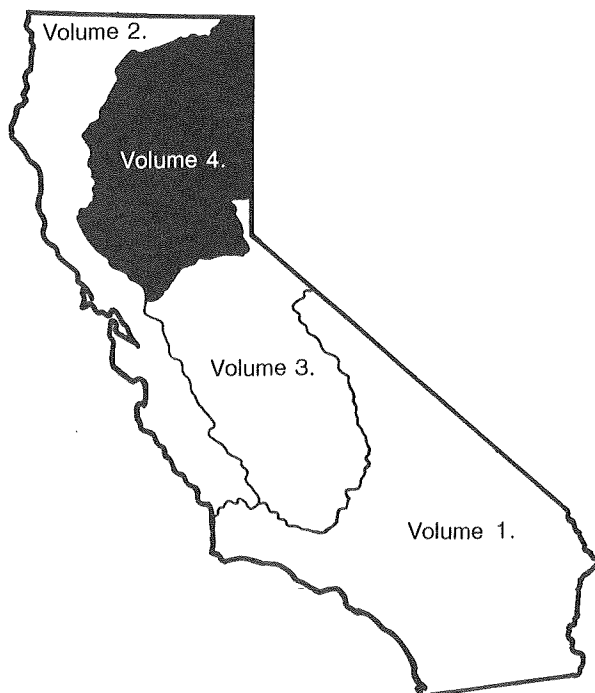


Water Resources Data California Water Year 1986

QA

Volume 4. Northern Central Valley Basins and
The Great Basin from Honey Lake
Basin to Oregon State Line



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-86-4
Prepared in cooperation with the California Department of
Water Resources and with other agencies

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

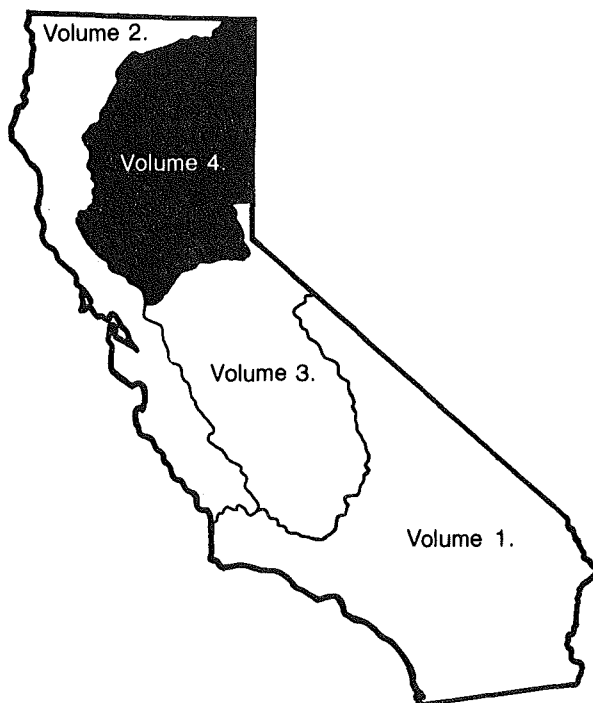
Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons



Water Resources Data California Water Year 1986

Volume 4. Northern Central Valley Basins and The Great Basin from Honey Lake Basin to Oregon State Line

by J.R. Mullen, W.F. Shelton, R.G. Simpson, and D.A. Grillo



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-86-4
Prepared in cooperation with the California Department of
Water Resources and with other agencies

DEPARTMENT OF THE INTERIOR
DONALD PAUL HODEL, Secretary
U.S. GEOLOGICAL SURVEY
Dallas L. Peck, Director

For information on the water program in California write to
District Chief, Water Resources Division
U.S. Geological Survey
Room W-2234, Federal Building
2800 Cottage Way
Sacramento, California 95825

