031	887	984	764	911	963	1068	932	1109
11	834	724	939	1017	960	956	767	871	877	991	967	1112
12	811	871	1031	1046	946	908	844	877	792	1068	894	1116
13	861	837	898	925	967	871	1006	881	783	999	901	1116
14	884	815	921	960	977	824	887	795	874	1060	915	1116
15	901	821	736	1035	1027	808	953	789	932	1006	908	1120
16	908	805	761	1020	970	828	864	761	932	977	932	1057
17	991	844	828	1120	891	799	881	795	898	1017	1002	1006
18	911	770	871	1068	761	877	799	799	925	1046	942	1013
19	831	783	960	1009	854	942	783	953	953	1027	1020	1017
20	861	789	981	1120	767	854	932	1046	981	1042	1082	1024
21	921	824	901	999	828	828	967	984	1006	1071	1006	1027
22	871	1024	908	1009	871	815	960	999	988	1038	1060	1035
23	799	1131	921	1027	857	871	967	1002	956	925	871	1053
24	851	970	851	755	956	939	967	970	904	942	956	1071
25	921	963	928	811	1046	1038	991	1053	908	891	967	1090
26	928	963	967	730	977	1042	1049	1009	881	915	1002	1049
27	752	960	1006	884	1006	877	911	999	861	821	828	1035
28	789	908	1013	908	1116	945	758	881	824	828	995	1079
29	792	761	1017	928	---	956	1009	877	736	1031	1035	1086
30	808	1143	928	939	---	898	901	942	721	939	1042	1057
31	844	---	981	884	---	908	---	867	---	963	1049	---
MAX	1049	1143	1097	1120	1116	1042	1049	1053	1006	1071	1082	1120
MIN	752	724	736	730	749	770	758	761	721	811	828	1006
a	4308.4	4316.8	4312.4	4309.6	4316.1	4310.3	4310.1	4309.1	4304.5	4311.9	4314.3	4314.5
b	-109	+299	-162	-97	+232	-208	-7	-34	-146	+242	+86	+8
CAL YR 1998	MAX 1197	MIN 706	b +192									
WTR YR 1999	MAX 1143	MIN 721	b +104									

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11404300 GRIZZLY CREEK BELOW DIVERSION DAM, NEAR STORRIE, CA

LOCATION.—Lat 39°53'29", long 121°17'35", in SW 1/4 NE 1/4 sec.34, T.24 N., R.6 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on right bank 0.2 mi downstream from diversion dam, and 2.4 mi southeast of Storrie.

DRAINAGE AREA.—14.4 mi².

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for water years 1976–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and concrete control with V-notch sharp-crested weir, since Oct. 8, 1987. Elevation of gage is 4,320 ft above sea level, from topographic map. Prior to Oct. 8, 1987, at datum 1.79 ft higher.

REMARKS.—Flow regulated by diversion dam 0.2 mi upstream. There is considerable inflow upstream from the diversion dam from Bucks Creek Tunnel outlet and Grizzly Powerplant (station 11404240). Most of the flow is diverted to Bucks Creek Powerplant (station 11403700) on North Fork Feather River. See schematic diagram of North Fork Feather 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, 6,300 ft³/s, Jan. 1, 1997, gage height, 7.33 ft, from rating curve extended above 260 ft³/s on basis of computation of peak flow over dam; maximum gage height, 9.54 ft, Feb. 17, 1986, datum then in use; minimum daily, 1.9 ft³/s, June 14, 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	4.6	4.5	34	2.4	2.5	29	3.5	3.4	4.7	4.5	4.6	4.8
2	4.7	4.5	2.9	2.4	2.5	3.1	3.4	3.4	4.7	4.6	4.6	4.8
3	4.7	4.7	273	2.4	2.4	3.2	3.4	3.5	4.7	4.6	4.7	4.8
4	4.7	4.7	3.1	2.4	2.5	3.2	3.3	3.4	4.7	4.6	4.7	4.8
5	4.7	4.7	2.9	2.4	2.5	3.1	3.4	3.4	4.7	4.7	4.8	4.8
6	4.6	4.7	2.8	2.4	2.5	3.1	3.5	3.3	4.7	4.7	4.8	4.8
7	4.7	4.8	2.7	2.4	2.9	3.0	3.5	3.3	4.7	4.6	4.7	4.8
8	4.7	4.6	2.6	2.4	3.0	3.0	3.5	3.4	4.6	4.5	4.7	4.8
9	4.7	4.5	2.6	2.4	70	3.0	3.4	3.4	4.6	4.7	4.8	4.9
10	4.6	4.6	2.5	2.4	3.8	2.9	3.4	3.4	4.6	4.8	4.7	4.9
11	4.5	4.5	2.5	2.4	3.4	2.9	3.3	3.4	4.8	4.8	4.7	4.9
12	4.4	4.5	2.5	2.4	3.2	2.8	3.4	4.3	4.7	4.7	4.6	7.2
13	4.5	4.5	2.6	2.4	3.1	2.7	3.5	4.8	4.6	4.7	4.6	10
14	4.5	4.4	2.5	2.4	3.1	2.7	3.5	4.8	4.6	4.7	4.6	11
15	4.5	4.4	2.5	2.4	3.0	2.7	3.5	4.7	4.7	4.8	4.6	11
16	4.5	4.5	2.4	2.5	3.0	2.7	3.5	4.7	4.7	4.7	4.6	8.3
17	4.6	4.6	2.4	2.5	3.0	2.7	3.5	4.7	4.7	4.7	4.7	4.7
18	4.6	4.5	2.4	198	3.0	2.7	3.5	4.7	4.7	4.8	4.7	4.7
19	4.5	4.4	2.4	2.7	2.9	2.7	3.4	4.8	4.7	4.8	4.7	4.7
20	4.5	4.4	2.5	19	2.9	2.7	3.4	4.9	4.8	4.8	4.8	4.7
21	4.5	4.5	2.5	4.1	2.9	2.6	3.5	4.9	4.8	4.8	4.8	4.7
22	4.6	4.7	2.5	2.9	2.8	2.6	3.5	4.9	4.8	4.8	4.8	4.7
23	4.5	321	2.5	36	2.8	2.6	3.5	4.9	4.8	4.7	4.8	4.7
24	4.6	9.7	2.5	2.8	2.8	2.7	3.5	4.9	4.7	4.7	4.6	4.8
25	4.6	5.0	2.5	2.7	2.9	2.8	3.5	4.9	4.7	4.6	4.7	4.8
26	4.6	5.0	2.5	2.7	2.9	2.8	3.5	4.9	4.7	4.6	4.7	4.8
27	4.5	5.0	2.5	2.6	2.8	2.7	3.4	4.9	4.7	4.6	4.7	4.8
28	4.4	4.9	2.4	2.6	3.1	2.7	3.3	4.9	4.6	4.5	4.7	4.7
29	4.4	4.9	2.4	2.6	---	2.7	3.3	4.8	4.6	4.7	4.8	4.8
30	4.4	136	2.4	2.6	---	2.7	3.4	4.8	4.4	4.8	4.8	4.8
31	4.5	---	2.4	2.6	---	3.0	---	4.8	---	4.7	4.8	---
TOTAL	141.4	591.7	380.9	324.9	148.2	113.8	103.2	133.3	140.5	145.3	145.9	167.0
MEAN	4.56	19.7	12.3	10.5	5.29	3.67	3.44	4.30	4.68	4.69	4.71	5.57
MAX	4.7	321	273	198	70	29	3.5	4.9	4.8	4.8	4.8	11
MIN	4.4	4.4	2.4	2.4	2.4	2.6	3.3	3.3	4.4	4.5	4.6	4.7
AC-FT	280	1170	756	644	294	226	205	264	279	288	289	331
a	13500	14540	15770	13700	11230	15320	13540	10970	4100	10950	14180	910

a Diversion, in acre-feet, to Bucks Creek Powerplant, provided by Pacific Gas & Electric Co.

11404300 GRIZZLY CREEK BELOW DIVERSION DAM, NEAR STORRIE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

MEAN	4.62	5.05	25.1	58.4	67.8	49.5	21.4	36.6	36.8	9.77	3.83	3.76
MAX	11.8	19.7	284	650	396	174	215	277	286	61.0	5.49	5.57
(WY)	1996	1999	1997	1997	1997	1995	1995	1995	1998	1998	1991	1999
MIN	2.01	2.01	2.09	2.11	2.17	2.20	2.10	2.03	2.01	2.08	2.03	2.00
(WY)	1995	1988	1994	1994	1994	1988	1987	1987	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1986 - 1999	
ANNUAL TOTAL	13863.4		2536.1			
ANNUAL MEAN	38.0		6.95		26.7	
HIGHEST ANNUAL MEAN					125 1997	
LOWEST ANNUAL MEAN					2.58 1994	
HIGHEST DAILY MEAN	522	Jun 25	321	Nov 23	4810	Jan 1 1997
LOWEST DAILY MEAN	2.4	Dec 16	2.4	Dec 16	1.9	Jun 14 1988
ANNUAL SEVEN-DAY MINIMUM	2.4	Dec 14	2.4	Dec 28	2.0	May 2 1987
INSTANTANEOUS PEAK FLOW			1120	Dec 3	6300	Jan 1 1997
INSTANTANEOUS PEAK STAGE			3.64	Dec 3	9.54	Feb 17 1986
ANNUAL RUNOFF (AC-FT)	27500		5030		19330	
ANNUAL DIVERSION (AC-FT) a	187000		138700			
10 PERCENT EXCEEDS	175		4.8		5.7	
50 PERCENT EXCEEDS	4.6		4.5		2.6	
90 PERCENT EXCEEDS	3.4		2.5		2.1	

a Diversion, in acre-feet, to Bucks Creek Powerplant, provided by Pacific Gas & Electric Co.

11404330 NORTH FORK FEATHER RIVER BELOW GRIZZLY CREEK, CA

LOCATION.—Lat 39°51'09", long 121°23'29", in NE 1/4 NW 1/4 sec.14, T.23 N., R.5 E., Butte County, Hydrologic Unit 18020121, Lassen National Forest, on left bank 0.7 mi upstream from Bear Ranch Creek, 1.6 mi downstream from Grizzly Creek, and 2.1 mi downstream from Cresta Dam.

DRAINAGE AREA.—1,914 mi².

PERIOD OF RECORD.—October 1985 to February 1986, October 1986 to current year. Unpublished records for water years 1982–85 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Elevation of gage is 1,480 ft above sea level, from topographic map.

REMARKS.—Flow regulated by numerous reservoirs upstream, combined capacity, 1,386,000 acre-ft. Most of the flow bypasses this station through Cresta Powerplant (station 11404360). Diversion through Cresta Powerplant began in 1949. See schematic diagram of North Fork Feather 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, 115,000 ft³/s, Jan. 1, 1997, gage height, 29.97 ft; minimum daily, 37 ft³/s, July 25, 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	68	79	4880	98	173	4990	299	1040	90	79	104	209
2	71	365	2250	97	164	3590	279	1240	91	82	94	554
3	73	841	7000	99	156	5150	279	1230	94	81	100	124
4	73	818	4100	101	156	4290	281	774	559	77	105	164
5	68	868	2230	91	154	2960	312	608	681	72	105	299
6	69	865	2840	93	185	1840	281	413	86	73	102	135
7	66	835	1350	94	2190	1230	264	266	84	76	107	143
8	64	713	685	95	4330	736	305	249	82	74	104	170
9	63	648	464	88	15500	434	289	230	76	70	105	178
10	67	600	287	88	9240	388	286	218	76	72	110	155
11	62	191	232	85	5060	339	282	220	76	69	102	164
12	65	83	152	97	2910	336	297	232	72	66	103	172
13	66	77	149	100	1830	349	300	236	71	70	103	173
14	66	70	141	98	912	344	311	216	70	69	104	193
15	63	74	128	101	446	325	304	197	71	71	99	208
16	64	76	127	117	764	269	297	198	69	71	100	206
17	62	123	126	123	2910	210	345	203	68	72	101	201
18	62	88	126	864	3350	206	1040	201	68	66	99	210
19	64	77	122	914	3480	202	1510	198	68	68	102	201
20	67	72	114	1620	2800	211	1470	196	64	69	100	213
21	66	90	108	3420	2390	208	2080	191	64	67	94	226
22	66	146	108	1170	1980	203	1770	196	62	66	95	233
23	62	3040	107	4210	1840	184	1470	193	60	66	106	253
24	281	1140	107	2380	1650	207	1410	155	60	67	102	413
25	727	167	107	713	2780	260	1480	120	59	66	98	296
26	438	150	106	301	1990	236	2020	139	58	63	97	286
27	87	256	101	229	816	612	2290	113	59	65	104	287
28	74	197	103	212	2150	732	1540	106	58	63	91	310
29	74	186	107	197	---	322	1150	99	59	72	80	349
30	79	4720	107	188	---	311	945	97	66	100	81	323
31	83	---	101	179	---	282	---	93	---	100	82	---
TOTAL	3360	17655	28665	18262	72306	31956	25186	9867	3221	2242	3079	7048
MEAN	108	588	925	589	2582	1031	840	318	107	72.3	99.3	235
MAX	727	4720	7000	4210	15500	5150	2290	1240	681	100	110	554
MIN	62	70	101	85	154	184	264	93	58	63	80	124
AC-FT	6660	35020	56860	36220	143400	63380	49960	19570	6390	4450	6110	13980
a	106800	169800	202100	177900	193800	206600	188500	214400	138400	126600	136200	65900

a Diversion, in acre-feet, to Cresta Powerplant, provided by Pacific Gas & Electric Co.

11404330 NORTH FORK FEATHER RIVER BELOW GRIZZLY CREEK, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

MEAN	84.7	138	546	1829	1426	2295	1258	1333	646	96.1	79.7	78.4
MAX	182	588	5071	16310	6576	10220	6777	9322	3842	221	205	235
(WY)	1986	1999	1997	1997	1997	1995	1995	1995	1995	1995	1997	1999
MIN	57.4	57.8	59.0	55.7	61.5	86.0	78.0	67.7	55.6	55.4	55.5	56.0
(WY)	1992	1993	1990	1991	1991	1988	1988	1992	1988	1988	1988	1991

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1986 - 1999	
ANNUAL TOTAL	460397		222847			
ANNUAL MEAN	1261		611		826	
HIGHEST ANNUAL MEAN					3115	
LOWEST ANNUAL MEAN					75.2	
HIGHEST DAILY MEAN	16500	Mar 24	15500	Feb 9	96900	Jan 1 1997
LOWEST DAILY MEAN	62	Oct 11	58	Jun 26	37	Jul 25 1994
ANNUAL SEVEN-DAY MINIMUM	64	Oct 13	59	Jun 23	52	Dec 10 1989
INSTANTANEOUS PEAK FLOW			21300	Feb 9	115000	Jan 1 1997
INSTANTANEOUS PEAK STAGE			17.60	Feb 9	29.97	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	913200		442000		598100	
ANNUAL DIVERSION (AC-FT) a	2251000		1927000			
10 PERCENT EXCEEDS	3850		1830		1960	
50 PERCENT EXCEEDS	281		156		83	
90 PERCENT EXCEEDS	68		67		56	

a Diversion, in acre-feet, to Cresta Powerplant, provided by Pacific Gas & Electric Co.

11404500 NORTH FORK FEATHER RIVER AT PULGA, CA

LOCATION.—Lat 39°47'40", long 121°27'02", in SE 1/4 NE 1/4 sec.6, T.22 N., R.5 E., Butte County, Hydrologic Unit 18020121, Plumas National Forest, on left bank between railroad and highway bridges, 0.6 mi downstream from Flea Valley Creek and Pulga, and 1.6 mi downstream from Poe Dam.

DRAINAGE AREA.—1,953 mi².

PERIOD OF RECORD.—October 1910 to current year. Monthly discharge only for some periods and yearly estimates for water years 1911 and 1938, published in WSP 1315-A. Prior to October 1960, published as "at Big Bar."

CHEMICAL DATA: Water years 1963–66, 1972, 1977.

WATER TEMPERATURE: Water years 1963–83.

REVISED RECORDS.—WSP 931: 1938(M), 1940. WSP 1515: 1935. WDR CA-77-4: 1976 (yearly summaries).

GAGE.—Water-stage recorder. Datum of gage is 1,305.62 ft above sea level. Prior to Oct. 1, 1937, at site 1.1 mi upstream at different datum. Oct. 1, 1937, to Sept. 30, 1958, at present site at datum 5.00 ft higher.

REMARKS.—Flow regulated by Lake Almanor, Bucks Lake, Butt Valley Reservoir (stations 11399000, 11403500, 11401050), Mountain Meadows Reservoir, and five forebays, combined capacity, 1,386,000 acre-ft. Diversion through Poe Powerplant (station 11404900) began on May 29, 1958. See schematic diagram of North Fork Feather 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, 105,400 ft³/s, Jan. 1, 1997, gage height, 41.65 ft, from rating curve extended above 32,000 ft³/s on basis of slope area measurement of peak discharge; minimum daily, 5.4 ft³/s, Sept. 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	122	118	6020	121	149	8070	2310	3430	1370	112	90	89
2	124	119	2650	117	148	6400	2350	3610	1180	112	88	96
3	131	120	8050	119	147	8140	1790	3650	940	111	90	91
4	129	118	4640	119	145	7110	1830	3100	540	111	93	92
5	124	117	2500	116	139	5360	1800	2870	622	110	92	93
6	122	117	1690	118	163	4230	1740	2870	800	111	91	90
7	122	141	1180	120	2650	3540	1380	2660	377	114	91	95
8	126	121	1030	119	5090	3410	1530	2560	643	112	92	98
9	124	120	877	114	19300	2990	1560	2630	300	114	91	99
10	126	124	674	115	10700	2660	1570	2430	116	113	93	99
11	122	122	585	115	5400	2200	1630	2350	118	111	93	99
12	122	116	196	117	3510	1950	1880	2310	117	104	90	100
13	123	120	132	117	2370	1750	2180	2470	117	92	90	100
14	123	121	132	115	1220	1790	2350	2450	115	91	92	100
15	122	121	130	118	823	2050	2510	2300	116	91	91	100
16	123	409	126	123	1200	1860	2500	2230	115	92	92	101
17	123	1600	128	145	3570	1990	2720	2040	113	91	91	103
18	118	1390	125	1700	4060	1890	3490	2100	113	90	93	101
19	115	1300	126	1300	4020	2150	3880	2300	114	90	94	101
20	112	1300	126	4130	3260	2610	3870	2320	115	92	91	99
21	116	854	123	4350	3190	2400	4380	2310	116	90	92	99
22	115	2240	120	1700	2740	2460	4110	2360	114	90	92	97
23	113	5600	123	5270	2450	2210	3840	2420	111	90	88	100
24	122	3590	123	3210	2210	2250	3730	2320	113	90	90	100
25	128	1460	119	1350	4370	2480	3820	2370	113	91	90	99
26	122	171	122	739	4370	2600	4270	2400	114	91	92	98
27	123	170	121	173	2780	2760	4570	2430	113	90	92	99
28	121	144	121	163	4810	2550	3840	2390	114	91	93	96
29	111	154	121	159	---	2440	3580	1660	111	91	91	95
30	116	5230	119	156	---	2670	3300	1600	113	89	89	96
31	121	---	121	156	---	2620	---	1640	---	90	91	---
TOTAL	3761	27427	32450	26584	94984	99590	84310	76580	9173	3057	2828	2925
MEAN	121	914	1047	858	3392	3213	2810	2470	306	98.6	91.2	97.5
MAX	131	5600	8050	5270	19300	8140	4570	3650	1370	114	94	103
MIN	111	116	119	114	139	1750	1380	1600	111	89	88	89
AC-FT	7460	54400	64360	52730	188400	197500	167200	151900	18190	6060	5610	5800
a	98380	144600	195100	168300	172800	110400	103600	110300	121400	115300	124500	71270

a Diversion, in acre-feet, to Poe Powerplant, provided by Pacific Gas & Electric Co.

11404500 NORTH FORK FEATHER RIVER AT PULGA, CA—Continued

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

MEAN	950	1151	1705	2265	2780	2910	3514	3047	1619	961	902	859
MAX	2943	4594	10690	14120	14320	11960	13580	12460	7689	2771	2441	2430
(WY)	1963	1951	1956	1997	1986	1995	1952	1922	1911	1952	1952	1952
MIN	16.4	26.4	50.7	52.6	56.0	58.2	54.9	41.7	34.0	32.6	13.3	14.2
(WY)	1978	1978	1977	1977	1990	1977	1990	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1911 - 1999	
ANNUAL TOTAL	810384		463669			
ANNUAL MEAN	2220		1270		1859	
HIGHEST ANNUAL MEAN					5320 1952	
LOWEST ANNUAL MEAN					42.7 1977	
HIGHEST DAILY MEAN	18000	Mar 24	19300	Feb 9	101000	Jan 1 1997
LOWEST DAILY MEAN	111	Oct 29	88	Aug 2	5.4	Sep 18 1977
ANNUAL SEVEN-DAY MINIMUM	116	Oct 18	90	Jul 27	12	Aug 10 1977
INSTANTANEOUS PEAK FLOW			26700	Feb 9	105400	Jan 1 1997
INSTANTANEOUS PEAK STAGE			20.90	Feb 9	41.65	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	1607000		919700		1347000	
ANNUAL DIVERSION (AC-FT) a	1636000		1536000			
10 PERCENT EXCEEDS	5870		3580		4640	
50 PERCENT EXCEEDS	1030		126		1310	
90 PERCENT EXCEEDS	121		92		55	

a Diversion, in acre-feet, to Poe Powerplant, provided by Pacific Gas & Electric Co.

11405120 PHILBROOK CREEK BELOW PHILBROOK DAM, NEAR BUTTE MEADOWS, CA

LOCATION.—Lat 40°01'48", long 121°28'36", unsurveyed, T.25 N., R.4 E., Butte County, Hydrologic Unit 18020121, Lassen National Forest, on right bank 500 ft downstream from outlet structure on Philbrook Dam, and 5.4 mi southeast of Butte Meadows.

DRAINAGE AREA.—5.05 mi².

PERIOD OF RECORD.—July 1989 to current year (no winter records). Unpublished records for water years 1986–89 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder, Parshall flume, and V-notch sharp-crested weir. Elevation of gage is 5,490 ft above sea level, from topographic map. October 1985 to July 1989, nonrecording gage at same site and datum. In June 1989, V-notch sharp-crested weir installed in flume to be used at low flows.

REMARKS.—Records not computed for winter months. Flow completely regulated by Philbrook Reservoir, usable capacity, 5,370 acre-ft, 500 ft upstream. Spillwater from Philbrook Reservoir bypasses this station.

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	42	2.7	---	---	---	---	4.2	4.5	4.4	3.5	23	39
2	41	2.7	---	---	---	---	4.2	4.5	4.3	3.5	23	40
3	41	2.7	---	---	---	---	4.2	4.5	4.4	3.5	23	40
4	41	2.7	---	---	---	---	4.2	4.5	4.4	3.5	23	40
5	40	2.7	---	---	---	---	4.2	2.4	4.4	3.5	23	40
6	40	2.7	---	---	---	---	4.2	4.2	4.4	3.5	23	40
7	45	2.7	---	---	---	---	4.2	4.3	3.8	3.5	23	43
8	48	2.7	---	---	---	---	4.2	4.3	3.2	3.5	23	45
9	47	2.7	---	---	---	---	4.2	4.3	3.2	3.5	23	45
10	47	2.7	---	---	---	---	4.2	4.3	3.3	3.5	29	44
11	46	2.7	---	---	---	---	4.2	4.3	3.3	3.5	34	44
12	46	2.7	---	---	---	---	4.2	4.3	3.3	16	34	43
13	45	2.7	---	---	---	---	4.2	4.3	3.3	39	34	43
14	44	2.7	---	---	---	---	4.2	4.3	3.3	39	34	42
15	44	2.7	---	---	---	---	4.3	4.3	3.4	26	34	43
16	34	2.7	---	---	---	4.2	4.5	4.3	3.4	7.9	34	45
17	28	2.7	---	---	---	4.2	4.5	4.3	3.4	7.9	33	44
18	27	2.7	---	---	---	4.2	4.5	4.3	3.4	7.9	33	43
19	27	---	---	---	---	4.2	4.5	4.4	3.4	7.9	36	40
20	27	---	---	---	---	4.2	4.5	4.4	3.4	7.9	39	3.9
21	26	---	---	---	---	4.2	4.5	4.4	3.4	7.9	39	3.9
22	24	---	---	---	---	4.2	4.5	4.4	3.4	7.9	39	4.0
23	2.6	---	---	---	---	4.2	4.5	4.4	3.4	7.9	39	4.0
24	2.7	---	---	---	---	4.2	4.5	4.4	3.4	7.9	39	4.0
25	2.7	---	---	---	---	4.2	4.5	4.5	3.4	7.9	40	4.0
26	2.7	---	---	---	---	4.2	4.5	4.6	3.4	15	40	4.0
27	2.7	---	---	---	---	4.2	4.5	4.6	3.5	23	40	4.0
28	2.7	---	---	---	---	4.2	4.5	4.5	3.5	23	40	4.0
29	2.7	---	---	---	---	4.2	4.5	4.4	3.5	23	40	4.0
30	2.7	---	---	---	---	4.2	4.5	4.4	3.5	23	39	4.0
31	2.7	---	---	---	---	4.2	---	4.4	---	23	39	---
TOTAL	874.2	---	---	---	---	---	130.6	134.0	107.8	367.5	1015	846.8
MEAN	28.2	---	---	---	---	---	4.35	4.32	3.59	11.9	32.7	28.2
MAX	48	---	---	---	---	---	4.5	4.6	4.4	39	40	45
MIN	2.6	---	---	---	---	---	4.2	2.4	3.2	3.5	23	3.9
AC-FT	1730	---	---	---	---	---	259	266	214	729	2010	1680

11405200 WEST BRANCH FEATHER RIVER BELOW HENDRICKS DIVERSION DAM, NEAR STIRLING CITY, CA

LOCATION.—Lat 39°56'03", long 121°31'43", in NW 1/4 SE 1/4 sec.16, T.24 N., R.4 E., Butte County, Hydrologic Unit 18020121, on right bank 200 ft upstream from road bridge, 1,800 ft downstream from Hendricks Diversion Dam, and 1.9 mi north of Stirling City.

DRAINAGE AREA.—46.1 mi².

PERIOD OF RECORD.—August 1986 to current year (low-flow records only).

GAGE.—Water-stage recorder. Elevation of gage is 3,210 ft above sea level, from topographic map.

REMARKS.—No records computed above 40 ft³/s. Most of the water is diverted at Hendricks Diversion Dam to the Hendricks Canal and Toadtown Canal (station 11389800) and then to De Sabla Powerplant (station 11389750) on Butte Creek.

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	21	20	---	20	---	---	---	---	---	23	19	21
2	21	20	---	20	---	---	---	---	---	24	19	21
3	21	20	---	20	---	---	---	---	---	24	19	21
4	21	20	---	20	---	---	---	---	---	24	19	21
5	20	20	---	20	---	---	---	---	---	24	19	20
6	20	20	---	20	---	---	---	---	---	24	19	20
7	20	39	---	20	---	---	---	---	---	23	19	21
8	20	23	---	20	---	---	---	---	---	23	19	21
9	20	21	---	20	---	---	---	---	---	23	19	21
10	20	21	---	20	---	---	---	---	---	23	19	21
11	20	21	---	20	---	---	---	---	---	23	19	21
12	20	20	---	20	---	---	---	---	---	23	19	22
13	20	20	---	20	---	---	---	---	---	25	19	22
14	20	20	---	20	---	---	---	---	---	24	19	21
15	20	21	---	24	---	---	---	---	---	24	19	21
16	19	21	---	---	---	---	---	---	---	23	19	21
17	19	27	---	---	---	---	---	---	---	23	19	21
18	19	22	---	---	---	---	---	---	---	23	19	21
19	19	21	---	---	---	---	---	---	34	23	19	22
20	19	21	---	---	---	---	---	---	26	22	19	21
21	19	26	---	---	---	---	---	---	23	20	20	21
22	19	---	---	---	---	---	---	---	24	19	20	21
23	20	---	---	---	---	---	---	---	25	19	20	21
24	21	---	40	---	---	---	---	---	25	19	20	21
25	21	---	38	---	---	---	---	---	25	19	20	21
26	20	---	36	---	---	---	---	---	25	19	20	20
27	20	---	33	---	---	---	---	---	24	19	20	20
28	20	---	27	---	---	---	---	---	24	19	20	20
29	20	39	22	---	---	---	---	---	24	19	20	20
30	20	---	21	---	---	---	---	---	24	19	20	21
31	20	---	21	---	---	---	---	---	---	19	20	---
TOTAL	619	---	---	---	---	---	---	---	---	678	600	627
MEAN	20.0	---	---	---	---	---	---	---	---	21.9	19.4	20.9
MAX	21	---	---	---	---	---	---	---	---	25	20	22
MIN	19	---	---	---	---	---	---	---	---	19	19	20
AC-FT	1230	---	---	---	---	---	---	---	---	1340	1190	1240

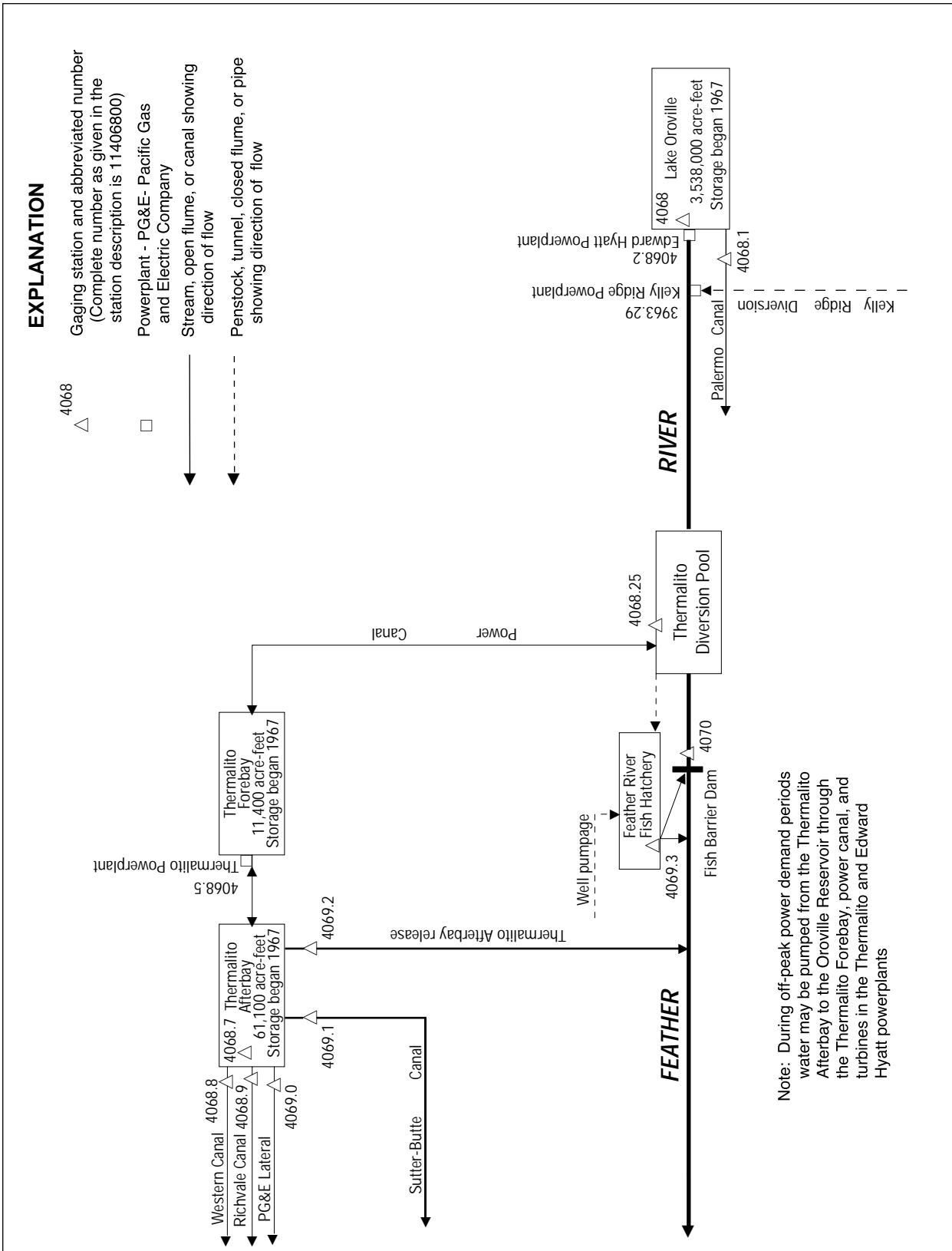


Figure 30. Diversions and storage from Feather River at Lake Oroville.

11406800 LAKE OROVILLE NEAR OROVILLE, CA

LOCATION.—Lat 39°32'06", long 121°28'25", in NE 1/4 SW 1/4 sec.1, T.19 N., R.4 E., Butte County, Hydrologic Unit 18020123, near intake structure at left end of Oroville Dam on Feather River, 1.0 mi downstream from North Fork Feather River, and 4.2 mi east of Oroville.

DRAINAGE AREA.—3,607 mi².

PERIOD OF RECORD.—November 1967 to current year.

GAGE.—Water-stage recorder. Datum of gage is 0.47 ft above sea level (levels by California Department of Water Resources). Contents based on capacity table in use since Sept. 21, 1967.

REMARKS.—Reservoir is formed by an earthfill dam with concrete chute-type sidehill spillway completed May 13, 1968; storage began Nov. 14, 1967. Usable capacity, 2,685,385 acre-ft between elevations 640.0 ft, minimum power pool, and 900.0 ft, normal maximum pool. Dead storage, 852,192 acre-ft. Total capacity at normal maximum pool, 3,537,577 acre-ft; temporary detention storage occurred at times during construction; maximum was 155,200 acre-ft, Dec. 23, 1964. Water is released to Edward Hyatt Powerplant (station 11406820) through penstock in left abutment of dam and to Palermo Canal (station 11406810) through concrete tunnel also in left abutment of dam. Three of the total of six turbines in the Edward Hyatt Powerplant are reversible and during periods of low power demand water is pumped at times from the river back into Lake Oroville. Records, including extremes, represent total contents at 2400 hours. Maximum inflow of 266,000 ft³/s during a 2-hour period Feb. 17, 1986. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.—Records were collected by California Department of Water Resources, 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, 3,536,000 acre-ft, June 4, 1973, gage height, 899.88 ft; minimum since initial storage began, 882,395 acre-ft, Sept. 7, 1977, gage height, 645.11 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 3,481,007 acre-ft, June, 13, gage height, 896.40 ft; minimum, 2,427,271 acre-ft, Sept. 30, gage height, 820.14 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by California Department of Water Resources, dated Sept. 21, 1967)

640	852,192	710	1,332,547	780	1,974,240	850	2,808,349
650	911,975	720	1,413,685	790	2,080,969	860	2,944,741
660	974,560	730	1,498,175	800	2,191,742	870	3,085,747
670	1,040,003	740	1,586,086	810	2,306,597	880	3,231,454
680	1,108,406	750	1,677,554	820	2,425,571	890	3,382,038
690	1,179,915	760	1,772,690	830	2,548,850	900	3,537,577
700	1,254,634	770	1,871,511	840	2,676,446		

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	2819227	2724076	2903896	2692041	2762339	2810360	2950990	3261626	3455296	3404282	2852178	2569983
2	2809421	2726835	2900190	2694515	2759821	2816941	2960167	3278059	3454519	3385559	2835939	2560785
3	2811971	2727229	2928412	2697122	2758761	2832024	2972573	3283600	3454830	3366605	2818420	2553242
4	2816538	2727886	2930484	2695298	2753731	2839182	2985436	3287947	3452965	3348335	2804594	2544337
5	2804862	2727097	2919030	2692432	2738809	2835129	2994127	3287048	3461361	3333619	2789480	2541206
6	2796829	2727492	2904858	2690609	2724864	2824745	3000587	3285698	3470238	3319553	2775487	2539205
7	2787344	2731436	2885399	2689958	2729200	2813045	3005367	3286448	3470238	3304174	2767248	2529585
8	2779880	2735516	2871343	2690609	2741314	2798702	3015509	3300413	3471641	3288547	2763002	2517006
9	2772961	2734989	2855163	2689958	2823533	2794021	3023273	3315175	3468524	3268192	2751614	2506826
10	2776152	2733015	2842021	2690870	2853263	2787878	3036007	3317892	3464474	3249711	2739337	2498654
11	2780013	2737360	2825688	2692172	2863585	2791216	3050769	3317439	3464318	3235456	2730252	2497293
12	2776019	2738019	2811434	2693865	2864945	2794555	3058454	3316835	3473669	3217409	2721320	2503605
13	2772030	2739205	2793754	2696602	2858692	2788946	3065439	3316231	3481007	3199432	2708614	2495439
14	2765523	2743821	2778947	2696862	2848383	2800977	3070435	3317288	3480069	3183285	2706653	2490006
15	2762472	2746857	2761411	2700906	2837560	2802986	3075008	3328169	3477415	3165151	2706392	2485197
16	2759821	2745537	2751879	2710838	2830945	2805934	3081877	3342413	3473981	3145057	2698558	2480763
17	2764992	2746065	2739996	2722764	2837965	2809957	3096940	3343627	3471018	3124764	2692041	2477196
18	2767514	2747782	2734068	2743689	2825823	2814522	3116672	3346816	3464629	3103412	2685146	2476582
19	2765788	2746593	2730384	2759556	2815060	2821783	3132580	3349247	3469615	3087179	2679691	2486059
20	2762472	2748310	2722632	2786411	2801915	2835669	3147091	3353808	3474137	3068008	2671258	2479533
21	2761146	2752805	2709007	2800174	2788946	2850823	3158589	3360659	3471797	3048921	2668149	2471546
22	2759556	2762339	2696993	2799772	2774822	2857199	3167633	3375766	3468524	3026665	2660904	2464556
23	2753201	2787478	2687877	2827440	2775354	2861002	3182992	3389236	3463851	3006915	2650578	2457458
24	2748310	2802048	2686446	2833104	2774423	2859643	3199579	3395525	3459649	2991742	2635527	2451717
25	2736965	2811837	2691000	2830136	2779480	2865761	3216671	3402129	3455451	2977882	2623861	2448179
26	2735779	2822187	2692432	2823264	2780146	2874886	3227904	3407666	3457938	2960445	2611722	2445421
27	2731305	2834319	2694125	2815194	2779214	2889366	3235307	3415058	3454674	2941418	2603311	2446960
28	2723814	2845945	2691000	2802852	2791482	2906644	3239460	3420455	3446135	2918203	2603183	2441845
29	2717648	2858828	2690089	2787611	---	2917927	3242132	3432504	3432814	2897721	2601529	2435765
30	2717386	2889913	2690479	2774024	---	2928689	3246589	3443965	3419375	2882119	2589208	2427271
31	2721845	---	2687876	2767779	---	2941141	---	3454519	---	2865217	2577812	---
MAX	2819227	2889913	2930484	2833104	2864945	2941141	3246589	3454519	3481007	3404282	2852178	2569983
MIN	2717386	2724076	2686446	2689958	2724864	2787878	2950990	3261626	3419375	2865217	2577812	2427271
a	843.48	856.02	840.838	846.96	848.74	859.74	881.02	894.70	892.43	854.21	832.30	820.14
b	-109640	+168068	-202037	+79903	+23703	+149659	+305448	+207930	-35144	-554158	-287405	-150541
c	5945	1706	1442	901	1032	2334	5064	7632	9594	11085	9184	7692
d	256900	166800	652200	433900	741300	505700	253600	328900	296000	717200	456400	245100

CAL YR 1998 b +4637504

WTR YR 1999 b -404214

ANNUAL DIVERSION (AC-FT) CAL YR 1998 d 6078000

ANNUAL DIVERSION (AC-FT) WTR YR 1999 d 5054000

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

b Change in contents, in acre-feet.

c Total evaporation, in acre-feet, provided by California Department of Water Resources; not reviewed by the U.S. Geological Survey.

d Diversion, in acre-feet, to Edward Hyatt Powerplant, provided by California Department of Water Resources.

11406810 PALERMO CANAL NEAR OROVILLE, CA

LOCATION.—Lat 39°31'59", long 121°28'54", in SW 1/4 SW 1/4 sec.1, T.19 N., R.4 E., Butte County, Hydrologic Unit 18020106, on right bank 50 ft downstream from Oroville Dam and 4.4 mi east of Oroville.

PERIOD OF RECORD.—April 1965 to current year. Daily discharge records of diversion from Kelly Ridge Penstock for period April 1965 to October 1968, when Kelly Ridge Penstock supplied the entire flow of Palermo Canal, are in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and Parshall flume. Datum of gage is 547.67 ft above sea level (levels by California Department of Water Resources). April 1965 to October 1968, water-stage recorder and Parshall flume at site of diversion from Kelly Ridge Penstock, 0.4 mi downstream at different datum.

REMARKS.—Canal diverts from left end of Oroville Dam. Water is used for irrigation near Oroville. During period of construction of Oroville Dam, water was released from Kelly Ridge Penstock to meet irrigation requirements. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.—Records were provided by California Department of Water Resources, 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, 28 ft³/s, several days during July to September 1967; no flow at times 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	20	10	1.7	2.8	2.8	2.8	2.9	7.1	18	20	19	19
2	20	10	1.7	2.8	2.8	2.8	2.9	7.1	18	20	19	19
3	20	10	1.7	2.8	2.8	2.9	2.9	7.1	18	20	19	19
4	20	8.1	1.7	2.8	2.8	2.9	3.0	7.1	18	20	19	19
5	20	7.1	1.7	2.7	2.8	3.1	3.0	9.0	18	20	19	19
6	20	7.1	1.7	2.8	2.8	3.1	3.0	9.9	18	20	19	19
7	20	7.1	1.7	2.7	2.8	3.1	3.0	13	18	20	19	19
8	20	7.1	1.7	2.7	2.8	3.0	3.0	15	18	20	19	19
9	20	5.8	1.7	2.7	2.8	3.1	3.0	15	18	20	19	19
10	20	5.1	2.4	2.7	2.9	3.1	3.0	15	18	20	19	19
11	20	5.1	3.0	2.7	2.9	3.1	3.0	15	18	20	19	19
12	20	5.1	3.0	2.7	2.9	3.2	3.0	15	18	19	19	19
13	17	4.9	3.0	2.7	2.9	3.0	3.0	16	18	19	19	19
14	15	5.0	2.9	2.7	2.9	2.8	3.0	17	18	19	19	19
15	15	5.1	2.9	2.7	2.8	2.9	3.0	17	18	19	19	19
16	15	5.1	2.9	2.7	2.8	2.9	3.0	17	18	19	19	19
17	15	5.1	2.8	2.7	2.9	2.9	3.0	17	18	19	19	19
18	15	5.1	2.9	2.7	2.9	2.9	3.0	17	18	19	19	19
19	15	5.1	2.9	2.8	2.9	2.8	3.0	17	18	19	19	19
20	15	5.1	2.9	2.8	2.9	2.7	3.0	17	18	19	19	19
21	14	5.2	2.8	2.8	2.9	2.7	3.9	18	18	19	19	19
22	13	5.1	2.8	2.8	2.9	2.7	4.3	18	18	19	19	18
23	13	4.9	2.8	2.8	2.8	2.7	4.3	18	18	19	19	18
24	13	4.9	2.8	2.8	2.9	2.6	4.3	18	18	19	19	18
25	13	5.0	2.8	2.8	2.9	.00	3.8	18	18	19	19	18
26	13	5.0	2.8	2.8	2.9	1.1	3.6	18	18	19	19	18
27	13	5.1	2.8	2.8	2.9	2.7	3.7	18	18	19	19	18
28	11	5.1	2.8	2.8	2.8	2.7	3.7	18	18	19	19	18
29	10	5.1	2.8	2.8	---	2.0	3.7	18	19	19	19	18
30	10	2.8	2.8	2.8	---	2.9	5.9	18	20	19	19	18
31	10	---	2.8	2.8	---	2.9	---	18	---	19	19	---
TOTAL	495	176.3	77.7	85.5	79.9	84.10	100.9	468.3	543	600	589	561
MEAN	16.0	5.88	2.51	2.76	2.85	2.71	3.36	15.1	18.1	19.4	19.0	18.7
MAX	20	10	3.0	2.8	2.9	3.2	5.9	18	20	20	19	19
MIN	10	2.8	1.7	2.7	2.8	.00	2.9	7.1	18	19	19	18
AC-FT	982	350	154	170	158	167	200	929	1080	1190	1170	1110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1999, BY WATER YEAR (WY)

MEAN	12.4	5.18	3.26	2.68	2.30	2.75	6.06	14.3	18.7	19.5	19.8	18.9
MAX	18.0	8.56	5.94	5.12	5.33	6.22	19.1	22.3	24.5	24.5	24.5	22.8
(WY)	1979	1994	1975	1971	1974	1988	1970	1976	1976	1975	1978	1975
MIN	6.85	2.04	.000	.21	.000	.000	.000	3.21	11.3	16.0	16.2	13.8
(WY)	1973	1983	1982	1995	1975	1979	1991	1995	1998	1991	1991	1985

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1969 - 1999

ANNUAL TOTAL	3263.46	3860.70		
ANNUAL MEAN	8.94	10.6	10.5	
HIGHEST ANNUAL MEAN			13.3	1970
LOWEST ANNUAL MEAN			7.54	1995
HIGHEST DAILY MEAN	20	Jul 16	26	Jul 2 1975
LOWEST DAILY MEAN	.00	Jan 13	.00	Mar 25 1970
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 13	1.7	Dec 1 1970
ANNUAL RUNOFF (AC-FT)	6470	7660	7620	
10 PERCENT EXCEEDS	20	19	21	
50 PERCENT EXCEEDS	5.1	9.0	8.4	
90 PERCENT EXCEEDS	.00	2.8	1.3	

11406870 THERMALITO AFTERBAY NEAR OROVILLE, CA

LOCATION.—Lat 39°27'30", long 121°38'17", in NE 1/4 SE 1/4 sec.33, T.19 N., R.3 E., Butte County, Hydrologic Unit 18020106, at dam 195 ft northeast of centerline of outlet structure and 5.7 mi southwest of Oroville.

PERIOD OF RECORD.—October 1967 to current year.

GAGE.—Water-stage recorder. Datum of gage is 100.47 ft above sea level (levels by California Department of Water Resources). Auxiliary water-stage recorder 90 ft southwest of centerline of Western Canal outlet and 7.2 mi west of Oroville.

REMARKS.—Reservoir is formed by an earthfill dam completed in 1967. Diversion from the reservoir began Oct. 12, 1967. Usable capacity, 61,144 acre-ft between gage heights 120.0 and 139.0 ft, extreme operating levels. Normal operating range is from 123 to 136.5 ft. Water is released to four canals (stations 11406880, 11406890, 11406900, and 11406910) and to the Feather River (station 11406920) from the reservoir. Total maximum release to the four canals is approximately 4,000 ft³/s. Water is pumped, at times, from Thermalito Afterbay back into Thermalito Forebay (station 11406840) during off-peak periods to be re-released through Thermalito Powerplant (station 11406850) for power generation during peak-demand periods. Records, including extremes, represent total contents at 2400 hours. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.—Records were collected by California Department of Water Resources, 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, 57,300 acre-ft, May 24, 1969, gage height, 136.56 ft; minimum since initial operation began, 5,590 acre-ft, Mar. 1, 1968, gage height, 119.09 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 50,331 acre-ft, Apr. 16, gage height, 134.90 ft; minimum, 19,826 acre-ft, Dec. 14, gage height, 125.87 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

(Based on table provided by California Department of Water Resources, dated Oct. 10, 1968)

119	5,465	124	15,157	130	32,150
120	7,054	126	20,171	134	46,719
122	10,792	128	25,832	139	68,198

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	37998	34346	38106	26433	27534	28531	43644	35556	31260	29449	26707	31589
2	41897	31064	34038	24383	28062	34758	44568	25264	35940	30672	27937	32019
3	34966	30478	31556	22327	29385	41185	39705	27411	39778	30737	30380	31589
4	24412	29545	28720	24441	33122	43951	35625	29067	43452	32819	29929	33392
5	27906	30770	28374	27906	36397	43912	36998	35625	38938	32786	31457	31227
6	29865	30966	28374	29194	37460	44028	39705	41148	33291	30025	31556	26798
7	33358	29672	28531	29801	37496	44298	42918	45658	34346	29897	28155	31293
8	36432	27073	27534	30510	38322	44568	43797	36256	35625	27906	22299	37461
9	40036	28625	25801	32585	39156	41972	45854	24704	37747	31064	26798	42804
10	35451	31031	25741	31919	38575	41972	40257	24646	42463	32752	30900	45932
11	30025	31787	23401	32485	37247	39375	34586	28657	43605	30770	32052	42463
12	33426	33257	22946	33122	36221	37926	35695	33494	36185	32385	34586	33156
13	37175	34758	22974	32954	35277	44220	37782	40812	29321	33528	40331	36679
14	42766	31886	19826	34517	34243	34896	42160	45269	30672	33021	35347	37318
15	44105	30998	20600	35800	33358	37890	47353	40072	32485	32719	27288	37318
16	45619	33392	20897	31820	33629	41148	50331	31391	35695	33257	27380	37998
17	40738	36115	22351	25651	31820	41897	45776	35208	40405	36714	28594	38034
18	35277	37854	22748	22188	32285	42010	39120	37890	44995	38466	29704	33799
19	33257	40887	20279	22216	32118	40924	38322	41222	39705	35556	29897	21524
20	31721	41859	21278	24558	32652	32987	38430	43644	33325	36679	33223	23344
21	29004	40553	28000	22077	32585	25057	40183	43720	35625	35139	29226	26373
22	25771	37353	31064	23602	32418	27196	42918	36962	36856	36750	28500	28563
23	26828	37425	34209	24675	32351	31391	38647	31688	40924	36573	29385	32451
24	25891	38034	32351	25472	31886	42311	32585	35277	40961	31260	35765	35625
25	34209	35451	27442	26011	31391	47711	25443	37247	42690	24998	41334	34380
26	31622	31787	25353	26464	30542	49802	27288	39631	38070	25146	45345	26252
27	33528	29641	22439	26646	26828	48070	31985	41822	32418	26252	45424	26524
28	37282	26373	23373	28000	25532	43912	37175	46129	29067	29449	36538	24529
29	38974	24005	24412	29194	---	43223	43337	39266	28783	32152	27504	23717
30	39412	32451	25861	30933	---	43567	42576	32853	28062	30445	27380	27012
31	36045	---	29131	28688	---	42501	---	26433	---	30478	29823	---
MAX	45619	41859	38106	35800	39156	49802	50331	46129	44995	38466	45424	45932
MIN	24412	24005	19826	22077	25532	25057	25443	24646	28062	24998	22299	21524
a	131.14	130.09	129.07	128.93	127.90	132.91	132.93	128.20	128.73	129.49	129.29	128.39
b	+2075	-3594	-3320	-443	-3156	+16969	+75	-16143	+1629	+2416	-655	-2811
c	1329	508	325	184	275	647	1473	1981	2132	2271	1975	1662
d	233400	149800	644200	420000	718900	470500	235000	811000	279500	702900	437900	219200

CAL YR 1998 b -7760

WTY YR 1999 b -6958

ANNUAL DIVERSION (AC-FT) CAL YR 1998 d 5908000

ANNUAL DIVERSION (AC-FT) WTR YR 1999 d 5322000

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

b Change in contents, in acre-feet.

c Total evaporation, in acre-feet, provided by California Department of Water Resources; not reviewed by the U.S. Geological Survey.

d Diversion, in acre-feet, to Thermalito Powerplant, provided by California Department of Water Resources.

11406880 WESTERN CANAL AT INTAKE, NEAR OROVILLE, CA

LOCATION.—Lat 39°30'19", long 121°41'06", in SW 1/4 NW 1/4 sec.18, T.19 N., R.3 E., Butte County, Hydrologic Unit 18020105, on left bank 500 ft downstream from Thermalito Afterbay Dam and 7.3 mi west of Oroville.

PERIOD OF RECORD.—October 1967 to current year.

GAGE.—Water-stage recorder. Datum of gage is 100.47 ft above sea level (levels by California Department of Water Resources).

REMARKS.—Water is diverted from Thermalito Afterbay (station 11406870) and is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.—Records collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,210 ft³/s, May 18, 1999; 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	69	663	50	179	.00	.00	.00	597	575	1080	905	489
2	88	623	47	179	.00	.00	.00	643	562	1050	905	448
3	152	541	61	178	.00	.00	.00	683	528	1040	905	411
4	167	519	86	179	.00	.00	.00	775	471	1040	884	363
5	168	538	98	179	.00	.00	.00	936	422	1030	870	316
6	168	538	98	184	.00	.00	.00	1110	399	1020	870	287
7	168	538	155	188	.00	.00	.00	1200	428	1030	858	278
8	200	538	189	189	.00	.00	.00	1200	495	1040	851	259
9	237	538	159	188	.00	.00	.00	1200	567	1040	849	235
10	247	538	149	188	.00	.00	.00	1200	628	1030	844	211
11	256	538	148	65	.00	.00	.00	1200	712	1030	830	181
12	307	513	148	.00	.00	.00	.00	1200	794	1030	811	171
13	318	498	147	.00	.00	.00	.00	1200	823	1040	791	164
14	318	482	148	.00	.00	.00	.00	1200	824	1040	784	142
15	326	473	149	.00	.00	.00	.00	1200	815	1040	783	121
16	350	449	149	.00	.00	.00	.00	1200	799	1030	783	113
17	358	409	151	.00	.00	.00	.00	1200	798	996	784	112
18	358	398	150	.00	.00	.00	.00	1210	816	977	772	112
19	383	399	149	.00	.00	.00	52	1160	847	977	749	111
20	485	345	149	.00	.00	.00	97	1050	848	966	743	112
21	614	298	154	.00	.00	.00	98	959	851	946	743	112
22	648	299	159	.00	.00	.00	99	881	849	947	743	105
23	648	245	160	.00	.00	.00	97	792	877	953	719	97
24	648	199	159	.00	.00	.00	114	760	898	945	687	98
25	648	179	158	.00	.00	.00	139	773	944	938	678	98
26	623	168	158	.00	.00	.00	232	757	981	938	666	96
27	631	169	158	.00	.00	.00	307	687	997	938	636	122
28	658	169	167	.00	.00	.00	352	636	1030	937	605	176
29	674	168	179	.00	---	.00	398	602	1060	935	598	208
30	680	120	179	.00	---	.00	485	573	1080	934	573	217
31	663	---	179	.00	---	.00	---	573	---	924	528	---
TOTAL	12258	12092	4390	1896.00	0.00	0.00	2470.00	29357	22718	30861	23747	5965
MEAN	395	403	142	61.2	.000	.000	82.3	947	757	996	766	199
MAX	680	663	189	189	.00	.00	485	1210	1080	1080	905	489
MIN	69	120	47	.00	.00	.00	.00	573	399	924	528	96
AC-FT	24310	23980	8710	3760	.00	.00	4900	58230	45060	61210	47100	11830

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	263	238	111	27.2	.000	.42	144	687	690	786	658	168
MAX	539	607	365	155	.000	12.4	566	947	959	1032	890	305
(WY)	1975	1975	1977	1977	1968	1972	1977	1999	1981	1981	1981	1995
MIN	95.2	38.9	.000	.000	.000	.000	1.00	271	477	504	456	49.9
(WY)	1990	1974	1971	1969	1968	1968	1982	1995	1983	1970	1970	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	120129.00		145754.00			
ANNUAL MEAN	329		399		316	
HIGHEST ANNUAL MEAN					403	
LOWEST ANNUAL MEAN					217	
HIGHEST DAILY MEAN	1170	May 22	1210	May 18	1210	May 18 1999
LOWEST DAILY MEAN	.00	Jan 9	.00	Jan 12	.00	Dec 4 1967
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 9	.00	Jan 12	.00	Jan 5 1968
ANNUAL RUNOFF (AC-FT)	238300		289100		229200	
10 PERCENT EXCEEDS	863		987		835	
50 PERCENT EXCEEDS	169		232		206	
90 PERCENT EXCEEDS	.00		.00		.00	

11406890 RICHVALE CANAL AT INTAKE, NEAR OROVILLE, CA

LOCATION.—Lat 39°30'19", long 121°41'06", in SW 1/4 NW 1/4 sec.18, T.19 N., R.3 E., Butte County, Hydrologic Unit 18020105, on right bank 500 ft downstream from axis of Thermalito Afterbay Dam and 7.3 mi west of Oroville.

PERIOD OF RECORD.—April 1968 to current year.

REVISED RECORDS.—WDR CA-91-4: 1990.

GAGE.—Water-stage recorder. Datum of gage is 100.47 ft above sea level (levels by California Department of Water Resources).

REMARKS.—Canal diverts from Thermalito Afterbay (station 11406870); water is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.—Records collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 511 ft³/s, May 16, 1974; 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	32	238	220	232	.00	.00	.00	320	249	443	437	281
2	33	238	213	232	.00	.00	.00	347	250	450	437	254
3	30	239	213	232	.00	.00	.00	349	237	454	436	243
4	28	265	213	234	.00	.00	.00	358	230	454	437	220
5	27	278	214	234	.00	.00	.00	376	230	454	436	201
6	38	312	214	234	.00	.00	.00	379	202	453	437	198
7	53	328	226	233	.00	.00	.00	378	190	453	437	199
8	71	328	234	233	.00	.00	.00	411	219	452	438	185
9	95	328	232	234	.00	.00	.00	448	230	452	435	151
10	98	328	233	232	.00	.00	.00	458	231	452	428	118
11	98	329	232	234	.00	.00	.00	458	260	458	425	102
12	104	308	233	234	.00	.00	.00	469	330	458	426	98
13	115	281	232	234	.00	.00	.00	473	358	456	428	98
14	132	273	232	234	.00	.00	.00	474	398	450	424	85
15	139	273	233	71	.00	.00	.00	473	418	445	409	78
16	138	274	233	.00	.00	.00	.00	473	418	446	403	69
17	139	274	234	.00	.00	.00	.00	474	419	446	396	64
18	138	246	235	.00	.00	.00	.00	443	418	439	393	52
19	139	233	234	.00	.00	.00	15	393	428	438	393	40
20	139	234	234	.00	.00	.00	70	379	425	437	393	35
21	139	233	234	.00	.00	.00	112	358	420	436	393	20
22	170	233	234	.00	.00	.00	124	310	419	435	380	10
23	184	234	234	.00	.00	.00	141	283	436	433	374	17
24	183	233	233	.00	.00	.00	140	278	443	433	374	23
25	183	233	233	.00	.00	.00	138	288	444	432	374	21
26	183	233	233	.00	.00	.00	186	294	443	433	353	18
27	197	234	233	.00	.00	.00	215	350	443	432	344	18
28	204	233	233	.00	.00	.00	214	406	443	431	343	19
29	204	233	233	.00	---	.00	231	390	443	431	322	20
30	227	234	234	.00	---	.00	258	320	443	431	314	21
31	239	---	234	.00	---	.00	---	262	---	433	297	---
TOTAL	3899	7940	7112	3337.00	0.00	0.00	1844.00	11872	10517	13750	12316	2958
MEAN	126	265	229	108	.000	.000	61.5	383	351	444	397	98.6
MAX	239	329	235	234	.00	.00	258	474	444	458	438	281
MIN	27	233	213	.00	.00	.00	.00	262	190	431	297	10
AC-FT	7730	15750	14110	6620	.00	.00	3660	23550	20860	27270	24430	5870

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	31.3	58.2	50.9	14.8	.000	.25	69.2	281	289	317	276	75.6
MAX	196	268	247	108	.000	6.32	201	436	400	444	397	154
(WY)	1998	1997	1997	1999	1969	1972	1972	1974	1979	1999	1999	1995
MIN	.000	.000	.000	.000	.000	.000	.000	104	129	140	130	8.43
(WY)	1972	1969	1969	1969	1969	1969	1983	1991	1991	1991	1991	1977

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	64434.00		75545.00			
ANNUAL MEAN	177		207		124	
HIGHEST ANNUAL MEAN					207	
LOWEST ANNUAL MEAN					66.4	
HIGHEST DAILY MEAN	473	May 25	474	May 14	511	May 16 1974
LOWEST DAILY MEAN	.00	Jan 16	.00	Jan 16	.00	Sep 25 1968
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 16	.00	Jan 16	.00	Oct 5 1968
ANNUAL RUNOFF (AC-FT)	127800		149800		89610	
10 PERCENT EXCEEDS	393		438		356	
50 PERCENT EXCEEDS	205		232		49	
90 PERCENT EXCEEDS	.00		.00		.00	

11406900 PACIFIC GAS & ELECTRIC CO. LATERAL AT INTAKE, NEAR OROVILLE, CA

LOCATION.—Lat 39°29'22", long 121°41'12", in SE 1/4 NW 1/4 sec.19, T.19 N., R.3 E., Butte County, Hydrologic Unit 18020106, on right bank 82 ft downstream from axis of Thermalito Afterbay Dam and 7.2 mi west of Oroville.

PERIOD OF RECORD.—April 1968 to current year.

GAGE.—Water-stage recorder. Datum of gage is 113.47 ft above sea level (levels by California Department of Water Resources).

REMARKS.—Flow regulated at outlet works from Thermalito Afterbay (station 11406870); water is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.—Records collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 46 ft³/s, Apr. 24, 1977, May 16, 1978; 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	.00	22	.00	1.3	.00	.00	.00	33	4.5	15	16	11
2	.00	23	.00	1.3	.00	.00	.00	38	1.9	15	16	9.5
3	.00	25	.00	1.2	.00	.00	.00	29	2.0	14	16	7.5
4	.00	25	.00	1.1	.00	.00	.00	26	2.0	15	16	6.2
5	.00	11	.00	1.2	.00	.00	.00	25	2.1	15	16	6.2
6	.00	3.4	.00	1.3	.00	.00	.00	25	2.0	15	16	5.9
7	.00	3.4	.63	1.3	.00	.00	.00	19	1.9	15	16	5.1
8	.00	3.4	1.0	1.3	.00	.00	.00	14	3.7	16	16	2.4
9	.00	3.3	1.0	1.3	.00	.00	.00	15	5.6	17	16	.00
10	.00	3.7	1.0	1.3	.00	.00	.00	18	8.8	18	16	.00
11	.00	4.0	1.0	.43	.00	.00	.00	20	9.9	18	15	.00
12	.00	2.9	1.0	.00	.00	.00	.00	13	9.5	18	15	.00
13	.00	2.0	1.0	.00	.00	.00	.00	7.3	9.7	18	15	.00
14	.00	2.0	.90	.00	.00	.00	.00	5.6	12	18	14	.00
15	.00	2.0	.90	.00	.00	.00	.00	5.5	13	18	14	.00
16	.00	2.0	.90	.00	.00	.00	.00	5.7	12	18	15	.00
17	.00	2.0	1.5	.00	.00	.00	.00	5.5	20	18	15	.00
18	.00	2.2	1.9	.00	.00	.00	.00	7.4	28	18	15	.00
19	.00	2.2	1.9	.00	.00	.00	.00	10	30	18	15	.00
20	.00	2.2	1.9	.00	.00	.00	.00	11	28	17	15	.00
21	.00	2.2	2.0	.00	.00	.00	.00	9.1	26	17	15	.00
22	.00	2.2	2.1	.00	.00	.00	.00	7.8	26	17	15	.00
23	.00	2.2	1.3	.00	.00	.00	.00	7.6	23	17	15	.00
24	.00	2.2	.69	.00	.00	.00	.00	7.4	19	17	15	.00
25	.00	2.2	.91	.00	.00	.00	.00	8.1	16	17	15	.00
26	.00	2.1	1.3	.00	.00	.00	.00	7.4	16	17	15	.00
27	.00	2.0	1.2	.00	.00	.00	.00	7.1	16	17	15	.00
28	.00	2.0	1.1	.00	.00	.00	13	8.0	16	17	14	.00
29	8.4	1.9	1.1	.00	---	.00	19	8.2	15	17	14	.00
30	19	1.1	1.2	.00	---	.00	23	7.6	15	16	14	.00
31	22	---	1.3	.00	---	.00	---	7.6	---	16	13	---
TOTAL	49.40	166.8	30.73	13.03	0.00	0.00	55.00	418.9	394.6	519	468	53.80
MEAN	1.59	5.56	.99	.42	.000	.000	1.83	13.5	13.2	16.7	15.1	1.79
MAX	22	25	2.1	1.3	.00	.00	23	38	30	18	16	11
MIN	.00	1.1	.00	.00	.00	.00	.00	5.5	1.9	14	13	.00
AC-FT	98	331	61	26	.00	.00	109	831	783	1030	928	107

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	.33	1.80	.68	.077	.000	.000	3.59	12.7	12.4	13.5	10.8	1.26
MAX	3.47	6.58	3.49	.51	.000	.000	14.8	23.2	18.3	17.1	15.1	2.62
(WY)	1997	1996	1987	1994	1969	1969	1977	1975	1981	1981	1999	1972
MIN	.000	.000	.000	.000	.000	.000	.000	6.55	8.40	9.37	7.12	.000
(WY)	1969	1969	1969	1969	1969	1969	1974	1994	1998	1970	1988	1994

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1968 - 1999

ANNUAL TOTAL	1787.87	2169.26	
ANNUAL MEAN	4.90	5.94	4.83
HIGHEST ANNUAL MEAN			5.94
LOWEST ANNUAL MEAN			3.67
HIGHEST DAILY MEAN	33	May 20	38
LOWEST DAILY MEAN	.00	Jan 9	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 9	.00
ANNUAL RUNOFF (AC-FT)	3550	4300	3500
10 PERCENT EXCEEDS	16	17	15
50 PERCENT EXCEEDS	.93	1.2	.00
90 PERCENT EXCEEDS	.00	.00	.00

11406910 SUTTER-BUTTE CANAL AT INTAKE, NEAR OROVILLE, CA

LOCATION.—Lat 39°27'01", long 121°39'27", in NW corner of Boga Fernandez Grant, T.18 N., R.3 E., Butte County, Hydrologic Unit 18020105, on left bank 675 ft downstream from Thermalito Afterbay Dam and 6.8 mi southwest of Oroville.

PERIOD OF RECORD.—November 1967 to current year.

GAGE.—Water-stage recorder. Datum of gage is 109.97 ft above sea level (levels by California Department of Water Resources). Prior to May 1, 1970, at datum 109.50 ft lower.

REMARKS.—Water is diverted from Thermalito Afterbay and is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.—Records collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 2,110 ft³/s, Apr. 22–24, 1968; 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	473	522	465	439	.00	.00	.00	1490	1450	1590	1520	1220
2	464	532	438	439	.00	.00	.00	1640	1460	1570	1500	1190
3	445	543	415	439	.00	.00	.00	1680	1430	1550	1500	1140
4	445	557	395	441	.00	.00	.00	1690	1360	1550	1510	1100
5	462	580	402	434	.00	.00	.00	1720	1280	1550	1490	1020
6	468	597	407	431	.00	.00	.00	1740	1210	1550	1480	984
7	477	580	407	431	.00	.00	.00	1750	1220	1550	1480	964
8	493	570	406	432	.00	.00	.00	1780	1260	1560	1490	947
9	497	556	410	431	.00	.00	.00	1800	1330	1560	1500	929
10	495	551	417	430	.00	.00	.00	1800	1410	1560	1490	905
11	491	541	416	433	.00	.00	.00	1810	1450	1550	1480	873
12	469	523	424	433	.00	.00	.00	1810	1500	1550	1480	849
13	470	522	429	434	.00	.00	.00	1820	1520	1570	1460	829
14	472	530	430	435	.00	.00	.00	1820	1540	1570	1460	799
15	487	549	432	132	.00	.00	.00	1810	1590	1570	1460	785
16	503	550	438	.00	.00	.00	.00	1800	1590	1570	1450	783
17	536	516	441	.00	.00	.00	.00	1800	1570	1570	1430	766
18	546	528	444	.00	.00	.00	.00	1750	1560	1570	1420	750
19	548	516	441	.00	.00	.00	166	1670	1540	1570	1410	749
20	559	486	441	.00	.00	.00	236	1630	1540	1580	1400	739
21	554	490	449	.00	.00	.00	291	1560	1530	1580	1420	705
22	565	497	446	.00	.00	.00	343	1500	1540	1580	1420	702
23	597	486	443	.00	.00	.00	477	1490	1560	1570	1450	701
24	596	473	441	.00	.00	.00	656	1490	1570	1560	1410	701
25	578	466	441	.00	.00	.00	713	1510	1590	1550	1380	689
26	565	474	440	.00	.00	.00	886	1530	1590	1570	1380	664
27	508	475	441	.00	.00	.00	927	1530	1590	1580	1340	646
28	513	474	441	.00	.00	.00	1000	1490	1590	1570	1320	594
29	537	475	442	.00	---	.00	1100	1510	1590	1550	1330	555
30	544	477	441	.00	---	.00	1280	1500	1590	1540	1310	548
31	486	---	442	.00	---	.00	---	1470	---	1540	1240	---
TOTAL	15843	15636	13365	6214.00	0.00	0.00	8075.00	51390	44550	48450	44410	24826
MEAN	511	521	431	200	.000	.000	269	1658	1485	1563	1433	828
MAX	597	597	465	441	.00	.00	1280	1820	1590	1590	1520	1220
MIN	445	466	395	.00	.00	.00	.00	1470	1210	1540	1240	548
AC-FT	31420	31010	26510	12330	.00	.00	16020	101900	88360	96100	88090	49240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	383	146	110	30.0	23.5	94.9	538	1396	1380	1477	1358	728
MAX	661	527	431	216	374	571	1294	1815	1643	1709	1608	893
(WY)	1975	1996	1999	1996	1977	1976	1968	1975	1975	1981	1982	1995
MIN	77.2	.000	.000	.000	.000	.000	.000	519	826	834	776	283
(WY)	1978	1975	1971	1969	1969	1978	1983	1977	1992	1991	1991	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	231056.00		272759.00			
ANNUAL MEAN	633		747		640	
HIGHEST ANNUAL MEAN					765	
LOWEST ANNUAL MEAN					401	
HIGHEST DAILY MEAN	1560	Jul 18	1820	May 13	2110	Apr 22 1968
LOWEST DAILY MEAN	.00	Jan 15	.00	Jan 16	.00	Jan 8 1968
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 15	.00	Jan 16	.00	Jan 8 1968
ANNUAL RUNOFF (AC-FT)	458300		541000		463700	
10 PERCENT EXCEEDS	1490		1570		1560	
50 PERCENT EXCEEDS	490		536		428	
90 PERCENT EXCEEDS	.00		.00		.00	

11406920 THERMALITO AFTERBAY RELEASE TO FEATHER RIVER, NEAR OROVILLE, CA

LOCATION.—Lat 39°27'23", long 121°38'10", in NW 1/4 SE 1/4 sec.33, T.19 N., R.3 E., Butte County, Hydrologic Unit 18020106, on left bank of outlet channel 955 ft downstream from centerline of Thermalito Afterbay Dam and 5.7 mi southwest of Oroville.

PERIOD OF RECORD.—November 1967 to current year.

WATER TEMPERATURE: Water years 1969–92.

GAGE.—Water-stage recorder. Datum of gage is 113.47 ft above sea level (levels by California Department of Water Resources). Prior to May 1, 1970, at datum 13.00 ft lower.

REMARKS.—Flow regulated by gates of Thermalito Afterbay outlet 955 ft upstream. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.—Records collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 21,600 ft³/s, Jan. 28, 1970, gage height, 23.30 ft, datum then in use, 21,600 ft³/s, Jan. 2, 1997, gage height, 11.45 ft; no flow for many days during 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	5410	1830	7720	2890	8960	13500	2390	4390	1260	7430	7930	2890
2	5410	1680	14500	2890	6680	13500	2390	4400	1260	7430	7930	2890
3	5410	1480	14500	2890	6430	13500	2390	4400	1260	7430	7430	2890
4	5400	1280	15500	2900	6890	15600	2390	3670	1260	7430	6920	2890
5	4970	1180	16500	2900	10900	17100	2390	3410	1260	7430	6430	2890
6	4460	1180	16500	2660	15500	17100	2390	3400	1260	7430	5930	2890
7	3960	1180	16500	2150	16500	17100	2390	3400	1260	7680	5420	2890
8	3450	1180	15500	1790	14800	17100	2400	3390	1260	7940	4910	2390
9	2950	1180	13500	1600	12700	16000	2670	3390	1260	7940	4170	2390
10	2440	1180	13500	1430	15700	13500	3380	3400	1260	7930	3410	2390
11	1940	1180	13500	1380	17100	10500	3390	3030	1260	7930	3400	2380
12	1890	1180	13500	1390	17100	7450	3390	2520	1260	7930	3400	2380
13	1880	1180	13500	1370	17100	7430	3400	2020	1260	8180	3400	2390
14	1860	1170	13500	1380	17100	7420	3400	1780	1260	8330	3390	2390
15	1840	1180	12000	1380	17100	6090	3400	1580	1260	7540	3400	2390
16	1840	1180	9960	2340	17100	5410	3400	1370	1260	8430	3150	2380
17	1830	1180	7950	3370	17100	5410	3390	1260	1260	8440	2640	2390
18	1830	1170	7430	4390	17100	5410	3390	1260	1260	8440	2400	2390
19	1830	1170	7430	5420	17100	5410	3400	1260	1260	8690	2640	2380
20	1830	1180	7440	6820	17100	5170	3660	1260	1250	8940	3140	2390
21	1830	1270	7450	13200	17100	4660	4400	1260	1260	8940	3650	2390
22	1830	1670	7450	13500	16900	4150	4400	1260	1260	8930	3900	2390
23	1840	1780	6440	13500	13500	3660	4400	1260	1260	8940	3900	1800
24	1830	1780	5420	13500	13500	3410	4400	1260	1260	8930	3900	1780
25	1830	1780	4420	13500	13500	3390	4390	1260	1260	8930	3900	1780
26	1830	1780	4410	13500	13500	3140	4400	1260	1820	8940	4150	2060
27	1830	1790	4400	13500	13500	2640	4410	1260	3880	8930	4890	3140
28	1840	1790	4400	13500	13500	2390	4400	1260	5910	8940	4910	3400
29	1840	1790	3650	13500	---	2390	4400	1260	6670	8690	4900	3400
30	1840	1790	2910	12000	---	2390	4400	1260	7170	8180	4660	2900
31	1840	---	2900	9980	---	2390	---	1260	---	7930	3680	---
TOTAL	82610	42340	304280	196520	401060	254310	103400	68450	56940	255200	137880	76300
MEAN	2665	1411	9815	6339	14320	8204	3447	2208	1898	8232	4448	2543
MAX	5410	1830	16500	13500	17100	17100	4410	4400	7170	8940	7930	3400
MIN	1830	1170	2900	1370	6430	2390	2390	1260	1250	7430	2400	1780
AC-FT	163900	83980	603500	389800	795500	504400	205100	135800	112900	506200	273500	151300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	1951	2355	4241	4707	5495	5770	4646	3604	3168	3859	3477	2917
MAX	5867	11020	15120	14700	14600	16890	15410	12340	9717	8232	7043	7085
(WY)	1975	1974	1984	1997	1983	1983	1983	1983	1999	1999	1974	1974
MIN	145	336	56.7	391	345	239	207	549	337	.13	116	398
(WY)	1978	1978	1968	1993	1968	1992	1992	1977	1990	1968	1968	1968

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1968 - 1999
ANNUAL TOTAL	2531060	1979290	
ANNUAL MEAN	6934	5423	3942
HIGHEST ANNUAL MEAN			9352
LOWEST ANNUAL MEAN			970
HIGHEST DAILY MEAN	16500	Dec 5	17100
LOWEST DAILY MEAN	693	Jan 3	1170
ANNUAL SEVEN-DAY MINIMUM	731	Jan 1	1180
INSTANTANEOUS PEAK FLOW			17300
INSTANTANEOUS PEAK STAGE		8.95	Feb 10
ANNUAL RUNOFF (AC-FT)	5020000	3926000	2856000
10 PERCENT EXCEEDS	13500	13500	9480
50 PERCENT EXCEEDS	5910	3400	2310
90 PERCENT EXCEEDS	1780	1260	509

11407000 FEATHER RIVER AT OROVILLE, CA

LOCATION.—Lat 39°31'18", long 121°32'48", in Boga Fernandez Grant, T.19 N., R.4 E., Butte County, Hydrologic Unit 18020106, on right bank 300 ft upstream from fish barrier dam on Feather River, 0.4 mi downstream from Thermalito Diversion Dam, 0.8 mi northeast of Oroville Post Office, and 4.8 mi downstream from Oroville Dam.

DRAINAGE AREA.—3,624 mi².

PERIOD OF RECORD.—October 1901 to current year. Monthly discharge only for some periods, published in WSP 1315-A. October 1934 to September 1961 published as "near Oroville."

CHEMICAL DATA: Water years 1906–07, 1951–77.

SPECIFIC CONDUCTANCE: Water years 1972–78.

WATER TEMPERATURE: Water years 1954–92.

SEDIMENT DATA: Water years 1957–79.

REVISED RECORDS.—WSP 843: 1907(M), 1909(M), 1914–15(M), 1919(M), 1927–28(M). WSP 881: 1913–28 (yearly summaries). WSP 1515: 1906–8. WSP 1931: Drainage area. WDR CA-74-2: 1968–70, adjusted monthly discharge.

GAGE.—Water-stage recorder. Datum of gage is 148.97 ft above sea level (levels by California Department of Water Resources). See WSP 1931 for history of changes prior to Oct. 1, 1964.

REMARKS.—Flow completely regulated by Lake Oroville (station 11406800), beginning November 1967, and Thermalito Diversion Pool (station 11406825), capacity 13,500 acre-ft. Diversions upstream from station for power and irrigation. Feather River Fish Hatchery (station 11406930) diverts up to 120 ft³/s at Thermalito Diversion Dam 0.4 mi upstream from gage. Daily figures shown are combined figures of river flow and diversion to fish hatchery. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.—Records were collected by California Department of Water Resources, 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 completion of Oroville Dam: Maximum discharge observed, 230,000 ft³/s Mar. 19, 1907, elevation, 167.5 ft above sea level, site and datum then in use, maximum discharge (since completion of Oroville Dam), 161,000 ft³/s, Jan. 2, 1997, gage height 25.45 ft; minimum, 300 ft³/s, estimated, Nov. 9, 1931.

Combined flow (since completion of Oroville Dam): Maximum daily discharge, 132,000 ft³/s, Feb. 18, 1986; minimum daily, 222 ft³/s, Sept. 19, 1972.

EXTREMES FOR CURRENT YEAR.—River only: Maximum discharge, 8,100 ft³/s, Feb. 21, gage height, 4.39 ft; maximum gage height, 4.39 ft, Feb. 18, 21; minimum daily, 441 ft³/s, June 14.

Combined flow: Maximum daily discharge, 8,080 ft³/s, Feb. 19; minimum daily, 559 ft³/s, June 14.

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	626	637	631	623	622	645	619	620	610	620	624	667
2	630	636	624	619	623	636	623	626	626	627	625	660
3	629	629	627	623	623	644	620	625	609	632	619	665
4	627	631	628	622	624	1370	624	623	616	630	621	664
5	617	635	638	624	621	3000	629	620	609	627	613	662
6	632	640	630	623	627	3000	635	617	604	627	618	663
7	636	640	634	622	629	3000	627	618	619	628	617	668
8	637	643	630	616	632	2040	628	620	619	627	604	664
9	633	637	621	636	634	623	627	620	615	627	651	669
10	631	642	624	631	616	644	628	620	573	626	638	672
11	631	638	625	625	626	626	625	615	575	623	639	663
12	634	635	626	624	623	614	623	615	570	620	626	661
13	632	638	627	621	625	628	621	620	561	620	620	669
14	633	639	628	620	642	626	619	621	559	627	601	668
15	635	643	620	619	643	627	617	622	565	629	603	671
16	637	653	616	615	708	633	611	616	607	630	618	669
17	634	646	613	615	2270	722	613	615	658	629	616	695
18	631	639	618	614	7860	626	614	620	648	628	623	703
19	631	638	624	617	8080	627	616	622	646	624	627	676
20	627	634	626	618	8030	620	617	627	654	629	635	669
21	631	636	627	616	8040	622	619	626	654	627	621	654
22	631	630	620	618	5870	626	613	618	661	624	630	633
23	636	640	620	617	703	625	615	625	650	625	638	629
24	625	633	627	627	682	631	614	626	663	626	639	636
25	628	629	629	627	655	627	618	626	628	624	655	635
26	624	629	627	628	650	622	619	624	627	623	652	701
27	626	631	626	625	647	633	621	623	626	624	640	622
28	624	628	625	632	664	632	623	625	621	624	626	624
29	633	635	624	625	---	623	621	625	620	625	606	626
30	630	638	627	627	---	624	614	627	618	624	648	623
31	633	---	627	627	---	623	---	628	---	624	665	---
TOTAL	19544	19102	19389	19296	54269	28839	18613	19275	18511	19400	19458	19781
MEAN	630	637	625	622	1938	930	620	622	617	626	628	659
MAX	637	653	638	636	8080	3000	635	628	663	632	665	703
MIN	617	628	613	614	616	614	611	615	559	620	601	622
AC-FT	38770	37890	38460	38270	107600	57200	36920	38230	36720	38480	38590	39240
MEAN ^a	2751	6061	7933	8647	16679	11908	9768	9157	4779	3173	3234	1958
AC-FT ^a	169200	360600	487800	531700	926300	732200	581200	563000	284400	195100	198900	116500

^a Adjusted for unreviewed evaporation, change in contents, and diversions in and out of Lake Oroville, Thermalito Diversion Pool, Thermalito Forebay, and Thermalito Afterbay (station 11406870).

SACRAMENTO RIVER BASIN

11407000 FEATHER RIVER AT OROVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 1967, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2085	3069	5296	6790	9463	10080	12120	9930	5176	2505	1980	1792
MAX	12370	19710	28410	39860	28030	39760	30100	25150	15650	5999	3265	2883
(WY)	1963	1904	1956	1909	1904	1904	1911	1938	1911	1907	1967	1967
MIN	745	853	1102	1350	1714	1564	2146	1246	924	852	956	992
(WY)	1933	1933	1950	1947	1933	1924	1924	1924	1924	1924	1924	1924

SUMMARY STATISTICS

WATER YEARS 1902 - 1967

ANNUAL MEAN	5834
HIGHEST ANNUAL MEAN	12860
LOWEST ANNUAL MEAN	1623
HIGHEST DAILY MEAN	187000
LOWEST DAILY MEAN	577
ANNUAL SEVEN-DAY MINIMUM	652
INSTANTANEOUS PEAK FLOW	230000
INSTANTANEOUS PEAK STAGE	167.5
ANNUAL RUNOFF (AC-FT)	4226000
10 PERCENT EXCEEDS	13300
50 PERCENT EXCEEDS	2870
90 PERCENT EXCEEDS	1470

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	559	754	1217	3163	2366	2129	1011	770	510	506	494	496
MAX	1580	3313	7728	26750	25180	18870	7064	7916	998	775	640	659
(WY)	1996	1982	1997	1997	1986	1995	1982	1995	1989	1992	1997	1999
MIN	399	397	392	401	399	404	401	387	405	404	393	389
(WY)	1969	1979	1979	1976	1978	1978	1977	1969	1974	1981	1979	1972

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1969 - 1999

ANNUAL TOTAL	400703	275477	
ANNUAL MEAN	1098	755	1161
ANNUAL MEAN ADJUSTED a	9931	7109	b 6299
HIGHEST ANNUAL MEAN			3936
LOWEST ANNUAL MEAN			404
HIGHEST DAILY MEAN	10200	Feb 6	8080
LOWEST DAILY MEAN	602	Aug 25	559
ANNUAL SEVEN-DAY MINIMUM	607	Aug 22	573
INSTANTANEOUS PEAK FLOW			161000
INSTANTANEOUS PEAK STAGE			25.45
ANNUAL RUNOFF (AC-FT)	794800	546400	840800
ANNUAL RUNOFF (AC-FT) ADJUSTED a	7190000	5147000	b 4564000
10 PERCENT EXCEEDS	958	662	651
50 PERCENT EXCEEDS	631	627	425
90 PERCENT EXCEEDS	618	616	401

a Adjusted for unreviewed evaporation, change in contents, and diversions in and out of Lake Oroville, Thermalito Diversion Pool, Thermalito Forebay, and Thermalito Afterbay (station 11406870).

b Includes water year 1968.

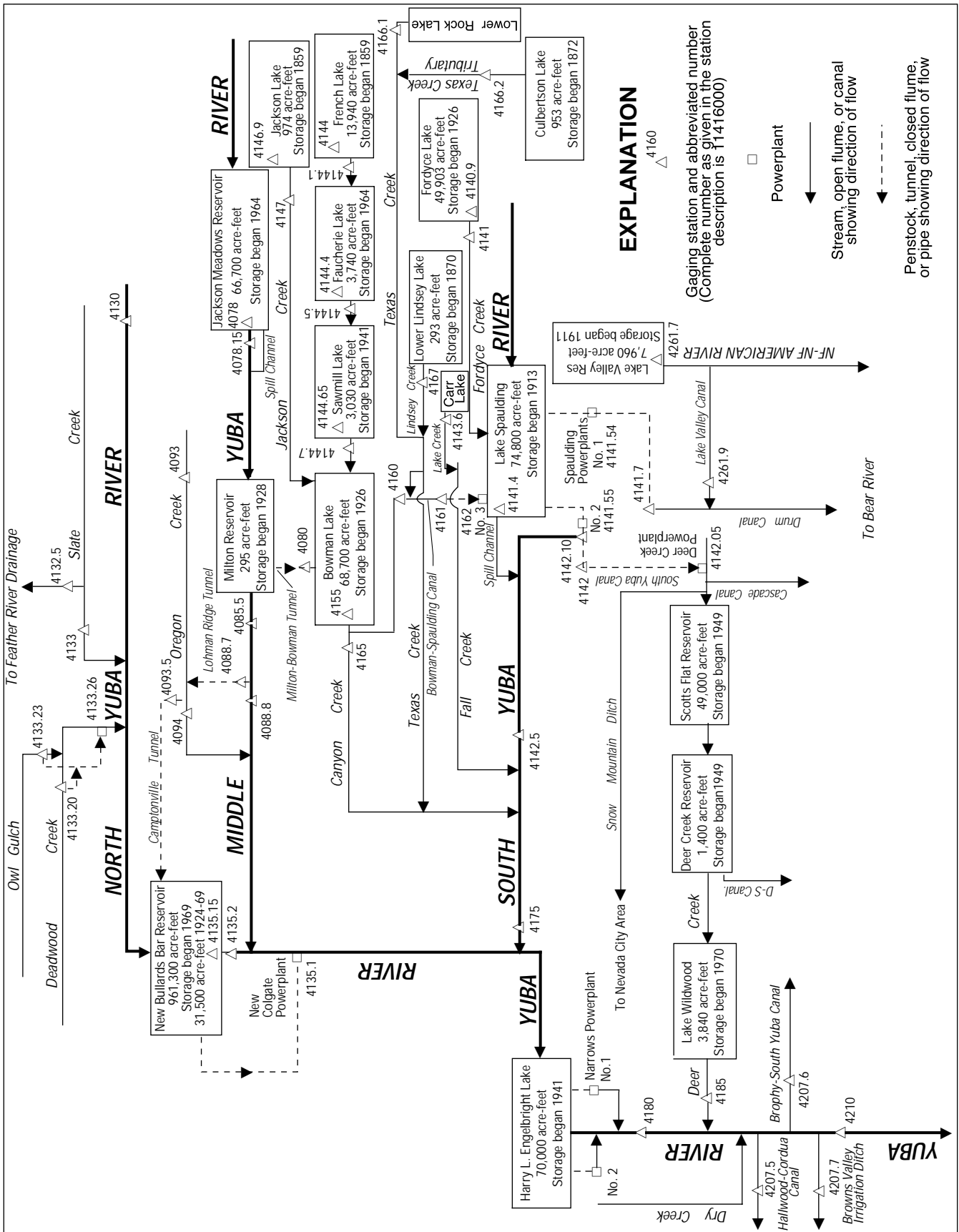


Figure 31. Diversions and storage in Yuba River Basin.

11407800 JACKSON MEADOWS RESERVOIR NEAR SIERRA CITY, CA

LOCATION.—Lat 39°30'33", long 120°33'08", in NW 1/4 SE 1/4 sec.18, T.19 N., R.13 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank at Jackson Meadows Dam on Middle Yuba River, 0.7 mi downstream from Pass Creek, and 5.7 mi southeast of Sierra City.

DRAINAGE AREA.—37.6 mi².

PERIOD OF RECORD.—November 1964 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Nevada Irrigation District).

REMARKS.—Reservoir is formed by an earthfill dam. Storage began Nov. 9, 1964. Usable capacity, 66,700 acre-ft between elevations 5,933.0 ft, bottom of intake tower, and 6,036.0 ft, top of radial spillway gates. Dead contents, 2,500 acre-ft. Records, including extremes, represent total contents. See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 71,100 acre-ft, May 31 and June 1, 1993, elevation, 6,037.78 ft; minimum since reservoir first filled, 2,500 acre-ft, Sept. 27–29, 1976, elevation, 5,933.1 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 68,300 acre-ft, June 29–July 3, maximum elevation, 6,035.15 ft, July 1, 2; minimum, 32,300 acre-ft, Nov. 20, elevation, 5,996.22 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Nevada Irrigation District, dated February 1965)

5,930	2,000	5,990	27,600
5,940	3,920	6,000	35,300
5,950	6,760	6,010	43,900
5,960	10,600	6,020	53,200
5,970	15,400	6,030	63,000
5,980	21,000	6,040	73,500

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	52700	39900	33600	e35100	e38400	43400	42100	42000	55600	68300	63900	57700
2	52300	39500	33700	35100	e38600	43600	e41800	42400	55500	68300	63700	57500
3	52000	39000	34000	35200	e38800	44000	e41600	42600	55200	68300	63500	57200
4	51600	38600	34200	35200	e39000	44200	e41300	42600	55200	68200	63300	57000
5	51200	38100	34300	35200	e39200	44300	e41100	42600	55600	68200	63100	56800
6	50900	37700	34300	35200	e39300	44500	e40800	42900	56200	68100	62900	56600
7	50500	37400	34400	e35200	e39500	44600	e40600	43500	56700	68000	62700	56400
8	50100	36900	34400	35200	e39700	44700	e40400	44000	57200	67900	62500	56100
9	49800	36500	34400	35200	e39900	44900	e40100	44500	57700	67800	62300	55900
10	49400	36100	34500	35300	e40000	45000	e39900	44900	58200	67700	62200	55700
11	49100	35600	34500	35300	e40200	44900	e39600	45400	58800	67500	62000	55500
12	48700	35200	34500	e35300	e40400	44700	e39400	e46000	59400	67400	61800	55300
13	48400	34700	34600	35300	e40600	44600	e39200	e46600	60100	67300	61600	55100
14	48000	34300	34600	35300	e40800	44400	e38900	e47200	60800	67100	61400	54900
15	47500	33900	34600	e35400	e40900	44300	38700	e47800	61600	67000	61200	54600
16	47000	33400	34700	35600	e41100	44100	e39000	e48400	62500	66800	61000	54400
17	46600	33100	34700	e35700	e41300	44000	e39200	e49000	63200	66600	60800	54200
18	46100	32700	34700	e35900	e41500	43900	e39300	49800	63900	66500	60600	54000
19	45700	32400	34800	e36100	e41700	43800	e39500	50700	64500	66300	60400	53800
20	45200	32300	34900	e36300	e41800	43700	e39600	51600	65000	66100	60200	53500
21	44800	32400	34900	e36500	e42000	43500	e39800	52600	65500	65900	60000	53300
22	44300	32400	34900	e36700	e42200	43400	e40000	53800	66100	65800	59800	53100
23	43900	32700	34900	e36800	e42300	43300	40100	55200	66600	65600	59600	52700
24	43500	32800	34900	e37000	42400	43200	40200	55900	67000	65400	59400	52400
25	43100	32800	35000	e37200	42600	43100	40500	56200	67400	65200	59200	52100
26	42600	32800	35000	e37400	42700	43000	41100	56200	67700	65000	59000	51800
27	42100	32900	35000	e37500	42800	42900	41400	56200	67900	64900	58800	51400
28	41700	32900	35000	e37700	43000	42900	41600	56000	68100	64700	58600	51100
29	41200	33000	35000	e37900	---	42800	41700	55700	68300	64500	58300	50800
30	40800	33500	35100	e38100	---	42600	41800	55600	68300	64300	58100	50500
31	40300	---	35100	e38200	---	42300	---	55600	---	64100	57900	---
MAX	52700	39900	35100	38200	43000	45000	42100	56200	68300	68300	63900	57700
MIN	40300	32300	33600	35100	38400	42300	38700	42000	55200	64100	57900	50500
a	6005.94	5997.68	5999.69		6009.00	6008.18	6007.57	6022.51	6035.14	6031.09	6024.90	6017.18
b	-12800	-6800	+1600	+3100	+4800	-700	-500	+13800	+12700	-4200	-6200	-7400
CAL YR 1998	MAX 69300	MIN 32300	b +2400									
WTR YR 1999	MAX 68300	MIN 32300	b -2600									

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11407815 MIDDLE YUBA RIVER CONTROLLED RELEASE AT JACKSON MEADOWS DAM, NEAR SIERRA CITY, CA

LOCATION.—Lat 39°30'36", long 120°33'15", in NW 1/4 SE 1/4 sec.18, T.19 N., R.13 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, in outlet structure near right bank below Jackson Meadows Dam on Middle Yuba River, 0.7 mi downstream from Pass Creek, and 5.7 mi southeast of Sierra City.

DRAINAGE AREA.—37.6 mi².

PERIOD OF RECORD.—July 1994 to current year.

GAGE.—Ultrasonic meter measures flow in two outlet pipes. Elevation of gage is 5,910 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Jackson Meadows Reservoir (station 11407800). Flow over the spillway bypasses this station. See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 415 ft³/s, May 23, 28, 1996; minimum daily, 7.9 ft³/s, several days November 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	183	233	9.1	9.2	9.6	9.6	206	207	222	113	e98	e109
2	183	233	9.0	9.2	9.4	9.6	207	207	222	101	e98	e109
3	183	232	9.1	9.2	9.5	9.7	207	207	222	101	e98	e109
4	182	231	9.1	9.3	9.4	9.7	206	208	221	101	e98	109
5	182	231	9.1	9.1	9.4	9.7	206	208	221	101	e98	108
6	182	230	9.1	9.3	9.4	9.7	206	208	222	100	e98	108
7	181	230	9.1	9.3	9.4	9.7	205	208	222	99	97	108
8	181	229	9.1	9.3	9.4	9.7	205	210	176	100	97	108
9	181	229	9.1	9.3	9.5	9.7	205	210	136	100	97	108
10	181	231	9.1	9.3	9.5	45	205	211	122	100	97	108
11	180	233	9.1	9.3	9.6	113	204	211	105	100	97	108
12	180	232	9.1	9.3	9.8	135	204	212	105	100	97	108
13	179	232	9.1	9.3	9.7	135	204	213	106	99	97	108
14	207	231	9.1	9.3	9.5	135	203	214	106	100	97	108
15	235	231	9.1	9.3	9.5	135	203	214	66	100	97	110
16	235	230	9.1	9.3	9.7	134	203	214	26	99	97	114
17	234	229	9.1	9.4	9.6	135	203	215	27	100	97	114
18	234	229	9.1	9.4	9.9	134	203	215	26	99	97	114
19	233	153	9.1	9.4	9.7	133	203	216	27	e100	97	113
20	232	35	9.1	9.4	9.5	133	204	217	26	e100	97	113
21	234	9.0	9.1	9.3	9.5	134	204	218	27	e100	97	113
22	234	9.0	9.1	9.3	9.5	133	204	219	26	e100	96	135
23	234	9.0	9.1	9.3	9.7	133	205	221	27	e99	103	159
24	232	9.0	9.1	9.3	9.6	133	205	222	26	e99	110	158
25	231	9.0	9.1	9.3	9.6	133	205	222	27	e99	109	158
26	231	9.0	9.1	9.4	9.6	133	205	223	27	e98	109	158
27	230	9.0	9.1	9.4	9.6	133	206	222	27	e98	109	158
28	229	9.0	9.1	9.4	9.6	133	206	222	27	e98	109	158
29	229	9.0	9.1	9.3	---	163	206	222	70	e98	109	157
30	231	9.0	9.2	9.4	---	206	207	222	127	e98	e109	157
31	234	---	9.1	9.4	---	206	---	222	---	e98	e109	---
TOTAL	6517	4434.0	282.1	288.7	267.7	3094.1	6145	6660	3017	3098	3115	3705
MEAN	210	148	9.10	9.31	9.56	99.8	205	215	101	99.9	100	124
MAX	235	233	9.2	9.4	9.9	206	207	223	222	113	110	159
MIN	179	9.0	9.0	9.1	9.4	9.6	203	207	26	98	96	108
AC-FT	12930	8790	560	573	531	6140	12190	13210	5980	6140	6180	7350

CAL YR 1998 TOTAL 48153.5 MEAN 132 MAX 284 MIN 9.0 AC-FT 95510
WTR YR 1999 TOTAL 40623.6 MEAN 111 MAX 235 MIN 9.0 AC-FT 80580

e Estimated.

11408000 MILTON-BOWMAN TUNNEL OUTLET NEAR GRANITEVILLE, CA

LOCATION.—Lat 39°27'37", long 120°36'37", in NW 1/4 NE 1/4 sec.3, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on right bank 100 ft downstream from tunnel outlet near upper end of Bowman Lake, and 6.9 mi east of Graniteville.

PERIOD OF RECORD.—May 1928 to September 1930, February 1931 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1962, published as "Milton-Bowman tunnel at outlet."

GAGE.—Water-stage recorder and Parshall flume. Datum of gage is 5,592.51 ft above sea level. Prior to Sept. 22, 1964, at datum 0.56 ft higher.