PREFACE

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

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

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

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

REPORT DOCUMENTATION PAGE	1. REPORT NO. USGS/WRD/HD-88/224	2.	3. Recipient's Accession No.
4. Title and Subtitle Water Resources Data for California, Water Year 1986 Volume 4. Northern Central Valley Basins and The Great Basin from Honey Lake Basin to Oregon State Line		5. Report Date April 1988	6.
7. Author(s) J.R. Mullen, W.F. Shelton, R.G. Simpson, and D.A. Grillo		8. Performing Organization Rept. No. USGS-WDR-CA-86-4	
9. Performing Organization Name and Address U.S. Geological Survey, Water Resources Division California District 2800 Cottage Way, Room W-2234 Sacramento, CA 95825		10. Project/Task/Work Unit No.	
12. Sponsoring Organization Name and Address U.S. Geological Survey, Water Resources Division California District 2800 Cottage Way, Room W-2234 Sacramento, CA 95825		11. Contract(C) or Grant(G) No. (C) (G)	
15. Supplementary Notes		13. Type of Report & Period Covered Annual--Oct. 1, 1985 to Sept. 30, 1986	
Prepared in cooperation with the California Department of Water Resources and with other agencies.		14.	
16. Abstract (Limit: 200 words) Water resources data for the 1986 water year for California consist of records of stage, discharge, and water quality of streams; stage and contents in lakes and reservoirs; and water levels and water quality in wells. Volume 4 contains discharge records for 156 gaging stations; stage and contents for 37 lakes and reservoirs; water precipitation data for 2 stations; and water quality for 8 stations. Also included is one water-quality partial-record station. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in California.			
17. Document Analysis a. Descriptors *California, *Hydrologic data, *Surface water, *Water quality, Flow rate, Sampling sites, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperatures, Water analyses b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
18. Availability Statement: No restriction on distribution. This report may be purchased from National Technical Information Service Springfield, VA 22161		19. Security Class (This Report) Unclassified	21. No. of Pages 296
		20. Security Class (This Page) Unclassified	22. Price

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SURFACE-WATER AND WATER-QUALITY STATIONS
IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

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

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SURFACE-WATER AND WATER-QUALITY STATIONS
IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

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WATER RESOURCES DATA - CALIFORNIA, WATER YEAR 1986
VOLUME 4--NORTHERN CENTRAL VALLEY BASINS AND THE GREAT BASIN
FROM HONEY LAKE BASIN TO OREGON STATE LINE

By J.R. Mullen, W.F. Shelton, R.G. Simpson, and D.A. Grillo

INTRODUCTION

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

This report includes records on surface water in the State. Specifically, it contains: (1) Discharge records for 156 streamflow-gaging stations; (2) stage and content records for 37 lakes and reservoirs; and (3) water-quality records for 8 streamflow-gaging stations and 1 water-quality partial-record stations. Records included for stream stages are only a small fraction of those obtained during the water year.

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

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

Publications similar to this report are published annually by the U.S. Geological Survey for all States. These official Survey reports have 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-86-4." 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 in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

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

COOPERATION

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

California Department of Water Resources, David N. Kennedy, Director.
 California Coastal Commission, Joseph Petrillo, Director of Planning.
 Georgetown Divide Public Utility District, Charles F. Gierau, General Manager.
 Oroville-Wyandotte Irrigation District, Hasket McInturf, President, Board of Directors.
 Paradise Irrigation District, C. Phillip Kelly, Jr., Manager.
 Sacramento Municipal Utility District, John P. Hiltz, Manager.
 Sacramento Regional County Sanitation District, John W. Newton, Chief of Administration.
 Siskiyou County Flood Control and Water Conservation District, David A. Gavenkamp, Director.
 Yolo County Flood Control and Water Conservation District, James F. Eagan, General Manager.
 Yuba County Water Agency, Donald Frost, Administrator.

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

The following organizations aided in collecting records: California Department of Water Resources; Pacific Gas and Electric Co.; Sacramento Municipal Utility District; Nevada and Oroville-Wyandotte Irrigation Districts; Placer and Yuba County Water Agencies.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Runoff during the 1986 water year in the area covered by this volume was 137 percent of the 1951-80 median (based on six representative streamflow records) and ranged from 106 percent of median at Sacramento River at Delta, to 169 percent at North Fork American River at North Fork Dam. Runoff, in percent of median, at selected sites in California is shown in figure 1. In figure 2, monthly runoff in the 1986 water year at four index stations is compared to the 1951-80 maximum, minimum, and median monthly runoff. Maximum instantaneous discharges at 23 gaging stations exceeded existing peaks of record in the area covered by this volume; peak discharges for those gages are shown below.