REMARKS.—Tunnel diverts from Middle Yuba River at Milton Reservoir, in sec.12, T.19 N., R.12 E., and discharges into Bowman Lake. Nearly the entire flow of Middle Yuba River is diverted during low and medium flows. Middle Yuba River is regulated by Jackson Meadows Reservoir (station 11407800) since November 1964. See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 492 ft³/s, Feb. 11, 1941; minimum daily, 0.4 ft³/s, Oct. 7, 1944.

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	180	234	e11	e11	17	51	216	244	412	117	96	106
2	179	231	e11	e12	17	38	214	247	412	101	96	105
3	179	231	e22	e12	16	43	214	240	402	100	96	105
4	179	230	e11	e12	16	35	212	234	382	100	96	105
5	177	230	e11	e11	16	30	214	235	258	100	96	105
6	177	230	e12	e12	16	27	211	242	243	100	96	104
7	178	233	e12	11	35	25	210	251	242	99	96	104
8	177	229	e12	10	33	24	212	250	208	99	96	104
9	177	227	e12	10	51	23	208	247	150	99	96	104
10	177	228	e12	10	35	38	208	246	142	99	97	104
11	176	232	e12	10	28	112	208	250	121	99	96	104
12	176	230	e12	10	25	141	209	259	121	99	95	103
13	176	230	e12	10	23	141	211	260	121	99	95	104
14	189	229	e12	10	22	141	213	251	120	99	95	103
15	229	228	e12	12	20	140	216	246	100	98	95	104
16	232	227	e12	17	22	140	220	246	43	98	95	108
17	232	232	e12	18	38	141	226	250	40	98	94	108
18	232	227	e12	22	30	142	233	256	38	98	94	109
19	231	180	e12	23	25	142	239	259	37	98	94	109
20	230	56	e12	24	23	143	244	259	36	98	94	109
21	230	12	e11	29	23	142	243	261	35	97	94	108
22	232	15	e11	34	20	141	237	269	34	97	94	120
23	232	26	e11	55	19	142	236	291	34	97	98	150
24	234	24	e11	35	19	142	239	409	32	97	106	150
25	234	13	e11	29	20	143	245	422	31	97	106	150
26	231	11	e11	26	18	145	258	425	30	97	106	150
27	229	12	e11	23	17	147	252	424	30	97	106	149
28	228	13	e11	21	25	146	244	423	29	96	106	149
29	228	14	e11	20	---	164	236	420	49	96	106	149
30	237	e21	e12	19	---	220	236	416	125	96	106	149
31	233	---	e11	18	---	219	---	414	---	96	106	---
TOTAL	6431	4535	368	576	669	3468	6764	9146	4057	3061	3042	3531
MEAN	207	151	11.9	18.6	23.9	112	225	295	135	98.7	98.1	118
MAX	237	234	22	55	51	220	258	425	412	117	106	150
MIN	176	11	11	10	16	23	208	234	29	96	94	103
AC-FT	12760	9000	730	1140	1330	6880	13420	18140	8050	6070	6030	7000

e Estimated.

11408000 MILTON-BOWMAN TUNNEL OUTLET NEAR GRANITEVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1964, BY WATER YEAR (WY)

MEAN	8.00	14.6	31.4	35.3	51.6	72.9	176	242	142	28.6	6.77	3.88
MAX	101	65.4	118	124	143	213	294	414	272	90.9	26.8	10.1
(WY)	1963	1951	1956	1942	1963	1940	1936	1937	1933	1938	1952	1952
MIN	.50	.50	.70	1.00	4.28	9.19	19.7	45.6	24.8	4.21	2.06	1.00
(WY)	1931	1931	1931	1931	1931	1933	1938	1936	1934	1939	1964	1931

SUMMARY STATISTICS

WATER YEARS 1928 - 1964

ANNUAL MEAN	67.9	
HIGHEST ANNUAL MEAN	97.2	1930
LOWEST ANNUAL MEAN	33.5	1949
HIGHEST DAILY MEAN	492	Feb 11 1941
LOWEST DAILY MEAN	.40	Oct 7 1944
ANNUAL SEVEN-DAY MINIMUM	.50	Oct 1 1930
ANNUAL RUNOFF (AC-FT)	49180	
10 PERCENT EXCEEDS	220	
50 PERCENT EXCEEDS	20	
90 PERCENT EXCEEDS	3.0	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

MEAN	152	129	59.0	37.6	36.6	55.5	57.1	98.6	81.5	64.7	88.3	154
MAX	310	368	357	211	197	265	225	333	280	174	253	300
(WY)	1981	1973	1973	1985	1985	1986	1999	1969	1998	1976	1968	1974
MIN	1.52	1.34	1.25	1.17	1.20	1.68	5.38	7.69	5.23	3.95	2.20	1.72
(WY)	1977	1977	1977	1977	1977	1977	1977	1986	1976	1977	1993	1981

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1966 - 1999

ANNUAL TOTAL	50777.8	45648	
ANNUAL MEAN	139	125	84.6
HIGHEST ANNUAL MEAN			133
LOWEST ANNUAL MEAN			14.5
HIGHEST DAILY MEAN	394	Jun 14	425
LOWEST DAILY MEAN	9.0	Jan 1	10
ANNUAL SEVEN-DAY MINIMUM	9.7	Jan 1	10
ANNUAL RUNOFF (AC-FT)	100700	90540	61310
10 PERCENT EXCEEDS	282	244	257
50 PERCENT EXCEEDS	165	104	26
90 PERCENT EXCEEDS	11	12	5.3

11408550 MIDDLE YUBA RIVER BELOW MILTON DAM, NEAR SIERRA CITY, CA

LOCATION.—Lat 39°31'19", long 120°34'57", in SW 1/4 SW 1/4 sec.12, T.19 N., R.12 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 350 ft downstream from Milton Dam, and 4.1 mi southeast of Sierra City.

DRAINAGE AREA.—39.9 mi².

PERIOD OF RECORD.—October 1987 to current year. Unpublished records for water years 1965–87 available in files of the U.S. Geological Survey.

REVISED RECORDS.—WDR CA-88-4: Drainage area.

GAGE.—Water-stage recorder, sharp-crested weir, and crest-stage gage. Elevation of gage is 5,690 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage 450 ft downstream at different datum.

REMARKS.—Middle Yuba River is regulated by Jackson Meadows Reservoir (station 11407800) since November 1964 and Milton Reservoir. Tunnel diverts from Middle Yuba River at Milton Dam, in sec.12, T.19 N., R.12 E., and discharges into Bowman Lake via Milton–Bowman Tunnel (station 11408000). Practically the entire flow of Middle Yuba River is diverted during low and medium flows. See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 8,610 ft³/s, Jan. 2, 1997, gage height, 17.1 ft, from flood marks; minimum daily, 0.77 ft³/s, Nov. 3, 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	3.7	3.7	3.4	3.5	3.5	3.7	3.8	3.8	324	3.7	3.6	3.6
2	3.7	3.7	3.4	3.4	3.5	3.6	3.8	3.8	335	3.7	3.5	3.6
3	3.7	3.7	3.6	3.4	3.5	3.7	3.8	3.9	222	3.7	3.5	3.6
4	3.7	3.7	3.4	3.4	3.5	3.6	3.8	3.8	86	3.6	3.5	3.6
5	4.9	3.7	3.4	3.4	3.5	3.6	3.9	3.8	4.6	3.6	3.6	3.6
6	3.7	3.7	3.4	3.4	3.5	3.6	3.8	3.8	4.3	3.6	3.6	3.6
7	3.7	3.8	3.3	3.4	3.7	3.5	3.8	3.8	4.1	3.6	3.6	3.6
8	3.7	3.7	3.3	3.4	3.6	3.5	3.8	3.8	3.9	3.6	3.6	3.6
9	3.7	3.7	3.3	3.4	3.8	3.5	3.8	3.8	3.8	3.6	3.6	3.6
10	3.8	3.7	3.3	3.4	3.6	3.6	3.8	3.8	3.8	3.6	3.6	3.6
11	3.8	3.7	3.3	3.4	3.6	3.8	3.8	3.8	3.8	3.6	3.6	3.6
12	3.8	3.7	3.3	3.4	3.6	3.8	3.8	3.8	3.8	3.6	3.6	3.6
13	3.8	3.7	3.3	3.4	3.5	3.8	3.8	3.8	3.8	3.6	3.6	3.6
14	3.8	3.7	3.3	3.4	3.5	3.8	3.8	3.8	3.7	3.6	3.6	3.6
15	3.9	3.7	3.3	3.5	3.5	3.8	3.8	3.8	3.7	3.6	3.6	3.6
16	3.9	3.7	3.3	3.5	3.6	3.8	3.9	3.8	3.6	3.6	3.6	3.6
17	3.8	3.8	3.3	3.6	3.7	3.8	3.9	3.8	3.6	3.6	3.6	3.6
18	3.8	3.7	3.3	3.8	3.6	3.8	3.9	3.8	3.6	3.6	3.6	3.6
19	3.8	3.7	3.3	3.7	3.6	3.8	3.9	3.8	3.6	3.6	3.6	3.6
20	3.8	3.4	3.3	3.9	3.5	3.8	3.9	3.8	3.6	3.6	3.6	3.6
21	3.8	3.4	3.4	3.6	3.5	3.8	3.9	3.8	3.6	3.6	3.6	3.6
22	3.8	3.4	3.4	3.6	3.5	3.8	3.9	3.8	3.5	3.6	3.6	3.6
23	3.8	3.6	3.4	3.7	3.5	3.8	3.9	3.9	3.5	3.6	3.6	3.6
24	3.9	3.4	3.4	3.6	3.5	3.8	3.9	290	3.4	3.6	3.6	3.7
25	3.8	3.3	3.4	3.5	3.5	3.8	3.9	590	3.5	3.6	3.6	3.7
26	3.8	3.3	3.4	3.5	3.5	3.8	3.9	674	3.5	3.6	3.6	3.7
27	3.8	3.4	3.4	3.5	3.5	3.8	3.9	666	3.5	3.6	3.6	3.7
28	3.8	3.3	3.4	3.5	3.6	3.8	3.9	609	3.5	3.6	3.6	3.7
29	3.8	3.4	3.4	3.5	---	3.8	3.8	508	3.5	3.6	3.6	3.7
30	3.7	3.6	3.4	3.5	---	3.9	3.8	365	3.7	3.6	3.6	3.7
31	3.7	---	3.4	3.5	---	3.8	---	339	---	3.6	3.6	---
TOTAL	118.2	108.0	104.2	108.7	99.5	115.8	115.4	4128.6	1063.5	111.9	111.3	108.7
MEAN	3.81	3.60	3.36	3.51	3.55	3.74	3.85	133	35.5	3.61	3.59	3.62
MAX	4.9	3.8	3.6	3.9	3.8	3.9	3.9	674	335	3.7	3.6	3.7
MIN	3.7	3.3	3.3	3.4	3.5	3.5	3.8	3.8	3.4	3.6	3.5	3.6
AC-FT	234	214	207	216	197	230	229	8190	2110	222	221	216

11408550 MIDDLE YUBA RIVER BELOW MILTON DAM, NEAR SIERRA CITY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

MEAN	4.12	3.78	3.57	55.3	26.8	10.6	42.0	127	107	21.5	3.94	3.91
MAX	7.02	4.94	3.98	620	195	61.3	213	723	631	119	5.36	4.68
(WY)	1994	1994	1997	1997	1993	1995	1996	1995	1995	1995	1993	1993
MIN	3.55	3.21	3.26	3.24	3.19	3.45	3.09	3.58	3.38	3.37	3.39	3.42
(WY)	1989	1996	1989	1996	1989	1990	1994	1990	1990	1988	1995	1990

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1988 - 1999	
ANNUAL TOTAL	7668.8		6293.8			
ANNUAL MEAN	21.0		17.2		34.1	
HIGHEST ANNUAL MEAN					146 1995	
LOWEST ANNUAL MEAN					3.53 1990	
HIGHEST DAILY MEAN	439	Jun 15	674	May 26	6860	Jan 2 1997
LOWEST DAILY MEAN	3.3	Nov 25	3.3	Nov 25	.77	Nov 3 1990
ANNUAL SEVEN-DAY MINIMUM	3.3	Dec 7	3.3	Dec 7	1.8	Apr 9 1994
INSTANTANEOUS PEAK FLOW			751	May 26	8610	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.39	May 26	17.10	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	15210		12480		24730	
10 PERCENT EXCEEDS	53		3.9		12	
50 PERCENT EXCEEDS	4.0		3.6		3.8	
90 PERCENT EXCEEDS	3.4		3.4		3.3	

11408870 LOHMAN RIDGE TUNNEL AT INTAKE, NEAR CAMPTONVILLE, CA

LOCATION.—Lat 39°24'25", long 120°59'43", in SW 1/4 NE 1/4 sec.20, T.18 N., R.8 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, at tunnel intake at Our House Dam and 4.0 mi southeast of Camptonville.

PERIOD OF RECORD.—October 1988 to current year. Records of monthly diversion published with Middle Yuba River below Our House Dam, near Camptonville (station 11408880), for water years 1969–88.

GAGE.—Water-stage recorder. Datum of gage is 2,014.77 ft above sea level.

REMARKS.—Records good except for estimated daily discharges, which are fair. Tunnel diverts water from Middle Yuba River to New Bullards Bar Reservoir (station 11413515) for power development. See schematic diagram of Yuba River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 839 ft³/s, Mar. 25, 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	23	23	599	84	284	763	310	438	685	80	20	6.2
2	23	23	381	80	256	736	293	483	673	75	19	5.5
3	22	19	642	77	238	e750	289	564	566	70	19	5.5
4	23	18	502	74	230	e735	270	486	420	67	18	5.1
5	21	20	419	72	218	718	284	444	268	63	18	4.0
6	e20	21	321	70	258	e700	271	452	279	59	17	3.4
7	e20	68	236	68	773	e615	265	496	277	55	19	2.8
8	e17	73	208	66	809	556	303	510	247	52	18	2.9
9	e18	35	191	63	695	540	285	474	226	49	17	2.8
10	18	28	173	61	626	483	274	453	215	46	19	3.3
11	17	39	161	60	662	449	306	447	204	44	20	2.7
12	17	29	153	59	e690	425	345	493	212	42	17	1.8
13	16	25	159	58	e660	408	380	536	211	39	16	1.6
14	17	23	174	56	571	402	441	496	209	38	14	2.8
15	16	21	160	77	505	378	457	429	209	37	13	1.9
16	16	21	163	199	552	364	463	400	208	34	12	1.3
17	15	69	174	255	773	359	496	399	204	33	12	1.1
18	15	65	167	705	752	365	537	437	188	32	11	1.2
19	14	39	159	741	741	371	571	458	176	30	9.9	1.8
20	13	31	151	670	722	377	585	470	166	30	9.2	1.5
21	13	32	129	572	709	359	585	469	155	31	9.2	1.6
22	13	174	122	554	643	338	524	515	146	31	8.9	1.1
23	13	e240	113	575	587	329	481	560	141	29	8.7	.99
24	24	460	111	551	e560	324	481	700	132	28	7.5	.92
25	42	160	105	608	702	331	499	770	122	27	6.5	.88
26	24	107	101	587	611	337	581	780	112	27	6.2	.54
27	19	155	97	488	546	e350	579	805	102	25	8.9	.28
28	18	e200	94	427	609	e343	511	800	94	24	7.2	.25
29	19	223	90	e370	---	332	447	785	89	23	6.1	.23
30	23	707	88	e340	---	341	408	775	84	22	5.4	.25
31	19	---	88	317	---	340	---	733	---	21	6.4	---
TOTAL	588	3148	6431	8984	15982	14218	12521	17057	7020	1263	399.1	66.24
MEAN	19.0	105	207	290	571	459	417	550	234	40.7	12.9	2.21
MAX	42	707	642	741	809	763	585	805	685	80	20	6.2
MIN	13	18	88	56	218	324	265	399	84	21	5.4	.23
AC-FT	1170	6240	12760	17820	31700	28200	24840	33830	13920	2510	792	131

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	11.4	41.1	129	214	318	390	446	333	201	68.3	12.4	5.97
MAX	51.4	112	486	509	649	644	688	701	503	269	41.4	23.6
(WY)	1990	1997	1997	1995	1998	1993	1995	1996	1993	1995	1998	1998
MIN	.000	1.42	1.36	.66	16.6	206	182	38.0	10.6	.86	.000	.000
(WY)	1989	1991	1991	1997	1991	1997	1994	1995	1992	1994	1992	1992

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1989 - 1999
ANNUAL TOTAL	117442	87677.34	
ANNUAL MEAN	322	240	180
HIGHEST ANNUAL MEAN			305
LOWEST ANNUAL MEAN			73.1
HIGHEST DAILY MEAN	814	Mar 23	839
LOWEST DAILY MEAN	13	Oct 20	.00
ANNUAL SEVEN-DAY MINIMUM	14	Oct 17	.00
ANNUAL RUNOFF (AC-FT)	232900	173900	130200
10 PERCENT EXCEEDS	743	613	573
50 PERCENT EXCEEDS	328	155	56
90 PERCENT EXCEEDS	21	7.4	.00

e Estimated.

11408880 MIDDLE YUBA RIVER BELOW OUR HOUSE DAM, NEAR CAMPTONVILLE, CA

LOCATION.—Lat 39°24'42", long 120°59'49", in SW 1/4 NW 1/4 sec.20, T.18 N., R.9 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 300 ft downstream from Our House Dam and 4.0 mi southeast of Camptonville.

DRAINAGE AREA.—145 mi².

PERIOD OF RECORD.—October 1968 to current year.

GAGE.—Water-stage recorder, sharp-crested weir since Oct. 16, 1990, and crest-stage gage. Datum of gage is 1,957.51 ft above sea level. Prior to Nov. 4, 1970, water-stage recorder at datum 10 ft higher. Prior to Oct. 1, 1987, at site 75 ft downstream.

REMARKS.—Records good except for periods of spill and estimated daily discharges, which are fair. Natural flow of stream affected by Jackson Meadows Reservoir (station 11407800), Milton Bowman Tunnel (station 11408000), which diverts upstream from station to Bowman Lake (station 11415500), and Lohman Ridge Tunnel (station 11408870), which diverts 300 ft upstream to Oregon Creek and then to New Bullards Bar Reservoir (station 11413515) via Camptonville Tunnel (station 11409350). Other small diversions upstream from station. See schematic diagram of Yuba River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 27,500 ft³/s, Jan. 2, 1997, gage height, 30.7 ft, from floodmark, present datum, from rating curve extended above 8,600 ft³/s on basis of theoretical rating of Our House Dam spillway; minimum daily, 2.1 ft³/s, Jan. 10, 1982.

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	33	153	34	41	787	40	55	58	38	37	37
2	33	33	41	34	40	368	40	56	58	38	37	37
3	33	33	608	33	40	650	40	58	55	38	37	37
4	33	33	238	34	40	350	40	57	55	38	37	37
5	33	33	40	33	39	162	39	56	54	38	37	37
6	33	33	38	33	39	60	39	56	54	38	37	37
7	33	34	37	33	708	43	39	57	55	38	37	37
8	33	34	37	33	761	42	40	57	56	38	37	37
9	33	33	36	33	e3400	42	40	57	55	38	37	37
10	33	33	36	33	e1350	41	39	56	55	38	37	37
11	33	33	35	33	e530	41	40	56	55	38	37	37
12	33	33	35	33	e250	41	41	56	55	38	37	37
13	33	33	35	33	e54	41	41	55	55	38	37	37
14	33	33	35	33	e40	41	49	54	55	37	37	37
15	33	35	35	34	e40	41	54	53	55	37	37	37
16	33	35	35	36	e40	41	53	53	46	37	37	37
17	33	35	35	36	e910	41	53	53	37	37	37	37
18	33	34	35	634	e457	40	53	54	37	37	37	37
19	33	34	35	854	e334	41	53	55	37	37	37	37
20	33	34	35	2310	e185	40	52	55	37	37	37	37
21	33	34	34	1080	e141	40	52	55	37	37	37	37
22	33	36	34	445	e47	40	51	56	37	37	37	37
23	33	64	34	1290	e45	40	51	57	37	37	37	37
24	33	71	34	560	42	40	51	105	37	37	37	37
25	33	38	34	203	102	40	52	424	37	37	37	37
26	33	38	34	47	43	40	53	565	37	37	37	37
27	33	38	34	46	42	41	53	500	38	37	37	37
28	33	39	34	45	155	40	52	392	39	37	37	37
29	33	39	34	44	---	40	52	244	38	37	37	36
30	33	498	34	43	---	40	53	91	38	37	37	37
31	33	---	34	43	---	40	---	62	---	37	37	---
TOTAL	1023	1566	1988	8215	9915	3394	1405	3660	1399	1160	1147	1109
MEAN	33.0	52.2	64.1	265	354	109	46.8	118	46.6	37.4	37.0	37.0
MAX	33	498	608	2310	3400	787	54	565	58	38	37	37
MIN	33	33	34	33	39	40	39	53	37	37	37	36
AC-FT	2030	3110	3940	16290	19670	6730	2790	7260	2770	2300	2280	2200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1999, BY WATER YEAR (WY)

	31.0	76.9	166	383	239	245	161	224	121	33.6	30.1	29.9
MEAN	31.0	76.9	166	383	239	245	161	224	121	33.6	30.1	29.9
MAX	52.7	462	1040	2973	1521	1228	1368	1697	994	49.6	42.1	39.6
(WY)	1983	1982	1982	1997	1986	1995	1982	1995	1995	1983	1984	1986
MIN	16.6	20.4	20.7	7.10	28.0	31.3	33.9	32.5	28.8	17.5	13.0	14.3
(WY)	1978	1978	1987	1987	1977	1976	1970	1970	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1969 - 1999

ANNUAL TOTAL	51961	35981		
ANNUAL MEAN	142	98.6		145
HIGHEST ANNUAL MEAN				481
LOWEST ANNUAL MEAN				26.3
HIGHEST DAILY MEAN	2320	Mar 24	3400	Feb 9
LOWEST DAILY MEAN	32	Feb 17	33	Oct 1
ANNUAL SEVEN-DAY MINIMUM	32	Feb 28	33	Oct 1
INSTANTANEOUS PEAK FLOW			e 4990	Feb 9
INSTANTANEOUS PEAK STAGE			unknown	Feb 9
ANNUAL RUNOFF (AC-FT)	103100	71370		104900
10 PERCENT EXCEEDS	396	95		177
50 PERCENT EXCEEDS	36	37		35
90 PERCENT EXCEEDS	33	33		26

e Estimated.

11409300 OREGON CREEK AT CAMPTONVILLE, CA

LOCATION.—Lat 39°26'46", long 121°02'43", in SE 1/4 NE 1/4 sec.11, T.18 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 25 ft downstream from county bridge, 0.5 mi southeast of Camptonville, and 5.5 mi upstream from mouth.

DRAINAGE AREA.—23.0 mi².

PERIOD OF RECORD.—August 1967 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 2,230 ft above sea level, from topographic map.

REMARKS.—Records good. No regulation or diversion upstream from station. See schematic diagram of Yuba River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 5,170 ft³/s, Jan. 1, 1997, gage height, 11.31 ft, from rating curve extended above 4,000 ft³/s, maximum gage height, 11.56 ft, Feb. 17, 1986; minimum daily, 0.53 ft³/s, Aug. 14–16, 1977, Sept. 6, 1988.

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)
Dec. 3	1200	661	6.71	Feb. 17	0245	827	7.04
Jan. 20	1830	1,540	8.15	Feb. 28	2245	661	6.71
Feb. 9	1015	1,800	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	4.5	4.8	228	21	97	502	70	62	21	7.3	3.6	2.6
2	4.4	4.7	117	20	90	364	68	64	21	7.0	4.7	2.6
3	4.5	4.4	384	20	84	472	67	120	21	7.0	4.6	2.6
4	4.6	4.3	226	19	81	368	64	109	21	6.8	3.4	2.6
5	4.4	4.7	135	19	76	294	67	92	20	6.8	3.3	2.5
6	4.1	5.0	100	18	84	244	63	84	19	6.5	3.4	2.5
7	4.0	17	79	18	583	202	63	81	18	6.3	3.5	2.5
8	3.9	13	68	18	610	175	71	78	18	6.2	3.6	2.4
9	3.9	7.2	58	17	1320	160	66	75	17	6.4	3.5	2.4
10	4.0	6.1	51	17	650	139	67	69	17	7.1	3.6	2.4
11	4.0	7.3	45	16	405	127	80	65	16	7.5	3.6	2.4
12	3.9	6.2	42	16	301	117	97	61	16	9.0	3.5	2.3
13	3.9	5.6	43	15	239	112	104	58	15	8.1	3.3	2.3
14	3.9	5.3	49	15	201	108	113	56	15	5.3	3.1	2.3
15	3.9	5.1	48	18	169	103	117	53	14	5.1	3.1	2.3
16	3.8	5.0	48	45	215	98	113	50	13	5.0	3.0	2.2
17	3.7	11	46	87	555	94	110	47	13	4.9	2.9	2.2
18	3.7	12	43	405	395	90	106	45	12	5.0	2.9	2.1
19	3.6	7.6	40	519	345	87	104	44	11	5.1	2.9	2.3
20	3.5	6.3	36	1010	287	87	101	42	11	4.9	2.9	2.3
21	3.4	6.8	31	673	261	86	97	40	11	4.8	2.8	2.3
22	3.4	33	29	394	220	84	91	37	10	4.6	2.8	2.2
23	3.4	75	28	952	200	82	85	35	9.9	4.5	2.7	2.2
24	4.8	91	27	497	191	81	81	34	9.5	4.3	2.6	2.2
25	6.5	32	26	329	291	83	78	31	9.1	4.3	2.6	2.2
26	4.8	21	26	246	225	80	80	29	9.0	4.3	2.6	2.2
27	4.2	45	25	187	192	78	79	27	8.7	4.1	2.8	2.1
28	4.1	68	24	154	303	76	76	25	8.3	4.0	2.8	2.0
29	4.1	70	23	133	---	74	70	24	8.0	3.9	2.6	2.0
30	4.6	348	22	118	---	76	65	23	7.7	3.8	2.5	2.0
31	4.4	---	22	110	---	76	---	22	---	3.7	2.6	---
TOTAL	127.9	932.4	2169	6126	8670	4819	2513	1682	420.2	173.6	97.8	69.2
MEAN	4.13	31.1	70.0	198	310	155	83.8	54.3	14.0	5.60	3.15	2.31
MAX	6.5	348	384	1010	1320	502	117	120	21	9.0	4.7	2.6
MIN	3.4	4.3	22	15	76	74	63	22	7.7	3.7	2.5	2.0
AC-FT	254	1850	4300	12150	17200	9560	4980	3340	833	344	194	137

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	5.24	33.3	84.9	167	163	170	112	64.0	19.9	6.04	2.90	2.80
MAX	16.9	214	407	555	664	453	391	198	92.3	17.9	6.16	9.12
(WY)	1982	1974	1984	1997	1986	1989	1982	1995	1998	1998	1998	1983
MIN	.84	3.03	2.30	3.88	6.28	10.8	7.64	9.45	3.61	1.11	.68	.67
(WY)	1989	1991	1977	1991	1991	1977	1977	1987	1987	1977	1977	1988

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1968 - 1999

ANNUAL TOTAL	41608.3	27800.1		
ANNUAL MEAN	114	76.2	68.9	
HIGHEST ANNUAL MEAN			146	1982
LOWEST ANNUAL MEAN			5.38	1977
HIGHEST DAILY MEAN	1010	Jan 12	1320	Feb 9
LOWEST DAILY MEAN	3.4	Oct 21	2.0	Sep 28
ANNUAL SEVEN-DAY MINIMUM	3.5	Sep 16	2.1	Sep 24
INSTANTANEOUS PEAK FLOW			1800	Feb 9
INSTANTANEOUS PEAK STAGE			8.46	Feb 9
ANNUAL RUNOFF (AC-FT)	82530	55140	49890	
10 PERCENT EXCEEDS	256	207	175	
50 PERCENT EXCEEDS	53	20	14	
90 PERCENT EXCEEDS	4.1	2.7	2.1	

11409350 CAMPTONVILLE TUNNEL AT INTAKE, NEAR CAMPTONVILLE, CA

LOCATION.—Lat 39°26'25", long 121°03'30", in NW 1/4 SW 1/4 sec.11, T.18 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Tahoe National Forest, at tunnel intake at Log Cabin Dam 1.0 mi southwest of town of Camptonville.

PERIOD OF RECORD.—October 1988 to current year. Records of monthly diversion published with Oregon Creek below Log Cabin Dam near Camptonville (station 11409400) for water years 1969–88.

GAGE.—Water-stage recorder. Datum of gage is 1,952.00 ft above sea level (from contractor's drawings).

REMARKS.—Records fair. Water is diverted to Oregon Creek from the Middle Yuba River through Lohman Ridge Tunnel (station 11408870) 1,000 ft upstream. Camptonville Tunnel diverts water from Oregon Creek to New Bullards Bar Reservoir (station 11413515) for power development. See schematic diagram of Yuba River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 1,090 ft³/s, Mar. 25, 1989, and Feb. 3, 1998; 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	19	18	794	98	418	1030	420	524	709	83	16	2.0
2	18	19	530	93	375	963	404	572	703	79	15	1.7
3	18	16	867	90	357	1000	397	695	629	74	15	1.8
4	19	14	719	87	345	961	371	624	478	69	14	1.5
5	18	16	579	84	332	885	386	560	324	66	14	.54
6	16	17	452	82	370	845	372	562	325	60	13	.08
7	16	74	348	80	984	782	366	604	324	57	15	.12
8	13	81	307	77	1050	729	416	606	295	53	15	.00
9	14	34	262	74	1070	712	391	576	272	49	14	.04
10	14	24	222	71	1020	654	380	548	250	47	16	.05
11	13	36	201	70	959	617	429	537	248	44	17	.16
12	13	27	186	68	867	582	486	579	253	41	14	.00
13	12	22	191	67	823	562	520	624	248	38	12	.00
14	13	20	231	65	756	556	580	584	244	e34	11	.00
15	12	18	208	86	687	531	604	510	242	e33	9.7	.00
16	11	17	211	258	733	513	607	477	242	e32	9.1	.00
17	11	67	221	361	1040	500	631	472	239	e30	8.5	.00
18	11	72	210	931	993	500	661	508	216	e30	7.4	.00
19	9.9	38	196	1010	956	501	688	531	198	e28	6.7	.00
20	8.8	29	185	997	884	506	701	545	182	e27	6.0	.00
21	8.6	27	158	804	871	485	695	541	169	26	5.7	.00
22	8.3	214	149	769	815	461	636	588	159	25	5.3	.00
23	8.6	272	136	774	774	450	593	630	154	25	5.0	.00
24	18	583	133	925	747	443	585	720	143	23	3.9	.00
25	41	216	125	842	888	452	601	757	131	22	3.2	.00
26	21	130	121	795	801	452	673	766	119	22	2.4	.00
27	15	208	115	673	735	469	676	772	106	20	5.1	.00
28	14	315	111	596	815	461	613	768	97	20	4.0	.00
29	14	300	105	534	---	443	544	762	92	19	2.6	.00
30	19	886	102	484	---	449	502	747	88	18	1.5	.00
31	15	---	101	459	---	452	---	733	---	17	2.3	---
TOTAL	462.2	3810	8476	12404	21465	18946	15928	19022	7879	1211	289.4	7.99
MEAN	14.9	127	273	400	767	611	531	614	263	39.1	9.34	.27
MAX	41	886	867	1010	1070	1030	701	772	709	83	17	2.0
MIN	8.3	14	101	65	332	443	366	472	88	17	1.5	.00
AC-FT	917	7560	16810	24600	42580	37580	31590	37730	15630	2400	574	16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

MEAN	10.8	48.5	155	299	425	547	539	388	219	77.5	9.74	3.74
MAX	54.9	127	628	695	865	793	867	820	542	347	37.8	19.8
(WY)	1990	1999	1997	1995	1998	1993	1995	1996	1993	1995	1998	1998
MIN	.000	1.28	.83	1.16	16.7	308	173	53.2	7.22	.11	.000	.000
(WY)	1989	1991	1991	1991	1991	1994	1994	1992	1992	1994	1992	1991

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1989 - 1999	
ANNUAL TOTAL	140720.2		109900.59			
ANNUAL MEAN	386		301		226	
HIGHEST ANNUAL MEAN					364	
LOWEST ANNUAL MEAN					75.7	
HIGHEST DAILY MEAN	1090	Feb 3	1070	Feb 9	1090	Mar 25 1989
LOWEST DAILY MEAN	8.3	Oct 22	.00	Sep 8	.00	Oct 1 1988
ANNUAL SEVEN-DAY MINIMUM	9.5	Oct 17	.00	Sep 12	.00	Oct 1 1988
ANNUAL RUNOFF (AC-FT)	279100		218000		163400	
10 PERCENT EXCEEDS	870		770		740	
50 PERCENT EXCEEDS	225		185		66	
90 PERCENT EXCEEDS	17		4.0		.00	

e Estimated.

11409400 OREGON CREEK BELOW LOG CABIN DAM, NEAR CAMPTONVILLE, CA

LOCATION.—Lat 39°26'22", long 121°03'29", in SW 1/4 SW 1/4 sec.11, T.18 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 500 ft downstream from Log Cabin Dam, 670 ft upstream from High Point Ravine, and 1.1 mi southwest of Camptonville.

DRAINAGE AREA.—29.1 mi².

PERIOD OF RECORD.—August 1968 to current year.

WATER TEMPERATURE: Water years 1972–79.

REVISED RECORDS.—WDR CA-81-4: 1980(M).

GAGE.—Water-stage recorder, sharp-crested weir since Nov. 13, 1990, and crest-stage gage. Datum of gage is 1,912.73 ft above sea level (levels by Yuba County Water Agency). Prior to July 24, 1973, at site 470 ft downstream at datum 8.40 ft lower. July 24, 1973, to Sept. 30, 1986, at site on right bank. Oct. 1, 1986, to Nov. 13, 1990, a sharp-crested weir was put in at same location and gage house located on left bank. The weir was deemed too shallow so a new sharp-crested weir was put in 70 ft downstream at a datum 7.24 ft lower.

REMARKS.—Records fair. Lohman Ridge Tunnel (station 11408870) diverts water into the basin from the Middle Yuba River. Camptonville Tunnel (station 11409350), maximum capacity, about 1,000 ft³/s, 520 ft upstream, diverts water out of the basin to New Bullards Bar Reservoir (station 11413515); diversion began October 1968. See schematic diagram of Yuba River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 6,400 ft³/s, Feb. 17, 1986, gage height, 11.24 ft, datum then in use, from rating curve extended above 50 ft³/s based on flow-over-dam computation, maximum gage height 15.70 ft (from floodmark), Jan. 1, 1997; minimum daily, 0.34 ft³/s, Sept. 18, 1972.

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	11	17	12	18	173	18	13	15	e10	9.0	8.4
2	10	11	16	12	17	28	18	13	e15	e10	e8.9	8.4
3	10	11	96	12	16	137	18	14	e15	10	8.9	8.4
4	10	11	20	12	16	31	17	14	e14	10	e8.9	8.4
5	10	11	18	12	15	e23	18	13	e13	10	e8.9	8.2
6	9.9	11	17	12	15	e22	17	13	e13	e10	8.9	e7.8
7	10	13	e16	12	328	21	17	14	e13	10	9.0	7.2
8	11	13	e16	12	285	21	18	14	13	e10	e9.1	7.1
9	11	12	15	12	1060	20	e18	13	e13	e9.8	e9.0	7.2
10	11	12	15	12	191	20	18	13	e13	9.8	9.0	7.2
11	11	12	15	12	30	20	18	13	13	9.8	9.0	7.2
12	11	12	14	12	22	19	17	13	13	9.8	e9.0	6.6
13	11	11	14	12	22	19	19	14	14	9.8	8.8	5.9
14	11	11	14	12	21	19	16	13	13	9.7	8.8	6.0
15	11	11	14	12	20	19	14	13	13	9.7	e8.8	6.6
16	11	11	14	e14	e20	19	14	13	12	9.7	e8.8	5.9
17	11	12	14	e15	e221	19	14	13	9.9	9.7	e8.8	5.4
18	11	13	14	e106	52	18	14	13	9.7	9.7	e8.8	5.2
19	11	e12	14	160	27	18	14	13	9.6	9.7	e9.0	5.6
20	11	12	13	687	e22	18	13	13	9.5	9.7	e8.9	e5.9
21	11	18	13	439	22	18	13	13	9.4	9.6	e8.6	e5.7
22	11	14	13	168	21	18	13	14	9.3	9.6	e8.6	5.6
23	11	14	13	e1000	e21	e18	13	14	9.3	9.2	e8.6	e5.1
24	11	15	13	e26	21	18	12	15	9.2	9.0	e8.6	e4.9
25	12	e83	13	22	22	18	13	15	9.1	9.1	8.4	e4.9
26	11	e27	13	21	21	18	13	e15	9.0	9.4	e8.4	e4.7
27	11	e21	13	20	20	18	13	e15	e10	9.4	e8.8	4.2
28	11	e19	13	19	63	18	13	15	10	9.2	8.6	e3.9
29	11	96	13	19	---	18	12	15	e9.8	e9.2	8.5	3.9
30	11	e18	13	18	---	18	12	e15	9.8	e9.2	e8.3	e3.9
31	11	---	13	18	---	18	---	e15	---	e9.0	e8.6	---
TOTAL	334.9	558	529	2932	2629	882	457	426	348.6	298.8	272.3	185.4
MEAN	10.8	18.6	17.1	94.6	93.9	28.5	15.2	13.7	11.6	9.64	8.78	6.18
MAX	12	96	96	1000	1060	173	19	15	15	10	9.1	8.4
MIN	9.9	11	13	12	15	18	12	13	9.0	9.0	8.3	3.9
AC-FT	664	1110	1050	5820	5210	1750	906	845	691	593	540	368

e Estimated.

11409400 OREGON CREEK BELOW LOG CABIN DAM, NEAR CAMPTONVILLE, 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	6.63	16.4	49.9	103	64.0	46.7	29.4	19.4	23.8	8.46	6.65	5.93
MAX	12.8	72.5	273	604	617	189	268	111	394	15.2	13.1	14.3
(WY)	1972	1982	1982	1969	1986	1969	1969	1969	1998	1983	1983	1984
MIN	1.95	2.27	1.97	4.57	3.39	7.14	8.11	8.00	4.89	1.82	1.32	1.37
(WY)	1989	1977	1977	1977	1977	1977	1986	1986	1987	1977	1977	1988

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	21126.2		9853.0			
ANNUAL MEAN	57.9		27.0		31.6	
HIGHEST ANNUAL MEAN					128	
LOWEST ANNUAL MEAN					4.20	
HIGHEST DAILY MEAN	962	Jan 12	1060	Feb 9	5340	Feb 17 1986
LOWEST DAILY MEAN	8.1	Aug 8	3.9	Sep 28	.34	Sep 18 1972
ANNUAL SEVEN-DAY MINIMUM	8.3	Aug 7	4.3	Sep 24	.74	Sep 18 1972
INSTANTANEOUS PEAK FLOW			1800		6400	
INSTANTANEOUS PEAK STAGE			11.61		15.70	
ANNUAL RUNOFF (AC-FT)	41900		19540		22870	
10 PERCENT EXCEEDS	106		21		19	
50 PERCENT EXCEEDS	13		13		10	
90 PERCENT EXCEEDS	9.0		8.6		3.5	

11413000 NORTH YUBA RIVER BELOW GOODYEARS BAR, CA

LOCATION.—Lat 39°31'30", long 120°56'13", in NE 1/4 SW 1/4 sec.11, T.19 N., R.9 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 200 ft downstream from St. Catherine Creek, 3.1 mi southwest of Goodyears Bar, and 6.4 mi southwest of Downieville.

DRAINAGE AREA.—250 mi².

PERIOD OF RECORD.—October 1930 to current year. Prior to October 1949, published as North Fork Yuba River below Goodyears Bar. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1041: 1944. WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 2,453 ft above sea level (river-profile survey).

REMARKS.—Records good. Several small diversions upstream from station for irrigation and mining. See schematic diagram of Yuba River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 45,500 ft³/s, Jan. 2, 1997, gage height, 25.65 ft, from rating curve extended above 11,900 ft³/s on basis of one float measurement at 17,900 ft³/s and slope-area measurements at gage heights 19.15 and 23.8 ft; minimum daily, 60 ft³/s, Sept. 7–14, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 3,200 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	2045	3,320	7.96	Feb. 9	0930	8,130	11.46
Nov. 30	1730	3,620	8.24	Mar. 1	0130	3,240	7.88
Dec. 3	1130	4,470	8.99	May 25	2330	4,370	8.91
Jan. 20	1800	5,640	9.89				

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	240	223	1630	345	773	2770	896	1600	2580	758	269	203
2	236	221	1020	336	730	2120	848	1850	2490	722	266	203
3	239	210	2910	330	706	2640	831	1720	2060	682	263	202
4	240	207	1640	324	694	2110	789	1500	1690	633	258	199
5	231	214	1090	320	669	1770	807	1400	1720	588	255	195
6	225	218	885	319	731	1560	774	1540	1940	553	254	193
7	222	329	734	315	2620	1400	749	1900	1900	521	258	190
8	219	307	678	308	2520	1310	800	1950	1740	496	258	189
9	218	242	602	303	5870	1260	754	1850	1650	477	254	187
10	218	232	554	301	2980	1140	731	1780	1600	460	289	187
11	216	242	528	299	2000	1070	763	1830	1650	443	279	187
12	214	227	508	296	1620	1010	824	2170	1720	430	261	184
13	213	225	517	293	1380	986	919	2390	1780	416	251	183
14	212	228	526	292	1250	979	1080	2140	1790	422	244	184
15	211	227	492	364	1120	949	1150	1780	1800	394	240	183
16	210	227	504	775	1190	930	1220	1750	1770	377	238	180
17	208	338	536	825	2280	929	1420	1860	1670	360	231	180
18	208	274	526	3080	1870	954	1640	2080	1570	352	226	177
19	205	243	509	2830	1730	990	1830	2250	1480	346	223	178
20	203	234	484	4990	1510	1000	1940	2330	1390	338	221	177
21	200	244	441	3210	1400	965	1940	2430	1330	332	219	179
22	200	532	432	2060	1260	921	1700	2750	1300	325	217	178
23	200	1430	416	3810	1190	905	1540	3050	1260	317	216	177
24	239	1220	412	2280	1150	903	1570	3300	1210	310	213	175
25	265	580	398	1690	1450	921	1740	3620	1110	304	209	175
26	233	444	389	1390	1260	970	2160	3660	993	298	209	174
27	227	539	377	1170	1150	1040	2060	3540	900	293	210	171
28	220	580	370	1040	1570	1020	1790	3360	846	287	210	170
29	223	598	360	946	---	989	1520	2920	813	281	206	168
30	223	2590	354	880	---	991	1420	2590	786	275	203	168
31	213	---	355	842	---	964	---	2660	---	272	203	---
TOTAL	6831	13625	21177	36563	44673	38466	38205	71550	46538	13062	7353	5496
MEAN	220	454	683	1179	1595	1241	1274	2308	1551	421	237	183
MAX	265	2590	2910	4990	5870	2770	2160	3660	2580	758	289	203
MIN	200	207	354	292	669	903	731	1400	786	272	203	168
AC-FT	13550	27030	42000	72520	88610	76300	75780	141900	92310	25910	14580	10900

11413000 NORTH YUBA RIVER BELOW GOODYEARS BAR, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	187	357	656	892	966	1078	1381	1807	1137	375	188	152
MAX	1407	2380	3830	4526	4367	3074	2822	3894	3627	1384	417	256
(WY)	1963	1951	1965	1997	1986	1995	1982	1952	1983	1983	1983	1983
MIN	71.8	107	97.3	117	138	151	241	335	170	82.7	66.8	71.0
(WY)	1978	1978	1977	1991	1977	1977	1977	1977	1992	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1931 - 1999	
ANNUAL TOTAL	441818		343539			
ANNUAL MEAN	1210		941		763	
HIGHEST ANNUAL MEAN					1566	
LOWEST ANNUAL MEAN					141	
HIGHEST DAILY MEAN	7050	Mar 24	5870	Feb 9	29600	Jan 2 1997
LOWEST DAILY MEAN	200	Oct 21	168	Sep 29	60	Sep 7 1977
ANNUAL SEVEN-DAY MINIMUM	203	Oct 17	172	Sep 24	60	Sep 7 1977
INSTANTANEOUS PEAK FLOW			8130	Feb 9	45500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			11.46	Feb 9	25.65	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	876300		681400		552900	
10 PERCENT EXCEEDS	3020		2090		1890	
50 PERCENT EXCEEDS	849		598		334	
90 PERCENT EXCEEDS	227		204		127	

11413250 SLATE CREEK TUNNEL NEAR STRAWBERRY VALLEY, CA

LOCATION.—Lat 39°36'57", long 121°03'03", in SE 1/4 SW 1/4 sec.2, T.20 N., R.8 E., Plumas County, Hydrologic Unit 18020125, Plumas National Forest, on right bank 30 ft upstream from diversion dam on Slate Creek, 0.3 mi upstream from Feney Ravine, and 4.5 mi northeast of town of Strawberry Valley.

PERIOD OF RECORD.—February 1962 to current year. Monthly discharge only published as adjustment to Slate Creek below diversion dam near Strawberry Valley (station 11413300) February 1962 to September 1966; records of daily discharge are in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is sea level.

REMARKS.—Tunnel diverts water from Slate Creek to Sly Creek Reservoir (station 11395400) for power development. See schematic diagrams of South Fork Feather River and Yuba River Basins.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 863 ft³/s, Apr. 6, 1963; no flow for many days in 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	743	64	184	831	6.5	403	238	38	.00	.00
2	.00	.00	602	61	168	823	6.5	439	221	35	.00	.00
3	.00	.00	759	59	162	830	6.5	538	190	33	.00	.00
4	.00	.00	768	55	159	823	6.5	464	164	30	.00	.00
5	.00	.00	519	54	149	794	6.5	404	161	27	.00	.00
6	.00	.00	351	53	152	525	6.5	413	166	25	.00	.00
7	.00	.00	259	52	667	411	6.4	458	155	23	.00	.00
8	.00	.00	216	49	813	361	6.2	429	137	21	.00	.00
9	.00	.00	177	47	826	321	6.2	382	127	19	.00	.00
10	.00	.00	153	46	816	272	6.2	353	118	18	.00	.00
11	.00	7.1	137	45	748	98	6.2	349	117	16	.00	.00
12	.00	10	124	44	548	6.5	6.2	393	117	15	.00	.00
13	.00	8.8	122	43	426	6.5	6.2	409	114	14	.00	.00
14	.00	8.8	120	43	362	6.5	6.2	357	111	13	.00	.00
15	.00	8.5	114	75	307	6.5	6.2	304	110	12	.00	.00
16	.00	9.0	133	300	321	6.5	6.2	287	106	11	.00	.00
17	.00	72	148	372	794	6.5	6.2	288	98	10	.00	.00
18	.00	43	142	818	730	6.5	6.2	308	91	9.6	.00	.00
19	.00	24	133	819	709	6.5	6.2	327	85	9.2	.00	.00
20	.00	18	122	814	507	6.5	6.2	324	79	8.6	.00	.00
21	.00	22	104	793	420	6.5	6.2	337	74	8.2	.00	.00
22	.00	212	96	810	347	6.5	6.2	380	71	7.9	.00	.00
23	.00	400	88	827	305	6.5	269	414	68	2.6	.00	.00
24	.00	427	89	808	287	6.5	452	435	64	.00	.00	.00
25	.00	203	86	623	375	6.5	481	444	59	.00	.00	.00
26	.00	131	80	462	301	6.5	594	434	53	.00	.00	.00
27	.00	287	75	356	278	6.5	555	402	48	.00	.00	.00
28	.00	253	72	296	572	6.5	451	349	44	.00	.00	.00
29	.00	226	68	256	---	6.5	379	297	42	.00	.00	.00
30	.00	778	67	228	---	6.5	369	264	40	.00	.00	.00
31	.00	---	68	210	---	6.5	---	251	---	.00	.00	---
TOTAL	0.00	3148.20	6735	9582	12433	6219.0	3688.4	11636	3268	406.10	0.00	0.00
MEAN	.000	105	217	309	444	201	123	375	109	13.1	.000	.000
MAX	.00	778	768	827	826	831	594	538	238	38	.00	.00
MIN	.00	.00	67	43	149	6.5	6.2	251	40	.00	.00	.00
AC-FT	.00	6240	13360	19010	24660	12340	7320	23080	6480	805	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

MEAN	8.33	64.9	94.0	129	152	211	222	210	113	23.9	3.21	1.53
MAX	43.5	321	302	408	595	588	690	638	470	144	24.2	21.1
(WY)	1983	1984	1967	1995	1996	1993	1993	1973	1998	1983	1983	1986
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.028	.000	.000	.000
(WY)	1963	1963	1974	1965	1965	1969	1969	1977	1977	1966	1963	1963

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1963 - 1999	
ANNUAL TOTAL	62765.00		57115.70			
ANNUAL MEAN	172		156		102	
HIGHEST ANNUAL MEAN					209	
LOWEST ANNUAL MEAN					.002	
HIGHEST DAILY MEAN	815	Jan 19	831	Mar 1	863	Apr 6 1963
LOWEST DAILY MEAN	.00	Jan 24	.00	Oct 1	.00	Oct 1 1962
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 24	.00	Oct 1	.00	Oct 1 1962
ANNUAL RUNOFF (AC-FT)	124500		113300		74100	
10 PERCENT EXCEEDS	522		463		338	
50 PERCENT EXCEEDS	43		35		16	
90 PERCENT EXCEEDS	.00		.00		.00	

11413300 SLATE CREEK BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CA

LOCATION.—Lat 39°36'52", long 121°03'04", in SE 1/4 SW 1/4 sec.2, T.20 N., R.8 E., Plumas County, Hydrologic Unit 18020125, Plumas National Forest, on right bank 300 ft downstream from diversion dam, 0.2 mi upstream from Feney Ravine, and 4.5 mi northeast of town of Strawberry Valley.

DRAINAGE AREA.—49.4 mi².

PERIOD OF RECORD.—October 1960 to current year.

GAGE.—Water-stage recorder and 130° V-notch weir since October 1982. Elevation of gage is 3,570 ft above sea level, from topographic map.

REMARKS.—Slate Creek Tunnel (station 11413250) diverts up to 900 ft³/s from Slate Creek Reservoir, capacity, 223 acre-ft, at diversion dam 300 ft upstream, to Sly Creek Reservoir (station 11395400). Diversion began in February 1962. See schematic diagrams of South Fork Feather River and Yuba River Basins.

COOPERATION.—Records provided by Oroville–Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Creek only: Maximum discharge, 17,300 ft³/s, Jan. 1, 1997, gage height, 17.20 ft, from rating curve extended above 5,500 ft³/s on basis of computed flow over dam at gage heights 12.75, 15.90, 16.89 and 17.20 ft; minimum, 0.3 ft³/s, Mar. 4, 5, 1962.

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	16	16	320	14	13	612	211	11	10	11	16	11
2	16	16	19	14	13	193	195	11	10	11	15	11
3	21	15	1150	14	12	501	185	11	10	11	15	11
4	21	14	142	15	11	179	172	11	10	11	15	11
5	17	16	15	15	12	30	175	11	10	11	14	11
6	16	17	14	15	12	11	167	11	10	11	14	10
7	15	60	14	15	269	11	156	11	10	11	15	10
8	15	64	14	15	219	11	158	11	11	11	15	10
9	15	31	14	15	1860	11	146	11	11	11	14	10
10	15	25	14	14	424	11	139	11	11	11	15	10
11	15	18	14	14	31	149	150	11	11	11	15	10
12	14	12	14	14	12	226	176	11	11	11	14	9.8
13	14	12	14	14	12	219	218	11	11	11	14	9.7
14	14	12	14	15	11	215	294	11	11	11	13	9.7
15	14	12	14	15	11	202	341	11	11	11	13	9.7
16	14	12	14	15	11	204	385	11	11	11	13	9.6
17	14	12	14	15	86	216	476	10	11	11	13	9.5
18	13	12	14	512	48	231	542	10	11	11	12	9.6
19	13	12	14	547	15	241	578	10	11	11	12	9.8
20	13	12	14	1580	12	247	594	10	11	11	12	9.8
21	13	12	14	627	11	236	569	10	11	11	12	10
22	13	12	14	112	11	220	486	10	11	11	12	9.9
23	13	624	14	806	11	218	182	10	11	16	12	9.7
24	25	115	14	116	11	223	11	10	11	18	11	9.6
25	37	15	14	15	12	300	11	10	11	18	11	9.6
26	19	15	14	15	11	315	11	10	11	18	11	9.5
27	17	15	14	14	11	324	11	10	11	17	12	9.2
28	16	15	14	14	287	294	11	10	11	17	11	9.1
29	16	15	14	14	---	268	11	10	11	17	11	9.1
30	15	1090	14	13	---	258	11	10	11	16	11	9.1
31	15	---	14	13	---	237	---	10	---	16	11	---
TOTAL	504	2328	2010	4646	3459	6613	6772	326	323	395	404	297.0
MEAN	16.3	77.6	64.8	150	124	213	226	10.5	10.8	12.7	13.0	9.90
MAX	37	1090	1150	1580	1860	612	594	11	11	18	16	11
MIN	13	12	14	13	11	11	11	10	10	11	11	9.1
AC-FT	1000	4620	3990	9220	6860	13120	13430	647	641	783	801	589

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

MEAN	24.9	55.7	152	257	200	221	190	195	49.6	12.1	11.1	10.4
MAX	437	545	1303	1334	1415	901	753	795	481	21.3	19.3	17.7
(WY)	1963	1974	1965	1970	1986	1983	1982	1983	1983	1998	1965	1998
MIN	5.85	7.51	5.80	9.04	8.49	6.61	6.12	6.15	6.95	5.17	3.82	6.13
(WY)	1971	1977	1977	1975	1973	1968	1968	1968	1973	1977	1977	1987

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1963 - 1999
ANNUAL TOTAL	64185	28077.0	
ANNUAL MEAN	176	76.9	115
HIGHEST ANNUAL MEAN			352
LOWEST ANNUAL MEAN			10.4
HIGHEST DAILY MEAN	2440	Mar 24	1860 Feb 9
LOWEST DAILY MEAN	11	Feb 9	9.1 Sep 28
ANNUAL SEVEN-DAY MINIMUM	11	Jul 31	9.3 Sep 24
INSTANTANEOUS PEAK FLOW			3330 Feb 9
INSTANTANEOUS PEAK STAGE			10.63 Feb 9
ANNUAL RUNOFF (AC-FT)	127300	55690	83110
10 PERCENT EXCEEDS	523	224	320
50 PERCENT EXCEEDS	22	14	11
90 PERCENT EXCEEDS	12	10	8.3

11413320 DEADWOOD CREEK NEAR STRAWBERRY VALLEY, CA

LOCATION.—Lat 39°33'00", long 121°05'36", in SW 1/4 SW 1/4 sec.33, T.20 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Plumas National Forest, on right bank 250 ft upstream of confluence with Owl Gulch and 1.3 mi southeast of Strawberry Valley.

DRAINAGE AREA.—3.16 mi².

PERIOD OF RECORD.—October 1994 to current year.

GAGE.—Water-stage recorder and 120° V-notch weir. Elevation of gage is 3,275 ft above sea level, from topographic map.

REMARKS.—Water from creek is diverted at gage to Deadwood Creek Powerplant (station 11413326). See schematic diagram of Yuba River Basin.

COOPERATION.—Records provided by Yuba County Water Agency, 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, 400 ft³/s, Jan. 1, 1997; minimum daily, 1.7 ft³/s, several days in February and March 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	5.6	4.5	3.2	2.8	2.8	14	2.7	2.9	2.4	2.6	2.6	4.4
2	5.6	4.5	11	2.8	2.8	10	2.7	2.9	2.3	2.6	2.6	4.4
3	6.6	4.5	4.2	2.8	2.8	12	2.7	2.9	3.2	2.6	2.6	4.4
4	4.8	4.5	3.0	2.8	2.8	7.6	2.7	2.6	2.4	2.6	2.6	4.3
5	4.7	4.5	2.9	2.8	2.8	6.0	2.7	2.6	2.4	2.6	2.6	4.9
6	4.5	4.5	2.9	2.8	4.1	4.9	2.7	2.6	2.4	2.6	2.6	4.3
7	4.5	3.2	2.9	2.8	20	4.9	2.7	2.6	2.4	2.5	2.6	4.3
8	4.5	3.2	2.8	2.8	19	4.2	2.8	2.6	2.4	2.5	2.6	4.2
9	4.5	3.1	2.8	2.8	46	3.9	2.8	2.6	2.4	2.5	2.6	4.2
10	4.5	3.1	2.8	2.8	33	3.4	2.8	2.6	2.5	2.5	2.6	4.3
11	4.5	4.6	2.8	2.8	29	3.2	2.8	2.6	2.5	2.5	2.6	4.1
12	4.5	3.2	2.8	2.8	28	3.2	2.8	2.6	2.5	2.5	2.6	4.1
13	4.7	3.2	2.8	2.8	26	3.1	2.8	2.6	2.5	2.5	2.6	4.1
14	4.7	2.9	5.6	2.8	25	3.0	2.8	2.6	2.5	2.5	2.6	4.1
15	4.7	2.9	2.8	2.8	23	2.8	2.7	2.6	2.5	2.5	2.6	4.0
16	4.7	3.0	2.8	2.8	31	2.6	2.8	2.6	2.6	2.6	2.6	4.0
17	4.7	4.9	2.8	2.9	33	2.6	2.7	2.7	2.6	2.6	2.6	4.0
18	4.7	2.9	2.8	6.2	31	2.6	2.7	2.7	2.6	2.6	2.6	4.1
19	4.7	2.9	2.8	13	27	2.6	2.7	2.7	2.6	2.6	4.8	4.1
20	4.7	3.6	2.8	22	28	2.5	2.7	2.7	2.6	2.6	4.3	4.0
21	4.7	3.2	2.8	5.5	26	2.5	2.7	2.7	2.6	2.6	4.7	4.0
22	4.7	4.2	2.8	9.4	21	2.5	2.7	2.7	2.6	2.6	4.3	3.9
23	4.7	4.9	2.8	23	3.2	2.5	2.7	2.7	2.6	2.6	4.4	3.9
24	5.1	3.0	2.8	5.9	7.4	2.5	2.7	2.6	2.6	2.6	4.4	3.9
25	4.5	2.9	2.8	3.6	5.1	10	2.7	2.6	2.6	2.6	4.4	3.8
26	4.5	3.0	2.8	3.0	4.2	17	2.7	2.6	2.6	2.6	4.4	3.8
27	4.5	3.0	2.8	2.9	3.4	17	2.7	2.5	2.6	2.6	4.3	3.7
28	4.5	5.4	2.8	2.8	13	6.0	2.7	2.5	2.6	2.6	4.4	3.7
29	4.5	12	2.8	2.9	---	8.0	2.7	2.5	2.6	2.6	4.3	3.7
30	4.5	7.5	2.8	2.8	---	2.6	2.7	2.5	2.6	2.6	4.4	3.7
31	4.5	---	2.8	2.9	---	2.7	---	2.4	---	2.6	4.4	---
TOTAL	147.1	122.8	100.1	153.6	500.4	172.4	81.8	81.6	76.3	79.7	104.3	122.4
MEAN	4.75	4.09	3.23	4.95	17.9	5.56	2.73	2.63	2.54	2.57	3.36	4.08
MAX	6.6	12	11	23	46	17	2.8	2.9	3.2	2.6	4.8	4.9
MIN	4.5	2.9	2.8	2.8	2.8	2.5	2.7	2.4	2.3	2.5	2.6	3.7
AC-FT	292	244	199	305	993	342	162	162	151	158	207	243
a	.00	363	698	999	773	1650	1310	876	486	230	63	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

MEAN	3.89	3.87	6.42	15.8	12.2	8.42	4.68	4.63	2.95	3.15	3.29	3.66
MAX	4.75	4.73	17.7	42.4	20.3	22.8	10.7	10.7	3.44	4.16	4.13	4.35
(WY)	1999	1997	1997	1997	1998	1995	1995	1995	1995	1997	1997	1996
MIN	2.04	3.09	2.75	4.32	4.64	3.53	2.73	2.63	2.54	2.57	2.87	3.02
(WY)	1995	1995	1998	1996	1997	1997	1999	1999	1999	1999	1998	1998

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1995 - 1999	
ANNUAL TOTAL	1922.7		1742.5			
ANNUAL MEAN	5.27		4.77		6.06	
HIGHEST ANNUAL MEAN					8.23	
LOWEST ANNUAL MEAN					4.63	
HIGHEST DAILY MEAN	48	Feb 6	46	Feb 9	400	Jan 1 1997
LOWEST DAILY MEAN	2.6	Jan 1	2.3	Jun 2	1.7	Feb 24 1997
ANNUAL SEVEN-DAY MINIMUM	2.7	Sep 3	2.4	Jun 4	1.7	Feb 23 1997
ANNUAL RUNOFF (AC-FT)	3810		3460		4390	
10 PERCENT EXCEEDS	11		6.0		9.9	
50 PERCENT EXCEEDS	3.1		2.8		3.0	
90 PERCENT EXCEEDS	2.8		2.6		2.6	

a Diversion, in acre-feet, to Deadwood Creek Powerplant, provided by Yuba County Water Agency.

11413323 OWL GULCH NEAR STRAWBERRY VALLEY, CA

LOCATION.—Lat 39°32'44", long 121°05'39", in SW 1/4 SW 1/4 sec.33, T.20 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Plumas National Forest, on left bank 250 ft upstream from Deadwood Creek and 1.3 mi southeast of Strawberry Valley.

DRAINAGE AREA.—2.07 mi².

PERIOD OF RECORD.—October 1994 to current year.

GAGE.—Water-stage recorder and 120° V-notch weir. Elevation of gage is 3,050 ft above sea level, from topographic map.

REMARKS.—Water from creek is diverted at gage to Deadwood Creek Powerplant (station 11413326). See schematic diagram of Yuba River Basin.

COOPERATION.—Records provided by Yuba County Water Agency, 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, 346 ft³/s, Jan. 1, 1997; minimum daily, 0.58 ft³/s, Sept. 17–22, 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	2.7	2.9	1.9	1.7	2.0	15	2.0	2.9	2.1	1.7	1.6	1.5
2	2.8	2.8	2.3	1.7	2.0	15	2.0	2.6	2.4	1.7	1.6	1.5
3	3.1	2.8	2.9	1.7	1.9	13	2.0	2.3	1.4	1.7	1.6	1.5
4	3.0	2.7	1.9	1.7	1.9	12	2.0	2.6	2.6	1.7	1.6	1.5
5	2.8	2.5	1.8	1.7	1.9	12	2.0	2.1	2.6	1.7	1.6	1.5
6	2.8	2.3	1.8	1.7	2.8	11	2.0	2.0	2.7	1.7	1.6	1.4
7	2.8	2.4	1.7	1.7	13	8.2	2.0	2.0	2.7	1.7	1.5	1.5
8	2.8	2.0	1.7	1.7	23	6.9	2.0	1.9	2.7	1.7	1.5	1.5
9	2.8	2.0	1.7	1.7	36	3.7	2.0	1.9	1.8	1.7	1.5	1.4
10	2.8	2.0	1.7	1.7	26	2.7	2.0	1.9	1.7	1.7	1.5	1.4
11	2.8	2.2	1.7	1.7	13	2.0	2.0	2.0	1.7	1.7	1.5	1.4
12	2.8	1.8	1.7	1.7	15	1.5	2.0	2.0	1.7	1.7	1.5	1.4
13	2.9	1.8	1.7	1.7	15	1.5	2.0	2.0	1.7	1.7	1.5	1.4
14	2.9	1.7	1.7	1.8	14	1.4	2.0	2.0	1.7	1.7	1.5	1.3
15	2.9	1.7	1.7	1.8	14	1.2	2.0	2.0	1.7	1.7	1.5	1.4
16	2.9	1.9	1.7	1.8	17	1.1	2.0	1.9	1.7	1.7	1.5	1.3
17	2.9	2.6	1.7	2.0	12	1.0	2.0	1.8	1.7	1.7	1.6	1.4
18	2.9	1.8	2.1	6.0	12	1.2	2.0	1.8	1.7	1.7	1.7	1.4
19	2.9	1.8	1.7	6.2	12	2.1	2.0	1.8	1.7	1.7	1.7	1.4
20	2.9	1.7	1.7	4.9	12	2.2	2.0	1.8	1.7	1.7	1.7	1.4
21	2.9	2.0	1.7	8.2	12	2.3	2.0	1.8	1.7	1.7	1.7	1.3
22	2.9	2.2	1.7	7.5	12	2.2	2.0	1.8	1.7	1.7	1.7	1.3
23	2.9	2.5	1.7	6.6	8.0	2.2	2.6	1.8	1.7	1.7	1.6	1.3
24	2.8	1.9	1.7	6.6	6.6	2.3	2.6	1.8	1.7	1.7	1.6	1.4
25	2.7	1.8	1.7	6.6	8.4	1.4	2.6	1.8	1.7	1.7	1.7	1.3
26	2.8	1.7	1.7	3.1	7.2	1.3	2.6	1.8	1.7	1.7	1.7	1.3
27	2.8	1.8	1.7	2.4	31	1.3	2.6	1.8	1.7	1.7	1.6	1.3
28	2.8	1.8	1.7	2.3	11	2.6	2.6	1.8	1.7	1.6	1.6	1.3
29	2.9	2.7	1.7	2.3	---	9.8	2.7	1.8	1.7	1.6	1.6	1.3
30	2.9	3.2	1.7	2.0	---	6.5	2.8	1.8	1.7	1.6	1.5	1.3
31	2.9	---	1.7	2.0	---	3.8	---	1.8	---	1.6	1.5	---
TOTAL	88.5	65.0	55.5	96.2	342.7	150.4	65.1	61.1	56.7	52.3	49.1	41.6
MEAN	2.85	2.17	1.79	3.10	12.2	4.85	2.17	1.97	1.89	1.69	1.58	1.39
MAX	3.1	3.2	2.9	8.2	36	15	2.8	2.9	2.7	1.7	1.7	1.5
MIN	2.7	1.7	1.7	1.7	1.9	1.0	2.0	1.8	1.4	1.6	1.5	1.3
AC-FT	176	129	110	191	680	298	129	121	112	104	97	83

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
MEAN	1.80	1.85	4.39	13.6	11.7	6.99	4.03	4.21	2.18	1.89	1.57	1.56			
MAX	2.85	2.17	14.2	35.3	23.7	16.3	8.74	10.6	2.87	2.06	1.90	2.09			
(WY)	1999	1999	1997	1997	1998	1995	1995	1995	1998	1997	1998	1998			
MIN	.99	1.56	1.72	3.10	3.97	2.46	2.13	1.97	1.79	1.69	.77	.79			
(WY)	1995	1995	1998	1999	1995	1997	1997	1999	1996	1999	1997	1997			

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1995 - 1999

ANNUAL TOTAL	1796.1	1124.2													
ANNUAL MEAN	4.92	3.08								4.61					
HIGHEST ANNUAL MEAN										6.02				1997	
LOWEST ANNUAL MEAN										3.08				1999	
HIGHEST DAILY MEAN	38	Feb 5				36	Feb 9			346				Jan 1 1997	
LOWEST DAILY MEAN	1.5	Jan 1				1.0	Mar 17			.58				Sep 17 1997	
ANNUAL SEVEN-DAY MINIMUM	1.7	Dec 7				1.3	Mar 12			.58				Sep 16 1997	
ANNUAL RUNOFF (AC-FT)	3560					2230				3340					
10 PERCENT EXCEEDS	13					6.5				11					
50 PERCENT EXCEEDS	2.7					1.8				2.0					
90 PERCENT EXCEEDS	1.8					1.5				1.5					

11413510 NEW COLGATE POWERPLANT NEAR FRENCH CORRAL, CA

LOCATION.—Lat 39°19'51", long 121°11'23", in NE 1/4 SE 1/4 sec.16, T.17 N., R.7 E., Yuba County, Hydrologic Unit 18020125, at powerplant on right bank of Yuba River, 0.3 mi upstream from Dobbins Creek, and 2.3 mi northwest of French Corral.

PERIOD OF RECORD.—October 1966 to current year. Prior to October 1969, published as "Colgate Powerplant."

GAGE.—Recorded output from powerplant turbines.

REMARKS.—Water is diverted from North Yuba River at New Bullards Bar Reservoir (station 11413515). Colgate Powerplant was rebuilt during the 1970 water year with an increased capacity. Prior to Oct. 31, 1973, Browns Valley Ditch diverted up to 10 ft³/s at times from the head of the penstock for use in irrigation. See schematic diagram of Yuba River Basin.

COOPERATION.—Records provided by Yuba County Water Agency, 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	1150	653	1240	3120	2030	3480	2780	2110	541	2200	2460	2040
2	1280	1550	970	2700	2030	3520	3040	2570	1770	2120	2680	2310
3	1160	1540	817	2510	3090	3380	3010	2770	2280	1930	2780	1300
4	1050	1330	931	2920	2820	3510	2230	2760	2140	1810	2710	1870
5	1050	1020	1040	3180	2820	3520	3060	2140	2360	2030	2550	979
6	888	904	371	1670	3150	3320	3010	2390	2390	2150	2880	1600
7	915	674	998	1970	3160	3390	2960	2350	2360	2310	2720	1680
8	1380	865	1320	2300	3270	3520	2730	2620	2340	2220	2850	1120
9	1370	1350	2190	2690	3480	3460	2930	1110	2260	2310	2880	1100
10	1460	1490	2410	2930	3470	3520	2610	2410	1850	2410	2910	1030
11	1140	2510	2450	2700	3370	3490	3500	2580	2260	2270	2850	629
12	1150	2080	2300	2520	3360	3520	3520	2480	1460	2350	2740	1780
13	1240	1850	1630	2860	3410	3530	2980	2610	1120	2290	2810	1220
14	1360	827	2100	1890	3410	3450	3040	2270	1190	2530	2300	1220
15	1140	877	2210	2100	3500	3480	3000	915	1330	2160	2720	1020
16	1360	1870	1950	2130	3400	3510	3140	1210	1890	2330	2730	1100
17	986	1620	2740	1410	3310	3550	3010	2440	1590	1710	2790	858
18	933	1860	2640	1070	3320	3270	2470	2180	1810	2250	2880	1240
19	1120	1770	2800	1680	3410	3290	2550	2600	958	2480	2970	1200
20	1120	1860	3260	1270	3440	3190	2440	1780	565	2950	2830	1350
21	1030	1660	3190	1610	3290	3110	2410	2310	2030	2990	2480	1280
22	1220	1250	2880	2510	3420	3140	2480	1520	1780	2800	2590	1370
23	1240	1540	2910	2440	3460	3130	2990	1600	2110	2640	2800	1190
24	1080	1440	2360	2360	3500	3290	2040	2460	2190	1870	2890	943
25	887	1530	2040	2050	3520	3180	2070	2490	1790	1780	2990	564
26	1220	1670	2060	2220	3580	3070	2470	1460	1350	2650	2910	920
27	1300	1630	2120	2160	3260	2560	2440	1140	1550	2650	2710	1510
28	1440	1450	2150	2590	3240	2460	2380	176	2120	2570	2980	1180
29	1350	1250	2170	2670	---	2780	2010	463	2110	2670	2440	1330
30	1390	1190	3000	2780	---	2730	2800	192	3030	2900	1670	1180
31	1280	---	2910	2080	---	2760	---	838	---	2910	1810	---
TOTAL	36689	43110	64157	71090	90520	101110	82100	58944	54524	73240	83310	38113
MEAN	1184	1437	2070	2293	3233	3262	2737	1901	1817	2363	2687	1270
MAX	1460	2510	3260	3180	3580	3550	3520	2770	3030	2990	2990	2310
MIN	887	653	371	1070	2030	2460	2010	176	541	1710	1670	564
AC-FT	72770	85510	127300	141000	179500	200600	162800	116900	108100	145300	165200	75600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999, BY WATER YEAR (WY)

	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	1214	1143	1414	1576	1740	1715	1726	1539	1679	1779	1953	1389																		
MAX	2497	2433	3262	3496	3525	3519	3508	3565	3629	3057	3130	2995																		
(WY)	1976	1976	1975	1984	1998	1980	1993	1982	1983	1983	1984	1980																		
MIN	.000	302	96.6	152	54.6	39.3	103	206	404	386	319	.000																		
(WY)	1975	1978	1978	1977	1977	1977	1979	1977	1977	1977	1977	1974																		

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1971 - 1999	
ANNUAL TOTAL	943338.00		796907			
ANNUAL MEAN	2584		2183		1572	
HIGHEST ANNUAL MEAN					2686	
LOWEST ANNUAL MEAN					316	
HIGHEST DAILY MEAN	3590	May 11	3580	Feb 26	4200	Jun 2 1971
LOWEST DAILY MEAN	.00	Jan 7	176	May 28	.00	Mar 14 1971
ANNUAL SEVEN-DAY MINIMUM	450	Sep 20	687	May 26	.00	Feb 29 1972
ANNUAL RUNOFF (AC-FT)	1871000		1581000		1139000	
10 PERCENT EXCEEDS	3550		3300		3410	
50 PERCENT EXCEEDS	3020		2280		1310	
90 PERCENT EXCEEDS	995		1050		162	

11413515 NEW BULLARDS BAR RESERVOIR NEAR NORTH SAN JUAN, CA

LOCATION.—Lat 39°23'34", long 121°08'25", in SE 1/4 NW 1/4 sec.25, T.18 N., R.7 E., Yuba County, Hydrologic Unit 18020125, Plumas National Forest, in center of dam on North Yuba River, 2.2 mi upstream from Middle Yuba River, and 2.4 mi northwest of North San Juan.

DRAINAGE AREA.—489 mi².

PERIOD OF RECORD.—January 1969 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Yuba County Water Agency).

REMARKS.—Reservoir is formed by concrete-arch dam with a concrete-sidehill spillway. Spill controlled by three 30-ft by 53-ft radial gates. Storage began in January 1969. Usable capacity, 727,380 acre-ft between elevations 1,732.0 ft, minimum power pool, and 1,955.0 ft, normal gross pool. Dead storage, 233,920 acre-ft. Total capacity at normal gross pool, 961,300 acre-ft, elevation, 1,955.0 ft. Water is released to New Colgate Powerplant (station 11413510) through a tunnel at the dam. Water is diverted into the reservoir from Middle Yuba River via Lohman Ridge Tunnel to Oregon Creek then via Camptonville Tunnel (stations 11408870 and 11409350). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Yuba River Basin.

COOPERATION.—Records provided by Yuba County Water Agency, 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, 972,224 acre-ft, June 27, 1995, elevation, 1,957.27 ft; minimum since reservoir first filled, 178,230 acre-ft, Dec. 29, 1980, elevation, 1,700.00 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 926,561 acre-ft, June 20, elevation, 1,947.66 ft; minimum, 580,709 acre-ft, Jan. 16, elevation, 1,862.12 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Yuba County Water Agency in 1969)

1,600	64,900	1,750	270,110
1,630	90,570	1,800	389,977
1,660	122,993	1,850	539,748
1,690	162,983	1,900	721,130
1,720	211,768	1,960	985,471

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	706827	658710	656505	629905	693480	798598	761441	783365	900648	913680	807520	670071
2	705106	656431	660546	626237	693171	794667	760005	785207	904778	911506	803179	666145
3	703700	654194	677017	622800	690699	794287	758365	787219	906802	909337	798683	664187
4	702490	652297	684507	618619	688734	790664	757628	788268	908000	907539	794245	661107
5	701204	651033	688503	613811	687156	786087	756442	789822	908092	905192	790075	659683
6	700192	649995	692205	611987	685658	781610	754685	790874	908829	902574	785333	657103
7	699142	650625	693906	609562	696191	777940	752849	792980	909475	899504	780900	654418
8	697200	650440	694564	606395	706358	777108	752360	794794	909705	896623	776193	652743
9	695261	648809	693249	602601	735854	777732	750812	798980	909844	893475	771380	651033
10	693171	646959	691162	598225	747115	777316	749755	800463	910582	890107	766709	649439
11	691626	643120	688849	594323	752604	776733	747602	801608	910629	886974	762140	648587
12	690083	639993	686810	590683	755829	775985	746142	803774	912338	883712	757628	645665
13	688426	637279	686081	586430	757628	774946	745049	806327	914744	880458	753053	643710
14	686503	636436	684584	584034	758365	773992	745292	808971	917155	876762	749267	641868
15	684890	635449	682706	581574	758160	772705	745899	812989	919245	873659	744765	640287
16	682898	632673	681252	580709	759759	771214	746385	816292	920175	870295	740281	638598
17	681520	631142	678465	582370	767370	769600	747805	817408	921524	867967	735613	637388
18	680296	628850	675799	595692	772788	768649	751057	819430	922175	864617	730724	635449
19	678732	626383	672760	608672	776692	767741	756319	821240	924180	860920	725260	633622
20	677093	623631	668748	634461	780065	767163	758775	824736	926561	856170	720892	631470
21	675685	621645	664601	648550	783156	766503	762879	827464	926234	851391	716816	629504
22	673899	621790	660957	655461	784830	765596	765967	832457	926187	846983	712519	627361
23	672115	627725	657178	673140	785668	764442	766874	838082	925487	842810	707728	625440
24	671093	632089	654492	681787	786254	763085	769021	842985	924413	840137	702802	623993
25	670374	632016	652297	687349	789150	762304	771587	848348	923807	837645	697704	623270
26	668748	630923	650032	691008	790285	761605	774739	855904	923947	833502	692785	621970
27	667012	631142	647861	693249	791126	762304	777649	863726	923340	829328	688233	619411
28	664940	631652	645149	693944	794709	762879	779773	872806	921524	825212	683128	617540
29	663097	633147	642604	693751	---	762551	781610	880549	919710	820938	678999	615352
30	661145	648290	638341	692862	---	762551	781652	887881	915949	816249	676331	613525
31	659384	---	634425	693442	---	762263	---	894114	---	811449	673443	---
MAX	706827	658710	694564	693944	794709	798598	781652	894114	926561	913680	807520	670071
MIN	659384	621645	634425	580709	685658	761605	745049	783365	900648	811449	673443	613525
a	1883.98	1881.00	1877.23	1892.93	1917.98	1910.19	1914.87	1940.63	1945.38	1921.92	1887.71	1871.45
b	-48854	-11094	-13865	+59017	+101267	-32446	+19389	+112462	+21835	-104500	-138006	-59918

CAL YR 1998 b +87114

WTR YR 1999 b -94713

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11413520 NORTH YUBA RIVER BELOW NEW BULLARDS BAR DAM, NEAR NORTH SAN JUAN, CA

LOCATION.—Lat 39°23'26", long 121°08'36", in SE 1/4 NW 1/4 sec.25, T.18 N., R.7 E., Yuba County, Hydrologic Unit 18020125, Plumas National Forest, on right bank at old Colgate Dam, 0.2 mi downstream from New Bullards Bar Dam, and 2.5 mi northwest of North San Juan.

DRAINAGE AREA.—490 mi².

PERIOD OF RECORD.—August 1966 to current year.

GAGE.—Water-stage recorder, and sharp-crested low-water control since Oct. 1, 1986. Elevation of gage is 1,350 ft above sea level, from topographic map. Auxiliary water-stage recorder for high flow 0.9 mi downstream at different datum.

REMARKS.—Records good. Flow regulated by New Bullards Bar Reservoir (station 11413515) since 1969. Prior to 1969, flow regulated by Bullards Bar Reservoir (usable capacity, 31,500 acre-ft). New Colgate Powerplant (station 11413510) diverts at New Bullards Bar Dam 0.2 mi upstream. Water is diverted to Feather River Basin through Slate Creek Tunnel (station 11413250). Camptonville Tunnel (station 11409350) diverts water from Middle Yuba River to New Bullards Bar Reservoir. Records include flow over New Bullards Bar Reservoir spillway. See schematic diagram of Yuba River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 56,200 ft³/s, Jan. 22, 1970, gage height, 35.29 ft, at auxiliary gage, from rating curve extended above 40,000 ft³/s on basis of computation of flow over old Colgate Dam; minimum daily, 0.42 ft³/s, Nov. 5, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 22, 1964, reached a stage of 49.8 ft, from floodmarks, discharge, 91,600 ft³/s, at auxiliary gage, from computation of flow over old Colgate 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	6.8	6.8	6.7	6.6	6.5	2780	7.6	7.0	7.9	7.6	7.2	6.8
2	6.8	6.8	7.0	6.6	6.8	4510	7.0	7.1	7.9	7.6	7.2	6.8
3	6.8	6.8	8.4	6.6	6.8	4430	7.0	7.2	7.8	7.6	7.2	6.8
4	6.8	6.8	6.7	6.6	6.8	4360	7.0	7.1	7.9	7.6	7.3	6.8
5	6.8	6.8	6.5	6.6	6.8	3790	7.0	7.0	7.8	7.6	7.4	6.8
6	6.8	6.7	6.5	6.6	7.3	3380	6.7	7.0	7.9	7.6	7.3	6.8
7	6.8	6.2	6.4	6.6	11	2510	7.0	7.0	8.0	7.6	7.2	6.8
8	6.8	5.8	6.5	6.6	8.2	870	7.3	7.0	8.0	7.6	7.2	6.8
9	6.8	6.1	6.8	6.6	9.6	8.5	7.0	7.0	8.1	7.6	7.2	6.8
10	6.8	6.9	6.8	6.6	7.2	8.2	6.7	7.0	8.0	7.6	7.2	6.8
11	6.8	7.0	6.8	6.6	7.0	8.2	6.3	7.0	7.9	7.6	7.2	6.8
12	6.8	6.8	6.8	6.6	8.4	8.2	6.6	7.0	7.8	7.6	7.2	6.8
13	6.8	6.8	6.5	6.6	7.1	8.2	7.0	7.9	7.8	7.6	7.2	6.8
14	6.8	6.8	6.2	6.6	7.0	8.2	7.0	7.2	8.0	7.6	7.2	6.8
15	6.8	6.8	6.1	6.8	7.0	8.2	7.0	7.2	8.1	7.6	7.2	6.8
16	6.8	6.8	6.3	6.9	8.0	8.2	7.0	7.2	8.0	7.6	7.2	6.8
17	6.8	7.0	8.8	7.1	8.9	8.2	7.0	7.2	8.0	7.6	7.2	6.8
18	6.8	6.8	6.7	8.0	7.0	8.2	7.0	7.2	8.0	7.6	7.2	6.8
19	6.8	6.8	6.6	8.1	6.5	8.2	7.0	7.2	8.0	7.6	7.2	6.8
20	6.8	6.6	6.6	7.9	7.5	8.2	7.0	7.2	8.0	7.5	7.2	6.8
21	6.8	6.7	6.6	6.5	10	8.2	7.0	7.3	8.0	7.4	7.0	6.8
22	6.8	6.6	6.6	7.0	7.6	8.2	7.0	7.2	8.0	7.5	7.0	6.8
23	6.8	7.2	6.6	9.7	6.3	8.2	7.0	7.2	8.0	7.5	7.1	6.8
24	7.1	6.5	6.6	6.9	6.4	8.2	7.0	7.4	8.0	7.6	7.0	6.8
25	7.3	6.4	6.6	7.0	6.6	8.3	7.0	7.4	8.0	7.6	7.0	6.8
26	6.8	6.4	6.6	6.9	5.6	8.1	7.0	7.4	7.9	7.6	7.0	6.8
27	6.8	7.1	6.6	6.6	5.6	8.0	7.0	7.6	7.8	7.6	7.0	6.8
28	6.8	6.6	6.6	6.8	356	8.0	7.0	7.8	7.8	7.6	7.0	6.8
29	6.8	7.1	6.6	6.8	---	8.0	7.0	7.8	7.8	7.6	6.9	6.8
30	6.8	7.7	6.5	6.8	---	8.2	7.0	7.8	7.8	7.6	6.8	6.8
31	6.8	---	6.6	6.8	---	8.2	---	7.9	---	7.5	6.8	---
TOTAL	211.6	202.2	208.2	215.0	555.5	26818.3	209.2	225.5	238.0	235.0	221.0	204.0
MEAN	6.83	6.74	6.72	6.94	19.8	865	6.97	7.27	7.93	7.58	7.13	6.80
MAX	7.3	7.7	8.8	9.7	356	4510	7.6	7.9	8.1	7.6	7.4	6.8
MIN	6.8	5.8	6.1	6.5	5.6	8.0	6.3	7.0	7.8	7.4	6.8	6.8
AC-FT	420	401	413	426	1100	53190	415	447	472	466	438	405

11413520 NORTH YUBA RIVER BELOW NEW BULLARDS BAR DAM, NEAR NORTH SAN JUAN, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.5	36.3	291	823	901	698	394	518	268	37.7	7.59	8.07
MAX	381	404	3570	8990	7457	4648	4144	4289	3759	759	25.4	45.9
(WY)	1975	1967	1984	1970	1986	1995	1982	1967	1967	1967	1967	1969
MIN	2.60	3.41	4.97	4.65	2.10	5.32	3.09	4.12	1.92	3.48	3.21	2.89
(WY)	1971	1971	1978	1981	1971	1976	1970	1970	1970	1977	1977	1966

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1966 - 1999	
ANNUAL TOTAL	91903.4		29543.5			
ANNUAL MEAN	252		80.9		331	
HIGHEST ANNUAL MEAN					1560	
LOWEST ANNUAL MEAN					4.62	
HIGHEST DAILY MEAN	4570	Mar 26	4510	Mar 2	48200	Feb 19 1986
LOWEST DAILY MEAN	5.8	Nov 8	5.6	Feb 26	.42	Nov 5 1966
ANNUAL SEVEN-DAY MINIMUM	6.2	Sep 9	6.5	Nov 3	.68	Nov 1 1966
INSTANTANEOUS PEAK FLOW			4710	Mar 2	56200	Jan 22 1970
INSTANTANEOUS PEAK STAGE			13.13	Mar 2	35.29	Jan 22 1970
ANNUAL RUNOFF (AC-FT)	182300		58600		239800	
10 PERCENT EXCEEDS	1010		8.2		67	
50 PERCENT EXCEEDS	7.0		7.0		6.7	
90 PERCENT EXCEEDS	6.4		6.6		4.8	

11413940 KIDD LAKE NEAR SODA SPRINGS, CA

LOCATION.—Lat 39°18'41", long 120°25'54", in SW 1/4 NW 1/4 sec.29, T.17 N., R.14 E., Placer County, Hydrologic Unit 18020125, on outlet structure on Kidd Lake Dam and 3.0 mi west of Soda Springs.

DRAINAGE AREA.—1.00 mi².

PERIOD OF RECORD.—July 1991 to current year. Unpublished records for water years 1966–91 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is 6,600.3 ft above sea level (levels by Pacific Gas & Electric Co.). Prior to July 1991, nonrecording gage at same site and datum.

REMARKS.—Records not collected during winter months. Reservoir is formed on natural lake by rock-fill dam completed in 1855. Usable capacity, 1,505 acre-ft between gage heights 0.0 ft, invert of outlet, and 27.3 ft, crest of spillway. Water is used for power development downstream. Records represent usable contents at 2400 hours.

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.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co., dated April 1965)

0	0	16	654
4	117	20	918
8	259	28	1,568

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	e1290	e415	---	---	---	---	---	---	1554	1515	1385	1065
2	e1270	e388	---	---	---	---	---	---	1555	1513	1371	1064
3	e1250	360	---	---	---	---	---	---	1550	1509	1360	1061
4	e1230	---	---	---	---	---	---	---	1546	1507	1351	1059
5	1209	---	---	---	---	---	---	---	1548	1503	1341	1058
6	e1178	---	---	---	---	---	---	---	1551	1500	1331	1055
7	e1147	---	---	---	---	---	---	---	1550	1498	1318	1054
8	e1116	---	---	---	---	---	---	---	1550	1494	1300	1053
9	e1085	---	---	---	---	---	---	---	1550	1492	1285	1051
10	e1054	---	---	---	---	---	---	---	1551	1490	1274	1049
11	e1023	---	---	---	---	---	---	---	1552	1467	1261	1040
12	e992	---	---	---	---	---	---	---	1552	1445	1248	1021
13	962	---	---	---	---	---	---	---	1552	1447	1236	1001
14	e937	---	---	---	---	---	---	---	1550	1450	1222	982
15	e912	---	---	---	---	---	---	---	1549	1452	1210	960
16	e887	---	---	---	---	---	---	---	1546	1453	1197	947
17	e862	---	---	---	---	---	---	---	1543	1453	1184	946
18	834	---	---	---	---	---	---	---	1540	1451	1172	945
19	e804	---	---	---	---	---	---	---	1539	1449	1158	944
20	e785	---	---	---	---	---	---	1335	1537	1447	1146	943
21	e755	---	---	---	---	---	---	1358	1536	1446	1132	942
22	e725	---	---	---	---	---	---	1384	1536	1445	1117	940
23	e695	---	---	---	---	---	---	1414	1535	1441	1102	940
24	e665	---	---	---	---	---	---	1449	1531	1441	1087	937
25	e635	---	---	---	---	---	---	1484	1530	1439	1078	936
26	e600	---	---	---	---	---	---	1515	1527	1434	1077	934
27	e565	---	---	---	---	---	---	1543	1525	1432	1076	931
28	525	---	---	---	---	---	---	1555	1523	1428	1075	928
29	e498	---	---	---	---	---	---	1554	1520	1420	1071	927
30	e471	---	---	---	---	---	---	1555	1518	1409	1070	926
31	e443	---	---	---	---	---	---	1555	---	1394	1068	---
MAX	1290	---	---	---	---	---	---	---	1555	1515	1385	1065
MIN	443	---	---	---	---	---	---	---	1518	1394	1068	926
a								27.86	27.45	26.02	22.02	20.11
b	-868								-37	-124	-326	-142

WTR YR 1999 b-385

e Estimated.

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

b Change in contents, in acre-feet.

11414090 FORDYCE LAKE NEAR CISCO, CA

LOCATION.—Lat 39°22'44", long 120°29'40", in NE 1/4 SE 1/4 sec.34, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, near left abutment of Fordyce Dam on Fordyce Creek and 5.3 mi northeast of Cisco.

DRAINAGE AREA.—31.7 mi².

PERIOD OF RECORD.—October 1977 to current year. Periodic gage heights only for October 1965 to September 1976 and daily contents for water year 1977 are in the files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is 6,290.5 ft above sea level (levels by Pacific Gas & Electric Co.). Prior to Nov. 29, 1976, nonrecording gage on upstream side of dam at same datum.

REMARKS.—Lake is formed by a rockfill dam; storage began in 1926. In 1980 the capacity of Fordyce Lake was increased by the addition of 3 ft of flashboards. Capacity, 49,903 acre-ft between gage heights 0.85 ft, bottom of outlet valve, and 114.6 ft, top of flashboards in spillway. Released water flows down Fordyce Creek (station 11414100) to Lake Spaulding (station 11414140) for use in a power and irrigation system. See schematic diagram of Yuba 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, 50,025 acre-ft, June 28, 1999, gage height, 114.77 ft; minimum, 250 acre-ft, Oct. 31 to Nov. 7, 1979.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 50,025 acre-ft, June 28, gage height, 114.77 ft; minimum, 746 acre-ft, Sept. 30, gage height, 9.78 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated May 1981)

4	219	20	2,608	40	8,183	80	26,770
5	278	25	3,827	50	11,797	90	32,820
10	774	30	5,170	60	16,174	100	39,342
15	1,570	35	6,628	70	21,196	114.6	49,903

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	25224	20220	15466	10790	10475	10052	10411	17236	41689	49854	25687	5984
2	25088	20054	15373	10609	10419	10152	10407	17800	42278	49739	24804	5351
3	24940	19889	15503	10434	10370	10237	10400	18137	42313	49570	23944	4718
4	24787	19719	15415	10255	10348	10255	10389	18326	42137	49302	23075	4119
5	24628	19555	15290	10141	10303	10263	10415	18532	42538	48990	22208	3537
6	24482	19386	15142	10078	10311	10252	10389	19025	43410	48480	21345	2963
7	24319	19223	14977	10008	10359	10226	10367	19807	44084	47659	20491	2408
8	24173	19056	14809	9939	10434	10226	10393	20512	44582	46866	19647	1876
9	24022	18894	14637	9870	10508	10215	10355	21143	45091	46051	18843	1382
10	23866	18727	14457	9802	10489	10185	10326	21756	45603	45230	18047	1072
11	23710	18572	14278	9735	10452	10133	10296	22572	46412	44408	17241	997
12	23549	18411	14105	9667	10411	10093	10289	23727	47224	43589	16440	964
13	23389	18222	13954	9600	10367	10056	10359	24770	48102	42771	15657	956
14	23223	17988	13771	9544	10333	10030	10501	25481	48450	41955	14868	884
15	23058	17830	13602	9583	10285	10001	10677	25975	48503	41103	14105	845
16	22883	17628	13442	9643	10292	9975	10916	26578	48647	40229	13348	831
17	22708	17451	13305	9760	10259	9953	11283	27449	49142	39349	13007	821
18	22528	17227	13164	10196	10244	9964	11757	28492	49555	38465	12952	817
19	22349	16998	13020	10407	10200	9994	12254	29608	49816	37571	12901	814
20	22176	16771	12889	10602	10181	10019	12817	30719	49769	36633	12842	809
21	21998	16584	12718	10639	10155	10041	13327	32058	49762	35699	12792	801
22	21809	16393	12553	10688	10104	10038	13671	33658	49915	34768	12751	798
23	21627	16402	12376	10752	10049	10038	13959	35478	49944	33830	12278	786
24	21547	16236	12201	10748	10012	10005	14336	37537	49915	32908	11549	782
25	21446	16042	12022	10726	9994	10001	14909	37590	49746	31989	10813	779
26	21223	15839	11853	10707	9939	10067	15522	37200	49723	31075	10074	775
27	21053	15680	11671	10669	9895	10159	15966	41752	49862	30165	9337	766
28	20890	15484	11498	10632	9924	10255	16293	41871	50025	29264	8626	754
29	20721	15382	11322	10591	---	10315	16512	41528	49981	28356	7935	749
30	20554	15540	11139	10546	---	10389	16747	41486	49915	27455	7269	746
31	20387	---	10977	10516	---	10411	---	41458	---	26572	6610	---
MAX	25224	20220	15503	10790	10508	10411	16747	41871	50025	49854	25687	5984
MIN	20387	15382	10977	9544	9895	9953	10289	17236	41689	26572	6610	746
a	68.46	58.65	47.90	46.68	45.08	46.40	61.20	103.08	114.62	79.66	34.94	9.78
b	-4974	-4847	-4563	-461	-592	+487	+6336	+24711	+8457	-23343	-19962	-5864

CAL YR 1998 MAX 49900 MIN 8556 b -2123
WTR YR 1999 MAX 50025 MIN 746 b -24615

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

b Change in contents, in acre-feet.

11414100 FORDYCE CREEK BELOW FORDYCE DAM, NEAR CISCO, CA

LOCATION.—Lat 39°22'48", long 120°29'54", in NW 1/4 SE 1/4 sec.34, T.18 N., R.13 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 850 ft downstream from Fordyce Dam, and 5.3 mi northeast of Cisco.

DRAINAGE AREA.—31.7 mi².

PERIOD OF RECORD.—June 1966 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,250 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Fordyce Lake (station 11414090). See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 4,660 ft³/s, July 9, 1974, gage height, 7.90 ft in gage well, 6.82 ft from high-water marks, from rating curve extended above 1,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 3.5 ft³/s, Jan. 2–9, 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	132	125	118	106	46	49	47	59	654	333	441	330
2	132	125	118	106	46	47	46	59	358	321	438	324
3	131	124	120	104	46	47	46	59	359	312	434	318
4	132	124	117	105	46	47	46	59	358	305	430	311
5	131	124	116	73	46	47	46	60	321	301	431	303
6	131	123	117	46	46	47	46	62	230	404	433	295
7	130	123	117	46	47	47	46	62	232	490	428	286
8	130	123	116	45	47	46	46	63	234	486	425	275
9	130	123	115	45	48	46	46	63	235	481	420	263
10	130	123	115	45	47	46	46	64	235	480	416	164
11	129	122	115	45	46	46	46	66	237	477	412	40
12	129	122	115	45	46	46	47	67	241	473	407	15
13	129	122	114	45	46	46	48	68	359	471	403	12
14	129	121	114	45	46	46	48	68	649	470	398	10
15	129	121	114	46	46	46	48	69	781	468	393	10
16	129	121	114	46	46	46	49	70	675	466	389	7.7
17	128	121	113	47	46	46	50	71	507	463	171	6.6
18	128	121	112	50	46	46	51	72	405	461	17	6.6
19	128	120	110	47	46	46	52	73	502	471	17	6.4
20	127	120	110	49	46	46	53	74	567	485	17	6.4
21	127	119	111	47	46	46	53	76	558	481	17	6.3
22	127	119	108	47	46	46	53	78	532	478	17	6.2
23	127	122	110	47	46	46	54	80	571	473	238	6.2
24	127	119	107	47	46	46	55	82	568	470	375	6.1
25	126	119	109	47	46	47	56	146	481	466	369	6.0
26	126	118	109	46	45	48	58	459	331	462	364	5.9
27	126	118	108	47	45	47	56	797	228	459	358	5.8
28	125	118	107	46	47	47	56	918	235	454	353	5.6
29	125	118	108	46	---	47	56	886	344	452	347	5.5
30	125	122	105	46	---	47	58	774	345	449	341	5.4
31	125	---	107	46	---	47	---	799	---	444	336	---
TOTAL	3980	3640	3489	1698	1292	1443	1508	6403	12332	13706	10035	3048.7
MEAN	128	121	113	54.8	46.1	46.5	50.3	207	411	442	324	102
MAX	132	125	120	106	48	49	58	918	781	490	441	330
MIN	125	118	105	45	45	46	46	59	228	301	17	5.4
AC-FT	7890	7220	6920	3370	2560	2860	2990	12700	24460	27190	19900	6050

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

MEAN	83.7	43.1	28.7	37.2	57.0	73.4	69.5	190	368	295	217	141
MAX	428	236	173	278	328	353	315	727	957	542	403	497
(WY)	1976	1977	1982	1997	1984	1984	1986	1996	1995	1995	1983	1980
MIN	4.35	3.90	3.75	4.76	4.78	5.07	9.21	17.0	36.4	21.7	11.4	4.84
(WY)	1978	1979	1979	1981	1977	1977	1977	1977	1976	1981	1987	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1966 - 1999	
ANNUAL TOTAL	63091		62574.7			
ANNUAL MEAN	173		171		134	
HIGHEST ANNUAL MEAN					288	
LOWEST ANNUAL MEAN					49.3	
HIGHEST DAILY MEAN	1130	Jun 16	918	May 28	3750	May 17 1996
LOWEST DAILY MEAN	22	Jan 1	5.4	Sep 30	3.5	Jan 2 1979
ANNUAL SEVEN-DAY MINIMUM	22	Jan 1	5.8	Sep 24	3.5	Jan 2 1979
INSTANTANEOUS PEAK FLOW			988		4660 Jul 9 1974	
INSTANTANEOUS PEAK STAGE			4.55		7.90 Jul 9 1974	
ANNUAL RUNOFF (AC-FT)	125100		124100		97300	
10 PERCENT EXCEEDS	401		461		411	
50 PERCENT EXCEEDS	123		112		34	
90 PERCENT EXCEEDS	27		46		6.8	

11414140 LAKE SPAULDING NEAR EMIGRANT GAP, CA

LOCATION.—Lat 39°19'35", long 120°38'32", in SE 1/4 NE 1/4 sec.20, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, near center of Spaulding Dam on South Yuba River and 2.5 mi northeast of Emigrant Gap.