Station No.	Station name	Years of record	Previous peak (ft ³ /s)	1986 peak (ft ³ /s)	Unit discharge [(ft ³ /s) /mi ²]
10358500	Willow Creek near Susanville	36	816	1,210	13
11344000	North Fork Pit River at Alturas	15	3,740	4,200	20
11349000	Pit River near Lookout	18	10,900	11,600	7
11355010	Pit River below Pit No. 1 Powerhouse, near Fall River Mills	11	19,900	30,000	8
11362500	Pit River below Pit No. 4 Dam	64	31,000	33,700	7
11384000	Big Chico Creek near Chico	56	9,580	10,600	146
11388000	Stony Creek below Black Butte Dam, near Orland	31	19,400	23,300	32
11390000	Butte Creek near Chico	56	21,200	22,000	150
11390500	Sacramento River below Wilkins Slough, near Grimes	48	32,300	32,700	3
11395200	South Fork Feather River below diversion dam, near Strawberry Valley	26	6,330	8,870	235
11396350	South Fork Feather River at Ponderosa Dam	24	11,000	21,000	194
11401500	Indian Creek near Crescent Mills	65	25,000	36,200	49
11402000	Spanish Creek above Blackhawk Creek, at Keddle	53	15,400	19,600	107
11408850	Middle Yuba River near Camptonville	19	15,500	21,600	259
11409300	Oregon Creek at Camptonville	19	3,830	4,550	198
11413100	North Yuba River above Slate Creek, near Strawberry Valley	18	43,600	56,500	161
11413300	Slate Creek below diversion dam, near Strawberry Valley	26	13,100	13,400	271
11418500	Deer Creek near Smartville	51	11,600	12,100	143
11424000	Bear River near Wheatland	57	33,000	48,000	164
11425500	Sacramento River at Verona	57	80,900	92,900	4
11426000	Sacramento weir spill at Yolo Bypass, near Sacramento	47	118,000	128,000	---
11447650	Sacramento River at Freeport	38	104,000	117,000	---
11453000	Yolo Bypass near Woodland	40	272,000	374,000	---