DRAINAGE AREA.—118 mi².

PERIOD OF RECORD.—October 1964 to current year.

GAGE.—Water-stage recorder. Datum of gage is 4,809.6 ft above sea level (levels by Pacific Gas & Electric Co.). Prior to July 1968, nonrecording gage at same site and datum.

REMARKS.—Lake is formed by three concrete-arch dams with spillway on the middle arch. Storage began in 1913. Capacity, 74,773 acre-ft between gage heights 0.6 ft, bottom of outlet, and 205.0 ft, top of radial gates. Released water flows through Spaulding Powerplants Nos. 1 and 2 (stations 11414154 and 11414155). Flow through Powerplant No. 1 is transported out of Yuba River Basin by Drum Canal to Bear River Basin. See schematic diagrams of Yuba and Bear River Basins.

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, 75,100 acre-ft, July 13, 1967, gage height, 205.5 ft; minimum, 914 acre-ft, Feb. 28, 1976, gage height, 25.5 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 74,836 acre-ft, June 22, gage height, 205.09 ft; minimum, 8,648 acre-ft, Apr. 13, gage height, 66.61 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co., dated Apr. 23, 1965)

20	566	70	9,632
25	874	100	19,541
30	1,352	150	41,545
40	2,742	200	71,329
50	4,578	206	75,473

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	49089	41359	41504	30527	33257	31087	14782	23607	69746	74342	62171	56133
2	48536	41111	41685	29831	32890	31561	14032	24821	69954	74272	61888	55876
3	47964	40859	44310	29150	32733	32429	13269	25185	70048	74099	61592	55608
4	47373	40593	44834	28443	32664	32383	12568	25132	69987	73829	61292	55655
5	46747	40363	44915	27689	32424	31975	12056	25149	70525	73469	60992	55685
6	46169	40179	44802	26881	32236	31435	11509	25932	71574	73234	60743	55685
7	45588	40123	44743	26205	33443	30782	10960	27485	72258	73193	60986	55322
8	45001	39909	44315	25430	34448	30118	10440	28742	72615	73110	61223	54949
9	44679	39661	43709	25230	37138	29386	9927	29610	72904	73000	61354	54530
10	45275	39443	43112	25047	37542	28491	9418	30389	73200	72752	61429	53978
11	45870	39237	42524	24250	37300	27476	8947	31666	73787	72128	61454	53580
12	45442	39005	41939	23449	36859	26442	8651	33784	74113	71390	61379	53090
13	44856	38789	41504	22842	36308	25467	8648	35694	74474	70660	61285	52163
14	44267	38529	41055	22223	35743	24611	9004	36727	74613	69880	61492	51205
15	43682	38280	40531	22146	35105	23737	9480	37104	74578	69137	61674	50260
16	43349	38051	40235	23351	34828	22928	10164	37675	74613	68452	61586	49189
17	43852	37957	39970	24583	35411	22265	11255	38834	74703	68312	61229	48263
18	44416	37784	39590	28224	35416	21726	12616	40485	74738	67546	60463	48286
19	44278	37547	39126	30265	35057	21274	14141	42294	74766	66798	59683	48742
20	44065	37286	38589	33424	34553	20753	15673	44049	74794	66054	58920	49201
21	43772	37443	37982	34099	34056	20064	16928	46125	74815	65307	58405	49656
22	43497	37784	37340	34425	33312	19270	17565	48904	74836	64546	57882	50113
23	43280	38915	36678	35989	32498	18508	17901	52129	74808	63777	57343	50561
24	43154	39423	36008	36168	31729	17802	18562	55489	74745	62988	57216	51022
25	42970	39206	35344	36139	31128	17183	19791	59615	74509	62203	57083	51462
26	42786	38809	34666	36158	30376	16914	21650	63458	74272	61411	56926	51910
27	42571	38504	33986	35921	29544	16893	22504	66857	73988	60824	56770	52360
28	42335	38186	33299	35430	29562	16712	22822	68951	73780	60955	56836	52776
29	42106	38220	32599	34828	---	16361	22714	69278	73932	61373	56872	53236
30	41835	40957	31898	34198	---	15968	22741	69365	74168	61756	56631	53673
31	41576	---	31218	33611	---	15469	---	69438	---	61982	56385	---
MAX	49089	41359	44915	36168	37542	32429	22822	69438	74836	74342	62171	56133
MIN	41576	37286	31218	22146	29544	15469	8648	23607	69746	60824	56385	48263
a	150.06	148.86	128.69	133.90	124.97	88.45	108.48	197.19	204.13	185.70	176.59	172.01
b	-8085	-619	-9739	+2393	-4049	-14093	+7272	+46697	+4730	-12186	-5597	-2712
c	31000	28480	33850	26600	27100	15370	1720	27950	40210	40030	41780	20640
d	3360	2910	2230	3450	4100	8210	4830	8650	9000	5810	4070	4370

CAL YR 1998 MAX 74787 MIN 18436 b +11702 c 474000 d 67640

WTR YR 1999 MAX 74836 MIN 8648 b +4012 c 334700 d 61000

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

b Change in contents, in acre-feet.

c Diversion, in acre-feet, to Spaulding No. 1 Powerplant, provided by Pacific Gas & Electric Co.

d Diversion, in acre-feet, to Spaulding No. 2 Powerplant, provided by Pacific Gas & Electric Co.

11414170 DRUM CANAL AT TUNNEL OUTLET, NEAR EMIGRANT GAP, CA

LOCATION.—Lat 39°19'03", long 120°39'08", in SE 1/4 SW 1/4 sec.20, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, 100 ft downstream from tunnel outlet, 1.0 mi downstream from Spaulding No. 1 Powerplant, and 1.7 mi northeast of Emigrant Gap.

PERIOD OF RECORD.—October 1964 to current year. Prior to October 1972, published as "Drum Canal at intake."

GAGE.—Water-stage recorder. Elevation of gage is 4,880 ft above sea level, from topographic map. Prior to Oct. 1, 1968, in powerplant 0.7 mi upstream at different datum.

REMARKS.—Canal diverts from Spaulding No. 1 Powerplant (station 11414154) at Lake Spaulding Dam. Most of the water from Drum Canal enters the Bear River via Drum No. 1 and 2 Powerplants (station 11414196) at Drum Afterbay. Some of the water is diverted out of Drum Forebay to Alta Powerplant (station 11421725). See schematic diagrams of Yuba and Bear River Basins.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 864 ft³/s, May 1, 1998; no flow for several 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	707	530	575	750	594	686	846	847	849	806	600	732
2	703	529	596	744	588	746	845	844	838	849	851	731
3	710	528	504	740	495	654	844	835	847	853	852	727
4	725	527	548	747	477	711	843	846	846	853	856	550
5	726	515	562	749	543	729	826	842	849	856	855	553
6	722	505	572	742	541	733	823	845	851	856	828	553
7	719	505	494	625	505	744	822	842	846	854	559	743
8	727	504	693	569	525	750	809	845	848	853	563	741
9	591	503	741	281	385	763	791	841	849	853	633	743
10	116	502	738	268	528	815	777	844	850	855	657	753
11	116	501	736	555	726	855	774	845	851	854	674	536
12	635	500	744	613	789	856	768	848	851	854	718	548
13	723	500	712	604	792	853	759	848	855	853	720	743
14	718	507	701	604	791	843	745	842	848	854	559	745
15	717	506	744	549	793	845	726	848	839	851	557	740
16	582	505	743	233	668	833	719	847	849	832	700	733
17	138	505	747	238	640	827	778	844	854	511	710	735
18	114	504	754	545	647	846	790	850	855	854	713	248
19	487	503	755	553	680	843	824	847	852	855	710	.00
20	519	455	753	444	705	843	848	851	852	854	702	.00
21	518	255	751	525	664	841	851	854	858	854	572	.00
22	517	262	752	554	750	839	845	845	857	855	581	.00
23	519	499	755	491	771	840	841	843	853	852	727	.00
24	523	440	753	579	753	824	848	844	850	852	717	.00
25	523	572	747	584	690	808	842	847	854	853	716	.00
26	523	594	751	532	707	845	847	850	853	853	720	.00
27	529	617	747	611	757	846	846	845	854	852	720	.00
28	533	613	749	712	655	847	844	846	857	622	587	.00
29	533	591	755	755	---	842	844	849	855	443	594	.00
30	532	532	754	764	---	838	844	850	857	498	735	.00
31	531	---	757	739	---	832	---	846	---	591	733	---
TOTAL	16976	15109	21683	17999	18159	24977	24409	26220	25527	24785	21419	11854.00
MEAN	548	504	699	581	649	806	814	846	851	800	691	395
MAX	727	617	757	764	793	856	851	854	858	856	856	753
MIN	114	255	494	233	385	654	719	835	838	443	557	.00
AC-FT	33670	29970	43010	35700	36020	49540	48420	52010	50630	49160	42480	23510
a	31560	30630	42300	36620	37910	47960	47310	49470	46790	44560	40240	21320
b	1060	885	351	659	980	700	516	113	657	1280	1260	1120

a Discharge, in acre-feet, to Drum No. 1 and 2 Powerplants, provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, to Alta Powerplant, provided by Pacific Gas & Electric Co.

11414170 DRUM CANAL AT TUNNEL OUTLET, NEAR EMIGRANT GAP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1999, BY WATER YEAR (WY)

MEAN	405	424	468	451	475	524	610	648	638	618	580	370
MAX	817	824	835	837	833	838	839	855	851	820	820	661
(WY)	1983	1984	1984	1984	1984	1984	1996	1998	1999	1983	1998	1986
MIN	.000	29.5	31.1	30.2	.000	22.6	22.9	5.77	166	178	.000	.000
(WY)	1966	1987	1977	1997	1991	1988	1988	1976	1977	1977	1965	1965

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1965 - 1999	
ANNUAL TOTAL	247818.50		249117.00			
ANNUAL MEAN	679		683		518	
HIGHEST ANNUAL MEAN					796	
LOWEST ANNUAL MEAN					101	
HIGHEST DAILY MEAN	864	May 1	858	Jun 21	864	May 1 1998
LOWEST DAILY MEAN	.00	Sep 14	.00	Sep 19	.00	Jul 31 1965
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 14	.00	Sep 19	.00	Jul 31 1965
ANNUAL RUNOFF (AC-FT)	491500		494100		375300	
ANNUAL DISCHARGE (AC-FT) a	411000		476700			
ANNUAL DISCHARGE (AC-FT) b	11880		9570			
10 PERCENT EXCEEDS	858		853		828	
50 PERCENT EXCEEDS	751		743		579	
90 PERCENT EXCEEDS	444		500		29	

a Discharge, in acre-feet, to Drum No. 1 and 2 Powerplants, provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, to Alta Powerplant, provided by Pacific Gas & Electric Co.

11414210 SOUTH YUBA RIVER BELOW SPAULDING NO. 2 POWERPLANT, NEAR EMIGRANT GAP, CA

LOCATION.—Lat 39°19'28", long 120°38'42", in NE 1/4 SE 1/4 sec.20, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on left bank 200 ft downstream from Spaulding No. 2 Powerplant, 0.2 mi downstream from Spaulding Dam, and 2.3 mi northeast of Emigrant Gap.

DRAINAGE AREA.—118 mi².

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for water years 1965–85 in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir and steel-lipped rectangular weir. Elevation of gage is 4,670 ft above sea level, from topographic map. Prior to June 1988, at same site and different datum.

REMARKS.—Flow regulated by Lake Spaulding (station 11414140) 0.2 mi upstream. Water is released at the intake to South Yuba Canal (station 11414200) 100 ft upstream. See schematic diagrams of Yuba and Bear River Basins.

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, 194 ft³/s, Apr. 14, June 8, 1986, gage height, 3.37 ft, from rating curve extended above 45 ft³/s, on basis of weir formula; minimum daily, 0.09 ft³/s, Nov. 5–7, 1985.

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	5.6	6.2	1.8	2.0	1.7	22	3.3	1.8	41	2.4	6.1	7.2
2	5.6	6.2	1.8	2.3	1.8	23	5.0	1.9	41	2.6	5.9	7.2
3	5.6	6.1	4.2	2.7	1.9	25	4.9	4.5	41	2.6	5.9	7.2
4	5.6	6.0	1.4	2.7	1.9	23	3.6	6.6	41	2.6	5.9	7.2
5	5.6	5.8	1.2	2.7	1.9	23	2.8	8.4	41	2.5	5.9	7.2
6	5.6	6.2	1.2	2.7	1.9	23	2.8	11	42	2.4	5.9	7.2
7	5.6	6.8	1.1	2.7	6.4	23	2.6	11	42	2.4	5.9	7.4
8	5.6	6.0	1.6	2.9	4.8	23	2.5	11	42	2.3	5.9	7.4
9	5.7	5.8	2.1	3.1	5.2	23	2.4	12	42	2.3	5.6	7.2
10	5.6	5.7	2.1	3.1	2.0	20	2.4	11	42	3.7	6.0	7.2
11	5.6	6.4	2.1	3.2	1.9	17	3.3	11	42	4.5	6.5	7.2
12	5.8	6.3	2.1	3.3	1.9	15	3.5	11	43	4.4	6.5	7.2
13	5.9	6.2	2.2	3.3	1.9	13	2.8	15	44	4.4	6.5	7.2
14	6.0	6.3	2.2	3.3	2.0	8.9	2.6	18	44	4.5	6.5	7.2
15	6.2	7.2	2.1	3.7	1.9	3.1	2.5	18	43	3.9	6.5	7.2
16	6.1	6.9	2.1	3.5	3.7	2.7	2.5	18	43	3.4	6.5	7.2
17	5.9	8.1	2.1	2.2	11	2.4	2.4	22	43	3.3	6.5	7.2
18	5.9	8.1	2.1	3.7	20	2.3	2.3	27	43	3.4	6.5	7.2
19	5.9	7.8	2.0	4.4	14	2.2	2.1	27	43	3.4	6.1	7.4
20	6.2	7.8	2.0	4.2	2.9	2.3	1.9	27	43	3.4	6.2	7.6
21	6.2	7.6	1.9	1.4	2.8	2.2	1.9	27	43	3.7	6.2	7.6
22	6.2	7.6	1.9	2.3	2.8	2.0	1.7	28	43	4.0	6.6	7.6
23	6.2	10	1.9	3.6	2.9	1.9	1.6	30	43	4.2	7.2	7.6
24	6.3	7.6	1.9	.97	2.9	1.9	1.7	31	43	5.2	7.2	7.6
25	6.2	7.1	1.9	.76	13	1.9	1.8	33	43	5.9	7.2	7.6
26	6.2	6.7	1.9	.71	26	1.9	2.0	51	43	5.9	7.2	7.6
27	6.2	7.3	1.9	.70	26	1.9	2.0	34	43	5.9	7.2	6.7
28	6.2	5.1	1.9	.67	23	1.7	2.0	34	21	5.9	7.1	5.3
29	6.2	4.0	1.8	.67	---	1.7	2.0	41	2.3	6.2	7.2	5.3
30	6.2	4.1	1.7	.67	---	1.9	1.9	41	2.1	6.2	7.2	5.4
31	6.2	---	1.8	1.0	---	1.9	---	41	---	6.2	7.2	---
TOTAL	183.9	199.0	60.0	75.15	190.1	317.8	76.8	664.2	1172.4	123.7	200.8	213.3
MEAN	5.93	6.63	1.94	2.42	6.79	10.3	2.56	21.4	39.1	3.99	6.48	7.11
MAX	6.3	10	4.2	4.4	26	25	5.0	51	44	6.2	7.2	7.6
MIN	5.6	4.0	1.1	.67	1.7	1.7	1.6	1.8	2.1	2.3	5.6	5.3
AC-FT	365	395	119	149	377	630	152	1320	2330	245	398	423

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	4.37	4.25	4.39	4.27	10.5	17.0	23.7	25.3	25.8	6.89	4.68	4.75		
MAX	6.80	6.63	21.2	17.7	61.4	111	118	85.8	111	29.1	8.84	8.22		
(WY)	1986	1986	1997	1995	1986	1986	1986	1986	1986	1988	1997	1997		
MIN	1.50	1.52	1.72	1.70	2.13	1.95	2.05	1.75	1.71	1.71	1.55	1.58		
(WY)	1986	1986	1987	1989	1989	1988	1987	1987	1987	1986	1986	1987		

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1986 - 1999

ANNUAL TOTAL	5114.4	3477.15		
ANNUAL MEAN	14.0	9.53	11.3	
HIGHEST ANNUAL MEAN			41.3	1986
LOWEST ANNUAL MEAN			2.05	1988
HIGHEST DAILY MEAN	46	Jul 14	51	May 26
LOWEST DAILY MEAN	1.1	Dec 7	.67	Jan 28
ANNUAL SEVEN-DAY MINIMUM	1.4	Feb 7	.74	Jan 24
INSTANTANEOUS PEAK FLOW			158	May 26
INSTANTANEOUS PEAK STAGE			2.82	May 26
ANNUAL RUNOFF (AC-FT)	10140	6900	8180	
10 PERCENT EXCEEDS	43	29	33	
50 PERCENT EXCEEDS	5.9	5.9	4.6	
90 PERCENT EXCEEDS	2.0	1.9	1.7	

11414250 SOUTH YUBA RIVER AT LANGS CROSSING, NEAR EMIGRANT GAP, CA

LOCATION.—Lat 39°19'07", long 120°39'24", in SW 1/4 SW 1/4 sec.20, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on right bank 50 ft downstream from road bridge, 0.8 mi downstream from Spaulding Nos. 1 and 2 Powerplants, and 1.6 mi northeast of Emigrant Gap.

DRAINAGE AREA.—120 mi².

PERIOD OF RECORD.—December 1965 to current year.

GAGE.—Water-stage recorder. Datum of gage is 4,432.44 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.—Flow regulated by Lake Spaulding (station 11414140) 0.8 mi upstream. Lake Spaulding receives water from Canyon Creek via the Bowman–Spaulding Canal (station 11416100). Most of the water is diverted out of the Yuba River just downstream from Spaulding Dam via Drum Canal (station 11414170) and South Yuba Canal (station 11414200). See schematic diagrams of Yuba and Bear River Basins.

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, about 34,200 ft³/s, Jan. 1, 1997, gage height, 23.60 ft, from rating curve extended above 8,800 ft³/s on basis of spillway rating at Spaulding Dam; minimum daily, 2.1 ft³/s, on several days during July and September 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	6.6	8.3	27	5.3	9.1	60	11	7.0	e1020	6.9	5.5	7.0
2	6.5	7.4	20	5.3	8.9	44	12	8.9	e728	7.4	5.5	7.1
3	6.5	7.1	56	5.7	8.9	67	12	19	e401	7.2	5.6	7.1
4	6.4	6.9	23	5.6	9.2	42	11	16	e274	6.9	5.6	7.0
5	6.2	7.0	15	5.4	9.0	35	11	15	e274	6.5	5.7	7.1
6	6.2	7.3	12	5.3	9.6	32	11	16	e229	6.2	5.8	7.0
7	6.3	14	11	5.2	75	30	11	16	e247	6.0	5.8	6.8
8	6.3	11	10	5.2	68	29	11	16	e253	5.7	5.8	6.8
9	6.4	9.0	10	5.6	121	28	11	16	e259	5.5	5.6	6.8
10	6.2	8.6	9.4	5.6	34	26	10	15	e260	6.4	6.2	6.7
11	6.3	9.1	9.3	5.6	22	23	14	15	e268	12	6.5	6.6
12	6.7	8.3	9.5	5.6	17	22	18	15	e558	29	6.4	6.5
13	6.8	7.9	10	5.6	15	21	21	17	e568	30	6.2	6.4
14	6.8	7.7	10	5.7	15	18	22	19	e383	28	6.2	6.4
15	6.7	7.4	9.8	7.5	13	13	22	19	e771	27	6.0	6.2
16	6.6	7.3	9.7	12	24	12	20	18	e800	26	6.0	6.2
17	6.3	14	9.1	13	57	12	17	22	e370	26	6.0	6.2
18	6.3	10	8.4	49	48	12	15	26	e633	25	6.0	7.9
19	6.9	9.2	7.9	62	36	12	14	26	e633	19	5.7	8.8
20	6.9	8.4	7.6	92	20	13	14	26	e370	6.8	5.9	8.8
21	6.9	9.3	7.0	40	18	12	12	28	e503	5.5	5.9	8.6
22	6.9	16	6.6	30	16	12	11	30	e463	5.4	6.0	8.4
23	6.9	38	6.2	76	16	11	9.6	32	e311	5.1	6.5	8.1
24	9.2	25	5.9	26	16	11	9.3	35	e417	5.5	6.4	8.1
25	8.5	15	5.8	18	26	11	9.1	37	e368	6.1	6.3	8.1
26	12	12	5.8	15	33	11	12	61	e188	5.9	6.3	8.0
27	9.6	14	5.6	13	34	11	11	380	e91	5.6	6.4	7.3
28	8.2	14	5.6	11	48	10	8.9	1120	e21	5.5	6.4	5.1
29	8.0	26	5.3	10	---	9.6	8.0	1630	e8.2	5.6	7.0	5.2
30	7.5	57	5.1	9.3	---	10	7.3	1580	e6.8	5.5	7.0	5.4
31	7.4	---	5.2	9.0	---	11	---	1710	---	5.5	7.0	---
TOTAL	221.0	402.2	348.8	569.5	826.7	670.6	386.2	6990.9	11676.0	354.7	189.2	211.7
MEAN	7.13	13.4	11.3	18.4	29.5	21.6	12.9	226	389	11.4	6.10	7.06
MAX	12	57	56	92	121	67	22	1710	1020	30	7.0	8.8
MIN	6.2	6.9	5.1	5.2	8.9	9.6	7.3	7.0	6.8	5.1	5.5	5.1
AC-FT	438	798	692	1130	1640	1330	766	13870	23160	704	375	420

e Estimated.

11414250 SOUTH YUBA RIVER AT LANGS CROSSING, NEAR EMIGRANT GAP, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

MEAN	7.14	42.4	49.7	123	95.4	91.0	87.1	328	442	71.4	6.12	6.41
MAX	18.8	683	685	2465	1626	1304	620	1734	2613	822	9.44	10.3
(WY)	1972	1984	1982	1997	1986	1986	1982	1996	1983	1983	1971	1986
MIN	2.68	4.51	5.44	4.51	5.58	5.10	3.41	5.29	3.05	2.34	2.43	2.73
(WY)	1978	1978	1977	1976	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1966 - 1999	
ANNUAL TOTAL	68500.4		22847.5			
ANNUAL MEAN	188		62.6		115	
HIGHEST ANNUAL MEAN					448	
LOWEST ANNUAL MEAN					4.35	
HIGHEST DAILY MEAN	2780	Jun 15	1710	May 31	25400	Jan 1 1997
LOWEST DAILY MEAN	4.6	Aug 10	5.1	Dec 30	2.1	Jul 15 1977
ANNUAL SEVEN-DAY MINIMUM	4.7	Aug 10	5.3	Dec 27	2.1	Sep 22 1977
INSTANTANEOUS PEAK FLOW			1830	May 31	34200	Jan 1 1997
INSTANTANEOUS PEAK STAGE			8.24	May 31	23.60	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	135900		45320		83470	
10 PERCENT EXCEEDS	696		71		96	
50 PERCENT EXCEEDS	15		9.7		7.6	
90 PERCENT EXCEEDS	6.0		5.7		5.3	

11414360 LAKE CREEK BELOW CARR LAKE, NEAR GRANITEVILLE, CA

LOCATION.—Lat 39°23'57", long 120°38'31", in SE 1/4 NE 1/4 sec.29, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 65 ft downstream from Carr Lake, 2.0 mi upstream from Fall Creek, and 5.8 mi southeast of Graniteville.

DRAINAGE AREA.—0.48 mi².

PERIOD OF RECORD.—October 1995 to current year. Unpublished records for water years 1965–95 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and compound rectangular weir. Elevation of gage is 6,650 ft above sea level (levels by Pacific Gas & Electric Co). August 1965 to November 1975, nonrecording gage at site 65 ft upstream at different datum. November 1975 to July 1984, nonrecording gage at same site but different datum. July 1984 to September 1995, nonrecording gage at same site and datum.

REMARKS.—Records not computed for winter months. Flow regulated by Carr Lake. See schematic diagram of Yuba 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	.64	10	---	---	---	---	---	---	---	2.4	e.35	e.94
2	.64	10	---	---	---	---	---	---	---	2.1	e.41	e.64
3	.64	10	---	---	---	---	---	---	---	1.5	e.41	e.64
4	.60	10	---	---	---	---	---	---	---	1.3	e.41	e.73
5	.95	10	---	---	---	---	---	---	---	1.3	e.41	e.73
6	1.6	9.8	---	---	---	---	---	---	---	1.3	e.48	e.73
7	1.5	9.7	---	---	---	---	---	---	---	1.3	e.41	e.73
8	1.5	9.6	---	---	---	---	---	---	---	1.3	e.41	e.73
9	1.5	9.2	---	---	---	---	---	---	---	1.3	e.41	e.73
10	1.5	9.2	---	---	---	---	---	---	---	1.3	e.41	e1.1
11	1.5	9.0	---	---	---	---	---	---	---	1.2	e.41	e1.2
12	1.5	8.6	---	---	---	---	---	---	---	1.3	e.41	e2.0
13	1.3	---	---	---	---	---	---	---	---	1.4	e.41	e3.1
14	1.3	---	---	---	---	---	---	---	---	1.2	e.41	e4.0
15	1.3	---	---	---	---	---	---	---	---	.69	e.41	e3.1
16	1.1	---	---	---	---	---	---	---	---	.40	e.41	e2.6
17	2.7	---	---	---	---	---	---	---	7.4	.31	e.41	e2.2
18	5.2	---	---	---	---	---	---	---	6.9	.36	e.41	e1.8
19	5.3	---	---	---	---	---	---	---	6.5	.50	e.41	e1.5
20	5.3	---	---	---	---	---	---	---	6.0	.83	e.41	e2.2
21	5.4	---	---	---	---	---	---	---	5.5	.94	e.41	e2.9
22	5.5	---	---	---	---	---	---	---	5.2	.85	e.41	e2.4
23	5.4	---	---	---	---	---	---	---	5.5	.79	e.41	e2.0
24	5.8	---	---	---	---	---	---	---	5.8	.57	e.41	e1.6
25	5.8	---	---	---	---	---	---	---	5.1	.51	e.41	e1.6
26	5.8	---	---	---	---	---	---	---	4.2	.48	e.41	e1.6
27	6.0	---	---	---	---	---	---	---	3.1	.44	e.41	e1.6
28	7.6	---	---	---	---	---	---	---	2.6	.37	e.41	e1.6
29	8.9	---	---	---	---	---	---	---	2.4	.34	e.56	e2.6
30	7.1	---	---	---	---	---	---	---	2.2	.30	e.73	e4.0
31	8.2	---	---	---	---	---	---	---	---	.30	e.83	---
TOTAL	109.07	---	---	---	---	---	---	---	---	29.18	13.61	53.30
MEAN	3.52	---	---	---	---	---	---	---	---	.94	.44	1.78
MAX	8.9	---	---	---	---	---	---	---	---	2.4	.83	4.0
MIN	.60	---	---	---	---	---	---	---	---	.30	.35	.64
AC-FT	216	---	---	---	---	---	---	---	---	58	27	106

e Estimated.

11414400 FRENCH LAKE NEAR CISCO, CA

LOCATION.—Lat 39°25'16", long 120°32'28", in SE 1/4 SW 1/4 sec.17, T.18 N., R.13 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank near French Lake Dam on Canyon Creek, 0.5 mi upstream from Weil Lake, and 8.2 mi north of Cisco.

DRAINAGE AREA.—4.60 mi².

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1966–86 available in the files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Nevada Irrigation District).

REMARKS.—Reservoir is formed on natural lake by rock-filled dam completed in 1859. Usable capacity, 13,940 acre-ft between elevations 6,594.90 ft, invert of outlet gate, and 6,660.28 ft, crest of spillway. Figures given represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 14,300 acre-ft, June 19, 1998, elevation, 6661.26 ft; minimum, 6140 acre-ft, Nov. 16, 1998, elevation, 6632.07 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 14,200 acre-ft, many days, maximum elevation, 6661.17, June 16; minimum, 6,140 acre-ft, Nov. 16, elevation, 6632.07 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Nevada Irrigation District in 1964)

6,610	1,805	6,640	8,006
6,620	3,636	6,650	10,701
6,630	5,677	6,662	14,542

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	6450	6190	6690	7120	7830	8480	8880	10400	14200	e14000	13500	9710
2	6440	6190	6720	7120	7830	8530	8880	10500	14100	e14000	13400	9560
3	6430	6180	6910	7120	7830	8580	8890	10600	14100	e14000	13300	9410
4	6410	6170	6950	7120	7840	8590	8890	10700	14000	e14000	13300	9260
5	6410	6160	6970	7120	7840	8600	8920	10700	14100	e14000	13200	9130
6	6400	6160	6990	7120	7890	8600	8930	10800	14200	e14000	13100	8990
7	6390	6200	6990	7120	7960	8600	8930	11000	14100	e14000	13000	8850
8	6370	6180	7000	7110	8040	8620	8980	11100	14100	e14000	12900	8710
9	6360	6180	7000	7110	8130	8660	8980	11200	14100	e14000	12800	8570
10	6350	6190	7000	7110	8130	8660	8980	11300	14100	e14000	12700	8430
11	6340	6180	7010	7110	8130	8660	8980	11400	14200	e14000	12600	8290
12	6330	6170	7010	7100	8130	8660	8990	11700	14200	e14000	12500	8150
13	6320	6170	7020	7100	8130	8650	9010	11800	14200	14000	12400	8010
14	6310	6160	7030	7110	8140	8660	9050	11900	14200	14000	12200	7890
15	6300	6160	7030	7150	8140	8660	9090	12000	e14200	14000	12200	7810
16	6280	6140	7050	7200	8190	8660	9140	12100	e14200	14000	12100	7800
17	6280	6180	7070	7270	8210	8670	9220	12200	e14200	14000	12000	7800
18	6270	6180	7080	7490	8230	8680	9320	12400	e14200	13900	11900	7790
19	6250	6170	7100	7600	8230	8700	9450	12700	e14200	13900	11700	7780
20	6250	6170	7120	7670	8250	8710	9580	12900	e14200	13900	11600	7770
21	6230	6180	7120	7700	8280	8720	9680	13100	e14200	13900	11400	7760
22	6220	6190	7120	7740	8270	8730	9750	13400	e14100	13900	11200	7760
23	6210	6310	7130	7790	8270	8740	9790	13700	e14100	13900	11100	7750
24	6230	6340	7130	7800	8270	8740	9870	14000	e14100	13900	10900	7740
25	6230	6360	7120	7800	8300	8740	9980	14200	e14100	13800	10800	7730
26	6220	6350	7120	7810	8300	8760	10100	14200	e14100	13800	10600	7720
27	6210	6370	7120	7810	8300	8790	10200	14200	e14100	13800	10500	7710
28	6200	6370	7120	7820	8380	8810	10300	14200	e14100	13800	10300	7700
29	6210	6420	7120	7810	---	8830	10300	14100	e14100	13700	10200	7700
30	6190	6640	7110	7820	---	8860	10300	14200	e14000	13600	10000	7690
31	6190	---	7120	7830	---	8870	---	14200	---	13600	9860	---
MAX	6450	6640	7130	7830	8380	8870	10300	14200	14200	14000	13500	9710
MIN	6190	6140	6690	7100	7830	8480	8880	10400	14000	13600	9860	7690
a	6632.26	6634.28	6636.29	6639.27	6641.44	6643.34	6648.64	6660.95		6659.14	6647.01	6638.67
b	-270	+450	+480	+710	+550	+490	+1430	+3900	-200	-400	-3740	-2170

WTR YR 1999 MAX 14200 MIN 6140 b +1230

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11414450 CANYON CREEK BELOW FAUCHERIE LAKE, NEAR CISCO, CA

LOCATION.—Lat 39°25'46", long 120°34'06", in SE 1/4 NE 1/4 sec.13, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 80 ft downstream from Faucherie Dam on Canyon Creek, 8.5 mi north of Cisco.

DRAINAGE AREA.—8.97 mi².

PERIOD OF RECORD.—January 1989 to current year (low-flow records only). Unpublished records for water years 1965–88 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,080 ft above sea level, from topographic map. October 1964 to July 1988, nonrecording gage at site 10 ft downstream at different datum. July 1988 to January 1989, nonrecording gage at same site and datum.

REMARKS.—No records computed above 3.2 ft³/s. Flow regulated by Faucherie Lake (station 11414440). Flow over the spillway bypasses this station. See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, 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	3.0	2.9	2.9	e2.8	2.9	2.9	e2.9	e2.9	e2.8	2.8	2.9	2.9
2	3.0	2.9	2.9	e2.8	2.9	2.9	e2.9	e2.9	e2.8	2.8	2.9	2.9
3	3.0	2.9	3.0	e2.8	2.9	2.9	e2.9	e2.9	e2.8	2.8	2.9	2.9
4	3.0	2.9	e3.0	e2.8	2.9	2.9	e2.9	e2.9	e2.8	2.8	2.9	2.9
5	3.0	2.9	e3.0	e2.8	2.9	2.9	e2.9	e2.8	e2.8	2.8	2.9	2.9
6	3.0	2.9	e3.0	2.8	2.9	2.9	e2.9	e2.8	e2.8	2.8	2.9	2.9
7	3.0	2.9	e2.9	2.8	2.9	2.9	e2.9	e2.8	e2.8	2.8	2.9	---
8	3.0	2.9	e2.9	2.8	2.9	2.9	e2.9	e2.8	e2.8	2.8	2.9	---
9	3.0	2.9	e2.9	2.8	2.9	2.9	e2.9	e2.8	e2.8	2.8	2.9	---
10	3.0	2.9	e2.9	2.8	2.9	2.9	e2.9	e2.8	e2.8	2.8	2.9	---
11	2.9	2.9	2.9	2.8	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
12	2.9	2.9	2.9	2.8	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
13	2.9	2.9	2.9	2.8	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
14	2.9	2.9	2.9	2.8	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
15	2.9	2.9	2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
16	2.9	2.9	2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
17	2.9	2.9	2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
18	2.9	2.9	2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
19	2.9	2.9	e2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
20	2.9	2.9	e2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
21	2.9	2.9	e2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
22	2.9	2.9	e2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
23	2.9	3.0	e2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	---
24	2.9	2.9	e2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	e3.2
25	2.9	2.9	e2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	e3.2
26	2.9	2.9	e2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.8	2.9	e3.2
27	2.9	2.9	e2.9	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.9	2.9	---
28	2.9	2.9	e2.8	2.9	2.9	e2.9	e2.9	e2.8	e2.8	2.9	2.9	---
29	2.9	2.9	e2.8	2.9	---	e2.9	e2.9	e2.8	e2.8	2.9	2.9	---
30	2.9	3.0	e2.8	2.9	---	e2.9	e2.9	e2.8	2.8	2.9	2.9	---
31	2.9	---	e2.8	2.9	---	e2.9	---	e2.8	---	2.9	2.9	---
TOTAL	90.9	87.2	89.9	88.5	81.2	89.9	87.0	87.2	84.0	87.3	89.9	---
MEAN	2.93	2.91	2.90	2.85	2.90	2.90	2.90	2.81	2.80	2.82	2.90	---
MAX	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.9	2.9	---
MIN	2.9	2.9	2.8	2.8	2.9	2.9	2.9	2.8	2.8	2.8	2.9	---
AC-FT	180	173	178	176	161	178	173	173	167	173	178	---

e Estimated.

11414690 JACKSON LAKE NEAR SIERRA CITY, CA

LOCATION.—Lat 39°27'52", long 120°33'44", in SW 1/4 SW 1/4 sec.31, T.19 N., R.13 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on outlet structure on Jackson Lake Dam on Jackson Creek, 3.0 mi upstream from Bowman Lake, and 8.0 mi southeast of Sierra City.

DRAINAGE AREA.—0.65 mi².

PERIOD OF RECORD.—October 1986 to current year. Unpublished records for water years 1965–86 available in files of U.S. Geological Survey.

GAGE.—Water-stage recorder installed Nov. 2, 1998. Records prior to Nov. 2 are instantaneous values. Datum of gage is 6,570 ft above sea level (levels by Nevada Irrigation District).

REMARKS.—Data for Jan. 28 to Mar. 29 missing due to equipment failure. Reservoir is formed on natural lake by earth-filled dam completed in 1859. Usable capacity, 974 acre-ft between gage height 0.0 ft, invert of outlet, and 22.67 ft, crest of spillway. Dead storage below gage height 0.0 ft, 360 acre-ft. Figures given represent total contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents recorded, 1,350 acre-ft, several days during June and July 1999, maximum elevation, 6,593.03 ft, June 14, 1999; minimum recorded, 428 acre-ft, Nov. 21, 22, 1998, elevation, 6571.80 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Nevada Irrigation District in 1964)

0	360	15	958
5	545	20	1,185
10	730	24	1,407

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	---	---	482	468	---	---	508	630	1160	1350	1170	1070
2	---	444	486	466	---	---	506	644	1180	1340	1170	1070
3	---	442	498	465	---	---	506	649	1190	1340	1160	1070
4	---	440	500	463	---	---	505	651	1200	1340	1160	1060
5	---	439	501	461	---	---	507	653	1210	1340	1150	1060
6	---	438	501	460	---	---	506	663	1230	1340	1140	1060
7	---	440	500	458	---	---	505	676	1250	1340	1140	1060
8	---	440	498	456	---	---	508	684	1260	1340	1130	1050
9	---	439	498	455	---	---	506	692	1270	1330	1130	1050
10	---	438	497	453	---	---	506	698	1290	1320	1120	1050
11	---	437	496	451	---	---	505	710	1300	1320	1120	1050
12	---	435	494	450	---	---	504	731	1320	1310	1120	1040
13	---	434	492	448	---	---	505	750	1340	1310	1120	1040
14	---	431	493	447	---	---	506	760	1350	1300	1110	1040
15	---	431	493	452	---	---	508	764	1350	1290	1110	1040
16	---	429	491	455	---	---	512	770	1350	1290	1110	1030
17	---	432	490	458	---	---	520	782	1350	1280	1110	1030
18	---	431	490	479	---	---	529	799	1350	1270	1100	1030
19	---	430	488	492	---	---	540	816	1350	1270	1100	1030
20	---	432	490	500	---	---	552	832	1350	1260	1100	1030
21	---	428	489	502	---	---	563	853	1350	1250	1100	1020
22	---	428	488	506	---	---	570	882	1350	1240	1090	1020
23	---	445	486	509	---	---	572	917	1350	1240	1090	1020
24	---	446	483	508	---	---	578	951	1350	1230	1090	1020
25	---	447	482	507	---	---	589	987	1350	1220	1090	1010
26	---	445	479	507	---	---	606	1020	1350	1210	1090	1010
27	---	443	477	506	---	---	613	1050	1350	1210	1080	1010
28	---	442	476	---	---	---	618	1070	1350	1200	1080	1010
29	---	451	473	---	---	---	620	1090	1350	1190	1080	1000
30	---	478	471	---	---	508	622	1120	1350	1190	1080	1000
31	---	---	470	---	---	508	---	1140	---	1180	1070	---
MAX	---	---	501	---	---	---	622	1140	1350	1350	1170	1070
MIN	---	---	470	---	---	---	504	630	1160	1180	1070	1000
a		6573.17	6572.98			6574.01	6577.08	6588.96	6592.91	6589.88	6587.56	6585.96
b			-8				+114	+518	+210	-170	-110	-70

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11414700 JACKSON CREEK BELOW JACKSON LAKE, NEAR SIERRA CITY, CA

LOCATION.—Lat 39°27'53", long 120°33'46", in SW 1/4 SW 1/4 sec.31, T.19 N., R.13 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 75 ft downstream from Jackson Lake Dam on Jackson Creek, 3.0 mi upstream from Bowman Lake, and 8.0 mi southeast of Sierra City.

DRAINAGE AREA.—0.65 mi².

PERIOD OF RECORD.—January 1989 to September 1992, April 1993 to current year (low-flow records only). Unpublished records for water years 1965–88 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,570 ft above sea level, from topographic map. October 1964 to October 1986, nonrecording gage at site 25 ft downstream at different datum. October 1986 to January 1989, nonrecording gage at same site and datum.

REMARKS.—No records computed above 2.9 ft³/s. Flow regulated by Jackson Lake (station 11414690). Flow over the spillway bypasses this station. See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, 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	---	---	1.3	1.2	e1.4	e1.4	1.4	2.1	.91	1.2	---	1.1
2	---	---	1.3	1.2	e1.4	e1.4	1.4	2.2	1.2	1.2	---	1.1
3	---	.88	1.4	1.2	e1.4	e1.4	1.4	2.2	1.2	1.1	---	1.1
4	---	.89	1.4	1.2	e1.4	e1.4	1.4	2.3	1.2	1.1	---	1.1
5	---	.87	1.4	1.2	e1.4	e1.4	1.4	2.3	1.2	1.1	---	1.1
6	---	.86	1.4	1.2	e1.4	e1.4	1.4	2.3	1.2	1.1	---	1.1
7	---	.81	1.3	1.2	e1.4	e1.4	1.4	2.4	1.2	1.1	---	1.1
8	---	.77	1.3	1.1	e1.4	e1.4	1.4	2.4	1.2	---	---	1.0
9	---	.77	1.3	1.1	e1.4	e1.4	1.4	2.5	1.2	---	---	1.0
10	---	.75	1.3	1.1	e1.4	e1.4	1.4	2.5	1.2	---	---	1.1
11	---	.76	1.3	1.1	e1.4	e1.4	1.4	2.6	1.3	---	1.4	1.0
12	---	.74	1.2	1.1	e1.4	1.5	1.4	2.7	1.2	---	1.2	1.0
13	---	.93	1.1	1.1	e1.4	1.5	1.4	2.7	1.2	---	.99	1.0
14	---	1.2	1.1	1.1	e1.4	1.5	1.4	2.7	1.2	---	.91	1.0
15	---	1.1	1.2	1.1	e1.4	1.5	1.4	2.8	1.2	---	.84	1.0
16	---	1.1	1.1	1.1	e1.4	1.5	1.4	---	1.2	---	.88	1.0
17	---	1.1	1.2	1.1	e1.4	1.5	1.4	---	1.2	---	1.0	1.0
18	---	1.1	1.3	1.3	e1.4	1.5	1.5	---	1.2	---	1.0	1.0
19	---	1.1	1.3	1.3	e1.4	1.5	1.6	---	1.2	---	.99	1.0
20	---	1.1	1.3	1.4	e1.4	1.5	1.6	---	1.2	---	1.0	1.0
21	---	1.0	1.3	1.4	e1.4	1.4	1.7	---	1.2	---	1.0	1.0
22	---	1.1	1.3	1.4	e1.4	1.4	1.7	---	1.1	---	1.0	1.0
23	---	1.1	1.3	1.5	e1.4	1.4	1.8	---	1.2	---	.99	1.0
24	---	1.1	1.3	1.5	e1.4	1.4	1.8	---	1.2	---	.99	1.0
25	---	1.1	1.3	1.5	e1.4	1.4	1.9	---	1.2	---	.99	1.0
26	---	1.1	1.3	1.5	e1.4	1.4	1.9	---	1.2	---	.97	1.0
27	---	1.1	1.3	1.4	e1.4	1.4	2.0	---	1.2	---	.97	1.0
28	---	1.1	1.3	e1.4	e1.4	1.4	2.0	.83	1.2	---	.96	1.0
29	---	1.1	1.3	e1.4	---	1.4	2.1	.80	1.2	---	.96	1.0
30	---	1.2	1.3	e1.4	---	1.4	2.1	.80	1.2	---	.96	1.0
31	---	---	1.3	e1.4	---	1.4	---	.78	---	---	1.0	---
TOTAL	---	---	39.8	39.2	39.2	44.3	47.5	---	35.71	---	---	30.8
MEAN	---	---	1.28	1.26	1.40	1.43	1.58	---	1.19	---	---	1.03
MAX	---	---	1.4	1.5	1.4	1.5	2.1	---	1.3	---	---	1.1
MIN	---	---	1.1	1.1	1.4	1.4	1.4	---	.91	---	---	1.0
AC-FT	---	---	79	78	78	88	94	---	71	---	---	61

e Estimated.

11415500 BOWMAN LAKE NEAR GRANITEVILLE, CA

LOCATION.—Lat 39°27'01", long 120°39'09", in SE 1/4 SW 1/4 sec.5, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on right bank near rockfill portion of Bowman Dam on Canyon Creek, 4.6 mi east of Graniteville, and 8 mi south of Sierra City.

DRAINAGE AREA.—27.1 mi².

PERIOD OF RECORD.—December 1926 to current year.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Nevada Irrigation District). Prior to Oct. 8, 1964, nonrecording gage at same site and datum.

REMARKS.—Lake is formed by one rockfill and one concrete-arch dam; storage began in November 1926. Total capacity, 68,700 acre-ft between elevations 5,400 ft, bottom of outlet tunnel, and 5,563.6 ft, top of radial spillway gates and crest of concrete-arch dam. Flashboards are occasionally added, increasing elevation to 5,565.8 ft and capacity to 70,400 acre-ft, all of which is available for release. Lake receives water from Middle Yuba River via Milton–Bowman Tunnel (station 11408000), and releases it through Bowman–Spaulding Canal (station 11416000) which conveys it to reservoirs of Pacific Gas & Electric Co. Water is eventually used for irrigation by Nevada Irrigation District. Records, including extremes, represent total contents. See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 71,000 acre-ft, May 30, 1965, elevation, 5,566.5 ft; lake completely drained for inspection and repair Nov. 25 to Dec. 9, 1949, Oct. 1–20, 1966, Oct. 4–29, 1972, and Sept. 21–30, 1981.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 64,600 acre-ft, June 24, elevation, 5558.93 ft; minimum, 28,900 acre-ft, Apr. 11–13, elevation, 5508.52 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated Nov. 24, 1926)

5,419.6	0	5,470	10,200
5,430	900	5,480	14,200
5,440	2,100	5,510	30,000
5,450	4,100	5,540	49,800
5,460	6,900	5,570	73,800

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	48900	44600	41600	34400	33400	32200	29300	35600	58100	63500	62700	53800
2	48700	44500	41600	34000	33100	32400	29300	36200	59200	63400	62300	53600
3	48500	44400	42300	33700	32900	32700	29200	36500	59900	63200	62000	53200
4	48300	44300	42300	33400	32600	32700	29200	36700	60300	63000	61600	53100
5	48100	44200	42200	33000	32300	32600	29200	36800	60700	62700	61300	52800
6	47900	44100	42000	32700	32200	32500	29200	37200	61200	62500	61000	51700
7	47700	44100	41800	32400	32700	32300	29100	37800	61800	62200	60700	52300
8	47500	44100	41600	32300	33100	32200	29100	38300	62100	61900	60400	52100
9	47300	44000	41300	32200	34000	32100	29100	38700	62200	61600	60100	51900
10	47100	43900	41100	32100	34100	31900	29000	39100	62300	61700	59800	51800
11	46900	43800	40800	32100	34000	31700	28900	39600	62400	61900	59500	51700
12	46700	43700	40500	31900	33800	31500	28900	40300	62600	62200	59200	51500
13	46500	43600	40200	31500	33700	31300	28900	41000	62800	62400	58900	50100
14	46300	43500	39900	31100	33500	31100	29000	41500	63000	62700	58500	51400
15	46200	43400	39600	30900	33300	30800	29100	41700	63300	62900	58200	51400
16	46000	43300	39300	30900	33200	30600	29200	42000	63600	63100	57900	51400
17	45900	43300	39100	30900	33400	30400	29500	42400	63900	63300	57600	50900
18	45800	43200	38800	32300	33400	30300	30000	43000	64100	63500	57300	51100
19	45700	43100	38600	33200	33300	30100	30500	43600	64300	63700	57000	51000
20	45600	42800	38300	34400	33100	30000	31200	44200	64400	63900	56700	50800
21	45700	42500	38000	34800	33000	29900	31700	44900	64500	64100	56500	50700
22	45500	42200	37700	34900	32800	29700	32100	45800	64500	64300	56200	49400
23	45400	42200	37400	35100	32600	29500	32300	46900	64500	64400	56000	50400
24	45400	42000	37200	35100	32300	29400	32700	48200	64600	64500	55700	50300
25	45300	41700	36700	34900	32200	29300	33200	49600	64500	64500	55500	50200
26	45200	41300	36400	34800	32000	29300	34000	51200	64400	64500	55300	50100
27	45100	41000	36000	34600	31700	29200	34500	52700	64200	64400	55000	50000
28	45000	40700	35700	34300	31700	29200	34800	54000	63900	64000	54800	49900
29	44900	40500	35400	34100	---	29100	35000	55100	63700	63700	54600	49800
30	44800	41500	35000	33800	---	29200	35200	56100	63700	63300	54300	49700
31	44700	---	34700	33600	---	29300	---	57100	---	63000	54100	---
MAX	48900	44600	42300	35100	34100	32700	35200	57100	64600	64500	62700	53800
MIN	44700	40500	34700	30900	31700	29100	28900	35600	58100	61600	54100	49400
a	5532.66	5528.10	5517.84	5516.16	5513.14	5509.27	5518.53	5549.61	5557.81	5556.99	5545.44	5539.53
b	-4300	-3200	-6800	-1100	-1900	-2400	+5900	+21900	+6600	-700	-8900	-4400

CAL YR 1998 MAX 69300 MIN 27600 b +1300
WTR YR 1999 MAX 64600 MIN 28900 b +700

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

11416100 BOWMAN-SPAULDING CANAL AT JORDAN CREEK SIPHON VENTURI, NEAR EMIGRANT GAP, CA

LOCATION.—Lat 39°20'32", long 120°38'26", in SW 1/4 NW 1/4 sec.16, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, at outlet of Jordan Creek Siphon, 0.6 mi downstream from Fuller Lake, and 3.5 mi northeast of Emigrant Gap.

PERIOD OF RECORD.—October 1964 to current year.

GAGE.—Water-stage recorder and Venturi section. Elevation of gage is 5,340 ft above sea level, from topographic map.

REMARKS.—Records show water diverted from Bowman Lake (station 11415500) plus numerous small tributaries before it enters Lake Spaulding (station 11414140). Most of the water at this gage flows downstream through Spaulding No. 3 Powerplant (station 11416200). See schematic diagrams of Yuba and Bear River Basins.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 335 ft³/s, Dec. 25, 1983; 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	298	298	248	223	234	302	292	306	288	306	296	301
2	298	293	230	222	231	311	286	319	312	309	299	301
3	298	294	261	221	230	316	292	318	317	309	299	301
4	298	290	256	220	230	305	288	297	306	307	305	304
5	296	295	232	219	229	277	293	296	290	306	307	307
6	302	305	229	218	220	261	296	305	283	305	300	303
7	302	306	229	176	218	252	303	315	288	303	299	302
8	301	269	228	83	254	249	307	306	302	301	298	300
9	305	272	217	99	296	255	308	285	303	296	299	295
10	306	282	213	99	247	253	305	278	301	245	299	295
11	306	283	216	91	262	241	302	296	304	57	297	291
12	304	282	228	153	263	238	302	307	310	.00	296	289
13	304	281	229	239	256	236	299	317	312	.00	295	268
14	304	271	229	230	250	236	309	309	313	.00	294	246
15	305	270	231	235	243	235	319	292	316	.00	293	253
16	308	279	235	256	243	235	318	280	313	.00	289	188
17	307	283	239	263	274	236	309	282	312	.00	296	262
18	308	284	237	308	285	239	309	301	306	.00	296	284
19	308	262	235	286	278	243	314	312	299	.00	295	287
20	308	211	235	309	260	246	320	319	292	.00	297	287
21	261	205	231	234	257	243	308	319	289	.00	300	289
22	267	215	230	217	248	239	289	318	299	.00	299	289
23	300	223	225	273	241	238	277	320	302	.00	299	289
24	307	242	220	289	237	238	297	321	302	.00	300	289
25	307	218	222	271	241	228	307	320	301	.00	300	287
26	312	206	218	262	237	270	320	319	299	17	300	286
27	309	209	216	251	235	301	302	317	299	119	300	284
28	303	212	221	246	244	307	287	313	299	244	300	276
29	300	212	225	240	---	306	272	308	299	284	300	286
30	298	256	224	238	---	307	285	295	300	294	300	291
31	297	---	224	236	---	306	---	285	---	298	301	---
TOTAL	9327	7808	7113	6907	6943	8149	9015	9475	9056	4300.00	9248	8530
MEAN	301	260	229	223	248	263	300	306	302	139	298	284
MAX	312	306	261	309	296	316	320	321	317	309	307	307
MIN	261	205	213	83	218	228	272	278	283	.00	289	188
AC-FT	18500	15490	14110	13700	13770	16160	17880	18790	17960	8530	18340	16920
a	19130	16000	14600	13860	14240	15850	18130	18840	18170	8010	18610	16190

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1999, BY WATER YEAR (WY)

	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	194	201	202	198	188	212	224	235	236	210	253	260																										
MAX	306	308	312	313	311	311	311	319	315	305	316	311																										
(WY)	1983	1984	1984	1984	1995	1983	1980	1983	1983	1983	1993	1983																										
MIN	29.5	.000	41.9	37.8	21.4	26.3	19.3	33.9	.000	45.6	40.2	143																										
(WY)	1973	1965	1978	1977	1991	1977	1977	1965	1965	1991	1988	1977																										

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1965 - 1999	
ANNUAL TOTAL	101929		95871.00			
ANNUAL MEAN	279		263		218	
HIGHEST ANNUAL MEAN					304	
LOWEST ANNUAL MEAN					77.9	
HIGHEST DAILY MEAN	320	May 2	321	May 24	335	Dec 25 1983
LOWEST DAILY MEAN	193	Jan 18	.00	Jul 12	.00	Oct 29 1964
ANNUAL SEVEN-DAY MINIMUM	217	Nov 21	.00	Jul 12	.00	Oct 29 1964
ANNUAL RUNOFF (AC-FT)	202200		190200		157800	
ANNUAL DISCHARGE (AC-FT) a	202000		191600			
10 PERCENT EXCEEDS	308		309		306	
50 PERCENT EXCEEDS	294		289		255	
90 PERCENT EXCEEDS	227		218		65	

a Discharge, in acre-feet, through Spaulding No. 3 Powerplant, provided by Pacific Gas & Electric Co.

11416500 CANYON CREEK BELOW BOWMAN LAKE, CA

LOCATION.—Lat 39°26'23", long 120°39'37", in NE 1/4 SE 1/4 sec.7, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on left bank 1 mi downstream from Bowman Dam, 3.5 mi upstream from Texas Creek, and 8.8 mi south of Sierra City.

DRAINAGE AREA.—28.3 mi².

PERIOD OF RECORD.—January 1927 to current year.

REVISED RECORDS.—WSP 1315-A: 1930(M). WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 5,300 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Bowman Lake (station 11415500), several smaller reservoirs, and diversion into Bowman–Spaulding Canal (station 11416000). See schematic diagram of Yuba River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, about 5,500 ft³/s, Jan. 2, 1997, gage height, 13.01 ft, from floodmarks (backwater from debris), from rating curve extended above 1,500 ft³/s, on basis of computation of flow over Bowman Dam; no flow at times 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	4.9	5.0	7.8	5.3	5.3	13	50	121	173	4.2	5.6	5.7
2	4.8	5.0	7.9	5.3	5.3	7.9	58	124	174	4.0	5.6	5.6
3	4.9	5.0	16	5.3	5.4	12	58	144	169	4.1	5.6	5.5
4	4.9	5.0	7.2	5.3	5.5	7.2	58	150	161	4.1	5.7	5.4
5	4.9	5.1	6.2	5.2	5.4	6.3	58	142	142	4.1	5.5	5.4
6	4.8	5.2	5.8	5.2	5.4	6.0	49	141	142	4.1	5.5	5.3
7	4.9	5.8	5.5	5.0	16	5.8	43	151	120	4.1	5.6	5.2
8	4.8	5.5	5.5	4.9	11	5.8	43	185	103	4.1	5.5	5.3
9	4.8	5.2	5.4	4.8	19	6.2	43	190	104	4.1	5.5	5.3
10	4.8	5.1	5.4	4.8	7.2	5.6	43	124	105	3.7	5.6	5.5
11	4.7	5.2	5.4	4.8	6.5	50	43	20	103	5.8	5.5	5.3
12	4.7	5.1	5.5	5.1	6.1	87	44	20	94	7.2	5.5	4.8
13	4.7	5.1	5.7	5.3	5.8	89	43	18	93	7.3	5.4	4.8
14	4.7	5.1	5.8	5.3	5.8	90	53	16	93	7.2	5.4	5.4
15	4.7	5.1	5.9	6.2	5.6	92	64	16	44	8.4	5.4	5.0
16	4.6	5.1	6.6	7.9	7.3	93	93	16	10	10	5.4	5.0
17	4.6	6.2	6.4	8.7	14	95	117	19	5.4	7.6	5.4	5.2
18	4.6	5.6	5.9	15	8.6	97	124	24	4.3	6.9	5.4	5.2
19	4.7	5.2	5.7	17	7.3	99	126	27	4.4	7.8	5.4	5.0
20	4.8	5.0	5.7	21	6.4	101	138	27	4.4	7.3	5.3	4.8
21	11	5.6	5.5	8.2	6.5	102	169	84	4.4	6.4	5.3	4.7
22	4.9	8.3	5.4	7.0	5.9	103	169	169	4.4	6.0	5.4	4.5
23	4.8	13	5.3	12	5.8	105	146	169	4.4	10	5.3	4.3
24	5.0	8.0	5.2	6.9	5.8	108	130	185	4.3	7.3	5.3	4.4
25	4.7	6.0	5.2	6.2	5.9	72	131	200	4.3	5.3	5.4	4.4
26	4.6	5.5	5.2	5.9	5.7	51	168	195	4.3	5.4	5.4	4.4
27	4.5	6.7	5.3	5.7	5.8	52	199	193	4.3	5.5	5.5	4.3
28	4.6	6.8	5.3	5.6	12	52	176	188	4.3	5.8	5.5	4.4
29	4.9	8.4	5.3	5.5	---	52	157	179	4.2	5.7	5.5	4.5
30	4.8	19	5.3	5.4	---	53	129	175	4.2	5.7	5.5	4.5
31	4.8	---	5.4	5.4	---	54	---	173	---	5.6	5.6	---
TOTAL	153.9	191.9	189.7	221.2	212.3	1772.8	2922	3585	1891.6	184.8	169.5	149.1
MEAN	4.96	6.40	6.12	7.14	7.58	57.2	97.4	116	63.1	5.96	5.47	4.97
MAX	11	19	16	21	19	108	199	200	174	10	5.7	5.7
MIN	4.5	5.0	5.2	4.8	5.3	5.6	43	16	4.2	3.7	5.3	4.3
AC-FT	305	381	376	439	421	3520	5800	7110	3750	367	336	296
a	17410	14670	12830	10680	10120	12870	13360	11680	13470	8280	17950	16490

a Diversion, in acre-feet, to Bowman–Spaulding Canal, provided by Nevada Irrigation District.

11416500 CANYON CREEK BELOW BOWMAN LAKE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1999, BY WATER YEAR (WY)

MEAN	3.04	6.25	17.3	23.3	18.1	28.2	43.9	126	146	14.1	2.67	2.54
MAX	24.1	195	360	453	198	629	325	773	542	314	37.3	17.0
(WY)	1973	1984	1965	1997	1965	1986	1940	1963	1952	1952	1952	1952
MIN	.13	.19	.20	.20	.50	.58	.46	.43	.30	.029	.000	.000
(WY)	1935	1940	1937	1937	1933	1935	1934	1947	1977	1935	1934	1963

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1927 - 1999	
ANNUAL TOTAL	29429.6		11643.8			
ANNUAL MEAN	80.6		31.9		35.5	
HIGHEST ANNUAL MEAN					165	1965
LOWEST ANNUAL MEAN					.81	1931
HIGHEST DAILY MEAN	1160	Jun 14	200	May 25	5520	Jan 2 1997
LOWEST DAILY MEAN	4.5	Oct 27	3.7	Jul 10	.00	Apr 16 1934
ANNUAL SEVEN-DAY MINIMUM	4.7	Oct 12	4.0	Jul 4	.00	Apr 16 1934
INSTANTANEOUS PEAK FLOW			233	Apr 26	5500	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.16	Apr 26	13.01	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	58370		23100		25750	
ANNUAL DIVERSION (AC-FT) a	163800		159800			
10 PERCENT EXCEEDS	220		124		67	
50 PERCENT EXCEEDS	7.2		5.7		3.1	
90 PERCENT EXCEEDS	4.9		4.6		.30	

a Diversion, in acre-feet, to Bowman-Spaulding Canal, provided by Nevada Irrigation District.

11416610 TEXAS CREEK BELOW LOWER ROCK LAKE, NEAR GRANITEVILLE, CA

LOCATION.—Lat 39°25'42", long 120°37'19", in SW 1/4 NW 1/4 sec.15, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 200 ft downstream from outlet structure on Lower Rock Lake Dam and 6.4 mi east of Graniteville.

DRAINAGE AREA.—0.36 mi².

PERIOD OF RECORD.—October 1995 to current year (low-flow records only). Unpublished records for water years 1974 and 1979–95 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 6,615 ft above sea level, from topographic map. August 1965 to August 1995, nonrecording gage at same site and datum.

REMARKS.—Records not computed for winter months or above 1.2 ft³/s. Flow regulated by Lower Rock Lake. See schematic diagram of Yuba 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	---	---	---	---	---	---	---	---	---	.55	.37	.34
2	---	---	---	---	---	---	---	---	---	.50	.38	.32
3	---	---	---	---	---	---	---	---	---	.50	.41	.48
4	---	---	---	---	---	---	---	---	---	.51	.41	.52
5	---	---	---	---	---	---	---	---	---	.52	.48	.57
6	---	---	---	---	---	---	---	---	---	.30	.48	.80
7	---	---	---	---	---	---	---	---	---	.30	.60	.82
8	---	---	---	---	---	---	---	---	---	.68	.79	---
9	---	---	---	---	---	---	---	---	---	.69	.61	.92
10	---	---	---	---	---	---	---	---	---	.81	.64	.86
11	---	---	---	---	---	---	---	---	---	.87	.54	.84
12	---	---	---	---	---	---	---	---	---	.61	.51	.82
13	---	---	---	---	---	---	---	---	---	.64	.45	.81
14	---	---	---	---	---	---	---	---	---	.53	.41	---
15	---	---	---	---	---	---	---	---	---	.22	.39	---
16	---	---	---	---	---	---	---	---	---	.13	.39	---
17	---	---	---	---	---	---	---	---	---	.19	.39	---
18	---	---	---	---	---	---	---	---	---	.27	.39	---
19	---	---	---	---	---	---	---	---	---	.25	.41	---
20	---	---	---	---	---	---	---	---	---	.23	.41	---
21	---	---	---	---	---	---	---	---	---	.33	.41	---
22	---	---	---	---	---	---	---	---	---	.45	.41	---
23	---	---	---	---	---	---	---	---	---	.44	.40	---
24	---	---	---	---	---	---	---	---	---	.43	.38	---
25	---	---	---	---	---	---	---	---	---	.42	.37	---
26	---	---	---	---	---	---	---	---	1.1	.41	.41	---
27	---	---	---	---	---	---	---	---	1.1	.41	.63	---
28	---	---	---	---	---	---	---	---	.85	.40	.66	---
29	---	---	---	---	---	---	---	---	.79	.39	.75	---
30	---	---	---	---	---	---	---	---	.75	.39	.41	---
31	---	---	---	---	---	---	---	---	---	.37	.37	---
TOTAL	---	---	---	---	---	---	---	---	---	13.74	14.66	---
MEAN	---	---	---	---	---	---	---	---	---	.44	.47	---
MAX	---	---	---	---	---	---	---	---	---	.87	.79	---
MIN	---	---	---	---	---	---	---	---	---	.13	.37	---
AC-FT	---	---	---	---	---	---	---	---	---	.27	.29	---

11416620 TEXAS CREEK TRIBUTARY BELOW CULBERTSON LAKE, NEAR GRANITEVILLE, CA

LOCATION.—Lat 39°25'17", long 120°37'21", in SW 1/4 SW 1/4 sec.15, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 150 ft downstream from outlet structure on Culbertson Lake Dam, 0.15 mi upstream from Texas Creek, and 6.4 mi east of Graniteville.

DRAINAGE AREA.—0.44 mi².

PERIOD OF RECORD.—October 1988 to current year (low-flow records only). Unpublished records for water years 1965–88 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,420 ft above sea level. October 1965 to August 1988, nonrecording gage at site 10 ft downstream at different datum. August to September 1988, nonrecording gage at same site and datum.

REMARKS.—Records not computed for winter months or above 1.2 ft³/s. Low and medium flow regulated by Culbertson Lake (capacity, 953 acre-ft). See schematic diagram of Yuba 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	---	---	---	---	---	---	---	---	---	.90	.79	1.1
2	---	---	---	---	---	---	---	---	---	.89	.87	---
3	---	.78	---	---	---	---	---	---	---	.85	.85	---
4	---	---	---	---	---	---	---	---	---	.85	.85	---
5	---	---	---	---	---	---	---	---	---	.75	.83	1.1
6	---	---	---	---	---	---	---	---	---	.59	.81	.66
7	---	---	---	---	---	---	---	---	---	.73	.79	.64
8	---	---	---	---	---	---	---	---	---	.96	.79	---
9	---	---	---	---	---	---	---	---	---	.96	.79	---
10	---	---	---	---	---	---	---	---	---	.95	.79	---
11	---	---	---	---	---	---	---	---	---	.92	.87	---
12	---	---	---	---	---	---	---	---	---	.92	.92	---
13	---	---	---	---	---	---	---	---	---	.92	.92	---
14	---	---	---	---	---	---	---	---	---	.91	.91	---
15	---	---	---	---	---	---	---	---	---	.87	.89	---
16	---	---	---	---	---	---	---	---	---	.85	.89	---
17	---	---	---	---	---	---	---	---	---	.83	.89	---
18	---	---	---	---	---	---	---	---	---	.83	.89	---
19	---	---	---	---	---	---	---	---	---	.82	.89	---
20	---	---	---	---	---	---	---	---	---	.81	.86	---
21	---	---	---	---	---	---	---	---	---	.79	.86	---
22	---	---	---	---	---	---	---	---	---	.78	.89	---
23	---	---	---	---	---	---	---	---	.76	.79	.89	---
24	---	---	---	---	---	---	---	---	.71	.80	.86	---
25	---	---	---	---	---	---	---	---	.72	.81	.82	---
26	---	---	---	---	---	---	---	---	.72	.79	.82	---
27	---	---	---	---	---	---	---	---	.70	.78	.82	---
28	---	---	---	---	---	---	---	---	.68	.76	.82	---
29	---	---	---	---	---	---	---	---	.67	.76	.83	---
30	---	---	---	---	---	---	---	---	.80	.75	.82	---
31	---	---	---	---	---	---	---	---	---	.73	.81	---
TOTAL	---	---	---	---	---	---	---	---	---	25.65	26.33	---
MEAN	---	---	---	---	---	---	---	---	---	.83	.85	---
MAX	---	---	---	---	---	---	---	---	---	.96	.92	---
MIN	---	---	---	---	---	---	---	---	---	.59	.79	---
AC-FT	---	---	---	---	---	---	---	---	---	51	52	---

11416700 LINDSEY CREEK BELOW LOWER LINDSEY LAKE, NEAR GRANITEVILLE, CA

LOCATION.—Lat 39°24'43", long 120°38'35", in NE 1/4 SE 1/4 sec.20, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 10 ft downstream from outlet structure on Lower Lindsey Lake Dam and 5.5 mi east of Graniteville.

DRAINAGE AREA.—0.91 mi².

PERIOD OF RECORD.—October 1988 to current year (low-flow records only). Unpublished records for water years 1965–88 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,225 ft above sea level, from topographic map. October 1965 to July 1984, nonrecording gage at same site and different datum. July 1984 to August 1988, nonrecording gage at same site and different datum.

REMARKS.—Records not computed for winter months or above 1.2 ft³/s. Low and medium flow regulated by Lower Lindsey Lake, capacity, 293 acre-ft. Spillway flows bypass this station. See schematic diagram of Yuba 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	---	---	---	---	---	---	---	---	---	.64	.53	.82
2	---	---	---	---	---	---	---	---	---	.61	.56	.53
3	---	---	---	---	---	---	---	---	---	.49	.56	.51
4	---	---	---	---	---	---	---	---	---	.83	.56	.52
5	---	---	---	---	---	---	---	---	---	---	.53	.51
6	---	---	---	---	---	---	---	---	---	---	.49	.51
7	---	---	---	---	---	---	---	---	---	.92	.48	.51
8	---	---	---	---	---	---	---	---	---	.34	.50	.49
9	---	---	---	---	---	---	---	---	---	.45	.52	.49
10	---	---	---	---	---	---	---	---	---	.46	.51	.48
11	---	---	---	---	---	---	---	---	---	.51	.51	.27
12	---	---	---	---	---	---	---	---	---	.59	.51	.27
13	---	---	---	---	---	---	---	---	---	.49	.52	.20
14	---	---	---	---	---	---	---	---	---	.53	.56	.98
15	---	---	---	---	---	---	---	---	---	.54	.56	---
16	---	---	---	---	---	---	---	---	---	.50	.56	---
17	---	---	---	---	---	---	---	---	---	.52	.51	---
18	---	---	---	---	---	---	---	---	---	.57	.48	---
19	---	---	---	---	---	---	---	---	---	.58	.43	---
20	---	---	---	---	---	---	---	---	---	.56	.56	---
21	---	---	---	---	---	---	---	---	---	.56	.92	---
22	---	---	---	---	---	---	---	---	.57	.56	.89	---
23	---	---	---	---	---	---	---	---	.41	.56	.87	---
24	---	---	---	---	---	---	---	---	.55	.56	.85	---
25	---	---	---	---	---	---	---	---	.51	.56	.71	---
26	---	---	---	---	---	---	---	---	.47	.56	.56	---
27	---	---	---	---	---	---	---	---	.46	.56	.54	---
28	---	---	---	---	---	---	---	---	.74	.56	.89	---
29	---	---	---	---	---	---	---	---	.89	.55	1.2	---
30	e1.0	---	---	---	---	---	---	---	.67	.55	1.1	---
31	---	---	---	---	---	---	---	---	---	.53	1.1	---
TOTAL	---	---	---	---	---	---	---	---	---	---	20.07	---
MEAN	---	---	---	---	---	---	---	---	---	---	.65	---
MAX	---	---	---	---	---	---	---	---	---	---	1.2	---
MIN	---	---	---	---	---	---	---	---	---	---	.43	---
AC-FT	---	---	---	---	---	---	---	---	---	---	40	---

e Estimated.

11417500 SOUTH YUBA RIVER AT JONES BAR, NEAR GRASS VALLEY, CA

LOCATION.—Lat 39°17'32", long 121°06'13", in NW 1/4 SE 1/4 sec.32, T.17 N., R.8 E., Nevada County, Hydrologic Unit 18020125, on left bank at Jones Bar, 100 ft upstream from Rush Creek, 0.9 mi downstream from bridge on State Highway 49, and 5 mi northwest of Grass Valley.

DRAINAGE AREA.—308 mi².

PERIOD OF RECORD.—October 1940 to September 1948, April 1959 to current year. Published as South Fork Yuba River at Jones Bar 1940–48, and as South Yuba River at Jones Bar 1959–63. Yearly discharge for the 1947 water year published in WSP 1315-A.

SEDIMENT DATA: Water years 1966–74.

WATER TEMPERATURE: Water years 1965–79 (daily records).

REVISED RECORDS.—WSP 1315-A: 1942–43(M), drainage area at former site. WSP 1931: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 1,060 ft above sea level, from river-profile map. Oct. 1, 1940, to Sept. 30, 1948, at site 150 ft upstream at datum 2.00 ft higher.

REMARKS.—Records fair. Flow regulated by Lake Spaulding, Fordyce Lake, and Bowman Lake (stations 11414140, 11414090, and 11415500) and many smaller reservoirs. Diversions into and out of basin for several powerplants and for irrigation. See schematic diagram of Yuba River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 53,600 ft³/s, Dec. 22, 1964, gage height, 25.0 ft, from floodmarks, from rating curve extended above 23,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 1.0 ft³/s, Sept. 10–13, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Dec. 23, 1955, reached a stage of 30.7 ft, from floodmarks, present datum, at site 100 ft upstream.

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	69	76	1270	133	397	2170	452	528	2150	96	63	55
2	67	78	548	127	359	1450	406	554	1630	93	62	55
3	67	70	1610	123	340	1890	418	705	1150	91	62	56
4	67	68	981	120	330	1440	411	661	733	90	61	55
5	66	69	531	118	318	1170	443	584	698	90	60	54
6	64	71	408	116	411	1020	437	574	534	89	61	53
7	63	130	320	115	2740	902	418	581	619	87	63	53
8	62	162	295	112	2710	851	583	582	595	80	64	52
9	62	98	278	107	6750	1010	527	577	597	72	63	52
10	62	84	247	103	2690	810	476	557	597	71	64	52
11	62	109	229	102	1670	734	581	514	602	76	68	52
12	63	98	220	101	1260	797	604	530	670	83	64	52
13	64	89	222	100	1030	766	613	561	923	103	61	50
14	64	86	258	99	888	754	670	590	1220	104	60	50
15	62	84	229	112	771	713	691	556	1580	99	59	50
16	60	83	226	262	940	681	676	541	1550	96	59	50
17	59	122	230	279	2560	663	709	535	1170	100	59	50
18	59	160	215	1390	1690	647	719	531	857	94	58	50
19	58	113	200	2100	1560	640	711	529	841	91	58	54
20	57	100	195	4060	1270	653	710	534	802	89	57	58
21	57	94	174	2080	1500	634	714	535	748	75	56	58
22	66	252	165	1090	1130	603	677	568	751	73	56	57
23	62	409	155	2710	1020	590	635	603	791	70	55	57
24	67	902	153	1450	939	583	602	638	734	72	54	57
25	104	293	149	975	1390	612	598	644	663	73	54	59
26	78	204	148	775	1080	512	646	651	515	62	54	63
27	69	277	144	625	948	506	719	791	246	61	57	57
28	68	368	140	532	1090	486	624	1630	201	59	57	57
29	105	307	137	469	---	459	582	2140	147	58	55	55
30	71	2070	133	423	---	468	530	2190	102	57	54	55
31	68	---	134	439	---	502	---	2260	---	58	54	---
TOTAL	2072	7126	10344	21347	39781	25716	17582	23974	24416	2512	1832	1628
MEAN	66.8	238	334	689	1421	830	586	773	814	81.0	59.1	54.3
MAX	105	2070	1610	4060	6750	2170	719	2260	2150	104	68	63
MIN	57	68	133	99	318	459	406	514	102	57	54	50
AC-FT	4110	14130	20520	42340	78910	51010	34870	47550	48430	4980	3630	3230

SACRAMENTO RIVER BASIN

11417500 SOUTH YUBA RIVER AT JONES BAR, NEAR GRASS VALLEY, 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	80.9	204	486	794	802	775	696	903	694	126	39.5	39.4
MAX	1197	1350	3756	4865	4078	3029	2804	3323	3618	996	84.9	132
(WY)	1963	1984	1965	1997	1986	1986	1982	1963	1967	1983	1983	1965
MIN	11.7	24.2	37.4	45.0	64.0	67.2	51.1	68.3	31.8	11.6	3.05	1.42
(WY)	1945	1960	1960	1991	1977	1977	1977	1992	1977	1947	1947	1947

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1941 - 1999	
ANNUAL TOTAL	264515		178330			
ANNUAL MEAN	725		489		475	
HIGHEST ANNUAL MEAN					1135	
LOWEST ANNUAL MEAN					42.6	
HIGHEST DAILY MEAN	5640	Feb 3	6750	Feb 9	30300	Jan 1 1997
LOWEST DAILY MEAN	57	Oct 20	50	Sep 13	1.0	Sep 10 1944
ANNUAL SEVEN-DAY MINIMUM	59	Oct 15	50	Sep 12	1.0	Sep 9 1944
INSTANTANEOUS PEAK FLOW			9560		53600	Dec 22 1964
INSTANTANEOUS PEAK STAGE			13.67		25.00	Dec 22 1964
ANNUAL RUNOFF (AC-FT)	524700		353700		343900	
10 PERCENT EXCEEDS	1860		1160		1170	
50 PERCENT EXCEEDS	440		230		126	
90 PERCENT EXCEEDS	67		57		29	

11418000 YUBA RIVER BELOW ENGLEBRIGHT DAM, NEAR SMARTVILLE, CA

LOCATION.—Lat 39°14'07", long 121°16'23", in NW 1/4 NW 1/4 sec.23, T.16 N., R.6 E., Yuba County, Hydrologic Unit 18020125, on right bank 2,000 ft downstream from Englebright Dam, 0.5 mi upstream from Deer Creek, and 2.3 mi northeast of Smartville.

DRAINAGE AREA.—1,108 mi².

PERIOD OF RECORD.—October 1941 to current year. Prior to October 1953, published as "at Narrows Dam." October 1953 to September 1969, published as "at Englebright Dam." If records for Deer Creek near Smartville (station 11418500) since 1941 are added to records at this station, records equivalent to those published from 1903 to 1941 as Yuba River at Smartville (station 11419000) can be obtained.

WATER TEMPERATURE: Water years 1973–78.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder and acoustic-velocity meters. Datum of gage is 278.68 ft above sea level (levels by International Engineering Co.). Prior to Sept. 19, 1958, at site 2,000 ft upstream at datum 248.31 ft higher, and Sept. 19, 1958, to Sept. 30, 1969, at datum 278.68 ft lower. Supplementary gage 2,000 ft upstream since Oct. 1, 1969, at Englebright Dam at datum 248.31 ft higher.

REMARKS.—Diversions up to 1,800 ft³/s (see stations 11413250, 11414190, and 11414200) out of basin for power and irrigation upstream from station. Flow regulation by Lake Spaulding (station 11414140), Jackson Meadows and New Bullards Bar Reservoirs (stations 11407800 and 11413515), Englebright Reservoir beginning in 1941, capacity, 70,000 acre-ft, Bowman and Fordyce Lakes (stations 11415500 and 11414090), and many smaller reservoirs. Flow is determined by adding the discharges provided by Narrows Powerplant No. 1 (11417970), Narrows Powerplant No. 2 (11417980), and spill over Englebright Dam (11417950). See schematic diagram of Yuba 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, 171,000 ft³/s, Dec. 22, 1964, gage height, 546.14 ft, site and datum then in use, from rating curve extended above 25,000 ft³/s on basis of computation of peak flow over spillway of dam at gage heights 544.72 and 546.14 ft; no flow at times in 1942, 1949, 1956, 1958–61, 1968–69.

REVISIONS.—The maximum discharge for the water-year 1997 has been revised to 154,000 ft³/s, Jan. 2, 1997, gage height, 41.53 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	1210	1370	4240	2650	3460	8920	3090	2970	3200	2280	2510	2080
2	1210	1360	2680	2640	3560	10400	3090	2970	2950	2280	2660	1590
3	1210	1360	2620	2610	3540	10800	3100	2970	2790	2270	2770	1520
4	1210	1360	3200	2600	3540	10100	3110	3000	2790	2260	2770	1510
5	1210	1370	2570	2570	3510	9490	3100	3020	2610	2260	2780	1510
6	1210	1360	2550	2550	3490	8050	3120	2390	2480	2260	2770	1500
7	1200	1360	2530	2510	4050	7000	3140	1640	2590	2260	2760	1260
8	1200	1370	2510	2480	7210	5710	3140	2690	2680	2260	2770	1210
9	1200	1380	2530	2460	18600	4630	3370	2740	2110	2260	2770	1210
10	1210	1380	2530	2450	9440	4540	3730	2350	2510	2260	2770	1210
11	1210	1660	2550	2430	6180	4400	3900	2400	2510	2260	2770	1210
12	1210	1800	2560	2410	5220	4420	3920	2560	2520	2270	2770	1210
13	1210	1820	2550	2420	4740	4420	3950	2580	2510	2270	2740	1210
14	1220	1820	2540	2360	4530	4350	3860	2600	2500	1130	2770	1210
15	1220	1810	2540	2320	4420	4350	3660	2610	2500	2510	2760	1180
16	1210	1790	2550	2270	4430	4330	3680	2570	2420	2500	2760	1210
17	1210	1800	2550	2230	8800	4330	3740	2540	2110	2490	2760	1210
18	1210	1810	2550	2170	6120	4300	3850	2560	2520	2470	2750	1210
19	1210	1750	2570	3420	6060	4110	3710	2560	2530	2390	2760	1210
20	1210	1810	2580	9340	5250	4090	3490	2210	2510	2470	2780	1210
21	1210	1810	2660	6170	6350	4080	3230	2380	2470	2480	2780	1170
22	1210	1810	2730	4890	5180	4060	3230	2360	2480	2280	2770	1210
23	1210	1810	2740	9300	4900	4020	2970	2360	2480	2500	2770	1150
24	1210	1820	2740	5800	4760	4020	3000	1020	2480	2520	2770	1180
25	1210	1820	2720	4120	5240	3800	2990	2380	2030	2490	2770	1180
26	1310	1820	2710	3320	4990	4010	2990	2410	2110	2470	2780	1180
27	1370	1830	2690	3300	4510	3910	2990	2120	1800	2480	2780	1180
28	1370	1920	2680	3260	4720	3860	2990	3270	2260	2490	2780	1180
29	1370	2320	2660	3280	---	3860	2990	3140	2260	2480	2180	1180
30	1370	2710	2660	3340	---	3550	2970	3270	2270	2490	2090	1180
31	1370	---	2610	3270	---	3150	---	3210	---	2500	2090	---
TOTAL	38400	51210	83100	106940	156800	165060	100100	79850	73980	72590	83510	38460
MEAN	1239	1707	2681	3450	5600	5325	3337	2576	2466	2342	2694	1282
MAX	1370	2710	4240	9340	18600	10800	3950	3270	3200	2520	2780	2080
MIN	1200	1360	2510	2170	3460	3150	2970	1020	1800	1130	2090	1150
AC-FT	76170	101600	164800	212100	311000	327400	198500	158400	146700	144000	165600	76290
a	19970	18450	12780	7620	195	234	12130	44940	45680	55010	46050	13920

a Combined flow, in acre-feet, from Browns Valley Irrigation Ditch (11420750), Brophy South Canal (11420760) and Hallwood-Cordua Irrigation District Canal (11420770).

11418000 YUBA RIVER BELOW ENGLEBRIGHT DAM, NEAR SMARTVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	965	1235	2707	3613	3977	3624	3761	4021	2712	1373	1290	1008
MAX	5206	8964	18100	22350	17330	13060	11950	13330	9017	4034	3140	3144
(WY)	1963	1951	1965	1997	1986	1995	1982	1952	1983	1983	1980	1980
MIN	207	41.3	175	283	211	199	437	367	501	430	326	202
(WY)	1960	1942	1960	1977	1977	1977	1976	1977	1977	1977	1944	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1942 - 1999	
ANNUAL TOTAL	1404645		1050000			
ANNUAL MEAN	3848		2877		2517	
HIGHEST ANNUAL MEAN					5251	
LOWEST ANNUAL MEAN					414	
HIGHEST DAILY MEAN	14800	Feb 3	18600	Feb 9	134000	Jan 2 1997
LOWEST DAILY MEAN	624	Sep 17	1020	May 24	.00	Nov 8 1941
ANNUAL SEVEN-DAY MINIMUM	645	Sep 15	1180	Sep 23	.00	Nov 8 1941
INSTANTANEOUS PEAK FLOW			26700	Feb 9	171000	Dec 22 1964
INSTANTANEOUS PEAK STAGE			20.46	Feb 9	546.14	Dec 22 1964
ANNUAL RUNOFF (AC-FT)	2786000		2083000		1823000	
ANNUAL DISCHARGE (AC-FT) a	240000		277000			
10 PERCENT EXCEEDS	7640		4420		5290	
50 PERCENT EXCEEDS	3270		2550		1310	
90 PERCENT EXCEEDS	1210		1210		445	

a Combined flow, in acre-feet, from Browns Valley Irrigation Ditch (11420750), Brophy South Canal (11420760) and Hallwood-Cordua Irrigation District Canal (11420770).

11418500 DEER CREEK NEAR SMARTVILLE, CA

LOCATION.—Lat 39°13'28", long 121°16'03", in SW 1/4 SE 1/4 sec.23, T.16 N., R.6 E., Nevada County, Hydrologic Unit 18020125, on left bank 400 ft upstream from county road bridge, 0.9 mi upstream from mouth, and 2 mi northeast of Smartville.

DRAINAGE AREA.—84.6 mi².

PERIOD OF RECORD.—June 1935 to current year.

WATER TEMPERATURE: Water years 1974–79.

SEDIMENT DATA: Water years 1974–79.

REVISED RECORDS.—WSP 1395: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 630 ft above sea level, from river-profile map. June 21, 1935, to Nov. 30, 1938, nonrecording gage at same site and datum.

REMARKS.—Records good. Natural flow of stream is affected by Scotts Flat Reservoir beginning in 1949, usable capacity, 26,300 acre-ft, increased to 49,000 acre-ft in July 1964; Deer Creek Reservoir, capacity, 1,400 acre-ft beginning 1949; Lake Wildwood, capacity, 3,840 acre-ft beginning in 1970, power developments, and diversion for irrigation. At times water from South Yuba River is diverted to Deer Creek and water from Deer Creek is diverted to Bear River. See schematic diagram of Yuba River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,100 ft³/s, Feb. 17, 1986, gage height, 14.05 ft, from rating curve extended above 5,200 ft³/s; minimum daily, 0.06 ft³/s, Aug. 5, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of March 1928 reached a stage of 14.5 ft from floodmarks, discharge, 14,000 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	12	16	349	28	280	677	175	46	10	7.9	6.2	4.5
2	11	18	112	27	206	526	160	49	14	8.2	5.8	4.9
3	9.9	17	1080	27	174	755	157	69	19	8.0	5.5	5.6
4	9.5	16	334	25	172	539	151	117	20	7.8	5.4	7.7
5	8.8	17	128	24	166	459	201	114	19	8.0	5.5	8.3
6	6.5	14	116	24	251	413	225	90	15	6.3	5.1	6.9
7	8.3	26	87	24	1740	370	181	52	12	6.6	6.5	4.8
8	9.4	45	78	24	1540	359	287	69	12	8.2	7.3	4.3
9	8.1	36	76	23	3880	529	268	87	9.8	7.7	6.3	4.3
10	7.8	28	59	23	1340	362	201	66	9.8	7.5	7.0	4.3
11	7.8	42	50	23	797	317	269	51	9.9	7.3	7.8	5.9
12	8.2	34	46	22	592	291	201	43	11	5.8	8.1	6.7
13	8.2	28	47	22	483	273	169	38	10	5.3	7.9	6.5
14	8.3	24	78	22	431	261	139	33	9.7	5.2	8.8	5.6
15	8.3	23	56	26	375	250	121	31	9.5	5.4	7.1	4.9
16	7.4	19	48	71	711	237	120	29	9.5	5.4	5.6	5.0
17	6.6	11	41	90	1720	226	111	27	10	5.6	5.8	4.9
18	143	8.6	39	698	914	215	102	26	9.4	6.2	5.3	5.6
19	301	7.2	38	1340	701	197	98	25	11	5.4	5.4	5.7
20	279	6.5	37	1200	675	197	97	23	12	5.5	5.9	4.7
21	252	6.5	35	350	1270	193	89	23	11	6.8	7.0	5.2
22	215	21	35	262	587	189	78	20	12	7.5	7.6	5.2
23	103	85	33	1460	469	186	62	17	11	7.5	6.0	4.8
24	48	85	32	470	413	192	65	15	9.2	7.5	5.9	5.3
25	42	19	32	442	663	218	56	19	7.8	8.0	5.9	5.8
26	29	13	33	393	482	177	57	18	8.5	6.3	5.2	5.5
27	22	83	32	342	412	165	56	13	7.5	8.4	5.4	3.9
28	18	85	31	277	549	157	50	13	7.3	8.9	6.4	4.1
29	15	69	29	240	---	152	49	12	7.9	7.3	6.5	3.1
30	14	462	29	214	---	160	47	14	8.3	7.1	5.0	3.1
31	13	---	29	317	---	223	---	13	---	7.2	5.0	---
TOTAL	1640.1	1364.8	3249	8530	21993	9465	4042	1262	333.1	215.8	194.2	157.1
MEAN	52.9	45.5	105	275	785	305	135	40.7	11.1	6.96	6.26	5.24
MAX	301	462	1080	1460	3880	755	287	117	20	8.9	8.8	8.3
MIN	6.5	6.5	29	22	166	152	47	12	7.3	5.2	5.0	3.1
AC-FT	3250	2710	6440	16920	43620	18770	8020	2500	661	428	385	312

SACRAMENTO RIVER BASIN

11418500 DEER CREEK NEAR SMARTVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	27.6	61.9	168	308	378	326	186	72.5	21.2	6.63	5.02	5.94
MAX	373	388	960	1418	1399	1162	888	301	129	23.2	14.2	19.1
(WY)	1963	1951	1956	1997	1986	1938	1982	1995	1998	1974	1969	1980
MIN	1.07	2.25	2.89	5.25	14.5	10.5	3.91	3.58	.48	.36	.33	.27
(WY)	1989	1940	1977	1991	1991	1977	1977	1981	1977	1940	1940	1937

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1936 - 1999	
ANNUAL TOTAL	84310.2		52446.1			
ANNUAL MEAN	231		144		129	
HIGHEST ANNUAL MEAN					327	
LOWEST ANNUAL MEAN					5.48	
HIGHEST DAILY MEAN	3340	Feb 3	3880	Feb 9	10200	Feb 17 1986
LOWEST DAILY MEAN	6.5	Oct 6	3.1	Sep 29	.06	Aug 5 1977
ANNUAL SEVEN-DAY MINIMUM	7.8	Oct 11	4.4	Sep 24	.16	Aug 3 1940
INSTANTANEOUS PEAK FLOW			6190	Feb 9	12100	Feb 17 1986
INSTANTANEOUS PEAK STAGE			10.95	Feb 9	14.05	Feb 17 1986
ANNUAL RUNOFF (AC-FT)	167200		104000		93750	
10 PERCENT EXCEEDS	610		401		319	
50 PERCENT EXCEEDS	87		24		18	
90 PERCENT EXCEEDS	8.7		5.6		2.7	

11421000 YUBA RIVER NEAR MARYSVILLE, CA

LOCATION.—Lat 39°10'33", long 121°31'26", in New Helvetia Grant, Yuba County, Hydrologic Unit 18020107, on left bank 4.2 mi northeast of Marysville and 5 mi downstream from Dry Creek.

DRAINAGE AREA.—1,339 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1940 to current year (prior to October 1943, low-water periods only). Published as "at Marysville" October 1940 to September 1957. Separate records published for two sites August 1954 to September 1955. Yearly discharge for the 1945 water year published in WSP 1315-A.

REVISED RECORDS.—WSP 1715: 1956(M). WSP 1931: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 2.95 ft below sea level. Prior to August 1954 and Oct. 1, 1956, to Sept. 30, 1957, at Simpson Lane Bridge in Marysville 4.2 mi downstream at same datum. Sept. 3, 1963, to Sept. 23, 1968, auxiliary water-stage recorder at Simpson Lane Bridge at same datum.

REMARKS.—Records good. Flow regulated by New Bullards Bar Reservoir since January 1969, and several other reservoirs. Many diversions upstream from station for power and for irrigation. See schematic diagrams of Yuba and lower Sacramento River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge (water years 1944, 1947–99), 180,000 ft³/s, Dec. 22, 1964, gage height, 90.15 ft, from floodmarks, from rating curve extended above 91,000 ft³/s on basis of U.S. Army Corps of Engineers flood-routing study, maximum gage height 91.64 ft, from floodmarks, Jan. 2, 1997; minimum recorded, 10 ft³/s, July 2, 1959.

REVISIONS.—The maximum discharge for the water year 1997 has been revised to 161,000 ft³/s, Jan. 2, 1997, gage height, 91.64 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	1080	1070	4730	2560	4230	10200	3600	2460	2750	1510	1820	1720
2	1060	1050	2920	2530	4230	11800	3590	2480	2650	1520	1920	1410
3	1050	1060	3640	2510	4130	12200	3580	2510	2400	1510	2080	1200
4	1040	1060	3790	2490	4090	11400	3580	2530	2420	1510	2060	1190
5	1030	1060	2730	2470	4060	10000	3640	2510	2290	1510	2080	1200
6	1040	1080	2740	2430	4120	8860	3720	2400	2080	1510	2100	1230
7	1030	1140	2630	2410	7170	7940	3690	2210	2060	1500	2110	1110
8	961	1170	2570	2360	10300	6760	3840	2210	2030	1490	2120	1040
9	910	1170	2570	2340	e28000	5850	4320	2230	2040	1480	2120	1070
10	932	1150	2580	2320	e16400	5430	4480	2190	2020	1480	2130	1100
11	950	1340	2550	2300	8190	5150	4720	1910	1940	1500	2150	1090
12	956	1560	2530	2260	6760	5040	4660	1920	1880	1490	2170	1080
13	958	1560	2530	2270	5930	5000	4580	1930	1890	1490	2190	1090
14	978	1560	2560	2240	5560	4900	4470	1940	1880	1550	2190	1100
15	983	1570	2530	2190	5340	4860	4170	2010	1860	1740	2200	1110
16	974	1590	2520	2210	5550	4810	4100	2020	1860	1740	2220	1110
17	938	1610	2500	2270	13800	4780	4120	2050	1860	1750	2240	1120
18	956	1600	2500	3020	8230	4760	4210	2150	1870	1750	2250	1150
19	1170	1580	2500	4530	8070	4590	4080	2170	1870	1760	2260	1180
20	1170	1580	2500	12700	6550	4560	3860	2090	1870	1780	2260	1180
21	1130	1590	2540	8040	9850	4530	3590	1980	1850	1790	2270	1170
22	1100	1620	2620	5490	6910	4510	3260	1950	1840	1620	2280	1180
23	1040	1680	2620	13100	5990	4470	3000	1960	1840	1790	2280	1170
24	997	1810	2620	7760	5610	4470	2920	1990	1830	1810	2320	1150
25	973	1650	2620	5440	6410	4540	2830	1980	1570	1800	2350	1130
26	1010	1640	2620	4310	6210	4460	2800	1990	1580	1790	2350	1130
27	1130	1720	2600	4180	5500	4400	2740	2180	1590	1790	2360	1130
28	1130	1790	2590	4020	5520	4340	2600	2590	1580	1800	2390	1120
29	1120	2150	2580	3930	---	4310	2530	2620	1540	1790	1930	1100
30	1100	2730	2570	3910	---	4120	2490	2750	1500	1810	1670	1080
31	1090	---	2580	4040	---	3730	---	2750	---	1830	1690	---
TOTAL	31986	44940	84680	124630	212710	186770	109770	68660	58240	51190	66560	34840
MEAN	1032	1498	2732	4020	7597	6025	3659	2215	1941	1651	2147	1161
MAX	1170	2730	4730	13100	28000	12200	4720	2750	2750	1830	2390	1720
MIN	910	1050	2500	2190	4060	3730	2490	1910	1500	1480	1670	1040
AC-FT	63440	89140	168000	247200	421900	370500	217700	136200	115500	101500	132000	69110

e Estimated.

SACRAMENTO RIVER BASIN

11421000 YUBA RIVER NEAR MARYSVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1968, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	507	846	3323	3574	4555	3928	4965	5064	2610	514	218	240
MAX	6222	8586	18650	13160	12470	7321	10400	13750	8712	2669	551	458
(WY)	1963	1951	1965	1956	1958	1958	1952	1952	1952	1952	1967	1952
MIN	50.5	116	157	573	965	1360	2139	1264	265	30.5	35.3	47.9
(WY)	1962	1960	1960	1960	1948	1964	1961	1947	1959	1959	1959	1961

SUMMARY STATISTICS

WATER YEARS 1944 - 1968

ANNUAL MEAN	2518
HIGHEST ANNUAL MEAN	5393
LOWEST ANNUAL MEAN	882
HIGHEST DAILY MEAN	136000
LOWEST DAILY MEAN	15
ANNUAL SEVEN-DAY MINIMUM	15
INSTANTANEOUS PEAK FLOW	180000
INSTANTANEOUS PEAK STAGE	90.15
ANNUAL RUNOFF (AC-FT)	1824000
10 PERCENT EXCEEDS	6450
50 PERCENT EXCEEDS	822
90 PERCENT EXCEEDS	108

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1142	1451	2531	4509	4650	4528	2992	2368	2005	1287	1477	1348
MAX	2731	4475	11430	26180	20970	15100	14280	9721	8633	3735	2829	2900
(WY)	1976	1984	1984	1997	1986	1983	1982	1995	1983	1983	1984	1980
MIN	132	182	371	230	211	188	173	166	155	88.4	71.7	85.8
(WY)	1970	1970	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1970 - 1999

ANNUAL TOTAL	1544129	1074976	
ANNUAL MEAN	4230	2945	2514
HIGHEST ANNUAL MEAN			5818
LOWEST ANNUAL MEAN			229
HIGHEST DAILY MEAN	21400	Feb 3	28000
LOWEST DAILY MEAN	494	Sep 19	910
ANNUAL SEVEN-DAY MINIMUM	511	Sep 17	949
INSTANTANEOUS PEAK FLOW			35100
INSTANTANEOUS PEAK STAGE			74.23
ANNUAL RUNOFF (AC-FT)	3063000	2132000	1821000
10 PERCENT EXCEEDS	8180	5430	5230
50 PERCENT EXCEEDS	3180	2200	1360
90 PERCENT EXCEEDS	1050	1100	318

11421000 YUBA RIVER NEAR MARYSVILLE, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1951–52, 1973–80, 1990 to current year. Published as Yuba River at Marysville (station 11421500) during water years 1966, 1973–76.

CHEMICAL DATA: Water years 1951–52, 1973–80, 1996. Published as Yuba River at Marysville (station 11421500) water years 1966, 1973–76

WATER TEMPERATURE: Water years 1973–78, 1990 to current year.

SEDIMENT DATA: Water year 1996.

PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: November 1972 to September 1978, October 1989 to current year.

INSTRUMENTATION.—Temperature recorder November 1972 to September 1978, October 1989 to current year.

REMARKS.—Water temperatures can be affected by releases from Englebright Reservoir located approximately 13 mi upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 28.5°C, July 16, 30, 1977, Aug. 11, 1992; minimum recorded, 4.5°C, Dec. 22, 23, 29–31, 1990.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 19.5°C, June 23, 25, 28–30; minimum recorded, 7.0°C, Dec. 21, 24.

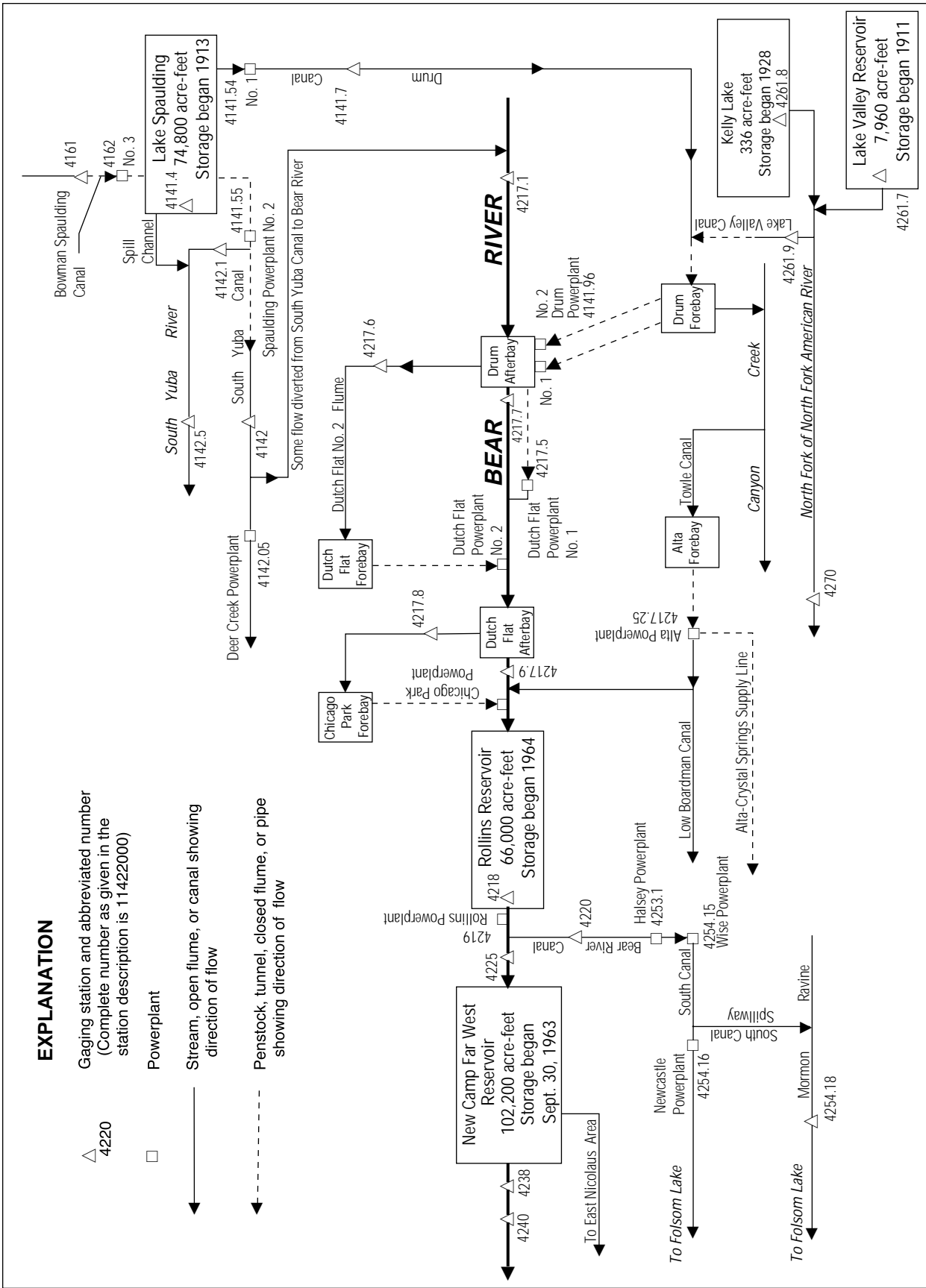
TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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

11421000 YUBA RIVER NEAR MARYSVILLE, 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	11.5	8.5	15.0	10.5	17.0	14.0	19.0	14.0	16.5	11.5	16.5	11.5
2	11.5	8.5	12.5	10.0	16.5	14.0	18.5	13.5	16.5	12.0	17.0	12.0
3	10.5	8.5	13.0	10.5	15.5	13.5	18.0	13.0	16.5	12.0	17.0	12.5
4	11.5	8.0	14.5	10.0	16.5	13.0	18.0	12.5	17.0	12.0	17.5	12.5
5	9.0	8.5	14.5	10.0	17.0	12.5	18.0	13.0	16.0	12.0	17.0	12.5
6	11.0	8.5	15.5	10.5	17.0	12.5	18.5	13.0	15.5	12.0	17.5	12.5
7	10.5	8.5	15.0	10.5	16.5	12.0	18.0	12.5	16.0	12.0	17.5	12.5
8	10.0	8.5	15.0	10.5	16.5	11.5	18.5	13.0	16.5	12.0	18.0	13.0
9	11.0	8.0	14.5	10.5	16.5	11.5	18.0	12.5	16.0	12.0	16.5	13.0
10	10.0	8.5	14.5	10.5	16.5	11.5	18.0	12.5	15.0	12.0	17.5	13.0
11	11.5	8.5	16.5	11.0	17.0	12.0	18.5	13.0	16.0	12.0	17.5	13.0
12	12.0	8.5	16.0	11.5	17.0	12.0	18.5	13.0	16.5	11.5	17.5	13.0
13	12.0	9.0	15.5	11.0	17.0	12.0	18.0	13.0	16.0	11.5	17.5	13.0
14	12.5	9.0	15.5	11.0	18.0	12.5	18.0	13.0	16.5	11.5	17.5	13.0
15	13.0	9.5	15.5	10.5	17.0	12.5	17.5	12.5	16.5	11.5	17.5	13.0
16	13.0	9.5	16.0	11.0	18.0	13.0	17.5	12.0	16.5	12.0	17.5	13.0
17	13.5	10.0	16.5	11.0	18.0	13.5	17.5	12.0	16.5	12.0	17.5	13.0
18	13.5	10.0	16.0	11.5	17.5	13.5	17.5	12.0	16.0	12.0	16.0	13.0
19	13.5	10.5	16.0	11.0	18.0	13.5	17.0	12.0	16.0	11.5	17.5	13.0
20	13.5	10.5	16.0	11.0	18.0	13.5	17.0	12.0	16.0	11.5	17.5	13.0
21	14.0	10.5	16.5	11.5	18.5	14.0	17.0	12.0	16.5	12.0	18.0	13.0
22	14.0	10.5	17.0	11.5	19.0	14.0	18.5	12.0	16.5	12.0	18.0	13.5
23	14.5	11.0	16.5	12.0	19.5	14.0	17.0	12.0	17.0	12.5	17.5	13.5
24	14.5	10.5	17.0	12.0	18.5	14.0	16.5	11.5	16.5	12.0	17.5	13.5
25	14.0	10.5	17.0	12.0	19.5	14.0	17.0	11.5	16.5	12.0	18.0	13.5
26	13.5	10.5	17.5	12.5	19.0	14.0	17.0	12.0	15.0	12.0	17.5	13.0
27	14.0	10.0	17.0	12.5	19.0	14.0	17.0	12.0	16.5	12.5	17.0	13.0
28	14.0	10.0	17.0	12.5	19.5	14.0	17.0	12.0	16.0	12.0	17.0	12.5
29	14.0	10.0	17.0	12.5	19.5	14.0	17.0	11.5	17.5	12.5	17.0	13.0
30	14.5	10.5	17.5	13.5	19.5	14.0	17.0	12.0	16.5	12.5	17.5	13.0
31	---	---	17.5	13.5	---	---	16.5	12.0	16.5	12.0	---	---
MONTH	14.5	8.0	17.5	10.0	19.5	11.5	19.0	11.5	17.5	11.5	18.0	11.5



EXPLANATION

△ 4220
 Gaging station and abbreviated number
 (Complete number as given in the
 station description is 11422000)

□
 Powerplant

→
 Stream, open flume, or canal showing
 direction of flow

- - -
 Penstock, tunnel, closed flume, or pipe
 showing direction of flow

Figure 32. Diversions and storage in Bear River Basin.

11421710 BEAR RIVER NEAR EMIGRANT GAP, CA

LOCATION.—Lat 39°18'23", long 120°40'41", in NW 1/4 SW 1/4 sec.30, T.17 N., R.12 E., Placer County, Hydrologic Unit 18020126, on left bank 20 ft upstream from Highway 20 Bridge and 0.7 mi northwest of Emigrant Gap.

DRAINAGE AREA.—0.76 mi².

PERIOD OF RECORD.—October 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 culvert. Elevation of gage is 4,550 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage at same site and datum.

REMARKS.—No records computed above 160 ft³/s. Some water is diverted into stream from South Yuba Canal (station 11414200). See schematic diagram of Bear 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	5.4	6.5	18	6.7	9.6	127	149	151	129	54	6.3	6.7
2	5.5	6.1	15	6.3	9.2	112	149	154	---	94	6.2	6.9
3	5.3	6.1	61	6.1	9.0	141	147	---	104	75	6.1	6.7
4	5.4	6.2	43	5.8	9.1	113	112	---	90	64	6.3	6.5
5	5.3	6.1	24	5.7	9.0	---	58	153	88	61	6.5	6.9
6	5.5	12	9.7	5.7	9.7	109	56	150	88	64	6.7	6.9
7	5.3	8.1	8.3	5.4	69	105	55	150	88	63	5.9	7.1
8	5.6	6.9	8.7	5.0	62	103	56	154	89	64	6.6	7.1
9	5.6	6.4	8.7	5.6	97	103	44	151	89	64	6.4	6.9
10	5.5	7.5	8.5	5.6	26	157	14	152	89	64	6.3	6.9
11	6.1	6.8	8.2	5.7	19	---	14	153	89	64	6.7	6.6
12	5.7	6.4	8.2	5.7	17	---	17	152	89	63	6.5	6.5
13	5.4	6.1	8.7	5.4	15	---	50	150	88	63	6.2	6.5
14	5.5	6.1	8.7	6.0	15	---	123	148	87	63	6.3	6.5
15	5.7	6.1	9.4	8.9	14	---	124	148	85	38	6.3	6.5
16	6.1	9.5	10	12	52	---	124	148	85	8.3	6.5	6.5
17	6.3	9.2	9.7	15	142	---	122	146	84	7.1	7.4	6.5
18	5.9	6.9	8.8	43	133	---	139	143	68	6.9	6.8	5.9
19	6.0	6.5	8.3	57	116	---	---	141	49	6.7	6.4	6.8
20	6.1	6.0	8.1	76	105	---	---	142	45	6.5	6.2	12
21	6.1	11	7.9	29	104	---	---	142	44	6.6	6.4	13
22	6.1	7.5	7.5	27	101	158	---	142	43	6.5	6.3	13
23	6.1	23	7.1	79	101	157	---	141	43	6.6	6.1	13
24	8.1	11	6.9	25	101	156	---	141	42	6.9	6.1	13
25	7.2	7.7	6.9	17	104	153	---	141	43	7.1	6.3	13
26	6.3	6.6	6.9	15	98	153	---	130	43	7.0	6.1	13
27	6.1	10	6.9	13	98	153	---	137	43	6.7	6.6	13
28	6.1	10	6.9	12	107	152	---	133	24	6.3	6.7	13
29	6.1	24	6.6	12	---	151	---	132	6.4	6.2	6.5	11
30	6.0	38	6.5	11	---	152	156	131	6.5	6.6	7.0	24
31	5.7	---	6.6	11	---	151	---	131	---	6.6	6.9	---
TOTAL	183.1	290.3	369.7	543.6	1751.6	---	---	---	---	1066.6	199.6	277.9
MEAN	5.91	9.68	11.9	17.5	62.6	---	---	---	---	34.4	6.44	9.26
MAX	8.1	38	61	79	142	---	---	---	---	94	7.4	24
MIN	5.3	6.0	6.5	5.0	9.0	---	---	---	---	6.2	5.9	5.9
AC-FT	363	576	733	1080	3470	---	---	---	---	2120	396	551

11421770 BEAR RIVER BELOW DRUM AFTERBAY, NEAR BLUE CANYON, CA

LOCATION.—Lat 39°15'16", long 120°46'26", in SW 1/4 NW 1/4 sec.17, T.16 N., R.11 E., Placer County, Hydrologic Unit 18020126, on left bank 60 ft downstream from Drum Afterbay Dam and 3.5 mi west of Blue Canyon.

DRAINAGE AREA.—12.3 mi².

PERIOD OF RECORD.—April 1966 to current year, low flows only April to September 1966 and since October 1998.

GAGE.—Water-stage recorder and 4-ft steel Cipolletti weir set in a concrete broad-crested weir. Elevation of gage is 3,300 ft above sea level, from topographic map. April 1966 to May 25, 1967, water-stage recorder at present site at different datum. May 26, 1967, to Feb. 11, 1968, water-stage recorder at site 1,000 ft downstream at different datum.

REMARKS.—Records not computed above 13.5 ft³/sec. Water for Dutch Flat No. 1 Powerplant (station 11421750) and Dutch Flat No. 2 Flume (station 11421760) is diverted from Drum Afterbay just upstream from station. See schematic diagram of Bear 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	5.7	6.2	6.3	6.5	---	---	12	12	12	12	11	---
2	6.0	6.3	6.2	6.4	---	12	12	12	12	12	---	---
3	5.7	5.8	6.7	6.5	---	12	12	12	12	12	---	---
4	5.7	5.9	6.2	6.2	6.4	---	12	12	12	12	---	11
5	5.7	6.2	6.1	6.4	---	---	12	12	12	12	---	11
6	5.7	6.3	6.2	6.1	---	12	12	12	12	12	---	11
7	5.7	6.4	6.1	6.2	---	12	12	12	12	13	13	---
8	5.7	6.2	6.3	6.3	---	12	12	12	12	12	11	---
9	5.7	6.0	6.4	6.1	---	12	12	12	12	12	---	11
10	5.8	5.9	6.3	6.4	---	---	12	12	12	12	---	11
11	6.1	6.3	6.2	6.4	6.9	---	12	12	12	12	---	11
12	6.2	6.0	6.3	6.6	6.5	---	12	---	12	12	---	11
13	5.8	6.5	6.3	6.3	6.1	12	12	12	12	12	---	11
14	6.0	6.4	5.9	6.0	6.4	---	---	12	12	12	11	11
15	6.3	6.0	6.4	6.0	6.3	12	---	12	12	12	10	11
16	6.3	5.9	6.4	6.0	6.8	12	12	12	12	12	---	11
17	5.9	6.2	6.6	6.0	6.8	12	12	12	12	13	---	11
18	6.3	6.3	6.5	6.2	6.7	---	12	12	12	12	---	11
19	6.2	6.0	6.2	6.1	6.2	12	---	12	12	12	---	11
20	6.0	6.0	6.5	6.2	6.3	12	12	12	12	13	---	11
21	6.1	6.3	6.4	6.1	6.1	---	12	12	12	11	11	11
22	6.2	6.0	6.2	6.4	---	12	---	12	12	11	10	11
23	6.0	6.5	6.1	---	---	---	12	---	12	11	---	11
24	6.2	6.1	6.0	6.0	---	12	---	12	12	11	---	11
25	6.2	6.4	6.4	6.6	---	12	12	12	12	11	---	11
26	6.2	6.1	6.6	6.7	---	12	---	12	12	11	---	11
27	6.4	6.4	6.6	6.2	8.8	12	12	12	12	11	---	11
28	6.3	6.5	6.5	6.5	12	12	12	12	12	11	11	11
29	6.0	6.7	6.6	6.6	---	12	12	12	12	11	11	---
30	6.6	6.1	6.5	6.5	---	12	12	12	12	11	---	---
31	6.3	---	6.6	6.6	---	12	---	12	---	11	---	---
TOTAL	187.0	185.9	196.6	---	---	---	---	---	360	364	---	---
MEAN	6.03	6.20	6.34	---	---	---	---	---	12.0	11.7	---	---
MAX	6.6	6.7	6.7	---	---	---	---	---	12	13	---	---
MIN	5.7	5.8	5.9	---	---	---	---	---	12	11	---	---
AC-FT	371	369	390	---	---	---	---	---	714	722	---	---
a	22050	19980	26440	24050	24590	31970	30470	32880	27450	22060	251	6180
b	10330	10560	18920	17740	16530	27330	24370	25920	22640	23300	32500	13130

CAL YR 1998 a 358400 b 185700

WTR YR 1999 a 268400 b 243300

a Diversion, in acre-feet, to Dutch Flat No. 2 Flume, provided by Nevada Irrigation District.

b Diversion, in acre-feet, to Dutch Flat No. 1 Powerplant, provided by Pacific Gas & Electric Co.

LOCATION.—Lat 39°12'55", long 120°50'23", in NE 1/4 NW 1/4 sec.34, T.16 N., R.10 E., Placer County, Hydrologic Unit 18020126, at left bank downstream end of spillway on Dutch Flat Afterbay Dam, 0.6 mi north of Dutch Flat.

DRAINAGE AREA.—21.5 mi².

PERIOD OF RECORD.—December 1965 to current year.

REVISED RECORDS.—WDR CA-82-4: 1978, 1979(M), 1980.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 2,600 ft above sea level, from topographic map.

REMARKS.—Water is imported from South Yuba River Basin via Drum Canal above forebay. Chicago Park Flume (station 11421780) diverts upstream from station to Chicago Park Powerplant. Records include spill over Dutch Flat Afterbay Dam. See schematic diagram of Bear River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 4,240 ft³/s, Feb. 17, 1986; minimum daily, 0.08 ft³/s, Mar. 8–19, 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	11	9.4	8.1	8.0	8.0	39	23	11	11	11	11	11
2	11	8.2	8.2	8.0	7.9	129	55	11	11	11	11	11
3	11	8.1	8.4	7.8	58	241	9.8	44	11	11	11	11
4	11	8.0	8.1	7.8	7.9	79	30	54	11	11	11	11
5	11	8.0	8.1	7.8	7.9	12	8.7	37	11	11	11	11
6	11	8.1	8.1	7.8	8.0	50	8.4	14	11	11	11	11
7	11	8.1	8.0	7.8	332	15	8.4	11	11	11	11	11
8	11	8.1	8.0	7.9	249	10	8.5	11	11	11	11	11
9	11	7.9	7.9	8.0	763	8.5	8.5	11	11	11	11	11
10	11	8.1	8.0	8.0	14	8.3	8.4	11	11	11	11	11
11	11	8.0	8.0	8.0	8.0	24	8.4	11	11	11	11	11
12	11	8.0	8.1	8.0	8.1	61	8.4	11	11	11	11	11
13	11	8.0	8.1	8.0	8.1	59	8.5	11	11	11	11	11
14	11	8.0	8.0	8.0	8.0	71	8.5	11	11	11	11	11
15	11	8.4	8.0	7.9	8.0	77	40	11	11	11	11	11
16	11	8.1	8.0	8.0	8.1	59	12	11	11	11	11	11
17	11	8.0	8.0	8.1	286	64	8.5	11	11	11	11	11
18	11	8.1	8.1	8.2	101	28	8.5	11	11	11	11	11
19	11	8.1	8.0	9.0	68	115	45	11	11	11	11	21
20	11	8.0	8.0	339	35	39	120	11	11	11	11	40
21	11	8.0	8.0	28	14	73	71	11	11	11	11	52
22	11	8.0	7.9	7.9	8.0	93	125	11	11	11	11	39
23	11	8.0	8.0	117	8.0	36	64	11	11	11	11	31
24	11	8.0	8.0	13	8.0	113	44	11	11	11	11	31
25	11	8.0	8.2	8.0	8.1	63	57	11	11	11	11	31
26	11	8.0	8.3	8.0	8.1	33	86	11	11	11	11	30
27	11	8.0	8.0	8.0	8.1	68	26	11	11	11	11	30
28	11	8.2	8.0	7.8	8.1	59	49	11	11	11	11	17
29	11	8.2	7.8	7.8	---	46	50	11	11	11	11	12
30	11	8.2	8.0	8.0	---	36	14	11	11	11	11	12
31	11	---	8.0	8.0	---	55	---	11	---	11	11	---
TOTAL	341	243.3	249.4	712.6	2064.4	1863.8	1022.5	446	330	341	341	544
MEAN	11.0	8.11	8.05	23.0	73.7	60.1	34.1	14.4	11.0	11.0	11.0	18.1
MAX	11	9.4	8.4	339	763	241	125	54	11	11	11	52
MIN	11	7.9	7.8	7.8	7.9	8.3	8.4	11	11	11	11	11
AC-FT	676	483	495	1410	4090	3700	2030	885	655	676	676	1080
a	33790	32510	48030	46170	53290	62340	57160	60290	52900	49710	42390	22870

a Diversion, in acre-feet, to Chicago Park Flume.

11421790 BEAR RIVER BELOW DUTCH FLAT AFTERBAY, NEAR DUTCH FLAT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

MEAN	18.9	11.9	43.9	53.1	58.3	63.5	61.3	25.1	12.9	10.9	10.6	14.3
MAX	266	71.1	350	531	380	395	602	142	63.5	22.0	13.1	21.3
(WY)	1968	1984	1997	1997	1986	1966	1969	1998	1998	1970	1969	1983
MIN	4.81	2.65	2.42	4.94	4.10	4.26	3.94	5.30	5.13	5.00	5.00	5.00
(WY)	1978	1968	1968	1975	1974	1973	1973	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1966 - 1999	
ANNUAL TOTAL	13144.0		8499.0			
ANNUAL MEAN	36.0		23.3		28.8	
HIGHEST ANNUAL MEAN					80.1 1982	
LOWEST ANNUAL MEAN					5.53 1977	
HIGHEST DAILY MEAN	441	Jun 22	763	Feb 9	3400	Feb 17 1986
LOWEST DAILY MEAN	7.3	Apr 8	7.8	Dec 29	.08	Mar 8 1968
ANNUAL SEVEN-DAY MINIMUM	7.3	Apr 8	7.8	Jan 2	.08	Mar 8 1968
INSTANTANEOUS PEAK FLOW			1360	Feb 9	4240	Feb 17 1986
ANNUAL RUNOFF (AC-FT)	26070		16860		20890	
ANNUAL DIVERSION (AC-FT) a	579500		561400			
10 PERCENT EXCEEDS	127		50		29	
50 PERCENT EXCEEDS	11		11		9.6	
90 PERCENT EXCEEDS	7.8		8.0		5.0	

a Diversion, in acre-feet, to Chicago Park Flume.

11421800 ROLLINS RESERVOIR NEAR COLFAX, CA

LOCATION.—Lat 39°08'08", long 120°56'57", in NE 1/4 SE 1/4 sec.22, T.15 N., R.9 E., Placer County, Hydrologic Unit 18020126, on left bank 300 ft upstream from Rollins Dam on Bear River and 2.3 mi north of Colfax.

DRAINAGE AREA.—104 mi².

PERIOD OF RECORD.—December 1964 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Nevada Irrigation District).

REMARKS.—Reservoir is formed by an earthfill dam. Storage began Dec. 15, 1964. Usable capacity, 66,000 acre-ft between elevations 1,970.0 ft, invert of outlet tunnel, and 2,171.0 ft, spillway crest. Dead storage, 270 acre-ft. Several diversions into and out of basin upstream for power development and irrigation. Water is normally released through Rollins Powerplant (station 11421900). Part of the water then is diverted to Bear River Canal (station 11422000) for power development. Water is later used for irrigation. See schematic diagram of Bear River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 71,700 acre-ft, Feb. 17, 1986, elevation, 2,177.7 ft; minimum since reservoir first filled, 4,250 acre-ft, Oct. 10, 1977, elevation, 2,022.5 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 68,200 acre-ft, Feb. 9, elevation, 2,173.58 ft; minimum, 39,900 acre-ft, Oct. 18, elevation, 2,133.38 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Nevada Irrigation District in 1964)

2,020	3,920	2,050	8,940	2,100	23,900	2,160	57,300
2,030	5,320	2,060	11,200	2,120	32,700	2,178	72,000
2,040	6,990	2,080	16,800	2,140	43,800		

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	44700	42200	57500	63700	66500	67100	66800	66600	66600	66100	62400	65000
2	44700	43100	57800	63900	66500	67000	66800	66600	66500	66400	62500	65000
3	44700	44500	59600	64000	66000	67300	66800	66800	66500	66100	63000	65100
4	44600	45500	60800	64000	66300	67100	66800	66700	66600	66300	63600	64900
5	44600	46600	61100	63900	66200	67000	66800	66700	66500	66300	64100	64700
6	44600	47400	61300	63900	66300	66900	66800	66600	66500	66300	64700	64300
7	44600	47900	61200	63600	67900	66800	66700	66600	66600	66200	64800	64400
8	44600	48500	61300	63200	68100	66900	66900	66600	66500	66400	64600	64400
9	44500	48800	61600	62200	68200	66900	66800	66600	66500	66400	64700	64300
10	43000	49100	61800	61200	67300	66800	66800	66600	66600	66300	64700	64300
11	41900	49500	61900	61100	67100	66900	66800	66600	66500	66300	64800	64100
12	41700	49900	62000	61400	67000	66900	66900	66600	66500	66300	64900	63700
13	41700	50300	62400	61900	66900	66800	66800	66600	66500	66300	65100	63800
14	41800	50500	62800	62300	66900	66800	66800	66500	66500	66200	64900	63900
15	41600	50700	62800	62800	66800	66800	66900	66600	66500	66300	64800	63900
16	41600	51500	62800	62900	67100	66800	66900	66600	66600	66300	65000	64000
17	40400	51800	63000	63100	67400	66800	66800	66600	66500	65400	65000	64200
18	39900	52400	63100	65700	67300	66800	66800	66600	66400	65400	65200	63700
19	40200	53000	63300	67300	67100	66900	66800	66600	66500	65400	65300	62600
20	40500	53000	63300	67800	67100	66800	66900	66600	66400	65400	65400	61600
21	40900	52900	e63200	67000	67100	66800	66900	66600	66500	65300	65200	60600
22	41100	53200	e63300	66900	67000	66800	66700	66600	66400	65100	65200	59500
23	41500	53400	63500	67500	67000	66800	66700	66600	66400	65000	65200	58500
24	41500	53600	63700	67000	66900	66900	66600	66600	66400	65000	65400	57400
25	41400	53600	63600	66800	67000	66800	66700	66600	66300	64900	65500	56400
26	41600	53400	63700	66700	66900	66800	66700	66600	66300	64800	65400	55300
27	41600	53400	63700	66700	66900	66800	66600	66600	66300	65000	65400	54200
28	41600	53400	63700	66600	67100	66800	66600	66600	66300	64600	65200	53100
29	42000	53500	63900	66600	---	66800	66600	66600	66300	64100	65000	52000
30	42100	56200	63800	66600	---	66800	66600	66600	66300	63200	64800	50600
31	42200	---	63700	66700	---	66800	---	66600	---	62600	65000	---
MAX	44700	56200	63900	67800	68200	67300	66900	66800	66600	66400	65500	65100
MIN	39900	42200	57500	61100	66000	66800	66600	66500	66300	62600	62400	50600
a	2137.29	2158.48	2168.19	2171.78	2172.30	2172.01	2171.72	2171.73	2171.34	2166.83	2169.82	2150.55
b	-2500	+14000	+7500	+3000	+400	-300	-200	0	-300	-3700	+2400	-14400
c	38300	25420	55060	55240	56920	63970	66380	64820	62400	63940	41320	39250
CAL YR 1998	MAX 67800	MIN 39900	b +18100	c 606300								
WTR YR 1999	MAX 68200	MIN 39900	b +5900	c 633000								

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Discharge, in acre-feet, through Rollins Powerplant, provided by Pacific Gas & Electric Co.

11422000 BEAR RIVER CANAL INTAKE NEAR COLFAX, CA

LOCATION.—Lat 39°07'58", long 120°57'12", in SW 1/4 SE 1/4 sec.22, T.15 N., R.9 E., Placer County, Hydrologic Unit 18020126, on right bank 400 ft downstream from canal inlet, 0.2 mi downstream from Rollins Dam, and 2.2 mi north of Colfax.

PERIOD OF RECORD.—January 1912 to September 1953, October 1964 to current year. Monthly discharge only for some periods published in WSP 1315-A. Prior to October 1912, published as Pacific Gas & Electric Co.'s Canal near Colfax; October 1912 to September 1953, published as Bear River Canal near Colfax.

GAGE.—Water-stage recorder. Elevation of gage is 1,950 ft above sea level, from topographic map. Prior to Mar. 25, 1946, water-stage recorder at site 1.5 mi downstream at different datum.

REMARKS.—Canal diverts from left bank of Bear River. Water is used to develop power at Halsey and Wise Powerplants (stations 11425310 and 11425415). Part of the water is distributed for irrigation, and the remainder is eventually spilled into North Fork American River. Capacity of canal is believed to have been increased in 1917 and 1931. See schematic diagram of Bear River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 531 ft³/s, Oct. 5, 6, 1980; 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	442	181	340	429	442	431	444	433	430	422	423	432
2	443	8.4	340	430	441	427	443	433	429	432	424	432
3	444	6.9	340	430	441	395	443	430	428	441	423	432
4	445	4.4	367	438	439	392	442	432	429	440	423	433
5	446	4.4	383	442	427	391	424	432	428	437	423	433
6	448	4.4	383	442	366	394	406	432	428	439	424	433
7	449	3.0	383	440	338	396	406	433	428	439	424	433
8	450	.00	382	443	352	396	401	433	428	439	424	431
9	451	.00	382	444	338	395	406	433	425	439	425	433
10	452	.00	382	444	377	395	406	433	428	440	425	433
11	454	.00	382	443	435	394	406	433	428	439	425	434
12	455	.00	381	442	447	418	424	433	427	439	425	434
13	456	.00	381	441	444	422	432	432	427	439	426	434
14	458	.00	381	441	444	422	432	433	427	439	426	434
15	459	.00	379	431	442	423	432	433	428	439	426	435
16	460	211	378	350	299	427	431	432	427	439	427	435
17	434	332	378	368	299	427	431	432	427	432	427	434
18	65	358	378	376	299	433	429	432	427	425	427	434
19	62	289	377	374	358	428	428	432	426	425	427	434
20	63	402	377	375	383	412	428	432	426	425	428	434
21	64	402	377	375	339	424	428	431	426	424	428	434
22	66	402	377	375	410	429	428	431	426	423	428	435
23	67	390	376	375	429	438	429	430	426	423	429	435
24	142	365	376	375	412	438	434	431	426	423	430	435
25	173	385	377	376	415	437	430	431	425	423	430	435
26	174	397	376	418	441	437	430	430	425	423	431	435
27	174	397	376	445	445	436	430	430	424	423	431	435
28	175	396	401	445	445	436	430	430	424	423	432	435
29	177	396	427	445	---	441	431	430	423	423	432	435
30	178	360	428	435	---	445	432	429	423	424	432	436
31	179	---	428	433	---	444	---	429	---	424	433	---
TOTAL	9405	5694.50	11793	12920	11147	13023	12796	13380	12799	13365	13238	13017
MEAN	303	190	380	417	398	420	427	432	427	431	427	434
MAX	460	402	428	445	447	445	444	433	430	441	433	436
MIN	62	.00	340	350	299	391	401	429	423	422	423	431
AC-FT	18650	11300	23390	25630	22110	25830	25380	26540	25390	26510	26260	25820
a	13850	9000	21000	23030	20380	23830	23440	23680	21870	22750	22710	22010
b	12030	4960	17920	21230	19240	21250	19470	20200	21570	22880	21110	19830

a Discharge, in acre-feet, to Halsey Powerplant, provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, to Wise Powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

11422000 BEAR RIVER CANAL INTAKE NEAR COLFAX, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 1931, BY WATER YEAR (WY)

MEAN	184	158	156	124	139	154	200	253	253	250	251	235
MAX	300	285	281	257	265	257	286	278	300	317	300	300
(WY)	1929	1929	1925	1925	1925	1922	1925	1925	1927	1931	1926	1927
MIN	.000	.000	.000	.000	.000	.000	53.2	158	190	162	167	93.7
(WY)	1930	1930	1930	1930	1930	1930	1931	1931	1931	1918	1918	1924

SUMMARY STATISTICS

WATER YEARS 1918 - 1931

ANNUAL MEAN	197	
HIGHEST ANNUAL MEAN	245	1929
LOWEST ANNUAL MEAN	121	1931
HIGHEST DAILY MEAN	345	Aug 2 1931
LOWEST DAILY MEAN	.00	Nov 12 1917
ANNUAL SEVEN-DAY MINIMUM	.00	Mar 17 1918
ANNUAL RUNOFF (AC-FT)	142400	
10 PERCENT EXCEEDS	300	
50 PERCENT EXCEEDS	232	
90 PERCENT EXCEEDS	.00	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1999, BY WATER YEAR (WY)

MEAN	334	313	372	357	347	321	312	389	402	410	410	396
MAX	492	495	488	479	478	485	490	498	499	493	497	496
(WY)	1968	1968	1976	1979	1980	1980	1978	1978	1978	1967	1967	1967
MIN	69.8	27.9	52.7	8.65	27.8	18.5	18.4	106	139	143	136	114
(WY)	1978	1978	1977	1946	1946	1977	1940	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1932 - 1999

ANNUAL TOTAL	135734.50	142577.50	
ANNUAL MEAN	372	391	364
HIGHEST ANNUAL MEAN			462
LOWEST ANNUAL MEAN			118
HIGHEST DAILY MEAN	460	Jan 2	460
LOWEST DAILY MEAN	.00	Nov 8	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Nov 8	.00
ANNUAL RUNOFF (AC-FT)	269200	282800	263500
ANNUAL DISCHARGE (AC-FT) a	238800	247600	
ANNUAL DISCHARGE (AC-FT) b	212700	221700	
10 PERCENT EXCEEDS	436	442	475
50 PERCENT EXCEEDS	400	428	424
90 PERCENT EXCEEDS	253	338	138

a Discharge, in acre-feet, to Halsey Powerplant, provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, to Wise Powerplant, provided by Pacific Gas & Electric Co.

11422500 BEAR RIVER BELOW ROLLINS DAM, NEAR COLFAX, CA

LOCATION.—Lat 39°07'53", long 120°57'29", in SE 1/4 SW 1/4 sec.22, T.15 N., R.9 E., Nevada County, Hydrologic Unit 18020126, on right bank 20 ft upstream from new highway bridge, 0.5 mi downstream from Rollins Dam, and 2.2 mi north of Colfax.

DRAINAGE AREA.—105 mi².

PERIOD OF RECORD.—January 1912 to September 1913, October 1913 to July 1915 (gage heights and discharge measurements only), August 1915 to June 1917, November 1949 to September 1953, August 1964 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to August 1964, published as Bear River near Colfax. Records for November and December 1911 include diversion to Bear River Canal and are not equivalent.

GAGE.—Water-stage recorder and concrete control. Datum of gage is 1,927.41 ft above sea level. Prior to Aug. 8, 1915, nonrecording gages at several sites above diversion dam 0.3 mi upstream at different datums. Aug. 8, 1915, to June 30, 1917, nonrecording gage 0.7 mi downstream at different datum. Nov. 1, 1949, to Sept. 30, 1953, at site 0.2 mi downstream at different datum. Aug. 17, 1964, to Feb. 4, 1986, at present site and datum. Feb. 5, 1986, to Mar. 19, 1987, at site 160 ft downstream at datum 8.00 ft lower.

REMARKS.—Flow regulated by Rollins Reservoir (station 11421800) beginning Dec. 15, 1964. Bear River Canal (station 11422000) diverts upstream from station. See schematic diagram of Bear River Basin.

COOPERATION.—Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge (prior to construction of Rollins Dam in 1964), 9,620 ft³/s, Nov. 20, 1950, gage height, 21.40 ft, site and datum then in use, from rating curve extended above 3,600 ft³/s on basis of slope-area measurement of peak flow; no flow at times in 1912, 1952. Maximum discharge since construction of Rollins Dam, 34,300 ft³/s, Jan. 2, 1997, gage height, 18.01 ft, maximum gage height, 20.62 ft, Feb. 17, 1986, site and datum then in use, from rating curve extended above 11,600 ft³/s; minimum daily, 0.5 ft³/s, Nov. 17, 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	303	369	412	394	592	1790	856	784	425	465	280	255
2	303	77	412	393	485	1630	815	796	563	471	217	257
3	303	29	425	395	488	1960	831	939	557	416	158	263
4	303	29	395	388	381	1750	802	953	612	438	160	259
5	304	29	380	384	407	1520	844	887	541	455	161	254
6	304	114	380	383	471	1310	856	841	514	440	164	254
7	306	384	379	383	2650	1280	766	809	624	429	162	252
8	308	385	379	383	2780	1220	850	780	582	460	162	251
9	308	386	380	382	7330	1290	921	773	547	466	168	248
10	305	386	381	378	3190	1190	858	757	570	442	206	251
11	300	387	380	190	1920	1040	853	757	581	439	205	251
12	297	387	385	28	1480	1120	884	748	554	430	202	253
13	299	389	382	30	1410	1100	821	747	554	422	201	257
14	298	382	383	30	1140	1070	888	721	525	416	199	260
15	295	369	411	34	793	1060	925	703	493	424	203	255
16	296	85	430	46	1130	1020	940	706	554	425	203	255
17	291	33	430	43	2780	986	915	692	520	416	203	170
18	350	29	430	135	2080	937	882	682	487	422	205	128
19	352	30	430	1010	1880	934	874	666	504	422	205	121
20	353	27	431	3160	1640	969	914	642	471	422	204	125
21	366	27	432	2400	1960	916	952	663	498	421	203	133
22	370	27	434	1440	1610	952	1020	642	483	419	204	130
23	372	167	431	2810	1450	885	921	667	461	420	201	127
24	374	330	432	2030	1390	889	865	666	459	420	202	125
25	369	344	435	1210	1530	921	860	625	458	419	250	123
26	363	344	432	900	1370	853	892	614	457	419	262	126
27	356	345	433	865	1250	824	885	625	442	421	259	128
28	368	348	410	773	1270	850	833	669	453	421	271	127
29	369	350	385	698	---	832	833	609	485	420	271	124
30	368	399	385	660	---	829	808	615	479	421	267	231
31	368	---	387	704	---	870	---	608	---	418	259	---
TOTAL	10221	6987	12611	23059	46857	34797	26164	22386	15453	13339	6517	5993
MEAN	330	233	407	744	1673	1122	872	722	515	430	210	200
MAX	374	399	435	3160	7330	1960	1020	953	624	471	280	263
MIN	291	27	379	28	381	824	766	608	425	416	158	121
AC-FT	20270	13860	25010	45740	92940	69020	51900	44400	30650	26460	12930	11890

11422500 BEAR RIVER BELOW ROLLINS DAM, NEAR COLFAX, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1953, BY WATER YEAR (WY)

MEAN	46.0	300	474	804	778	635	586	314	133	46.2	36.3	47.0
MAX	73.8	1016	1372	1103	1354	1110	1126	578	226	109	102	89.7
(WY)	1951	1951	1951	1951	1916	1916	1952	1952	1953	1916	1916	1916
MIN	12.7	19.8	58.4	287	201	127	151	165	35.1	.000	.000	.000
(WY)	1913	1953	1953	1913	1913	1913	1912	1916	1913	1913	1913	1913

SUMMARY STATISTICS

WATER YEARS 1912 - 1953

ANNUAL MEAN	356	
HIGHEST ANNUAL MEAN	534	1951
LOWEST ANNUAL MEAN	126	1913
HIGHEST DAILY MEAN	5760	Nov 20 1950
LOWEST DAILY MEAN	.00	Jul 5 1912
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 11 1912
INSTANTANEOUS PEAK FLOW	9620	Nov 20 1950
INSTANTANEOUS PEAK STAGE	21.40	Nov 20 1950
ANNUAL RUNOFF (AC-FT)	258000	
10 PERCENT EXCEEDS	879	
50 PERCENT EXCEEDS	138	
90 PERCENT EXCEEDS	1.0	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

MEAN	115	197	369	649	715	745	654	507	354	256	202	157
MAX	330	1267	1957	2973	2889	2324	2516	1211	757	538	420	383
(WY)	1999	1984	1997	1997	1986	1983	1982	1995	1998	1983	1995	1983
MIN	21.3	10.3	6.53	6.67	5.14	4.56	16.6	21.8	15.2	22.8	34.3	34.4
(WY)	1978	1978	1978	1977	1977	1977	1976	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1966 - 1999

ANNUAL TOTAL	260571		224384		
ANNUAL MEAN	714		615		409
HIGHEST ANNUAL MEAN					972
LOWEST ANNUAL MEAN					19.0
HIGHEST DAILY MEAN	3990	Feb 3	7330	Feb 9	22800
LOWEST DAILY MEAN	22	Jan 1	27	Nov 20	3.6
ANNUAL SEVEN-DAY MINIMUM	24	Jan 1	37	Nov 16	4.4
INSTANTANEOUS PEAK FLOW			11300	Feb 9	34300
INSTANTANEOUS PEAK STAGE			10.48	Feb 9	20.62
ANNUAL RUNOFF (AC-FT)	516800		445100		296000
10 PERCENT EXCEEDS	1270		1130		972
50 PERCENT EXCEEDS	561		429		196
90 PERCENT EXCEEDS	303		163		22

11423800 BEAR RIVER FISH RELEASE BELOW NEW CAMP FAR WEST RESERVOIR, NEAR WHEATLAND, CA

LOCATION.—Lat 39°02'30", long 121°19'52", in NE 1/4 NW 1/4 sec.29, T.14 N., R.6 E., Placer County, Hydrologic Unit 18020108, on left bank 5.4 mi northeast of Wheatland and 1.2 mi downstream from New Camp Far West Reservoir.

DRAINAGE AREA.—Not determined.

PERIOD OF RECORD.—October 1989 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 120 ft above sea level, from topographic map.

REMARKS.—The gage measures required fish-release flow and is entirely regulated by New Camp Far West Reservoir. See schematic diagrams of lower Sacramento River and Bear River Basins.

COOPERATION.—Records provided by South Sutter Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 43 ft³/s, Dec. 4, 1994; minimum daily, 8.0 ft³/s, July 2, 1995.

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	12	13	13	11	13	14	13	28	27	15	11	11
2	12	13	12	11	13	14	13	28	27	11	11	11
3	12	13	12	11	13	15	13	28	27	11	11	11
4	12	13	12	11	13	15	13	28	27	11	11	11
5	12	13	12	11	13	15	13	28	27	11	12	11
6	12	13	12	11	14	15	13	28	27	11	12	11
7	12	14	12	11	14	14	13	27	27	12	12	11
8	12	14	13	11	14	14	13	27	27	12	12	11
9	12	14	13	11	14	15	20	27	27	11	12	11
10	12	14	13	11	14	15	28	27	27	11	12	11
11	12	14	13	11	15	14	28	27	26	11	12	11
12	12	14	13	11	15	14	28	27	26	11	12	12
13	12	14	13	11	15	14	28	27	26	11	12	12
14	12	14	13	12	15	14	28	27	27	10	12	12
15	12	14	13	12	15	14	28	27	28	11	12	12
16	11	14	13	12	15	14	28	27	27	11	11	12
17	11	14	13	12	15	14	28	27	28	11	11	12
18	11	14	13	12	15	14	28	27	27	11	11	12
19	13	14	13	12	15	14	28	27	27	11	11	12
20	13	35	13	15	15	13	28	27	27	11	11	12
21	13	35	13	15	14	13	28	27	26	11	11	12
22	13	35	12	13	15	13	28	27	26	11	11	12
23	13	35	12	13	14	13	28	27	27	11	11	12
24	13	20	12	14	14	13	28	27	28	11	11	12
25	13	13	12	12	14	14	28	27	28	11	11	12
26	13	13	12	12	14	14	28	27	27	11	11	12
27	13	13	12	13	14	13	28	27	27	11	11	14
28	13	13	12	13	14	13	28	27	27	11	11	14
29	13	13	12	13	---	13	28	27	27	11	11	14
30	13	13	11	13	---	13	28	27	27	11	11	14
31	13	---	11	13	---	13	---	27	---	11	11	---
TOTAL	382	498	385	374	398	430	712	843	809	346	352	357
MEAN	12.3	16.6	12.4	12.1	14.2	13.9	23.7	27.2	27.0	11.2	11.4	11.9
MAX	13	35	13	15	15	15	28	28	28	15	12	14
MIN	11	13	11	11	13	13	13	27	26	10	11	11
AC-FT	758	988	764	742	789	853	1410	1670	1600	686	698	708

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

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	12.6	12.9	12.9	13.6	13.5	14.0	27.5	28.0	27.7	11.3	11.4	11.4
MAX	14.5	18.0	16.4	21.7	18.7	21.7	32.0	30.5	30.1	12.9	13.0	13.0
(WY)	1998	1996	1996	1995	1995	1995	1995	1995	1995	1995	1995	1995
MIN	11.0	11.0	11.0	10.9	11.0	11.2	23.7	25.9	25.8	11.0	10.8	10.8
(WY)	1991	1991	1991	1991	1991	1991	1999	1990	1990	1997	1990	1990

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1990 - 1999	
ANNUAL TOTAL	6109		5886			
ANNUAL MEAN	16.7		16.1		16.4	
HIGHEST ANNUAL MEAN					19.5	
LOWEST ANNUAL MEAN					15.0	
HIGHEST DAILY MEAN	35	Nov 20	35	Nov 20	43	Dec 4 1994
LOWEST DAILY MEAN	10	Jul 6	10	Jul 14	8.0	Jul 2 1995
ANNUAL SEVEN-DAY MINIMUM	11	Jul 2	11	Jul 9	10	Sep 1 1990
ANNUAL RUNOFF (AC-FT)	12120		11670		11870	
10 PERCENT EXCEEDS	27		27		28	
50 PERCENT EXCEEDS	13		13		13	
90 PERCENT EXCEEDS	12		11		11	

11424000 BEAR RIVER NEAR WHEATLAND, CA

LOCATION.—Lat 39°00'00", long 121°24'20", in SE 1/4 SW 1/4 sec.3, T.13 N., R.5 E., Placer County, Hydrologic Unit 18020108, on right bank 200 ft downstream from bridge on State Highway 65, 1 mi southeast of Wheatland, and 6.5 mi downstream from New Camp Far West Reservoir.

DRAINAGE AREA.—292 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1928 to current year.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 71.92 ft above sea level. See WSP 2131 for history of changes prior to May 28, 1970.

REMARKS.—Records good. Natural flow of stream affected by inflow from Yuba and American River Basins. Flow regulated by Lake Combie, usable capacity, 7,840 acre-ft, since 1928; Rollins Reservoir (station 11421800), since December 1964; and New Camp Far West Reservoir, usable capacity, 102,200 acre-ft, since October 1963. Many diversions for irrigation and power. See schematic diagrams of Bear River and lower Sacramento River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 48,000 ft³/s, Feb. 17, 1986, gage height, 21.60 ft, maximum gage height, 23.72 ft, Jan. 2, 1997 (backwater from Feather River); 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	79	318	29	488	1260	2390	1100	490	98	30	19	43
2	234	316	23	486	1120	2380	1080	420	131	16	19	48
3	233	315	28	487	e960	2590	1020	376	148	18	17	16
4	237	311	22	485	e850	2680	984	459	149	16	19	16
5	235	322	24	485	e740	2240	995	482	151	16	22	19
6	256	315	29	485	709	1980	1080	443	179	15	23	20
7	274	322	34	482	2460	1780	863	390	173	15	21	17
8	250	322	151	482	5370	1660	1200	342	161	16	25	22
9	242	320	466	484	10400	1790	1270	310	138	14	25	20
10	243	319	515	486	7520	1780	1230	286	113	15	25	17
11	244	315	505	484	3740	1600	1180	238	78	17	22	17
12	241	318	698	484	2760	1460	1180	281	50	16	22	19
13	238	318	786	482	2280	1440	1110	269	42	13	21	17
14	217	318	690	247	2060	1400	988	266	50	12	21	16
15	207	319	680	21	1860	1350	1080	264	52	12	19	17
16	259	319	675	21	1770	1240	1070	264	44	14	22	17
17	295	319	672	20	5040	1310	1050	238	39	15	20	17
18	297	312	670	e25	3910	1240	1040	188	35	20	19	15
19	295	316	672	e1440	3450	1170	1170	154	36	17	22	16
20	283	319	674	e5540	2710	1150	1170	139	39	17	24	15
21	296	320	672	4590	4120	1190	676	137	38	17	22	13
22	296	321	517	2700	3250	1150	755	131	35	16	22	11
23	292	327	308	4260	2490	1130	855	129	35	14	25	13
24	301	317	384	4300	2150	1100	885	125	33	e14	23	11
25	301	316	486	2660	2200	1130	838	148	33	e14	24	12
26	299	317	487	1860	2150	1120	766	168	33	e16	22	12
27	300	320	486	1490	1940	1070	720	129	36	18	20	12
28	277	319	486	1290	1820	1020	650	96	35	17	21	13
29	306	323	481	1140	---	1000	578	95	34	17	20	14
30	304	213	480	1030	---	896	516	95	34	18	20	12
31	311	---	484	1050	---	1090	---	93	---	17	17	---
TOTAL	8142	9446	13314	39984	81089	46526	29099	7645	2252	502	663	527
MEAN	263	315	429	1290	2896	1501	970	247	75.1	16.2	21.4	17.6
MAX	311	327	786	5540	10400	2680	1270	490	179	30	25	48
MIN	79	213	22	20	709	896	516	93	33	12	17	11
AC-FT	16150	18740	26410	79310	160800	92280	57720	15160	4470	996	1320	1050

e Estimated.

11424000 BEAR RIVER NEAR WHEATLAND, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1963, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	92.8	184	565	826	1240	1033	770	306	79.0	12.6	16.7	18.4
MAX	1348	1980	3501	3004	3360	2918	2553	939	245	55.4	148	215
(WY)	1963	1951	1956	1956	1936	1938	1958	1942	1932	1952	1935	1935
MIN	2.05	9.14	21.3	68.0	156	192	11.3	.57	.71	.53	.65	.30
(WY)	1961	1960	1960	1947	1933	1933	1959	1959	1959	1959	1939	1939

SUMMARY STATISTICS

WATER YEARS 1930 - 1963

ANNUAL MEAN	424
HIGHEST ANNUAL MEAN	891 1951
LOWEST ANNUAL MEAN	70.0 1933
HIGHEST DAILY MEAN	22100 Dec 23 1955
LOWEST DAILY MEAN	.00 Sep 18 1939
ANNUAL SEVEN-DAY MINIMUM	.00 Sep 18 1939
INSTANTANEOUS PEAK FLOW	33000 Dec 22 1955
INSTANTANEOUS PEAK STAGE	20.83 Nov 21 1950
ANNUAL RUNOFF (AC-FT)	307500
10 PERCENT EXCEEDS	1060
50 PERCENT EXCEEDS	77
90 PERCENT EXCEEDS	3.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	23.1	147	469	1010	1257	1166	739	251	73.6	19.7	15.6	16.2
MAX	263	1606	2668	3954	5201	3845	3796	1035	484	72.6	29.5	73.2
(WY)	1999	1984	1984	1997	1986	1983	1982	1983	1998	1995	1967	1998
MIN	.002	.056	.000	.14	.62	1.07	.60	4.05	3.17	2.95	4.72	1.31
(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 1966 - 1999

ANNUAL TOTAL	335398	239189	
ANNUAL MEAN	919	655	428
HIGHEST ANNUAL MEAN			1191 1983
LOWEST ANNUAL MEAN			3.42 1977
HIGHEST DAILY MEAN	13800	Feb 3	10400 Feb 9 35900 Feb 17 1986
LOWEST DAILY MEAN	11	Aug 27	11 Sep 22 .00 Oct 14 1976
ANNUAL SEVEN-DAY MINIMUM	15	Jul 25	12 Sep 21 .00 Oct 29 1976
INSTANTANEOUS PEAK FLOW			14400 Feb 9 48000 Feb 17 1986
INSTANTANEOUS PEAK STAGE			15.42 Feb 9 23.72 Jan 2 1997
ANNUAL RUNOFF (AC-FT)	665300	474400	310200
10 PERCENT EXCEEDS	2100	1780	1240
50 PERCENT EXCEEDS	484	299	23
90 PERCENT EXCEEDS	19	17	8.0

11424000 BEAR RIVER NEAR WHEATLAND, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1953 to July 1980, June 1999 to September 1999.

CHEMICAL DATA: Water years 1953 to July 1980, June 1999 to September 1999.

SEDIMENT DATA: June 1999 to September 1999.

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, DIS- SOLVED CENT CACO3 (MG/L) (29802)	ALKA- LITY WAT.DIS GRAN T. FIELD (MG/L) (00613)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
JUN										
23...	1100	35	85	7.7	25.4	757	11.4	140	30	<.01
JUL										
28...	1200	16	117	8.3	26.3	762	8.2	102	38	<.01
AUG										
25...	1050	25	110	7.8	26.7	760	5.1	64	39	<.01
SEP										
10...	1100	18	96	7.7	23.5	757	7.5	89	37	<.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. (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)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
JUN									
23...	.06	<.02	.1	.1	.005	<.004	.01	1.5	.2
JUL									
28...	<.05	<.02	.2	<.1	.008	<.004	<.01	1.4	.2
AUG									
25...	<.05	<.02	e.10	e.08	<.004	<.004	<.01	1.3	.2
SEP									
10...	--	<.02	.1	e.10	.008	<.004	<.01	1.5	.4

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, DIS- SUS- PENDED (MG/L) (80154)	SEDI- MENT, CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUN						
23...N	1100	35	25.4	9	.85	87
JUL						
28...N	1200	16	26.3	4	.17	92
AUG						
25...N	1050	25	26.7	10	.68	91
SEP						
10...N	1100	18	23.5	6	.29	60

e Estimated.

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

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

11425418 MORMON RAVINE NEAR NEWCASTLE, CA

LOCATION.—Lat 38°50'12", long 121°05'36", in SE 1/4 NW 1/4 sec.4, T.11 N., R.8 E., Placer County, Hydrologic Unit 18020128, on right bank 200 ft upstream from Folsom Lake, 700 ft north of Newcastle Powerplant, and 3.3 mi southeast of Newcastle.

DRAINAGE AREA.—3.84 mi².

PERIOD OF RECORD.—October 1989 to current year (low-flow records only).

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 500 ft above sea level, from topographic map.

REMARKS.—Records not computed above 8.5 ft³/s. Low flow augmented by release from end of South Canal. Most of the water in South Canal is diverted to Newcastle Powerplant (station 11425416). See schematic diagram of Bear 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	---	2.7	---	8.0	---	---	---	---	6.4	8.5	---	---
2	---	3.5	---	8.0	---	---	---	---	---	7.5	---	---
3	---	6.0	---	8.0	---	---	---	---	8.5	---	---	7.3
4	---	5.4	---	7.9	---	---	---	---	---	---	---	7.0
5	---	5.3	---	7.5	---	---	---	---	8.5	---	---	6.3
6	---	4.5	---	7.6	---	---	---	---	7.7	---	---	5.8
7	---	8.0	---	7.7	---	---	---	8.0	7.3	---	---	5.6
8	---	7.8	---	8.0	---	---	---	7.7	6.8	---	---	5.8
9	---	5.7	---	8.0	---	---	---	7.6	6.3	---	---	6.1
10	---	4.1	---	7.9	---	---	---	7.6	6.3	---	---	6.9
11	---	---	---	8.0	---	---	---	7.5	6.1	---	---	6.6
12	---	---	---	8.2	---	---	---	7.4	6.4	---	---	6.6
13	---	6.9	---	8.0	---	---	---	7.7	6.2	---	---	6.7
14	7.6	7.8	---	7.7	---	---	---	7.7	6.2	---	---	6.3
15	---	5.9	---	---	---	---	---	7.9	7.1	---	---	6.8
16	---	---	---	---	---	---	---	7.6	7.2	---	---	6.4
17	---	---	8.2	---	---	---	---	7.0	6.5	---	---	7.0
18	---	---	7.8	---	---	---	---	6.4	---	---	---	7.6
19	2.2	---	7.9	---	---	---	---	7.1	---	---	---	7.6
20	.96	---	7.9	---	---	---	---	7.2	---	---	---	7.6
21	.87	---	7.5	---	---	---	---	6.8	---	---	---	7.3
22	1.4	---	7.5	---	---	---	---	6.8	---	---	---	7.4
23	.86	---	7.4	---	---	---	---	7.1	---	---	---	7.0
24	3.8	---	8.2	---	---	---	---	7.7	---	---	---	7.0
25	3.0	8.4	8.2	---	---	---	---	7.3	---	---	---	7.0
26	6.3	7.9	8.5	---	---	---	---	6.8	---	---	---	6.7
27	5.5	---	8.4	---	---	---	---	6.5	---	---	---	6.7
28	2.2	---	8.2	---	---	---	---	6.6	---	---	---	6.7
29	2.2	---	---	---	---	---	---	7.5	---	---	---	6.5
30	1.5	---	8.2	---	---	---	7.8	7.1	---	---	---	6.4
31	1.6	---	8.2	---	---	---	---	6.7	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---
a	6440	5670	17290	17660	16220	17710	13580	6030	4500	0	0	9900

CAL YR 1998 a 131800

WTR YR 1999 a 115000

a Diversion, in acre-feet, to Newcastle Powerplant, provided by Pacific Gas & Electric Co.

11425500 SACRAMENTO RIVER AT VERONA, CA

LOCATION.—Lat 38°46'28", long 121°35'50", in SW 1/4 NW 1/4 sec.25, T.11 N., R.3 E., Sutter County, Hydrologic Unit 18020109, on left bank 1.3 mi southeast of Verona, 1.5 mi downstream from Feather River, 6.2 mi east of Knights Landing, and at mile 19.1 upstream from Sacramento.

DRAINAGE AREA.—21,251 mi².

PERIOD OF RECORD.—May 1926 to September 1929 (low-water periods only), October 1929 to current year.

CHEMICAL DATA: Water years 1952, 1969–70, 1996–98.

SPECIFIC CONDUCTANCE: Water years 1995–98.

WATER TEMPERATURE: Water years 1980, 1995–98.

SEDIMENT: Water years 1980, 1996–98.

REVISED RECORDS.—WDR CA-77-4: Drainage area.

GAGE.—Water-stage recorder and crest-stage gage. Datum of gage is 3.00 ft below sea level. May 1926 to Sept. 30, 1987, at site 0.5 mi upstream at same datum.

REMARKS.—Records good. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, return flow from irrigated areas, and bypassing for flood control. When discharge exceeds about 55,000 ft³/s, flow begins over Fremont Weir, 3.5 mi upstream on right bank, into Yolo Bypass (station 11453000). See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 94,000 ft³/s, Jan. 2, 1997, gage height, 42.09 ft; maximum gage height, Feb. 20, 1986, 42.11 ft, site then in use; minimum daily, 304 ft³/s, July 23, 24, 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	18300	11300	33600	17200	37000	60100	28000	19800	15700	16900	19400	14700
2	18000	11300	40900	16800	34200	61100	25700	19300	15300	17000	19600	14100
3	17800	11300	46800	16600	30700	61600	24000	19200	15200	16800	19600	13900
4	17200	11100	52000	16300	28200	62100	22800	19300	15800	16500	19200	13900
5	17000	11000	55600	16200	27100	62100	22000	19000	16900	16300	18700	14000
6	16200	11000	57500	16000	29500	62100	21700	18300	17200	16600	18300	13900
7	15700	11200	58100	15900	37200	61800	21600	16700	16600	16600	17400	14300
8	15300	11800	58000	15300	48000	61200	22200	16100	15600	16700	16800	14400
9	14500	12600	57300	14800	57300	61000	22600	16500	14600	16900	16300	14200
10	13800	13100	55800	14400	63700	60300	23200	16200	13700	17000	15500	14300
11	13200	13000	54300	14200	63600	59700	24400	15500	13000	16900	14800	14600
12	12900	13100	52400	14200	62700	58800	26100	14600	12500	17200	14700	14600
13	12500	13800	50600	14200	61100	58000	30100	14000	12100	17500	14700	14300
14	12000	13900	49200	14100	59900	57100	30700	13800	12100	17700	14500	13900
15	11700	14200	48100	13800	58800	55600	29800	13500	11800	18200	14400	13800
16	11500	14700	46600	14000	58100	52600	29300	12800	11600	17800	14300	13700
17	11400	15300	43300	15000	59600	49000	29000	12300	11600	18300	14000	13600
18	11100	15600	39200	16500	62300	45300	29000	12300	11800	18600	13400	13600
19	11000	17000	36500	20800	63000	42000	28900	12200	11500	18900	12700	13700
20	11000	19400	34600	31600	63000	39400	28300	12400	11400	19500	12500	13600
21	10700	20100	32700	41400	63300	36600	27600	12400	11700	19800	12800	13100
22	10600	20300	30600	44600	63600	34100	27000	12700	11700	19800	13300	12900
23	10400	21600	28200	47400	62800	31600	25700	13500	11800	19600	13700	13000
24	10300	24800	25600	53500	61300	29100	24100	13800	11600	19500	13900	12500
25	10700	29000	23200	55300	60300	27800	22800	13800	11500	19500	14000	12200
26	11400	30400	21400	54400	59900	32100	22000	13600	11600	19800	14100	12000
27	12100	28900	20400	52700	59500	36500	21400	13300	11700	20100	14400	11700
28	12500	29100	19900	49900	59300	37600	20900	13700	13300	20100	15200	12200
29	12200	30700	19600	46700	---	37000	20500	14400	15300	20000	15600	12900
30	11800	30200	19000	43300	---	34800	20300	14900	16500	19900	15400	12800
31	11500	---	18000	39800	---	31400	---	15600	---	19400	15300	---
TOTAL	406300	530800	1229000	856900	1495000	1499500	751700	465500	402700	565400	478500	406400
MEAN	13110	17690	39650	27640	53390	48370	25060	15020	13420	18240	15440	13550
MAX	18300	30700	58100	55300	63700	62100	30700	19800	17200	20100	19600	14700
MIN	10300	11000	18000	13800	27100	27800	20300	12200	11400	16300	12500	11700
AC-FT	805900	1053000	2438000	1700000	2965000	2974000	1491000	923300	798800	1121000	949100	806100

11425500 SACRAMENTO RIVER AT VERONA, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1943, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5623	8493	17140	28130	33500	35320	34370	24600	12750	3943	2603	4242
MAX	7816	23510	41690	56930	57860	57700	55330	53730	33480	9176	5036	5895
(WY)	1939	1938	1938	1941	1942	1938	1938	1938	1938	1938	1938	1938
MIN	3462	3923	5968	7819	11730	13860	5932	3103	1872	497	846	2960
(WY)	1933	1933	1937	1937	1933	1931	1931	1931	1931	1931	1931	1934

SUMMARY STATISTICS

WATER YEARS 1930 - 1943

ANNUAL MEAN	17470
HIGHEST ANNUAL MEAN	31300
LOWEST ANNUAL MEAN	6286
HIGHEST DAILY MEAN	76900
LOWEST DAILY MEAN	304
ANNUAL SEVEN-DAY MINIMUM	313
INSTANTANEOUS PEAK FLOW	79200
INSTANTANEOUS PEAK STAGE	41.20
ANNUAL RUNOFF (AC-FT)	12650000
10 PERCENT EXCEEDS	50700
50 PERCENT EXCEEDS	8620
90 PERCENT EXCEEDS	2680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10640	14000	22870	30110	34930	32210	25190	20280	14610	11700	12110	12810
MAX	24920	43300	64470	71040	70030	71340	62140	51600	45560	24550	21400	22110
(WY)	1963	1974	1984	1997	1998	1983	1982	1952	1998	1983	1983	1971
MIN	4725	5987	6586	8561	7591	6731	6188	5118	4858	4848	5385	6300
(WY)	1978	1993	1960	1991	1991	1977	1977	1992	1992	1947	1947	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1946 - 1999

ANNUAL TOTAL	13078400	9087700	
ANNUAL MEAN	35830	24900	20050
HIGHEST ANNUAL MEAN			39150
LOWEST ANNUAL MEAN			7178
HIGHEST DAILY MEAN	76300	Feb 8	63700
LOWEST DAILY MEAN	10300	Oct 24	10300
ANNUAL SEVEN-DAY MINIMUM	10700	Oct 19	10700
INSTANTANEOUS PEAK FLOW			64200
INSTANTANEOUS PEAK STAGE			34.00
ANNUAL RUNOFF (AC-FT)	25940000	18030000	14520000
10 PERCENT EXCEEDS	64200	57300	47800
50 PERCENT EXCEEDS	32700	17200	13500
90 PERCENT EXCEEDS	13600	11900	7480

11426000 SACRAMENTO WEIR SPILL TO YOLO BYPASS, NEAR SACRAMENTO, CA

LOCATION.—Lat 38°36'25", long 121°33'15", unsurveyed, Sacramento County, Hydrologic Unit 18020109, on right bank 100 ft upstream from weir, 3.2 mi upstream from American River, 4 mi northwest of Sacramento, and 4.2 mi upstream from Sacramento.

PERIOD OF RECORD.—October 1939 to current year. Monthly discharge only for water years 1940–51, published in WSP 1735. Published as Sacramento Weir near Sacramento 1939–61. Gage-height records collected at same site February 1926 to September 1934 and major flood flows only October 1934 to September 1939 are contained in reports of California Department of Water Resources.

GAGE.—Water-stage recorder and concrete weir crest. Datum of gage is 3.00 ft below sea level. October 1939 to September 1942, October 1959 to September 1963, water-stage recorder or nonrecording gage at downstream end of weir. October 1942 to September 1959, water-stage recorder on left bank of Sacramento River opposite center of weir. February 1963 to September 1985, water-stage recorder on right bank of Sacramento River 100 ft downstream from end of weir.

REMARKS.—Crest of weir is at gage height 20.2 ft and top of movable gates at 28.0 ft. Weir consists of 48 gates each 38.1 ft long. Flow over weir enters Yolo Bypass by way of Sacramento Bypass. Flow regulated by weir gates. February 1963 to September 1985, stage was obtained by averaging the stage obtained at sites on the Sacramento River above and below the weir. See schematic diagram of lower Sacramento River Basin.

COOPERATION.—Records provided by California Department of Water Resources; not reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 128,000 ft³/s, Feb. 20, 1986, gage height, 30.84 ft; maximum gage height, 33.01 ft, Dec. 23, 1955; no flow all or most of each year.

EXTREMES FOR CURRENT YEAR.—No flow for 1999 water year.

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	1.30	129	552	816	796	545	89.4	2.24	.22	.000	.000	.000
MAX	72.6	7014	12470	19700	23920	17830	2042	79.1	12.7	.000	.000	.000
(WY)	1963	1951	1965	1997	1986	1983	1982	1983	1998	1943	1943	1943
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1944	1944	1944	1944	1944	1944	1944	1943	1943	1943	1943	1943

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1943 - 1999
ANNUAL TOTAL	136915.00		
ANNUAL MEAN	375		239
HIGHEST ANNUAL MEAN			2075
LOWEST ANNUAL MEAN			.000
HIGHEST DAILY MEAN	16300	Feb 4	123000
LOWEST DAILY MEAN	.00	Jan 1	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00
INSTANTANEOUS PEAK FLOW			128000
INSTANTANEOUS PEAK STAGE			33.01
ANNUAL RUNOFF (AC-FT)	271600		173400
10 PERCENT EXCEEDS	186		.00
50 PERCENT EXCEEDS	.00		.00
90 PERCENT EXCEEDS	.00		.00

11426170 LAKE VALLEY RESERVOIR NEAR CISCO, CA

LOCATION.—Lat 39°18'01", long 120°35'46", in NE 1/4 NW 1/4 sec.35, T.17 N., R.12 E., Placer County, Hydrologic Unit 18020128, on dam near left abutment on North Fork of North Fork American River and 1.3 mi west of Cisco.

DRAINAGE AREA.—4.54 mi².

PERIOD OF RECORD.—July 1987 to current year. Unpublished records for water years 1980–86 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is 5,727.4 ft above sea level (levels by Pacific Gas & Electric Co.). Prior to July 1987, nonrecording gage at same site and datum.

REMARKS.—Lake is formed by an earthfill dam; storage began in 1911. Usable capacity, 7,960 acre-ft between gage heights 6.2 ft, natural rim of lake, and 57.5 ft, top of flashboards. Released water is diverted downstream to Lake Valley Canal (station 11426190) and then to several powerplants. Records, including extremes, represent usable contents at 2400 hours. See schematic diagrams of Bear and Yuba River Basins.

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 contents, 8,225 acre-ft, Jan. 1, 1997, gage height, 58.35 ft; minimum, 1,153 acre-ft, Feb. 28, 1990, gage height, 25.01 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 7,943 acre-ft, May 22, June 2, gage height, 57.43 ft; minimum, about 2,119 acre-ft, Jan. 13, gage height, unknown.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co., dated June 18, 1965)

8	41	17	476	40	3,455
10	102	20	693	50	5,810
12	189	25	1,152	59	8,411
14	304	30	1,830		

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	5314	3973	3021	2397	3210	4037	4259	5727	7934	7836	7450	6507
2	5269	3930	3012	2365	3192	4084	4238	5865	7943	7824	7438	6471
3	5225	3884	3127	2331	3174	4166	4227	5975	7907	7815	7423	6438
4	5181	3840	3130	2316	3159	4196	4200	6047	7871	7803	7408	6397
5	5128	3799	3119	e2294	3141	4223	4207	6121	7868	7794	7393	6364
6	5085	3760	3105	e2271	3150	4243	4187	6228	7880	7782	7381	6328
7	5041	3746	3083	e2249	3304	4257	4162	6355	7883	7773	7369	6297
8	4997	3708	3064	e2236	3432	4286	4173	6465	7883	7764	7354	6281
9	4955	3659	3036	e2214	3669	4309	4148	6567	7889	7752	7345	6261
10	4908	3615	3012	e2191	3701	4291	4125	6668	7901	7743	7331	6248
11	4864	3567	2987	e2169	3703	4270	4104	6786	7916	7731	7292	6228
12	4818	3514	2963	e2143	3705	4250	4081	6937	7919	7722	7253	6209
13	4777	3462	2944	e2119	3699	4229	4072	7086	7922	7713	7212	6193
14	4732	e3445	2921	e2196	3690	4209	4072	7194	7922	7701	7173	6176
15	4689	e3428	2897	e2273	3673	4189	4107	7286	7916	7686	7137	6157
16	4655	e3411	2877	e2350	3726	4169	4169	7375	7910	7671	7098	6138
17	4594	e3365	2864	e2427	3831	4151	4254	7483	7901	7659	7059	6124
18	4549	e3319	2830	e2504	3868	4144	4357	7528	7898	7644	7020	6108
19	4502	e3273	2802	e2581	3870	4144	4472	7590	7889	7632	6981	6091
20	4454	e3227	2774	e2655	3884	4153	4589	7716	7877	7617	6940	6078
21	4407	e3181	2737	e2735	3898	4153	4695	7854	7866	7605	6905	6061
22	4364	e3165	2703	e2812	3881	4148	4791	7943	7866	7590	6868	6047
23	4318	e3147	2674	e2899	3865	4144	4869	7925	7874	7575	6825	6030
24	4309	e3129	2644	e2966	3849	4139	4962	7916	7877	7563	6791	6016
25	4266	e3111	2615	e3043	3856	4137	5073	7913	7874	7549	6755	6000
26	4227	e3093	2585	e3120	3835	4151	5229	7901	7866	7537	6721	5983
27	4180	e3075	2553	e3197	3817	4173	5343	7892	7860	7522	6690	5972
28	4137	e3058	2522	e3275	3893	4191	5430	7871	7854	7510	6657	5942
29	4097	e3040	2491	e3259	---	4209	5498	7842	7848	7495	6617	5925
30	4051	3033	2459	e3243	---	4245	5589	7851	7842	7480	6581	5911
31	4005	---	2430	3227	---	4259	---	7889	---	7465	6543	---
MAX	5314	3973	3130	3275	3898	4309	5589	7943	7943	7836	7450	6507
MIN	4005	3033	2430	2119	3141	4037	4072	5727	7842	7465	6543	5911
a	42.40	37.93	34.05	39.01	41.91	43.51	49.20	57.25	57.09	55.83	52.66	50.37
b	-1355	-972	-603	+797	+666	+366	+1330	+2300	-47	-377	-922	-632
c	1610	1540	2080	1520	1850	2340	2320	2430	1540	0	610	171

CAL YR 1998 MAX 7925 MIN 2430 b -768 c 19570
WTR YR 1999 MAX 7943 MIN 2119 b +551 c 18010

e Estimated.

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

b Change in contents, in acre-feet.

c Diversion, in acre-feet, to Lake Valley Canal, provided by Pacific Gas & Electric Co.

11426180 KELLY LAKE NEAR CISCO, CA

LOCATION.—Lat 39°18'40", long 120°34'49", in SE 1/4 NW 1/4 sec.25, T.17 N., R.12 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on outlet structure on Kelly Lake Dam on unnamed tributary to North Fork of North Fork American River and 2.2 mi west of Cisco.

DRAINAGE AREA.—0.58 mi².

PERIOD OF RECORD.—October 1991 to current year. Unpublished records for water years 1965–91 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is 5,888.9 ft above sea level (levels by Pacific Gas & Electric Co.). Prior to October 1991, nonrecording gage at same site and datum.

REMARKS.—No records computed during the winter months. Reservoir is formed on natural lake by rock-fill dam completed in 1928. Usable capacity, 336 acre-ft between gage heights 0.0 ft, invert of outlet, and 17.1 ft, top of flashboards. Water is used for power development downstream. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of Bear 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 contents, 359 acre-ft, May 15, 1996, gage height, 17.96 ft; no storage many days in October 1991.

EXTREMES FOR CURRENT YEAR.—Maximum contents recorded, 346 acre-ft, May 6, gage height, 17.47 ft; minimum recorded, 80 acre-ft, Nov. 4, gage height, 5.15 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co., dated December 1933)

0	0	12	213
4	61	16	308
8	130	19	387

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	268	81	164	---	---	---	---	---	339	332	296	282
2	265	80	169	---	---	---	---	---	339	331	296	282
3	261	80	197	---	---	---	---	---	337	330	296	282
4	261	80	203	---	---	---	---	---	339	328	297	280
5	255	80	207	---	---	---	---	343	339	322	297	280
6	244	80	210	---	---	---	---	346	339	318	297	279
7	231	92	213	---	---	---	---	344	338	314	297	279
8	220	92	215	---	---	---	---	342	336	309	298	278
9	208	92	217	---	---	---	---	338	336	305	298	277
10	198	92	218	---	---	---	---	337	337	313	298	277
11	186	92	222	---	---	---	---	338	337	320	297	276
12	175	92	224	---	---	---	---	335	337	317	298	276
13	166	92	226	---	---	---	---	338	337	317	297	275
14	151	91	229	---	---	---	---	334	338	316	296	274
15	138	91	231	---	---	---	---	332	338	314	296	273
16	126	91	235	---	---	---	---	331	338	313	296	271
17	115	93	---	---	---	---	---	334	338	312	295	271
18	106	93	---	---	---	---	---	336	338	311	294	272
19	102	93	---	---	---	---	---	337	338	311	294	272
20	100	93	---	---	---	---	---	338	338	311	293	270
21	96	94	---	---	---	---	---	339	337	311	293	271
22	93	94	---	---	---	---	---	339	337	308	292	271
23	88	109	---	---	---	---	---	327	336	308	290	272
24	89	110	---	---	---	---	---	332	336	308	289	271
25	88	111	---	---	---	---	---	337	335	307	288	272
26	86	111	---	---	---	---	---	337	335	307	287	270
27	86	116	---	---	---	---	---	336	334	305	286	270
28	85	119	---	---	---	---	---	337	334	303	284	268
29	83	127	---	---	---	---	---	337	333	302	284	269
30	82	158	---	---	---	---	---	337	333	299	284	269
31	80	---	---	---	---	---	---	338	---	296	283	---
MAX	268	158	---	---	---	---	---	---	339	332	298	282
MIN	80	80	---	---	---	---	---	---	333	296	283	268
a	5.20	9.41						17.17	16.95	15.54	14.99	14.44
b	-191	+78							-5	-37	-13	-14

WTR YR 1999 b -2

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

11427000 NORTH FORK AMERICAN RIVER AT NORTH FORK DAM, CA

LOCATION.—Lat 38°56'10", long 121°01'22", in SW 1/4 NW 1/4 sec.31, T.13 N., R.9 E., Placer County, Hydrologic Unit 18020128, on left bank 50 ft upstream from crest of North Fork Dam, 2 mi upstream from Middle Fork, and 4 mi northeast of Auburn.

DRAINAGE AREA.—342 mi².

PERIOD OF RECORD.—October 1941 to current year.

CHEMICAL DATA: Water years 1977–80.

WATER TEMPERATURE: Water years 1959–83.

SEDIMENT DATA: Water year 1980 (periodic record).

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder and ogee section of concrete debris dam. Datum of gage is 715.0 ft above sea level (levels by U.S. Army Corps of Engineers).

REMARKS.—Records good. Minor regulation by Lake Clementine, usable capacity, 12,800 acre-ft, formed by North Fork Dam. Storage in Big Reservoir and Lake Valley Reservoir (station 11426170), combined capacity, 10,300 acre-ft upstream from station. Lake Valley Canal (station 11426190) diverts from North Fork of North Fork American River into Bear River Basin for power development in powerplants of Pacific Gas & Electric Co. Combined storage and diversion have small effect on natural flow. See schematic diagrams of Bear and lower Sacramento River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 65,400 ft³/s, Dec. 23, 1964, gage height, 11.87 ft, from rating curve extended above 24,000 ft³/s on basis of computed flow over crest of dam at gage height 10.22 ft; no flow, Aug. 27–30, Sept. 2–11, 1944; Oct. 5, 6, 1963; Nov. 7–10, 1965, caused by operation of valve in North Fork Dam.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 4,300 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1800	4,410	3.59	Feb. 17	0830	6,390	4.13
Jan. 20	0445	8,730	4.68	Mar. 1	0830	4,680	3.67
Feb. 9	1230	17,300	6.23				

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	95	99	2320	265	983	3870	979	1520	1870	463	108	71
2	90	105	1060	255	888	3130	908	1870	1890	441	107	70
3	87	97	2220	245	828	3750	883	1840	1520	422	104	70
4	85	91	2010	236	809	3230	837	1570	1190	377	102	67
5	85	91	1090	227	777	2570	868	1410	1060	336	100	66
6	83	95	828	223	789	2200	879	1540	1300	302	98	64
7	81	136	648	220	5430	1930	867	1940	1350	288	99	63
8	80	211	565	215	5560	1740	1010	1970	1190	276	99	62
9	80	153	528	214	12500	1800	1070	1770	1130	261	99	64
10	80	123	465	199	6350	1610	996	1670	1080	248	100	65
11	79	134	432	194	3690	1500	1080	1680	1110	240	100	65
12	78	129	411	202	2780	1400	1180	2010	1220	240	104	64
13	78	113	406	191	2250	1330	1280	2340	1230	232	103	62
14	77	107	467	188	1930	1320	1500	1910	1250	222	95	62
15	77	105	431	210	1680	1260	1620	1550	1270	215	93	61
16	75	104	416	651	1660	1190	1640	1480	1230	198	90	61
17	73	157	480	806	4880	1190	1840	1570	1150	182	89	60
18	73	226	490	3280	3530	1220	2050	1850	1060	172	86	60
19	80	166	448	3590	3310	1270	2190	1960	976	164	85	60
20	77	140	412	8040	2620	1260	2280	2030	902	158	84	59
21	73	131	363	4880	3360	1190	2210	2000	848	154	83	57
22	70	224	339	2600	2660	1100	1940	2310	814	148	82	56
23	70	353	319	5590	2220	1060	1690	2670	843	143	81	55
24	80	1540	308	3530	1970	1040	1650	2920	803	139	79	56
25	107	530	300	2350	2260	1040	1790	3220	723	135	77	56
26	105	339	293	1840	2030	1090	2120	3100	596	132	77	56
27	90	309	284	1490	1830	1240	2180	2880	518	129	77	54
28	85	386	275	1260	1800	1190	1750	2620	482	126	80	53
29	85	383	267	1100	---	1090	1470	2350	467	120	76	52
30	86	2490	262	991	---	1050	1330	1850	467	114	73	52
31	88	---	262	1020	---	1090	---	1980	---	111	70	---
TOTAL	2552	9267	19399	46302	81374	50950	44087	63380	31539	6888	2800	1823
MEAN	82.3	309	626	1494	2906	1644	1470	2045	1051	222	90.3	60.8
MAX	107	2490	2320	8040	12500	3870	2280	3220	1890	463	108	71
MIN	70	91	262	188	777	1040	837	1410	467	111	70	52
AC-FT	5060	18380	38480	91840	161400	101100	87450	125700	62560	13660	5550	3620

11427000 NORTH FORK AMERICAN RIVER AT NORTH FORK DAM, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	105	374	913	1390	1458	1505	1578	1632	807	198	67.3	50.5
MAX	1749	3307	5781	7303	8403	5187	4490	3688	2855	928	214	121
(WY)	1963	1951	1965	1997	1986	1995	1982	1952	1983	1983	1983	1982
MIN	18.3	35.6	33.9	44.6	70.5	114	207	273	71.7	25.8	13.4	14.9
(WY)	1978	1960	1977	1991	1991	1977	1977	1992	1992	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1942 - 1999	
ANNUAL TOTAL	476288		360361			
ANNUAL MEAN	1305		987		837	
HIGHEST ANNUAL MEAN					1843	
LOWEST ANNUAL MEAN					88.5	
HIGHEST DAILY MEAN	9360	Feb 3	12500	Feb 9	50100	Jan 2 1997
LOWEST DAILY MEAN	70	Oct 22	52	Sep 29	.00	Aug 27 1944
ANNUAL SEVEN-DAY MINIMUM	74	Oct 17	54	Sep 24	.00	Sep 2 1944
INSTANTANEOUS PEAK FLOW			17300	Feb 9	65400	Dec 23 1964
INSTANTANEOUS PEAK STAGE			6.23	Feb 9	11.87	Dec 23 1964
ANNUAL RUNOFF (AC-FT)	944700		714800		606100	
10 PERCENT EXCEEDS	2960		2290		2080	
50 PERCENT EXCEEDS	900		463		279	
90 PERCENT EXCEEDS	90		73		42	

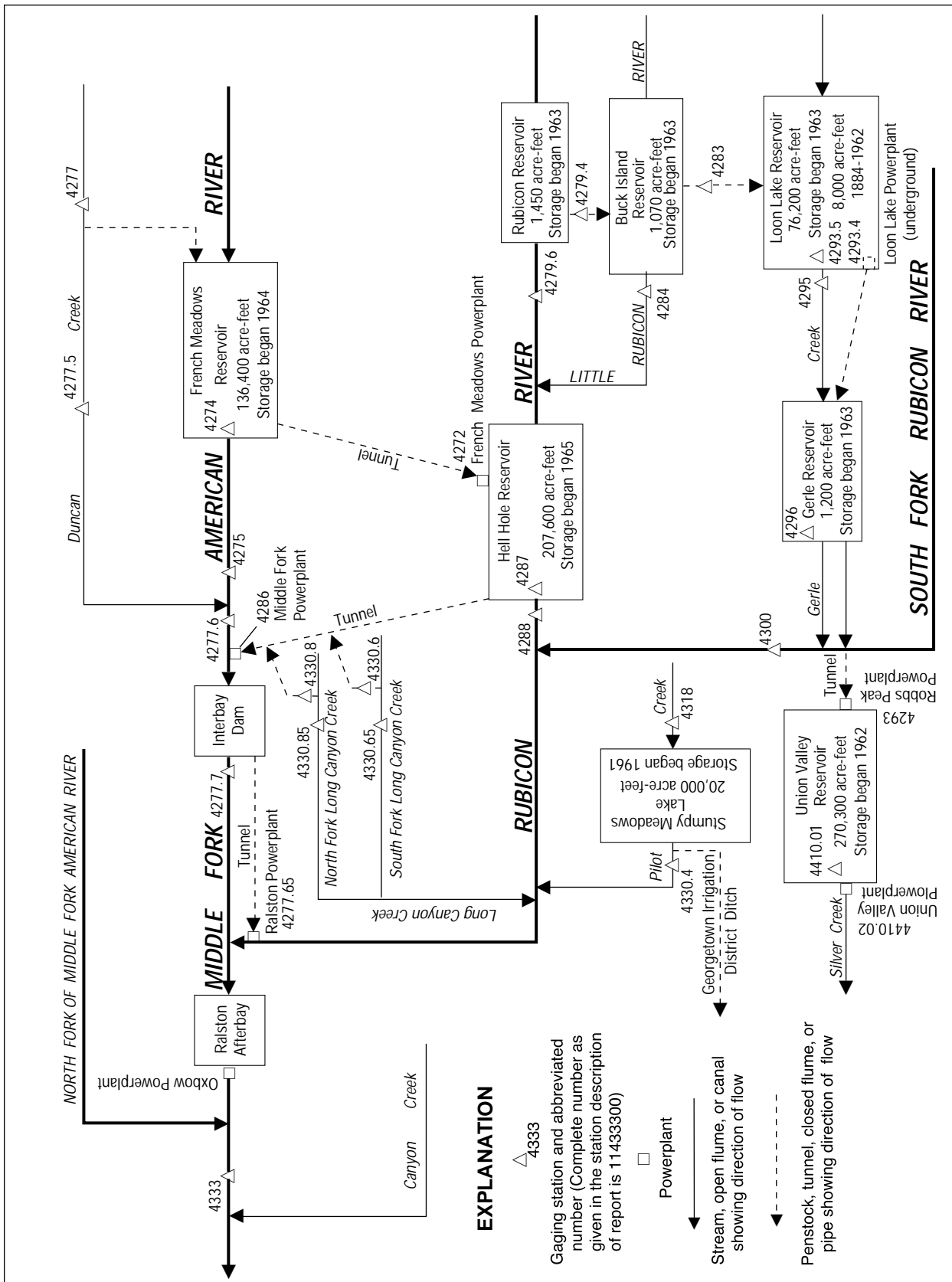


Figure 33. Diversions and storage in Middle Fork American and Rubicon River Basins.

11427400 FRENCH MEADOWS RESERVOIR NEAR FORESTHILL, CA

LOCATION.—Lat 39°06'32", long 120°25'49", in SW 1/4 NE 1/4 sec.32, T.15 N., R.14 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on left bank 2.2 mi upstream from dam on Middle Fork American River, 6.9 mi upstream from Chipmunk Creek, and 21 mi northeast of Foresthill.

DRAINAGE AREA.—47.0 mi².

PERIOD OF RECORD.—December 1964 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Placer County Water Agency).

REMARKS.—Reservoir is formed by rockfill dam with earth core. Storage began Dec. 21, 1964. Usable capacity, 125,601 acre-ft between elevations 5,125 ft, minimum operating level, and 5,263 ft, top of radial gates. Dead storage, 10,804 acre-ft. Reservoir is used to store water for hydroelectric power. Up to 400 ft³/s diverted from Duncan Creek through a tunnel to reservoir. Water is released through a tunnel to French Meadows Powerplant (station 11427200) at Hell Hole Reservoir (station 11428700) on the Rubicon River; releases began Dec. 13, 1965. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 137,700 acre-ft, May 19, 1966, elevation, 5,263.9 ft; minimum since reservoir first filled, 28,500 acre-ft, Oct. 21–24, 1991, elevation, 5,157.6 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 131,500 acre-ft, June 27, elevation, 5,259.5 ft; minimum, 62,100 acre-ft, Nov. 16, elevation, 5,199.6 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on a survey by Placer County Water Agency in 1965)

5,125	10,800	5,200	62,400
5,130	13,100	5,230	94,100
5,150	23,700	5,270	146,500
5,170	37,100		

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	88000	70400	65200	70500	84800	100400	91900	93700	118200	130800	119900	105400
2	87500	69700	65400	70600	84900	100900	91400	94200	119100	130500	119300	104900
3	86900	69200	66500	70600	85100	101100	91000	94400	119300	130400	118800	104500
4	86400	68400	66900	70700	85400	101100	90500	94200	119500	130400	118300	104200
5	85800	67600	67100	70800	85600	100900	90200	94100	119700	130200	117900	103900
6	85400	66800	67300	70800	85900	100700	89700	94400	120000	129800	117400	103600
7	84800	66200	67500	70900	87100	100300	89200	95000	120300	129400	117000	103100
8	84400	65900	67600	70900	88400	100000	88700	95500	120800	129100	116600	102700
9	83900	65300	67700	71000	90400	99600	88100	95700	121200	128700	116200	102200
10	83300	64700	67800	71000	91200	99200	87700	96100	121600	128300	115800	101700
11	82700	64200	67900	71100	91800	98800	87100	96500	122100	128200	115300	101500
12	82200	63600	68000	71100	92200	98300	86600	97300	123000	127800	114800	101100
13	81500	63000	68100	71200	92700	97800	86300	98200	124100	127400	114300	100800
14	81100	62700	68300	71300	93000	97300	85900	98500	124900	127000	113800	100300
15	80600	62400	68400	71600	93400	96900	85800	98800	126000	126700	113400	99800
16	80000	62100	68600	72000	94000	96400	85700	99000	127100	126300	112900	99400
17	79500	62200	68800	72600	94900	96100	85900	99400	127800	126000	112500	98900
18	79000	62200	69000	74800	95600	95700	86400	100000	128500	125700	112000	98600
19	78300	62300	69200	76400	95900	95400	86900	100500	129300	125300	111400	98300
20	77700	62300	69400	78800	96400	95000	87600	101600	130000	125100	110800	97900
21	77200	62300	69500	79800	96800	94700	88300	103000	130400	124500	110600	97300
22	76500	62400	69600	80600	97100	94300	88700	104700	130700	124100	110200	97000
23	76100	62900	69700	81800	97300	93800	88900	106600	130900	123700	109700	96400
24	75400	63100	69800	82400	97600	93400	89300	108700	131200	123300	109200	95900
25	75000	63200	69900	82800	97900	93000	90000	111000	131200	123000	108700	95500
26	74100	63200	70000	83300	98200	92800	90900	113100	131400	122500	108300	95000
27	73300	63300	70100	83500	98500	92700	91500	115000	131400	122000	107700	94500
28	72500	63400	70100	83800	99000	92500	92200	116300	131200	121600	107200	94100
29	71900	63700	70200	84000	---	92200	93200	116900	131200	121000	106900	93600
30	71100	64800	70300	84300	---	92200	93500	117200	131100	120500	106400	93000
31	70700	---	70300	84600	---	92100	---	117500	---	120300	105800	---
MAX	88000	70400	70300	84600	99000	101100	93500	117500	131400	130800	119900	105400
MIN	70700	62100	65200	70500	84800	92100	85700	93700	118200	120300	105800	93000
a	5208.4	5202.5	5208.0	5221.6	5234.2	5228.3	5229.5	5249.1	5259.2	5251.2	5239.8	5229.1
b	-17800	-5900	+5500	+14300	+14400	-6900	+1400	+24000	+13600	-10800	-14500	-12800

CAL YR 1998 b +19700

WTR YR 1999 b +4500

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11427500 MIDDLE FORK AMERICAN RIVER AT FRENCH MEADOWS, CA

LOCATION.—Lat 39°06'35", long 120°28'49", in SW 1/4 NW 1/4 sec.36, T.15 N., R.13 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on left bank 0.6 mi downstream from French Meadows Dam, 4.1 mi upstream from Chipmunk Creek, and 14 mi south of Cisco.

DRAINAGE AREA.—47.9 mi².

PERIOD OF RECORD.—October 1951 to current year.

REVISED RECORDS.—WSP 1445: 1953–54. WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 4,920 ft above sea level, from topographic map. Prior to Oct. 1, 1962, at site 0.8 mi upstream at different datum.

REMARKS.—Considerable regulation by French Meadows Reservoir (station 11427400) 0.6 mi upstream beginning December 1964. Water diverted into basin from Duncan Creek to French Meadows Reservoir since December 1964. Water diverted out of basin from French Meadows Reservoir through French Meadows Powerplant (station 11427200) to Hell Hole Reservoir (station 11428700) since December 1965. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 21,500 ft³/s, Jan. 31, 1963, gage height, 14.20 ft, from rating curve extended above 1,100 ft³/s on basis of peak flow at former site; minimum, 0.3 ft³/s, Oct. 4, 5, 21–25, 1960, Oct. 5, 6, 1961. Maximum discharge since construction of French Meadows Dam in 1964, 6,050 ft³/s, May 16, 1996, gage height, 11.61 ft, from flow over spillway of French Meadows Reservoir; minimum daily, 0.8 ft³/s, Oct. 22–25, 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	9.9	9.8	12	10	13	26	14	512	142	10	10	10
2	9.9	9.5	12	10	12	19	14	513	11	10	10	10
3	9.9	9.5	17	10	12	27	14	513	11	9.9	10	10
4	9.9	9.5	13	10	12	21	13	513	11	9.9	10	10
5	9.9	9.5	11	10	12	18	13	513	11	9.9	10	10
6	9.9	9.5	11	10	12	17	13	513	11	9.9	10	10
7	9.9	10	11	10	40	16	13	513	11	9.8	10	10
8	9.9	9.7	11	10	32	15	13	513	11	9.8	10	10
9	9.9	9.5	10	10	59	15	13	513	10	9.8	10	10
10	9.9	9.6	10	10	21	14	13	513	10	9.7	10	10
11	9.9	9.6	10	10	18	14	13	513	10	9.7	10	10
12	9.9	9.5	10	10	16	14	14	514	10	9.8	10	10
13	9.9	9.5	10	10	16	14	14	514	10	9.9	10	10
14	9.9	9.5	10	10	15	14	15	515	10	10	10	10
15	9.9	9.3	10	11	15	14	16	514	10	9.9	10	10
16	9.8	9.3	11	12	17	14	16	514	10	10	10	10
17	9.7	9.8	11	13	32	14	17	515	10	10	10	9.9
18	9.7	9.5	11	23	20	14	17	515	11	10	10	9.9
19	9.7	9.4	11	34	18	15	18	515	10	10	10	9.9
20	9.7	9.3	11	51	16	15	18	395	10	10	10	9.9
21	9.7	9.4	10	23	16	15	18	324	10	10	10	9.8
22	9.7	9.9	10	18	15	14	17	325	10	10	10	9.8
23	9.6	11	10	30	15	15	16	326	10	10	10	9.9
24	9.9	11	10	18	14	15	16	307	10	10	10	9.8
25	9.6	10	10	16	14	15	16	333	10	10	10	9.8
26	9.5	9.8	10	15	14	15	17	335	10	10	10	9.8
27	9.5	9.8	10	14	14	15	16	336	10	10	10	9.8
28	9.5	10	10	13	17	15	14	337	11	10	10	9.7
29	9.6	12	10	13	---	15	13	337	10	10	10	9.7
30	9.5	16	10	13	---	15	302	338	11	10	10	9.7
31	9.5	---	10	13	---	14	---	337	---	10	10	---
TOTAL	302.7	299.7	333	470	527	493	736	13788	442	308.0	310	297.4
MEAN	9.76	9.99	10.7	15.2	18.8	15.9	24.5	445	14.7	9.94	10.0	9.91
MAX	9.9	16	17	51	59	27	302	515	142	10	10	10
MIN	9.5	9.3	10	10	12	14	13	307	10	9.7	10	9.7
AC-FT	600	594	661	932	1050	978	1460	27350	877	611	615	590
a	17070	8720	.00	.00	.00	21920	20860	2630	12060	14190	14580	12150

a Diversion, in acre-feet, from French Meadows Reservoir to Hell Hole Reservoir through French Meadows Powerplant, provided by Placer County Water Agency.