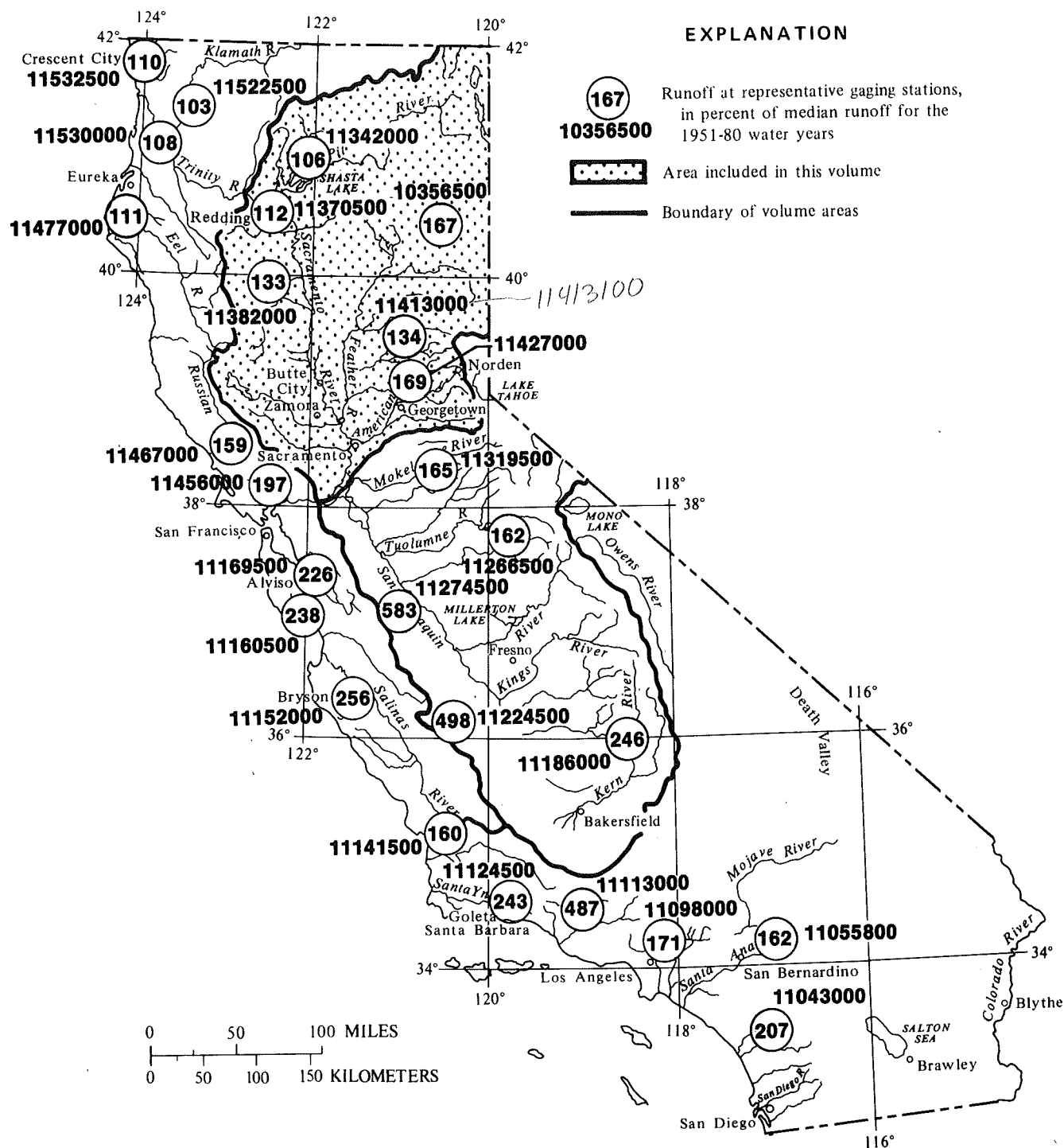


FIGURE 1.—Runoff, in percent of median, for the 1986 water year.