11427500 MIDDLE FORK AMERICAN RIVER AT FRENCH MEADOWS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1964, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	19.8	20.3	101	92.5	143	151	356	550	297	52.4	6.04	2.10
MAX	222	106	882	377	561	367	537	1110	775	232	25.3	5.06
(WY)	1963	1964	1956	1956	1963	1960	1962	1958	1952	1952	1952	1952
MIN	.40	1.60	1.76	5.57	40.1	55.2	187	210	69.7	6.22	1.57	.64
(WY)	1961	1960	1960	1960	1955	1962	1955	1959	1959	1959	1959	1961

SUMMARY STATISTICS

WATER YEARS 1952 - 1964

ANNUAL MEAN	149
HIGHEST ANNUAL MEAN	265 1956
LOWEST ANNUAL MEAN	68.7 1961
HIGHEST DAILY MEAN	11300 Dec 23 1955
LOWEST DAILY MEAN	.30 Oct 22 1960
ANNUAL SEVEN-DAY MINIMUM	.34 Oct 19 1960
INSTANTANEOUS PEAK FLOW	21500 Jan 31 1963
INSTANTANEOUS PEAK STAGE	14.20 Jan 31 1963
ANNUAL RUNOFF (AC-FT)	108000
10 PERCENT EXCEEDS	446
50 PERCENT EXCEEDS	38
90 PERCENT EXCEEDS	1.5

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	15.2	10.3	12.9	20.0	18.4	22.9	23.9	61.8	43.9	16.5	8.53	11.8
MAX	266	42.7	83.3	249	200	375	248	518	272	136	15.0	136
(WY)	1966	1966	1965	1997	1982	1986	1965	1965	1995	1983	1965	1965
MIN	1.67	3.16	3.91	4.37	4.53	4.40	4.47	3.95	3.68	2.98	2.76	2.70
(WY)	1965	1978	1977	1977	1977	1977	1977	1976	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1965 - 1999

ANNUAL TOTAL	9283.8	18306.8	
ANNUAL MEAN	25.4	50.2	22.2
HIGHEST ANNUAL MEAN			97.3 1965
LOWEST ANNUAL MEAN			3.90 1977
HIGHEST DAILY MEAN	690 Jun 14	515 May 14	3430 May 16 1996
LOWEST DAILY MEAN	9.3 Nov 15	9.3 Nov 15	.80 Oct 22 1964
ANNUAL SEVEN-DAY MINIMUM	9.4 Nov 15	9.4 Nov 15	.84 Oct 21 1964
INSTANTANEOUS PEAK FLOW		672 Apr 30	6050 May 16 1996
INSTANTANEOUS PEAK STAGE		8.42 Apr 30	11.61 May 16 1996
ANNUAL RUNOFF (AC-FT)	18410	36310	16090
TOTAL DIVERSION (AC-FT) a	170700	124200	
10 PERCENT EXCEEDS	20	36	16
50 PERCENT EXCEEDS	11	10	9.6
90 PERCENT EXCEEDS	9.8	9.7	5.7

a Diversion, in acre-feet, from French Meadows Reservoir to Hell Hole Reservoir through French Meadows Powerplant, provided by Placer County Water Agency.

11427700 DUNCAN CREEK NEAR FRENCH MEADOWS, CA

LOCATION.—Lat 39°08'09", long 120°28'39", in NE 1/4 NW 1/4 sec.24, T.15 N., R.13 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on left bank 0.2 mi upstream from diversion dam, 0.5 mi downstream from Little Duncan Creek, 2 mi northwest of French Meadows, and 20 mi northeast of Foresthill.

DRAINAGE AREA.—9.94 mi².

PERIOD OF RECORD.—August 1960 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 5,270 ft above sea level, from topographic map. Prior to Sept. 3, 1965, at site 150 ft upstream at datum 9.56 ft higher.

REMARKS.—No regulation or diversion upstream from station. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 3,650 ft³/s, Dec. 22, 1964, gage height, 10.6 ft, from floodmarks, from rating curve extended above 400 ft³/s on basis of computation of flow over diversion dam; maximum gage height, 10.95, Jan. 1, 1997 (backwater from debris dam); minimum daily, 0.10 ft³/s, several days during July and August 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 250 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 18	0715	485	7.64	May 24	1730	590	7.80

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	2.3	5.3	39	13	25	147	32	130	218	14	2.5	1.2
2	2.2	3.1	32	13	24	93	30	137	201	14	2.4	1.2
3	2.1	2.5	140	13	24	90	29	108	154	13	2.4	1.2
4	2.1	2.3	54	12	24	73	27	90	121	12	2.3	1.2
5	2.0	2.3	35	12	22	60	e26	94	123	11	2.3	1.1
6	1.8	2.5	27	12	24	52	e24	120	129	9.7	2.4	1.1
7	1.8	6.0	22	11	103	45	24	149	119	9.0	2.5	1.1
8	1.7	5.1	20	11	66	41	25	153	107	8.3	2.4	1.0
9	1.7	3.6	18	11	142	38	23	145	99	7.7	2.4	1.0
10	1.7	3.5	17	11	81	34	21	141	94	7.1	2.8	1.0
11	1.7	4.1	16	11	61	31	22	161	98	6.6	2.6	.96
12	1.7	4.0	16	11	52	30	26	199	101	6.1	2.3	.93
13	1.7	4.5	17	11	45	31	35	198	102	6.1	2.2	.93
14	1.7	4.9	16	11	40	31	45	166	101	5.8	2.1	.91
15	1.6	4.7	16	22	35	29	49	143	97	5.3	2.0	.88
16	1.6	4.5	21	51	36	30	60	141	89	4.9	1.9	.86
17	1.6	7.8	23	69	72	33	86	157	77	4.7	1.8	.86
18	1.6	5.4	22	296	54	37	110	171	68	4.5	1.7	.92
19	1.5	5.0	20	182	43	38	134	188	59	4.3	1.7	1.1
20	1.5	4.9	22	266	38	37	149	202	52	4.2	1.5	1.0
21	1.5	4.9	23	143	34	32	147	224	46	4.0	1.5	1.1
22	1.5	12	21	100	31	31	131	268	41	3.9	1.5	.96
23	1.4	61	23	111	29	32	119	305	37	3.7	1.7	.95
24	3.3	27	19	71	28	32	123	375	33	3.5	1.4	1.0
25	3.5	14	15	56	27	34	142	408	28	3.4	1.3	.93
26	2.9	11	14	46	24	44	165	392	24	3.2	1.4	.90
27	2.3	11	13	39	25	48	161	371	21	3.1	1.7	.83
28	2.1	10	13	34	49	45	132	333	19	2.9	1.4	.81
29	2.3	28	13	31	---	42	107	269	17	2.8	1.2	.79
30	2.3	132	13	29	---	39	109	241	16	2.7	1.2	.78
31	2.0	---	13	27	---	35	---	230	---	2.6	1.3	---
TOTAL	60.7	396.9	773	1736	1258	1414	2313	6409	2491	194.1	59.8	29.50
MEAN	1.96	13.2	24.9	56.0	44.9	45.6	77.1	207	83.0	6.26	1.93	.98
MAX	3.5	132	140	296	142	147	165	408	218	14	2.8	1.2
MIN	1.4	2.3	13	11	22	29	21	90	16	2.6	1.2	.78
AC-FT	120	787	1530	3440	2500	2800	4590	12710	4940	385	119	59

e Estimated.

SACRAMENTO RIVER BASIN

11427700 DUNCAN CREEK NEAR FRENCH MEADOWS, CA—Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.06	17.9	34.8	44.5	41.4	51.7	75.8	121	62.4	9.47	1.61	1.13
MAX	51.1	172	256	213	291	161	162	245	316	100	10.4	4.51
(WY)	1963	1984	1965	1997	1986	1986	1989	1993	1983	1983	1983	1982
MIN	.22	1.09	.76	1.76	3.24	5.75	12.7	12.9	2.71	.51	.19	.34
(WY)	1978	1977	1977	1991	1977	1977	1977	1992	1992	1977	1977	1960

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	22993.7		17135.00			
ANNUAL MEAN	63.0		46.9		38.8	
HIGHEST ANNUAL MEAN					86.8	
LOWEST ANNUAL MEAN					4.27	
HIGHEST DAILY MEAN	556	Mar 24	408	May 25	2800	Jan 1 1997
LOWEST DAILY MEAN	1.4	Sep 19	.78	Sep 30	.10	Jul 31 1977
ANNUAL SEVEN-DAY MINIMUM	1.4	Sep 17	.86	Sep 24	.11	Aug 8 1977
INSTANTANEOUS PEAK FLOW			590	May 24	3650	Dec 22 1964
INSTANTANEOUS PEAK STAGE			7.80	May 24	10.95	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	45610		33990		28120	
10 PERCENT EXCEEDS	207		142		107	
50 PERCENT EXCEEDS	22		20		9.4	
90 PERCENT EXCEEDS	1.9		1.4		.75	

11427750 DUNCAN CREEK BELOW DIVERSION DAM, NEAR FRENCH MEADOWS, CA

LOCATION.—Lat 39°07'59", long 120°28'58", in NE 1/4 SE 1/4 sec.23, T.15 N., R.13 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on right bank 800 ft downstream from unnamed right bank tributary, 1,000 ft downstream from Duncan Creek Diversion Dam, and 20 mi northeast of Foresthill.

DRAINAGE AREA.—10.5 mi².

PERIOD OF RECORD.—October 1964 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 5,210 ft above sea level, from topographic map.

REMARKS.—Natural flow affected by transmountain diversion through Duncan Creek Diversion Tunnel to French Meadows Reservoir (station 11427400). Maximum design flow of tunnel is 400 ft³/s. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 3,640 ft³/s, Dec. 22, 1964, gage height, 8.74 ft, in gage well, 10.0 ft from floodmarks, from rating curve extended above 400 ft³/s on basis of computation of peak flow over diversion dam; no flow at times in 1965–66.

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	2.4	5.3	15	12	13	23	15	20	13	10	2.5	1.4
2	2.3	3.3	14	12	13	20	15	20	13	10	2.4	1.3
3	2.2	2.5	26	12	13	21	14	18	13	10	2.4	1.3
4	2.1	2.3	17	12	13	19	14	17	13	9.9	2.3	1.2
5	2.0	2.3	15	12	13	17	14	17	13	9.9	2.3	1.2
6	1.9	2.5	14	12	13	16	14	19	13	9.8	2.3	1.1
7	1.8	5.8	13	12	e20	15	14	21	13	8.8	2.4	1.1
8	1.8	5.6	13	12	19	15	e13	20	12	8.2	2.3	1.1
9	1.8	3.8	13	11	27	e15	13	19	12	7.7	2.4	1.0
10	1.8	3.6	13	11	20	14	13	18	12	7.2	2.7	1.0
11	1.8	4.2	13	11	17	14	13	18	12	6.7	2.6	1.0
12	1.7	4.1	13	11	16	14	13	19	12	6.2	2.4	.95
13	1.7	4.5	13	11	15	14	14	18	12	6.0	2.1	.95
14	1.7	4.9	13	11	15	14	16	17	12	6.1	2.0	.95
15	1.7	4.9	13	12	14	14	17	16	11	5.4	1.9	.93
16	1.7	4.6	14	14	15	14	19	16	11	5.0	1.9	.88
17	1.7	7.8	14	16	20	15	22	16	11	4.8	1.8	.88
18	1.7	5.7	14	70	17	16	25	15	11	4.6	1.7	.91
19	1.6	5.2	14	26	16	17	26	15	11	4.4	1.7	1.1
20	1.5	5.1	13	37	15	17	26	15	11	4.2	1.6	1.0
21	1.5	4.8	e13	23	15	16	24	15	11	4.0	1.5	1.2
22	1.5	12	13	19	14	15	22	16	11	3.9	1.5	1.0
23	1.5	35	e13	22	14	15	21	28	11	3.7	1.7	.95
24	3.2	26	13	18	14	15	21	76	11	3.6	1.6	1.0
25	3.7	12	12	16	13	15	23	108	11	3.4	1.4	.96
26	3.0	11	12	15	13	16	24	98	10	3.3	1.5	.93
27	2.3	10	12	14	13	17	22	83	10	3.1	1.9	.87
28	2.2	10	12	14	15	17	20	55	10	2.9	1.6	.83
29	2.3	12	12	14	---	17	18	19	10	2.8	1.4	.81
30	2.3	24	12	14	---	16	18	14	10	2.7	1.4	.81
31	2.1	---	12	13	---	16	---	13	---	2.6	1.4	---
TOTAL	62.5	244.8	423	519	435	499	543	879	346	180.9	60.6	30.61
MEAN	2.02	8.16	13.6	16.7	15.5	16.1	18.1	28.4	11.5	5.84	1.95	1.02
MAX	3.7	35	26	70	27	23	26	108	13	10	2.7	1.4
MIN	1.5	2.3	12	11	13	14	13	13	10	2.6	1.4	.81
AC-FT	124	486	839	1030	863	990	1080	1740	686	359	120	61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1999, BY WATER YEAR (WY)

MEAN	2.15	8.68	22.2	31.0	21.9	19.3	15.7	29.1	13.8	4.04	1.44	1.09
MAX	17.3	76.1	244	225	237	80.3	91.7	149	107	21.9	5.87	3.61
(WY)	1983	1982	1965	1997	1986	1986	1982	1967	1998	1983	1983	1983
MIN	.061	1.15	.76	1.69	2.02	2.63	4.80	3.88	2.15	.44	.28	.090
(WY)	1966	1991	1977	1991	1974	1965	1974	1976	1965	1965	1977	1965

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1965 - 1999	
ANNUAL TOTAL	7877.2		4223.41			
ANNUAL MEAN	21.6		11.6		14.2	
HIGHEST ANNUAL MEAN					43.1	
LOWEST ANNUAL MEAN					2.16	
HIGHEST DAILY MEAN	410	Mar 24	108	May 25	2560	Jan 1 1997
LOWEST DAILY MEAN	1.4	Aug 28	.81	Sep 29	.00	Sep 10 1965
ANNUAL SEVEN-DAY MINIMUM	1.5	Sep 16	.89	Sep 24	.00	Sep 10 1965
INSTANTANEOUS PEAK FLOW			281	May 24	3640	Dec 22 1964
INSTANTANEOUS PEAK STAGE			3.59	May 24	8.74	Dec 22 1964
ANNUAL RUNOFF (AC-FT)	15620		8380		10290	
10 PERCENT EXCEEDS	25		20		16	
50 PERCENT EXCEEDS	12		12		5.5	
90 PERCENT EXCEEDS	1.9		1.5		.72	

e Estimated.

11427760 MIDDLE FORK AMERICAN RIVER ABOVE MIDDLE FORK POWERPLANT, NEAR FORESTHILL, CA

LOCATION.—Lat 39°01'31", long 120°35'40", in NW 1/4 NW 1/4 sec.36, T.14 N., R.12 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on right bank 300 ft upstream from Middle Fork Powerplant, 3.7 mi upstream from Big Mosquito Creek, and 11 mi east of Foresthill.

DRAINAGE AREA.—87.8 mi².

PERIOD OF RECORD.—August 1965 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 2,540 ft above sea level, from topographic map. Prior to May 15, 1980, at datum 5.00 ft higher. May 15, 1980, to Oct. 11, 1984, at datum 4.00 ft higher.

REMARKS.—Considerable regulation by French Meadows Reservoir (station 11427400) 11 mi upstream. Transbasin diversions from French Meadows Reservoir to Hell Hole Reservoir (station 11428700) through French Meadows Powerplant (station 11427200). See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 13,900 ft³/s, Jan. 2, 1997, gage height, 14.6 ft, from floodmark, from rating curve extended above 4,200 ft³/s; minimum daily, 5.3 ft³/s, Sept. 11, 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	23	26	116	48	123	417	149	637	248	45	24	18
2	22	25	85	48	117	345	143	646	90	44	24	18
3	22	22	188	47	113	442	141	662	88	43	24	18
4	21	21	129	46	114	384	134	645	83	43	24	18
5	21	22	92	46	111	329	140	642	81	43	24	18
6	21	22	80	45	117	294	134	650	77	41	24	18
7	21	37	70	45	481	264	128	656	74	39	23	18
8	21	35	70	44	552	245	136	651	72	38	23	18
9	21	25	65	43	963	235	126	638	70	37	23	18
10	21	24	61	42	529	210	122	627	68	36	24	19
11	21	29	60	42	386	197	132	625	67	35	23	19
12	20	25	59	42	322	186	140	628	65	33	22	19
13	20	24	61	41	276	180	154	623	63	33	22	18
14	21	24	63	41	247	176	181	615	62	33	21	18
15	21	24	61	51	221	169	195	608	60	32	21	18
16	20	24	64	89	246	166	209	598	59	31	21	18
17	20	35	67	102	535	167	233	594	57	31	21	18
18	20	30	66	305	401	169	249	593	56	30	20	18
19	20	26	63	384	350	173	260	590	55	29	19	18
20	20	25	63	753	312	177	264	480	54	29	19	18
21	20	24	57	447	289	172	258	376	53	28	19	19
22	20	44	57	290	257	165	245	376	52	28	19	18
23	20	66	54	445	240	163	228	377	51	27	19	18
24	24	107	55	308	225	161	221	390	50	27	19	18
25	27	50	54	248	239	159	219	447	49	27	18	18
26	23	43	53	212	214	164	231	435	48	27	18	18
27	22	43	52	182	207	169	224	422	47	26	20	18
28	21	46	51	163	231	165	206	400	47	25	19	18
29	22	68	50	148	---	160	190	376	46	25	19	17
30	22	177	50	138	---	160	388	362	45	24	18	17
31	21	---	50	134	---	161	---	358	---	23	19	---
TOTAL	659	1193	2166	5019	8418	6724	5780	16727	2037	1012	653	542
MEAN	21.3	39.8	69.9	162	301	217	193	540	67.9	32.6	21.1	18.1
MAX	27	177	188	753	963	442	388	662	248	45	24	19
MIN	20	21	50	41	111	159	122	358	45	23	18	17
AC-FT	1310	2370	4300	9960	16700	13340	11460	33180	4040	2010	1300	1080

11427760 MIDDLE FORK AMERICAN RIVER ABOVE MIDDLE FORK POWERPLANT, NEAR FORESTHILL, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	27.6	47.3	91.5	181	176	213	181	186	100	37.2	19.6	17.4
MAX	270	262	446	781	969	696	601	600	451	184	33.2	29.5
(WY)	1966	1984	1997	1997	1986	1986	1982	1982	1995	1983	1983	1982
MIN	7.43	12.9	12.2	15.7	18.4	21.7	19.3	21.5	15.4	8.64	6.35	6.59
(WY)	1978	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1966 - 1999	
ANNUAL TOTAL	53566		50930			
ANNUAL MEAN	147		140		106	
HIGHEST ANNUAL MEAN					271	
LOWEST ANNUAL MEAN					14.3	
HIGHEST DAILY MEAN	1270	Mar 24	963	Feb 9	7600	Jan 2 1997
LOWEST DAILY MEAN	20	Sep 17	17	Sep 29	5.3	Sep 11 1977
ANNUAL SEVEN-DAY MINIMUM	20	Sep 17	18	Sep 24	5.5	Sep 8 1977
INSTANTANEOUS PEAK FLOW			1270	Feb 9	13900	Jan 2 1997
INSTANTANEOUS PEAK STAGE			8.07	Feb 9	14.60	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	106200		101000		76820	
10 PERCENT EXCEEDS	322		389		257	
50 PERCENT EXCEEDS	85		54		39	
90 PERCENT EXCEEDS	21		19		15	

11427770 MIDDLE FORK AMERICAN RIVER BELOW INTERBAY DAM, NEAR FORESTHILL, CA

LOCATION.—Lat 39°01'35", long 120°36'09", in SW 1/4 SE 1/4 sec.26, T.14 N., R.12 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on left bank at Interbay Dam, 3.3 mi upstream from Big Mosquito Creek, and 10.6 mi east of Foresthill.

DRAINAGE AREA.—89.1 mi².

PERIOD OF RECORD.—October 1965 to current year (since October 1985, operated as low-flow station only).

GAGE.—Acoustic-velocity meter system. Elevation of gage is 2,470 ft above sea level, from topographic map. Prior to February 1986, water-stage recorder at same site. March 1986 to September 1987, nonrecording gage and V-notch sharp-crested weir at same site and datum as previous gage.

REMARKS.—Flow regulated by French Meadows Reservoir (station 11427400) and after Aug. 22, 1966, by Interbay Reservoir (usable capacity, 130 acre-ft between normal operating limits) 500 ft upstream. Water is diverted out of the basin from French Meadows Reservoir to Hell Hole Reservoir (station 11428700) and from Interbay Reservoir to Ralston Powerplant (station 11427765). Water is diverted into the basin from Hell Hole Reservoir to Middle Fork Powerplant (station 11428600) and through South Fork and Middle Fork Long Canyon Creek Diversion Tunnels (stations 11433060 and 11433080). See schematic diagram of Middle Fork American and Rubicon River Basins. Beginning October 1985, only flows less than 35 ft³/s are computed.

COOPERATION.—Records provided by Placer County Water Agency, 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 (water years 1966–85), 9,900 ft³/s, Jan. 13, 1980, gage height, 7.95 ft; minimum daily, 1.0 ft³/s, Oct. 25–30, 1966, Jan. 19, 1967.

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	e25	e23	23	23	23	---	23	23	23	23	23	23
2	e25	e23	23	23	23	---	23	23	23	23	23	23
3	e25	e23	23	23	23	---	23	23	23	23	23	23
4	e25	e23	23	23	23	---	23	23	23	23	23	23
5	e25	23	23	23	23	---	23	23	23	23	23	23
6	e25	23	23	23	23	---	23	23	23	23	23	23
7	e25	23	23	23	23	---	23	23	23	23	23	23
8	e25	23	23	23	---	---	23	23	23	23	23	23
9	e24	23	23	23	---	---	23	23	23	23	23	23
10	e24	23	23	23	---	---	23	23	23	23	23	23
11	e24	23	23	23	23	---	23	23	23	23	23	23
12	e24	23	23	23	23	---	23	---	23	23	23	23
13	e24	23	23	23	23	---	23	23	23	23	23	23
14	e24	23	23	23	23	---	23	23	23	23	23	23
15	e25	23	23	23	23	---	---	---	23	23	23	23
16	e24	23	23	23	23	---	---	23	23	23	23	23
17	e24	23	23	23	23	---	23	23	23	23	23	23
18	e24	23	23	23	23	---	23	23	23	23	23	23
19	e23	23	23	---	23	---	---	23	23	23	23	22
20	e23	23	23	---	23	---	---	23	23	23	23	20
21	e22	23	23	23	23	---	23	23	23	23	23	22
22	e22	23	23	23	23	---	23	23	23	23	23	21
23	e22	23	23	23	23	---	23	23	23	23	23	20
24	e23	23	23	23	---	---	23	23	23	23	23	20
25	e23	23	23	23	---	---	23	---	23	23	23	20
26	e23	23	23	23	---	23	---	23	23	23	23	20
27	e23	23	23	23	---	23	23	23	23	23	23	20
28	e23	23	23	23	23	23	23	23	23	23	23	20
29	e23	23	23	23	---	23	23	23	23	23	23	20
30	e23	23	23	23	---	23	23	23	23	23	23	20
31	e23	---	23	23	---	23	---	23	---	23	23	---
TOTAL	737	690	713	---	---	---	---	---	690	713	713	659
MEAN	23.8	23.0	23.0	---	---	---	---	---	23.0	23.0	23.0	22.0
MAX	25	23	23	---	---	---	---	---	23	23	23	23
MIN	22	23	23	---	---	---	---	---	23	23	23	20
AC-FT	1460	1370	1410	---	---	---	---	---	1370	1410	1410	1310
a	3100	29220	40390	34630	43280	52780	47450	51650	46410	41380	42210	25360

e Estimated.

a Diversion, in acre-feet, through Ralston Powerplant, provided by Placer County Water Agency.

11427770 MIDDLE FORK AMERICAN RIVER BELOW INTERBAY DAM, NEAR FORESTHILL, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1985, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	30.5	27.4	73.8	93.7	86.6	101	117	118	78.2	29.4	18.8	18.3
MAX	270	140	548	398	928	508	868	857	313	152	23.7	24.7
(WY)	1966	1984	1984	1980	1982	1983	1982	1982	1967	1983	1983	1983
MIN	5.84	6.38	6.22	6.15	9.32	7.61	11.6	11.1	11.3	7.52	5.86	5.68
(WY)	1978	1968	1968	1968	1968	1968	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS

	WATER YEARS 1966 - 1985	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR
ANNUAL MEAN	66.0		
HIGHEST ANNUAL MEAN	347	1982	
LOWEST ANNUAL MEAN	10.0	1968	
HIGHEST DAILY MEAN	8090	Feb 16 1982	
LOWEST DAILY MEAN	1.0	Oct 25 1966	
ANNUAL SEVEN-DAY MINIMUM	1.3	Oct 25 1966	
INSTANTANEOUS PEAK FLOW	9900	Jan 13 1980	
INSTANTANEOUS PEAK STAGE	7.95	Jan 13 1980	
ANNUAL RUNOFF (AC-FT)	47810		
TOTAL DIVERSION (AC-FT) a		484400	457900
10 PERCENT EXCEEDS	141		
50 PERCENT EXCEEDS	22		
90 PERCENT EXCEEDS	11		

a Diversion, in acre-feet, through Ralston Powerplant, provided by Placer County Water Agency.

11427940 RUBICON-ROCKBOUND TUNNEL NEAR MEEKS BAY, CA

LOCATION.—Lat 38°59'16", long 120°13'29", in NE 1/4 SE 1/4 sec.8, T.13 N., R.16 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank at tunnel intake 100 ft upstream from diversion dam on Rubicon River, 3.5 mi upstream from Rubicon Springs, and 6.4 mi southwest of Meeks Bay.

PERIOD OF RECORD.—December 1963 to current year.

GAGE.—Water-stage recorder. Datum of gage is 6,533.23 ft above sea level (levels by Sacramento Municipal Utility District). Auxiliary water-stage recorder since Aug. 26, 1966, 220 ft downstream from tunnel outlet at different datum.

REMARKS.—Tunnel diverts water from Rubicon River to Rockbound Lake which flows into Buck Island Lake. Water is then diverted via Buck-Loon Tunnel (station 11428300) to Loon Lake (station 11429350) for power development. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, 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	14	29	191	18	22	39	36	157	646	392	20	.03
2	9.9	35	103	17	21	52	31	241	597	412	18	.00
3	7.4	19	125	16	22	43	29	173	323	379	16	.00
4	5.6	12	116	16	25	38	28	121	191	290	14	.00
5	4.1	8.5	76	15	25	29	25	122	184	230	12	.00
6	2.5	6.9	55	15	23	24	27	206	342	212	11	.00
7	1.2	6.7	43	15	36	21	25	331	406	218	11	.00
8	.24	8.1	39	15	53	19	24	342	342	205	8.8	.00
9	.00	9.7	34	14	48	20	27	284	328	185	9.6	.00
10	.00	9.7	31	13	49	24	25	253	349	170	27	.00
11	.00	9.8	31	13	45	18	22	313	435	178	40	.00
12	.00	10	31	13	38	17	29	455	530	191	23	.00
13	.00	11	34	13	27	19	52	519	619	182	15	.00
14	.00	15	33	14	24	26	98	336	686	171	11	.00
15	.00	19	30	23	22	25	114	233	767	159	8.4	.00
16	.00	19	30	61	21	23	124	244	761	136	6.6	.00
17	.00	21	38	63	42	29	156	326	688	108	5.4	.00
18	.00	21	40	127	40	40	190	445	664	90	4.5	.00
19	.00	19	35	104	29	53	236	447	623	76	4.2	.00
20	.00	16	29	77	24	46	264	493	543	67	3.9	.00
21	.00	14	27	60	24	36	264	508	553	31	3.3	.00
22	.00	17	25	50	24	30	210	651	574	.23	3.1	.00
23	.00	75	23	48	21	31	148	775	655	.08	6.9	.00
24	.00	127	21	40	20	36	120	808	677	7.4	6.6	.00
25	.00	72	19	39	21	41	170	848	554	26	4.7	.00
26	.00	42	19	35	22	66	258	845	370	33	3.2	.00
27	.00	30	18	29	20	93	235	826	299	35	2.5	.00
28	.00	26	17	26	25	80	177	800	294	32	2.0	.00
29	.11	28	17	24	---	63	124	706	329	29	1.6	.00
30	4.5	272	17	23	---	50	106	566	356	25	.77	.00
31	11	---	17	23	---	42	---	718	---	22	.33	---
TOTAL	60.55	1008.4	1364	1059	813	1173	3374	14092	14685	4291.71	304.40	0.03
MEAN	1.95	33.6	44.0	34.2	29.0	37.8	112	455	490	138	9.82	.001
MAX	14	272	191	127	53	93	264	848	767	412	40	.03
MIN	.00	6.7	17	13	20	17	22	121	184	.08	.33	.00
AC-FT	120	2000	2710	2100	1610	2330	6690	27950	29130	8510	604	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

	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	16.1	49.1	46.2	50.1	43.4	67.1	154	359	327	118	18.9	10.6																											
MAX	149	277	204	222	187	196	295	655	789	519	168	91.0																											
(WY)	1983	1984	1965	1970	1986	1986	1989	1969	1983	1983	1983	1982																											
MIN	.000	.000	.000	.000	3.44	13.5	24.6	110	33.8	.77	.000	.000																											
(WY)	1964	1964	1977	1977	1991	1977	1975	1977	1976	1976	1964	1964																											

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1964 - 1999	
ANNUAL TOTAL	53667.82		42225.09			
ANNUAL MEAN	147		116		105	
HIGHEST ANNUAL MEAN					197	
LOWEST ANNUAL MEAN					30.5	
HIGHEST DAILY MEAN	937	Mar 24	848	May 25	1180	Jan 1 1997
LOWEST DAILY MEAN	.00	Oct 9	.00	Oct 9	.00	Oct 1 1963
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 9	.00	Oct 9	.00	Oct 1 1963
ANNUAL RUNOFF (AC-FT)	106500		83750		76200	
10 PERCENT EXCEEDS	518		384		342	
50 PERCENT EXCEEDS	37		27		27	
90 PERCENT EXCEEDS	6.6		.00		.00	

11427960 RUBICON RIVER BELOW RUBICON DAM, NEAR MEEKS BAY, CA

LOCATION.—Lat 38°59'20", long 120°13'20", in NW 1/4 SW 1/4 sec.9, T.13 N., R.16 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, at outlet structure on diversion dam on Rubicon River, 3.3 mi upstream from Rubicon Springs, and 6.2 mi southwest of Meeks Bay.

PERIOD OF RECORD.—October 1991 to current year (low-flow records only). Unpublished records for water years 1964–91 available in files of the U.S. Geological Survey.

GAGE.—Differential-pressure gage and orifice control in outlet pipes. Auxiliary nonrecording gage 1,300 ft downstream at different datum. Datum of gage is 6,520 ft above sea level from topographic map. Prior to Sept. 4, 1991, nonrecording gage at site 1,300 ft downstream at different datum.

REMARKS.—Records not computed above 10 ft³/s. Flow regulated by Rubicon Reservoir. Flow over the spillway bypasses this station. Most of the water is diverted through Rubicon–Rockbound Tunnel (station 11427940) to Rockbound Lake, which flows into Buck Island Lake. Water is then diverted via Buck–Loon Tunnel (station 11428300) to Loon Lake (station 11429350) for power development. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, 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	6.9	6.2	6.8	6.6	6.6	6.8	6.7	7.5	e8.6	e7.0	e7.3	6.7
2	6.7	6.2	6.5	6.6	6.6	6.8	6.7	7.8	e8.5	e7.0	e7.3	6.7
3	6.7	6.1	6.5	6.6	6.6	6.8	6.4	7.6	e7.9	e7.0	e7.3	6.7
4	6.6	6.0	6.5	6.6	6.6	6.8	6.6	7.4	e7.5	e6.8	e7.3	6.7
5	e6.6	6.0	6.3	6.6	6.6	6.6	6.6	7.4	e7.4	e6.6	e7.3	6.6
6	e6.6	6.0	6.3	6.6	6.6	6.6	6.6	7.7	e7.9	e6.5	e7.3	6.6
7	6.6	6.0	6.2	6.5	6.7	6.6	6.6	8.1	e8.1	e6.6	e7.3	5.4
8	6.5	6.0	6.2	6.5	6.8	6.5	6.6	8.1	e8.0	e6.5	e7.3	3.3
9	6.5	6.0	6.2	6.5	6.8	6.5	6.6	8.0	e7.9	e6.4	e7.3	3.3
10	6.5	6.0	6.4	6.5	6.8	6.5	6.6	7.9	e6.8	e6.1	e7.3	3.3
11	6.5	6.0	6.7	6.5	6.8	6.5	6.6	8.0	e6.8	e6.4	e7.3	3.4
12	6.4	6.0	6.7	6.6	6.7	6.5	6.6	8.3	e7.3	e6.5	e7.3	3.4
13	5.4	6.0	6.7	6.6	6.6	6.5	6.7	8.5	e7.4	e6.4	e7.3	3.4
14	4.0	6.0	6.7	6.6	6.7	6.6	6.9	8.2	e7.6	e6.3	e7.3	3.3
15	3.9	6.0	6.7	6.6	6.6	6.6	7.2	7.9	e7.6	e6.3	e7.3	3.3
16	4.0	6.0	6.7	6.8	6.6	6.6	7.4	7.9	e7.6	e6.2	e7.3	3.3
17	3.9	6.1	6.7	6.8	6.7	6.7	7.5	8.1	e7.6	e6.1	e7.3	4.7
18	3.9	6.1	6.7	7.1	6.7	6.7	7.6	8.4	e7.5	e6.2	e7.3	6.5
19	3.9	6.1	6.7	7.0	6.6	6.8	7.8	8.4	e7.4	e6.4	7.2	6.5
20	3.9	6.0	6.7	6.9	6.6	6.8	7.8	8.4	e7.3	e6.4	6.8	6.5
21	3.9	6.0	6.7	6.8	6.6	6.7	7.9	8.5	e6.4	e6.4	6.8	5.6
22	3.9	6.0	6.6	6.8	6.6	6.7	7.7	8.8	e7.3	e6.7	6.8	4.0
23	3.8	6.3	6.6	6.8	6.7	6.7	7.5	e8.9	e7.5	e7.0	6.8	4.0
24	3.8	6.6	6.6	6.7	6.6	6.7	7.4	e8.9	e7.5	e7.3	6.8	4.1
25	3.9	6.4	6.6	6.7	6.6	6.7	7.6	e8.7	e7.3	e7.4	6.8	4.0
26	3.9	6.3	6.6	6.7	6.6	6.8	7.9	e8.7	e7.0	e7.4	6.8	4.0
27	4.0	6.2	6.6	6.7	6.7	7.0	7.8	e8.7	e6.8	e7.4	6.8	4.0
28	4.0	6.2	6.6	6.6	6.7	6.9	7.6	e8.8	e6.8	e7.4	6.8	4.0
29	4.0	6.2	6.6	6.6	---	6.8	7.4	e8.7	e6.9	e7.4	6.8	4.0
30	4.1	7.0	6.6	6.6	---	6.8	7.3	e8.5	e6.9	e7.3	6.7	4.0
31	5.4	---	6.6	6.6	---	6.7	---	e8.7	---	7.3	6.7	---
TOTAL	156.7	184.0	203.6	206.7	186.4	207.3	214.2	255.5	223.1	208.7	220.0	141.3
MEAN	5.05	6.13	6.57	6.67	6.66	6.69	7.14	8.24	7.44	6.73	7.10	4.71
MAX	6.9	7.0	6.8	7.1	6.8	7.0	7.9	8.9	8.6	7.4	7.3	6.7
MIN	3.8	6.0	6.2	6.5	6.6	6.5	6.4	7.4	6.4	6.1	6.7	3.3
AC-FT	311	365	404	410	370	411	425	507	443	414	436	280

CAL YR 1998 TOTAL 2496.5 MEAN 6.84 MAX 8.4 MIN 3.8 AC-FT 4950
WTR YR 1999 TOTAL 2407.5 MEAN 6.60 MAX 8.9 MIN 3.3 AC-FT 4780

e Estimated.

11428300 BUCK-LOON TUNNEL NEAR MEEKS BAY, CA

LOCATION.—Lat 39°00'17", long 120°15'21", in SE 1/4 NW 1/4 sec.6, T.13 N., R.16 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank at tunnel intake near left abutment of diversion dam and 7.4 mi southwest of Meeks Bay.

PERIOD OF RECORD.—November 1963 to current year.

GAGE.—Water-stage recorder. Datum of gage is 6,425.0 ft above sea level (levels by Sacramento Municipal Utility District).

REMARKS.—Tunnel diverts water from Buck Island Lake and discharges into Loon Lake (station 11429350). Buck Island Lake receives water from Rubicon River via Rubicon-Rockbound Tunnel (station 11427940). Gates are closed at the tunnel entrance during the summer to raise the level of Buck Island Lake for recreational purposes. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, 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	8.7	12	375	19	29	45	48	172	877	511	27	1.1
2	129	46	191	19	26	61	39	314	838	540	24	1.0
3	63	37	165	18	26	64	36	289	582	540	21	1.0
4	11	24	188	18	28	55	34	193	338	443	18	1.0
5	5.6	15	125	17	30	43	34	151	247	350	15	1.0
6	2.8	11	84	16	31	35	34	218	408	298	14	1.0
7	1.8	12	61	16	50	29	31	405	560	292	13	1.0
8	.76	13	52	16	73	26	31	478	514	289	12	1.0
9	.24	11	46	15	84	29	31	423	478	264	12	1.0
10	.04	11	40	14	69	25	28	363	479	237	21	.99
11	.00	12	38	14	55	23	26	395	555	232	35	.99
12	.00	12	38	13	49	21	28	549	667	255	38	.98
13	.00	12	38	13	40	22	41	704	751	254	29	.98
14	.00	13	41	14	34	26	80	540	845	234	19	.97
15	.00	17	38	19	29	30	129	379	924	213	14	.97
16	.00	22	37	56	28	29	147	329	944	185	11	.96
17	.00	29	40	77	44	30	183	402	895	150	8.2	.96
18	.00	30	45	160	53	38	240	557	842	120	6.1	.96
19	.00	26	45	190	45	51	302	598	812	96	5.0	.95
20	.00	22	43	142	35	57	354	639	721	80	4.2	.95
21	.00	18	37	100	37	48	368	645	695	45	3.7	.94
22	.00	21	33	69	31	40	321	782	707	.76	3.4	.94
23	.00	55	29	73	28	37	232	941	784	.80	3.8	.93
24	.00	186	26	60	26	38	164	974	827	.82	4.1	.93
25	.00	133	24	48	29	43	194	982	774	.85	4.4	.92
26	.00	75	22	45	27	59	319	985	577	.91	4.2	.92
27	.00	50	21	40	25	94	361	975	447	1.0	3.6	.91
28	.00	41	20	35	28	101	275	964	407	16	2.9	.91
29	.00	39	19	32	---	82	190	927	439	33	2.4	.90
30	.00	260	19	30	---	67	139	758	472	33	1.8	.90
31	.00	---	19	29	---	60	---	868	---	30	1.4	---
TOTAL	222.94	1265	1999	1427	1089	1408	4439	17899	19406	5745.14	382.2	28.96
MEAN	7.19	42.2	64.5	46.0	38.9	45.4	148	577	647	185	12.3	.97
MAX	129	260	375	190	84	101	368	985	944	540	38	1.1
MIN	.00	11	19	13	25	21	26	151	247	.76	1.4	.90
AC-FT	442	2510	3970	2830	2160	2790	8800	35500	38490	11400	758	57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

MEAN	21.0	66.6	63.2	68.5	58.1	87.9	197	459	409	141	20.7	13.1
MAX	182	405	264	297	254	239	356	861	994	643	197	116
(WY)	1983	1984	1965	1970	1986	1989	1989	1969	1983	1995	1983	1982
MIN	.000	.000	.000	.25	5.46	19.1	36.8	145	31.8	.97	.000	.000
(WY)	1964	1964	1977	1991	1991	1977	1967	1977	1976	1987	1964	1964

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1964 - 1999	
ANNUAL TOTAL	66543.37		55311.24			
ANNUAL MEAN	182		152		134	
HIGHEST ANNUAL MEAN					245	
LOWEST ANNUAL MEAN					39.2	
HIGHEST DAILY MEAN	973	Mar 24	985	May 26	1240	Dec 23 1964
LOWEST DAILY MEAN	.00	Oct 11	.00	Oct 11	.00	Oct 1 1963
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 11	.00	Oct 11	.00	Oct 1 1963
ANNUAL RUNOFF (AC-FT)	132000		109700		97060	
10 PERCENT EXCEEDS	638		544		430	
50 PERCENT EXCEEDS	46		35		36	
90 PERCENT EXCEEDS	3.5		.93		.05	

11428400 LITTLE RUBICON RIVER BELOW BUCK ISLAND DAM, NEAR MEEKS BAY, CA

LOCATION.—Lat 39°00'18", long 120°15'19", in SW 1/4 NW 1/4 sec.6, T.13 N., R.16 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, at outlet structure on Buck Island Diversion Dam, 7.4 mi southwest of Meeks Bay.

DRAINAGE AREA.—6.00 mi².

PERIOD OF RECORD.—October 1990 to current year (low-flow records only). Unpublished records for water years 1964–90 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,420 ft above sea level, from topographic map. Aug. 14, 1964, to Oct. 4, 1973, nonrecording gage at site 60 ft downstream at different datum. Nonrecording gage at present site Oct. 4, 1973, to Aug. 26, 1986, at different datum and Aug. 27, 1986, to Sept. 30, 1990, at same datum.

REMARKS.—No records computed above 2 ft³/s. Flow regulated by Buck Island Reservoir. Flow over the spillway bypasses this station. Most of the water is diverted at Buck Island Reservoir via Buck–Loon Tunnel (station 11428300) to Loon Lake (station 11429350). Buck Island Lake receives water from Rubicon River via Rubicon–Rockbound Tunnel (station 11427940). See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, 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	1.2	1.2	1.5	1.2	1.3	1.4	1.2	1.3	1.6	1.5	1.2	1.1
2	1.3	1.2	1.3	1.2	1.3	1.4	1.2	1.4	1.6	1.5	1.2	1.1
3	1.2	1.2	1.3	1.2	1.3	1.4	1.2	1.4	1.5	1.5	1.2	1.1
4	1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.3	1.4	1.4	1.2	1.1
5	e1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.3	1.3	1.4	1.2	1.1
6	e1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.3	1.5	1.3	1.2	1.1
7	1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.4	1.5	1.3	1.2	1.0
8	1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.5	1.5	1.3	1.2	1.1
9	1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.4	1.5	1.3	1.2	1.1
10	1.2	1.2	1.2	1.2	1.3	1.3	1.2	1.4	1.5	1.3	1.2	1.1
11	1.2	1.2	1.2	1.2	1.3	1.3	1.2	1.4	1.5	1.3	1.3	1.1
12	1.2	1.2	1.2	1.2	1.4	1.3	1.2	1.5	1.6	1.3	1.3	1.1
13	1.2	1.2	1.2	1.2	1.4	1.3	1.2	1.6	1.6	1.3	1.3	1.1
14	1.2	1.2	1.2	1.2	1.3	1.3	1.2	1.5	1.6	1.3	1.4	1.1
15	1.2	1.2	1.2	1.2	1.4	1.3	1.3	1.4	---	1.3	1.4	1.1
16	1.2	1.2	1.2	1.3	1.4	1.3	1.3	1.4	---	1.3	1.5	1.1
17	1.1	1.2	1.2	1.3	1.4	1.3	1.3	1.4	---	1.2	1.6	1.1
18	1.1	1.2	1.2	1.3	1.4	1.3	1.3	1.5	1.6	1.2	1.6	1.1
19	1.1	1.2	1.2	1.3	1.4	1.2	1.4	1.5	1.6	1.2	1.6	1.1
20	1.1	1.2	1.2	1.3	1.4	1.2	1.4	1.5	1.6	1.2	1.3	1.1
21	1.1	1.2	1.2	1.3	1.4	1.2	1.4	1.5	1.6	1.2	1.2	1.1
22	1.1	1.2	1.2	1.3	1.4	1.2	1.4	1.5	1.6	1.2	1.2	1.1
23	1.1	1.3	1.2	1.3	1.4	1.2	1.3	---	1.6	1.2	1.2	1.1
24	1.1	1.3	1.3	1.3	1.4	1.2	1.3	---	1.6	1.2	1.1	1.1
25	1.1	1.3	1.3	1.3	1.4	1.2	1.3	---	1.6	1.2	1.2	1.1
26	1.1	1.3	1.3	1.3	1.4	1.2	1.4	---	1.5	1.3	1.2	1.1
27	1.1	1.3	1.3	1.3	1.4	1.3	1.4	---	1.5	1.2	1.2	1.1
28	1.1	1.2	1.3	1.3	1.5	1.3	1.3	---	1.4	1.1	1.2	1.1
29	1.1	1.2	1.3	1.3	---	1.3	1.3	---	1.4	1.2	1.2	1.2
30	1.1	1.4	1.3	1.3	---	1.2	1.3	---	1.5	1.2	1.2	1.3
31	1.1	---	1.3	1.3	---	1.2	---	---	---	1.2	1.1	---
TOTAL	35.8	36.7	39.1	38.8	38.1	39.6	38.2	---	---	39.6	39.3	33.2
MEAN	1.15	1.22	1.26	1.25	1.36	1.28	1.27	---	---	1.28	1.27	1.11
MAX	1.3	1.4	1.5	1.3	1.5	1.4	1.4	---	---	1.5	1.6	1.3
MIN	1.1	1.2	1.2	1.2	1.3	1.2	1.2	---	---	1.1	1.1	1.0
AC-FT	71	73	78	77	76	79	76	---	---	79	78	66

e Estimated.

11428700 HELL HOLE RESERVOIR NEAR MEEKS BAY, CA

LOCATION.—Lat 39°03'54", long 120°24'50", in SE 1/4 NW 1/4 sec.16, T.14 N., R.14 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 0.3 mi upstream from Hell Hole Dam on Rubicon River and 15.6 mi west of Meeks Bay.

DRAINAGE AREA.—114 mi².

PERIOD OF RECORD.—December 1965 to current year.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Placer County Water Agency).

REMARKS.—Reservoir is formed by rockfill dam with earth core. Storage began Dec. 6, 1965. Usable capacity, 207,342 acre-ft between elevations 4,287.65 ft, invert of river outlet, and 4,630.0 ft, crest of ogee spillway. Dead storage 248 acre-ft. Reservoir is used to store water for hydroelectric power. Water is diverted into reservoir from French Meadows Reservoir (11427400) on the Middle Fork American River through French Meadows Powerplant (station 11427200). Water is diverted out of reservoir to the Middle Fork American River through Middle Fork Powerplant. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 217,400 acre-ft, Jan. 2, 1997, elevation, 4,637.7 ft; minimum since reservoir first filled, 37,499 acre-ft, Mar. 23, 1973, elevation, 4,428.28 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 204,600 acre-ft, June 18, elevation, 4,627.6 ft; minimum, 98,200 acre-ft, Apr. 12, elevation, 4,520.0 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Placer County Water Agency in 1966)

4,340	5,220	4,400	24,200	4,550	122,700
4,360	9,840	4,450	49,600	4,600	171,900
4,380	16,200	4,500	83,000	4,650	233,400

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	143100	155600	144200	114400	108700	101800	99900	118700	188800	200400	178100	149300
2	143500	155400	143800	113200	108300	101800	99700	120200	191500	199900	177200	148200
3	144100	155100	144200	112200	107800	102900	99700	121200	193000	198900	176400	146700
4	144600	155100	144000	111200	107500	103300	99700	122000	193900	198400	175800	145600
5	145000	155000	143800	110100	107100	103300	99500	122700	195100	197800	175300	144700
6	145400	154900	143500	109100	106500	103400	99500	124300	196800	196800	174500	143800
7	145800	154800	143100	108000	106100	103600	99400	126300	198400	196000	173700	142700
8	146200	154500	142600	107000	105200	103300	99300	128000	199400	195100	172900	141500
9	146700	154200	142100	106100	111300	102900	99100	129700	200500	194300	172100	140700
10	147100	153900	141500	105500	111800	102600	98900	131000	201400	193600	171200	139600
11	147700	153700	141000	104600	111400	102200	98500	132900	202400	192600	170200	138300
12	148200	153400	140000	103800	111000	101700	98200	135300	202700	191600	169300	137700
13	148800	153200	139200	103100	110500	101300	98400	137400	203100	191000	168500	136500
14	149200	152700	138000	102500	110000	101000	98700	138900	203700	190400	168000	135400
15	149600	152100	136800	101900	109300	100600	99100	139900	204000	189700	167200	134400
16	150200	151600	135700	101700	108600	100200	99600	141100	204200	189000	166300	133300
17	150500	150900	134700	101900	109400	100000	100600	142900	204500	188400	165400	132300
18	151000	150100	133400	103900	109200	99900	102000	144800	204600	188100	164300	131400
19	151600	149300	132300	105400	108600	99900	103400	146900	204300	187400	163300	131300
20	152100	148400	130700	108000	108000	99800	105000	149000	204100	186900	162200	131600
21	152600	147600	129100	108900	107600	99900	106900	151200	204000	186100	161300	132000
22	153000	146900	127400	109100	106700	99600	107500	154000	204100	185500	160200	132400
23	153500	147000	125700	110300	105800	99500	109200	157200	204100	184900	159200	133000
24	154300	146600	124100	110700	104700	99200	110300	160900	204100	184300	158200	133200
25	154800	145900	122900	110900	104000	99000	111800	164400	203700	183800	157100	133700
26	155400	145100	121900	111000	102700	99200	113900	169000	203200	183000	156000	134100
27	155500	144300	120800	110800	102000	99700	115500	173000	202600	182500	155000	134500
28	156300	143500	119600	110400	101600	100200	116300	176900	202000	181600	153800	134900
29	156500	143200	118300	110000	---	100400	116700	180100	201400	180700	152800	135300
30	156400	144400	116700	109500	---	100200	117500	183000	200800	179700	151700	135600
31	155900	---	115200	109100	---	100000	---	186100	---	178900	150500	---
MAX	156500	155600	144200	114400	111800	103600	117500	186100	204600	200400	178100	149300
MIN	143100	143200	115200	101700	101600	99000	98200	118700	188800	178900	150500	131300
a	4585.3	4573.9	4541.1	4533.7	4524.3	4522.3	4543.8	4612.3	4624.5	4606.2	4580.0	4564.6
b	+13200	-11500	-29200	-6100	-7500	-1600	+17500	+68600	+14700	-21900	-28400	-14900
CAL YR 1998 b	+60700											
WTY YR 1999 b	-7100											

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11428800 RUBICON RIVER BELOW HELL HOLE DAM, NEAR MEEKS BAY, CA

LOCATION.—Lat 39°03'24", long 120°24'25", in NE 1/4 NE 1/4 sec.21, T.14 N., R.14 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 600 ft downstream from outlet of dam, and 15.3 mi west of Meeks Bay.

DRAINAGE AREA.—114 mi².

PERIOD OF RECORD.—November 1965 to current year.

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 4,231.52 ft above sea level (levels by Placer County Water Agency).

REMARKS.—Flow completely regulated by Hell Hole Reservoir (station 11428700) 600 ft upstream from station. During years when Hell Hole Dam spills, records include flow which bypasses the station. Transbasin diversions upstream from station through Buck-Loon Tunnel (station 11428300) to Loon Lake Reservoir (station 11429350); from Middle Fork American River Basin through tunnel from French Meadows Reservoir (station 11427400) to Hell Hole Reservoir; from Hell Hole Reservoir through tunnel to Middle Fork Powerplant (station 11428600). Diversion began Sept. 8, 1966. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 28,800 ft³/s, Jan. 2, 1997, including flow over spillway; no flow Aug. 25 to Sept. 11, 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	34	21	25	11	12	20	19	12	23	23	23	23
2	34	21	24	12	12	15	13	13	23	23	23	23
3	34	22	26	12	12	19	13	13	22	23	23	23
4	34	23	25	12	12	16	13	13	23	23	23	23
5	34	23	23	12	12	14	13	12	23	23	23	23
6	34	23	22	12	12	14	13	13	23	23	23	23
7	34	23	22	12	29	13	13	13	23	23	23	23
8	34	23	22	12	25	13	13	13	22	23	23	23
9	34	23	22	12	30	13	13	13	23	23	23	23
10	34	23	22	12	16	13	13	12	23	23	23	23
11	34	23	22	12	15	13	13	13	23	23	23	23
12	29	23	22	12	15	13	15	14	23	23	23	23
13	21	23	22	12	14	13	15	14	23	23	23	23
14	21	23	22	12	14	13	16	17	23	23	23	23
15	21	23	16	12	13	13	15	26	23	23	23	23
16	21	23	13	13	16	12	15	26	23	23	23	22
17	21	23	12	13	24	12	14	26	23	23	23	29
18	21	23	11	20	16	13	15	26	23	23	23	31
19	21	23	12	23	15	13	17	24	23	23	23	31
20	21	23	12	27	14	13	17	23	23	23	23	29
21	21	23	12	17	14	13	16	24	23	23	23	23
22	21	24	12	15	13	13	15	24	23	23	23	23
23	21	25	12	21	14	13	14	24	23	23	23	23
24	21	25	12	15	14	12	14	23	23	23	23	23
25	21	24	12	15	14	12	14	23	23	23	23	23
26	21	24	12	14	13	12	15	23	23	23	23	23
27	21	24	12	14	13	13	14	25	23	23	23	23
28	21	23	12	13	16	12	13	22	23	23	23	23
29	21	25	11	13	---	12	12	21	23	23	23	23
30	21	27	11	13	---	18	12	23	23	23	23	23
31	21	---	11	12	---	21	---	23	---	23	23	---
TOTAL	802	699	526	437	439	429	427	591	688	713	713	717
MEAN	25.9	23.3	17.0	14.1	15.7	13.8	14.2	19.1	22.9	23.0	23.0	23.9
MAX	34	27	26	27	30	21	19	26	23	23	23	31
MIN	21	21	11	11	12	12	12	12	22	23	23	22
AC-FT	1590	1390	1040	867	871	851	847	1170	1360	1410	1410	1420
a	3170	28270	37940	24910	29950	45410	38610	19000	45450	41930	42860	25480

a Diversion, in acre-feet, from Hell Hole Reservoir through Middle Fork Powerplant, provided by Placer County Water Agency.

11428800 RUBICON RIVER BELOW HELL HOLE DAM, NEAR MEEKS BAY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.3	17.4	25.0	63.2	22.0	31.4	22.1	68.5	112	46.2	15.4	16.8
MAX	40.6	25.8	318	1615	172	478	129	1053	1007	303	23.6	36.7
(WY)	1989	1984	1982	1997	1982	1986	1982	1996	1995	1983	1995	1989
MIN	7.14	7.51	7.57	6.24	6.34	6.33	7.78	7.92	7.74	6.93	6.50	6.43
(WY)	1974	1977	1989	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1966 - 1999	
ANNUAL TOTAL	26161		7181			
ANNUAL MEAN	71.7		19.7		38.9	
HIGHEST ANNUAL MEAN					158	1997
LOWEST ANNUAL MEAN					7.11	1977
HIGHEST DAILY MEAN	1430	Jun 23	34	Oct 1	17100	Jan 2 1997
LOWEST DAILY MEAN	10	Apr 9	11	Dec 18	.00	Aug 25 1966
ANNUAL SEVEN-DAY MINIMUM	10	Apr 9	11	Dec 26	.00	Aug 25 1966
INSTANTANEOUS PEAK FLOW			44	Feb 9	28800	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	51890		14240		28160	
TOTAL DIVERSION (AC-FT) a	421300		383000			
10 PERCENT EXCEEDS	34		24		27	
50 PERCENT EXCEEDS	22		23		18	
90 PERCENT EXCEEDS	12		12		8.9	

a Diversion, in acre-feet, from Hell Hole Reservoir through Middle Fork Powerplant, provided by Placer County Water Agency.

11429350 LOON LAKE NEAR MEEKS BAY, CA

LOCATION.—Lat 38°58'59", long 120°19'22", in SE 1/4 SW 1/4 sec.8, T.13 N., R.15 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, in powerplant intake structure, 1.6 mi southwest of right bank end of Loon Lake Dam on Gerle Creek, and 10 mi southwest of Meeks Bay.

DRAINAGE AREA.—7.96 mi².

PERIOD OF RECORD.—December 1963 to current year.

CHEMICAL ANALYSES: June to September 1996.

REVISED RECORDS.—WDR CA-76-4: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sacramento Municipal Utility District). Prior to Sept. 23, 1975, at site 1.6 mi northeast on right bank end of Loon Lake Dam at same datum.

REMARKS.—Reservoir is formed by an earthfill dam completed Dec. 27, 1963; storage began Dec. 5, 1963. Prior to September 1962, reservoir was formed by granite-block dam built in 1884, capacity, 8,000 acre-ft. Usable capacity, 73,868 acre-ft, between elevations 6,325 ft, invert of fishwater release valve, and 6,410 ft, crest of spillway. Dead storage, 2,300 acre-ft. Lake receives water from Rubicon River via Rubicon-Rockbound Tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon Tunnel (stations 11427940, 11428300). Records, including extremes, represent total contents. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 77,700 acre-ft, June 6, 1969, elevation, 6,411.1 ft; minimum since reservoir first filled, 3,262 acre-ft, Nov. 8, 9, 1988, elevation, 6,328.70 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 75,288 acre-ft, July 11, elevation, 6,409.37 ft; minimum, 14,016 acre-ft, Apr. 1, elevation, 6352.40 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sacramento Municipal Utility District recomputed October 1991)

6,330	3,478	6,370	28,323
6,340	7,116	6,390	50,058
6,350	12,469	6,412	78,983
6,360	19,570		

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	46274	45236	48200	40249	39784	17096	14016	19729	47476	69587	70171	63280
2	46497	45282	48366	40016	39497	17052	14116	19993	49311	70647	69696	63031
3	46591	45305	48736	39739	39222	17111	14284	19937	50408	71685	69262	62652
4	46591	45329	48832	39475	38817	16912	14337	20146	50990	72521	69181	62378
5	46532	45340	48736	39123	37957	16670	14540	19737	51550	73113	69168	62013
6	46485	45329	48390	38795	37471	16509	14663	19713	52530	73665	69154	61557
7	46450	45398	48200	38467	37180	16321	14731	20536	53664	74219	69141	61129
8	46403	45410	47855	38055	37213	16126	14909	21127	54521	74690	69127	60780
9	46368	45410	47523	37968	37535	15990	14992	21810	55182	75163	69168	60418
10	46345	45201	47298	37697	36966	15649	15068	22504	55671	75219	69181	60018
11	46298	45224	47050	37492	36071	15417	15138	22993	56501	75288	69181	59967
12	46263	45178	46556	37320	34902	15242	15228	23934	57945	74843	69181	59542
13	46227	45189	46579	37191	34028	15047	15417	25099	59542	74885	69195	59132
14	46204	45108	46216	36891	32919	14951	15727	25760	61155	75219	69181	58722
15	46169	45015	45982	36955	32018	14930	16119	25842	62900	75247	69154	58327
16	46017	44992	45573	37213	30829	14820	16444	26162	64399	75080	68533	57919
17	45900	45131	45247	37579	30238	14752	16853	26605	65590	74885	68344	57411
18	45876	45154	44922	38598	29428	14670	17529	27378	66575	74663	68277	57386
19	45806	45178	44679	39354	28028	14711	18235	28437	67217	74788	67404	57183
20	45690	45201	44414	40016	26902	14861	18962	29448	67833	74565	67150	56804
21	45655	45189	43769	40360	25860	14889	19689	30356	68533	74233	66735	56476
22	45620	45236	42969	40626	24598	14786	20114	31987	68722	73734	66308	55721
23	45503	45596	42730	40961	23714	14670	20195	33729	69289	73251	65935	55345
24	45515	45935	42469	41051	22573	14520	20114	35447	70334	72645	65391	55282
25	45468	46157	42311	40604	21267	14445	20381	37180	70429	71986	65033	54908
26	45433	46309	41690	40649	19921	14324	20797	38882	70293	71548	64768	54671
27	45340	46403	41454	40582	18458	14561	21102	40404	69913	71110	64649	54633
28	45271	46497	41353	40382	17439	14642	21143	42254	69370	71097	64399	54297
29	45294	46791	40961	40182	---	14351	20683	43655	68857	71110	64082	53838
30	45201	47819	40682	40149	---	14324	20090	44691	68735	70551	63569	53256
31	45154	---	40582	40226	---	14043	---	46028	---	70565	63333	---
MAX	46591	47819	48832	41051	39784	17111	21143	46028	70429	75288	70171	63280
MIN	45154	44992	40582	36891	17439	14043	14016	19713	47476	69587	63333	53256
a	6385.86	6388.13	6381.84	6381.52	6357.24	6352.44	6360.65	6386.61	6404.59	6405.94	6400.53	6392.62
b	-1144	+2665	-7237	-356	-22787	-3396	+6047	+25938	+22707	+1830	-7232	-10077

CAL YR 1998 MAX 75707 MIN 17267 b +13977

WTR YR 1999 MAX 75288 MIN 14016 b +6958

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11429500 GERLE CREEK BELOW LOON LAKE DAM, NEAR MEEKS BAY, CA

LOCATION.—Lat 39°00'20", long 120°18'52", in NE 1/4 NE 1/4 sec.5, T.13 N., R.15 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 0.3 mi downstream from Loon Lake Dam, and 11 mi southwest of Meeks Bay.

DRAINAGE AREA.—8.01 mi².

PERIOD OF RECORD.—July 1910 to April 1914 (fragmentary), August 1962 to current year. Prior to August 1962, published as "near Rubicon Springs."

GAGE.—Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,250 ft above sea level, from topographic map. Prior to August 1962, nonrecording gage at site 1,400 ft upstream at different datum.

REMARKS.—Records good. Beginning in 1884, flow regulated by Loon Lake (station 11429350). Original dam was dismantled during September and October 1962 to permit construction of a new earthfill dam, which was completed Dec. 27, 1963. Loon Lake receives water from Rubicon River via Buck-Loon Tunnel (station 11428300). Since August 1971, most of the water is diverted past the station via Loon Lake Powerplant (station 11429340) and returns to Gerle Creek at Gerle Creek Dam. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,240 ft³/s, unregulated, Feb. 1, 1963, gage height, 12.65 ft, from rating curve extended above 970 ft³/s on basis of slope-area measurement of peak flow; no flow Oct. 15, 1913. Maximum discharge since construction of Loon Lake Dam in 1963, 1,050 ft³/s, June 5, 1969, gage height, 9.03 ft; minimum daily, 3.6 ft³/s, Sept. 27, 28, Nov. 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	12	e12	12	12	12	14	11	14	15	12	12	12
2	12	12	12	12	12	11	11	14	16	12	12	12
3	12	11	13	12	12	11	11	13	15	12	12	12
4	12	11	12	12	12	11	11	13	15	12	12	12
5	12	11	12	12	12	11	11	14	15	12	12	12
6	12	11	12	12	12	11	11	15	15	12	12	12
7	12	11	11	12	13	11	11	15	15	12	12	12
8	12	11	11	12	12	11	11	15	15	12	12	12
9	12	11	11	12	14	11	11	14	15	12	12	12
10	12	11	11	12	12	11	11	15	15	12	12	12
11	12	11	11	12	12	12	11	15	15	12	12	12
12	12	11	11	12	12	11	12	16	15	12	12	12
13	12	11	11	12	12	11	12	15	15	12	12	12
14	12	11	11	12	11	12	12	14	15	12	12	12
15	12	11	11	e12	11	11	12	14	15	12	12	12
16	12	11	11	e12	11	12	13	15	16	13	12	12
17	12	11	11	e12	12	12	13	15	14	12	12	12
18	12	11	11	e12	11	12	14	15	11	12	12	12
19	12	11	11	e12	11	12	14	15	11	12	12	12
20	12	11	11	e12	11	12	14	15	11	12	12	12
21	12	11	11	12	11	12	14	15	12	12	12	12
22	12	12	11	12	11	11	13	16	11	12	12	12
23	12	e12	11	12	12	12	13	16	11	12	12	12
24	e12	11	11	12	12	12	14	16	12	12	12	12
25	12	11	12	12	12	12	15	16	12	12	12	12
26	12	11	12	12	11	13	15	16	12	12	12	12
27	12	11	12	12	11	12	14	16	12	12	12	12
28	12	11	12	12	12	12	13	15	12	12	12	12
29	12	e12	12	12	---	12	13	15	12	12	12	12
30	12	e12	12	12	---	12	14	15	12	12	12	11
31	12	---	12	12	---	11	---	15	---	12	12	---
TOTAL	372	336	355	372	329	361	375	462	407	373	372	359
MEAN	12.0	11.2	11.5	12.0	11.8	11.6	12.5	14.9	13.6	12.0	12.0	12.0
MAX	12	12	13	12	14	14	15	16	16	13	12	12
MIN	12	11	11	12	11	11	11	13	11	12	12	11
AC-FT	738	666	704	738	653	716	744	916	807	740	738	712
a	449	1040	11370	5370	24690	7500	7060	19620	17700	8220	6680	8580

e Estimated.

a Diversion, in acre-feet, to Loon Lake Powerplant, provided by Sacramento Municipal Utility District.

11429500 GERLE CREEK BELOW LOON LAKE DAM, NEAR MEEKS BAY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1970, BY WATER YEAR (WY)

MEAN	112	132	165	74.7	103	192	133	63.0	390	341	232	115
MAX	190	356	343	134	261	347	244	209	721	493	351	338
(WY)	1970	1966	1966	1968	1970	1970	1967	1969	1969	1967	1969	1967
MIN	7.53	7.93	8.95	8.41	9.13	9.57	8.75	10.5	185	196	50.8	8.20
(WY)	1965	1968	1969	1965	1968	1968	1965	1968	1966	1965	1965	1970

SUMMARY STATISTICS

WATER YEARS 1965 - 1970

ANNUAL MEAN	171	
HIGHEST ANNUAL MEAN	217	1970
LOWEST ANNUAL MEAN	127	1965
HIGHEST DAILY MEAN	1030	Jun 5 1969
LOWEST DAILY MEAN	6.0	Dec 2 1969
ANNUAL SEVEN-DAY MINIMUM	6.4	Dec 10 1969
INSTANTANEOUS PEAK FLOW	1050	Jun 5 1969
INSTANTANEOUS PEAK STAGE	9.03	Jun 5 1969
ANNUAL RUNOFF (AC-FT)	124100	
10 PERCENT EXCEEDS	394	
50 PERCENT EXCEEDS	28	
90 PERCENT EXCEEDS	8.1	

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

MEAN	8.97	8.81	9.45	9.19	9.11	9.18	9.11	11.0	9.17	9.11	8.73	8.75
MAX	13.3	11.2	23.9	13.0	12.8	11.6	12.5	48.7	13.6	15.7	12.0	12.0
(WY)	1993	1999	1984	1997	1996	1996	1999	1996	1999	1995	1999	1998
MIN	3.93	4.00	4.45	4.61	5.12	4.67	4.27	4.64	4.13	4.30	4.09	3.99
(WY)	1978	1978	1978	1978	1978	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1972 - 1999

ANNUAL TOTAL	4217.5	4473	
ANNUAL MEAN	11.6	12.3	9.22
HIGHEST ANNUAL MEAN			13.5
LOWEST ANNUAL MEAN			6.06
HIGHEST DAILY MEAN	18	Mar 24	16
LOWEST DAILY MEAN	9.4	Feb 27	11
ANNUAL SEVEN-DAY MINIMUM	9.7	Jan 5	11
INSTANTANEOUS PEAK FLOW			33
INSTANTANEOUS PEAK STAGE			2.50
ANNUAL RUNOFF (AC-FT)	8370	8870	6680
ANNUAL DIVERSION (AC-FT) a	144600	118300	
10 PERCENT EXCEEDS	13	15	11
50 PERCENT EXCEEDS	12	12	8.8
90 PERCENT EXCEEDS	10	11	7.9

a Diversion, in acre-feet, to Loon Lake Powerplant, provided by Sacramento Municipal Utility District.

11429600 GERLE RESERVOIR NEAR MEEKS BAY, CA

LOCATION.—Lat 38°57'59", long 120°23'33", in SE 1/4 SW 1/4 sec.15, T.13 N., R.14 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on left bank side of upstream face of dam on Gerle Creek, 0.2 mi downstream from Angel Creek, and 15.2 mi southwest of Meeks Bay.

DRAINAGE AREA.—28.7 mi².

PERIOD OF RECORD.—October 1993 to current year. Unpublished records for water years 1980–93 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sacramento Municipal Utility District). Prior to June 9, 1988, nonrecording gage at same site and datum.

REMARKS.—Reservoir is formed by concrete dam completed in 1970. Storage began in 1970. Usable capacity, 1,200 acre-ft, below elevation 5,230.9 ft, crest of spillway. Most of the water is diverted at this reservoir to Robbs Peak Powerplant (station 11429300). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 1,469 acre-ft, Jan. 1, 1997, elevation, 5,235.39 ft; minimum, 845 acre-ft, Dec. 15, 1994, elevation, 5,222.15 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 1,174 acre-ft, May 21, elevation, 5,229.60 ft; minimum, 873 acre-ft, Nov. 7, elevation, 5,222.84 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sacramento Municipal Utility District, recomputed October 1991)

5,200	203	5,220	761
5,205	304	5,225	964
5,210	431	5,230	1,193
5,215	583	5,235	1,448

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	986	925	1099	981	991	1046	944	1120	1058	994	1040	1088
2	949	969	942	1002	954	1076	940	1101	1094	1076	1062	1040
3	904	922	1053	987	967	1006	963	1089	1041	1142	1054	1066
4	911	929	959	1009	1004	1023	966	997	1042	986	1027	1079
5	e916	946	937	1038	1100	967	938	1115	1053	1083	1032	1124
6	921	948	974	1047	989	987	911	1127	1041	1128	1037	1111
7	925	873	939	968	1063	963	946	1123	1052	951	1043	1142
8	930	903	994	1043	1089	965	898	1143	1074	1012	1049	1065
9	934	927	987	966	1096	1010	900	1074	1063	1052	1055	1077
10	937	983	945	1021	1084	977	898	1054	1080	1108	1112	1055
11	940	967	951	1002	1129	966	914	1103	1055	1021	1099	1023
12	943	882	944	972	1072	980	892	1141	1054	1082	1127	1090
13	946	906	939	989	1106	987	966	1090	1048	1049	1065	1041
14	948	975	994	977	1148	976	987	1117	1068	970	1067	1112
15	893	930	945	982	1039	967	982	1082	1055	1031	1089	1121
16	996	913	989	961	1139	987	1032	1097	1070	1112	1105	1094
17	995	951	1017	988	1106	1006	1038	1132	1146	1062	1026	1066
18	996	992	948	1021	1094	1002	1050	1120	1130	1043	977	1068
19	947	924	948	1018	1076	987	1060	1096	1084	1062	1094	1064
20	962	949	1046	1033	1103	994	1060	1100	1146	1073	1055	1154
21	964	930	989	949	1120	984	1048	1174	1165	1039	1047	1118
22	967	908	1022	961	1120	987	1072	1120	1157	1070	1070	1127
23	964	947	958	999	1050	997	1065	1151	1062	1061	1046	1049
24	913	923	961	987	1105	975	1127	1135	1148	1080	1120	1067
25	897	946	968	992	1139	1001	1074	1104	1168	1119	1086	1102
26	922	931	1093	940	1128	1002	1124	1114	1162	1024	1104	1114
27	961	985	981	979	1152	998	1121	1137	1162	1089	987	1096
28	961	942	973	958	1104	983	1078	1042	1126	942	1044	1077
29	969	912	991	983	---	1119	1132	1051	1140	954	1018	991
30	984	984	952	940	---	988	1157	1068	1107	1048	e1053	1011
31	991	---	966	935	---	1109	---	1068	---	1003	1088	---
MAX	996	992	1099	1047	1152	1119	1157	1174	1168	1142	1127	1154
MIN	893	873	937	935	954	963	892	997	1041	942	977	991
a	5225.60	5225.44	5225.03	5224.31	5228.11	5228.23	5229.24	5227.32	5228.17	5225.88	5227.76	5225.07
b	+11	-7	-18	-31	+169	+5	+48	-89	+39	-104	+85	-77
CAL YR 1998	MAX 1291	MIN 873	b +66									
WTR YR 1999	MAX 1174	MIN 873	b +31									

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11430000 SOUTH FORK RUBICON RIVER BELOW GERLE CREEK, NEAR GEORGETOWN, CA

LOCATION.—Lat 38°57'17", long 120°24'02", in SW 1/4 SW 1/4 sec.22, T.13 N., R.14 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on left bank 600 ft downstream from Gerle Creek, 1.2 mi downstream from South Fork Rubicon River Diversion Dam, and 18 mi east of Georgetown.

DRAINAGE AREA.—47.6 mi².

PERIOD OF RECORD.—February 1910 to June 1914 (published as Little South Fork Rubicon River below Gerle Creek near Quintette), August 1961 to current year.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 4,970 ft above sea level, from topographic map. Feb. 1, 1910, to June 21, 1914, nonrecording gage at site about 700 ft downstream at different datum.

REMARKS.—Beginning in 1884, flow regulated by Loon Lake (station 11429350). Original dam was dismantled during September and October 1962 to permit construction of a new earthfill dam completed Dec. 27, 1963. Loon Lake receives water from Rubicon River via Rubicon–Rockbound Tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck–Loon Tunnel (stations 11427940 and 11428300). Prior to Dec. 3, 1961, water was diverted out of the basin in Georgetown Divide Ditch. Water is diverted 1.2 mi upstream at South Fork Rubicon River Diversion Dam to Robbs Peak Powerplant (station 11429300). Diversion of up to 1,440 ft³/s to Silver Creek Basin began in October 1962. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 12,600 ft³/s, Jan. 1, 1997, gage height, 12.65 ft, from rating curve extended above 2,500 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.8 ft³/s, Sept. 21, 1962.

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	12	12	11	7.3	9.4	20	8.4	10	11	10	11	12
2	12	11	10	7.5	9.5	15	7.9	10	12	11	11	11
3	12	9.4	13	7.4	9.2	23	7.8	12	12	12	11	11
4	12	7.6	11	7.3	9.3	16	7.8	11	12	12	11	11
5	11	6.2	9.6	7.2	9.4	12	8.3	11	11	11	11	11
6	11	6.4	9.2	7.1	10	11	7.7	12	11	12	11	12
7	11	9.0	8.3	7.3	36	10	7.4	12	11	12	11	12
8	11	6.9	8.2	7.1	34	9.7	7.6	12	11	11	11	12
9	11	6.2	8.0	7.3	84	9.7	7.0	12	11	11	11	12
10	11	6.3	7.8	7.3	19	9.2	6.7	11	11	12	11	12
11	11	7.0	7.6	7.0	15	8.9	7.3	11	11	12	11	11
12	11	6.6	7.8	7.0	14	8.7	8.5	11	11	12	12	11
13	11	6.1	7.7	6.7	13	8.9	9.3	11	11	12	12	12
14	11	6.1	7.7	7.1	12	9.1	10	11	11	11	12	11
15	11	6.3	7.8	e7.1	12	9.1	11	11	11	11	12	11
16	11	6.1	8.4	e7.5	14	9.3	11	11	11	11	12	11
17	12	7.6	8.3	e7.5	27	9.9	11	10	11	11	12	12
18	12	6.9	8.2	e8.0	17	10	11	11	11	11	11	11
19	12	6.9	7.8	e15	15	10	11	11	11	11	11	12
20	12	6.3	7.8	e20	14	10	11	11	11	11	11	11
21	12	6.4	8.1	18	14	9.4	10	14	11	11	11	11
22	12	7.9	8.5	14	13	9.1	9.8	16	11	11	11	11
23	12	11	8.5	30	12	9.3	9.3	10	11	11	11	12
24	13	10	8.5	15	12	9.3	9.0	11	10	11	11	11
25	12	7.8	8.3	13	12	9.3	9.0	11	11	11	11	11
26	11	7.4	7.7	12	12	9.9	9.2	10	11	11	12	11
27	11	7.2	7.3	11	12	9.7	9.0	10	11	11	12	11
28	12	7.2	7.0	11	14	9.1	8.9	10	11	11	11	11
29	12	9.0	7.3	10	---	8.6	10	10	11	10	11	11
30	12	14	7.5	9.7	---	8.9	10	10	11	11	11	10
31	12	---	7.3	9.5	---	8.8	---	10	---	11	11	---
TOTAL	359	234.8	261.2	318.9	483.8	330.9	271.9	344	332	347	349	339
MEAN	11.6	7.83	8.43	10.3	17.3	10.7	9.06	11.1	11.1	11.2	11.3	11.3
MAX	13	14	13	30	84	23	11	16	12	12	12	12
MIN	11	6.1	7.0	6.7	9.2	8.6	6.7	10	10	10	11	10
AC-FT	712	466	518	633	960	656	539	682	659	688	692	672
a	674	3430	16040	16390	36760	21120	26110	48470	27560	9560	6700	8680

e Estimated.

a Diversion, in acre-feet, to Robbs Peak Powerplant, provided by Sacramento Municipal Utility District.

11430000 SOUTH FORK RUBICON RIVER BELOW GERLE CREEK, NEAR GEORGETOWN, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

MEAN	10.8	19.4	36.9	59.8	36.3	20.6	13.3	26.9	20.6	13.0	9.22	9.36
MAX	52.2	268	396	530	524	130	141	276	249	92.5	12.5	22.3
(WY)	1963	1984	1965	1997	1986	1986	1982	1996	1983	1967	1983	1982
MIN	2.40	2.75	4.79	4.86	5.03	3.11	2.35	2.42	2.29	2.36	2.03	1.99
(WY)	1978	1978	1968	1968	1966	1977	1977	1977	1977	1977	1977	1977

0SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1963 - 1999	
ANNUAL TOTAL	5963.8		3971.5			
ANNUAL MEAN	16.3		10.9		23.0	
HIGHEST ANNUAL MEAN					67.1	
LOWEST ANNUAL MEAN					3.59	
HIGHEST DAILY MEAN	1210	Mar 24	84	Feb 9	8050	Jan 1 1997
LOWEST DAILY MEAN	6.1	Nov 13	6.1	Nov 13	1.3	Sep 29 1963
ANNUAL SEVEN-DAY MINIMUM	6.4	Nov 10	6.4	Nov 10	1.5	Sep 28 1963
INSTANTANEOUS PEAK FLOW			239	Feb 9	12600	Jan 1 1997
INSTANTANEOUS PEAK STAGE			3.98	Feb 9	12.65	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	11830		7880		16670	
ANNUAL DIVERSION (AC-FT) a	279600		221500			
10 PERCENT EXCEEDS	15		12		13	
50 PERCENT EXCEEDS	11		11		8.4	
90 PERCENT EXCEEDS	7.9		7.3		5.2	

a Diversion, in acre-feet, to Robbs Peak Powerplant, provided by Sacramento Municipal Utility District.

11431800 PILOT CREEK ABOVE STUMPY MEADOWS LAKE, CA

LOCATION.—Lat 38°53'41", long 120°34'02", in NE 1/4 NW 1/4 sec.18, T.12 N., R.13 E., El Dorado County, Hydrologic Unit 18020128, on right bank 2.1 mi upstream from Stumpy Meadows Dam and 12.5 mi east of Georgetown.

DRAINAGE AREA.—11.7 mi².

PERIOD OF RECORD.—October 1960 to current year. Prior to October 1971, published as "above Stumpy Meadows Reservoir."

GAGE.—Water-stage recorder. Elevation of gage is 4,280 ft above sea level, from topographic map.

REMARKS.—Records good except estimated daily discharges, which are fair. No regulation or diversion upstream from station. See schematic diagram of Middle Fork American and Rubicon River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,510 ft³/s, Feb. 17, 1986, gage height, 7.15 ft, from rating curve extended above 540 ft³/s on basis of slope-area measurement at gage height 6.31 ft; maximum gage height, 8.05 ft, Jan. 31, 1963; minimum daily, 0.14 ft³/s, Aug. 16, 1977.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 140 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	0532	382	3.32	Mar. 3	0930	177	2.48
Feb. 9	0747	762	4.22				

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	9.0	11	26	11	28	118	40	44	19	12	8.7	6.0
2	8.8	8.9	21	11	27	98	37	45	21	12	8.5	5.9
3	8.7	8.5	36	11	26	143	38	51	20	12	7.6	5.9
4	8.7	8.2	26	11	25	122	38	46	20	12	7.2	5.7
5	8.3	8.5	20	10	24	104	40	43	19	11	7.3	5.6
6	8.2	8.8	18	10	26	92	38	41	19	11	7.6	5.5
7	8.1	16	16	10	252	83	36	40	18	11	7.8	5.4
8	8.2	14	15	10	320	75	38	38	18	10	7.7	5.4
9	8.5	11	14	10	511	71	36	36	17	10	7.7	5.3
10	8.6	10	14	10	206	61	35	35	17	9.9	7.8	5.4
11	8.4	11	13	10	141	56	37	34	17	9.5	7.6	5.3
12	8.1	10	13	10	112	50	39	33	17	9.2	7.3	5.4
13	7.9	9.5	13	9.9	92	48	43	32	16	9.0	7.1	5.5
14	8.0	9.3	13	9.8	79	49	49	31	16	9.0	7.0	5.4
15	8.1	9.1	13	13	69	47	56	31	15	9.4	7.0	5.4
16	7.9	8.6	14	21	77	46	63	30	15	9.6	7.0	5.3
17	7.8	12	14	21	161	46	75	28	15	9.5	6.8	5.4
18	7.8	11	e13	76	127	46	79	28	15	9.5	7.0	5.6
19	7.7	9.3	e13	138	111	46	79	27	14	9.4	7.0	5.9
20	7.6	8.8	e13	304	100	47	78	26	14	9.4	6.9	5.6
21	7.5	8.6	e13	141	92	45	74	25	14	9.3	6.8	5.4
22	7.4	13	e13	83	81	44	70	24	13	9.6	6.8	5.4
23	7.4	20	e13	156	73	45	64	24	13	9.5	6.9	5.5
24	10	26	e12	102	67	44	62	23	13	9.4	6.2	5.5
25	10	15	e12	76	73	45	58	23	13	9.3	5.9	5.4
26	8.8	12	e12	60	64	45	60	22	13	9.3	5.9	5.3
27	8.2	12	e12	47	61	45	55	21	13	9.0	6.5	5.2
28	8.2	12	e11	40	67	43	50	20	13	8.8	6.0	5.1
29	8.3	17	e11	35	---	42	47	20	13	9.1	5.8	5.1
30	8.3	35	12	32	---	42	45	20	12	8.8	5.9	5.1
31	8.1	---	12	30	---	42	---	20	---	8.6	6.0	---
TOTAL	256.6	374.1	471	1518.7	3092	1930	1559	961	472	305.1	217.3	163.9
MEAN	8.28	12.5	15.2	49.0	110	62.3	52.0	31.0	15.7	9.84	7.01	5.46
MAX	10	35	36	304	511	143	79	51	21	12	8.7	6.0
MIN	7.4	8.2	11	9.8	24	42	35	20	12	8.6	5.8	5.1
AC-FT	509	742	934	3010	6130	3830	3090	1910	936	605	431	325

e Estimated.

11431800 PILOT CREEK ABOVE STUMPY MEADOWS LAKE, CA—Continued

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

MEAN	6.55	12.8	26.3	48.4	50.0	54.4	47.9	36.6	15.6	8.51	5.44	4.86
MAX	24.8	74.1	159	268	373	195	139	118	50.4	17.8	16.2	16.3
(WY)	1963	1984	1965	1997	1986	1983	1982	1967	1967	1998	1961	1961
MIN	.87	2.79	3.35	4.55	4.64	4.82	3.38	4.06	1.93	.64	.18	.50
(WY)	1978	1977	1977	1991	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	14182.2		11320.7			
ANNUAL MEAN	38.9		31.0		26.3	
HIGHEST ANNUAL MEAN					64.8 1983	
LOWEST ANNUAL MEAN					2.96 1977	
HIGHEST DAILY MEAN	559	Mar 24	511	Feb 9	2840	Feb 17 1986
LOWEST DAILY MEAN	7.4	Oct 22	5.1	Sep 28	.14	Aug 16 1977
ANNUAL SEVEN-DAY MINIMUM	7.6	Oct 17	5.2	Sep 24	.15	Aug 12 1977
INSTANTANEOUS PEAK FLOW			762	Feb 9	3510	Feb 17 1986
INSTANTANEOUS PEAK STAGE			4.22	Feb 9	8.05	Jan 31 1963
ANNUAL RUNOFF (AC-FT)	28130		22450		19080	
10 PERCENT EXCEEDS	88		73		60	
50 PERCENT EXCEEDS	21		13		10	
90 PERCENT EXCEEDS	8.5		6.1		3.4	

11433040 PILOT CREEK BELOW MUTTON CANYON, NEAR GEORGETOWN, CA

LOCATION.—Lat 38°55'25", long 120°38'27", in NE 1/4 NW 1/4 sec.4, T.12 N., R.12 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on left bank 450 ft downstream from Mutton Canyon, 500 ft downstream from Georgetown Divide Diversion Dam, 2.5 mi downstream from Stumpy Meadows Dam, and 10 mi east of Georgetown.

DRAINAGE AREA.—21.1 mi².

PERIOD OF RECORD.—June 1961 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 3,760 ft above sea level, from topographic map.

REMARKS.—Records good. Flow regulated by Stumpy Meadows Lake 2.5 mi upstream, usable capacity, 17,500 acre-ft, completed in November 1961. Georgetown Irrigation District Ditch, capacity, about 60 ft³/s, diverts water out of Pilot Creek, 500 ft upstream from station. See schematic diagram of Middle Fork American and Rubicon River Basins.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,830 ft³/s, Jan. 2, 1997, gage height, 10.95 ft, from rating curve extended above 970 ft³/s on basis of slope-area measurement at gage height 10.06 ft; minimum daily, 0.20 ft³/s, Sept. 24, Nov. 1–5, 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	4.5	4.7	16	4.7	58	221	63	57	14	4.8	4.4	4.3
2	4.5	4.5	7.8	4.7	51	195	59	59	19	4.8	4.4	4.6
3	4.5	4.5	19	4.5	46	270	58	91	23	4.8	4.4	4.9
4	4.5	4.3	12	4.5	44	232	55	75	19	4.8	4.5	4.7
5	4.3	4.3	8.1	4.5	43	188	66	63	17	4.8	4.6	4.6
6	4.6	4.5	7.2	4.5	54	165	67	57	15	4.7	4.5	4.5
7	4.9	7.0	6.3	4.4	458	145	56	53	13	4.6	4.6	4.5
8	4.8	5.8	6.2	4.3	597	131	67	49	12	4.6	4.6	4.5
9	4.7	5.1	5.9	4.3	1360	144	59	47	11	4.6	5.2	4.5
10	4.7	4.8	5.6	4.3	632	114	52	45	9.2	4.6	5.2	4.5
11	4.7	5.7	5.5	4.3	365	103	57	43	8.9	4.5	4.6	4.5
12	4.7	5.0	5.5	4.3	262	95	57	42	8.6	4.6	4.5	4.7
13	4.7	4.7	5.6	4.2	206	89	60	40	7.8	4.9	4.5	4.7
14	4.7	4.5	5.8	4.2	173	87	67	36	6.8	5.0	4.4	4.7
15	4.7	4.5	5.8	5.3	145	83	75	36	6.3	5.1	4.3	5.0
16	4.9	4.3	5.7	11	163	79	82	34	5.4	5.1	4.3	5.1
17	4.7	6.0	5.6	9.8	345	77	93	32	5.1	5.1	4.4	5.1
18	4.7	5.3	5.5	68	279	75	105	29	5.1	5.0	4.5	5.1
19	4.7	4.8	5.5	230	248	72	108	27	5.1	5.0	4.5	5.1
20	4.7	4.5	5.5	611	217	76	105	26	5.0	5.0	4.5	5.1
21	4.7	4.5	5.3	363	229	76	100	25	5.0	5.0	4.5	5.1
22	4.7	6.6	5.3	194	173	71	95	24	4.9	4.9	4.5	4.9
23	4.6	8.7	5.2	346	153	70	91	23	4.8	4.9	4.5	5.0
24	5.3	8.4	5.1	232	140	69	79	25	4.8	4.9	4.5	5.0
25	5.1	5.6	5.1	164	174	68	76	23	4.7	4.8	4.5	4.9
26	4.7	5.1	5.1	133	138	66	76	20	4.7	4.6	4.5	4.9
27	4.5	5.1	5.1	102	128	65	74	18	4.7	4.6	4.5	4.9
28	4.3	5.5	5.1	85	140	63	69	17	4.5	4.5	4.5	4.9
29	4.3	8.7	5.0	72	---	61	65	15	4.7	4.5	4.4	4.9
30	4.3	23	4.9	64	---	62	60	15	4.8	4.5	4.3	4.9
31	4.3	---	4.7	68	---	74	---	15	---	4.5	4.3	---
TOTAL	144.0	180.0	206.0	2819.8	7021	3386	2196	1161	263.9	148.1	139.9	144.1
MEAN	4.65	6.00	6.65	91.0	251	109	73.2	37.5	8.80	4.78	4.51	4.80
MAX	5.3	23	19	611	1360	270	108	91	23	5.1	5.2	5.1
MIN	4.3	4.3	4.7	4.2	43	61	52	15	4.5	4.5	4.3	4.3
AC-FT	286	357	409	5590	13930	6720	4360	2300	523	294	277	286

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

MEAN	2.87	5.78	30.5	64.8	80.9	78.0	68.9	39.2	9.87	4.29	3.32	2.87
MAX	7.19	28.6	340	621	585	370	289	171	54.4	15.6	13.4	8.54
(WY)	1963	1984	1965	1997	1986	1983	1982	1995	1967	1983	1983	1983
MIN	.46	.46	.54	.53	.89	1.21	.98	1.12	.66	.45	.38	.37
(WY)	1962	1962	1962	1962	1991	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	21470.7		17809.8			
ANNUAL MEAN	58.8		48.8		32.4	
HIGHEST ANNUAL MEAN					109	
LOWEST ANNUAL MEAN					.84	
HIGHEST DAILY MEAN	778	Mar 24	1360	Feb 9	5210	Jan 2 1997
LOWEST DAILY MEAN	4.3	Jan 1	4.2	Jan 13	.20	Sep 24 1966
ANNUAL SEVEN-DAY MINIMUM	4.4	Oct 27	4.3	Jan 8	.23	Oct 30 1966
INSTANTANEOUS PEAK FLOW			1900		7830	
INSTANTANEOUS PEAK STAGE			8.37		10.95	
ANNUAL RUNOFF (AC-FT)	42590		35330		23460	
10 PERCENT EXCEEDS	155		135		88	
50 PERCENT EXCEEDS	11		5.4		4.1	
90 PERCENT EXCEEDS	4.7		4.5		1.1	

11433060 SOUTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CA

LOCATION.—Lat 39°03'04", long 120°28'14", in SW 1/4 NE 1/4 sec.24, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank at diversion dam, 3.3 mi upstream from confluence with North and South Forks Long Canyon Creek, and 17.2 mi east of Volcanoville.

PERIOD OF RECORD.—October 1965 to current year.

GAGE.—Water-stage recorder and sharp-crested weir. Elevation of gage is 4,630 ft above sea level, from topographic map.

REMARKS.—Tunnel completed in September 1965; diversion began in February 1966. Flow is diverted from South Fork Long Canyon Creek to a tunnel from Hell Hole Reservoir to Middle Fork Powerplant on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 251 ft³/s, Nov. 12, 1973; no flow for part 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	.00	.00	13	104	26	52	33	.00	.00	.00
2	.00	.00	.00	.00	13	71	23	54	34	.00	.00	.00
3	.00	.00	.00	.00	14	94	23	51	30	.00	.00	.00
4	.00	.00	.00	.00	16	67	22	49	26	.00	.00	.00
5	.00	.00	.00	.00	14	52	21	52	22	.00	.00	.00
6	.00	.00	.00	.00	15	44	21	58	20	.00	.00	.00
7	.00	.00	.00	.00	95	38	20	59	19	.00	.00	.00
8	.00	.00	.00	.00	102	35	19	56	18	.00	.00	.00
9	.00	.00	.00	.00	166	32	18	53	17	.00	.00	.00
10	.00	.00	.00	.00	80	30	17	52	15	.00	.00	.00
11	.00	.00	.00	.00	54	28	19	54	13	.00	.00	.00
12	.00	.00	.00	.00	44	26	22	60	13	.00	.00	.00
13	.00	.00	.00	.00	38	27	30	58	12	.00	.00	.00
14	.00	.00	.00	.00	35	28	40	53	11	.00	.00	.00
15	.00	.00	.00	.00	31	27	45	49	11	.00	.00	.00
16	.00	.00	.00	.00	39	28	50	47	9.4	.00	.00	.00
17	.00	.00	.00	12	115	31	57	48	5.3	.00	.00	.00
18	.00	.00	.00	56	67	34	61	49	.00	.00	.00	.00
19	.00	.00	.00	75	48	35	65	49	.00	.00	.00	.00
20	.00	.00	.00	137	41	34	66	49	.00	.00	.00	.00
21	.00	.00	.00	67	36	31	63	50	.00	.00	.00	.00
22	.00	.00	.00	44	33	28	59	53	.00	.00	.00	.00
23	.00	.00	.00	82	31	29	56	56	.00	.00	.00	.00
24	.00	.00	.00	45	30	30	57	60	.00	.00	.00	.00
25	.00	.00	.00	34	30	30	62	62	.00	.00	.00	.00
26	.00	.00	.00	27	27	36	74	57	.00	.00	.00	.00
27	.00	.00	.00	22	27	36	69	53	.00	.00	.00	.00
28	.00	.00	.00	19	42	34	58	49	.00	.00	.00	.00
29	.00	.00	.00	18	---	31	50	43	.00	.00	.00	.00
30	.00	.00	.00	16	---	30	50	42	.00	.00	.00	.00
31	.00	---	.00	15	---	27	---	35	---	.00	.00	---
TOTAL	0.00	0.00	0.00	669.00	1296	1207	1263	1612	308.70	0.00	0.00	0.00
MEAN	.000	.000	.000	21.6	46.3	38.9	42.1	52.0	10.3	.000	.000	.000
MAX	.00	.00	.00	137	166	104	74	62	34	.00	.00	.00
MIN	.00	.00	.00	.00	13	26	17	35	.00	.00	.00	.00
AC-FT	.00	.00	.00	1330	2570	2390	2510	3200	612	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

MEAN	.002	3.33	5.47	10.7	13.5	21.9	27.7	25.5	8.89	.33	.002	.000
MAX	.034	37.2	38.6	42.1	77.3	77.7	67.8	80.6	54.0	4.54	.067	.001
(WY)	1980	1974	1984	1974	1996	1989	1980	1975	1998	1983	1983	1972
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1966	1966	1966	1966	1991	1974	1974	1974	1966	1966	1966	1966

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1966 - 1999

ANNUAL TOTAL	8799.10	6355.70		
ANNUAL MEAN	24.1	17.4	9.74	
HIGHEST ANNUAL MEAN			24.1	1998
LOWEST ANNUAL MEAN			.43	1977
HIGHEST DAILY MEAN	157	Jan 17	166	Feb 9
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1
ANNUAL RUNOFF (AC-FT)	17450		12610	7060
10 PERCENT EXCEEDS	73		55	33
50 PERCENT EXCEEDS	.00		.00	.00
90 PERCENT EXCEEDS	.00		.00	.00

11433065 SOUTH FORK LONG CANYON CREEK BELOW DIVERSION DAM, NEAR VOLCANOVILLE, CA

LOCATION.—Lat 39°03'04", long 120°28'14", in SW 1/4 NE 1/4 sec.24, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 21 ft below diversion dam, 3.3 mi upstream from confluence of North and South Forks Long Canyon Creek, and 17.2 mi east of Volcanoville.

PERIOD OF RECORD.—October 1988 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 4,630 ft above sea level, from topographic map.

REMARKS.—Discharge is computed only during periods of operation of South Fork Long Canyon Creek Diversion Tunnel (station 11433060). See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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	---	---	---	---	6.2	7.0	6.0	6.5	6.3	---	---	---
2	---	---	---	---	6.0	6.8	6.0	6.6	6.3	---	---	---
3	---	---	---	---	6.2	6.9	6.0	6.6	6.3	---	---	---
4	---	---	---	---	6.2	6.8	6.0	6.5	6.3	---	---	---
5	---	---	---	---	6.3	6.6	6.0	6.5	6.2	---	---	---
6	---	---	---	---	6.3	6.6	6.0	6.5	6.2	---	---	---
7	---	---	---	---	7.0	6.5	6.0	6.5	6.2	---	---	---
8	---	---	---	---	7.1	6.5	6.0	6.5	6.0	---	---	---
9	---	---	---	---	10	6.5	6.0	6.5	6.0	---	---	---
10	---	---	---	---	7.3	6.4	6.0	6.5	6.0	---	---	---
11	---	---	---	---	6.8	6.4	6.2	6.5	6.0	---	---	---
12	---	---	---	---	6.6	6.3	6.2	6.5	6.0	---	---	---
13	---	---	---	---	6.6	6.3	6.3	6.5	6.0	---	---	---
14	---	---	---	---	6.5	6.3	6.3	6.5	6.0	---	---	---
15	---	---	---	---	6.5	6.3	6.4	6.4	6.0	---	---	---
16	---	---	---	---	6.6	6.3	6.4	6.4	6.0	---	---	---
17	---	---	---	6.8	7.3	6.4	6.5	6.4	6.7	---	---	---
18	---	---	---	6.3	6.8	6.4	6.5	6.4	---	---	---	---
19	---	---	---	6.3	6.5	6.4	6.5	6.4	---	---	---	---
20	---	---	---	6.5	6.5	6.4	6.5	6.5	---	---	---	---
21	---	---	---	5.9	6.4	6.4	6.5	6.5	---	---	---	---
22	---	---	---	6.2	6.4	6.4	6.4	6.5	---	---	---	---
23	---	---	---	6.9	6.4	6.4	6.4	6.5	---	---	---	---
24	---	---	---	6.5	6.4	6.4	6.4	6.5	---	---	---	---
25	---	---	---	6.4	6.4	6.4	6.4	6.5	---	---	---	---
26	---	---	---	6.3	6.3	6.4	6.5	6.5	---	---	---	---
27	---	---	---	6.2	6.3	6.4	6.5	6.5	---	---	---	---
28	---	---	---	6.2	6.5	6.3	6.5	6.5	---	---	---	---
29	---	---	---	6.2	---	6.2	6.5	6.5	---	---	---	---
30	---	---	---	6.2	---	6.2	6.5	6.5	---	---	---	---
31	---	---	---	6.2	---	6.2	---	6.4	---	---	---	---
TOTAL	---	---	---	---	186.4	199.8	188.4	201.1	---	---	---	---
MEAN	---	---	---	---	6.66	6.45	6.28	6.49	---	---	---	---
MAX	---	---	---	---	10	7.0	6.5	6.6	---	---	---	---
MIN	---	---	---	---	6.0	6.2	6.0	6.4	---	---	---	---
AC-FT	---	---	---	---	370	396	374	399	---	---	---	---

11433080 NORTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CA

LOCATION.—Lat 39°02'57", long 120°28'56", in SW 1/4 NW 1/4 sec.24, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on left bank at diversion dam, 3.2 mi upstream from confluence of North and South Forks Long Canyon Creek, and 16.9 mi east of Volcanoville.

PERIOD OF RECORD.—October 1965 to current year.

GAGE.—Water-stage recorder and Parshall flume. Elevation of gage is 4,700 ft above sea level, from topographic map.

REMARKS.—Tunnel completed in September 1965 and diversions began in February 1966. Flow is diverted from North Fork Long Canyon Creek to a tunnel from Hell Hole Reservoir to Middle Fork Powerplant (stations 11428700 and 11428600) on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 100 ft³/s, Jan. 15, 1998; no flow for part 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	.00	.00	5.9	68	12	30	6.7	.00	.00	.00
2	.00	.00	.00	.00	5.9	39	11	29	7.1	.00	.00	.00
3	.00	.00	.00	.00	7.1	56	10	25	6.9	.00	.00	.00
4	.00	.00	.00	.00	7.9	39	9.2	25	6.3	.00	.00	.00
5	.00	.00	.00	.00	7.1	29	9.5	32	5.1	.00	.00	.00
6	.00	.00	.00	.00	6.7	24	8.6	36	4.3	.00	.00	.00
7	.00	.00	.00	.00	64	21	7.5	36	3.5	.00	.00	.00
8	.00	.00	.00	.00	61	18	6.9	32	2.9	.00	.00	.00
9	.00	.00	.00	.00	89	17	6.5	29	.73	.00	.00	.00
10	.00	.00	.00	.00	46	14	5.9	28	.00	.00	.00	.00
11	.00	.00	.00	.00	31	13	6.7	30	.00	.00	.00	.00
12	.00	.00	.00	.00	25	13	12	33	.00	.00	.00	.00
13	.00	.00	.00	.00	21	14	20	29	.00	.00	.00	.00
14	.00	.00	.00	.00	19	14	26	25	.00	.00	.00	.00
15	.00	.00	.00	.00	16	14	28	23	.00	.00	.00	.00
16	.00	.00	.00	.00	19	15	33	22	.00	.00	.00	.00
17	.00	.00	.00	21	69	18	38	22	.00	.00	.00	.00
18	.00	.00	.00	57	41	20	41	22	.00	.00	.00	.00
19	.00	.00	.00	63	26	19	43	22	.00	.00	.00	.00
20	.00	.00	.00	92	21	18	43	21	.00	.00	.00	.00
21	.00	.00	.00	42	18	15	38	21	.00	.00	.00	.00
22	.00	.00	.00	25	16	14	34	21	.00	.00	.00	.00
23	.00	.00	.00	44	14	14	32	21	.00	.00	.00	.00
24	.00	.00	.00	24	14	14	33	23	.00	.00	.00	.00
25	.00	.00	.00	18	13	16	37	21	.00	.00	.00	.00
26	.00	.00	.00	14	11	21	41	18	.00	.00	.00	.00
27	.00	.00	.00	11	12	21	36	14	.00	.00	.00	.00
28	.00	.00	.00	9.5	28	18	29	12	.00	.00	.00	.00
29	.00	.00	.00	8.3	---	16	26	10	.00	.00	.00	.00
30	.00	.00	.00	7.5	---	15	27	9.0	.00	.00	.00	.00
31	.00	---	.00	6.7	---	13	---	7.7	---	.00	.00	---
TOTAL	0.00	0.00	0.00	443.00	714.6	660	710.8	728.7	43.53	0.00	0.00	0.00
MEAN	.000	.000	.000	14.3	25.5	21.3	23.7	23.5	1.45	.000	.000	.000
MAX	.00	.00	.00	92	89	68	43	36	7.1	.00	.00	.00
MIN	.00	.00	.00	.00	5.9	13	5.9	7.7	.00	.00	.00	.00
AC-FT	.00	.00	.00	879	1420	1310	1410	1450	86	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

	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	.046	.80	1.88	3.99	6.35	10.8	13.1	11.0	2.67	.018	.003	.004																										
MAX	.74	13.2	12.7	18.5	35.6	35.5	33.0	39.9	22.5	.20	.093	.077																										
(WY)	1980	1982	1997	1998	1996	1993	1993	1998	1998	1973	1973	1973																										
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000																										
(WY)	1966	1966	1966	1966	1974	1974	1974	1974	1966	1966	1966	1966																										

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1966 - 1999	
ANNUAL TOTAL	4631.50		3300.63			
ANNUAL MEAN	12.7		9.04		4.21	
HIGHEST ANNUAL MEAN					12.7	
LOWEST ANNUAL MEAN					.007	
HIGHEST DAILY MEAN	100	Jan 15	92	Jan 20	100	Jan 15 1998
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1965
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1 1965
ANNUAL RUNOFF (AC-FT)	9190		6550		3050	
10 PERCENT EXCEEDS	38		29		15	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

11433085 NORTH FORK LONG CANYON CREEK BELOW DIVERSION DAM, NEAR VOLCANOVILLE, CA

LOCATION.—Lat 39°02'57", long 120°28'56", in SW 1/4 NW 1/4 sec.24, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 26 ft below diversion dam, 3.2 mi upstream from confluence of North and South Forks Long Canyon Creek, and 16.9 mi east of Volcanoville.

PERIOD OF RECORD.—October 1988 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 4,700 ft above sea level, from topographic map.

REMARKS.—Discharge is computed only during periods of operation of North Fork Long Canyon Creek Diversion Tunnel (station 11433080). See schematic diagram of Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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	---	---	---	---	3.9	4.8	3.7	4.1	3.3	---	---	---
2	---	---	---	---	3.5	4.1	3.6	4.0	3.4	---	---	---
3	---	---	---	---	3.4	4.5	3.6	3.9	3.4	---	---	---
4	---	---	---	---	3.5	4.2	3.6	3.9	3.3	---	---	---
5	---	---	---	---	3.5	3.9	3.6	4.1	3.3	---	---	---
6	---	---	---	---	3.5	3.8	3.6	4.2	3.3	---	---	---
7	---	---	---	---	5.4	3.7	3.5	4.2	3.2	---	---	---
8	---	---	---	---	5.1	3.6	3.5	4.1	3.1	---	---	---
9	---	---	---	---	7.7	3.6	3.5	4.1	3.8	---	---	---
10	---	---	---	---	6.2	3.5	3.4	4.1	---	---	---	---
11	---	---	---	---	5.6	3.5	3.4	4.2	---	---	---	---
12	---	---	---	---	5.3	3.4	3.6	4.2	---	---	---	---
13	---	---	---	---	5.1	3.4	3.8	4.1	---	---	---	---
14	---	---	---	---	4.1	3.4	4.0	4.0	---	---	---	---
15	---	---	---	---	3.8	3.4	4.1	4.0	---	---	---	---
16	---	---	---	---	3.9	3.5	4.2	4.0	---	---	---	---
17	---	---	---	4.7	5.1	3.5	4.4	3.9	---	---	---	---
18	---	---	---	4.8	4.2	3.7	4.4	3.9	---	---	---	---
19	---	---	---	4.8	4.0	3.8	4.5	3.8	---	---	---	---
20	---	---	---	7.4	3.9	3.7	4.5	3.7	---	---	---	---
21	---	---	---	5.7	3.8	3.7	4.4	3.7	---	---	---	---
22	---	---	---	5.0	3.8	3.6	4.2	3.7	---	---	---	---
23	---	---	---	5.5	3.8	3.6	4.2	3.8	---	---	---	---
24	---	---	---	4.8	3.7	3.6	4.2	3.8	---	---	---	---
25	---	---	---	4.5	3.7	3.7	4.4	3.8	---	---	---	---
26	---	---	---	4.4	3.7	3.8	4.5	3.7	---	---	---	---
27	---	---	---	4.1	3.6	3.9	4.4	3.6	---	---	---	---
28	---	---	---	4.0	3.9	3.8	4.1	3.6	---	---	---	---
29	---	---	---	4.0	---	3.8	4.0	3.5	---	---	---	---
30	---	---	---	4.0	---	3.8	4.0	3.4	---	---	---	---
31	---	---	---	3.9	---	3.7	---	3.4	---	---	---	---
TOTAL	---	---	---	---	120.7	116.0	118.9	120.5	---	---	---	---
MEAN	---	---	---	---	4.31	3.74	3.96	3.89	---	---	---	---
MAX	---	---	---	---	7.7	4.8	4.5	4.2	---	---	---	---
MIN	---	---	---	---	3.4	3.4	3.4	3.4	---	---	---	---
AC-FT	---	---	---	---	239	230	236	239	---	---	---	---

11433300 MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL, CA

LOCATION.—Lat 39°00'22", long 120°45'35", in NW 1/4 NW 1/4 sec.4, T.13 N., R.11 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on right bank 1.6 mi downstream from Oxbow Powerplant and 3.3 mi east of Foresthill.

DRAINAGE AREA.—524 mi².

PERIOD OF RECORD.—October 1958 to current year.

CHEMICAL DATA: Water year 1979.

BIOLOGICAL DATA: Water year 1979.

GAGE.—Water-stage recorder. Elevation of gage is 1,070 ft above sea level, from topographic map. Prior to Oct. 22, 1965, at site 3.2 mi downstream at different datum. Oct. 22, 1965, to Aug. 28, 1985, at site 400 ft downstream at different datum.

REMARKS.—Flow regulated by French Meadows Reservoir, Hell Hole Reservoir, Loon Lake (stations 11427400, 11428700, and 11429350), Stumpy Meadows Lake, usable capacity, 17,500 acre-ft, and several smaller reservoirs. Robbs Peak Powerplant (station 11429300) and Georgetown Divide Ditch, capacity about 60 ft³/s, divert water out of basin upstream from station. See schematic diagrams of lower Sacramento River Basin and Middle Fork American and Rubicon River Basins.

COOPERATION.—Records provided by Placer County Water Agency, 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, 310,000 ft³/s, Dec. 23, 1964, gage height, 69.0 ft from floodmarks, site and datum then in use, caused by overtopping of the partly constructed Hell Hole Dam on the Rubicon River, from rating curve extended above 28,000 ft³/s on basis of slope-area measurement at gage height 38.0 ft and slope-conveyance study at gage height 69.0 ft, at site and datum then in use; next highest peak, 123,000 ft³/s, Jan. 2, 1997, gage height, 29.56 ft, from rating curve extended above 37,000 ft³/s; minimum, 35 ft³/s, Oct. 10–20, 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	182	641	1760	860	1110	4440	1640	1890	1040	1120	731	919
2	171	643	1290	816	1210	3670	1720	1870	846	1120	889	909
3	171	623	1730	821	1200	4290	1620	2130	1070	1170	809	1070
4	171	593	1650	815	1110	3910	1530	2020	1050	876	713	882
5	166	624	999	852	1140	3340	1720	1920	974	926	616	824
6	162	626	878	909	1310	2940	1670	1870	926	1120	853	735
7	159	697	817	821	5430	2640	1590	1880	872	1060	710	766
8	160	760	817	782	6240	2700	1770	1830	922	1070	734	900
9	159	663	737	716	11900	2700	1750	1720	827	1050	863	814
10	159	641	770	617	5790	2450	1640	1760	992	922	844	831
11	160	667	745	726	4080	2320	1840	1780	1010	941	955	733
12	160	657	912	662	3280	2250	2020	1890	1150	945	858	765
13	160	629	910	656	2850	2240	2010	1830	1200	820	772	866
14	153	637	1020	608	2590	2340	2280	1730	1210	869	721	878
15	147	631	1040	679	2380	1920	2410	1710	1210	797	725	868
16	146	613	1100	938	2530	2190	2360	1660	1260	770	779	867
17	146	700	1110	994	5170	2040	2500	1600	1270	699	861	849
18	144	711	1200	2510	4070	1880	2430	1600	1250	588	921	814
19	142	667	1060	3570	3730	2040	2470	1620	1260	709	920	500
20	140	642	1280	7250	3320	2030	2440	1540	1220	595	968	164
21	138	637	1270	4440	3140	1870	2200	1430	1210	872	780	173
22	131	752	1260	2750	2930	1930	2150	1460	1220	723	792	169
23	115	811	1210	5170	2750	1900	2080	1450	1220	770	873	175
24	114	1300	1260	3240	2760	1900	2010	1480	1190	733	923	179
25	129	820	1060	2340	2910	1900	1990	1650	1210	554	909	170
26	110	737	1100	1970	2780	1850	2080	1540	1200	746	852	159
27	107	722	767	1810	2440	1770	2040	1460	1160	689	983	142
28	114	740	807	1610	2530	1690	1900	1390	1160	872	993	116
29	303	794	970	1540	---	1670	1580	1210	1180	829	836	109
30	618	1980	1170	1490	---	1760	1610	1110	1180	863	940	111
31	613	---	1100	1440	---	1780	---	1120	---	760	986	---
TOTAL	5650	22358	33799	54402	92680	74350	59050	51150	33489	26578	26109	17457
MEAN	182	745	1090	1755	3310	2398	1968	1650	1116	857	842	582
MAX	618	1980	1760	7250	11900	4440	2500	2130	1270	1170	993	1070
MIN	107	593	737	608	1110	1670	1530	1110	827	554	616	109
AC-FT	11210	44350	67040	107900	183800	147500	117100	101500	66430	52720	51790	34630

11433300 MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL, 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	449	656	1176	1684	1889	1869	1784	1577	1035	670	625	523
MAX	1634	2952	7172	8778	8815	5076	5572	4642	3300	1836	1142	1084
(WY)	1963	1984	1965	1997	1986	1983	1982	1963	1983	1983	1983	1983
MIN	54.3	47.1	64.8	85.2	111	240	110	120	124	99.2	47.2	42.8
(WY)	1961	1960	1960	1991	1991	1977	1977	1977	1977	1966	1959	1962

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1959 - 1999	
ANNUAL TOTAL	587965		497072			
ANNUAL MEAN	1611		1362		1158	
HIGHEST ANNUAL MEAN					2723	
LOWEST ANNUAL MEAN					179	
HIGHEST DAILY MEAN	9790	Mar 24	11900	Feb 9	65000	Dec 23 1964
LOWEST DAILY MEAN	107	Oct 27	107	Oct 27	35	Oct 19 1961
ANNUAL SEVEN-DAY MINIMUM	117	Oct 22	117	Oct 22	38	Oct 14 1961
INSTANTANEOUS PEAK FLOW			15800		310000	
INSTANTANEOUS PEAK STAGE			20.06		69.00	
ANNUAL RUNOFF (AC-FT)	1166000		985900		838600	
10 PERCENT EXCEEDS	2770		2500		2430	
50 PERCENT EXCEEDS	1290		1040		763	
90 PERCENT EXCEEDS	327		174		97	

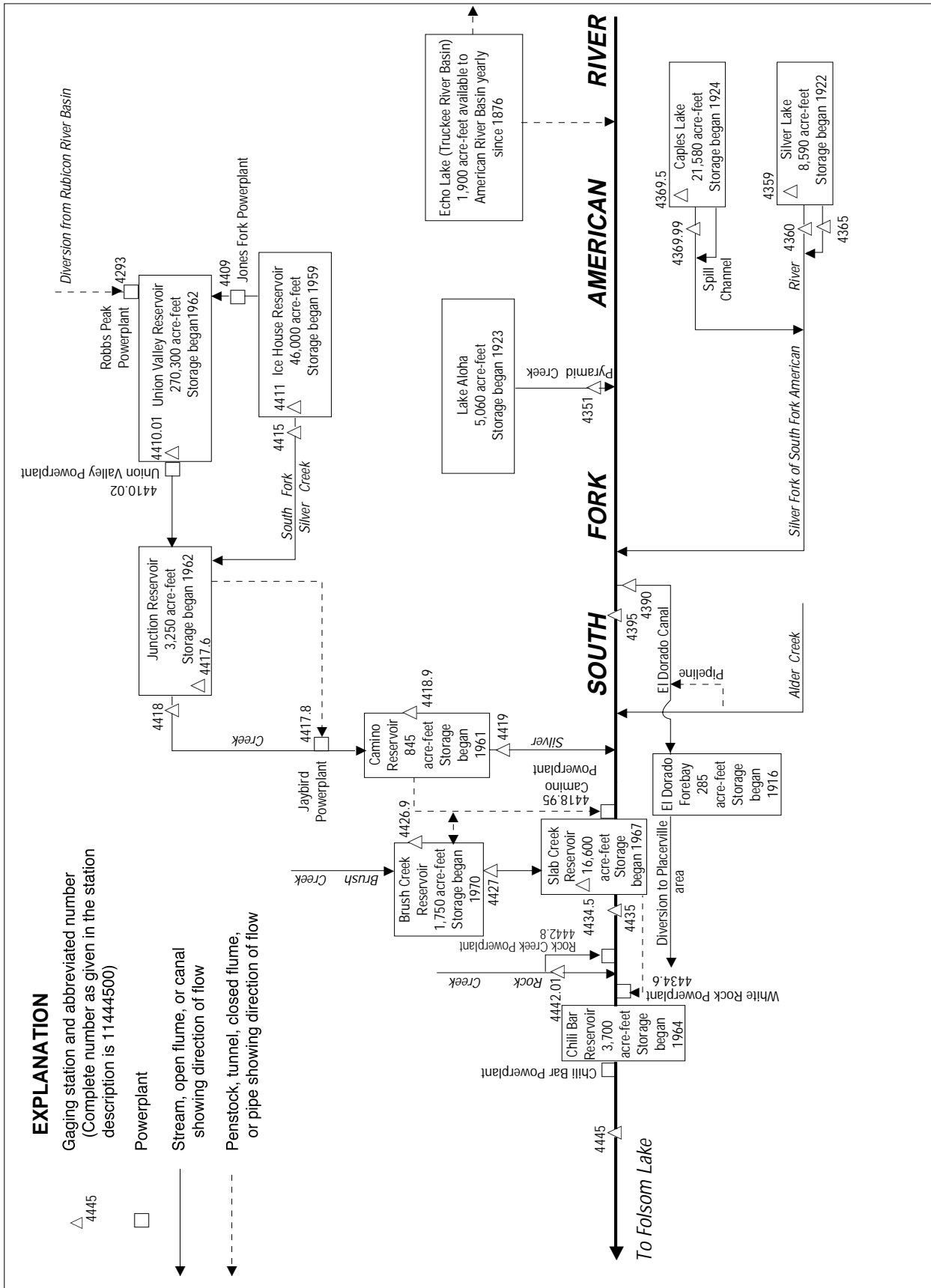


Figure 34. Diversions and storage in South Fork American River Basin.

11435100 PYRAMID CREEK AT TWIN BRIDGES, CA

LOCATION.—Lat 38°48'57", long 120°06'58", in NW 1/4 SW 1/4 sec.9, T.11 N., R.17 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 0.5 mi northeast of Twin Bridges, 2.2 mi west of Phillips, and 3.6 mi downstream from Lake Aloha.

DRAINAGE AREA.—8.76 mi².

PERIOD OF RECORD.—October 1970 to current year.

GAGE.—Water-stage recorder. Elevation of gage is 6,320 ft above sea level, from topographic map. Prior to October 1987, at datum 1.00 ft higher.

REMARKS.—Flow regulated by Lake Aloha, capacity, 5,060 acre-ft. Lake of the Woods, Ropi Lake, and Toem Lake (unknown capacities) also regulate at times. See schematic diagram of South Fork American 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.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,920 ft³/s, Jan. 2, 1997, gage height, 7.22 ft, from rating curve extended above 300 ft³/s; minimum daily, 0.03 ft³/s, Oct. 26–28, 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	48	18	34	10	12	19	15	50	164	114	27	50
2	46	15	21	10	11	18	14	63	161	116	26	50
3	45	10	43	9.9	12	19	13	43	122	108	26	49
4	43	8.1	30	9.7	13	17	13	34	106	96	25	48
5	41	7.1	24	9.7	11	16	13	42	111	88	25	48
6	37	6.8	22	9.6	11	15	14	97	147	84	25	47
7	33	9.4	21	9.1	16	14	13	126	142	83	25	46
8	13	10	20	8.8	23	14	14	105	128	82	24	43
9	7.7	9.4	19	8.6	26	15	20	91	128	79	24	15
10	6.8	8.0	18	8.6	24	15	18	90	134	77	24	9.5
11	6.5	9.0	16	8.8	20	14	16	112	149	76	24	8.9
12	6.2	8.4	15	8.7	17	14	14	139	159	76	25	8.7
13	6.2	9.4	14	8.7	16	15	19	127	173	76	40	8.8
14	6.2	11	14	8.6	15	15	28	98	177	75	46	8.8
15	6.1	11	13	14	15	14	31	87	192	73	49	8.8
16	6.0	10	15	19	15	14	38	96	185	69	50	8.7
17	5.7	11	16	26	22	17	52	118	174	65	50	8.7
18	5.5	11	16	32	17	21	65	130	173	63	54	8.6
19	5.5	9.3	13	28	17	21	76	132	164	60	55	8.6
20	5.3	8.3	15	27	15	18	74	135	160	57	55	8.6
21	5.2	8.6	20	22	17	16	63	146	163	38	55	9.1
22	5.2	12	20	17	16	15	45	162	150	33	55	51
23	5.1	17	20	16	15	15	33	176	155	32	56	60
24	5.8	19	20	21	14	16	33	175	157	31	55	60
25	7.3	14	20	19	15	18	53	196	132	31	54	59
26	9.2	12	20	19	16	26	67	193	113	30	54	58
27	11	11	20	18	15	26	53	188	104	30	53	57
28	9.7	10	19	17	16	22	43	182	103	30	52	55
29	9.2	14	15	16	---	19	32	161	108	29	52	54
30	11	52	11	15	---	17	32	156	111	28	51	53
31	10	---	11	13	---	16	---	168	---	28	51	---
TOTAL	468.4	369.8	595	467.8	452	531	1014	3818	4345	1957	1287	1008.8
MEAN	15.1	12.3	19.2	15.1	16.1	17.1	33.8	123	145	63.1	41.5	33.6
MAX	48	52	43	32	26	26	76	196	192	116	56	60
MIN	5.1	6.8	11	8.6	11	14	13	34	103	28	24	8.6
AC-FT	929	733	1180	928	897	1050	2010	7570	8620	3880	2550	2000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999, BY WATER YEAR (WY)

MEAN	12.1	18.2	16.6	20.5	18.1	24.8	40.5	96.1	104	71.3	44.9	18.4
MAX	35.8	57.1	53.2	133	55.6	63.2	70.2	160	249	198	90.2	77.4
(WY)	1996	1997	1997	1997	1982	1982	1997	1974	1998	1995	1974	1983
MIN	.18	.74	1.93	2.25	3.54	7.13	14.7	29.5	18.4	32.3	2.52	.28
(WY)	1991	1991	1991	1991	1991	1977	1975	1977	1987	1991	1981	1981

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1971 - 1999	
ANNUAL TOTAL	21982.2		16313.8			
ANNUAL MEAN	60.2		44.7		40.6	
HIGHEST ANNUAL MEAN					65.1	
LOWEST ANNUAL MEAN					15.3	
HIGHEST DAILY MEAN	350	Jun 25	196	May 25	1570	Jan 2 1997
LOWEST DAILY MEAN	5.1	Oct 23	5.1	Oct 23	.03	Oct 26 1992
ANNUAL SEVEN-DAY MINIMUM	5.4	Oct 17	5.4	Oct 17	.04	Oct 22 1992
INSTANTANEOUS PEAK FLOW			237	May 25	2920	Jan 2 1997
INSTANTANEOUS PEAK STAGE			3.93	May 25	7.22	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	43600		32360		29400	
10 PERCENT EXCEEDS	167		128		100	
50 PERCENT EXCEEDS	30		21		21	
90 PERCENT EXCEEDS	10		8.8		3.3	

11435900 SILVER LAKE NEAR KIRKWOOD, CA

LOCATION.—Lat 38°40'07", long 120°07'14", in NW 1/4 SE 1/4 sec.32, T.10 N., R.17 E., Amador County, Hydrologic Unit 18020129, Eldorado National Forest, on outlet structure, 3.5 mi southwest of Kirkwood.

DRAINAGE AREA.—15.2 mi².

PERIOD OF RECORD.—October 1985 to current year. Unpublished records for water years 1981–85 available in files of U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is 7,184.3 ft above sea level (levels by Pacific Gas & Electric Co.). October 1985 to Mar. 5, 1991, nonrecording gage at same site and datum.

REMARKS.—Lake is formed by earthfill and rock masonry dam initially constructed in 1876 and enlarged in 1929. Capacity, 8,590 acre-ft between gage heights 0.0 ft, invert of outlet, and 22.7 ft, top of radial gates and flashboards. Released water is used for power development on South Fork American River. See schematic diagram of South Fork American River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 8,791 acre-ft, June 3, 1996, gage height, 23.10 ft; minimum, 0 acre-ft, Feb. 13, 15, 20, 22, 27, 1991, gage height, 0 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 8,746 acre-ft, June 29, gage height, 23.01 ft; minimum, 977 acre-ft, Jan. 10–14, gage height, 3.51 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., recomputed Oct. 1, 1989)

0.0	0	12.0	3,840
2.0	540	15.0	5,010
4.0	1,120	18.0	6,350
6.0	1,720	21.0	7,740
9.0	2,730	24.0	9,241

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	5263	2547	1357	1038	1156	1111	1278	3289	6000	8665	7712	6547
2	5151	2460	1357	1024	1147	1114	1266	3419	6170	8670	7669	6515
3	5057	2377	1387	1018	1138	1141	1263	3456	6262	8670	7627	6483
4	4958	2291	1378	1015	1138	1129	1236	3453	6290	8650	7584	6451
5	4861	2206	1351	1006	1135	1123	1254	3513	6405	8635	7537	6414
6	4813	2124	1348	1001	1171	1117	1248	3802	6657	8640	7499	6382
7	4793	2070	1309	992	1213	1105	1242	4140	6869	8650	7457	6350
8	4777	1995	1275	986	1245	1123	1260	4274	7039	8660	7415	6318
9	4757	1921	1248	983	1275	1135	1242	4290	7256	8645	7387	6253
10	4745	1847	1236	977	1248	1120	1228	4294	7547	8620	7368	6170
11	4725	1784	1219	977	1228	1108	1210	4403	7899	8605	7335	6087
12	4650	1720	1213	977	1213	1108	1192	4551	8285	8585	7298	5995
13	4528	1651	1198	977	1201	1108	1204	4528	8575	8565	7256	5913
14	4407	1591	1180	977	1180	1103	1245	4407	8575	8540	7214	5826
15	4282	1531	1186	1012	1165	1091	1296	4329	8505	8500	7177	5745
16	4166	1474	1177	1021	1186	1091	1372	4313	8395	8455	7141	5668
17	4045	1438	1183	1038	1174	1100	1489	4434	8445	8420	7099	5592
18	3934	1381	1195	1117	1174	1108	1654	4489	8585	8375	7058	5511
19	3809	1336	1195	1186	1153	1123	1883	4547	8635	8330	7021	5440
20	3687	1284	1186	1210	1171	1135	2124	4586	8630	8275	6984	5375
21	3585	1245	1180	1207	1168	1141	2329	4690	8610	8210	6943	5280
22	3471	1231	1171	1210	1156	1144	2449	4869	8645	8164	6906	5155
23	3363	1287	1156	1242	1138	1150	2491	4958	8660	8109	6869	5040
24	3278	1260	1138	1222	1126	1159	2540	4930	8620	8069	6833	4922
25	3167	1242	1123	1207	1138	1165	2667	4946	8555	8029	6801	4809
26	3090	1216	1108	1201	1123	1186	2859	5203	8575	7979	6773	4698
27	2992	1192	1094	1192	1114	1213	3025	5538	8640	7934	6741	4575
28	2902	1171	1082	1183	1117	1233	3119	5795	8731	7889	6708	4465
29	2830	1192	1070	1165	---	1245	3138	5817	8746	7844	6667	4356
30	2719	1327	1059	1165	---	1260	3171	5836	8696	7800	6621	4247
31	2621	---	1056	1165	---	1281	---	5881	---	7755	6584	---
MAX	5263	2547	1387	1242	1275	1281	3171	5881	8746	8670	7712	6547
MIN	2621	1171	1056	977	1114	1091	1192	3289	6000	7755	6584	4247
a	8.69	4.69	3.78	4.15	3.99	4.54	10.22	16.98	22.91	21.03	18.51	13.07
b	-2737	-1294	-271	+109	-48	+164	+1890	+2710	+2815	-941	-1171	-2337

CAL YR 1998 MAX 8625 MIN 1056 b -744
WTR YR 1999 MAX 8746 MIN 977 b -1111

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

11436000 SILVER LAKE OUTLET NEAR KIRKWOOD, CA

LOCATION.—Lat 38°40'18", long 120°07'19", in NE 1/4 SW 1/4 sec.32, T.10 N., R.17 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 1,000 ft downstream from Silver Lake Dam and 3.5 mi southwest of Kirkwood.

DRAINAGE AREA.—15.2 mi².

PERIOD OF RECORD.—September 1922 to current year. Records for water year 1923 incomplete, yearly estimate published in WSP 1315-A.

REVISED RECORDS.—WDR CA-75-4: 1927(M), 1929(M), 1932(M), 1937–38(M), 1940–45(M), 1950–53(M), 1955–58(M), 1963(M), 1965(M), 1967(M), 1969–70(M), 1973(M).

GAGE.—Water-stage recorder. Concrete control since Sept. 8, 1986. Datum of gage is 7,198.0 ft above sea level (levels by Pacific Gas & Electric Co).

REMARKS.—Low and medium flow regulated by Silver Lake (station 11435900) 1,000 ft upstream. Some water, in addition to that released through dam and over spillway, escapes from Silver Lake through porous rock formation and is measured at staff gage (station 11436500) 0.25 mi east of station. For leakage from Silver Lake, refer to monthly figures below. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 2,170 ft³/s, Jan. 2, 1997, gage height, 7.79 ft, from rating curve extended above 430 ft³/s; no flow many days in February and March 1948, Jan. 13, 14, 1954, Nov. 3, 1959, to Feb. 5, 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	56	45	23	13	14	12	21	51	205	78	5.9	5.8
2	54	44	23	12	13	12	21	52	119	52	6.0	5.8
3	54	43	24	12	13	13	20	52	66	31	6.2	5.7
4	53	42	24	11	13	13	20	53	66	30	6.3	5.7
5	52	41	24	11	13	13	19	53	66	25	6.3	5.6
6	24	40	25	10	13	13	20	54	61	13	6.2	5.7
7	4.8	39	25	10	16	13	20	67	58	6.5	6.1	5.6
8	4.7	38	24	9.9	17	13	20	129	58	6.4	6.0	5.5
9	4.7	37	22	9.3	19	14	19	155	31	6.3	6.0	18
10	4.7	36	21	9.1	19	13	19	156	16	6.4	6.0	30
11	4.7	36	19	8.8	18	13	18	174	16	6.5	6.1	30
12	36	35	19	8.7	17	13	17	229	20	6.5	6.1	29
13	59	34	19	8.6	16	12	17	249	76	6.5	5.9	29
14	58	33	18	8.3	16	12	18	235	244	6.5	5.8	29
15	58	32	18	8.5	15	12	20	187	289	6.6	5.8	29
16	57	31	17	9.0	15	12	22	161	278	6.7	5.8	29
17	56	30	17	9.3	15	12	25	167	194	6.7	5.8	28
18	55	28	18	10	15	12	27	213	109	6.7	5.9	28
19	55	26	18	13	15	13	35	222	147	6.7	5.9	28
20	54	25	18	15	14	14	38	256	161	6.6	5.8	28
21	53	24	18	16	15	14	41	282	159	6.6	5.8	40
22	53	21	17	16	14	14	42	348	159	6.5	5.8	57
23	52	22	17	17	14	15	43	409	163	6.4	5.8	56
24	52	22	16	18	13	15	44	408	163	6.3	5.8	56
25	51	21	16	17	14	15	45	416	123	6.3	5.8	55
26	51	20	15	16	13	16	47	345	59	6.3	5.9	55
27	50	19	15	16	13	18	48	289	30	6.2	5.8	54
28	49	19	14	15	12	19	50	279	21	6.0	5.8	54
29	48	19	14	15	---	19	51	292	59	6.0	5.8	53
30	47	21	13	14	---	20	51	293	92	5.9	5.8	53
31	46	---	13	14	---	21	---	269	---	5.9	5.8	---
TOTAL	1356.6	923	584	380.5	414	440	898	6545	3308	389.0	183.8	913.4
MEAN	43.8	30.8	18.8	12.3	14.8	14.2	29.9	211	110	12.5	5.93	30.4
MAX	59	45	25	18	19	21	51	416	289	78	6.3	57
MIN	4.7	19	13	8.3	12	12	17	51	16	5.9	5.8	5.5
AC-FT	2690	1830	1160	755	821	873	1780	12980	6560	772	365	1810
a	22	0	0	0	0	0	0	29	515	717	390	79

a Leakage, in acre-feet, from Silver Lake, provided by Pacific Gas & Electric Co.

11436000 SILVER LAKE OUTLET NEAR KIRKWOOD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1999, BY WATER YEAR (WY)

MEAN	25.2	18.6	16.1	15.2	13.8	15.6	43.2	127	89.1	20.0	8.45	37.5
MAX	54.3	110	116	188	93.2	98.2	133	306	353	186	50.5	74.6
(WY)	1953	1951	1951	1997	1963	1986	1943	1969	1983	1983	1987	1983
MIN	.11	.15	.000	.000	.093	.013	.20	1.37	1.43	.91	.44	.16
(WY)	1930	1929	1960	1960	1948	1948	1924	1977	1977	1959	1925	1923

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1923 - 1999	
ANNUAL TOTAL	21944.7		16335.3			
ANNUAL MEAN	60.1		44.8		35.9	
HIGHEST ANNUAL MEAN					85.4 1983	
LOWEST ANNUAL MEAN					8.76 1976	
HIGHEST DAILY MEAN	386	Jun 16	416	May 25	1940	Jan 2 1997
LOWEST DAILY MEAN	4.7	Oct 8	4.7	Oct 8	.00	Feb 24 1948
ANNUAL SEVEN-DAY MINIMUM	5.4	Jul 29	5.7	Sep 2	.00	Feb 28 1948
INSTANTANEOUS PEAK FLOW			441	May 25	2170	Jan 2 1997
INSTANTANEOUS PEAK STAGE			5.06	May 25	7.79	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	43530		32400		26010	
ANNUAL LEAKAGE (AC-FT) a	1830		1750			
10 PERCENT EXCEEDS	175		121		96	
50 PERCENT EXCEEDS	29		19		12	
90 PERCENT EXCEEDS	6.2		6.0		.80	

a Leakage, in acre-feet, from Silver Lake, provided by Pacific Gas & Electric Co.

11436950 CAPLES LAKE NEAR KIRKWOOD, CA

LOCATION.—Lat 38°42'27", long 120°02'55", in SW 1/4 SW 1/4 sec.18, T.10 N., R.18 E., Alpine County, Hydrologic Unit 18020129, Eldorado National Forest, on Caples Lake Dam near the center of the earthfill portion and 1.3 mi east of Kirkwood.

DRAINAGE AREA.—13.5 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 Oct. 1, 1991. Datum of gage is 7,894.0 ft above sea level (levels by Pacific Gas & Electric Co.). Prior to Oct. 1, 1991, nonrecording gage read periodically except for the periods Oct. 16, 1986, to Sept. 30, 1987, Dec. 18, 1990, to May 26, 1991, and July 30 to Sept. 16, 1991, when there was a water-stage recorder at same site and datum.

REMARKS.—Lake is formed by one earthfill and one concrete dam at spillway; dam was completed and storage began in 1924. Capacity, 21,581 acre-ft, between gage heights 6.0 and 62.0 ft, top of 3 ft of flashboards; capacity, 19,751 acre-ft at spillway level. Released water is measured at Caples Creek Release (station 11436999). When gage height is above spillway crest of 59.0 ft, there is leakage or spill which is not measured. Released water is used for power development on South Fork American River. See schematic diagram of South Fork American River Basin.

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

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 21,696 acre-ft, July 9, 10, 1997, gage height, 62.19 ft; minimum, 2,427 acre-ft, Mar. 30, 31, 1987, gage height, 20.7 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 21,519 acre-ft, July 8, gage height, 61.90 ft; minimum, 16,754 acre-ft, Apr. 14, gage height 53.89 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co., dated Mar. 24, 1934)

15.0	1,061	45.0	12,037
20.0	2,238	50.0	14,609
25.0	3,703	55.0	17,390
30.0	5,442	60.0	20,356
35.0	7,432	63.0	22,201
40.0	9,648		

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	19271	17923	17540	e17200	17252	17598	e17083	16874	19229	21433	21383	21003
2	19212	17923	17557	e17188	17252	17569	e17056	16880	19050	21439	21383	20972
3	19170	17894	17592	e17177	17229	17609	e17029	16874	18712	21420	21383	20935
4	19098	17877	17592	e17160	17217	17609	e17002	16817	18310	21427	21377	20935
5	19033	17877	17586	e17143	17194	17575	e16975	16800	17947	21396	21340	20899
6	18997	17877	17586	e17114	17229	17575	e16948	16874	17766	21451	21340	20868
7	18961	17906	17569	e17102	17361	17540	e16921	16999	17708	21494	21328	20837
8	18919	17894	17569	e17091	17494	17569	e16895	17120	17656	21519	21316	20794
9	18854	17871	17569	e17080	17563	17592	e16868	17211	17696	21482	21309	20745
10	18842	17865	17563	e17068	17580	17563	e16842	17309	17935	21482	21365	20684
11	18771	17865	17552	e17057	17580	17563	e16815	17488	18281	21451	21365	20605
12	18712	17842	17540	e17039	17580	17563	e16791	17760	18664	21451	21390	20544
13	18652	17842	17528	e17028	17557	17540	e16765	17888	19140	21494	21365	20477
14	18623	17842	17517	e17017	17563	17511	16754	17853	19558	21513	21340	20380
15	18588	17801	17511	e17028	17534	17505	e16784	17766	19883	21513	21340	20313
16	18493	17783	17505	e17034	17575	17482	e16814	17725	20137	21488	21316	20240
17	18457	17801	e17476	e17034	17580	17476	e16844	17696	20368	21470	21279	20174
18	18393	17778	e17453	e17091	17604	17465	e16874	17749	20575	21439	21285	20137
19	18339	17778	e17430	e17183	17604	17448	e16904	17795	20733	21439	21242	20059
20	18281	17731	e17407	e17240	17609	17453	e16934	17906	20941	21396	21242	19980
21	18222	17679	e17384	17240	17650	17436	16965	18069	21187	21408	21199	19914
22	18187	17650	e17367	17257	17650	17413	17017	18316	21383	21408	21199	19835
23	18151	17720	e17344	17332	17621	17413	16977	18670	21457	21390	21174	19715
24	18104	17667	e17327	17344	17598	17373	16942	18931	21439	21396	21174	19570
25	18075	17621	e17309	17338	17633	17361	16914	19128	21340	21396	21144	19415
26	18023	17546	e17292	17332	17615	17303	16925	19289	21346	21402	21131	19271
27	17988	17517	e17275	17321	17615	17269	16931	19438	21396	21402	21131	19116
28	17988	17471	e17257	17303	17598	17234	16948	19558	21427	21402	21131	18955
29	17982	17500	e17240	17303	---	17177	16948	19528	21451	21402	21101	18812
30	17958	17569	e17223	17263	---	17137	16908	19433	21433	21402	21033	18664
31	17941	---	e17211	17269	---	e17110	---	19361	---	21402	21003	---
MAX	19271	17923	17592	17344	17650	17609	17083	19558	21457	21519	21390	21003
MIN	17941	17471	17211	17017	17194	17110	16754	16800	17656	21390	21003	18664
a	55.95	55.31		54.79	55.36		54.16	58.35	61.76	61.71	61.06	57.18
b	-1384	-372	-358	+58	+329	-488	-202	+2453	+2072	-31	-399	-2339

CAL YR 1998 MAX 21494 MIN 15520 b -765

WTR YR 1999 MAX 21519 MIN 16754 b -661

e Estimated.

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

b Change in contents, in acre-feet.

11436999 CAPLES CREEK RELEASE BELOW CAPLES DAM, NEAR KIRKWOOD, CA

LOCATION.—Lat 38°42'31", long 120°03'02", in NW 1/4 SW 1/4 sec.18, T.10 N., R.18 E., Alpine County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 500 ft downstream from main dam and outlet gate of Caples Lake and 1.3 mi east of Kirkwood.

DRAINAGE AREA.—13.5 mi².

PERIOD OF RECORD.—October 1992 to current year. Records for September 1922 to September 1992 were published as station 11437000, Caples Lake Outlet. This record combined the spillway discharge. Records for water year 1945 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1969, published as Twin Lakes Outlet near Kirkwood.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 7,730 ft above sea level, from topographic map.

REMARKS.—Flow regulated by Caples Lake (station 11436950) 500 ft upstream. Flow over Caples Lake Spillway bypasses this gage. No diversion upstream from station. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 292 ft³/s, May 28, 1999, gage height, 3.21 ft; minimum daily, 5.5 ft³/s, Sept. 10, 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	31	9.2	20	13	13	13	31	53	289	71	10	10
2	30	9.2	12	13	13	13	31	53	289	71	11	10
3	30	9.2	12	13	13	13	31	53	289	71	10	10
4	30	9.2	12	13	13	13	31	53	288	71	10	10
5	31	9.3	12	13	13	13	31	53	286	64	10	10
6	22	9.4	12	13	13	13	31	53	232	49	10	10
7	11	9.4	12	13	13	13	31	54	176	49	10	10
8	17	9.4	12	13	13	13	31	54	158	49	10	14
9	23	9.4	12	13	13	13	31	54	95	49	10	29
10	23	9.4	13	13	13	13	31	54	44	49	11	33
11	23	9.4	13	13	13	13	31	54	36	49	11	33
12	23	9.4	13	13	13	13	31	55	36	49	11	33
13	23	9.4	12	13	13	13	31	97	36	49	10	33
14	23	9.4	13	13	13	13	32	130	86	49	10	33
15	23	9.4	13	13	13	13	32	130	153	49	10	33
16	23	9.4	13	13	13	13	32	130	154	49	10	33
17	23	9.4	13	13	13	13	32	130	154	48	10	33
18	23	9.4	13	13	13	13	32	130	155	40	10	33
19	23	9.4	13	13	13	13	32	130	155	32	10	33
20	23	13	13	13	13	13	32	130	130	25	10	33
21	23	30	13	13	13	13	32	130	113	21	10	33
22	23	30	13	13	13	13	45	130	113	18	10	56
23	23	30	13	13	13	13	55	131	113	13	10	73
24	23	30	13	13	13	23	55	172	113	13	10	73
25	23	30	13	13	13	31	55	239	113	12	10	73
26	23	30	13	13	13	31	55	262	99	11	10	73
27	16	30	13	13	13	31	55	277	71	11	10	73
28	10	30	13	13	13	31	30	290	71	10	10	73
29	8.4	30	13	13	---	31	35	290	71	10	10	73
30	8.9	30	13	13	---	31	53	290	71	10	10	73
31	9.3	---	13	13	---	31	---	289	---	10	10	---
TOTAL	668.6	490.7	401	403	364	539	1097	4150	4189	1171	314	1149
MEAN	21.6	16.4	12.9	13.0	13.0	17.4	36.6	134	140	37.8	10.1	38.3
MAX	31	30	20	13	13	31	55	290	289	71	11	73
MIN	8.4	9.2	12	13	13	13	30	53	36	10	10	10
AC-FT	1330	973	795	799	722	1070	2180	8230	8310	2320	623	2280

11436999 CAPLES CREEK RELEASE BELOW CAPLES DAM, NEAR KIRKWOOD, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1999, BY WATER YEAR (WY)

MEAN	25.5	18.0	16.9	34.6	31.0	23.3	34.4	65.8	119	72.1	27.6	32.8
MAX	54.5	33.1	29.8	116	92.4	40.0	83.5	134	203	183	64.5	55.3
(WY)	1996	1996	1996	1997	1997	1997	1995	1999	1995	1995	1995	1995
MIN	6.72	6.75	6.60	13.0	9.54	9.87	9.37	8.63	9.34	11.6	10.1	17.0
(WY)	1998	1998	1998	1999	1996	1996	1994	1994	1994	1994	1999	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1993 - 1999	
ANNUAL TOTAL	18879.4		14936.3			
ANNUAL MEAN	51.7		40.9		41.7	
HIGHEST ANNUAL MEAN					63.1 1995	
LOWEST ANNUAL MEAN					20.8 1994	
HIGHEST DAILY MEAN	260	Jun 27	290	May 28	290	May 28 1999
LOWEST DAILY MEAN	6.4	Jan 1	8.4	Oct 29	5.5	Sep 10 1996
ANNUAL SEVEN-DAY MINIMUM	6.5	Jan 1	9.1	Oct 29	6.4	Oct 5 1997
INSTANTANEOUS PEAK FLOW			292	May 28	292	May 28 1999
INSTANTANEOUS PEAK STAGE			3.21	May 28	3.21	May 28 1999
ANNUAL RUNOFF (AC-FT)	37450		29630		30210	
10 PERCENT EXCEEDS	126		113		98	
50 PERCENT EXCEEDS	30		13		23	
90 PERCENT EXCEEDS	9.3		10		8.6	

11439500 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CA

LOCATION.—Lat 38°45'49", long 120°19'39", in SW 1/4 SW 1/4 sec.29, T.11 N., R.15 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 0.8 mi downstream from Silver Fork American River, and 1.9 mi southwest of Kyburz.

DRAINAGE AREA.—193 mi².

PERIOD OF RECORD.—August to December 1907, October 1922 to current year. Prior to October 1956, records for river and El Dorado Canal published separately; combined flow only, October 1956 to September 1960.

CHEMICAL DATA: Water years 1979, 1980.

BIOLOGICAL DATA: Water years 1979, 1980.

SUSPENDED SEDIMENT: Water year 1980.

WATER TEMPERATURE: Water years 1966–79.

REVISED RECORDS.—WSP 1445: 1923(M), 1925(M), 1927(M), 1928 (river only), 1935–37(M). WSP 1515: 1928 (combined). WSP 1931: Drainage area.

GAGE.—Water-stage recorder on river; water-stage recorder for canal diversion (station 11439000). Elevation of gage is 3,840 ft above sea level, from topographic map. Prior to Oct. 1, 1962, at datum 1.00 ft higher.

REMARKS.—Low and medium flows regulated by Echo Lake, Silver Lake, Caples Lake (stations 10336608, 11435900, and 11436950), and Lake Aloha, total capacity, 37,100 acre-ft. Some water is diverted out of river 0.6 mi upstream at diversion dam to El Dorado Canal (station 11439000). Part of this water is used for irrigation and domestic use and the remainder is returned to river at El Dorado Powerplant. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—River only: Maximum discharge, 25,000 ft³/s, Jan. 2, 1997, gage height, 14.26 ft (from floodmarks), from rating curve extended above 6,300 ft³/s on basis of contracted-opening measurement at gage height 10.40 ft; minimum daily, 0.13 ft³/s, Nov. 26, 1977.

Combined flow: Maximum discharge, 25,000 ft³/s, Jan. 2, 1997; minimum daily, 10 ft³/s, Oct. 17, 19, 1929.

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	190	100	324	122	193	410	419	1050	2240	872	120	79
2	178	111	207	118	189	430	399	1200	2040	818	118	78
3	171	95	265	117	195	584	390	985	1600	724	116	76
4	163	90	220	114	210	552	371	866	1400	617	114	75
5	160	87	179	114	203	449	376	932	1430	546	113	73
6	151	87	176	113	201	401	369	1280	1610	455	114	71
7	97	98	164	112	541	370	351	1570	1510	415	117	71
8	76	101	174	108	649	343	336	1580	1380	394	112	70
9	59	90	153	107	996	336	346	1500	1310	408	111	59
10	53	90	149	106	584	318	329	1430	1220	364	128	82
11	52	93	150	108	448	301	335	1630	1300	348	159	81
12	54	88	149	107	398	291	359	1980	1370	331	104	80
13	111	89	157	106	363	294	434	1990	1510	304	99	78
14	119	93	155	106	337	314	594	1750	1690	293	101	86
15	117	94	148	131	311	302	683	1560	1910	279	97	90
16	115	90	167	223	327	301	786	1550	1820	258	94	90
17	112	100	200	234	593	339	970	1710	1730	230	89	89
18	109	91	188	496	484	379	1120	1880	1570	214	92	90
19	106	85	172	614	400	420	1250	1870	1510	193	93	91
20	103	86	138	690	369	412	1310	2010	1450	182	91	117
21	104	103	136	453	358	368	1290	2160	1400	157	89	125
22	103	132	150	344	338	350	1090	2510	1380	141	90	176
23	101	183	142	368	325	365	964	2770	1450	130	96	235
24	108	237	158	307	316	373	932	2800	1460	122	87	236
25	112	152	148	285	332	409	1080	3030	1280	118	84	232
26	113	135	134	260	308	496	1300	3070	988	111	86	229
27	126	124	126	232	308	552	1200	2910	819	104	97	226
28	106	122	123	219	336	511	1110	2790	788	100	87	222
29	98	129	121	210	---	487	869	2490	828	96	83	226
30	96	478	122	209	---	465	862	2370	890	97	80	206
31	93	---	127	205	---	456	---	2360	---	122	80	---
TOTAL	3456	3653	5122	7038	10612	12378	22224	59583	42883	9543	3141	3739
MEAN	111	122	165	227	379	399	741	1922	1429	308	101	125
MAX	190	478	324	690	996	584	1310	3070	2240	872	159	236
MIN	52	85	121	106	189	291	329	866	788	96	80	59
AC-FT	6850	7250	10160	13960	21050	24550	44080	118200	85060	18930	6230	7420

11439500 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1999, BY WATER YEAR (WY)

MEAN	35.8	78.4	131	156	175	276	636	1207	856	188	26.7	25.4
MAX	223	1283	1587	1964	1333	1252	1497	2765	3551	1628	343	417
(WY)	1984	1951	1951	1997	1986	1986	1982	1969	1983	1995	1983	1983
MIN	.77	.49	.69	.57	.76	2.42	38.9	56.8	.76	.62	.58	.54
(WY)	1929	1929	1931	1929	1931	1933	1977	1977	1924	1924	1926	1924

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1923 - 1999	
ANNUAL TOTAL	249548		183372			
ANNUAL MEAN	684		502		316	
HIGHEST ANNUAL MEAN					907	
LOWEST ANNUAL MEAN					19.4	
HIGHEST DAILY MEAN	3750	Mar 24	3070	May 26	18000	Jan 2 1997
LOWEST DAILY MEAN	52	Oct 11	52	Oct 11	.13	Nov 26 1977
ANNUAL SEVEN-DAY MINIMUM	72	Oct 7	71	Sep 3	.36	Nov 5 1928
INSTANTANEOUS PEAK FLOW			3890		25000	
INSTANTANEOUS PEAK STAGE			6.67		14.26	
ANNUAL RUNOFF (AC-FT)	495000		363700		228900	
10 PERCENT EXCEEDS	2010		1480		1040	
50 PERCENT EXCEEDS	246		223		52	
90 PERCENT EXCEEDS	100		90		2.8	

11439501 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CA—Continued

SOUTH FORK AMERICAN RIVER AND EL DORADO CANAL NEAR KYBURZ, 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	207	118	334	122	193	410	419	1080	2260	905	120	112
2	195	129	217	118	189	430	399	1230	2070	851	118	111
3	189	113	275	117	195	584	390	1020	1620	757	116	110
4	181	108	230	114	210	552	371	899	1420	649	114	109
5	177	105	185	114	203	449	376	965	1450	578	113	107
6	171	105	176	113	201	401	369	1310	1630	487	114	105
7	119	116	164	112	541	370	351	1600	1530	448	117	104
8	101	119	174	108	649	343	336	1610	1410	426	112	102
9	89	108	153	107	996	336	346	1530	1340	441	111	91
10	85	108	149	106	584	318	329	1430	1250	397	128	115
11	84	111	150	108	448	301	335	1630	1330	381	165	114
12	85	106	149	107	398	291	359	1980	1400	363	131	113
13	141	107	157	106	363	294	434	1990	1540	337	132	111
14	149	111	155	106	337	314	594	1750	1720	326	134	119
15	147	112	148	131	311	302	683	1560	1940	312	130	123
16	145	108	167	223	327	301	786	1550	1850	291	127	123
17	142	118	200	234	593	339	970	1710	1760	263	122	122
18	139	109	188	496	484	379	1120	1880	1600	247	125	123
19	136	103	172	614	400	420	1250	1870	1540	226	126	124
20	133	99	138	690	369	412	1310	2010	1480	215	124	126
21	134	103	136	453	358	368	1290	2170	1430	190	122	125
22	133	134	150	344	338	350	1110	2530	1410	174	123	176
23	131	190	142	368	325	365	997	2790	1480	163	130	235
24	138	247	158	307	316	373	965	2820	1490	155	121	236
25	143	162	148	285	332	409	1110	3060	1310	151	117	232
26	138	145	134	260	308	496	1330	3100	1020	144	119	229
27	138	134	126	232	308	552	1230	2940	849	137	131	226
28	124	132	123	219	336	511	1140	2820	819	134	121	222
29	116	139	121	210	---	487	901	2510	859	130	117	226
30	114	489	122	209	---	465	895	2390	923	126	113	220
31	111	---	127	205	---	456	---	2380	---	122	113	---
TOTAL	4235	4088	5168	7038	10612	12378	22495	60114	43730	10526	3806	4391
MEAN	137	136	167	227	379	399	750	1939	1458	340	123	146
MAX	207	489	334	690	996	584	1330	3100	2260	905	165	236
MIN	84	99	121	106	189	291	329	899	819	122	111	91
AC-FT	8400	8110	10250	13960	21050	24550	44620	119200	86740	20880	7550	8710
a	1550	864	90	0	0	0	551	1090	1700	1950	1320	1290

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1999, BY WATER YEAR (WY)

MEAN	110	161	221	243	272	381	741	1329	986	313	149	134
MAX	365	1301	1698	1964	1412	1344	1533	2905	3561	1637	357	424
(WY)	1983	1951	1951	1997	1986	1986	1982	1969	1983	1995	1983	1983
MIN	20.8	25.1	44.2	35.9	38.4	53.7	178	207	99.7	75.0	73.0	46.4
(WY)	1978	1930	1960	1929	1977	1977	1977	1977	1924	1931	1994	1987

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1923 - 1999

ANNUAL TOTAL	252463	188581		
ANNUAL MEAN	692	517	420	
HIGHEST ANNUAL MEAN			980	1983
LOWEST ANNUAL MEAN			104	1977
HIGHEST DAILY MEAN	3750	Mar 24	3100	May 26
LOWEST DAILY MEAN	81	Jan 5	84	Oct 11
ANNUAL SEVEN-DAY MINIMUM	96	Jan 3	101	Oct 7
INSTANTANEOUS PEAK FLOW			3920	May 25
ANNUAL RUNOFF (AC-FT)	500800	374100	304400	
ANNUAL DIVERSION (AC-FT) a	5780	10390		
10 PERCENT EXCEEDS	2010	1510	1150	
50 PERCENT EXCEEDS	246	226	167	
90 PERCENT EXCEEDS	118	111	75	

a Diversion, in acre-feet, to El Dorado Canal, provided by Pacific Gas & Electric Co.

11441001 UNION VALLEY RESERVOIR NEAR RIVERTON, CA

LOCATION.—Lat 38°51'33", long 120°26'13", in NW 1/4 NW 1/4 sec.29, T.12 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, in valve control house near left bank at Union Valley Dam on Silver Creek, 0.7 mi upstream from Little Silver Creek, and 6.6 mi north of Riverton.

DRAINAGE AREA.—83.7 mi².

PERIOD OF RECORD.—October 1962 to current year.

CHEMICAL ANALYSES.—June to September 1996.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sacramento Municipal Utility District).

REMARKS.—Reservoir is formed by earthfill dam completed in December 1962; storage began May 1962. Usable capacity, 269,514 acre-ft between elevations 4,645.0 ft, minimum operating level, and 4,870.0 ft, top of radial spillway gates. Dead storage, 7,921 acre-ft. Reservoir receives water from the South Fork Rubicon River via Robbs Peak Powerplant (station 11429300) and from South Fork Silver Creek, since April 1985, via Jones Fork Powerplant (station 11440900). Water is used for power development in the South Fork American River Basin. Discharge to Union Valley Powerplant (station 11441002) is shown as a line item below this table. Records, including extremes, represent total contents. See schematic diagrams of Middle Fork American and Rubicon River Basins and South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 279,100 acre-ft, July 9, 1974, elevation, 4,870.6 ft; minimum since reservoir first filled, 18,300 acre-ft, Jan. 13, 1977, elevation, 4,683.3 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 272,159 acre-ft, July 4, elevation, 4,868.23 ft; minimum, 147,049 acre-ft, Dec. 25, elevation, 4,816.13 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sacramento Municipal Utility District, recomputed October 1991)

4,680	17,675	4,780	89,926
4,700	25,160	4,800	118,894
4,720	35,266	4,820	154,489
4,740	48,883	4,840	197,460
4,760	66,841	4,870	277,435

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	164962	154665	151168	148831	175973	210745	187990	186051	247467	270534	242284	183438
2	164983	153746	152211	149289	175306	211139	186523	187448	248519	271036	241278	182462
3	164142	152909	153961	149403	174640	212373	184976	187741	248657	271479	239384	181115
4	164080	152017	154881	149308	174576	212571	184061	187832	248990	272159	237179	180236
5	163365	151361	154979	149212	174833	212596	182351	189511	249852	271390	234936	178727
6	163365	150802	155195	149308	175715	212348	181115	191636	251470	270741	232206	178073
7	163039	151457	154704	150015	180038	211805	179885	193340	252029	269828	230626	176794
8	162713	151631	154920	149766	184016	211237	178836	194288	252197	268330	228272	175607
9	162855	150648	154900	150207	189329	209567	177965	194985	252646	267833	225908	173934
10	163079	150360	154371	150284	192004	209297	176686	195287	253123	266431	223640	173059
11	162509	149785	153844	150015	193872	208028	175370	196360	253432	266081	221669	171299
12	162448	149422	153376	150418	195893	206521	174084	197812	254587	265034	219052	170328
13	162042	148565	153961	150860	196523	205191	172868	199721	255434	264222	216057	169425
14	162327	147730	153473	151380	197694	204757	172549	201072	256085	263152	213836	168317
15	162042	148071	152463	152114	198847	203412	172379	202383	256879	262027	211040	167193
16	161556	147635	152521	153298	200076	201572	172379	202741	256794	260475	209297	166013
17	161880	147181	152288	154626	204540	201025	173806	204108	257305	259844	207127	165209
18	161091	147087	151592	158162	206763	200289	174898	205988	258387	259387	204637	163773
19	160748	147332	151303	161657	207711	199083	176275	208028	259701	258701	202550	162733
20	160567	147389	150744	166178	208320	198188	177617	210548	260704	257618	200787	161536
21	160104	147597	150207	168213	208686	197014	178705	212942	261825	256993	199532	160406
22	159823	147068	149862	169677	208028	196360	179578	216282	263556	255632	197929	159261
23	158901	147162	148546	172188	208149	194822	179797	220523	264976	254502	191246	158282
24	159261	147540	147332	173528	207687	193918	179753	224669	265586	253854	193409	157566
25	158063	147484	147049	174790	208442	192694	181137	228141	266547	252871	192233	156515
26	157685	147465	147768	175306	208540	192510	182484	231231	267540	251694	191063	155431
27	156377	147654	148090	176189	208637	191636	183638	234882	268213	249880	189556	154019
28	155844	147805	147578	176383	209273	190880	184484	237447	268946	248768	188466	152851
29	155372	148546	147749	176405	---	189624	184641	239816	269857	246777	187402	151979
30	154783	150264	148318	176102	---	189033	184752	242392	270652	244934	186546	150226
31	154371	---	148223	175715	---	188058	---	245236	---	243620	184976	---
MAX	164983	154665	155195	176405	209273	212596	187990	245236	270652	272159	242284	183438
MIN	154371	147068	147049	148831	174576	188058	172379	186051	247467	243620	184976	150226
a	4819.94	4817.82	4816.75	4830.33	4844.93	4835.92	4834.45	4858.79	4867.72	4858.20	4834.55	4817.80
b	-10632	-4107	-2041	+27492	+33558	-21215	-3306	+60484	+25416	-27032	-58644	-34750
c	16380	15680	30720	9060	37640	72070	66110	54280	40600	40820	68100	48390
CAL YR 1998	MAX 276027	MIN 131720	b +10996	c 583600								
WTR YR 1999	MAX 272159	MIN 147049	b -14777	c 499900								

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Diversion, in acre-feet, to Union Valley Powerplant, provided by Sacramento Municipal Utility District.

11441100 ICE HOUSE RESERVOIR NEAR KYBURZ, CA

LOCATION.—Lat 38°49'51", long 120°21'35", in SE 1/4 NW 1/4 sec. 1, T.11 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, in powerplant intake structure near right bank, 0.5 mi north of Ice House Dam on South Fork Silver Creek, and 5.2 mi northwest of Kyburz.

DRAINAGE AREA.—27.2 mi².

PERIOD OF RECORD.—October 1959 to current year.

CHEMICAL ANALYSES: June to September 1996.

REVISED RECORDS.—WSP 1931: 1960.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sacramento Municipal Utility District). Prior to July 15, 1985, at site 0.5 mi downstream at Ice House Dam at same datum.

REMARKS.—Reservoir is formed by an earthfill dam; storage began Dec. 15, 1959. Usable capacity, 45,839 acre-ft between elevations 5,327.5 ft, centerline of fishwater outlet, and 5,450.0 ft, top of spillway gates. Dead storage, 160 acre-ft. Reservoir is used to store water for power development. Reservoir is also forebay for Jones Fork Powerplant (station 11440900), which diverts up to 350 ft³/s to powerplant completed in April 1985, then to Union Valley Reservoir (station 11441001). Records, including extremes, represent total contents. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 46,400 acre-ft, June 27, 1971, elevation, 5,450.6 ft; minimum since reservoir first filled, 1,450 acre-ft, Dec. 8, 1983, elevation, 5,347.9 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 43,549 acre-ft, July 10, elevation, 5,446.61 ft; minimum, 13,547 acre-ft, Apr. 16, elevation, 5,390.32 ft.

Capacity table (elevation, in feet, and contents in acre-feet)
(Based on table provided by Sacramento Municipal Utility District, recomputed in October 1991)

5,345	1,080	5,400	17,665
5,350	1,801	5,420	27,406
5,360	3,751	5,440	39,167
5,380	9,663	5,451	46,721

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	32337	27390	26318	23783	24381	19732	15372	16249	34445	42319	43086	39310
2	32325	27315	26334	23818	24245	19478	15262	16538	35043	42551	43031	39024
3	32308	27246	26449	23838	24220	19345	15166	16703	35433	42742	42962	38837
4	32291	27166	26470	23858	24190	19093	15141	16659	35672	42887	42866	38708
5	32262	27098	26476	23888	24044	18837	14919	16616	36090	43017	42845	38560
6	32244	27045	26465	23918	23873	18570	14633	16807	36661	43134	42818	38367
7	31967	27008	26339	23898	23878	18484	14406	17241	37036	43300	42797	38175
8	31840	26939	26204	23848	23974	e18344	14287	17616	37369	43404	42845	37920
9	31651	26865	26151	23798	24039	e18204	14049	17945	37666	43487	42749	37717
10	31410	26802	26136	23748	23888	e18064	13940	18259	37978	43549	42749	37521
11	31388	26744	26105	23554	23718	e17924	13838	18665	38380	43459	42763	37470
12	31188	26670	26047	23514	23435	e17784	13802	19216	38785	43169	42763	37256
13	30978	26591	26016	23460	23350	e17644	13757	19802	39303	43203	42749	37055
14	30746	26528	25964	23420	23073	e17504	13705	20155	39806	43265	42736	36836
15	30554	26465	25886	23460	22764	e17364	13628	20474	40353	43328	42708	36624
16	30397	26413	25819	23484	22563	e17244	13547	20917	40777	43376	42462	36362
17	30156	26402	25808	23534	22378	e17084	13600	21403	41144	43404	42319	36139
18	30061	26355	25669	23798	22188	e16944	13761	21960	41399	43425	42298	36115
19	29672	26298	25426	24054	21936	e16804	14017	22509	41594	43425	42122	35905
20	29412	26245	25083	24265	21724	e16664	14340	23054	41769	43418	41993	35684
21	29126	26214	24863	24341	21527	e16524	14480	23778	41850	43418	41776	35427
22	28852	26178	24721	24401	21436	16382	14657	24950	41972	43231	41466	35171
23	28590	26235	24568	24503	21159	16305	14790	26110	42183	43231	41231	34946
24	28411	26157	24230	24533	20884	16236	14894	27076	42373	43231	40910	34849
25	28195	26115	24180	24533	20662	16111	15078	28178	42421	43217	40684	34602
26	27979	26079	24114	24533	20375	15885	15393	29357	42332	43217	40564	34271
27	27904	26016	23984	24503	20132	15855	15651	30442	42292	43190	40346	34253
28	27818	25990	23928	24437	19941	15791	15893	31433	42346	43183	40234	34008
29	27609	26026	23883	24417	---	15740	15979	32250	42169	43162	39957	33770
30	27539	26240	23833	24386	---	15689	16064	32949	42081	43127	39629	33450
31	27459	---	23803	24396	---	15630	---	33734	---	43107	39342	---
MAX	32337	27390	26476	24533	24381	19732	16064	33734	42421	43549	43086	39310
MIN	27459	25990	23803	23420	19941	15630	13547	16249	34445	42319	39342	33450
a	5420.10	5417.79	5413.02	5414.20	5405.01	5395.36	5396.38	5429.98	5444.55	5445.95	5440.33	5430.80
b	-4890	-1219	-2437	+593	-4455	-4311	+434	+17670	+8347	+1026	-3765	-5892
CAL YR 1998	MAX 45942	MIN 13854	b -166									
WTR YR 1999	MAX 43549	MIN 13547	b +1101									

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11441500 SOUTH FORK SILVER CREEK NEAR ICE HOUSE, CA

LOCATION.—Lat 38°49'08", long 120°21'51", in NW 1/4 NW 1/4 sec.12, T.11 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 300 ft upstream from Peavine Creek, 0.4 mi downstream from Ice House Dam, and 4.8 mi northwest of Kyburz.

DRAINAGE AREA.—27.5 mi².

PERIOD OF RECORD.—October 1924 to current year.

REVISED RECORDS.—WSP 1395: 1928, 1938. WSP 1635: Drainage area at former site.

GAGE.—Water-stage recorder and concrete control. Elevation of gage is 5,290 ft above sea level, from topographic map. Prior to Oct. 1, 1959, at site 0.3 mi upstream at different datum.

REMARKS.—Flow regulated by Ice House Reservoir (station 11441100) beginning in December 1959. Diversion to Jones Fork Powerplant (station 11440900) starting April 1985 bypasses station and returns to Silver Creek at Union Valley Reservoir (station 11441001). See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge prior to construction of Ice House Dam in 1959, 3,940 ft³/s, Dec. 23, 1955, gage height, 6.71 ft, site and datum then in use, from rating curve extended above 540 ft³/s on basis of slope-area measurement at gage height 6.69 ft; no flow Oct. 31 to Nov. 9, 1958. Maximum discharge since construction of the dam, 7,530 ft³/s, May 16, 1996, gage height, 7.64 ft, from rating curve extended above 730 ft³/s on basis of computation of flow over dam at gage height 5.66 ft; minimum daily, 1.2 ft³/s, Mar. 17–19, 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	15	13	6.2	5.2	4.5	7.2	4.9	12	12	15	16	16
2	14	11	6.0	5.1	4.5	6.1	5.0	12	12	15	16	16
3	14	11	6.7	5.1	4.6	8.1	5.1	12	12	15	16	16
4	14	10	6.0	5.1	4.6	6.0	4.7	12	12	15	16	16
5	14	10	5.9	4.5	4.7	5.4	4.6	11	12	15	16	16
6	14	10	5.9	3.9	4.8	5.2	4.6	11	12	15	16	16
7	14	11	5.9	5.2	e5.0	5.1	4.6	11	12	15	16	16
8	14	11	6.0	5.3	e5.6	5.1	4.3	11	12	16	16	16
9	13	10	6.2	5.4	e5.5	5.0	4.3	11	12	16	16	16
10	13	11	6.5	5.4	e5.4	4.9	4.3	11	12	16	16	16
11	13	11	6.5	4.6	5.4	4.9	4.4	11	12	16	16	16
12	13	11	6.6	4.0	5.1	5.0	4.8	11	12	16	16	16
13	13	12	6.3	4.0	5.1	5.3	5.2	11	12	16	16	16
14	13	12	6.2	4.0	5.1	5.4	5.3	12	12	16	16	16
15	13	12	6.1	4.4	4.9	5.3	5.2	11	12	16	16	16
16	13	9.4	5.9	4.9	6.5	5.0	5.2	11	12	16	16	15
17	13	5.6	6.0	4.8	8.9	5.0	5.0	11	13	16	16	15
18	14	5.4	5.8	e5.0	6.3	5.0	4.9	11	13	16	16	15
19	14	5.4	5.6	e5.2	5.8	5.0	4.8	11	13	16	16	15
20	14	5.4	5.6	e5.2	5.5	5.1	4.7	11	12	16	16	16
21	14	5.4	e5.6	e5.2	5.5	4.9	4.6	11	12	16	16	15
22	13	5.8	e5.6	5.2	5.5	4.9	4.6	11	12	16	16	15
23	13	6.1	5.4	e5.2	5.4	4.9	4.5	11	13	16	16	16
24	13	5.8	5.4	5.1	5.4	4.9	4.4	11	12	16	15	16
25	13	5.4	5.4	4.9	5.4	4.9	4.4	11	12	16	15	16
26	13	5.4	5.4	4.9	5.4	5.0	4.4	11	12	16	16	16
27	12	5.4	5.7	4.6	5.5	5.0	4.3	11	12	16	16	16
28	13	5.4	6.3	4.6	6.2	4.7	4.4	11	12	16	16	16
29	13	6.5	5.6	4.6	---	4.6	8.8	12	14	16	15	16
30	12	6.7	5.4	4.6	---	4.8	12	12	15	16	15	16
31	13	---	5.4	4.6	---	4.9	---	12	---	16	15	---
TOTAL	414	255.1	183.1	149.8	152.1	162.6	152.3	349	369	489	491	474
MEAN	13.4	8.50	5.91	4.83	5.43	5.25	5.08	11.3	12.3	15.8	15.8	15.8
MAX	15	13	6.7	5.4	8.9	8.1	12	12	15	16	16	16
MIN	12	5.4	5.4	3.9	4.5	4.6	4.3	11	12	15	15	15
AC-FT	821	506	363	297	302	323	302	692	732	970	974	940
a	4500	2240	4350	2320	8430	8610	7560	7260	6580	839	3140	4980

e Estimated.

a Diversion, in acre-feet, to Jones Fork Powerplant, provided by Sacramento Municipal Utility District.

11441500 SOUTH FORK SILVER CREEK NEAR ICE HOUSE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1959, BY WATER YEAR (WY)

MEAN	4.98	24.1	36.6	31.3	35.8	61.6	155	296	197	42.7	5.82	2.03
MAX	28.0	326	305	163	91.7	191	280	531	418	132	22.8	7.62
(WY)	1948	1951	1951	1956	1925	1928	1943	1952	1952	1952	1952	1952
MIN	.65	.64	2.34	3.00	3.00	6.92	54.9	66.2	35.0	2.92	.22	.18
(WY)	1933	1930	1933	1933	1933	1933	1944	1934	1931	1934	1931	1931

SUMMARY STATISTICS

WATER YEARS 1925 - 1959

ANNUAL MEAN	74.5
HIGHEST ANNUAL MEAN	123 1956
LOWEST ANNUAL MEAN	25.3 1931
HIGHEST DAILY MEAN	2780 Dec 23 1955
LOWEST DAILY MEAN	.00 Oct 31 1958
ANNUAL SEVEN-DAY MINIMUM	.00 Oct 31 1958
INSTANTANEOUS PEAK FLOW	3940 Dec 23 1955
INSTANTANEOUS PEAK STAGE	6.71 Dec 23 1955
ANNUAL RUNOFF (AC-FT)	53970
10 PERCENT EXCEEDS	237
50 PERCENT EXCEEDS	20
90 PERCENT EXCEEDS	1.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1984, BY WATER YEAR (WY)

MEAN	112	87.6	49.4	57.1	71.2	43.6	56.0	125	157	78.1	80.9	90.1
MAX	330	332	171	216	316	199	348	449	382	363	378	360
(WY)	1970	1966	1980	1982	1971	1969	1983	1982	1983	1983	1983	1983
MIN	5.64	5.05	5.21	4.76	5.48	3.67	2.94	4.17	3.80	4.02	3.79	3.97
(WY)	1965	1963	1963	1967	1973	1984	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS

WATER YEARS 1961 - 1984

ANNUAL MEAN	84.0
HIGHEST ANNUAL MEAN	226 1983
LOWEST ANNUAL MEAN	24.8 1977
HIGHEST DAILY MEAN	1560 Jan 22 1970
LOWEST DAILY MEAN	1.3 Jan 26 1984
ANNUAL SEVEN-DAY MINIMUM	1.4 Jan 24 1984
INSTANTANEOUS PEAK FLOW	1930 May 26 1982
INSTANTANEOUS PEAK STAGE	5.74 May 26 1982
ANNUAL RUNOFF (AC-FT)	60830
10 PERCENT EXCEEDS	256
50 PERCENT EXCEEDS	12
90 PERCENT EXCEEDS	5.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

MEAN	10.0	7.51	5.52	18.0	5.62	9.36	5.34	13.9	25.2	15.7	11.9	11.9
MAX	14.3	11.2	6.12	184	7.03	55.0	6.13	87.9	168	61.9	18.2	17.6
(WY)	1998	1997	1993	1997	1986	1986	1990	1996	1995	1995	1997	1996
MIN	5.32	5.65	4.78	3.65	3.97	4.13	4.01	5.49	5.54	5.46	5.21	5.29
(WY)	1989	1993	1990	1987	1987	1987	1986	1988	1988	1987	1992	1992

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1986 - 1999

ANNUAL TOTAL	6190.7	3641.0	
ANNUAL MEAN	17.0	9.98	11.7
HIGHEST ANNUAL MEAN			26.2 1995
LOWEST ANNUAL MEAN			5.68 1988
HIGHEST DAILY MEAN	457 Jun 21	16 Jul 8	2840 Jan 2 1997
LOWEST DAILY MEAN	4.0 Jan 6	3.9 Jan 6	2.8 Jan 3 1986
ANNUAL SEVEN-DAY MINIMUM	4.2 Feb 18	4.4 Jan 11	3.0 Apr 11 1989
INSTANTANEOUS PEAK FLOW		82 Jun 23	7530 May 16 1996
INSTANTANEOUS PEAK STAGE		3.31 Jun 23	7.64 May 16 1996
ANNUAL RUNOFF (AC-FT)	12280	7220	8470
ANNUAL DIVERSION (AC-FT) a	82550	60820	
10 PERCENT EXCEEDS	17	16	16
50 PERCENT EXCEEDS	10	11	6.1
90 PERCENT EXCEEDS	4.9	4.8	4.6

a Diversion, in acre-feet, to Jones Fork Powerplant, provided by Sacramento Municipal Utility District.

11441760 JUNCTION RESERVOIR NEAR POLLOCK PINES, CA

LOCATION.—Lat 38°51'07", long 120°27'22", in SW 1/4 SW 1/4 sec.30, T.12 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, in outlet structure to Jaybird Powerplant 100 ft upstream from left abutment of Junction Diversion Dam, 0.3 mi downstream from South Fork Silver Creek, and 9.0 mi northeast of Pollock Pines.

DRAINAGE AREA.—147 mi².

PERIOD OF RECORD.—October 1991 to current year. Unpublished records for water years 1980–91 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sacramento Municipal Utility District). Prior to Apr. 13, 1987, nonrecording gage at same site and datum.

REMARKS.—Reservoir is formed by concrete arch dam completed in 1962. Storage began in 1962. Usable capacity, 2,368 acre-ft, between elevations 4,397 ft, maximum drawdown level, and 4,450 ft, crest of spillway. Dead storage, 862 acre-ft. Most of the flow is diverted at this reservoir to Jaybird Powerplant (station 11441780). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 3,737 acre-ft, Jan. 2, 1997, elevation, 4,459.10 ft; minimum, 875 acre-ft, Oct. 3, 1991, elevation, 4,397.47 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 3,360 acre-ft, Apr. 6, elevation, 4,452.34 ft; minimum, 1,555 acre-ft, Nov. 20, elevation, 4,416.58 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sacramento Municipal Utility District, recomputed October 1991)

4,390	692	4,420	1,703
4,400	949	4,440	2,687
4,410	1,290	4,460	3,788

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	2762	2693	3050	2806	2338	2560	2582	2403	2686	3038	3061	2993
2	2541	3132	2818	2550	2375	2567	2559	2342	2848	2717	2644	3024
3	3096	3122	2790	2672	2408	2725	2317	2639	2972	2769	2798	2795
4	2877	3056	2723	2724	2475	2792	2065	2910	2958	2821	2883	2682
5	e2932	3186	3068	2935	2301	2798	2908	3044	2780	3085	2752	2751
6	2990	2827	2870	2932	1989	2819	3360	2588	2891	2694	3077	2891
7	3085	2647	2910	2473	2218	2466	3351	2415	2988	2885	2701	2780
8	3135	2442	3111	3001	2598	2108	3323	2577	3054	3039	2724	2743
9	2991	2832	2883	2804	3007	2604	3183	2549	2874	2886	2779	2741
10	2778	2930	2979	2804	3062	2474	2842	2488	2977	2697	2951	3092
11	3066	3061	2733	3049	2843	2308	2512	2575	2886	2874	2733	3116
12	2927	2970	2842	3051	2677	2413	2669	2712	2820	2630	2567	3055
13	2895	2953	2583	2794	2921	2675	2758	2548	2864	2682	2915	3021
14	2822	3110	2675	2789	2756	2272	2765	2665	2827	2631	2546	2968
15	3050	3142	2839	2858	2553	2205	2823	2523	2786	2781	2733	2845
16	3129	3010	2527	3004	2384	2428	2711	2285	2839	2759	2792	2916
17	2794	2991	2221	3036	2825	2538	2688	2492	2758	3021	2730	2914
18	2862	2521	2711	2979	2655	2367	2566	2376	2647	2974	2590	2866
19	3102	1747	2903	2603	2513	2241	2460	2433	2724	2747	3017	2927
20	2981	1555	2895	2912	2488	2203	2520	2396	2977	2809	2823	2919
21	3139	1618	2955	2532	2401	2190	2433	2646	2846	2600	2654	3027
22	2941	2341	2783	2300	2758	2296	2409	2574	3088	2809	2792	3154
23	3138	2820	2899	2465	2640	2243	2580	2713	2916	2910	2685	2966
24	2695	2748	2832	2287	2605	2125	2405	2542	2906	2700	3123	2598
25	2976	2736	2744	2501	2603	2254	2619	2549	3091	2765	3102	2562
26	3091	2894	2574	2587	2585	2464	2636	2218	3091	2947	2823	2699
27	3018	2606	2834	2390	2516	2190	2606	2411	3159	2752	3144	2859
28	3155	2517	2795	2494	2343	2233	2583	2462	3201	2847	2965	2862
29	2862	2399	2992	2294	---	2604	2545	2403	3175	2705	2850	2882
30	3052	2732	2671	2251	---	2579	2238	2287	3158	2976	e2965	2848
31	2967	---	3031	2262	---	2654	---	2466	---	2788	3081	---
MAX	3155	3186	3111	3051	3062	2819	3360	3044	3201	3085	3144	3154
MIN	2541	1555	2221	2251	1989	2108	2065	2218	2647	2600	2546	2562
a	4445.20	4440.84	4446.38	4431.78	4433.37	4439.37	4431.30	4435.77	4448.69	4441.89	4447.29	4443.00
b	-59	-235	+299	-769	+81	+311	-416	+228	+692	-370	+293	-233
CAL YR 1998	MAX 3412	MIN 1555	b +445									
WTR YR 1999	MAX 3360	MIN 1555	b -178									

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11441800 SILVER CREEK BELOW JUNCTION DAM, NEAR POLLOCK PINES, CA

LOCATION.—Lat 38°51'08", long 120°27'22", in SW 1/4 SW 1/4 sec.30, T.12 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, at outlet structure on Junction Dam and 9 mi northeast of Pollock Pines.

DRAINAGE AREA.—147 mi².

PERIOD OF RECORD.—October 1987 to current year (low-flow records only). Unpublished records for water years 1965–87 available in files of the U.S. Geological Survey.

GAGE.—Differential-pressure gage and orifice control in outlet pipe. Auxiliary nonrecording gage 550 ft downstream at different datum. Elevation of gage is 4,280 ft above sea level, from topographic map. August 1964 to December 1986, nonrecording gage at site 500 ft downstream at different datum. December 1986 to September 1987, nonrecording gage at site 550 ft downstream.

REMARKS.—Records not computed above 30 ft³/s. Flow completely regulated by Junction Dam. Flow over the spillway bypasses this station. Diversion through Jaybird Powerplant (station 11441780) since 1962 bypasses this station. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, 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	21	21	11	11	11	11	11	21	21	23	23	23
2	21	14	11	11	11	11	11	21	21	22	22	23
3	21	11	11	10	11	11	11	21	21	22	22	22
4	21	11	11	11	11	11	11	21	21	22	23	22
5	21	11	11	11	11	11	11	21	21	23	22	22
6	21	11	11	11	11	11	---	21	21	22	23	23
7	21	11	11	11	11	11	---	21	21	22	22	22
8	21	11	11	11	11	11	---	21	21	23	22	22
9	21	11	11	10	11	11	---	21	21	23	22	22
10	21	11	11	11	11	11	11	21	21	22	23	23
11	21	10	10	11	11	11	11	21	21	22	22	23
12	21	11	11	11	11	11	11	21	21	22	22	23
13	21	11	11	11	11	11	11	21	21	22	22	21
14	21	11	11	11	11	11	11	21	21	22	22	21
15	21	11	11	11	10	11	11	21	20	22	22	21
16	21	11	11	11	11	11	11	21	21	22	22	21
17	21	11	11	11	11	11	11	21	21	23	22	21
18	21	11	11	11	11	11	11	21	21	23	22	21
19	21	11	11	10	11	11	11	21	21	23	23	21
20	21	11	11	11	11	11	11	21	21	22	22	21
21	21	11	11	11	11	11	11	21	21	22	22	21
22	21	11	11	11	11	11	11	21	22	22	22	21
23	21	11	11	11	11	11	11	21	23	22	22	21
24	21	10	11	10	11	11	11	21	22	22	23	21
25	21	11	11	11	11	11	11	21	22	22	23	21
26	21	11	11	11	11	11	11	21	23	23	23	21
27	21	11	11	11	11	11	11	21	23	22	23	21
28	21	11	10	11	11	11	11	21	23	22	23	21
29	21	11	11	11	---	11	11	21	23	22	22	21
30	21	11	11	11	---	11	17	21	23	22	23	21
31	21	---	11	11	---	11	---	21	---	22	23	---
TOTAL	651	341	339	337	307	341	---	651	644	690	694	648
MEAN	21.0	11.4	10.9	10.9	11.0	11.0	---	21.0	21.5	22.3	22.4	21.6
MAX	21	21	11	11	11	11	---	21	23	23	23	23
MIN	21	10	10	10	10	11	---	21	20	22	22	21
AC-FT	1290	676	672	668	609	676	---	1290	1280	1370	1380	1290
a	17190	17860	33420	19490	53720	84000	71690	60490	42390	42590	68980	49190

CAL YR 1998 a 653700

WTR YR 1999 a 561000

a Diversion, in acre-feet, to Jaybird Powerplant, provided by Sacramento Municipal Utility District.

11441890 CAMINO RESERVOIR NEAR POLLOCK PINES, CA

LOCATION.—Lat 38°49'44", long 120°32'09", in NW 1/4 NW 1/4 sec.4, T.11 N., R.13 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, in outlet tower to Camino Powerplant 100 ft upstream from right abutment of Camino Diversion Dam, 0.3 mi upstream from Round Tent Canyon, and 5.3 mi northwest of Pollock Pines.

DRAINAGE AREA.—160 mi².

PERIOD OF RECORD.—October 1991 to current year. Unpublished records for water years 1980–91 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sacramento Municipal Utility District). Prior to Apr. 8, 1987, nonrecording gage at same site and datum.

REMARKS.—Reservoir is formed by concrete-arch dam completed in 1961. Storage began in 1961. Usable capacity, 763 acre-ft, between elevations 2,840 ft, centerline of outlet valve, and 2,915 ft, maximum water surface level. Dead storage, 50 acre-ft. Most of the water is diverted at this reservoir to Camino Powerplant (station 11441895). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 819 acre-ft, Jan. 21, 1993, elevation, 2,915.29 ft; minimum, 208 acre-ft, Oct. 28, 1997, elevation, 2,868.19 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 731 acre-ft, May 4, elevation, 2,910.44 ft; minimum, 276 acre-ft, Nov. 20, elevation, 2,876.00 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sacramento Municipal Utility District, recomputed October 1991)

2,860	149	2,900	564
2,870	223	2,910	724
2,880	315	2,920	910
2,890	428		

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	630	644	658	565	611	704	605	532	615	586	719	690
2	635	602	644	627	670	715	579	622	644	579	630	681
3	674	668	671	598	613	679	661	723	687	640	682	624
4	682	643	623	609	628	626	592	731	671	694	650	655
5	e665	612	642	631	644	693	663	644	664	574	661	644
6	648	660	670	586	629	614	678	568	624	619	587	568
7	619	633	648	612	591	601	634	654	644	661	652	651
8	637	612	660	603	649	636	622	659	651	696	639	585
9	638	653	652	575	572	590	655	589	659	665	653	693
10	629	644	674	546	675	557	571	573	652	632	655	658
11	623	661	570	639	612	579	587	591	685	657	623	687
12	641	623	587	571	556	618	694	576	650	589	683	711
13	684	600	583	633	650	676	653	580	636	720	592	594
14	584	685	604	647	625	576	689	548	650	582	671	565
15	580	680	651	649	639	584	689	568	661	555	648	621
16	686	618	608	565	664	610	710	591	668	641	643	657
17	624	557	573	609	666	677	698	577	711	708	611	617
18	596	593	631	521	664	594	682	637	636	674	673	632
19	637	602	609	540	638	519	655	648	645	694	557	631
20	662	276	629	690	648	639	624	696	663	669	573	653
21	644	e362	702	651	660	630	658	629	653	716	630	675
22	546	447	698	672	653	660	634	610	517	708	724	622
23	678	591	630	649	627	601	636	567	568	679	589	614
24	649	599	605	664	655	622	661	546	544	701	683	572
25	631	607	674	628	682	636	604	600	512	579	630	571
26	624	599	718	614	691	590	646	612	544	629	632	575
27	604	556	609	597	680	570	566	536	521	614	593	606
28	600	612	619	603	655	583	611	548	535	648	649	679
29	614	602	562	607	---	641	572	569	532	569	625	646
30	647	629	650	596	---	579	577	581	604	695	e670	694
31	667	---	561	601	---	640	---	560	---	e707	716	---
MAX	686	685	718	690	691	715	710	731	711	720	724	711
MIN	546	276	561	521	556	519	566	532	512	555	557	565
a	2906.59	2904.23	2899.76	2902.46	2905.86	2904.97	2900.90	2899.72	2902.67		2909.52	2908.26
b	+48	-38	-68	+40	+54	-15	-63	-17	+44	+103	+9	-22
CAL YR 1998	MAX 724	MIN 276	b -89									
WTR YR 1999	MAX 731	MIN 276	b +75									

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11441900 SILVER CREEK BELOW CAMINO DIVERSION DAM, CA

LOCATION.—Lat 38°49'26", long 120°32'18", on line between secs.4 and 5, T.11 N., R.13 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 300 ft downstream from Round Tent Canyon, 0.4 mi downstream from diversion dam, and 5 mi northeast of Pollock Pines.

DRAINAGE AREA.—171 mi².

PERIOD OF RECORD.—October 1960 to current year.

GAGE.—Water-stage recorder. Datum of gage is 2,754.06 ft above sea level (Sacramento Municipal Utility District benchmark).

REMARKS.—Flow is regulated by Ice House Reservoir (station 11441100) since 1959, Union Valley Reservoir (station 11441001) since 1962, and Junction and Camino Reservoirs (stations 11441760 and 11441890). Diversion to Camino Powerplant (station 11441895) since 1961 bypasses this station. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, about 47,700 ft³/s, Jan. 2, 1997, gage height, 15.72 ft, backwater from log jam, from rating curve extended above 4,700 ft³/s on basis of slope-area measurement at gage height 11.28 ft; minimum daily, 1.0 ft³/s, Nov. 1, 1980.

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	28	19	20	20	832	48	44	28	28	28	28
2	28	22	20	20	20	832	121	47	30	28	27	27
3	28	20	25	20	19	922	70	57	30	27	26	27
4	28	20	19	20	19	894	143	56	30	28	28	27
5	28	20	20	20	19	678	50	54	29	28	28	27
6	28	20	20	19	20	663	76	52	29	28	27	27
7	28	20	20	19	648	748	47	50	29	28	27	27
8	28	21	20	20	497	650	100	48	29	27	27	27
9	28	22	20	19	1850	565	45	45	29	27	27	27
10	28	21	20	20	193	168	45	43	28	26	27	27
11	28	20	20	20	141	119	47	36	28	27	28	27
12	28	20	20	19	118	114	55	34	28	27	28	28
13	28	20	20	20	100	87	45	33	28	26	27	28
14	28	20	20	20	94	198	25	33	27	27	28	26
15	28	20	21	20	89	263	29	33	27	27	27	26
16	27	20	21	19	85	109	32	32	28	26	27	28
17	27	20	20	20	147	173	35	32	28	27	27	33
18	27	20	20	70	457	238	31	33	28	27	28	32
19	27	20	20	114	900	195	26	34	27	27	26	33
20	27	28	20	179	791	98	23	32	27	27	26	32
21	27	44	20	107	793	164	23	30	27	27	27	31
22	27	77	21	75	748	97	25	29	27	27	28	31
23	28	68	20	105	722	145	42	29	28	27	27	30
24	27	19	20	79	658	99	60	28	29	27	28	29
25	28	20	21	91	680	281	57	28	29	26	28	28
26	27	20	20	37	645	141	55	28	29	27	27	29
27	28	20	20	25	669	83	52	28	29	27	26	30
28	28	20	20	21	709	62	51	27	29	27	25	29
29	28	20	20	19	---	47	49	27	29	27	26	30
30	28	24	20	19	---	220	47	28	24	26	26	30
31	28	---	20	20	---	48	---	28	---	28	27	---
TOTAL	859	754	627	1296	11851	9933	1554	1138	847	839	839	861
MEAN	27.7	25.1	20.2	41.8	423	320	51.8	36.7	28.2	27.1	27.1	28.7
MAX	28	77	25	179	1850	922	143	57	30	28	28	33
MIN	27	19	19	19	19	47	23	27	24	26	25	26
AC-FT	1700	1500	1240	2570	23510	19700	3080	2260	1680	1660	1660	1710
a	18360	19690	36540	28210	55180	81360	84020	64860	45740	44820	71150	50760

a Diversion, in acre-feet, to Camino Powerplant, provided by Sacramento Municipal Utility District.

11441900 SILVER CREEK BELOW CAMINO DIVERSION DAM, CA—Continued

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

MEAN	28.0	45.1	73.1	205	130	118	118	191	148	66.7	32.6	26.4
MAX	138	1088	856	4122	1168	1207	956	1505	1019	503	364	188
(WY)	1995	1984	1965	1997	1986	1986	1962	1995	1995	1995	1962	1962
MIN	3.12	3.44	5.39	5.21	5.45	3.56	3.14	3.30	3.29	2.98	3.11	3.18
(WY)	1978	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	44719		31398			
ANNUAL MEAN	123		86.0		98.4	
HIGHEST ANNUAL MEAN					461	1997
LOWEST ANNUAL MEAN					4.16	1977
HIGHEST DAILY MEAN	2380	Jun 17	1850	Feb 9	32900	Jan 2 1997
LOWEST DAILY MEAN	11	Jan 1	19	Nov 24	1.0	Nov 1 1980
ANNUAL SEVEN-DAY MINIMUM	11	Jan 1	19	Jan 6	2.7	Mar 2 1977
INSTANTANEOUS PEAK FLOW			3460	Feb 9	47700	Jan 2 1997
INSTANTANEOUS PEAK STAGE			7.60	Feb 9	15.72	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	88700		62280		71270	
ANNUAL DIVERSION (AC-FT) a	740800		600700			
10 PERCENT EXCEEDS	117		144		145	
50 PERCENT EXCEEDS	26		28		19	
90 PERCENT EXCEEDS	19		20		6.9	

a Diversion, in acre-feet, to Camino Powerplant, provided by Sacramento Municipal Utility District.

11442690 BRUSH CREEK RESERVOIR NEAR POLLOCK PINES, CA

LOCATION.—Lat 38°48'42", long 120°37'14", in NW 1/4 SE 1/4 sec.10, T.11 N., R.12 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, in outlet tower to Camino Powerplant 200 ft upstream from left abutment of Brush Creek Diversion Dam and 4.0 mi northwest of Pollock Pines.

DRAINAGE AREA.—7.99 mi².

PERIOD OF RECORD.—October 1991 to current year. Unpublished records for water years 1980–91 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sacramento Municipal Utility District). Prior to Apr. 7, 1987, nonrecording gage at same site and datum.

REMARKS.—Reservoir is formed by concrete-arch dam completed in 1970. Storage began in 1970. Usable capacity, 1,273 acre-ft, between elevations 2,825 ft, invert of tunnel, and 2,915 ft, crest of spillway. Dead storage, 259 acre-ft. Most of the water is diverted at this reservoir to Camino Powerplant (station 11441895). Records, including extremes, represent total contents at 2400 hours. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 1,546 acre-ft, Jan. 25, 1997, elevation, 2,915.72 ft; minimum, 541 acre-ft, June 29, 1995, elevation, 2,853.64 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 1,505 acre-ft, Feb. 8, elevation, 2,913.72 ft; minimum, 902 acre-ft, Apr. 13, elevation, 2,880.14 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sacramento Municipal Utility District, recomputed October 1991)

2,820	220	2,870	753
2,830	300	2,880	900
2,840	393	2,890	1,062
2,850	499	2,900	1,239
2,860	619	2,915	1,532

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	1301	1407	1299	1221	1251	1444	1444	1064	1406	1289	1322	1263
2	1306	1406	1310	1221	1259	1429	1195	1086	1343	1352	1215	1269
3	1311	1404	1343	1223	1268	1416	1171	1123	1356	1356	1071	1267
4	1316	1401	1363	1224	1279	1440	1166	1204	1374	1367	1219	1268
5	e1321	1399	1373	1224	1289	1469	1187	1314	1391	1254	1214	1270
6	1325	1398	1379	1224	1305	1411	1209	1169	1407	1240	1215	1272
7	1328	1404	1333	1224	1439	1288	1068	1225	1422	1282	1221	1273
8	1332	1406	1347	1225	1505	1276	995	1227	1437	1288	1225	1275
9	1336	1406	1298	1225	1376	1279	956	1229	1453	1295	1229	1276
10	1340	1406	1266	1225	1408	1289	944	1233	1345	1302	1234	1277
11	1344	1407	1247	1225	1390	1308	961	1195	1343	1309	1238	1279
12	1347	1407	1240	1225	1365	1333	907	1184	1357	1101	1242	1281
13	1351	1407	1243	1224	1346	1365	902	1195	1370	1282	1246	1282
14	1355	1406	1247	1339	1345	1397	943	1212	1384	1360	1249	1283
15	1358	1406	1249	1338	1358	1432	957	1228	1398	1349	1253	1284
16	1362	1405	1252	1356	1405	1467	971	1243	1411	1351	1257	1286
17	1365	1407	1244	1366	1434	1370	999	1258	1227	1354	1261	1288
18	1369	1408	1231	1436	1405	1295	1033	1273	1355	1425	1265	1289
19	1371	1408	1208	1442	1418	1243	1061	1289	1362	1426	1269	1291
20	1374	1407	1192	1413	1438	1205	1086	1304	1228	1430	1273	1293
21	1377	1405	1182	1428	1399	1206	1108	1319	1219	1436	1276	1294
22	1379	1411	1230	1389	1375	1224	1127	1332	1031	1340	1316	1296
23	1382	1425	1270	1421	1366	1249	1128	1345	1231	1333	1304	1297
24	1388	1435	1215	1437	1372	1273	1147	1359	1322	1338	1295	1298
25	1393	1437	1215	1455	1419	1297	1170	1372	989	1343	1295	1300
26	1397	1438	1212	1300	1406	1321	1088	1386	1019	1347	1297	1301
27	1400	1225	1216	1290	1375	1343	1095	1398	1196	1352	1299	1302
28	1404	1219	1215	1265	1373	1365	1039	1410	1113	1356	1301	1303
29	1408	1228	1217	1247	---	1387	1031	1422	1210	1344	1303	1301
30	1409	1265	1218	1236	---	1410	1044	1434	1269	1256	1304	1297
31	1407	---	1220	1239	---	1434	---	1446	---	1252	1306	---
MAX	1409	1438	1379	1455	1505	1469	1444	1446	1453	1436	1322	1303
MIN	1301	1219	1182	1221	1251	1205	902	1064	989	1101	1071	1263
a	2908.82	2901.43	2898.96	2900.01	2907.12	2910.19	2888.92	2910.79	2901.66	2900.70	2903.60	2903.11
b	+112	-142	-45	+19	+134	+61	-390	+402	-177	-17	+54	-9
CAL YR 1998	MAX 1523	MIN 854	b +21									
WTR YR 1999	MAX 1505	MIN 902	b +2									

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11442700 BRUSH CREEK BELOW BRUSH CREEK DAM, NEAR POLLOCK PINES, CA

LOCATION.—Lat 38°48'41", long 120°37'20", in NW 1/4 SE 1/4 sec.10, T.11 N., R.12 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, at outlet structure on Brush Creek Dam and 4.0 mi northwest of Pollock Pines.

DRAINAGE AREA.—7.99 mi².

PERIOD OF RECORD.—October 1987 to current year. Unpublished records for water years 1971–87 available in files of the U.S. Geological Survey.

GAGE.—Differential-pressure gage and orifice control in outlet pipe. Auxiliary water-stage recorder 200 ft downstream at different datum. Elevation of gage is 2,700 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage 400 ft downstream at different datum.

REMARKS.—Flow completely regulated by Brush Creek Reservoir (station 11442690). See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 620 ft³/s, Jan. 2, 1997; minimum daily, 2.1 ft³/s, many days in 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	3.6	7.1	6.3	6.6	6.6	6.8	6.7	6.6	4.4	3.2	3.2	3.2
2	3.6	7.2	6.3	6.7	6.6	6.8	6.6	6.7	3.1	3.2	3.1	3.1
3	3.7	7.2	6.4	6.6	6.7	6.7	6.7	6.7	3.1	3.1	3.1	3.1
4	3.7	7.2	6.3	6.7	6.7	6.7	6.7	6.7	3.1	3.1	3.2	3.1
5	e3.7	7.2	6.3	6.7	6.6	6.8	6.7	6.6	3.1	3.1	3.1	3.1
6	e3.7	7.2	6.4	6.7	6.7	6.7	6.8	6.7	3.1	3.0	3.1	3.1
7	3.7	7.0	6.3	6.6	7.0	6.7	6.7	6.7	3.1	3.1	3.1	3.1
8	3.7	7.0	6.3	6.7	10	6.7	6.8	6.6	3.2	3.1	3.1	3.1
9	3.7	6.6	6.3	6.7	8.0	6.7	6.8	6.7	3.2	3.1	3.1	3.1
10	3.7	6.2	6.3	6.7	6.8	6.7	6.9	6.6	3.2	3.1	3.1	3.0
11	3.7	6.2	6.4	6.7	6.7	6.7	6.9	6.6	e3.2	3.1	3.1	3.1
12	3.7	6.2	6.4	6.6	6.7	6.7	6.8	6.6	3.2	3.1	3.2	3.1
13	3.7	6.2	6.4	6.7	6.7	6.7	6.8	6.7	3.2	3.1	3.2	3.1
14	3.7	6.2	6.4	6.6	6.7	6.6	6.9	6.7	3.2	3.1	3.2	3.0
15	3.7	6.2	6.5	6.7	6.7	6.5	6.9	6.7	3.2	3.6	3.2	3.0
16	3.7	6.2	6.5	6.7	6.8	6.6	6.9	6.7	3.2	3.1	3.2	3.0
17	3.7	6.2	6.5	6.7	6.9	6.5	6.8	6.7	3.2	3.1	3.2	3.0
18	3.7	6.2	6.5	6.8	6.7	6.5	6.8	6.7	3.3	3.1	3.2	3.0
19	3.7	6.2	6.5	6.9	6.7	6.5	6.9	6.7	3.2	3.1	3.2	3.0
20	3.7	6.2	6.5	6.8	6.8	6.5	6.9	6.7	3.2	3.1	3.2	3.0
21	3.7	6.2	6.4	6.7	6.8	6.5	6.9	6.6	3.2	3.1	3.2	3.0
22	3.7	6.2	6.4	6.7	6.7	6.5	6.8	6.6	3.2	3.1	3.1	3.0
23	3.7	6.3	6.4	6.7	6.7	6.5	6.8	6.6	3.3	3.1	3.1	3.0
24	3.7	6.2	6.4	6.7	6.7	6.6	6.7	6.6	3.2	3.1	3.2	3.0
25	3.7	6.2	6.5	6.7	6.7	6.6	6.7	6.6	3.2	3.1	3.1	3.0
26	3.7	6.2	6.5	6.6	6.8	6.6	6.7	6.7	3.2	3.1	3.1	3.0
27	3.7	6.2	6.5	6.5	6.7	6.6	6.7	6.7	3.2	3.1	3.0	3.0
28	3.7	6.2	6.5	6.5	6.7	6.6	6.6	6.7	3.2	3.1	3.0	3.0
29	3.7	6.2	6.5	6.7	---	6.6	6.6	6.7	3.2	3.1	3.1	3.0
30	5.0	6.3	6.5	6.6	---	6.7	6.6	6.6	3.2	3.2	3.1	3.0
31	7.0	---	6.5	6.6	---	6.7	---	6.6	---	3.2	3.1	---
TOTAL	119.1	194.1	198.9	206.9	192.9	205.6	203.1	206.4	96.8	96.9	97.2	91.3
MEAN	3.84	6.47	6.42	6.67	6.89	6.63	6.77	6.66	3.23	3.13	3.14	3.04
MAX	7.0	7.2	6.5	6.9	10	6.8	6.9	6.7	4.4	3.6	3.2	3.2
MIN	3.6	6.2	6.3	6.5	6.6	6.5	6.6	6.6	3.1	3.0	3.0	3.0
AC-FT	236	385	395	410	383	408	403	409	192	192	193	181

e Estimated.

11442700 BRUSH CREEK BELOW BRUSH CREEK DAM, NEAR POLLOCK PINES, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

MEAN	3.07	5.69	5.68	9.90	5.73	5.92	6.09	5.88	3.22	3.11	3.06	3.04
MAX	3.86	8.06	7.81	58.0	7.76	8.95	10.4	9.09	4.43	4.26	3.87	3.81
(WY)	1994	1990	1990	1997	1997	1997	1997	1997	1995	1995	1995	1993
MIN	2.44	4.16	4.09	4.10	4.12	4.39	4.23	4.28	2.24	2.18	2.14	2.14
(WY)	1993	1991	1988	1988	1988	1992	1988	1988	1988	1988	1988	1988

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1988 - 1999	
ANNUAL TOTAL	2000.3		1909.2			
ANNUAL MEAN	5.48		5.23		5.03	
HIGHEST ANNUAL MEAN					10.5 1997	
LOWEST ANNUAL MEAN					3.39 1988	
HIGHEST DAILY MEAN	7.2	Feb 3	10	Feb 8	620	Jan 2 1997
LOWEST DAILY MEAN	3.4	Aug 13	3.0	Jul 6	2.1	Jul 4 1988
ANNUAL SEVEN-DAY MINIMUM	3.4	Aug 18	3.0	Sep 14	2.1	Aug 15 1988
ANNUAL RUNOFF (AC-FT)	3970		3790		3650	
10 PERCENT EXCEEDS	7.0		6.8		6.9	
50 PERCENT EXCEEDS	6.4		6.4		4.4	
90 PERCENT EXCEEDS	3.6		3.1		2.5	

11443450 SLAB CREEK RESERVOIR NEAR CAMINO, CA

LOCATION.—Lat 38°46'21", long 120°41'58", in SW 1/4 NE 1/4 sec.25, T.11 N., R.11 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on left bank 100 ft upstream from dam on South Fork American River, 1,600 ft upstream from Iowa Canyon, and 2.7 mi northwest of Camino.

DRAINAGE AREA.—493 mi².

PERIOD OF RECORD.—May 1987 to current year. Unpublished records for water years 1969–86 available in files of the U.S. Geological Survey.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by Sacramento Municipal Utility District). Prior to May 26, 1987, nonrecording gage at same site and datum. September 1980 to October 1993, supplementary water-stage recorder at left abutment of dam operated by U.S. Geological Survey during periods of spill.

REMARKS.—Reservoir is formed by concrete-arch dam completed in 1967. Storage began in October 1967. Usable capacity, 16,567 acre-ft, between elevations 1,670 ft, invert of tunnel, and 1,850 ft, crest of spillway. Dead storage, 600 acre-ft. Reservoir receives water from South Fork American River and Silver Creek via El Dorado and Camino Powerplants (station 11441895) 10 mi upstream. Nearly the entire flow is diverted at this reservoir to White Rock Powerplant (station 11443460). See South Fork American River near Camino (station 11443500) for additional information on diversions and releases from Slab Creek Reservoir. Records, including extremes, represent usable contents. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 18,637 acre-ft, Jan. 1, 1997, elevation, 1,859.70 ft; minimum, 3,917 acre-ft, Oct. 27, 1991, elevation, unknown.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 17,124 acre-ft, Feb. 8, elevation, 1,852.68 ft, minimum, 9,360 acre-ft, May 18, elevation, 1,808.84.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Sacramento Municipal Utility District recomputed October 1991)

1,730	1,688	1,800	8,124
1,740	2,276	1,820	11,073
1,750	2,966	1,840	14,587
1,760	3,763	1,850	16,567
1,780	5,700	1,855	17,615

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	15836	15641	16614	14393	13052	16801	11413	11801	14308	14009	14628	14749
2	16086	15461	15198	14261	12471	16780	11783	12224	15917	14059	15172	13970
3	16049	15390	14303	14306	13134	16867	12549	11556	16035	14476	15019	14678
4	15973	15274	13324	13968	13091	16809	12613	11566	14955	14471	14739	14171
5	e15779	15227	12552	13624	12365	16751	11336	11326	14711	14372	14579	14028
6	15585	15575	12701	13558	11387	16757	10876	11887	15170	14732	13299	13400
7	15780	14340	12743	13617	14880	16691	11232	12266	14912	15215	14306	13885
8	15554	14070	12302	13426	17124	16011	12260	11556	14342	15382	15572	14473
9	15514	14431	12629	13520	17080	14408	12338	12192	12811	14592	15465	15270
10	15530	14239	12570	13776	16838	12158	12269	11964	10815	15510	15731	15274
11	15188	14164	13418	13944	16763	10813	12141	12291	10445	15327	15593	15433
12	15210	14318	13529	14151	16722	11428	12168	12042	10494	14272	14435	15534
13	15471	15126	13659	14380	16687	11411	12192	12632	10100	14254	14547	15591
14	14905	16031	13837	14033	16658	11074	11596	11078	10863	14684	14359	15544
15	14843	15133	14242	13712	16627	12343	12098	11316	10794	15015	13688	15842
16	14914	14799	14024	14070	16728	11905	11568	11184	10470	14812	14416	16108
17	15040	15597	14303	14581	16813	12850	12141	10580	12024	15122	14372	16336
18	14916	15901	14556	15262	16913	12643	12618	9360	12391	15163	14070	16003
19	14909	16195	14211	16836	16838	11846	12778	11176	14849	15052	14423	15868
20	14573	16468	14239	16911	16848	11333	11736	13407	15605	14874	14082	15627
21	14640	15766	13431	16674	16825	11241	11885	16096	14726	15475	14444	15581
22	14860	15339	14000	16256	16751	11289	12481	16944	14154	14444	14465	15272
23	14810	15192	13617	16720	16730	11485	11515	16963	14393	14714	14872	15473
24	14533	14895	13866	16454	16720	11184	11568	16950	14241	14320	15079	15917
25	14554	14897	13507	15597	16749	10946	12778	17076	14188	14310	14613	15473
26	14847	14938	13522	14878	16724	11505	12984	16990	14310	14333	15132	15736
27	14828	15011	13206	13791	16722	11867	12533	17026	14930	14512	14932	15258
28	15067	14745	13741	13145	16774	11123	12339	17009	14166	14336	15429	15211
29	15633	14235	13607	12701	---	10636	11031	16898	14214	15149	15923	15532
30	15671	15750	13888	12903	---	11456	10793	16542	13831	14440	e15293	14503
31	15838	---	14220	13156	---	11146	---	15298	---	14613	14663	---
MAX	16086	16468	16614	16911	17124	16867	12984	17076	16035	15510	15923	16336
MIN	14533	14070	12302	12701	11387	10636	10793	9360	10100	14009	13299	13400
a	1846.41	1845.97	1838.06	1832.25	1851.00	1820.45	1818.25	1843.68	1835.97	1840.14	1840.40	1839.56
b	+263	-88	-1530	-1064	+3618	-5628	-353	+4505	-1467	+782	+50	-160
CAL YR 1998	MAX 17204	MIN 9576.0	b -871									
WTR YR 1999	MAX 17124	MIN 9360.0	b -1072									

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11443500 SOUTH FORK AMERICAN RIVER NEAR CAMINO, CA

LOCATION.—Lat 38°46'23", long 120°42'02", in SW 1/4 NE 1/4 sec.25, T.11 N., R.11 E., El Dorado County, Hydrologic Unit 18020129, on right bank 500 ft upstream from Iowa Canyon Creek and 2.8 mi northwest of Camino.

DRAINAGE AREA.—493 mi².

PERIOD OF RECORD.—October 1922 to current year. Monthly discharge only for October 1922, WSP 1315-A. Records for river and American River Flume, published separately October 1922 to September 1956, October 1962 to December 1964 when flume was destroyed. Records of river and flume combined October 1956 to September 1962.

REVISED RECORDS.—WSP 931: 1928, 1938, 1940(M). WSP 1931: Drainage area at former site.

GAGE.—Acoustic-velocity meter. Elevation of gage is 1,625 ft above sea level, from topographic map. Prior to May 26, 1987, water-stage recorder at different datum at site 1,000 ft downstream. Auxiliary water-stage recorder on Slab Creek Dam records spill discharges which are combined with release discharges. See WSP 2131 for history of changes prior to Oct. 12, 1966.

REMARKS.—Flow regulated by several reservoirs. Since 1967 diversion from Slab Creek Dam to White Rock Powerplant (station 11443460) bypasses this station. Echo Lake Conduit (station 11434500) imports up to 1,900 acre-ft each year from Truckee River Basin. Variable amounts of El Dorado Canal water, up to 40 ft³/s May to October, and about 7 ft³/s remainder of the year, diverted for irrigation and domestic use between Pollock Pines and Placerville. Water from Jenkinson Lake in North Fork Cosumnes River Basin diverted to Camino and substituted for flow from El Dorado Canal in some years. Since October 1962, water is imported from the Upper Rubicon River Basin by way of Robbs Peak Powerplant (station 11429300). See schematic diagram of South Fork American River Basin.

COOPERATION.—Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 62,300 ft³/s, Jan. 2, 1997, from rating curve extended above 24,000 ft³/s on basis of computation of peak flow over dam; minimum daily, 1.3 ft³/s, Aug. 24, 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	41	41	314	40	39	1300	38	38	39	40	40	37
2	41	40	48	40	39	1180	38	39	39	40	41	37
3	41	40	40	40	39	1540	39	38	40	40	41	37
4	41	40	39	40	39	1620	39	38	39	40	41	37
5	41	40	39	40	39	1120	38	38	39	40	41	37
6	41	40	38	39	38	898	38	38	39	41	40	37
7	41	40	39	39	38	944	38	38	39	41	40	37
8	41	40	38	39	851	606	38	38	39	41	41	37
9	40	40	38	39	5260	40	39	38	38	41	41	37
10	40	40	39	39	1990	39	39	38	37	41	41	38
11	40	40	38	39	964	38	39	39	36	41	41	38
12	40	40	39	40	634	38	39	38	36	41	41	38
13	40	40	39	40	396	38	39	39	36	40	41	38
14	40	40	39	40	243	38	38	38	38	40	40	38
15	40	40	39	39	184	38	38	38	38	41	40	38
16	40	40	40	39	148	39	39	37	37	41	40	38
17	40	40	40	40	1330	39	38	37	38	41	40	38
18	40	40	40	40	1040	39	39	36	39	41	40	38
19	40	41	40	376	1450	39	39	40	40	41	40	38
20	40	41	40	2260	1110	38	38	40	41	41	40	38
21	40	41	39	102	1210	38	38	39	41	41	40	38
22	40	40	39	116	1000	38	39	1070	40	41	40	38
23	40	40	39	269	880	38	39	1560	40	40	41	38
24	40	40	39	141	758	38	38	1820	40	41	41	38
25	40	40	39	41	936	38	39	2100	40	40	41	38
26	40	40	39	40	796	38	39	2500	41	40	41	38
27	40	40	39	40	748	38	39	2430	41	40	39	38
28	40	40	39	39	758	38	39	2380	41	40	38	38
29	40	40	39	39	---	37	38	2040	40	40	38	38
30	40	40	39	39	---	38	37	1430	40	41	38	38
31	41	---	40	39	---	38	---	40	---	40	38	---
TOTAL	1249	1204	1496	4253	22957	10088	1155	18172	1171	1257	1245	1131
MEAN	40.3	40.1	48.3	137	820	325	38.5	586	39.0	40.5	40.2	37.7
MAX	41	41	314	2260	5260	1620	39	2500	41	41	41	38
MIN	40	40	38	39	38	37	37	36	36	40	38	37
AC-FT	2480	2390	2970	8440	45540	20010	2290	36040	2320	2490	2470	2240
a	27750	30920	54040	56920	95270	139000	150500	159500	136800	64840	78290	58740

a Diversion, in acre-feet, to White Rock Powerplant, provided by Sacramento Municipal Utility District.

11443500 SOUTH FORK AMERICAN RIVER NEAR CAMINO, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1957, BY WATER YEAR (WY)

MEAN	54.8	254	569	601	855	1171	2069	2681	1557	285	39.7	31.1
MAX	221	3951	4780	3422	2125	3367	4015	6382	4031	1310	168	150
(WY)	1952	1951	1951	1956	1927	1943	1952	1952	1952	1952	1951	1951
MIN	4.43	5.46	12.9	43.0	116	146	620	418	13.8	1.97	2.01	6.97
(WY)	1930	1930	1950	1929	1929	1924	1924	1934	1924	1931	1931	1955

SUMMARY STATISTICS

WATER YEARS 1923 - 1957

ANNUAL MEAN	846
HIGHEST ANNUAL MEAN	1760 1951
LOWEST ANNUAL MEAN	161 1924
HIGHEST DAILY MEAN	40000 Dec 23 1955
LOWEST DAILY MEAN	1.3 Aug 24 1931
ANNUAL SEVEN-DAY MINIMUM	1.5 Jul 29 1931
INSTANTANEOUS PEAK FLOW	49800 Dec 23 1955
INSTANTANEOUS PEAK STAGE	32.6 Dec 23 1955
ANNUAL RUNOFF (AC-FT)	612700
10 PERCENT EXCEEDS	2520
50 PERCENT EXCEEDS	230
90 PERCENT EXCEEDS	13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1957, COMBINED RIVER PLUS FLUME, BY WATER YEAR (WY)

MEAN	167	364	684	713	959	1259	2176	2815	1695	413	154	142
MAX	288	4051	4780	3422	2229	3490	4181	6552	4201	1474	324	227
(WY)	1948	1951	1951	1956	1927	1943	1952	1952	1952	1952	1952	1952
MIN	44.1	49.8	134	141	212	252	727	533	97.3	50.2	35.5	53.4
(WY)	1930	1930	1924	1929	1933	1924	1924	1934	1924	1931	1931	1924

SUMMARY STATISTICS

WATER YEARS 1923 - 1957

ANNUAL MEAN	960
HIGHEST ANNUAL MEAN	1860 1952
LOWEST ANNUAL MEAN	249 1924
HIGHEST DAILY MEAN	40000 Dec 23 1955
LOWEST DAILY MEAN	20 Aug 24 1931
ANNUAL SEVEN-DAY MINIMUM	30 Aug 19 1931
ANNUAL RUNOFF (AC-FT)	695700
10 PERCENT EXCEEDS	2660
50 PERCENT EXCEEDS	350
90 PERCENT EXCEEDS	120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	47.8	87.8	135	348	232	130	129	343	305	83.5	34.8	34.7
MAX	453	1093	1112	4836	2709	1090	1402	2434	2619	936	45.1	48.2
(WY)	1968	1968	1984	1997	1986	1986	1971	1995	1995	1995	1980	1980
MIN	9.97	10.2	10.0	10.0	5.62	10.9	10.0	9.73	9.98	9.93	10.4	10.1
(WY)	1978	1978	1988	1988	1970	1992	1988	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1968 - 1999

ANNUAL TOTAL	83324	65378	
ANNUAL MEAN	228	179	159
HIGHEST ANNUAL MEAN			608 1995
LOWEST ANNUAL MEAN			13.3 1977
HIGHEST DAILY MEAN	4260 Mar 25	5260 Feb 9	48900 Jan 2 1997
LOWEST DAILY MEAN	36 Jan 25	36 May 18	2.4 Feb 12 1970
ANNUAL SEVEN-DAY MINIMUM	37 Jan 25	37 Jun 10	2.6 Feb 9 1970
INSTANTANEOUS PEAK FLOW		7780 Feb 9	62300 Jan 2 1997
ANNUAL RUNOFF (AC-FT)	165300	129700	115100
ANNUAL RUNOFF (AC-FT) a	1389000	1053000	
10 PERCENT EXCEEDS	459	384	74
50 PERCENT EXCEEDS	40	40	36
90 PERCENT EXCEEDS	38	38	11

a Diversion, in acre-feet, to White Rock Powerplant, provided by Sacramento Municipal Utility District.

11444201 ROCK CREEK NEAR PLACERVILLE, CA

LOCATION.—Lat 38°47'39", long 120°46'28", in NE 1/4 NW 1/4 sec.20, T.11 N., R.11 E., El Dorado County, Hydrologic Unit 18020129, on left bank 500 ft downstream from Rock Creek Road and 4.0 mi north of Placerville.

DRAINAGE AREA.—73.0 mi².

PERIOD OF RECORD.—October 1986 to current year.

GAGE.—Water-stage recorder and broad-crested weir; water-stage recorder and sharp-crested weir. Elevation of gages is 1,305 ft above sea level, from topographic map.

REMARKS.—Flow at this station has two components, which are combined for publication: flow over a broad-crested weir (station 11444200) and flow over a sharp-crested weir (station 11444260). Water is diverted upstream from weirs through a tunnel to Rock Creek Powerplant (station 11444280), returning to Rock Creek at its confluence with the South Fork American River. Extremes also represent combined flows. See schematic diagram of South Fork American River Basin.

COOPERATION.—Records provided by Sithe Energies, Inc., 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, 6,690 ft³/s, Jan. 2, 1997; no flow Sept. 29 to Oct. 3, 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	25	30	142	30	22	235	22	25	22	41	28	25
2	25	27	22	30	22	130	22	26	22	41	39	25
3	26	29	128	29	22	378	22	69	21	41	44	23
4	25	26	90	29	22	199	22	24	22	41	52	23
5	25	25	22	29	22	136	22	23	22	41	52	23
6	24	28	22	28	22	92	23	22	22	40	54	22
7	24	36	22	28	1350	68	23	26	22	40	55	22
8	23	35	21	28	876	44	65	28	22	40	53	22
9	24	28	22	28	1790	67	55	26	22	39	52	22
10	24	27	22	28	693	36	27	24	22	39	54	23
11	24	37	21	28	296	24	65	23	19	39	52	23
12	23	28	23	28	109	22	40	22	22	38	53	22
13	23	25	32	27	62	22	29	22	22	37	52	22
14	24	24	36	27	33	21	27	22	22	35	51	22
15	24	23	21	32	22	22	27	22	21	35	51	21
16	23	23	21	34	72	25	21	22	21	36	50	21
17	23	39	38	26	990	23	22	22	21	35	50	21
18	23	33	37	267	335	23	22	22	21	34	50	22
19	26	29	36	419	302	23	22	23	21	33	49	22
20	26	27	36	1200	219	23	22	24	21	32	34	21
21	25	26	36	392	500	23	22	22	21	32	24	21
22	24	55	35	54	295	23	22	25	21	32	24	22
23	23	39	35	662	205	22	22	21	25	32	23	21
24	31	62	35	253	172	22	22	30	27	31	19	21
25	31	42	35	46	203	22	22	42	29	31	19	22
26	26	34	32	48	110	21	22	41	27	30	19	22
27	26	37	32	28	70	21	22	43	44	30	22	22
28	23	42	31	22	68	22	23	36	30	30	21	22
29	25	26	31	22	---	21	22	22	28	30	21	22
30	25	156	30	22	---	21	22	22	33	29	23	21
31	26	---	30	26	---	22	---	22	---	28	25	---
TOTAL	769	1098	1176	3950	8904	1853	821	843	715	1092	1215	663
MEAN	24.8	36.6	37.9	127	318	59.8	27.4	27.2	23.8	35.2	39.2	22.1
MAX	31	156	142	1200	1790	378	65	69	44	41	55	25
MIN	23	23	21	22	22	21	21	21	19	28	19	21
AC-FT	1530	2180	2330	7830	17660	3680	1630	1670	1420	2170	2410	1320
a	.00	30	875	2380	5530	7910	6840	3410	1760	.00	.00	.00

a Discharge, in acre-feet, through Rock Creek Powerplant near Placerville, provided by Sithe Energies U.S.A., Inc.

SACRAMENTO RIVER BASIN

11444201 ROCK CREEK NEAR PLACERVILLE, 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	12.4	20.6	59.8	155	110	101	41.4	32.9	18.7	14.0	12.2	10.3
MAX	24.8	36.6	403	737	326	454	99.6	127	31.5	35.2	39.2	25.7
(WY)	1999	1999	1997	1997	1998	1995	1995	1995	1995	1999	1999	1998
MIN	4.60	6.15	9.97	11.4	12.5	16.4	16.6	11.3	6.35	3.18	1.97	1.86
(WY)	1993	1993	1990	1991	1991	1988	1994	1992	1992	1988	1994	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	28045		23099			
ANNUAL MEAN	76.8		63.3		48.8	
ANNUAL MEAN a	131		103		63.6	
HIGHEST ANNUAL MEAN					118	
LOWEST ANNUAL MEAN					14.3	
HIGHEST DAILY MEAN	1430	Feb 3	1790	Feb 9	4660	Jan 2 1997
LOWEST DAILY MEAN	16	Jan 1	19	Jun 11	.00	Sep 29 1987
ANNUAL SEVEN-DAY MINIMUM	21	Jun 8	21	Aug 23	.35	Sep 28 1987
INSTANTANEOUS PEAK FLOW			3320		6690	
ANNUAL RUNOFF (AC-FT)	55630		45820		35380	
ANNUAL DIVERSION (AC-FT) a	39530		28740		10680	
10 PERCENT EXCEEDS	165		68		75	
50 PERCENT EXCEEDS	27		26		20	
90 PERCENT EXCEEDS	21		22		4.7	

a Discharge, in acre-feet, through Rock Creek Powerplant near Placerville, provided by Sithe Energies U.S.A., Inc.

11444500 SOUTH FORK AMERICAN RIVER NEAR PLACERVILLE, CA

LOCATION.—Lat 38°46'16", long 120°48'55", in NE 1/4 SW 1/4 sec.25, T.11 N., R.10 E., El Dorado County, Hydrologic Unit 18020129, on right bank 700 ft downstream from Chili Bar Dam, 0.5 mi upstream from Big Canyon, and 2.5 mi north of Placerville.

DRAINAGE AREA.—598 mi².

PERIOD OF RECORD.—August 1911 to July 1920 (monthly discharge only for some periods, published in WSP 1315-A), July 1964 to current year.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Elevation of gage is 925 ft above sea level, from topographic map. Aug. 11, 1911, to July 31, 1920, nonrecording gage 0.6 mi downstream at different datum.

REMARKS.—Flow regulated by Chili Bar Reservoir, capacity, 3,700 acre-ft, Chili Bar Powerplant, and other storage and powerplants (see station 11443500). See schematic diagrams of South Fork American River and lower Sacramento River Basins.

COOPERATION.—Records 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, 71,000 ft³/s, Jan. 2, 1997, gage height, unknown, on basis of computations of flow over dam, maximum gage height, 17.4 ft, from floodmarks, datum then in use, Dec. 23, 1964; minimum daily, 0.2 ft³/s, Nov. 12, 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	154	357	267	250	1160	3830	2490	2500	3920	1840	1220	1350
2	308	738	e1550	484	2000	3620	2330	3070	2670	1190	1280	1570
3	705	808	e2020	428	1300	4260	1980	3620	2910	862	1480	820
4	557	1230	e2100	670	1490	4180	2510	2800	3280	829	1490	1280
5	870	452	e1580	825	1890	3610	2730	2740	2340	1200	1810	1300
6	397	858	e1170	520	2000	3250	2480	2380	2090	1180	2200	1180
7	229	1360	e1220	554	4000	3320	2350	3140	2750	1010	1280	949
8	706	535	e1220	441	4040	3380	2170	3820	2990	1390	867	875
9	303	363	e971	439	8510	4070	2640	3240	3520	1620	1400	725
10	424	833	e1170	261	5070	4070	2640	3640	3560	1000	1290	766
11	539	504	e1210	504	3580	3480	2740	3420	2980	1230	2000	1100
12	321	861	e905	271	3070	2410	2700	4100	2340	2410	2380	1190
13	400	216	e532	204	2740	2720	2700	3770	2450	1570	1730	1150
14	676	218	e983	448	2530	2850	3220	4080	2410	1250	1760	1110
15	637	554	896	495	2430	1960	2820	3230	3110	921	2150	1140
16	234	1210	1350	296	2380	2750	3330	3430	3190	1380	1570	950
17	584	302	1030	379	4760	2090	3020	3560	2370	981	1620	711
18	280	342	1130	975	3710	2790	3110	4060	2670	950	1810	1240
19	994	649	1070	1890	4080	3160	3390	2560	1250	960	1570	1180
20	593	525	1450	3400	3580	2870	4110	2180	1810	1250	1870	1440
21	573	563	1690	3130	4170	2710	3470	2130	2660	1280	1350	1120
22	728	838	706	2530	3600	2620	2990	3030	2700	1280	1190	1560
23	632	757	1510	2840	3340	2410	3550	3890	2150	1050	1360	1360
24	872	955	1130	2750	3150	2660	3060	4230	2440	1130	1300	853
25	732	722	804	2340	3410	2740	2450	4490	2530	1380	1820	1340
26	678	389	681	2210	3200	2330	3310	4790	1860	1150	1020	1030
27	749	572	1070	2150	3070	2530	3490	4460	1520	1180	1290	1140
28	733	481	389	1980	3060	2980	3340	4430	2060	1410	746	1490
29	362	1200	836	1730	---	2920	3510	4120	1690	1010	989	1210
30	642	327	339	1730	---	2070	3020	3990	1860	1390	1280	1810
31	575	---	236	1340	---	2750	---	4080	---	1240	1460	---
TOTAL	17187	19719	33215	38464	91320	93390	87650	108980	76080	38523	46582	34939
MEAN	554	657	1071	1241	3261	3013	2922	3515	2536	1243	1503	1165
MAX	994	1360	2100	3400	8510	4260	4110	4790	3920	2410	2380	1810
MIN	154	216	236	204	1160	1960	1980	2130	1250	829	746	711
AC-FT	34090	39110	65880	76290	181100	185200	173900	216200	150900	76410	92400	69300

e Estimated.

11444500 SOUTH FORK AMERICAN RIVER NEAR PLACERVILLE, 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	517	761	1297	1873	1837	1974	2083	2556	2049	1209	970	842
MAX	935	3806	5386	9673	6613	5561	5382	6159	6496	3648	1719	1401
(WY)	1984	1984	1965	1997	1986	1983	1982	1995	1983	1983	1998	1995
MIN	204	106	320	188	125	124	255	295	228	88.2	142	244
(WY)	1988	1978	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	886873		686049			
ANNUAL MEAN	2430		1880		1496	
HIGHEST ANNUAL MEAN					3275	
LOWEST ANNUAL MEAN					224	
HIGHEST DAILY MEAN	7260	Mar 25	8510	Feb 9	57100	Jan 2 1997
LOWEST DAILY MEAN	154	Oct 1	154	Oct 1	.20	Nov 12 1964
ANNUAL SEVEN-DAY MINIMUM	417	Oct 6	354	Jan 10	20	Feb 11 1977
INSTANTANEOUS PEAK FLOW			11700	Feb 9	71000	Jan 2 1997
INSTANTANEOUS PEAK STAGE			11.51	Feb 9	17.40	Dec 23 1964
ANNUAL RUNOFF (AC-FT)	1759000		1361000		1084000	
10 PERCENT EXCEEDS	4430		3570		3370	
50 PERCENT EXCEEDS	2040		1520		1010	
90 PERCENT EXCEEDS	574		491		339	

11446030 SOUTH FORK AMERICAN RIVER NEAR PILOT HILL, CA

LOCATION.—Lat 38°45'47", long 121°00'26", in SE 1/4 NE 1/4 sec.31, T.11 N., R.9 E., El Dorado County, Hydrologic Unit 18020128, on left bank 0.1 mi downstream from Weber Creek and 5.0 mi south of Pilot Hill.

DRAINAGE AREA.— 801 mi².

PERIOD OF RECORD.—August to September 1999.

WATER TEMPERATURE: August to September 1999.

PERIOD OF DAILY RECORD.—August to September 1999.

WATER TEMPERATURE: August to September 1999.

INSTRUMENTATION.—Water-temperature recorder since Aug. 4, 1999.

REMARKS.—Water temperature can be affected by upstream powerplant releases.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 17.5°C, several days in August and September 1999; minimum recorded, 11.5°C, Aug. 14, 15, 19, 21, 1999.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 17.5°C, several days in August and September; minimum recorded, 11.5°C, Aug. 14, 15, 19, 21.

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	---	---	---	---	---	---	---	---	---	---	15.0	12.0
2	---	---	---	---	---	---	---	---	---	---	15.0	12.0
3	---	---	---	---	---	---	---	---	---	---	15.5	12.0
4	---	---	---	---	---	---	---	---	---	---	16.5	14.0
5	---	---	---	---	---	---	---	---	17.0	13.5	16.0	12.5
6	---	---	---	---	---	---	---	---	16.5	13.5	16.5	13.0
7	---	---	---	---	---	---	---	---	16.5	12.5	16.5	13.0
8	---	---	---	---	---	---	---	---	17.0	14.5	17.0	13.5
9	---	---	---	---	---	---	---	---	17.5	15.0	16.0	14.5
10	---	---	---	---	---	---	---	---	16.5	13.0	17.5	14.5
11	---	---	---	---	---	---	---	---	16.5	12.5	17.0	14.5
12	---	---	---	---	---	---	---	---	15.5	12.0	17.0	13.5
13	---	---	---	---	---	---	---	---	16.0	12.0	16.5	13.5
14	---	---	---	---	---	---	---	---	15.5	11.5	16.5	13.5
15	---	---	---	---	---	---	---	---	15.5	11.5	16.5	14.5
16	---	---	---	---	---	---	---	---	16.0	12.0	17.0	14.0
17	---	---	---	---	---	---	---	---	16.0	12.0	17.0	14.0
18	---	---	---	---	---	---	---	---	16.0	12.0	16.5	15.0
19	---	---	---	---	---	---	---	---	15.0	11.5	17.0	14.0
20	---	---	---	---	---	---	---	---	15.5	12.0	16.5	13.5
21	---	---	---	---	---	---	---	---	15.5	11.5	17.0	14.0
22	---	---	---	---	---	---	---	---	17.0	13.5	17.0	14.0
23	---	---	---	---	---	---	---	---	16.5	13.0	17.5	14.0
24	---	---	---	---	---	---	---	---	16.5	12.5	17.5	14.5
25	---	---	---	---	---	---	---	---	16.0	12.5	17.5	14.5
26	---	---	---	---	---	---	---	---	15.0	12.5	17.0	14.0
27	---	---	---	---	---	---	---	---	17.5	14.0	17.0	14.0
28	---	---	---	---	---	---	---	---	16.5	13.0	17.0	13.5
29	---	---	---	---	---	---	---	---	17.0	15.5	17.0	14.0
30	---	---	---	---	---	---	---	---	17.0	15.0	17.0	14.0
31	---	---	---	---	---	---	---	---	15.5	12.5	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	17.5	12.0

11446200 FOLSOM LAKE NEAR FOLSOM, CA

LOCATION.—Lat 38°42'29", long 121°09'22", in NW 1/4 NE 1/4 sec.24, T.10 N., R.7 E., Sacramento County, Hydrologic Unit 18020128, near center of dam on American River, 0.7 mi downstream from South Fork American River, and 2.3 mi northeast of Folsom.

DRAINAGE AREA.—1,861 mi².

PERIOD OF RECORD.—February 1955 to current year. Prior to October 1959, published as Folsom Reservoir near Folsom.

REVISED RECORDS.—WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Reservoir is formed by concrete gravity-type dam with rolled-earth-wing dams, auxiliary dams, and dikes, completed May 14, 1956; storage began Feb. 25, 1955. Total capacity, 1,010,300 acre-ft between elevations 205.5 ft, invert of lower tier of river outlets, and 466.0 ft gross pool elevation, all of which are available for release. Spillway design flood pool elevation, 475.4 ft, capacity, 1,120,200 acre-ft. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of lower Sacramento River Basin.

COOPERATION.—Records provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 1,024,400 acre-ft, June 15, 1963, elevation, 467.23 ft; minimum since storage pool first filled, 140,600 acre-ft, Nov. 20, 21, 1977, elevation, 347.57 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 950,200 acre-ft, June 25, elevation, 463.59 ft; minimum, 495,600 acre-ft, Feb. 28, elevation, 415.97 ft.

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

(Based on survey by U.S. Bureau of Reclamation in 1992)

345	123,600	380	258,600	440	703,800
350	137,900	390	314,100	460	908,400
360	170,600	400	376,900	479	1,125,000
370	210,500	420	525,500		

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	705700	611500	562000	561300	532900	503300	618500	757300	915200	932600	783100	751800
2	699400	609600	564800	559200	533300	505600	620800	760900	916200	928800	779000	751400
3	694800	607900	570500	558100	533900	513200	622200	766900	918100	925300	776100	751400
4	691000	606500	578100	556500	533300	519000	624100	771200	919300	920400	774500	750200
5	687900	605200	580400	554400	531400	520100	627200	774300	919400	915600	774200	749500
6	684100	603300	581300	554300	526300	519000	630400	776300	919200	911600	772100	748300
7	679800	602800	580700	552500	537300	519700	633400	780600	919400	907600	772000	746900
8	676300	602300	580100	550700	551000	522300	636700	786400	919600	903600	769700	746000
9	674700	600800	579100	549500	612900	529600	641000	790500	922000	899200	767100	745100
10	672100	599200	577600	547000	611500	536700	645600	795800	925200	894100	765900	743800
11	669300	595700	576400	544500	592700	540700	650100	800100	928100	888400	765500	742900
12	666500	593100	576000	543000	577400	541800	655500	806700	929600	884600	766200	741900
13	663400	588800	574800	541400	564000	543900	659300	813600	931000	880000	766000	742800
14	661200	584400	573200	539000	554500	547700	665500	819900	932600	874900	765400	744500
15	658100	580300	572900	537500	547600	550700	671800	824300	936000	870000	764600	745500
16	655300	576300	571800	536700	541600	554600	676800	827700	939300	863100	763500	746600
17	652800	574100	571800	537300	542900	559500	683400	832100	941800	857200	762600	747200
18	649300	570500	572100	544200	516800	563600	689900	837100	945000	850800	762400	746300
19	646400	567500	571600	565000	503100	569300	697000	841000	945200	845200	763300	745100
20	644100	564400	571500	595200	495700	574100	706000	842800	944900	838800	762400	743500
21	641100	560900	572100	589800	500800	578800	712600	844500	945600	833900	762700	742200
22	637100	559600	572400	568700	499200	582900	718400	847400	947500	829000	761400	740100
23	634400	557200	572200	567100	497800	586100	724200	853600	948500	824600	759900	737800
24	633100	559100	571500	562600	497200	590300	728800	861200	949500	819400	759000	735100
25	631100	559200	571300	555600	498800	594500	731500	870600	950200	814000	759500	732400
26	628200	556900	569700	548900	499200	598100	736800	879900	948800	810100	759300	731000
27	625300	554800	567800	542900	497600	601300	743300	888200	944600	804300	757900	728600
28	622500	552700	565800	538600	495600	605500	748100	895700	940800	799700	756800	726200
29	618200	550700	564100	535600	---	609100	752100	901400	937800	795200	755200	723600
30	615800	555300	563800	533700	---	611400	755600	905300	934800	791300	753400	721600
31	613800	---	563000	533200	---	615400	---	910300	---	787300	752500	---
MAX	705700	611500	581300	595200	612900	615400	755600	910300	950200	932600	783100	751800
MIN	613800	550700	562000	533200	495600	503300	618500	757300	915200	787300	752500	721600
a	430.02	423.28	424.19	420.63	415.97	430.20	445.04	459.94	462.19	448.21	444.73	441.58
b	-99100	-58500	+7700	-29800	-37600	+119800	+140200	+154700	+24500	-147500	-34800	-30900
c	2699	882	964	563	814	1615	3507	5445	6826	7321	5919	4611

CAL YR 1998 b +141800

WTR YR 1999 b +8700

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Total evaporation, in acre-feet, provided by U.S. Bureau of Reclamation; not reviewed by U.S. Geological Survey.

11446220 AMERICAN RIVER BELOW FOLSOM DAM, NEAR FOLSOM, CA

LOCATION.—Lat 38°42'14", long 121°09'48", in NE 1/4 SE 1/4 sec.24, T.10 N., R.7 E., Sacramento County, Hydrologic Unit 18020111, on left bank 0.3 mi downstream from Folsom Dam and 1.5 mi north of Folsom.

DRAINAGE AREA.—1,863 mi².

PERIOD OF RECORD.—October 1998 to September 1999.

WATER TEMPERATURE.—October 1998 to September 1999.

PERIOD OF DAILY RECORD.—October 1998 to September 1999.

WATER TEMPERATURE.—October 1998 to September 1999.

INSTRUMENTATION.—Water-temperature recorder since Oct. 23, 1998.

REMARKS.—Water temperature is affected by upstream releases from Folsom Dam. Interruption in record was due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 17.5°C, Aug. 11, 15, 16, 1999; minimum recorded, 7.0°C, Feb. 6, 15–17, 1999.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 17.5°C, Aug. 11, 15, 16; minimum recorded, 7.0°C, Feb. 6, 15–17.

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	---	---	16.0	15.0	13.5	13.0	8.5	8.0	8.5	8.0	8.5	8.0
2	---	---	16.0	15.0	13.5	13.0	9.0	8.0	8.5	8.0	8.5	8.0
3	---	---	15.5	15.0	13.0	12.5	8.5	8.0	8.5	8.0	8.5	8.0
4	---	---	15.5	15.0	13.0	12.0	8.5	8.0	8.5	8.0	9.0	8.0
5	---	---	15.5	15.0	12.5	11.5	8.5	7.5	8.0	7.5	9.0	8.5
6	---	---	15.5	14.5	12.5	11.5	8.5	8.0	8.0	7.0	9.0	8.5
7	---	---	15.5	14.5	12.5	11.5	8.5	7.5	8.0	7.5	9.0	8.5
8	---	---	15.5	15.0	12.0	11.5	8.5	7.5	8.0	7.5	9.0	8.0
9	---	---	15.5	14.5	12.0	11.0	8.5	7.5	8.5	7.5	9.0	8.5
10	---	---	15.0	14.5	12.5	11.0	8.5	7.5	8.5	8.0	9.0	8.5
11	---	---	15.0	14.5	12.5	11.0	8.5	7.5	9.0	8.0	9.0	8.5
12	---	---	15.0	14.5	11.0	10.5	8.5	7.5	8.5	8.0	9.0	8.5
13	---	---	15.0	14.5	11.0	10.0	8.0	7.5	8.5	7.5	9.0	8.5
14	---	---	15.0	14.5	12.0	10.0	9.0	7.5	8.0	7.5	9.0	8.5
15	---	---	15.0	14.5	---	10.0	8.5	8.0	7.5	7.0	9.0	8.0
16	---	---	15.0	14.0	11.0	---	8.5	8.0	7.5	7.0	8.5	8.0
17	---	---	14.5	14.0	10.5	10.0	8.5	8.0	8.0	7.0	9.0	8.5
18	---	---	14.5	13.5	10.5	10.0	8.5	8.0	8.0	7.5	9.0	8.0
19	---	---	14.5	13.5	10.5	10.0	9.0	8.0	8.0	7.5	9.0	8.0
20	---	---	14.5	13.5	10.5	10.0	8.5	7.5	8.0	7.5	9.0	8.0
21	---	---	14.5	13.5	10.5	9.5	8.5	8.0	8.0	7.5	9.0	8.5
22	---	---	14.5	13.5	10.0	9.5	9.0	8.0	8.0	7.5	9.0	8.5
23	---	---	14.0	13.5	10.0	9.5	9.0	8.5	8.5	8.0	9.0	8.5
24	15.5	15.0	14.0	13.0	10.0	9.0	9.0	8.5	8.5	8.0	9.0	8.0
25	15.5	15.0	14.0	13.5	9.5	9.0	9.0	8.5	8.0	7.5	9.5	8.5
26	---	---	14.0	13.5	9.5	8.5	9.0	8.5	8.5	8.0	9.0	8.5
27	15.5	15.0	14.0	13.5	9.0	8.5	9.0	8.5	8.5	8.0	9.0	8.5
28	15.5	15.0	13.5	13.0	9.0	8.5	8.5	8.5	8.5	8.0	9.5	8.5
29	15.5	15.0	13.5	13.0	9.0	8.0	8.5	8.5	---	---	9.5	8.5
30	16.0	15.0	---	---	9.0	8.0	8.5	8.0	---	---	9.0	8.5
31	16.0	15.0	---	---	8.5	8.0	8.5	8.0	---	---	9.5	8.5
MONTH	---	---	---	---	---	---	9.0	7.5	9.0	7.0	9.5	8.0

11446220 AMERICAN RIVER BELOW FOLSOM DAM, NEAR FOLSOM, 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	11.5	10.5	12.0	11.5	14.0	13.0	17.0	12.0	16.5	13.5
2	10.0	9.0	11.5	10.5	12.0	11.5	14.0	13.5	17.0	16.0	16.5	13.5
3	10.5	9.0	11.5	10.5	13.5	10.5	14.0	13.5	17.0	16.5	16.5	13.0
4	10.0	9.0	12.0	11.0	12.5	11.5	14.5	13.5	17.0	16.5	16.5	12.5
5	9.5	9.0	12.0	11.0	12.5	11.5	14.0	13.5	17.0	12.5	16.5	13.5
6	10.0	9.5	12.0	11.0	12.5	12.0	14.0	13.5	17.0	16.0	16.5	13.0
7	10.0	9.0	12.0	11.0	12.5	12.0	14.5	14.0	17.0	16.0	16.5	13.5
8	9.5	9.0	12.0	11.0	13.0	12.0	14.5	13.5	17.0	13.5	15.5	13.5
9	10.0	9.0	12.0	11.0	12.5	12.0	14.5	14.0	17.0	12.5	15.5	13.5
10	10.0	9.0	12.0	11.0	12.5	12.0	14.5	14.0	17.0	12.5	15.5	13.0
11	10.0	9.0	12.0	10.0	12.5	12.0	14.5	14.0	17.5	12.0	15.5	13.5
12	10.0	9.5	12.0	10.5	12.5	12.0	14.5	14.0	17.0	12.5	15.5	14.0
13	10.5	9.5	12.0	11.0	13.0	12.0	14.5	14.0	17.0	12.5	15.5	13.5
14	11.0	10.0	11.5	11.0	12.5	12.0	15.0	14.0	17.0	12.5	15.5	14.0
15	10.5	10.0	12.5	11.0	13.0	12.0	15.0	12.0	17.5	13.0	16.0	14.5
16	11.0	10.0	12.0	11.0	13.0	12.5	15.0	14.0	17.5	12.5	16.0	15.0
17	11.0	10.0	12.0	11.0	13.0	12.5	15.0	14.5	16.5	12.0	16.0	14.0
18	11.0	10.0	11.5	11.0	13.0	12.5	15.5	14.5	15.5	13.0	16.0	14.5
19	11.0	10.0	12.0	11.0	13.0	12.5	15.5	12.0	14.5	13.0	16.0	15.5
20	11.0	10.0	12.0	11.0	13.0	12.5	15.5	15.0	16.0	12.5	16.0	15.5
21	11.0	10.0	12.0	11.0	13.5	12.5	16.0	15.0	16.5	13.5	16.0	15.0
22	13.0	10.0	12.0	11.0	13.0	12.5	16.0	15.0	16.0	13.0	16.0	15.5
23	12.5	11.0	12.0	11.0	13.0	12.5	15.5	15.0	16.5	13.0	16.5	15.5
24	11.5	10.5	12.0	11.5	13.5	12.5	16.0	15.0	16.5	13.0	16.5	16.0
25	11.5	10.5	12.0	11.0	13.5	12.5	16.0	15.0	16.0	13.0	16.5	16.0
26	11.5	10.5	12.0	11.0	13.0	12.5	16.0	12.0	16.0	14.0	16.5	16.0
27	11.5	10.5	12.0	11.5	13.5	13.0	16.5	15.0	17.0	14.0	16.5	16.0
28	12.0	10.5	12.5	11.5	13.5	13.0	16.5	15.0	17.0	14.5	16.5	16.0
29	12.5	11.5	12.0	11.5	13.5	13.0	16.5	15.5	16.0	14.5	16.5	16.0
30	12.0	11.0	12.0	11.5	14.0	13.0	16.5	16.0	16.5	14.5	16.5	16.0
31	---	---	12.0	11.5	---	---	16.5	15.5	16.5	14.5	---	---
MONTH	13.0	9.0	12.5	10.0	14.0	10.5	16.5	12.0	17.5	12.0	16.5	12.5

11446500 AMERICAN RIVER AT FAIR OAKS, CA

LOCATION.—Lat 38°38'08", long 121°13'36", in SE 1/4 NE 1/4 sec.17, T.9 N., R.7 E., Sacramento County, Hydrologic Unit 18020111, on right bank 2,100 ft downstream from Nimbus Dam, 2.4 mi east of Fair Oaks, 8.1 mi downstream from South Fork, and at mile 22.2.

DRAINAGE AREA.—1,888 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—November 1904 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1181: 1928(M). WSP 1515: 1907(M), 1910, 1931(M), 1943(M). WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 71.53 ft above sea level. See WSP 2131 for history of changes prior to July 15, 1970.

REMARKS.—Records good. Flow regulated by Folsom Lake beginning Feb. 25, 1955 (station 11446200). Some minor regulation of high flows by temporary pondage during period of construction January 1953 to February 1955. Diurnal fluctuations from Folsom Powerplant re-regulated by Nimbus Reservoir, capacity, 2,800 acre-ft between normal operating elevations 118.5 and 125.0 ft and by Nimbus Powerplant. Many diversions upstream from station for irrigation, municipal, and domestic water supply. Diversions for San Juan Suburban Water District, city of Folsom, city of Roseville, and State of California are made at Folsom Dam. Diversion to Folsom South Canal from Nimbus Reservoir started in June 1973. Some inflow from Bear and Yuba River Basins. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 180,000 ft³/s, Nov. 21, 1950, gage height, 31.85 ft, site and datum then in use; minimum, 3.6 ft³/s, Aug. 16, 1924. Maximum discharge since regulation by Folsom Lake in 1955, 134,000 ft³/s, Feb. 19, 1986, gage height, 27.96 ft; minimum daily, 160 ft³/s, Apr. 17, 1955.

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	4140	2160	3080	2570	4610	e9300	4090	4520	4340	4530	3640	2280
2	3640	2060	3110	2560	4560	e10400	4090	4550	4340	4160	3640	2300
3	3140	1980	3100	2560	4180	e10400	4090	4570	4340	4040	3170	2300
4	2760	1980	3120	2530	4560	e10400	4100	4560	4340	4040	2620	2300
5	2590	1990	3120	2530	4950	e10400	4080	4570	4350	4030	2540	2260
6	2460	1990	3110	2530	6770	10200	4090	4580	4340	4050	2510	2210
7	2430	1990	3100	2520	13000	8840	4100	4590	4350	4070	2510	2190
8	2100	2010	3080	2510	13900	7480	4110	4370	3950	4340	2510	2010
9	1950	2050	3100	2500	15500	6670	4120	4340	3840	4600	2500	2020
10	1970	2050	3120	2500	23900	6140	4120	4340	3580	4620	2520	2020
11	1980	2930	3170	2480	22400	6140	4130	4350	3640	4650	2510	2030
12	2010	3040	3210	2510	18200	6110	4160	4370	3650	4700	2510	2010
13	2010	3090	3170	2520	15200	5690	4160	4360	3660	4640	2520	e1150
14	2030	3070	3180	2550	12700	5240	4150	4370	3590	4620	2500	e910
15	2010	3080	3120	2520	11000	4800	4140	4380	3530	4530	2500	e1440
16	2030	3070	3110	2590	10700	4500	4680	4370	3520	4620	2470	e980
17	2070	3100	3130	2660	16800	4130	4630	4370	3510	4680	2280	e1270
18	2050	3140	3180	2560	21800	4030	4590	4380	3490	4630	2230	e2300
19	2050	3060	3110	3590	20000	4040	4600	4380	3480	4550	2250	e2290
20	2050	3060	3080	11900	15300	4060	4610	4360	3510	4430	2260	e2300
21	2030	3070	3270	19600	13900	4040	4560	4360	3510	4090	2250	e2300
22	1990	3120	3170	19100	12700	4050	4650	4380	3530	4120	2240	e2300
23	2000	3110	2990	17100	10800	4050	4740	4380	3530	4040	2250	2360
24	2050	3120	3000	14800	9950	4050	4500	4370	3510	4090	2250	2330
25	2200	3110	3010	12000	9650	4070	4440	4370	3630	4110	2270	2360
26	2110	3140	3000	10500	9520	4080	4480	4370	4430	4140	2250	2370
27	2100	3150	3000	9160	9500	4080	e4560	4410	4780	4150	2320	2420
28	2130	3120	3010	7760	9550	4070	e4530	4410	4830	4170	2320	2320
29	2040	3080	2580	6500	---	4080	e4530	4380	4830	4170	2250	2190
30	2020	3080	2520	5700	---	4080	4510	4360	4790	3750	2280	2400
31	2250	---	2560	5200	---	4080	---	4340	---	3730	2290	---
TOTAL	70390	82000	94610	188610	345600	183700	130340	136810	118720	133090	77160	61920
MEAN	2271	2733	3052	6084	12340	5926	4345	4413	3957	4293	2489	2064
MAX	4140	3150	3270	19600	23900	10400	4740	4590	4830	4700	3640	2420
MIN	1950	1980	2520	2480	4180	4030	4080	4340	3480	3730	2230	910
AC-FT	139600	162600	187700	374100	685500	364400	258500	271400	235500	264000	153000	122800

e Estimated.

SACRAMENTO RIVER BASIN

11446500 AMERICAN RIVER AT FAIR OAKS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 1954, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	455	1327	2504	4483	5831	6647	8258	8656	5149	1293	342	269
MAX	1430	16450	17360	24290	15540	24710	15640	18200	17720	6336	1497	813
(WY)	1905	1951	1951	1909	1909	1907	1907	1952	1911	1906	1907	1907
MIN	100	85.0	254	284	650	879	1998	1488	206	26.8	15.8	24.4
(WY)	1930	1930	1906	1918	1920	1924	1924	1924	1924	1924	1924	1924

SUMMARY STATISTICS

WATER YEARS 1905 - 1954

ANNUAL MEAN	3752
HIGHEST ANNUAL MEAN	7896
LOWEST ANNUAL MEAN	731
HIGHEST DAILY MEAN	132000
LOWEST DAILY MEAN	4.6
ANNUAL SEVEN-DAY MINIMUM	4.8
INSTANTANEOUS PEAK FLOW	180000
INSTANTANEOUS PEAK STAGE	31.85
ANNUAL RUNOFF (AC-FT)	2718000
10 PERCENT EXCEEDS	9980
50 PERCENT EXCEEDS	1420
90 PERCENT EXCEEDS	216

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	1930	2431	3972	5591	5794	5219	4297	4359	3823	3668	2788	2286
MAX	4102	11700	19360	31780	31140	19340	17760	14270	9828	10710	4500	4014
(WY)	1970	1984	1965	1997	1986	1983	1982	1995	1983	1995	1983	1998
MIN	284	272	252	350	408	273	258	520	1135	869	855	602
(WY)	1978	1978	1978	1962	1991	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1956 - 1999

ANNUAL TOTAL	2099940	1622950	
ANNUAL MEAN	5753	4446	3839
HIGHEST ANNUAL MEAN			8854
LOWEST ANNUAL MEAN			778
HIGHEST DAILY MEAN	33700	Feb 4	23900
LOWEST DAILY MEAN	1470	Jan 6	910
ANNUAL SEVEN-DAY MINIMUM	1990	Oct 9	1400
INSTANTANEOUS PEAK FLOW			24200
INSTANTANEOUS PEAK STAGE			13.77
ANNUAL RUNOFF (AC-FT)	4165000	3219000	2781000
10 PERCENT EXCEEDS	10000	8970	7680
50 PERCENT EXCEEDS	4360	3640	2530
90 PERCENT EXCEEDS	2180	2070	930

11446500 AMERICAN RIVER AT FAIR OAKS, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water years 1960–65, October 1998 to September 1999.

WATER TEMPERATURE: Water years 1961–65, October 1998 to September 1999.

CHEMICAL DATA: Water years 1960–62.

PERIOD OF DAILY RECORD.—Water years 1961–65, October 1998 to September 1999.

WATER TEMPERATURE: Water years 1961–65, October 1998 to September 1999.

INSTRUMENTATION.—Water-temperature recorder since Oct. 29, 1998.

REMARKS.—Water temperature is affected by upstream releases from Nimbus Dam. Interruption in record was due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 18.5°C, on several days during August and September 1999; minimum recorded, 7.5°C, Jan. 10, 1999.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 18.5°C, on several days during August and September; minimum recorded, 7.5°C, Jan. 10.

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	---	---	16.0	15.5	13.5	13.0	9.5	8.5	9.0	8.5	9.5	9.0
2	---	---	16.5	15.5	13.5	13.0	9.5	8.5	9.0	8.5	9.5	8.5
3	---	---	16.5	15.5	13.5	13.0	9.0	8.5	9.5	9.0	9.5	9.0
4	---	---	16.5	15.5	13.5	12.5	9.0	8.5	9.5	8.5	9.5	9.0
5	---	---	16.5	15.5	12.5	12.0	9.0	8.5	9.0	8.5	10.0	9.0
6	---	---	16.0	15.0	12.5	12.0	8.5	8.0	9.0	8.0	9.5	9.0
7	---	---	15.5	15.0	12.5	11.5	8.5	8.0	8.5	8.0	10.0	9.0
8	---	---	15.5	14.5	12.0	11.5	9.0	8.0	9.0	8.5	9.5	9.0
9	---	---	15.5	14.5	12.0	11.5	8.5	8.0	9.0	8.0	9.5	8.5
10	---	---	15.5	14.5	12.0	11.5	8.5	7.5	9.0	8.0	10.0	9.0
11	---	---	15.0	14.5	12.0	11.5	8.5	8.0	9.0	8.5	10.0	9.5
12	---	---	15.0	14.5	12.0	11.0	8.5	8.0	9.0	8.5	10.0	9.5
13	---	---	15.5	14.5	11.5	11.0	9.0	8.0	9.0	8.5	10.0	9.5
14	---	---	15.5	14.5	11.5	11.0	8.5	8.0	8.5	8.0	10.0	9.5
15	---	---	15.0	14.5	11.5	11.0	9.0	8.0	8.5	8.0	10.0	9.5
16	---	---	15.0	14.5	11.5	11.0	9.0	8.5	8.5	8.0	9.5	9.0
17	---	---	15.0	14.5	11.5	10.5	9.0	8.5	8.5	8.0	10.0	9.0
18	---	---	15.0	14.5	11.0	10.5	9.0	8.5	9.0	8.5	10.5	9.5
19	---	---	15.0	14.0	11.0	10.5	9.5	9.0	9.0	8.5	10.0	9.5
20	---	---	14.5	14.0	10.5	9.5	9.5	8.5	9.0	8.5	10.5	9.5
21	---	---	14.5	14.0	10.0	9.5	9.0	8.0	9.0	8.0	10.0	9.0
22	---	---	14.5	14.0	10.0	9.5	9.0	8.5	9.0	8.5	10.0	9.5
23	---	---	14.5	14.0	10.0	9.5	9.0	8.5	9.0	8.5	10.5	9.5
24	---	---	14.5	14.0	10.0	9.5	9.0	8.5	9.0	8.5	10.0	9.5
25	---	---	14.0	13.5	10.0	9.5	9.0	8.5	9.0	8.5	10.5	9.5
26	---	---	14.5	13.5	10.0	9.5	9.0	8.5	9.0	8.5	11.0	9.5
27	---	---	14.0	13.5	10.0	9.5	9.0	8.5	9.5	8.5	10.5	9.5
28	---	---	14.0	13.5	10.0	9.0	9.0	8.5	9.5	8.5	10.5	9.5
29	---	---	14.0	13.0	10.0	9.0	9.0	8.5	---	---	10.5	9.5
30	16.5	15.5	13.5	13.0	9.5	9.0	9.0	8.0	---	---	10.5	9.5
31	16.0	15.5	---	---	9.5	8.5	9.0	8.5	---	---	10.5	9.5
MONTH	---	---	16.5	13.0	13.5	8.5	9.5	7.5	9.5	8.0	11.0	8.5

11446500 AMERICAN RIVER AT FAIR OAKS, 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	9.0	13.0	12.0	13.5	12.5	15.5	14.0	18.0	16.5	17.0	16.0
2	11.0	10.0	12.5	11.0	13.5	12.5	15.5	14.5	18.0	17.0	17.5	16.0
3	11.0	10.0	12.0	11.0	13.0	12.0	15.5	14.5	18.5	17.0	17.5	16.0
4	10.5	9.5	12.0	11.0	13.5	12.5	15.5	14.5	18.5	17.0	17.5	16.5
5	10.5	9.5	13.0	11.5	14.0	13.0	15.5	14.5	18.5	17.0	17.5	16.5
6	10.0	9.0	13.0	12.0	14.0	13.0	15.5	14.5	18.5	17.0	17.5	16.5
7	10.5	9.5	13.0	12.0	14.0	13.0	16.0	14.5	18.5	17.0	18.0	16.5
8	10.5	9.5	13.0	12.0	14.0	12.5	16.0	15.0	18.5	17.0	18.0	16.5
9	10.5	9.5	13.0	12.0	14.0	13.0	16.0	15.0	18.5	17.5	17.5	16.5
10	10.5	9.5	13.0	12.0	14.5	13.0	16.0	15.0	18.5	17.5	17.5	16.5
11	11.0	10.0	13.0	12.0	14.5	13.0	16.0	15.0	18.5	17.5	17.5	16.5
12	11.0	10.0	13.5	12.0	14.5	13.0	16.5	15.5	18.5	17.5	17.5	16.5
13	11.5	10.5	13.5	12.5	14.5	13.0	16.5	15.5	18.5	17.5	18.0	16.5
14	11.5	10.5	13.0	12.0	14.5	13.0	16.5	15.5	18.5	17.0	---	---
15	12.0	11.0	13.0	12.0	14.5	13.0	16.5	15.5	18.5	17.0	18.0	16.5
16	12.0	11.0	13.0	12.0	14.5	13.5	16.0	15.5	18.0	17.0	---	16.5
17	12.0	11.0	13.5	12.0	15.0	13.5	16.5	15.5	18.0	16.5	18.5	16.5
18	12.0	11.0	13.0	12.0	14.5	13.5	16.5	15.5	17.5	16.5	17.0	16.5
19	12.0	11.0	13.0	12.0	15.0	13.5	17.0	16.0	18.0	16.5	17.5	16.5
20	12.0	11.0	13.0	12.0	15.0	13.5	16.5	16.0	17.0	15.5	17.5	16.5
21	12.0	11.0	13.0	12.0	15.0	13.5	17.0	16.0	17.0	15.5	17.5	16.5
22	12.0	11.0	13.5	12.5	15.5	14.0	17.0	16.0	18.0	16.5	17.5	16.5
23	13.0	11.0	13.5	12.0	15.5	14.0	17.5	16.0	17.5	16.5	17.5	16.5
24	13.0	12.0	13.5	12.5	15.5	14.0	17.0	16.0	18.0	16.5	17.5	16.5
25	12.5	11.5	13.5	12.5	15.5	14.0	17.5	16.5	17.5	16.5	17.5	16.5
26	12.0	11.5	13.5	12.5	15.5	14.0	18.0	16.5	17.5	16.5	17.5	16.5
27	12.0	11.0	13.5	12.5	15.0	14.0	17.5	16.5	17.5	16.0	17.5	16.5
28	12.5	11.5	13.5	12.5	15.0	14.0	17.5	16.5	17.5	16.0	17.5	16.5
29	12.5	11.5	13.5	12.5	15.0	14.0	17.5	16.5	17.5	16.0	17.5	16.5
30	13.0	12.0	13.5	12.5	15.5	14.5	18.0	16.5	17.5	16.0	17.5	16.5
31	---	---	13.5	12.5	---	---	18.0	17.0	17.5	16.0	---	---
MONTH	13.0	9.0	13.5	11.0	15.5	12.0	18.0	14.0	18.5	15.5	---	---

11446980 AMERICAN RIVER BELOW WATT AVENUE BRIDGE, NEAR CARMICHAEL, CA

LOCATION.—Lat 38°34'32", long 121°23'14", in SE 1/4 NW 1/4 sec.12, T.8 N., R.5 E., Sacramento County, Hydrologic Unit 18020111, on right bank 15 mi downstream from Folsom Dam and 5 mi southwest of Carmichael.

DRAINAGE AREA.—1,938 mi².

PERIOD OF RECORD.—November 1998 to September 1999.

WATER TEMPERATURE.—November 1998 to September 1999.

PERIOD OF DAILY RECORD.—November 1998 to September 1999.

WATER TEMPERATURE.—November 1998 to September 1999.

INSTRUMENTATION.—Water-temperature recorder since Nov. 13, 1998.

REMARKS.—Water temperature can be affected by releases from Folsom and Nimbus Dams.

EXTREMES FOR PERIOD OF DAILY RECORD.—

WATER TEMPERATURE: Maximum recorded, 21.5°C, Sept. 14, 1999; minimum recorded, 7.5°C, several days in January and February 1999.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 21.5°C, Sept. 14; minimum recorded, 7.5°C, several days in January and February.

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	13.0	9.5	8.5	9.5	8.0	10.5	9.0
2	---	---	---	---	14.0	13.0	10.0	8.5	9.5	8.0	10.0	8.5
3	---	---	---	---	13.5	13.0	9.0	8.5	10.0	8.0	10.0	9.0
4	---	---	---	---	13.0	12.0	9.5	9.0	9.5	8.5	9.5	8.5
5	---	---	---	---	12.5	11.5	9.0	8.0	9.5	7.5	10.5	8.5
6	---	---	---	---	12.5	11.5	8.5	8.0	8.5	8.0	10.5	9.5
7	---	---	---	---	12.0	11.0	8.5	8.0	8.0	8.0	11.0	9.5
8	---	---	---	---	12.0	11.5	9.0	8.0	8.5	8.0	10.0	9.0
9	---	---	---	---	12.0	10.5	8.5	8.0	8.5	8.0	10.5	9.0
10	---	---	---	---	12.0	11.0	8.5	8.0	9.0	7.5	10.5	9.0
11	---	---	---	---	12.0	11.0	8.5	7.5	9.0	8.0	11.0	9.5
12	---	---	---	---	12.0	11.0	8.5	7.5	8.5	8.0	11.5	9.5
13	---	---	15.5	14.0	11.5	11.0	9.0	7.5	9.0	8.0	11.5	9.5
14	---	---	15.5	14.0	12.0	10.5	9.0	7.5	8.5	7.5	10.5	9.5
15	---	---	15.5	14.0	11.5	10.5	9.5	8.5	8.5	7.5	11.5	9.5
16	---	---	14.5	14.0	12.0	10.5	9.5	9.0	8.0	7.5	10.5	9.5
17	---	---	15.0	14.0	12.0	10.5	10.0	9.0	8.0	7.5	11.5	9.0
18	---	---	15.0	13.5	11.5	10.5	10.0	9.5	8.0	8.0	11.5	9.5
19	---	---	14.5	13.0	11.0	10.0	10.0	9.5	8.5	7.5	11.5	9.5
20	---	---	15.0	13.5	10.5	9.5	10.0	8.5	8.5	8.0	11.5	9.5
21	---	---	15.0	13.5	10.0	8.5	9.0	8.5	8.5	8.0	12.0	9.5
22	---	---	15.0	14.0	10.0	8.5	9.0	8.5	8.5	8.0	11.0	9.5
23	---	---	14.5	14.0	10.0	9.0	9.0	8.5	9.0	8.0	11.5	9.5
24	---	---	14.5	13.5	9.5	8.5	9.5	8.5	8.5	8.0	11.0	9.5
25	---	---	14.5	13.0	10.0	8.5	9.0	8.5	9.0	8.0	12.0	9.5
26	---	---	14.5	13.0	10.0	9.0	9.0	8.5	9.0	7.5	12.5	9.5
27	---	---	14.0	14.0	10.0	9.0	9.5	8.0	10.0	8.0	12.0	9.5
28	---	---	14.5	13.5	10.0	9.0	9.5	8.5	9.5	9.0	12.0	9.5
29	---	---	13.5	13.0	10.0	9.0	9.5	8.5	---	---	12.0	9.0
30	---	---	13.5	13.0	10.0	8.5	9.0	8.0	---	---	12.0	9.5
31	---	---	---	---	10.0	9.0	9.0	8.5	---	---	11.5	9.0
MONTH	---	---	---	---	14.0	8.5	10.0	7.5	10.0	7.5	12.5	8.5

11446980 AMERICAN RIVER BELOW WATT AVENUE BRIDGE, NEAR CARMICHAEL, 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	9.0	15.5	12.5	16.0	13.0	18.5	15.0	20.0	16.5	18.5	15.5
2	12.5	9.5	13.0	12.0	15.5	13.0	18.5	14.5	20.5	17.0	19.0	15.5
3	12.0	10.0	13.0	11.0	15.0	12.5	18.0	14.5	21.0	17.0	19.0	16.0
4	12.0	9.0	14.0	11.0	16.0	12.5	18.5	14.5	21.0	17.5	19.5	16.5
5	11.0	9.5	15.0	11.5	17.0	13.0	18.5	15.0	20.0	17.0	19.5	16.0
6	11.0	9.0	15.5	12.5	17.0	13.5	18.5	14.5	20.0	17.5	19.5	16.0
7	11.0	9.5	15.5	12.5	16.5	13.0	18.5	14.5	20.5	17.0	19.5	16.5
8	11.0	9.5	15.0	12.0	17.0	13.0	18.5	15.0	20.5	17.0	20.0	16.5
9	12.0	9.0	15.0	12.0	17.0	13.0	19.0	15.0	20.5	17.5	19.5	17.0
10	11.5	9.5	15.0	12.0	17.5	13.5	18.5	15.0	20.5	17.5	19.5	16.5
11	12.0	10.0	16.0	12.5	17.5	13.5	19.0	15.0	21.0	17.5	19.0	16.5
12	13.0	9.5	16.0	13.0	17.5	13.5	19.0	15.5	21.0	17.5	19.5	16.5
13	13.5	10.5	15.5	12.5	18.0	13.5	19.0	15.5	21.0	17.0	20.5	16.5
14	14.0	10.5	15.0	12.0	18.0	14.0	19.0	15.5	21.0	17.5	21.5	18.0
15	14.0	11.0	15.5	12.0	17.5	13.5	19.0	15.5	21.0	17.0	19.5	18.0
16	14.0	11.0	15.5	12.0	18.0	14.0	18.5	15.5	21.0	17.0	21.0	17.0
17	14.5	11.5	16.0	12.0	18.0	14.0	18.5	15.0	20.5	17.0	21.0	18.0
18	14.0	11.0	15.5	12.5	18.0	14.0	19.0	15.0	20.0	16.5	19.5	16.5
19	14.0	11.0	15.5	12.0	18.5	14.0	19.0	15.5	20.0	16.0	19.0	16.5
20	13.5	11.0	15.5	12.0	18.0	14.0	19.0	15.5	19.5	16.5	19.0	16.0
21	14.0	11.0	16.0	12.0	18.0	14.0	19.5	15.5	19.5	15.5	19.5	16.5
22	14.0	11.0	16.5	12.5	18.5	14.5	19.5	15.5	20.5	16.5	19.5	17.0
23	14.5	10.5	16.5	13.0	18.5	14.5	19.5	16.0	20.0	17.0	19.5	17.0
24	15.5	12.5	16.0	12.5	19.0	14.0	19.5	16.0	20.5	16.5	19.5	16.5
25	14.0	12.0	16.5	12.5	18.5	14.5	20.0	16.0	20.0	17.0	19.5	16.5
26	13.0	11.5	16.5	13.0	18.5	14.0	20.0	16.5	19.5	17.0	19.5	17.0
27	14.0	11.0	16.5	13.0	18.0	14.5	20.0	16.5	20.5	16.5	19.0	17.0
28	14.0	11.0	16.5	12.5	18.0	14.5	19.5	16.0	20.0	16.5	19.0	16.5
29	14.0	11.0	16.5	12.5	18.0	14.5	20.0	16.0	20.0	16.5	19.5	16.5
30	15.0	12.0	16.5	13.0	18.5	14.5	20.0	16.5	19.5	16.0	19.5	16.5
31	---	---	16.5	13.0	---	---	20.5	16.5	19.0	16.0	---	---
MONTH	15.5	9.0	16.5	11.0	19.0	12.5	20.5	14.5	21.0	15.5	21.5	15.5

11447293 DRY CREEK AT VERNON STREET BRIDGE, AT ROSEVILLE, CA

LOCATION.—Lat 38°44'04", long 121°17'55", NW 1/4 SW 1/4 sec.11, T.10 N, R6 E, in Placer County, Hydrologic Unit 18021111, on right bank upstream side of bridge and 0.5 mi below confluence of Cirby Creek, at Roseville, Ca.

DRAINAGE AREA.—80.08 mi².

PERIOD OF RECORD.—October 1996 to current year.

GAGE.—Water-stage recorder. Datum of gage is 99.86 ft above sea level (levels by City of Roseville).

REMARKS.—Records good. Records computed only for gage heights above the bottom of the stilling well (11.55 ft and above), as the well sits above the intakes. Low summer flow sustained by ground-water seepage and residential and industrial waste water.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,950 ft³/s, Jan. 22, 1997, gage height, 24.39 ft.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than a base discharge of 1,500 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 9	1015	1,990	15.60				

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	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	e372	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	e776	---	---	---	---	---	---	---
8	---	---	---	---	410	---	---	---	---	---	---	---
9	---	---	---	---	1290	---	---	---	---	---	---	---
10	---	---	---	---	366	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	838	---	---	---	---	---	---	---
18	---	---	---	---	e404	---	---	---	---	---	---	---
19	---	---	---	382	---	---	---	---	---	---	---	---
20	---	---	---	547	---	---	---	---	---	---	---	---
21	---	---	---	---	842	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	e374	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	e409	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated.

11447360 ARCADE CREEK NEAR DEL PASO HEIGHTS, CA

LOCATION.—Lat 38°38'01", long 121°22'54", in Del Paso Grant, Sacramento County, Hydrologic Unit 18021111, on right bank 500 ft upstream from bridge on Watt Avenue at intersection with Longview Drive and 1.3 mi east of Del Paso Heights.

DRAINAGE AREA.—31.5 mi².

PERIOD OF RECORD.—July 1963 to June 1978, December 1995 to current year.

CHEMICAL DATA: Water years 1996–98.

SPECIFIC CONDUCTANCE: Water years 1997–98.

WATER TEMPERATURE: Water years 1997–98.

SEDIMENT DATA: Water years 1996–98.

GAGE.—Water-stage recorder. Elevation of gage is 50 ft above sea level, from topographic map. Prior to December 1995, at site 0.3 mi upstream at different datum.

REMARKS.—Records good except for discharges below 1 ft³/s which are poor. Low summer flow sustained by residential and industrial waste water.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 3,320 ft³/s, Feb. 3, 1998, gage height, 15.63; no flow for many days in most years. See schematic diagram of lower Sacramento River Basin.

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)
Oct. 24	1515	572	9.58	Jan. 31	1030	687	10.28
Nov. 30	1700	602	9.77	Feb. 9	1000	1,040	11.69
Jan. 20	0245	613	9.84	Feb. 21	0100	710	10.39

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	1.4	12	30	.55	12	67	4.9	1.9	2.5	2.2	2.3	1.1
2	1.8	2.4	4.3	.43	3.1	6.1	2.8	2.9	2.1	2.1	2.4	1.3
3	1.2	1.2	128	.35	1.9	57	2.3	4.9	16	2.1	2.1	1.3
4	1.2	1.2	10	.26	1.4	6.3	1.9	2.0	3.1	1.9	2.2	1.4
5	1.1	.50	8.3	.24	1.1	4.4	67	1.4	2.6	2.0	2.0	1.5
6	1.0	7.0	33	.11	22	3.8	23	1.5	2.5	2.2	2.0	1.4
7	1.2	77	2.8	.33	440	3.5	4.3	1.5	2.4	2.2	2.1	1.4
8	1.2	12	2.0	.56	83	31	28	1.5	2.2	2.1	2.1	1.3
9	.99	3.1	1.6	.27	527	94	7.0	1.6	2.3	2.1	2.0	1.0
10	1.1	1.7	1.1	.21	21	5.7	4.1	1.5	2.7	2.1	2.0	1.0
11	1.3	46	1.0	.20	6.6	4.0	4.1	1.7	2.2	2.2	2.0	1.1
12	1.1	3.9	.91	.19	3.9	3.3	3.5	1.8	2.9	2.2	1.9	1.2
13	1.1	1.4	.64	.23	5.4	3.3	2.8	1.9	2.9	2.2	1.9	1.4
14	1.1	.92	3.5	.21	21	2.9	2.2	1.7	2.8	2.1	1.9	1.2
15	.99	.64	1.2	9.9	3.1	2.7	2.1	1.8	2.2	2.0	1.9	1.0
16	.87	.43	.64	58	65	2.7	2.2	1.9	2.2	2.1	1.7	.97
17	.72	26	.55	25	200	2.7	2.5	1.9	2.4	2.2	1.7	.99
18	.95	2.6	.66	148	43	2.5	2.5	1.9	2.3	2.1	1.7	.93
19	1.6	.95	.40	80	17	2.4	2.5	2.0	2.5	2.3	1.8	1.1
20	1.0	.39	.29	205	119	11	2.1	2.1	2.3	2.4	1.7	1.1
21	1.2	.55	.08	9.5	224	3.4	1.9	1.9	2.5	2.5	1.6	.95
22	1.3	57	.25	3.1	10	2.3	1.9	2.1	2.5	2.5	1.6	.92
23	1.3	60	.93	83	6.2	3.9	1.8	2.0	2.3	2.7	1.7	.82
24	182	41	1.2	8.1	5.1	4.9	1.7	1.9	2.3	2.8	1.7	.76
25	15	3.1	1.0	2.5	28	14	2.2	1.9	2.3	2.9	1.7	.85
26	2.9	1.4	.90	31	5.4	3.5	2.0	2.2	2.3	2.9	1.6	.81
27	2.0	90	.75	3.4	4.1	2.4	2.1	2.3	2.2	2.5	1.9	.70
28	1.4	112	.62	1.4	42	2.1	1.7	2.4	2.3	2.5	1.8	.48
29	1.6	30	.58	.98	---	2.1	1.7	2.3	2.2	2.2	1.7	.47
30	1.2	217	.55	.86	---	1.9	1.5	2.1	2.3	2.3	1.5	.43
31	.93	---	.51	243	---	9.5	---	2.2	---	2.4	1.3	---
TOTAL	233.75	813.38	238.26	916.88	1921.3	366.3	190.3	62.7	86.3	71.0	57.5	30.88
MEAN	7.54	27.1	7.69	29.6	68.6	11.8	6.34	2.02	2.88	2.29	1.85	1.03
MAX	182	217	128	243	527	94	67	4.9	16	2.9	2.4	1.5
MIN	.72	.39	.08	.11	1.1	1.9	1.5	1.4	2.1	1.9	1.3	.43
AC-FT	464	1610	473	1820	3810	727	377	124	171	141	114	61

11447360 ARCADE CREEK NEAR DEL PASO HEIGHTS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.89	23.5	34.4	68.2	49.0	18.5	11.6	5.70	3.25	3.48	3.07	3.27
MAX	13.7	76.0	92.4	227	232	64.0	34.7	27.6	5.90	10.0	5.53	14.0
(WY)	1976	1974	1997	1969	1998	1975	1996	1998	1975	1974	1975	1965
MIN	.65	2.67	.51	3.15	.93	.85	.12	.64	.000	.000	.001	1.02
(WY)	1966	1976	1964	1976	1971	1966	1977	1965	1977	1977	1977	1996

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1963 - 1999	
ANNUAL TOTAL	12917.83		4988.55			
ANNUAL MEAN	35.4		13.7		17.9	
HIGHEST ANNUAL MEAN					38.2	
LOWEST ANNUAL MEAN					2.64	
HIGHEST DAILY MEAN	1910	Feb 3	527	Feb 9	1910	Feb 3 1998
LOWEST DAILY MEAN	.08	Dec 21	.08	Dec 21	.00	Oct 27 1963
ANNUAL SEVEN-DAY MINIMUM	.41	Dec 16	.27	Jan 6	.00	Dec 31 1963
INSTANTANEOUS PEAK FLOW			1040		3320	
INSTANTANEOUS PEAK STAGE			11.69		15.63	
ANNUAL RUNOFF (AC-FT)	25620		9890		12960	
10 PERCENT EXCEEDS	75		27		24	
50 PERCENT EXCEEDS	2.7		2.1		2.4	
90 PERCENT EXCEEDS	1.1		.74		.40	

11447650 SACRAMENTO RIVER AT FREEPORT, CA

LOCATION.—Lat 38°27'15", long 121°29'54", in SW 1/4 SW 1/4 sec.13, T.7 N., R.4 E., Sacramento County, Hydrologic Unit 18020109, on left bank 630 ft downstream from drawbridge at Freeport and 11 mi south of Sacramento.

DRAINAGE AREA.—Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—January 1904 to July 1905 (gage heights only), June to November 1921, October 1948 to current year. Prior to October 1979, published as Sacramento River at Sacramento (station 11447500).

REVISED RECORD.—WDR CA-96-4: 1994–1995 (P).

GAGE.—Water-stage recorder and acoustic-velocity system. Datum of gage is sea level.

REMARKS.—Records good. Natural flow of stream affected by storage reservoirs, power development, diversions for irrigation, return flow from irrigated areas, and tide. Floodflows bypass station through Sacramento Weir Spill to Yolo Bypass (stations 11426000 and 11453000). See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD (since 1949).—Maximum discharge, 117,000 ft³/s, Feb. 19, 1986, elevation, 25.00 ft; minimum daily, 3,970 ft³/s, Oct. 15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.—Maximum discharge known prior to Nov. 21, 1950, 103,000 ft³/s, Jan. 17, 1909, elevation, 29.6 ft, site then in use at present datum, from reports of California Department of Water Resources.

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	22900	e13900	37200	21600	44900	71800	34300	24900	19800	20900	22900	17300
2	22200	e14300	43300	21000	41600	73400	31400	24800	19400	21000	23300	16600
3	21500	e14100	49400	20900	37900	74000	29800	24400	20000	20600	23200	16500
4	20300	13200	54700	20600	34800	74700	28600	24800	20200	20800	22400	16500
5	20000	13200	58300	20500	33900	74700	27700	24400	21200	20400	21500	16600
6	19000	13200	60700	20200	35300	74600	27700	23800	21800	20500	21400	16300
7	18200	13200	61900	20100	48400	72900	27300	22500	21500	20800	20600	16400
8	18000	14500	62300	19700	60300	71300	27500	21300	20400	20700	19700	16400
9	16800	15100	61900	19200	69200	70600	28200	21400	18700	21200	18900	16200
10	16300	15800	60700	18400	83100	69300	28300	21200	17600	21400	17800	16200
11	15800	16600	59400	18000	85400	68200	29400	20500	16400	21300	17400	16500
12	15500	16800	57600	17900	82500	67700	30700	19300	16200	21400	17100	16900
13	15100	17100	55700	17900	78700	66600	34400	18700	15600	21500	17200	16200
14	14400	17200	54200	17800	75200	65600	36500	18100	15600	21500	17100	15100
15	14100	17400	53100	17400	72400	63900	35700	18200	15000	22100	17100	15300
16	13900	18000	51900	17600	71200	61000	34900	17500	15200	22200	17000	15400
17	13500	18600	49300	18300	74800	57200	34600	16900	15100	22500	16600	15000
18	13300	19200	45300	20100	86700	53000	34600	16600	15200	22900	15600	16000
19	13100	19800	42100	23600	85600	49200	34700	16700	15200	23100	15500	16300
20	13100	22400	40000	36400	81300	46600	34200	17100	14900	23900	14800	16700
21	12900	23500	38400	56800	80000	43500	33600	17100	15000	23900	15100	15900
22	12700	24200	36300	61700	79400	40900	33200	16800	14900	23800	15300	15300
23	12700	24400	34000	63100	76600	38300	31800	17400	14700	23200	15600	15400
24	13000	28500	31500	66700	74000	35800	29900	18400	14600	23300	16100	15000
25	13400	31900	29000	67500	72600	34000	28600	18400	14900	23200	16100	14800
26	13700	34600	26900	65700	71900	36000	27500	17900	15400	23400	16300	14600
27	14200	33900	25600	63700	71300	41400	26900	17700	15700	23600	16500	14400
28	15400	33400	24900	60200	71100	43200	26700	17700	17100	23700	17400	14500
29	e14400	34800	24200	56200	---	43100	26100	18600	19100	23900	17700	15200
30	e14700	34800	23400	52000	---	41300	25500	18900	20700	23700	17900	15400
31	e14400	---	22400	48800	---	38200	---	19800	---	23100	17800	---
TOTAL	488500	627600	1375600	1069600	1880100	1762000	920300	611800	517100	689500	558900	474900
MEAN	15760	20920	44370	34500	67150	56840	30680	19740	17240	22240	18030	15830
MAX	22900	34800	62300	67500	86700	74700	36500	24900	21800	23900	23300	17300
MIN	12700	13200	22400	17400	33900	34000	25500	16600	14600	20400	14800	14400
AC-FT	968900	1245000	2729000	2122000	3729000	3495000	1825000	1214000	1026000	1368000	1109000	942000

e Estimated.

11447650 SACRAMENTO RIVER AT FREEPORT, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	12480	16470	26830	35390	41450	38160	30160	25010	18440	14970	14510	14920
MAX	28690	48820	74510	87110	81370	78290	76580	69820	55690	31000	25180	25320
(WY)	1963	1984	1984	1997	1998	1983	1982	1952	1998	1983	1998	1998
MIN	4494	6380	7208	8984	8003	6573	5961	6414	6865	6345	7061	6838
(WY)	1978	1993	1960	1991	1977	1977	1977	1992	1977	1949	1949	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1949 - 1999	
ANNUAL TOTAL	15621700		10975900			
ANNUAL MEAN	42800		30070		23980	
HIGHEST ANNUAL MEAN					46900	
LOWEST ANNUAL MEAN					7608	
HIGHEST DAILY MEAN	94100	Feb 4	86700	Feb 18	115000	Feb 19 1986
LOWEST DAILY MEAN	12700	Oct 22	12700	Oct 22	3970	Oct 15 1977
ANNUAL SEVEN-DAY MINIMUM	13000	Oct 18	13000	Oct 18	4060	Oct 13 1977
INSTANTANEOUS PEAK FLOW			87900		117000	
INSTANTANEOUS PEAK STAGE			19.13		25.00	
ANNUAL RUNOFF (AC-FT)	30990000		21770000		17370000	
10 PERCENT EXCEEDS	73600		65600		57000	
50 PERCENT EXCEEDS	42100		21400		16100	
90 PERCENT EXCEEDS	16700		15000		8940	

11447650 SACRAMENTO RIVER AT FREEPORT, CA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.—Water year 1957 to current year.

CHEMICAL DATA: Water years 1959 to current year.

BIOLOGICAL DATA: Water years 1974–81.

SPECIFIC CONDUCTANCE: Water years 1974–75, 1989–98.

WATER TEMPERATURE: Water year 1960 to current year.

SEDIMENT DATA: Water year 1957 to current year (prior to water year 1980, published as 11447500 Sacramento River at Sacramento).

PERIOD OF DAILY RECORD.—October 1956 to current year.

CHEMICAL DATA: June 1960 to June 1963.

SPECIFIC CONDUCTANCE: Water years 1974–75, 1989–94, 1996–98.

WATER TEMPERATURE: June 1960 to current year.

SUSPENDED SEDIMENT: October 1956 to current year.

INSTRUMENTATION.—Temperature recorder June 1960 to November 1988. Water-quality monitor since November 1988.

REMARKS.—Records of sediment discharge from 1957 to 1979 were obtained at Sacramento and are considered equivalent. Additional specific-conductance and monthly chemical and trace-element data are available in files of the U.S. Geological Survey. Interruption in record was due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.—

SPECIFIC CONDUCTANCE: Maximum recorded, 318 microsiemens, Nov. 22, 1974; minimum recorded, 32 microsiemens, Apr. 6, 1974.

WATER TEMPERATURE: Maximum recorded, 27.0°C, Sept. 8, 1977; minimum recorded, 3.0°C, Dec. 25–27, 1990.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,960 mg/L, Dec. 24, 1964; minimum daily, 2 mg/L, Jan. 27, 31, and Nov. 21, 1991.

SEDIMENT LOAD: Maximum daily, 525,000 tons, Dec. 24, 1964; minimum daily, 35 tons, Jan. 31, 1991.

EXTREMES FOR CURRENT YEAR.—

WATER TEMPERATURE: Maximum recorded, 22.5°C, several days in June, July, and August; minimum recorded, 6.5°C, Dec. 23–26.

SEDIMENT CONCENTRATION: Maximum daily mean, 204 mg/L, Dec. 3, minimum daily mean, 10 mg/L, Nov. 4, 5.

SEDIMENT LOAD: Maximum daily, 36,500 tons, Feb. 10; minimum daily, 362 tons, Nov. 5.

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 WATER (DEG C) (00010)	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)	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													
	22...	1030	13300	131	7.8	15.5	763	13.3	133	49	--	11	5.6
NOV													
	13...	0940	18900	137	7.8	12.1	768	10.7	99	52	--	11	5.8
DEC													
	28...	1130	22200	142	7.7	7.1	769	11.7	96	52	--	11	6.1
JAN													
	21...	1040	56600	87	7.6	9.8	768	10.9	95	32	3	7.4	3.4
FEB													
	26...	1030	72000	100	7.6	9.7	766	10.8	94	41	2	9.0	4.4
MAR													
	17...	1130	57600	118	7.6	11.0	762	10.5	95	47	13	10	5.2
APR													
	09...	1100	27400	133	8.0	11.4	769	10.8	98	54	6	12	5.9
MAY													
	17...	1020	19000	122	7.8	16.6	763	9.4	96	44	--	9.6	4.9
JUN													
	04...	1130	20400	129	7.7	17.2	762	9.2	96	48	0	10	5.5
JUL													
	08...	1130	22700	114	7.8	20.4	760	9.7	108	42	--	9.3	4.6
AUG													
	05...	0900	24300	127	7.8	20.4	756	9.3	104	48	--	10	5.4
SEP													
	14...	1030	13200	200	7.8	20.3	758	6.1	68	73	--	15	8.9

11447650 SACRAMENTO RIVER AT FREEPORT, 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												
22...	6.3	21	.4	1	51	4.4	3.8	<.1	16	90	82	.12
NOV												
13...	7.9	24	.5	1.2	53	6.3	5.5	<.1	17	98	91	.13
DEC												
28...	7.4	23	.4	1.1	53	6.4	5.6	<.1	18	93	92	.13
JAN												
21...	3.8	20	.3	.9	29	3.8	2.9	<.1	13	64	58	.09
FEB												
26...	4.9	20	.3	1.0	39	4.3	2.9	<.1	16	75	71	.10
MAR												
17...	6.0	21	.4	1.1	34	4.3	3.2	<.1	18	80	69	.11
APR												
09...	6.5	20	.4	1	48	5.5	4.3	<.1	17	89	82	.12
MAY												
17...	6.3	23	.4	.9	45	5.4	5.1	<.1	16	79	75	.11
JUN												
04...	7.9	26	.5	.9	48	5.6	5.2	<.1	16	101	80	.14
JUL												
08...	6.6	25	.4	.8	46	21	9.1	<.1	16	114	95	.16
AUG												
05...	7.5	25	.5	.9	52	5.1	1.7	<.1	16	90	78	.12
SEP												
14...	13	28	.7	1.2	82	8.5	9.0	<.1	19	124	124	.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 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)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)
OCT												
22...	<.01	.16	<.02	.1	<.1	<.05	.03	.01	<10	<3	1.4	.2
NOV												
13...	.01	.21	.03	.2	.2	.05	.03	.04	12	<3	2.1	.3
DEC												
28...	.02	.20	<.02	.2	<.1	.06	.02	.02	14	3	1.4	.4
JAN												
21...	<.01	.12	.05	.3	.1	.13	<.01	.01	11	<3	2.8	1
FEB												
26...	<.01	.14	.02	.3	<.1	.07	.02	.01	21	4	1.9	.4
MAR												
17...	<.01	.11	<.02	.2	<.1	.06	.02	.02	12	3	1.4	--
APR												
09...	<.01	.16	<.02	.2	<.1	.05	.02	.01	<10	<3	1.2	.5
MAY												
17...	<.01	.08	<.02	.1	<.1	.05	.02	.02	<10	4	1.5	.3
JUN												
04...	<.01	<.05	.02	.2	.1	.06	.03	<.01	11	<3	1.4	.2
JUL												
08...	<.01	.08	<.02	.2	.1	.05	.02	.03	<10	<3	1.4	1.0
AUG												
05...	<.01	.06	<.02	.2	<.1	.05	.03	.03	<10	<3	1.5	.3
SEP												
14...	<.01	.07	<.02	.2	.1	.06	.04	.03	11	e2	2.2	.7

< Actual value known to be less than value shown.

11447650 SACRAMENTO RIVER AT FREEPORT, 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 0.7 U GF, REC (UG/L) (82682)
OCT												
22...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
NOV												
13...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
DEC												
28...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
JAN												
21...<.003	<.003	<.002	<.002	<.002	e.002	<.002	<.002	e.005	<.003	<.004	<.004	<.002
FEB												
26...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
MAR												
17...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
APR												
09...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
MAY												
17...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.010	<.010	<.004	<.004	<.002
JUN												
04...<.003	<.003	<.002	<.002	<.002	<.010	<.002	<.002	e.007	e.010	<.004	<.004	<.002
JUL												
08...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
AUG												
05...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.004	<.002
SEP												
14...<.003	<.003	<.002	<.002	<.002	<.001	<.002	<.002	<.003	e.021	<.004	<.004	<.002
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)	FONOFOFOS WATER DISS REC (UG/L) (04095)	LIN-URON WATER FLTRD GF, REC (UG/L) (82666)	METHYL-AZIN-THION, DIS- SOLVED (UG/L) (39532)	METHYL-AZIN-THION, DIS- SOLVED (UG/L) (82686)	
OCT												
22...<.002	<.002	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	.008	<.001
NOV												
13...<.002	<.002	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
DEC												
28...<.002	<.002	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
JAN												
21...<.002	.022	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
FEB												
26...<.002	.012	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
MAR												
17...<.002	<.002	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
APR												
09...<.002	<.002	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
MAY												
17...<.002	<.002	<.001	<.001	<.017	.005	<.004	<.003	<.003	<.004	<.002	<.005	<.001
JUN												
04...<.002	<.002	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.010	<.001
JUL												
08...<.002	<.002	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001
AUG												
05...<.002	<.002	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	.017	<.001
SEP												
14...<.002	<.002	<.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	.022	e.014

e Estimated.

< Actual value known to be less than value shown.

11447650 SACRAMENTO RIVER AT FREEPORT, CA—Continued

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

DATE	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P, P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER- CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)
OCT												
22...	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
NOV												
13...	<.006	<.002	<.004	.016	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
DEC												
28...	<.006	<.002	<.004	<.010	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
JAN												
21...	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
FEB												
26...	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
MAR												
17...	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
APR												
09...	<.006	<.002	<.004	<.004	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
MAY												
17...	<.006	.006	<.004	.219	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
JUN												
04...	<.006	.052	<.004	1.34	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
JUL												
08...	<.006	.005	<.004	.055	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
AUG												
05...	<.006	.007	<.004	.023	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
SEP												
14...	<.006	.005	<.004	.057	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018

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											
22...	<.003	<.004	<.013	<.007	.005	<.010	<.007	<.013	<.002	<.001	<.002
NOV											
13...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	.006	<.001	<.002
DEC											
28...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	<.002	<.001	<.002
JAN											
21...	<.003	<.004	<.013	<.007	.015	<.010	<.007	<.013	<.002	<.001	<.002
FEB											
26...	<.003	<.004	<.013	<.007	.012	<.010	<.007	<.013	<.002	<.001	<.002
MAR											
17...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	<.002	<.001	<.002
APR											
09...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	<.002	<.001	<.002
MAY											
17...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	.071	<.001	<.002
JUN											
04...	<.003	<.004	<.013	<.007	<.010	<.010	<.007	<.013	.275	<.001	.004
JUL											
08...	<.003	<.004	<.013	<.007	<.005	<.010	<.007	<.013	.017	<.001	<.002
AUG											
05...	<.003	.087	<.013	<.007	<.005	<.010	<.007	<.013	.009	<.001	<.002
SEP											
14...	<.003	<.004	<.013	<.007	.016	<.010	<.007	<.013	.020	<.001	<.002

< Actual value known to be less than value shown.

11447650 SACRAMENTO RIVER AT FREEPORT, 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- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
16...	0945	17000	15.0	32	1470	92
22...N	1030	13300	15.5	14	503	95
NOV						
13...N	0940	18900	12.1	29	1480	89
19...	1029	20500	12.0	28	1550	90
DEC						
28...N	1130	22200	7.1	31	1860	89
JAN						
08...	0928	17000	8.0	15	688	86
21...N	1040	56600	9.8	148	22600	65
FEB						
19...	1235	86600	8.5	56	13100	64
26...N	1030	72000	9.7	43	8370	68
MAR						
17...N	1130	57600	11.0	55	8560	79
29...	1155	43700	12.5	128	15100	84
APR						
09...N	1100	27400	11.4	55	4070	90
MAY						
17...N	1020	19000	16.6	24	1230	90
18...	0951	16000	17.0	20	864	87
JUN						
04...N	1130	20400	17.2	28	1540	94
25...	1243	18900	21.5	21	1070	92
JUL						
08...N	1130	22700	20.4	46	2820	94
AUG						
05...N	0900	24300	20.4	34	2230	88
05...	1220	21000	20.5	38	2150	94
SEP						
14...N	1030	13200	20.3	18	642	94
14...	1200	15600	20.5	22	927	93

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

11447650 SACRAMENTO RIVER AT FREEPORT, CA—Continued

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, OF INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	BED	BED	BED
					MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)
FEB							
19...	1146	1	86800	8.5	--	--	10
19...	1150	1	86800	8.5	--	--	2
19...	1156	1	86800	8.5	--	--	12
19...	1200	1	86800	8.5	--	--	7
19...	1204	1	86800	8.5	--	1	46
AUG							
05...	1255	1	20100	20.5	1	12	24
05...	1300	1	20100	20.5	--	--	1
05...	1305	1	20100	20.5	1	4	26
05...	1310	1	20100	20.5	1	4	18
05...	1315	1	20100	20.5	--	1	20
DATE	TIME	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)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)
FEB							
19...	1146	78	96	99	100	--	--
19...	1150	50	91	98	100	--	--
19...	1156	73	98	100	--	--	--
19...	1200	59	83	94	99	100	--
19...	1204	100	--	--	--	--	--
AUG							
05...	1255	53	95	99	100	--	--
05...	1300	50	96	100	--	--	--
05...	1305	70	91	94	96	99	100
05...	1310	87	99	100	--	--	--
05...	1315	93	100	--	--	--	--

11447650 SACRAMENTO RIVER AT FREEPORT, 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	17.0	17.0	14.0	13.5	11.5	11.0	9.0	8.5	9.0	9.0	10.5	10.5
2	17.0	16.5	14.0	13.5	11.0	11.0	9.0	8.5	9.0	8.5	11.0	10.5
3	17.0	16.5	14.0	13.5	11.0	11.0	9.0	9.0	9.0	9.0	11.0	11.0
4	16.5	16.0	14.0	13.5	11.0	10.5	9.0	8.5	9.5	9.0	11.0	11.0
5	16.5	16.0	14.0	13.5	10.5	10.0	8.5	8.5	9.5	9.5	11.0	10.5
6	16.5	16.0	13.5	13.0	10.0	9.0	8.5	8.5	9.5	9.0	10.5	10.5
7	16.5	16.0	13.0	12.5	9.0	8.5	8.5	8.0	9.5	9.0	10.5	10.5
8	16.5	16.0	12.5	12.5	9.0	8.5	8.0	8.0	9.5	9.5	10.5	10.0
9	16.5	16.0	12.5	12.0	9.0	9.0	8.0	8.0	10.0	9.5	10.0	9.5
10	16.5	16.0	12.0	11.5	9.0	9.0	8.0	7.5	9.5	9.0	9.5	9.5
11	16.0	16.0	12.0	11.5	9.0	9.0	8.0	7.5	9.5	9.0	9.5	9.5
12	16.0	16.0	12.0	11.5	9.5	9.0	7.5	7.5	9.5	9.0	10.0	9.5
13	16.0	15.5	12.0	11.5	10.0	9.5	8.0	7.5	9.0	9.0	10.5	10.0
14	16.0	15.5	12.0	11.5	10.0	10.0	8.5	8.0	9.0	9.0	10.5	10.5
15	16.0	15.5	12.0	12.0	10.5	10.0	9.0	8.5	9.0	9.0	10.5	10.5
16	15.5	14.5	12.0	12.0	10.5	10.5	10.0	9.0	9.0	9.0	11.0	10.5
17	14.5	14.5	12.0	12.0	10.5	10.5	10.5	10.0	9.5	9.0	11.0	11.0
18	14.5	14.0	12.0	12.0	10.5	10.5	11.0	10.5	9.5	9.5	11.5	11.0
19	14.5	14.5	12.0	12.0	10.5	10.0	11.5	11.0	9.5	9.5	12.0	11.0
20	15.0	14.5	12.0	11.5	10.0	9.5	11.5	11.0	10.0	9.5	12.0	11.5
21	15.0	14.5	12.0	12.0	9.5	8.0	11.0	10.5	9.5	9.5	12.0	11.5
22	15.5	15.0	12.5	12.0	8.0	7.5	10.5	10.5	9.5	9.5	12.0	11.5
23	15.5	15.0	12.5	12.5	7.5	6.5	10.5	10.0	10.0	9.5	12.0	11.5
24	15.5	15.0	12.5	12.0	6.5	6.5	10.0	9.5	10.5	10.0	12.0	11.5
25	15.0	14.5	12.5	12.0	6.5	6.5	9.5	9.5	10.5	10.5	11.5	11.5
26	15.0	14.5	12.0	11.5	7.0	6.5	9.5	9.0	10.5	10.0	12.0	11.5
27	15.0	15.0	12.0	11.5	7.5	7.0	9.0	8.5	10.5	10.0	12.0	11.5
28	15.0	14.5	12.0	11.5	8.0	7.5	9.0	8.5	10.5	10.5	12.0	11.5
29	15.0	14.5	12.0	11.5	8.5	7.5	9.0	8.5	---	---	12.5	12.0
30	14.5	14.5	11.5	11.5	8.5	8.0	9.0	8.5	---	---	12.0	11.5
31	14.5	14.0	---	---	9.0	8.5	9.0	8.5	---	---	12.0	11.5
MONTH	17.0	14.0	14.0	11.5	11.5	6.5	11.5	7.5	10.5	8.5	12.5	9.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	11.5	16.0	15.0	19.5	19.0	22.5	21.5	20.5	19.0	20.5	20.0
2	11.5	11.5	15.5	15.0	19.0	18.0	22.0	21.0	20.5	19.5	20.0	19.5
3	11.5	11.0	15.0	14.5	18.0	17.5	21.0	20.0	21.0	19.5	19.5	19.5
4	11.5	11.0	15.0	14.0	18.0	17.0	20.5	19.5	21.0	20.0	20.0	19.5
5	11.0	11.0	16.0	15.0	18.0	17.0	20.0	19.5	21.0	20.0	20.0	19.5
6	11.0	10.5	16.5	15.5	18.0	17.0	20.5	19.5	21.0	20.0	20.5	20.0
7	11.0	10.5	17.0	16.0	18.0	17.5	20.5	19.5	20.5	19.5	20.5	20.0
8	11.5	11.0	17.0	16.0	18.5	18.0	20.5	19.5	20.0	19.5	20.5	20.5
9	11.5	11.0	16.5	16.0	19.0	18.0	20.5	19.5	20.0	19.5	21.0	20.5
10	12.0	11.0	16.5	15.5	19.5	18.5	21.0	20.0	20.0	19.5	21.0	20.5
11	11.5	11.0	16.5	15.5	20.0	19.0	21.0	20.5	20.0	19.5	20.5	20.5
12	12.0	11.5	17.5	16.5	20.0	19.5	21.5	21.0	20.0	19.5	20.5	20.5
13	13.0	12.0	18.0	17.0	20.0	19.5	22.0	21.0	20.0	20.0	20.5	20.5
14	13.5	12.5	18.0	17.0	20.5	20.0	21.5	21.0	20.5	20.0	20.5	20.5
15	14.5	13.0	17.5	17.0	20.5	20.0	21.5	20.5	21.0	20.0	20.5	20.5
16	15.0	14.5	17.5	17.0	20.5	20.0	21.0	20.0	21.0	20.5	21.0	20.5
17	15.5	15.0	17.5	16.5	21.0	20.5	20.0	19.5	21.5	21.0	21.0	20.5
18	16.0	15.5	17.5	17.0	21.5	21.0	20.0	19.0	21.5	21.0	20.5	20.0
19	16.0	15.5	18.0	17.0	21.5	21.0	19.5	19.0	21.5	21.0	20.0	19.5
20	16.0	16.0	18.0	17.5	21.5	21.0	19.5	19.0	21.5	21.0	19.5	19.5
21	16.0	15.5	18.5	17.5	21.5	21.0	19.5	18.5	21.5	21.5	20.0	19.5
22	16.0	16.0	19.0	18.0	22.0	21.0	20.0	18.5	22.0	21.5	---	---
23	16.0	15.5	19.5	18.5	22.0	21.5	20.0	19.0	22.5	22.0	---	---
24	16.0	15.5	19.5	19.0	22.0	21.5	20.0	19.0	22.5	22.0	---	---
25	16.0	15.5	19.5	19.0	22.0	21.0	20.0	19.0	22.5	22.0	---	---
26	15.5	15.0	20.0	19.0	22.0	21.0	20.5	19.0	22.5	22.0	---	---
27	15.5	15.0	20.0	19.5	22.0	21.0	20.5	19.5	22.0	21.5	---	---
28	15.5	15.0	20.0	19.5	22.0	21.0	20.0	19.0	21.5	21.0	---	---
29	15.0	14.5	20.0	19.5	22.0	21.5	20.0	19.0	21.5	21.0	19.5	19.0
30	15.5	14.5	20.0	19.0	22.5	21.5	20.0	19.0	21.0	20.5	19.0	18.5
31	---	---	20.0	19.0	---	---	20.0	19.0	21.0	20.5	---	---
MONTH	16.0	10.5	20.0	14.0	22.5	17.0	22.5	18.5	22.5	19.0	---	---

11447650 SACRAMENTO RIVER AT FREEPORT, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT
	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	22900	29	1780	e13900	11	426	37200	105	10600
2	22200	27	1590	e14300	11	425	43300	199	23300
3	21500	27	1560	e14100	11	407	49400	204	27200
4	20300	28	1530	13200	10	369	54700	190	28000
5	20000	29	1570	13200	10	362	58300	147	23100
6	19000	29	1470	13200	12	413	60700	150	24500
7	18200	23	1150	13200	14	492	61900	122	20300
8	18000	20	953	14500	16	643	62300	106	17900
9	16800	20	929	15100	19	791	61900	102	17000
10	16300	22	966	15800	21	901	60700	83	13600
11	15800	24	1000	16600	22	1010	59400	69	11100
12	15500	25	1060	16800	24	1080	57600	63	9740
13	15100	27	1100	17100	25	1180	55700	60	9080
14	14400	29	1130	17200	27	1250	54200	59	8590
15	14100	31	1180	17400	27	1290	53100	57	8140
16	13900	32	1190	18000	28	1350	51900	53	7480
17	13500	29	1070	18600	28	1420	49300	50	6680
18	13300	27	969	19200	29	1480	45300	54	6600
19	13100	25	880	19800	28	1500	42100	57	6500
20	13100	23	811	22400	33	1990	40000	60	6470
21	12900	21	736	23500	42	2640	38400	61	6310
22	12700	20	669	24200	53	3440	36300	48	4710
23	12700	18	616	24400	66	4380	34000	43	3910
24	13000	17	582	28500	82	6320	31500	40	3370
25	13400	15	553	31900	86	7400	29000	37	2900
26	13700	14	521	34600	87	8120	26900	35	2510
27	14200	13	501	33900	88	8050	25600	32	2200
28	15400	13	527	33400	89	8040	24900	29	1950
29	e14400	12	481	34800	91	8590	24200	26	1700
30	e14700	12	478	34800	94	8840	23400	24	1500
31	e14400	12	455	---	---	---	22400	21	1260
TOTAL	488500	---	30007	627600	---	84599	1375600	---	318200
	JANUARY			FEBRUARY			MARCH		
1	21600	21	1240	44900	55	6620	71800	46	8870
2	21000	23	1300	41600	50	5610	73400	43	8520
3	20900	25	1400	37900	43	4390	74000	52	10400
4	20600	26	1470	34800	44	4160	74700	56	11300
5	20500	25	1410	33900	49	4490	74700	51	10200
6	20200	25	1350	35300	53	5060	74600	45	8990
7	20100	22	1180	48400	104	13600	72900	39	7760
8	19700	18	949	60300	120	19600	71300	36	6910
9	19200	20	1040	69200	169	31600	70600	47	8960
10	18400	20	994	83100	163	36500	69300	35	6610
11	18000	19	946	85400	105	24200	68200	40	7420
12	17900	14	683	82500	96	21400	67700	46	8390
13	17900	11	552	78700	88	18600	66600	47	8460
14	17800	11	550	75200	79	16000	65600	48	8500
15	17400	12	560	72400	71	13900	63900	49	8440
16	17600	12	582	71200	64	12300	61000	50	8220
17	18300	17	829	74800	58	11700	57200	51	7900
18	20100	25	1330	86700	59	13700	53000	56	8000
19	23600	42	2650	85600	60	13800	49200	60	7930
20	36400	99	9690	81300	60	13100	46600	63	7940
21	56800	121	18500	80000	56	12000	43500	67	7830
22	61700	135	22500	79400	52	11100	40900	68	7510
23	63100	143	24400	76600	49	10100	38300	51	5290
24	66700	116	20800	74000	49	9770	35800	46	4460
25	67500	94	17100	72600	49	9580	34000	40	3640
26	65700	100	17800	71900	47	9200	36000	77	7450
27	63700	80	13800	71300	47	8990	41400	122	13600
28	60200	61	9850	71100	46	8910	43200	121	14100
29	56200	55	8290	---	---	---	43100	120	14000
30	52000	54	7620	---	---	---	41300	86	9540
31	48800	55	7200	---	---	---	38200	74	7600
TOTAL	1069600	---	198565	1880100	---	369980	1762000	---	264740

e Estimated.

11447650 SACRAMENTO RIVER AT FREEPORT, CA—Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT
	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)
	APRIL			MAY			JUNE		
1	34300	69	6380	24900	45	3040	19800	40	2140
2	31400	64	5470	24800	47	3160	19400	40	2100
3	29800	60	4860	24400	49	3260	20000	40	2160
4	28600	57	4360	24800	50	3370	20200	40	2180
5	27700	53	3960	24400	41	2720	21200	40	2290
6	27700	50	3700	23800	42	2700	21800	40	2350
7	27300	46	3400	22500	43	2600	21500	40	2320
8	27500	44	3270	21300	43	2500	20400	40	2200
9	28200	47	3570	21400	44	2550	18700	39	1980
10	28300	51	3860	21200	45	2550	17600	38	1810
11	29400	53	4180	20500	42	2300	16400	37	1640
12	30700	54	4500	19300	38	1970	16200	36	1570
13	34400	79	7320	18700	35	1760	15600	35	1470
14	36500	105	10400	18100	33	1620	15600	34	1430
15	35700	123	11900	18200	32	1560	15000	33	1340
16	34900	86	8140	17500	30	1430	15200	32	1320
17	34600	77	7220	16900	27	1240	15100	30	1220
18	34600	72	6750	16600	22	982	15200	28	1140
19	34700	68	6330	16700	27	1230	15200	26	1050
20	34200	63	5800	17100	27	1230	14900	24	950
21	33600	60	5480	17100	29	1330	15000	22	883
22	33200	65	5810	16800	31	1430	14900	20	817
23	31800	66	5670	17400	34	1610	14700	20	806
24	29900	66	5330	18400	37	1850	14600	21	814
25	28600	66	5100	18400	37	1810	14900	22	870
26	27500	62	4620	17900	38	1820	15400	23	973
27	26900	47	3390	17700	40	1890	15700	25	1060
28	26700	42	3020	17700	40	1910	17100	27	1230
29	26100	41	2920	18600	40	2010	19100	28	1460
30	25500	43	2980	18900	40	2040	20700	30	1670
31	---	---	---	19800	40	2140	---	---	---
TOTAL	920300	---	159690	611800	---	63612	517100	---	45243
	JULY			AUGUST			SEPTEMBER		
1	20900	30	1710	22900	40	2480	17300	24	1140
2	21000	31	1740	23300	40	2540	16600	24	1080
3	20600	31	1730	23200	41	2540	16500	24	1060
4	20800	31	1770	22400	41	2470	16500	24	1050
5	20400	32	1750	21500	38	2200	16600	23	1050
6	20500	32	1780	21400	35	2000	16300	23	1010
7	20800	33	1830	20600	34	1900	16400	23	1010
8	20700	33	1850	19700	34	1790	16400	23	997
9	21200	35	1990	18900	33	1690	16200	22	974
10	21400	37	2130	17800	33	1570	16200	22	962
11	21300	39	2240	17400	32	1520	16500	22	969
12	21400	41	2390	17100	32	1470	16900	21	981
13	21500	44	2530	17200	31	1460	16200	21	929
14	21500	44	2530	17100	31	1430	15100	22	896
15	22100	43	2580	17100	31	1410	15300	23	936
16	22200	43	2570	17000	30	1390	15400	22	928
17	22500	42	2580	16600	30	1340	15000	22	891
18	22900	42	2600	15600	29	1240	16000	22	936
19	23100	42	2600	15500	29	1210	16300	21	940
20	23900	41	2660	14800	29	1140	16700	21	948
21	23900	41	2640	15100	28	1150	15900	21	890
22	23800	40	2600	15300	28	1150	15300	20	843
23	23200	40	2510	15600	28	1160	15400	20	836
24	23300	40	2500	16100	27	1180	15000	20	803
25	23200	39	2470	16100	27	1160	14800	20	780
26	23400	39	2470	16300	26	1160	14600	19	758
27	23600	39	2500	16500	26	1160	14400	19	737
28	23700	39	2520	17400	26	1210	14500	19	731
29	23900	40	2550	17700	25	1210	15200	18	755
30	23700	40	2550	17900	25	1210	15400	18	754
31	23100	40	2490	17800	25	1190	---	---	---
TOTAL	689500	---	71360	558900	---	47730	474900	---	27574
YEAR	10975900		1681300						

11449500 KELSEY CREEK NEAR KELSEYVILLE, CA

LOCATION.—Lat 38°55'39", long 122°50'33", in SE 1/4 SE 1/4 sec.34, T.13 N., R.9 W., Lake County, Hydrologic Unit 18020116, on left bank 1.6 mi downstream from Widow Creek and 3.5 mi south of Kelseyville.

DRAINAGE AREA.—36.6 mi².

PERIOD OF RECORD.—October 1946 to current year.

REVISED RECORDS.—WSP 1285: 1947–48(M), 1950–52(P). WSP 1931: Drainage area. WDR CA-96-4: 1956–93(P).

GAGE.—Water-stage recorder. Datum of gage is 1,475.44 ft above sea level. Prior to July 16, 1955, at site 600 ft upstream at different datum.

REMARKS.—Records good. Some minor diversions upstream from station. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 8,600 ft³/s, Mar. 9, 1995, gage height, 13.80 ft; minimum daily, 0.13 ft³/s, Sept. 6–11, 1992.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,400 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	0915	2,520	9.26	Feb. 9	0415	5,100	11.62

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	8.2	9.7	294	19	60	264	120	49	21	9.3	6.7	5.8
2	8.3	9.7	144	18	52	206	106	48	22	9.2	6.8	5.9
3	8.3	9.9	382	18	48	234	95	51	23	9.2	6.8	5.9
4	8.1	9.8	157	17	45	173	88	48	22	9.6	6.7	5.8
5	8.0	9.5	110	17	41	148	98	45	21	9.4	6.8	5.5
6	7.9	9.6	106	17	521	130	91	43	20	9.2	7.1	5.5
7	7.8	23	71	17	1110	115	80	42	19	9.0	7.3	5.3
8	8.1	17	65	16	703	297	168	40	19	8.9	7.2	5.3
9	8.3	13	56	16	2120	368	127	40	18	8.5	7.1	5.3
10	8.3	11	50	16	489	234	116	39	17	8.2	7.0	5.4
11	8.4	11	45	15	285	183	666	38	17	7.9	7.2	5.2
12	8.4	11	41	15	205	150	302	37	17	7.6	7.3	5.2
13	8.4	10	42	15	161	130	203	36	16	7.4	7.0	5.2
14	8.5	10	47	15	135	180	158	35	16	7.3	6.8	5.2
15	8.6	11	39	16	110	183	132	34	16	7.6	6.7	5.1
16	8.5	10	36	20	359	143	116	33	16	7.8	6.6	5.0
17	8.3	15	33	21	441	124	104	32	15	7.8	6.4	5.1
18	8.2	13	32	123	330	111	95	31	14	7.6	6.2	5.1
19	8.3	11	30	250	244	103	86	31	14	7.6	6.4	5.1
20	8.3	11	29	336	307	106	79	30	13	7.8	6.2	5.1
21	8.2	12	27	197	433	93	75	30	13	7.9	6.1	5.1
22	8.2	17	26	254	287	86	72	28	13	7.7	5.9	5.3
23	8.4	462	24	434	220	105	68	27	12	7.6	5.8	5.2
24	15	156	23	185	236	406	65	25	11	7.6	5.8	5.2
25	13	50	23	125	486	638	62	25	12	7.4	5.7	5.0
26	10	45	23	92	261	304	59	24	11	7.2	5.6	5.0
27	9.6	48	22	72	206	217	57	23	11	7.2	5.7	4.9
28	9.5	33	21	61	305	174	55	22	11	7.1	5.6	4.9
29	9.5	63	20	55	---	148	54	22	9.8	7.2	5.5	4.8
30	9.4	1360	20	50	---	146	52	22	9.6	7.1	5.5	4.9
31	9.3	---	20	86	---	150	---	21	---	6.9	5.7	---
TOTAL	275.3	2481.2	2058	2608	10200	6049	3649	1051	469.4	247.8	199.2	157.3
MEAN	8.88	82.7	66.4	84.1	364	195	122	33.9	15.6	7.99	6.43	5.24
MAX	15	1360	382	434	2120	638	666	51	23	9.6	7.3	5.9
MIN	7.8	9.5	20	15	41	86	52	21	9.6	6.9	5.5	4.8
AC-FT	546	4920	4080	5170	20230	12000	7240	2080	931	492	395	312

SACRAMENTO RIVER BASIN

11449500 KELSEY CREEK NEAR KELSEYVILLE, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.3	46.5	127	209	213	152	78.7	32.0	13.4	5.81	3.63	3.80
MAX	154	334	688	929	919	640	429	163	64.1	19.2	9.40	16.3
(WY)	1963	1974	1956	1995	1986	1983	1982	1983	1998	1998	1998	1957
MIN	1.22	3.55	4.19	4.83	8.97	11.4	5.67	6.12	1.98	.46	.20	.16
(WY)	1992	1991	1991	1991	1977	1977	1977	1977	1977	1977	1977	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1947 - 1999	
ANNUAL TOTAL	52824.4		29445.2			
ANNUAL MEAN	145		80.7		74.1	
HIGHEST ANNUAL MEAN					206	
LOWEST ANNUAL MEAN					4.78	
HIGHEST DAILY MEAN	2060	Feb 3	2120	Feb 9	6020	Feb 17 1986
LOWEST DAILY MEAN	7.2	Sep 14	4.8	Sep 29	.13	Sep 6 1992
ANNUAL SEVEN-DAY MINIMUM	7.3	Sep 12	5.0	Sep 24	.13	Sep 5 1992
INSTANTANEOUS PEAK FLOW			5100	Feb 9	8600	Mar 9 1995
INSTANTANEOUS PEAK STAGE			11.62	Feb 9	13.80	Mar 9 1995
ANNUAL RUNOFF (AC-FT)	104800		58400		53700	
10 PERCENT EXCEEDS	406		218		156	
50 PERCENT EXCEEDS	43		19		13	
90 PERCENT EXCEEDS	8.2		5.8		2.6	

11450000 CLEAR LAKE AT LAKEPORT, CA

LOCATION.—Lat 39°02'21", long 122°54'44", in NE 1/4 NE 1/4 sec.25, T.14 N., R.10 W., Lake County, Hydrologic Unit 18020116, on pier behind 410 Esplanade Street in Lakeport.

DRAINAGE AREA.—528 mi².

PERIOD OF RECORD.—1874–1900 (incomplete), January 1913 to April 1982, October 1984 to current year.

GAGE.—Water-stage recorder. Datum of gage is 1,318.26 ft above sea level (California State Land Commission Benchmark). Prior to July 8, 1947, nonrecording gage, and July 8, 1947, to Mar. 17, 1949, at municipal wharf at foot of Third Street in Lakeport at datum 0.33 ft higher. Mar. 18, 1949, to Sept. 30, 1967, at private pier at foot of Fourth Street at datum 0.33 ft higher. Gage relocated at same datum, Apr. 20, 1982, and published as "at Clearlake" for 1982–84.

REMARKS.—This natural lake is regulated by gates on a dam at outlet, completed in 1915. Capacity between gage heights 0.00 and 7.56 ft, limits stipulated by court decree of 1920, about 319,000 acre-ft. Water is released down natural channel of Cache Creek (station 11451000), from which it is diverted for irrigation. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum gage height, 11.44 ft, Feb. 24, 1998, minimum observed, -3.50 ft, Sept. 24–27, 1920.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Mar. 4, 1983, reached a stage of 11.24 ft, present datum, from floodmarks.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.12	2.79	3.36	3.82	4.72	7.49	7.45	7.57	6.40	5.26	3.77	2.47
2	3.08	2.78	3.43	3.83	4.74	7.46	7.46	7.53	6.32	5.19	3.72	2.45
3	3.04	2.78	3.48	3.83	4.75	7.41	7.41	7.50	6.34	5.09	3.68	2.42
4	3.04	2.77	3.56	3.83	4.75	7.36	7.45	7.49	6.30	5.07	3.63	2.40
5	3.02	2.73	3.57	3.83	4.76	7.33	7.49	7.48	6.25	5.03	3.57	2.39
6	3.00	2.75	3.60	3.83	4.83	7.32	7.53	7.44	6.20	4.98	3.53	2.37
7	2.97	2.76	3.63	3.84	5.07	7.31	7.52	7.39	6.15	4.94	3.50	2.35
8	2.94	2.78	3.67	3.84	5.32	7.36	7.53	7.35	6.13	4.91	3.45	2.32
9	2.90	2.79	3.68	3.84	5.72	7.48	7.55	7.32	6.10	4.87	3.42	2.30
10	2.91	2.79	3.69	3.84	6.07	7.49	7.60	7.28	6.06	4.83	3.38	2.27
11	2.90	2.79	3.70	3.84	6.23	7.45	7.71	7.26	6.01	4.79	3.34	2.25
12	2.89	2.79	3.71	3.84	6.32	7.46	7.68	7.21	5.97	4.76	3.30	2.22
13	2.87	2.79	3.71	3.85	6.35	7.50	7.63	7.16	5.94	4.72	3.25	2.20
14	2.86	2.78	3.75	3.85	6.41	7.57	7.58	7.09	5.92	4.67	3.21	2.18
15	2.85	2.79	3.76	3.87	6.44	7.63	7.59	7.09	5.87	4.63	3.18	2.15
16	2.85	2.78	3.78	3.90	6.61	7.63	7.61	7.04	5.84	4.57	3.15	2.12
17	2.84	2.77	3.79	3.95	6.92	7.58	7.62	7.02	5.81	4.52	3.12	2.09
18	2.83	2.79	3.79	3.97	7.05	7.50	7.62	6.97	5.76	4.48	3.07	2.06
19	2.83	2.78	3.77	4.03	7.14	7.44	7.61	6.95	5.72	4.43	3.03	2.03
20	2.81	2.77	3.75	4.14	7.17	7.45	7.59	6.91	5.68	4.37	2.99	2.00
21	2.81	2.77	3.78	4.22	7.27	7.45	7.58	6.89	5.65	4.33	2.95	1.99
22	2.79	2.79	3.78	4.29	7.33	7.47	7.61	6.86	5.63	4.28	2.92	1.96
23	2.78	2.86	3.78	4.40	7.34	7.50	7.62	6.81	5.59	4.22	2.88	1.93
24	2.82	2.95	3.78	4.51	7.34	7.61	7.62	6.78	5.52	4.16	2.85	1.91
25	2.83	2.97	3.79	4.54	7.43	7.77	7.63	6.76	5.48	4.12	2.81	1.89
26	2.84	2.99	3.79	4.60	7.47	7.79	7.61	6.72	5.44	4.07	2.78	1.86
27	2.82	3.00	3.80	4.62	7.46	7.76	7.56	6.67	5.40	4.03	2.75	1.84
28	2.82	2.99	3.81	4.64	7.47	7.71	7.58	6.61	5.37	3.98	2.70	1.80
29	2.80	3.06	3.81	4.67	---	7.62	7.60	6.55	5.34	3.92	2.65	1.77
30	2.80	3.20	3.82	4.69	---	7.54	7.60	6.50	5.31	3.88	2.54	1.74
31	2.79	---	3.82	4.70	---	7.47	---	6.46	---	3.82	2.51	---
MEAN	2.89	2.84	3.71	4.11	6.30	7.51	7.57	7.05	5.85	4.55	3.15	2.12
MAX	3.12	3.20	3.82	4.70	7.47	7.79	7.71	7.57	6.40	5.26	3.77	2.47
MIN	2.78	2.73	3.36	3.82	4.72	7.31	7.41	6.46	5.31	3.82	2.51	1.74

11451000 CACHE CREEK NEAR LOWER LAKE, CA

LOCATION.—Lat 38°55'27", long 122°33'53", in sec.6, T.12 N., R.6 W., Lake County, Hydrologic Unit 18020116, on left bank 500 ft downstream from Clear Lake Dam, 1.9 mi downstream from Copsy Creek, and 2.5 mi northeast of Lower Lake.

DRAINAGE AREA.—528 mi².

PERIOD OF RECORD.—May 1944 to current year.

GAGE.—Water-stage recorder and rain gage (station 385525122335501). Datum of gage is 1,279.64 ft above sea level. Prior to Oct. 2, 1987, at datum 1.00 ft higher.

REMARKS.—Records fair. Flow completely regulated by Clear Lake (station 11450000) 500 ft upstream. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 10,200 ft³/s, Feb. 17, 1998, gage height, 11.01 ft, present datum; no flow, Nov. 8–20, 1977, Apr. 5, 6, 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	220	6.2	5.2	5.5	7.0	2530	883	435	694	553	553	300
2	200	6.3	5.2	5.5	7.1	2510	419	681	525	569	544	277
3	201	6.4	5.5	5.5	7.3	2550	276	676	445	559	565	237
4	196	5.1	5.5	5.5	7.5	2400	211	669	398	555	583	223
5	197	5.3	5.6	6.0	7.5	1620	210	670	361	557	567	232
6	207	5.3	5.7	7.8	7.6	1000	459	698	342	551	538	260
7	210	5.4	6.0	6.9	8.1	620	469	737	402	541	522	274
8	213	5.5	5.9	6.5	8.3	405	471	718	507	538	466	300
9	213	5.6	6.2	6.3	1040	1680	340	702	569	549	418	323
10	123	5.5	6.5	6.0	95	2330	557	726	625	551	389	294
11	10	5.6	6.5	6.1	9.4	1350	2340	730	566	544	458	271
12	9.7	5.7	6.5	6.1	9.5	556	2660	742	478	541	475	275
13	9.5	5.6	6.3	6.2	9.7	277	2650	744	441	541	530	281
14	9.3	5.7	7.1	6.3	9.8	448	1190	737	483	510	519	280
15	9.0	5.5	6.8	6.3	10	1250	412	729	542	547	477	276
16	8.5	5.5	6.6	6.3	10	2070	397	731	573	559	458	273
17	8.0	5.6	6.9	6.3	756	2560	529	724	584	578	466	271
18	7.7	5.5	7.1	6.5	2070	2510	526	747	598	591	517	273
19	7.3	5.6	7.5	6.5	2230	1210	530	717	594	574	554	274
20	7.0	5.5	7.8	6.5	2290	496	284	678	586	487	569	272
21	6.8	5.6	7.0	6.5	2440	480	140	692	527	522	532	270
22	6.8	5.4	5.8	6.5	2460	290	46	698	525	611	509	312
23	6.9	5.5	5.8	6.5	2450	337	20	696	599	701	532	331
24	7.0	5.2	5.8	6.6	2430	1970	20	713	629	742	574	337
25	6.8	5.0	5.8	6.5	2630	2870	19	749	578	761	589	340
26	6.6	5.0	5.7	6.6	2550	2680	255	801	527	700	562	350
27	6.6	5.0	5.8	6.8	2540	2680	261	823	521	599	528	340
28	6.6	5.0	5.8	6.8	2520	2660	23	833	487	582	517	334
29	6.7	4.9	5.8	6.8	---	2540	28	823	475	596	516	334
30	6.5	5.2	5.8	6.8	---	2580	20	793	484	601	503	343
31	6.3	---	5.6	7.0	---	2190	---	788	---	579	391	---
TOTAL	2139.6	164.2	191.1	198.0	28619.8	51649	16645	22400	15665	17989	15921	8757
MEAN	69.0	5.47	6.16	6.39	1022	1666	555	723	522	580	514	292
MAX	220	6.4	7.8	7.8	2630	2870	2660	833	694	761	589	350
MIN	6.3	4.9	5.2	5.5	7.0	277	19	435	342	487	389	223
AC-FT	4240	326	379	393	56770	102400	33020	44430	31070	35680	31580	17370
a	0.90	6.45	0.97	2.90	8.81	4.38	2.14	0.16	0.24	0.01	0.00	0.00

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	30.7	16.2	113	635	868	840	551	327	376	400	318	167
MAX	191	683	2584	3047	4988	4919	3538	951	684	651	514	325
(WY)	1996	1984	1984	1997	1998	1983	1958	1983	1998	1998	1999	1995
MIN	.40	.17	.14	.18	.17	.32	.42	.40	.29	.41	.71	.55
(WY)	1978	1978	1991	1991	1991	1955	1990	1990	1991	1977	1977	1977

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1945 - 1999
ANNUAL TOTAL	414250.9	180338.7	
ANNUAL MEAN	1135	494	
HIGHEST ANNUAL MEAN			384
LOWEST ANNUAL MEAN			1342
HIGHEST DAILY MEAN	7200	Feb 18	.67
LOWEST DAILY MEAN	3.6	Jan 1	1990
ANNUAL SEVEN-DAY MINIMUM	4.0	Jan 1	2870
INSTANTANEOUS PEAK FLOW			Mar 25
INSTANTANEOUS PEAK STAGE			4.9
ANNUAL RUNOFF (AC-FT)	821700	357700	Nov 29
10 PERCENT EXCEEDS	4260	1100	.00
50 PERCENT EXCEEDS	481	340	.00
90 PERCENT EXCEEDS	5.6	5.7	Nov 8 1977
			Nov 8 1977
			Feb 17 1998
			Feb 17 1998
			11.01
			Feb 17 1998
			278600
			634
			62
			1.1

a Precipitation, in inches.

11451100 NORTH FORK CACHE CREEK AT HOUGH SPRINGS, NEAR CLEARLAKE OAKS, CA

LOCATION.—Lat 39°09'56", long 122°37'08", in SE 1/4 NW 1/4 sec.10, T.15 N., R.7 W., Lake County, Hydrologic Unit 18020116, on right bank 0.5 mi upstream from Spanish Creek, 0.9 mi upstream from Hough Springs, and 10 mi northeast of Clearlake Oaks.

DRAINAGE AREA.—60.2 mi².

PERIOD OF RECORD.—October 1971 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 1,534.13 ft above sea level. Prior to Jan. 13, 1980, at datum 2.0 ft higher. Recording rain gage (station 391056122420801) 4.7 mi northwest of gage. Elevation of rain gage is 2,050 ft above sea level, from topographic map.

REMARKS.—Records good. No regulation or diversion upstream from station. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 13,200 ft³/s, Jan. 1, 1997, gage height, 14.14 ft, from rating curve extended above 3,900 ft³/s on basis of slope-area measurement at gage height 11.23 ft; no flow at times in 1972, 1976–77, 1987–88, 1990–92, 1994.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 1,500 ft³/s, or maximum.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 9	0615	4,170	10.26	Mar. 25	0100	1,620	7.61

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	6.7	9.6	434	47	106	712	226	74	31	11	4.9	3.3
2	6.6	9.2	310	45	97	565	205	73	31	11	5.0	3.3
3	6.9	9.2	641	44	93	531	189	76	33	10	5.0	3.2
4	6.9	9.2	338	43	89	432	174	70	31	10	4.9	3.2
5	6.4	9.2	236	42	83	357	176	66	29	10	4.6	3.1
6	6.4	9.6	188	41	465	305	162	63	27	9.5	5.6	2.9
7	6.3	42	146	41	1440	261	151	60	27	9.2	5.8	2.9
8	6.5	26	173	39	1000	316	178	58	26	8.9	5.4	2.7
9	6.8	16	140	38	2520	399	161	57	25	8.7	5.2	2.7
10	6.8	15	121	38	1020	323	177	55	25	8.4	5.2	2.7
11	6.9	16	109	38	592	286	446	54	24	7.8	5.4	2.7
12	6.7	14	102	37	464	261	378	52	22	7.5	5.2	2.6
13	6.9	13	105	36	394	253	343	51	22	7.2	5.0	2.6
14	6.9	12	112	36	303	376	301	49	21	7.0	4.8	2.7
15	7.0	12	99	39	242	431	259	48	21	6.8	4.6	2.5
16	6.7	13	91	59	626	356	225	47	20	6.7	4.4	2.5
17	6.5	24	86	64	916	310	198	45	19	6.7	4.2	2.5
18	6.5	21	82	290	694	274	177	44	18	6.7	4.1	2.4
19	6.4	16	77	207	599	245	158	43	18	6.5	4.1	2.4
20	6.0	14	74	413	613	252	142	43	17	6.5	4.1	2.3
21	6.0	15	66	408	743	223	132	43	16	6.6	4.0	2.4
22	6.1	25	63	388	632	207	122	40	16	6.5	3.9	2.3
23	6.2	541	61	727	590	223	111	39	15	6.3	3.7	2.3
24	15	248	58	394	589	684	105	38	14	6.0	3.3	2.3
25	12	96	56	286	884	1080	98	38	14	5.9	3.2	2.2
26	9.1	89	55	219	632	623	93	36	14	5.7	3.2	2.2
27	8.8	91	54	172	552	479	88	35	14	5.5	3.3	2.1
28	8.6	66	52	142	736	377	85	34	13	5.3	3.2	2.0
29	8.8	214	51	125	---	312	81	34	12	5.2	3.1	2.0
30	8.5	818	49	114	---	283	76	33	12	5.2	3.0	2.1
31	8.6	---	49	130	---	257	---	31	---	5.0	3.2	---
TOTAL	230.5	2513.0	4278	4742	17714	11993	5417	1529	627	229.3	134.6	77.1
MEAN	7.44	83.8	138	153	633	387	181	49.3	20.9	7.40	4.34	2.57
MAX	15	818	641	727	2520	1080	446	76	33	11	5.8	3.3
MIN	6.0	9.2	49	36	83	207	76	31	12	5.0	3.0	2.0
AC-FT	457	4980	8490	9410	35140	23790	10740	3030	1240	455	267	153
a	1.61	12.49	1.98	5.41	14.72	6.18	2.61	0.10	0.08	0.00	0.00	0.00

a Precipitation, in inches.

11451100 NORTH FORK CACHE CREEK AT HOUGH SPRINGS, NEAR CLEARLAKE OAKS, CA—Continued

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

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.22	57.3	144	321	347	286	120	48.1	16.5	4.82	1.68	1.29
MAX	12.4	405	738	1750	1382	1258	631	242	90.9	26.7	10.8	6.75
(WY)	1980	1982	1997	1995	1998	1995	1982	1995	1998	1998	1998	1998
MIN	.19	1.11	1.17	4.74	9.59	9.88	5.13	3.93	1.69	.19	.000	.000
(WY)	1992	1977	1977	1991	1991	1977	1977	1977	1977	1977	1977	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1972 - 1999	
ANNUAL TOTAL	92190.6		49484.5			
ANNUAL MEAN	253		136		111	
HIGHEST ANNUAL MEAN					335	
LOWEST ANNUAL MEAN					3.67	
HIGHEST DAILY MEAN	3650	Feb 3	2520	Feb 9	8340	Feb 17 1986
LOWEST DAILY MEAN	5.6	Sep 17	2.0	Sep 28	.00	Aug 27 1972
ANNUAL SEVEN-DAY MINIMUM	6.0	Sep 13	2.1	Sep 24	.00	Aug 27 1972
INSTANTANEOUS PEAK FLOW			4170	Feb 9	13200	Jan 1 1997
INSTANTANEOUS PEAK STAGE			10.26	Feb 9	14.14	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	182900		98150		80760	
10 PERCENT EXCEEDS	780		410		268	
50 PERCENT EXCEEDS	75		37		12	
90 PERCENT EXCEEDS	6.9		3.3		.48	

11451300 NORTH FORK CACHE CREEK NEAR CLEARLAKE OAKS, CA

LOCATION.—Lat 39°04'50", long 122°32'07", in SE 1/4 SW 1/4 sec.4, T.14 N., R.6 W., Lake County, Hydrologic Unit 18020116, on right bank 2,500 ft downstream from Indian Valley Dam and 8 mi northeast of Clearlake Oaks.

DRAINAGE AREA.—121 mi².

PERIOD OF RECORD.—October 1983 to September 1985 (operated as a low-flow station only), October 1985 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 1,320 ft above sea level, from topographic map. Recording rain gage (station 390500122321601) located on top of Indian Valley Dam.

REMARKS.—Records good except for estimated daily discharges, which are fair. Flow completely regulated by Indian Valley Reservoir, capacity 300,000 acre-ft. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 7,950 ft³/s, Feb. 11, 1998, gage height 10.61; maximum gage height, 10.62 ft, Jan. 2, 1997; minimum daily, 0.37 ft³/s, Oct. 15, 1994.

EXTREMES OUTSIDE PERIOD OF RECORD.—Flood of Jan. 26, 1983, reached a stage of 12.74 ft, present datum, discharge about 9,500 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	77	20	15	15	265	990	14	164	177	370	139	249
2	102	20	15	15	118	970	13	12	254	355	138	249
3	101	18	15	15	13	690	13	12	254	356	138	246
4	101	13	291	15	13	374	13	12	253	355	138	201
5	100	13	431	15	13	271	13	12	254	355	138	155
6	57	14	453	18	13	473	13	12	254	355	138	133
7	13	14	457	14	124	440	13	12	178	358	138	119
8	13	14	457	15	997	271	13	12	130	367	138	161
9	13	14	439	15	2260	524	13	12	127	366	163	186
10	119	14	439	15	2380	661	13	12	135	366	153	186
11	188	14	439	15	2340	565	13	12	214	366	56	167
12	192	14	438	15	2300	370	13	12	258	367	11	128
13	212	14	438	15	1870	271	13	12	257	367	11	113
14	212	14	437	15	1630	333	13	12	259	368	11	113
15	212	15	334	15	722	489	13	12	261	312	11	113
16	211	14	171	15	276	455	13	12	260	274	11	e111
17	124	14	133	15	970	393	13	12	260	275	11	e113
18	22	14	86	15	1670	267	13	12	260	275	11	e113
19	22	14	56	16	1920	267	20	12	261	275	10	e111
20	22	14	55	16	1230	267	162	12	261	275	15	e113
21	23	14	35	15	790	191	257	12	260	184	11	e115
22	23	14	15	183	791	14	316	12	260	138	11	e112
23	23	14	15	265	912	14	344	12	261	138	10	e51.0
24	23	14	15	265	1230	14	344	12	263	137	11	5.4
25	23	14	15	265	1470	413	344	12	334	137	10	5.2
26	23	14	15	265	1090	775	154	12	405	226	10	5.2
27	23	14	15	265	786	777	199	12	405	274	10	5.2
28	23	14	15	265	829	774	401	12	404	184	10	5.5
29	23	14	15	265	---	450	427	12	404	139	11	5.5
30	27	15	15	265	---	277	492	12	404	139	10	5.9
31	31	---	15	265	---	122	---	12	---	139	180	---
TOTAL	2378	436	5784	2887	29022	13162	3695	524	7967	8592	1863	3395.9
MEAN	76.7	14.5	187	93.1	1036	425	123	16.9	266	277	60.1	113
MAX	212	20	457	265	2380	990	492	164	405	370	180	249
MIN	13	13	15	14	13	14	13	12	127	137	10	5.2
AC-FT	4720	865	11470	5730	57570	26110	7330	1040	15800	17040	3700	6740
a	0.92	3.92	1.04	2.59	6.90	3.31	1.26	0.04	0.08	0.00	0.00	0.00

e Estimated.

a Precipitation, in inches.

11451300 NORTH FORK CACHE CREEK NEAR CLEARLAKE OAKS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	26.4	13.2	24.1	166	367	202	185	189	215	199	127	80.6
MAX	172	35.5	187	1675	1964	849	557	717	576	370	342	348
(WY)	1998	1997	1999	1997	1998	1986	1987	1987	1987	1988	1996	1996
MIN	6.65	6.96	7.21	7.02	4.62	1.90	8.26	6.98	8.10	8.16	8.17	9.10
(WY)	1994	1995	1994	1994	1994	1994	1993	1993	1993	1993	1990	1990

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1986 - 1999	
ANNUAL TOTAL	103726.7		79705.9			
ANNUAL MEAN	284		218		148	
HIGHEST ANNUAL MEAN					326	
LOWEST ANNUAL MEAN					8.54	
HIGHEST DAILY MEAN	6690	Feb 11	2380	Feb 10	6690	Feb 11 1998
LOWEST DAILY MEAN	9.0	Jan 1	5.2	Sep 25	.37	Oct 15 1994
ANNUAL SEVEN-DAY MINIMUM	9.3	Jan 1	5.4	Sep 24	1.8	Mar 9 1994
INSTANTANEOUS PEAK FLOW			2440	Feb 9	7950	Feb 11 1998
INSTANTANEOUS PEAK STAGE			7.10	Feb 9	10.62	Jan 2 1997
ANNUAL RUNOFF (AC-FT)	205700		158100		107300	
10 PERCENT EXCEEDS	438		451		379	
50 PERCENT EXCEEDS	38		113		12	
90 PERCENT EXCEEDS	13		12		7.2	

11451715 BEAR CREEK ABOVE HOLSTEN CHIMNEY CANYON, NEAR RUMSEY, CA

LOCATION.—Lat 38°57'28", long 122°20'30", in NW 1/4 SE 1/4 sec.19, T.13 N., R.4 W., Colusa County, Hydrologic Unit 18020116, on left bank, downstream side Highway 16 bridge, 2.9 mi upstream from confluence with Cache Creek, 7.4 mi northwest of Rumsey.

DRAINAGE AREA.—94.90 mi².

PERIOD OF RECORD.—November 1997 to current year.

GAGE.—Water-stage recorder and crest-stage gage. Elevation of gage is 920 ft above sea level, from topographic map.

REMARKS.—Records fair except for estimated daily discharges, which are poor. Some minor diversions upstream from station. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 8,510 ft³/s, Feb. 2, 1998, gage height, 13.57 ft from rating curve extended above 3,000 ft³/s; minimum daily, 1.7 ft³/s, Sept. 28, 1999.

EXTREMES OUTSIDE PERIOD OF RECORD.—Maximum discharge 9,200 ft³/s, Jan. 5, 1965.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 2,000 ft³/s, or maximum.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 9	0645	4,120	11.34				

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	e4.8	6.1	143	7.4	28	87	68	28	10	e5.4	3.1	2.7
2	e4.7	6.1	38	7.4	20	73	58	28	11	e5.3	3.2	3.0
3	4.7	6.1	34	7.6	18	65	53	29	14	e5.2	3.2	2.8
4	4.5	6.1	31	7.4	17	58	49	28	13	e5.1	3.1	2.7
5	4.3	6.1	21	7.4	16	56	52	e27	12	e5.0	3.2	2.7
6	4.3	5.9	21	7.7	26	55	55	e26	11	e4.9	3.6	2.7
7	4.6	7.3	17	7.8	499	51	49	e24	10	e4.8	3.8	2.6
8	5.3	6.9	16	7.5	143	54	85	e23	10	e4.7	3.7	2.5
9	5.1	6.0	15	7.2	1410	175	59	e22	10	e4.6	3.5	2.5
10	5.2	5.8	13	7.3	183	85	51	e21	10	4.5	3.7	2.3
11	5.2	6.3	12	7.5	86	62	213	e20	9.6	4.4	4.0	2.5
12	5.1	5.8	12	7.6	63	52	135	e19	9.3	4.4	3.8	2.2
13	5.4	5.5	11	7.7	52	48	76	e18	9.1	4.2	3.4	2.1
14	5.4	5.4	12	7.5	49	55	62	e17	8.9	4.0	3.5	1.9
15	5.7	5.5	10	8.2	38	169	56	e17	8.8	3.9	3.4	2.0
16	5.2	5.5	9.6	10	385	76	52	e16	8.7	3.9	3.2	1.9
17	5.0	6.0	9.3	9.4	421	61	49	e16	8.6	3.8	3.0	2.0
18	5.1	5.8	9.3	9.4	143	55	47	15	8.2	3.8	2.9	1.9
19	5.3	5.2	9.1	13	117	53	44	e15	8.0	3.6	2.9	1.9
20	5.1	5.5	8.8	32	112	61	44	e14	7.8	3.5	3.0	2.1
21	5.1	6.2	8.3	30	365	63	43	e14	7.5	3.5	3.2	2.2
22	5.4	7.2	8.0	21	125	55	41	e14	7.3	3.4	3.0	2.2
23	5.5	15	7.9	33	81	52	38	e14	6.8	3.5	3.1	2.2
24	7.9	28	7.9	28	67	142	37	e14	6.4	3.3	3.1	2.3
25	9.1	17	7.7	19	157	612	36	e13	6.2	3.5	3.0	2.2
26	6.5	11	7.9	17	82	171	34	e13	6.3	3.6	3.0	2.1
27	6.0	10	8.1	15	65	107	33	e13	6.2	3.7	3.1	1.8
28	5.9	9.4	7.8	13	67	85	33	12	6.0	3.3	3.1	1.7
29	6.4	17	7.7	13	---	75	31	11	5.8	3.3	2.8	1.8
30	6.1	179	7.7	13	---	70	30	11	5.5	3.2	2.6	1.8
31	5.9	---	7.7	34	---	79	---	11	---	3.2	2.5	---
TOTAL	169.8	418.7	538.8	423.0	4835	2962	1713	563	262.0	126.5	99.7	67.3
MEAN	5.48	14.0	17.4	13.6	173	95.5	57.1	18.2	8.73	4.08	3.22	2.24
MAX	9.1	179	143	34	1410	612	213	29	14	5.4	4.0	3.0
MIN	4.3	5.2	7.7	7.2	16	48	30	11	5.5	3.2	2.5	1.7
AC-FT	337	830	1070	839	9590	5880	3400	1120	520	251	198	133

e Estimated.

11451715 BEAR CREEK ABOVE HOLSTEN CHIMNEY CANYON, NEAR RUMSEY, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.48	14.0	26.1	133	601	138	91.5	71.2	32.7	9.16	4.59	3.79
MAX	5.48	14.0	34.9	252	1029	180	126	124	56.6	14.2	5.97	5.34
(WY)	1999	1999	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
MIN	5.48	14.0	17.4	13.6	173	95.5	57.1	18.2	8.73	4.08	3.22	2.24
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999

SUMMARY STATISTICS

	FOR 1998 CALENDAR YEAR				FOR 1999 WATER YEAR				WATER YEARS 1998 - 1999			
ANNUAL TOTAL	53433.1				12178.8							
ANNUAL MEAN	146				33.4				33.4			
HIGHEST ANNUAL MEAN									33.4			
LOWEST ANNUAL MEAN									33.4			
HIGHEST DAILY MEAN	2660		Feb 3		1410		Feb 9		2660		Feb 3 1998	
LOWEST DAILY MEAN	4.0		Aug 13		1.7		Sep 28		1.7		Sep 28 1999	
ANNUAL SEVEN-DAY MINIMUM	4.6		Aug 10		2.0		Sep 13		2.0		Sep 13 1999	
INSTANTANEOUS PEAK FLOW					4120				Feb 9			
INSTANTANEOUS PEAK STAGE					11.34				Feb 9			
ANNUAL RUNOFF (AC-FT)	106000				24160				24170			
10 PERCENT EXCEEDS	398				67				189			
50 PERCENT EXCEEDS	27				8.3				16			
90 PERCENT EXCEEDS	5.2				3.0				3.6			

11451800 CACHE CREEK AT RUMSEY, CA

LOCATION.—Lat 38°53'26", long 122°14'14", in Canada de Capay Grant, Yolo County, Hydrologic Unit 18020110, midstream on Arbuckle Bridge at Rumsey.

DRAINAGE AREA.—963.55 mi².

PERIOD OF RECORD.—Water years 1976, 1996 to current year.

CHEMICAL DATA: February 1996 to current year.

SEDIMENT DATA: December 1975 to September 1976, February 1996 to current year.

REMARKS.—Records of sediment discharge from December 1975 to September 1976 were obtained from the California Department of Water Resources. DWR has provided discharge data from December 1975 to current year. This station replaced former station 11451760 (Cache Creek above Rumsey) in September 1976 and was reestablished February 1996 for NAWQA water-quality and sediment sampling purposes.

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

DATE	TIME	DIS-	SPE-	PH	TEMPER-	BARO-	OXYGEN,	ALKA-	NITRO-	
		CHARGE,	CIFIC	WATER		METRIC		LINITY		GEN,
		INST.	CON-	WHOLE	ATURE	PRES-	SOLVED	WAT.DIS	NITRITE	
		CUBIC	DUCT-	FIELD	(STAND-	SURE	(PER-	GRAN T.	DIS-	
		FEET	ANCE	(FIELD	ARD	(MM	DIS-	FIELD	SOLVED	
		PER		TEMPER-	WATER	OF	SOLVED	SATUR-	CACO3	
		SECOND	(US/CM)	ATURE	(DEG C)	HG)	(MG/L)	ATION)	(MG/L)	
		(00061)	(00095)	UNITS)	(00010)	(00025)	(00300)	(00301)	(29802)	
				(00400)					(00613)	
FEB										
21...	0530	4700	296	8.2	7.1	754	11.9	99	130	<.01
MAR										
14...	2300	--	329	8.3	--	744	--	--	130	<.01
15...	0030	1400	326	8.4	9.4	744	11.2	100	120	<.01
15...	0620	2200	362	8.1	8.9	744	11.3	100	140	<.01
15...	1110	2170	346	8.2	9.8	744	11.1	100	120	<.01
24...	1130	720	364	8.1	10.9	746	10.9	101	140	<.01
APR										
21...	1100	463	382	8.4	15.8	750	11.1	114	140	<.01
MAY										
18...	1140	667	300	8.5	19.3	749	10.2	113	130	<.01
JUN										
16...	1100	711	276	8.4	21.8	748	11.4	133	110	<.01
JUL										
21...	1230	583	262	8.5	21.0	752	9.70	110	108	<.01
AUG										
18...	1100	322	280	8.7	22.6	747	8.30	98	120	<.01

DATE	NITRO-	NITRO-	NITRO-	NITRO-	PHOS-	PHOS-	PHOS-	CARBON,	CARBON,
	GEN,	GEN,	GEN,AM-	GEN,AM-					
	NO2+NO3	AMMONIA	MONIA +	MONIA +	PHOS-	PHORUS	PHORUS	CARBON,	ORGANIC
	DIS-	DIS-	ORGANIC	ORGANIC	PHORUS	DIS-	DIS-	ORGANIC	SUS-
	SOLVED	SOLVED	TOTAL	DIS.	TOTAL	SOLVED	SOLVED	SOLVED	TOTAL
	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L
	AS N)	AS N)	AS N)	AS N)	AS P)	AS P)	AS P)	AS C)	AS C)
	(00631)	(00608)	(00625)	(00623)	(00665)	(00666)	(00671)	(00681)	(00689)
FEB									
21...	.08	<.02	.8	.2	.53	.02	.02	3.0	3.2
MAR									
14...	.10	<.02	.2	e.08	.091	.009	<.01	1.9	.7
15...	.11	<.02	.3	.1	.11	.008	.01	2.1	.8
15...	.10	<.02	.6	.1	.26	.012	.01	2.4	1.8
15...	.08	.02	.4	.1	.14	.012	.01	2.6	.7
24...	.09	<.02	.3	.2	.051	.008	<.01	2.3	.4
APR									
21...	.10	<.02	.1	e.08	.007	.006	<.01	2.0	.3
MAY									
18...	<.05	<.02	.3	.2	.065	.023	.02	4.0	.7
JUN									
16...	.06	<.02	.4	.3	<.004	.01	<.01	2.8	1.0
JUL									
21...	<.05	<.02	.4	.3	.036	.013	<.01	2.9	.4
AUG									
18...	<.05	<.02	1.5	.4	.20	.018	<.01	4.2	--

e Estimated.

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

SACRAMENTO RIVER BASIN

11451800 CACHE CREEK AT RUMSEY, 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. % FINER THAN .062 MM (70331)
FEB						
21...N	0530	4700	7.1	607	7700	91
MAR						
14...N	2300	--	--	90	--	79
15...N	0030	1400	9.4	113	427	86
15...N	0620	2200	8.9	313	1860	90
15...N	1110	2170	9.8	158	926	91
24...N	1130	720	10.9	31	60	82
APR						
21...N	1100	463	15.8	9	11	88
MAY						
18...N	1140	667	19.3	27	49	86
JUN						
15...N	1100	711	21.8	32	61	84
JUL						
21...N	1230	583	21.0	12	19	91
AUG						
18...N	1100	322	22.6	39	34	94

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

11452500 CACHE CREEK AT YOLO, CA

LOCATION.—Lat 38°43'38", long 121°48'22", in Rio Jesus Maria Grant, Yolo County, Hydrologic Unit 18020129, on left bank 35 ft upstream from Interstate 5 highway bridge, 0.5 mi south of Yolo, and 7.3 mi downstream from Moore Dam.

DRAINAGE AREA.—1,139 mi².

PERIOD OF RECORD.—January 1903 to current year. Records for water year 1903 incomplete; yearly estimate published in WSP 1315-A.

WATER TEMPERATURE: Water years 1959–65, November 1966 to February 1967.

SEDIMENT DATA: Water years 1959–65, November 1966 to February 1967 (daily record), 1986 (periodic record).

REVISED RECORDS.—WSP 1315-A: 1914(M). WSP 1345: 1906. WSP 1445: 1955. WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level. See WSP 2131 for history of changes prior to Apr. 25, 1969. Apr. 25, 1969, to July 1976, at site 765 ft upstream at same datum.

REMARKS.—Records good. Some regulation by Clear Lake (station 11450000) beginning in 1915 and Indian Valley Reservoir beginning in 1974, capacity, 300,000 acre-ft. Diversions for irrigation of about 30,000 acres between Capay and Yolo, from data furnished by Clear Lake Water Co. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 41,400 ft³/s, Feb. 25, 1958, gage height, 85.35 ft, present datum; maximum stage observed, 86.4 ft (corrected), present datum, Mar. 10, 1904; 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	108	24	633	66	441	4660	2870	61	25	8.4	43	14
2	110	48	308	66	369	4600	1400	58	36	18	59	23
3	117	51	180	64	311	4540	1020	123	66	38	63	37
4	118	53	271	61	156	4280	805	91	48	47	53	29
5	116	51	314	58	122	3650	683	93	55	52	45	31
6	109	52	482	58	120	2350	685	82	54	52	48	17
7	118	59	502	57	752	2240	905	71	40	47	49	5.6
8	92	57	497	57	1630	1500	953	77	32	42	48	9.1
9	71	56	500	58	5320	1600	1130	74	40	29	51	12
10	68	56	476	56	5060	4120	791	56	39	31	48	21
11	70	56	472	55	3150	3880	1410	51	28	40	59	29
12	68	54	470	54	2770	2270	4310	55	26	38	63	35
13	62	54	466	54	2610	1420	3890	64	29	20	46	43
14	69	55	466	53	2040	1150	3580	69	13	19	29	34
15	74	53	461	54	1860	1870	1340	65	14	26	51	24
16	75	52	403	56	1020	2770	805	54	35	46	49	25
17	75	52	306	59	2840	3810	607	58	34	44	30	23
18	79	53	201	57	3960	3960	668	51	36	44	15	22
19	68	53	192	60	4870	3660	627	46	25	52	13	22
20	30	53	143	99	4950	1690	563	54	26	53	25	33
21	15	53	124	237	5070	1380	362	50	38	46	50	38
22	13	56	117	198	4790	1210	325	31	44	52	48	35
23	11	60	107	233	4570	771	250	47	20	35	45	43
24	15	68	89	554	4550	811	205	47	18	17	33	30
25	13	103	82	435	5110	4770	156	51	37	24	30	18
26	13	100	78	389	5140	5090	106	47	37	37	31	30
27	13	82	75	364	4610	4810	118	57	55	46	37	58
28	14	75	72	345	4450	4660	145	70	62	63	38	67
29	13	75	71	335	---	4540	106	62	53	61	41	63
30	12	91	69	333	---	4140	78	56	24	31	38	61
31	13	---	68	355	---	4100	---	31	---	21	30	---
TOTAL	1842	1805	8695	4980	82641	96302	30893	1902	1089	1179.4	1308	931.7
MEAN	59.4	60.2	280	161	2951	3107	1030	61.4	36.3	38.0	42.2	31.1
MAX	118	103	633	554	5320	5090	4310	123	66	63	63	67
MIN	11	24	68	53	120	771	78	31	13	8.4	13	5.6
AC-FT	3650	3580	17250	9880	163900	191000	61280	3770	2160	2340	2590	1850

SACRAMENTO RIVER BASINE

11452500 CACHE CREEK AT YOLO, CA—Continued

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

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	12.6	61.5	431	1408	2036	1538	880	200	63.8	27.1	12.7	7.81
MAX	335	1593	5644	7446	12750	10930	6353	1655	784	421	189	105
(WY)	1963	1984	1984	1914	1998	1983	1958	1904	1906	1907	1907	1998
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1904	1906	1906	1920	1920	1920	1924	1919	1913	1912	1910	1903

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1903 - 1999

ANNUAL TOTAL	706535	233568.1	
ANNUAL MEAN	1936	640	548
HIGHEST ANNUAL MEAN			2449
LOWEST ANNUAL MEAN			.000
HIGHEST DAILY MEAN	27100	Feb 3	29300
LOWEST DAILY MEAN	11	Oct 23	.00
ANNUAL SEVEN-DAY MINIMUM	13	Oct 25	.00
INSTANTANEOUS PEAK FLOW			9830
INSTANTANEOUS PEAK STAGE			64.62
ANNUAL RUNOFF (AC-FT)	1401000	463300	396800
10 PERCENT EXCEEDS	5500	2800	1430
50 PERCENT EXCEEDS	201	61	2.0
90 PERCENT EXCEEDS	58	24	.00

11453000 YOLO BYPASS NEAR WOODLAND, CA

LOCATION.—Lat 38°40'40", long 121°38'35", unsurveyed, Yolo County, Hydrologic Unit 18020109, on left bank 300 ft upstream from Sacramento and Woodland Railroad Bridge, 6 mi upstream from Sacramento Bypass, 6 mi downstream from Fremont Weir, and 7 mi east of Woodland.

PERIOD OF RECORD.—October 1939 to current year (since October 1977, high-flow records only). Monthly discharge only for some periods, published in WSP 1315-A.

SEDIMENT DATA: Water years 1957-61, 1980.

REVISED RECORDS.—WDR CA-96-4: 1995(M).

GAGE.—Water-stage recorder. Datum of gage is 3.41 ft below sea level. Prior to Dec. 17, 1941, nonrecording gage, and Dec. 18–31, 1941, water-stage recorder, at datum 0.73 ft higher. Prior to Sept. 30, 1977, a supplementary water-stage recorder 6 mi downstream at different datum recorded low flow.

REMARKS.—Flow is from Cache Creek and Knights Landing Ridge Cut plus floodwater passing over Fremont Weir. Beginning October 1977, only flows above 1,000 ft³/s are computed. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 374,000 ft³/s, Feb. 20, 1986, gage height, 34.87 ft; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 33,900 ft³/s, Feb. 10, gage height, 26.47 ft.

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	---	---	1280	---	---	12700	4080	---	---	---	---	---
2	---	---	1880	---	---	16300	3240	---	---	---	---	---
3	---	---	2110	---	---	18400	2450	---	---	---	---	---
4	---	---	1960	---	---	20000	1940	---	---	---	---	---
5	---	---	1760	---	---	19700	1540	---	---	---	---	---
6	---	---	1550	---	---	19100	1710	---	---	---	---	---
7	---	---	1460	---	---	17600	1450	---	---	---	---	---
8	---	---	1660	---	---	15700	1450	---	---	---	---	---
9	---	---	1620	---	1380	14200	1620	---	---	---	---	---
10	---	---	1160	---	15400	12500	1620	---	---	---	---	---
11	---	---	---	---	31100	10200	1600	---	---	---	---	---
12	---	---	---	---	27700	7460	2790	---	---	---	---	---
13	---	---	---	---	21200	5090	3960	---	---	---	---	---
14	---	---	---	---	15500	3620	4070	---	---	---	---	---
15	---	---	---	---	10700	2520	3450	---	---	---	---	---
16	---	---	---	---	6900	2890	2350	---	---	---	---	---
17	---	---	---	---	6440	3510	1770	---	---	---	---	---
18	---	---	---	---	20800	3950	1410	---	---	---	---	---
19	---	---	---	---	29200	3970	1200	---	---	---	---	---
20	---	---	---	---	31300	3550	1150	---	---	---	---	---
21	---	---	---	---	31500	2520	1180	---	---	---	---	---
22	---	---	---	---	33100	2150	1130	---	---	---	---	---
23	---	---	---	---	30300	1870	---	---	---	---	---	---
24	---	---	---	---	23800	1550	---	---	---	---	---	---
25	---	1120	---	---	18700	2430	---	---	---	---	---	---
26	---	1110	---	---	16400	4770	---	---	---	---	---	---
27	---	1090	---	---	14400	5150	---	---	---	---	---	---
28	---	1060	---	---	12500	5000	---	---	---	---	---	---
29	---	---	---	---	---	4740	---	---	---	---	---	---
30	---	---	---	---	---	4490	---	---	---	---	---	---
31	---	---	---	---	---	4290	---	---	---	---	---	---
TOTAL	---	---	---	---	---	251920	---	---	---	---	---	---
MEAN	---	---	---	---	---	8126	---	---	---	---	---	---
MAX	---	---	---	---	---	20000	---	---	---	---	---	---
MIN	---	---	---	---	---	1550	---	---	---	---	---	---
AC-FT	---	---	---	---	---	499700	---	---	---	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1977, BY WATER YEAR (WY)

	441	738	5638	13230	11240	3398	3849	430	144	20.7	26.1	51.0
MEAN	441	738	5638	13230	11240	3398	3849	430	144	20.7	26.1	51.0
MAX	13420	10890	48790	86470	92890	27910	37310	4546	1420	107	84.9	155
(WY)	1963	1951	1956	1970	1958	1958	1958	1952	1967	1958	1958	1954
MIN	1.01	2.19	.92	2.43	.88	3.55	.083	.55	.53	.000	.000	.63
(WY)	1977	1960	1977	1977	1977	1977	1976	1977	1977	1966	1966	1977

SUMMARY STATISTICS

WATER YEARS 1946 - 1977

ANNUAL MEAN	3230
HIGHEST ANNUAL MEAN	13020
LOWEST ANNUAL MEAN	1.53
HIGHEST DAILY MEAN	259000
LOWEST DAILY MEAN	.00
ANNUAL SEVEN-DAY MINIMUM	.00
INSTANTANEOUS PEAK FLOW	265000
INSTANTANEOUS PEAK STAGE	32.48
ANNUAL RUNOFF (AC-FT)	2340000
10 PERCENT EXCEEDS	3080
50 PERCENT EXCEEDS	35
90 PERCENT EXCEEDS	1.9

11453120 YOLO BYPASS AT INTERSTATE HIGHWAY 80, NEAR WEST SACRAMENTO, CA

LOCATION.—Lat 38°34'04", long 121°36'51", in SE 1/4 NW 1/4 sec. 2, T.8 N., R.3 E, Yolo County, Hydrologic Unit 18020109, at center of bikepath bridge on Interstate Highway 80, 1.9 mi west of West Capitol Avenue, approximately 2.8 mi west of West Sacramento.

DRAINAGE AREA.—Indeterminate.

PERIOD OF RECORD.—January 1997 to current year.

CHEMICAL DATA: January 1997 to current year.

SEDIMENT DATA: January 1997 to current year.

INSTRUMENTATION.—None.

REMARKS.—Discharge values were determined from USGS station 11453000, Yolo Bypass Near Woodland, and California Department of Water Resources discharge data.

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)	
FEB	23..	1200	31000	218	7.9	10.7	766	10.4	93	74	14	9.2	14
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) (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 (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)	
FEB	23..	29	.7	1.5	75	16	8.6	<.1	18	141	133	.19	<.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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PENDED TOTAL (MG/L AS C) (00689)	2,6-DI-ETHYL ANILINE WAT FLT (0.7 U GF, REC) (UG/L) (82660)	
FEB	23..	.17	<.02	.3	.2	.11	.036	.03	e8	7	2.4	1.0	<.003
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 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)	
FEB	23..	<.002	<.002	<.002	<.001	<.002	<.002	<.003	<.003	<.004	<.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 GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOFOS WATER DISS REC (UG/L) (04095)	LINDANE WATER FLTRD 0.7 U GF, REC (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)	
FEB	23..	.043	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005	<.001	<.006

e Estimated.

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

11453120 YOLO BYPASS AT INTERSTATE HIGHWAY 80, NEAR WEST SACRAMENTO, CA—Continued

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

DATE	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER 0.7 U GF, REC (UG/L) (82684)	P, P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	PEB- ULATE WATER 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT GF, REC (UG/L) (82683)	PER- CIS WAT FLT GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)
FEB 23...	.005	<.004	<.010	<.003	<.006	<.004	<.004	<.004	<.005	<.002	<.018
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 GF, REC (UG/L) (82661)
FEB 23...	<.003	<.004	<.013	<.007	.077	<.010	<.007	<.013	.006	<.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, CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
FEB 23...N	1200	31000	10.7	73	6110	98

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

N Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

11453500 PUTAH CREEK NEAR GUENOC, CA

LOCATION.—Lat 38°46'44", long 122°30'59", in Guenoc Grant, Lake County, on right bank just upstream from Coyote Valley damsite, 2.8 mi upstream from Soda Creek and 3.2 mi downstream from highway bridge at Guenoc.

DRAINAGE AREA.—113 mi².

PERIOD OF RECORD.—February 1904 to September 1906, July 1930 to September 1976, and April 1998 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.—WSP 1285: 1937(M), 1938, 1940, 1943(M), 1951(M).

GAGE.—Water-stage recorder. Datum of gage is 911.18 ft above sea level. February 1904 to September 1906, nonrecording gage 0.2 mi upstream at different datum, July 1930 to September 1976, at datum 3.00 ft higher.

REMARKS.—Records good. Some regulation by Hartmann Dam on Coyote Creek since 1969, capacity, 3,000 acre-ft; diversions and ground-water withdrawals for irrigation of about 1,600 acres above station. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 32,000 ft³/s, Dec. 11, 1937, gage height, 22.7 ft, from rating curve extended above 13,000 ft³/s; no flow many days in 1964, 1970, 1974–76.

EXTREMES FOR CURRENT YEAR.—Peak discharges greater than base discharge of 5,000 ft³/s, or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 9	0500	16,300	19.61				

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	9.4	946	50	282	906	359	117	41	12	3.3	2.2
2	9.7	9.2	538	47	215	642	316	113	42	11	3.0	2.3
3	9.7	9.2	1360	46	188	711	283	117	44	11	2.8	1.9
4	9.4	9.9	544	45	170	543	258	111	42	11	3.3	2.0
5	8.5	11	333	44	154	464	298	104	39	13	3.1	2.0
6	7.9	12	355	43	1710	410	308	97	37	12	3.4	1.8
7	7.7	28	233	42	4110	364	261	91	35	11	4.1	.99
8	7.2	36	205	41	1930	651	502	88	35	10	5.3	.63
9	5.3	24	172	40	6780	1180	423	86	34	9.7	4.8	1.3
10	5.5	21	145	39	1660	692	356	82	33	10	4.2	2.0
11	5.6	21	127	39	1000	541	1550	79	31	9.6	4.2	1.1
12	6.4	19	116	38	724	453	838	74	29	8.7	3.8	1.8
13	7.4	17	110	37	569	399	585	72	27	8.5	2.8	1.6
14	7.1	17	120	37	496	461	470	71	26	8.1	2.7	1.2
15	7.2	17	103	37	405	541	397	69	25	5.7	2.4	.50
16	5.0	17	95	44	1020	402	346	67	24	6.2	2.9	1.8
17	5.9	20	89	46	1560	346	305	66	24	6.7	3.6	1.8
18	5.7	20	84	516	1050	310	272	65	22	6.2	3.3	1.9
19	5.7	19	79	856	860	290	245	63	22	5.8	3.1	1.9
20	5.4	18	75	1470	904	312	223	61	21	6.2	3.0	1.5
21	5.7	19	71	738	1540	278	206	59	20	6.8	3.0	1.3
22	5.4	29	67	557	1050	258	193	55	20	7.2	2.9	1.5
23	5.5	1390	65	1490	780	309	179	53	18	7.2	2.8	2.0
24	11	520	63	624	649	1030	168	52	17	7.3	1.4	2.0
25	13	169	60	415	1390	1970	158	51	17	6.7	1.7	1.8
26	10	125	59	319	806	906	150	48	17	5.0	1.3	2.2
27	8.7	145	58	253	637	642	139	46	17	4.3	1.4	2.4
28	9.0	101	56	208	834	514	134	44	16	5.2	3.0	2.0
29	10	209	54	181	---	439	129	43	15	4.5	3.0	.97
30	8.0	2570	53	164	---	412	123	43	14	4.9	2.6	.44
31	8.4	---	51	464	---	450	---	42	---	4.8	2.3	---
TOTAL	236.2	5631.7	6486	8970	33473	17826	10174	2229	804	246.3	94.5	48.83
MEAN	7.62	188	209	289	1195	575	339	71.9	26.8	7.95	3.05	1.63
MAX	13	2570	1360	1490	6780	1970	1550	117	44	13	5.3	2.4
MIN	5.0	9.2	51	37	154	258	123	42	14	4.3	1.3	.44
AC-FT	469	11170	12860	17790	66390	35360	20180	4420	1590	489	187	97

11453500 PUTAH CREEK NEAR GUENOC, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.4	91.6	388	635	664	405	226	70.1	27.7	8.08	3.87	2.77
MAX	329	1005	1684	2288	2107	1326	906	264	165	36.8	12.0	10.0
(WY)	1963	1974	1956	1970	1958	1938	1958	1998	1906	1998	1906	1905
MIN	.27	1.35	2.34	15.2	36.7	55.9	26.6	9.48	1.57	.47	.000	.000
(WY)	1965	1932	1937	1976	1976	1976	1931	1976	1976	1976	1976	1976

SUMMARY STATISTICS

FOR 1999 WATER YEAR

WATER YEARS 1905 - 1999

ANNUAL TOTAL	86219.53		
ANNUAL MEAN	236	209	
HIGHEST ANNUAL MEAN		467	1938
LOWEST ANNUAL MEAN		21.8	1976
HIGHEST DAILY MEAN	6780	Feb 9	16500 Dec 10 1937
LOWEST DAILY MEAN	.44	Sep 30	.00 Aug 20 1964
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 7	.00 Jul 26 1976
INSTANTANEOUS PEAK FLOW	16300	Feb 9	32000 Dec 11 1937
INSTANTANEOUS PEAK STAGE	19.61	Feb 9	22.70 Dec 11 1937
ANNUAL RUNOFF (AC-FT)	171000		151300
10 PERCENT EXCEEDS	650		448
50 PERCENT EXCEEDS	42		25
90 PERCENT EXCEEDS	2.5		1.6

11453900 LAKE BERRYESSA NEAR WINTERS, CA

LOCATION.—Lat 38°30'48", long 122°06'13", in SE 1/4 NW 1/4 sec.29, T.8 N., R.2 W., Napa County, Hydrologic Unit 18020117, near center of Monticello Dam on Putah Creek and 7.4 mi west of Winters.

DRAINAGE AREA.—566 mi².

PERIOD OF RECORD.—January 1957 to current year.

REVISED RECORDS.—WSP 1735: 1958–60. WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.—Reservoir is formed by concrete arch-gravity dam completed November 1956. Usable capacity, 1,592,000 acre-ft between elevations 253.25 ft, invert of outlet valves, and 440 ft crest of glory-hole spillway. Dead storage, 10,340 acre-ft. Water is released down Putah Creek and is diverted into Putah South Canal for irrigation of about 46,000 acres in the lower Sacramento Valley. Total diverted during current year was 204,735 acre-ft. Releases for irrigation began in May 1959. Records, including extremes, show total contents at 2400 hours. See schematic diagram of lower Sacramento River Basin.

COOPERATION.—Records provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.—Maximum contents, 1,733,500 acre-ft, Mar. 2, 1983, elevation, 446.67 ft; minimum since irrigation pool first filled, 422,130 acre-ft, Dec. 1, 1992, elevation, 361.73 ft.

EXTREMES FOR CURRENT YEAR.—Maximum contents, 1,621,400 acre-ft, Mar. 26, elevation, 440.99 ft; minimum, 1,392,300 acre-ft, Sept 30, elevation, 428.80 ft.

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

(Based on survey by U.S. Bureau of Reclamation in 1956)

360	404,550	390	765,730	420	1,236,000
370	511,760	400	911,200	430	1,414,200
380	632,360	410	1,068,100	450	1,799,900

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	1455700	1437300	1457500	1462700	1483200	1612100	1616400	1599800	1564300	1520400	1467200	1422400
2	1454700	1436800	1458100	1462700	1484000	1612100	1615000	1599400	1563100	1518700	1465900	1421200
3	1454000	1436800	1461000	1463300	1484000	1612500	1614100	1598400	1562400	1517000	1464400	1420000
4	1454000	1436800	1463100	1463800	1484700	1612300	1613300	1597100	1561000	1515100	1463100	1418600
5	1453600	1436200	1464900	1463300	1485300	1611800	1612500	1596100	1559500	1513800	1461000	1417700
6	1452100	1435900	1465700	1462200	1500600	1611200	1612100	1595500	1558600	1512100	1459400	1415100
7	1451800	1437000	1465900	1461200	1518500	1610600	1611000	1594800	1557400	1510200	1458100	1415500
8	1451200	1437000	1466400	1461000	1544800	1611600	1612100	1593600	1556100	1508500	1456000	1413800
9	1450500	1436800	1467500	1460500	1566400	1614100	1611900	1592500	1554900	1506800	1454700	1412700
10	1450100	1436800	1468100	1460100	1571400	1614800	1611600	1591500	1553400	1505100	1453800	1411600
11	1448600	1435900	1469000	1461000	1573800	1614800	1616800	1590500	1552300	1503300	1452700	1410500
12	1447700	1435900	1469600	1461400	1574800	1614300	1617900	1589600	1550000	1501600	1451000	1409800
13	1447700	1435300	1471500	1460900	1575200	1613500	1617800	1588600	1548600	1500100	1449700	1408500
14	1447300	1435300	1472200	1460300	1575400	1613700	1617200	1587100	1547500	1498200	1448200	1407400
15	1447000	1435100	1472900	1460300	1575400	1613700	1616600	1585900	1546400	1496300	1446600	1406500
16	1446000	1435100	1472200	1459900	1579200	1612900	1615600	1584800	1545200	1494400	1445500	1405400
17	1444700	1434900	1463600	1459900	1581500	1612300	1614700	1583600	1543900	1492900	1444200	1404300
18	1443800	1434800	1463600	1460300	1586500	1611600	1614100	1582500	1542600	1491400	1442500	1403200
19	1443100	1434800	1462900	1461400	1588000	1611200	1612900	1581100	1539700	1489800	1440900	1402100
20	1442900	1434600	1462300	1467000	1591700	1610600	1611900	1580200	1538200	1488200	1439400	1400800
21	1442100	1434600	1462200	1468800	1597500	1610200	1611000	1578800	1537200	1486800	1438100	1400100
22	1441600	1434600	1462200	1472000	1600400	1609600	1610200	1577300	1535700	1484900	1436800	1399200
23	1440900	1436800	1462300	1475200	1603100	1610200	1608500	1576500	1534600	1483200	1435500	1398300
24	1440700	1437000	1462300	1476700	1605400	1613100	1607100	1575000	1532700	1481700	1434000	1397500
25	1440700	1437000	1462200	1477600	1608500	1621200	1606000	1573700	1531400	1480400	1432900	1396600
26	1439600	1437300	1462200	1478900	1609400	1621400	1605200	1572700	1528700	1478700	1431300	1395700
27	1439600	1437500	1462300	1479500	1610000	1620700	1604200	1571500	1527600	1477000	1430000	1394600
28	1439000	1437500	1462700	1479700	1610600	1620100	1603100	1570200	1525900	1474800	1428700	1393700
29	1438500	1440500	1463300	1479900	---	1618900	1601300	1568700	1524400	1472000	1427000	1393000
30	1437900	1454700	1462300	1480800	---	1618300	1600700	1567100	1522100	1470100	1425400	1392300
31	1437500	---	1462300	1481900	---	1617200	---	1565600	---	1468500	1423900	---
MAX	1455700	1454700	1472900	1481900	1610600	1621400	1617900	1599800	1564300	1520400	1467200	1422400
MIN	1437500	1434600	1457500	1459900	1483200	1609600	1600700	1565600	1522100	1468500	1423900	1392300
a	431.27	432.20	432.61	433.66	440.43	440.77	439.92	438.09	435.80	432.94	430.53	428.80
b	-18900	+17200	+7600	+19600	+128700	+6600	-16500	-35100	-43500	-53600	-44600	-31600
c	4687	1198	1157	1216	1271	3132	6050	8657	9346	10054	8694	7165
CAL YR 1998 b	+74000											
WTY YR 1999 b	-64100											

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Total evaporation, in acre-feet, provided by U.S. Bureau of Reclamation, not reviewed by U.S. Geological Survey.

11454000 PUTAH CREEK NEAR WINTERS, CA

LOCATION.—Lat 38°30'55", long 122°04'51", in NE 1/4 NE 1/4 sec.28, T.8 N., R.2 W., Yolo County, Hydrologic Unit 18020109, on left bank 1 mi downstream from Cold Canyon, 1.3 mi downstream from Monticello Dam, and 6 mi west of Winters.

DRAINAGE AREA.—574 mi².

PERIOD OF RECORD.—July 1930 to current year.

CHEMICAL DATA: Water years 1951–66, 1973–81.

WATER TEMPERATURE: Water years 1966–81.

REVISED RECORDS.—WSP 901: 1937–38(M). WSP 1285: 1932(M), 1935–36(M), 1940(M), 1942–43(M), 1951, 1952(M). WSP 1565: 1957. WSP 1931: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 160.75 ft above sea level (river-profile survey). June 28, 1930, to Feb. 29, 1940, at datum about 1 ft higher.

REMARKS.—Records good. Flow completely regulated by Lake Berryessa (station 11453900) beginning January 1957. See schematic diagram of lower Sacramento River Basin.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 81,000 ft³/s, Feb. 27, 1940, gage height, 30.5 ft, present datum, from rating curve extended above 30,000 ft³/s; no flow, Sept. 6–15, 1950, July 26 to Sept. 1, Sept. 6–9, 1955. Since completion of Monticello Dam in 1957, maximum discharge, 18,700 ft³/s, Mar. 2, 1983, gage height, 19.55 ft; minimum daily, 6.1 ft³/s, Dec. 19, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.—Maximum stage known since at least 1905, that of Feb. 27, 1940, on basis of records for station at Winters.

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	271	96	72	86	72	1060	1490	709	715	826	598	518
2	266	75	88	86	72	1090	1420	711	684	822	598	484
3	256	75	102	86	72	1120	1350	712	642	743	617	486
4	280	99	93	85	72	1110	1280	666	600	682	622	454
5	298	140	86	85	72	1080	1230	603	545	684	603	422
6	325	136	86	85	79	1050	1200	550	543	711	595	456
7	325	107	86	85	136	1020	1150	555	560	783	564	483
8	313	98	86	85	80	990	1180	586	597	740	510	483
9	294	98	99	85	455	1190	1180	600	627	788	525	483
10	271	98	110	85	676	1280	1150	625	642	836	562	472
11	256	98	104	82	694	1280	1280	681	679	795	567	426
12	264	83	99	81	635	1250	1470	721	660	784	564	424
13	266	74	99	81	688	1210	1480	651	663	784	593	419
14	260	82	99	80	688	1170	1470	572	651	776	601	398
15	246	86	82	82	688	1210	1420	567	644	764	587	396
16	247	110	84	85	688	1170	1380	619	681	724	563	396
17	240	131	99	85	695	1140	1330	693	665	649	556	394
18	235	111	99	85	693	1090	1280	727	593	581	589	374
19	235	111	95	85	691	1050	1220	717	570	617	652	362
20	262	111	90	86	692	1030	1160	689	601	656	613	385
21	282	96	79	86	702	920	1120	655	630	687	601	418
22	302	83	70	86	692	663	1060	654	643	707	611	397
23	285	79	142	86	692	374	980	642	738	730	559	353
24	248	82	86	86	708	538	914	630	796	787	572	324
25	212	105	86	86	807	1640	866	636	741	770	600	308
26	193	110	86	86	901	1780	811	654	717	720	616	304
27	185	94	86	86	940	1770	782	657	717	688	593	289
28	174	87	86	86	976	1720	751	664	760	660	550	295
29	141	87	86	84	---	1670	731	685	790	635	534	329
30	123	82	86	79	---	1590	711	704	812	668	534	317
31	123	---	86	72	---	1550	---	731	---	637	534	---
TOTAL	7678	2924	2837	2608	15056	36805	34846	20266	19906	22434	17983	12049
MEAN	248	97.5	91.5	84.1	538	1187	1162	654	664	724	580	402
MAX	325	140	142	86	976	1780	1490	731	812	836	652	518
MIN	123	74	70	72	72	374	711	550	543	581	510	289
AC-FT	15230	5800	5630	5170	29860	73000	69120	40200	39480	44500	35670	23900

SACRAMENTO RIVER BASIN

11454000 PUTAH CREEK NEAR WINTERS, CA—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1956, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8.62	96.0	993	1284	1716	976	514	137	42.1	12.5	6.94	5.84
MAX	45.4	807	5110	3957	6468	3506	2729	452	156	63.7	31.7	20.8
(WY)	1951	1951	1956	1952	1938	1938	1941	1941	1942	1941	1941	1941
MIN	.89	3.17	7.16	44.6	66.7	118	40.8	12.3	6.72	2.39	.000	1.47
(WY)	1956	1956	1931	1947	1948	1932	1931	1931	1931	1955	1955	1931

SUMMARY STATISTICS

WATER YEARS 1931 - 1956

ANNUAL MEAN	477
HIGHEST ANNUAL MEAN	1387 1941
LOWEST ANNUAL MEAN	48.1 1931
HIGHEST DAILY MEAN	54500 Feb 27 1940
LOWEST DAILY MEAN	.00 Sep 6 1950
ANNUAL SEVEN-DAY MINIMUM	.00 Sep 6 1950
INSTANTANEOUS PEAK FLOW	81000 Feb 27 1940
INSTANTANEOUS PEAK STAGE	30.5 Feb 27 1940
ANNUAL RUNOFF (AC-FT)	345500
10 PERCENT EXCEEDS	924
50 PERCENT EXCEEDS	38
90 PERCENT EXCEEDS	3.0

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	225	89.5	110	506	713	776	655	547	596	627	547	401
MAX	476	263	1625	4406	6271	7791	5023	1018	773	802	681	610
(WY)	1972	1987	1984	1970	1998	1983	1982	1983	1981	1984	1975	1968
MIN	13.3	14.9	11.6	11.6	21.6	40.9	110	155	328	338	298	175
(WY)	1960	1963	1961	1960	1960	1962	1960	1960	1960	1960	1960	1960

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1960 - 1999

ANNUAL TOTAL	372755	195392	
ANNUAL MEAN	1021	535	481
HIGHEST ANNUAL MEAN			1580 1983
LOWEST ANNUAL MEAN			132 1960
HIGHEST DAILY MEAN	10900 Feb 8	1780 Mar 26	17700 Mar 2 1983
LOWEST DAILY MEAN	64 Jan 11	70 Dec 22	6.1 Dec 19 1967
ANNUAL SEVEN-DAY MINIMUM	73 Jan 22	73 Jan 30	8.3 Nov 7 1963
INSTANTANEOUS PEAK FLOW		1830 Mar 26	18700 Mar 2 1983
INSTANTANEOUS PEAK STAGE		10.34 Mar 26	19.55 Mar 2 1983
ANNUAL RUNOFF (AC-FT)	739400	387600	348700
10 PERCENT EXCEEDS	1370	1130	723
50 PERCENT EXCEEDS	566	567	357
90 PERCENT EXCEEDS	83	85	52

11454210 PUTAH SOUTH CANAL NEAR WINTERS, CA

LOCATION.—Lat 38°29'534, long 122°00'07", in Rio De Los Putos Grant, T.8 N., R.1 W., Solano County, Hydrologic Unit 18020109, on left bank, 500 ft downstream from diversion headgate structure on Lake Solano, and 2.7 mi southwest of Winters.

PERIOD OF RECORD.—October 1994 to September 1997, October 1998 to September 1999. Monthly and yearly totals were published during water years 1972–93.

GAGE.—Water-stage recorder. Elevation of gage is 160 ft above sea level, from topographic map.

REMARKS.—Water from canal is diverted for irrigation, municipal, and industrial use. See schematic diagram of lower Sacramento River Basin.

COOPERATION.—Records provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 725 ft³/s, July 1, 1999; no flow on some 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	223	74	75	50	40	47	109	393	647	725	555	501
2	220	20	75	43	40	50	107	419	621	705	558	476
3	220	30	63	40	40	50	105	432	593	672	558	455
4	227	92	50	45	40	50	105	461	561	622	571	427
5	237	100	55	50	40	50	105	499	503	615	565	408
6	265	86	60	50	40	50	105	518	495	620	561	434
7	271	73	60	50	34	50	105	543	519	670	525	461
8	270	63	60	55	30	50	98	538	557	653	475	468
9	249	58	60	60	30	40	95	560	565	669	495	446
10	226	55	60	48	37	50	97	582	587	708	515	436
11	221	51	60	37	50	45	100	610	614	694	537	411
12	215	53	60	35	50	40	100	629	609	671	531	396
13	215	58	60	43	43	47	104	596	615	665	554	383
14	218	60	45	50	40	50	103	552	605	675	546	369
15	208	38	40	52	50	55	100	549	589	665	523	361
16	203	87	60	55	52	73	107	583	609	645	509	367
17	190	85	55	55	46	74	127	627	605	596	516	370
18	189	61	50	55	40	70	142	651	562	550	549	355
19	186	73	57	55	40	77	159	649	552	560	597	343
20	210	48	45	52	45	80	170	617	570	595	582	366
21	227	50	45	50	50	80	183	611	567	620	565	385
22	240	50	45	50	50	80	208	606	606	632	558	379
23	248	50	84	47	50	93	215	598	643	655	528	335
24	209	63	50	45	44	37	240	590	674	675	545	301
25	169	75	50	45	40	88	273	598	666	669	559	283
26	154	50	50	45	40	100	334	607	635	640	571	261
27	150	40	50	45	40	100	350	608	630	611	555	258
28	132	49	50	45	40	87	342	610	664	594	511	281
29	104	50	47	45	---	80	318	632	690	581	487	290
30	92	67	50	42	---	75	366	640	706	606	508	280
31	86	---	50	40	---	85	---	662	---	591	507	---
TOTAL	6274	1809	1721	1479	1181	2003	5072	17770	18059	19849	16716	11286
MEAN	202	60.3	55.5	47.7	42.2	64.6	169	573	602	640	539	376
MAX	271	100	84	60	52	100	366	662	706	725	597	501
MIN	86	20	40	35	30	37	95	393	495	550	475	258
AC-FT	12440	3590	3410	2930	2340	3970	10060	35250	35820	39370	33160	22390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

MEAN	203	63.3	48.1	42.1	47.2	81.6	240	432	559	604	544	386
MAX	219	79.0	55.5	47.7	55.1	182	450	573	602	640	575	410
(WY)	1996	1996	1999	1999	1997	1997	1997	1999	1999	1999	1995	1995
MIN	191	50.6	35.3	34.5	42.2	37.8	168	281	518	580	499	376
(WY)	1997	1995	1995	1995	1999	1996	1995	1995	1995	1995	1997	1999

SUMMARY STATISTICS

FOR 1999 WATER YEAR

WATER YEARS 1995 - 1999

ANNUAL TOTAL	103219	
ANNUAL MEAN	283	272
HIGHEST ANNUAL MEAN		299
LOWEST ANNUAL MEAN		246
HIGHEST DAILY MEAN	725	725
LOWEST DAILY MEAN	20	.00
ANNUAL SEVEN-DAY MINIMUM	36	23
ANNUAL RUNOFF (AC-FT)	204700	197100
10 PERCENT EXCEEDS	620	595
50 PERCENT EXCEEDS	203	205
90 PERCENT EXCEEDS	45	40

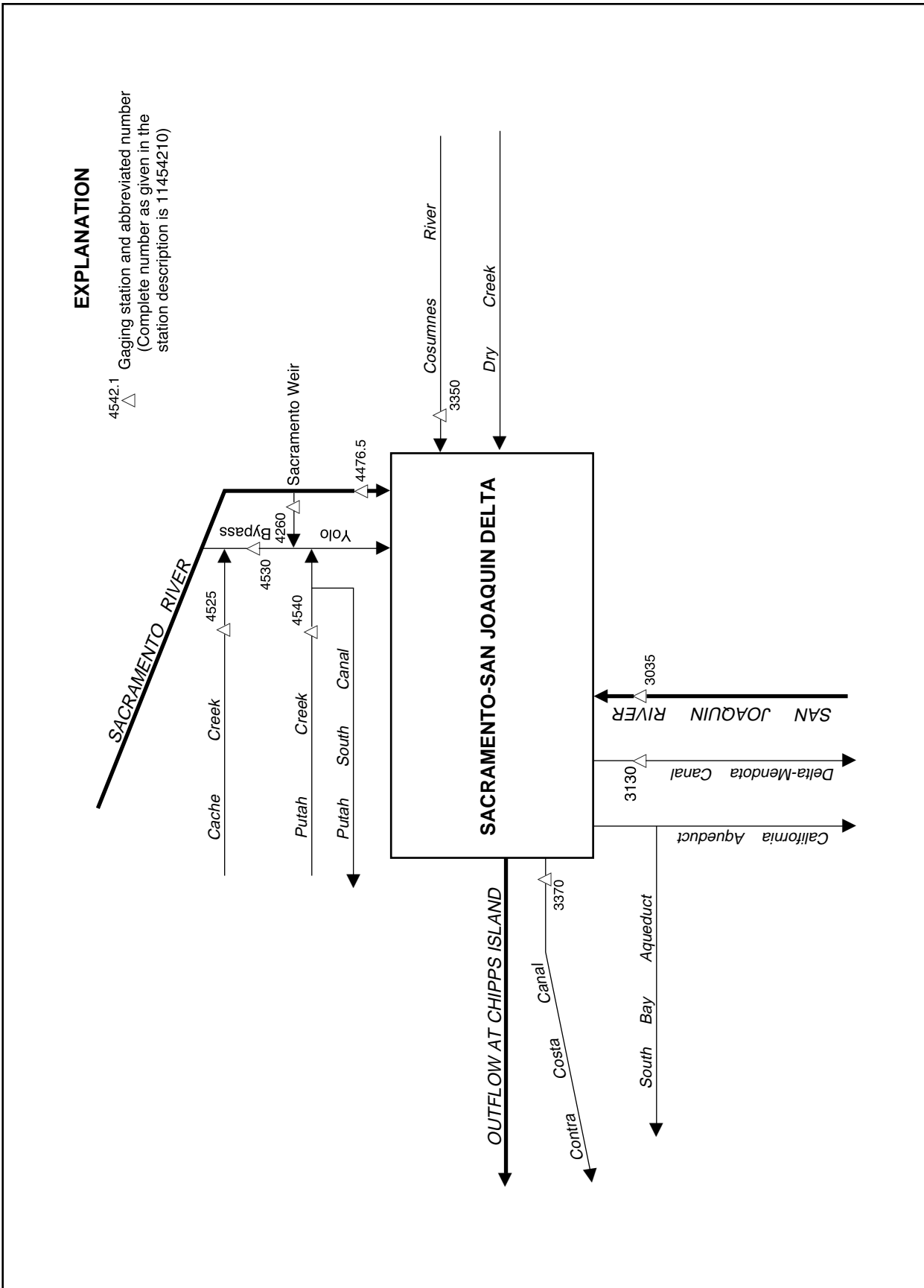


Figure 35. Principal inflows and diversions, Sacramento-San Joaquin Delta.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the U.S. Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low- or flood-flow analyses, depending on the type of data collected.

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)
SACRAMENTO RIVER BASIN						
11341900	Dog Creek at Delta, CA	Lat 40°56'17", long 122°25'13", in SE 1/4 NE 1/4 sec.34, T.36 N., R.5 W., Shasta County, Hydrologic Unit 18020005, 0.1 mi upstream from mouth, 0.5 mi southwest of Delta, and 25 mi north of Redding.	17.3	a1975, 1976-84, 1986-99	11-02-98 02-10-99 03-03-99 09-10-99	b9.17 241 264 b5.72
38352512143 4601	Willow Slough Bypass near Davis, CA	Lat 38°35'25", long 121°43'46", in SE 1/4 SE 1/4 sec.27, T.9 N., R.2 E., Yolo County, Hydrologic Unit 18020109, at County Road 102, 3.5 mi northeast of Davis.	—	—	08-18-99 08-27-99 09-03-99 09-10-99 09-17-99 09-24-99	
38374912143 3701	Willow Slough near Woodland, CA	Lat 38°37'49", long 121°43'37", in NW 1/4 NW 1/4 sec.14, T.9 N., R.2 E., Yolo County, Hydrologic Unit 18020109, 1,000 ft downstream of County Road 102, and 3.8 miles southeast of Woodland.	—	—	08-18-99 08-27-99 09-03-99 09-10-99 09-17-99 09-24-99	

a Published as a miscellaneous measurement.

b Base flow.