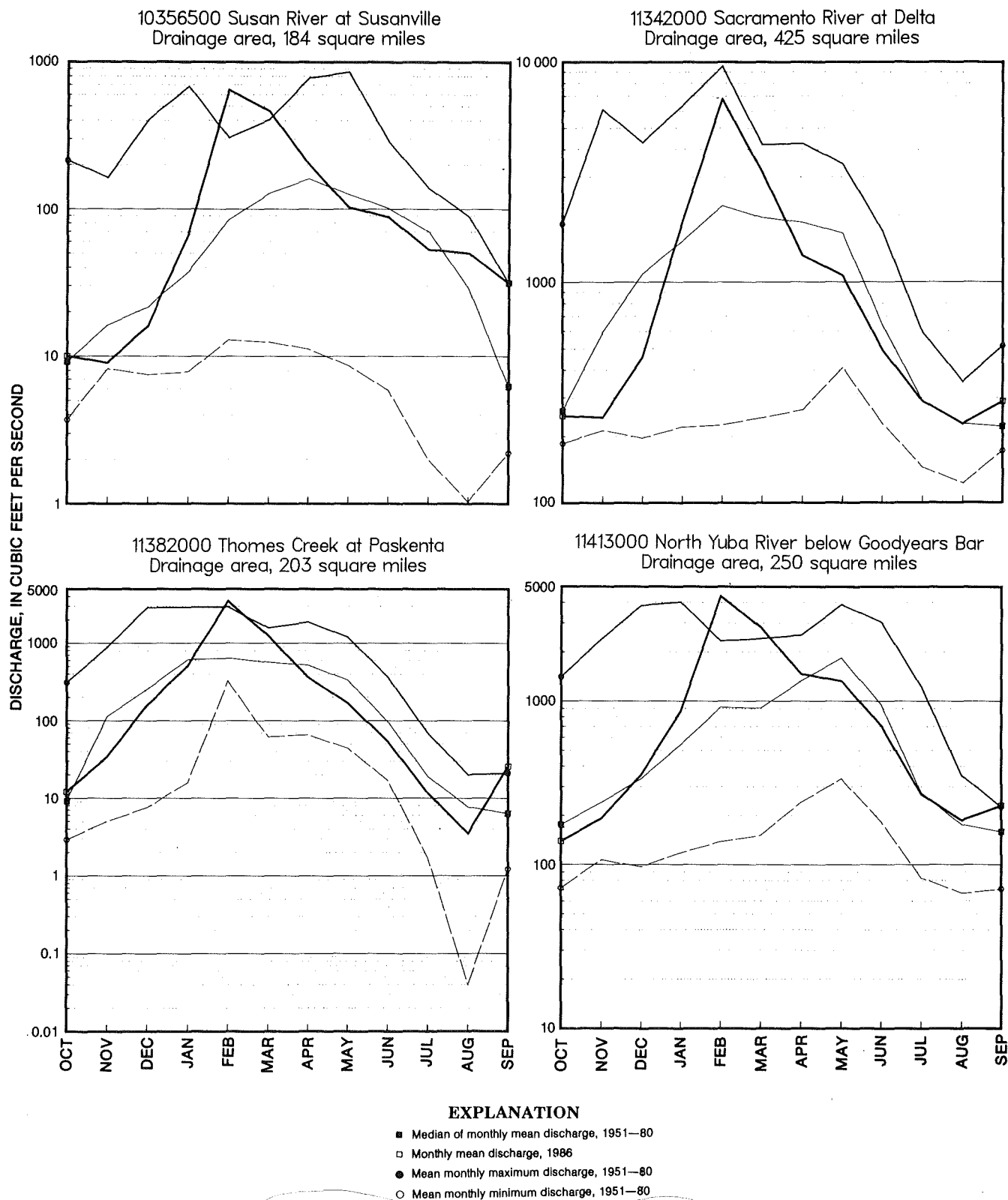


FIGURE 2. — Comparison of discharge during water year 1986 with long-term median discharge at four representative gaging stations.

The 1986 water year was relatively mild through January, averaging 85 percent of normal precipitation. An unprecedented amount of precipitation fell in most of northern California during a 10-day period ending February 21. The 10-day storm totals, ranging from 10 to 50 inches, represented over 50 percent of the average annual precipitation at many locations. The 1-day maximum precipitation ranged from 1.2 to 19.7 inches in the area included in this volume.

Runoff was generally well controlled by careful reservoir management and releases and by operation of bypass weirs and channels along the Sacramento River system. Some serious levee failures did occur, notably in the communities of Linda and Olivehurst near the Yuba River, contributing to 13 deaths, 67 injuries, and 50,000 evacuations. Damages were estimated to be \$378 million to private and public property.

As a result of the super-abundant runoff from the February storm, yearend water levels in all major reservoirs were at or above the long-term average. Shasta Lake held 102 percent, Lake Oroville, 103 percent, Folsom Lake, 102 percent, and Clair Engle Lake, 103 percent of the 10-year average.

Water Quality

Water samples collected at the three NASQAN stations reported in this volume were analyzed for water-quality constituents. Water quality at these stations changed slightly from the previous year. Median dissolved-solids concentrations generally decreased slightly at two NASQAN stations and increased slightly at one NASQAN station. The monthly dissolved-solids concentrations during water year 1986 were compared in figure 3 with long-term mean dissolved-solids concentrations at two selected sites. There were no chemical-constituent concentrations that exceeded water-quality criteria recommended by the U.S. Environmental Protection Agency.

The largest densities of fecal-coliform and fecal-streptococci bacteria (greater than 3,500 and 850 colonies per 100 milliliters, respectively), were found in waters sampled from the Sacramento River near Freeport. These bacterial densities were substantially higher than in 1985.

Sediment

Suspended-sediment discharge and concentration were monitored daily at four stations and periodically at four stations in the area included in this volume. The variation in precipitation, drainage-basin characteristics, and stream regulation in northern central California resulted in significant differences in sediment-discharge rates and concentrations at the sampled streams.

Sediment discharge was significantly above normal during the 1986 water year, as indicated by comparison with the 1968-85 mean sediment discharge at the two long-term daily stations. Annual sediment discharge was 720 percent of the mean for the Feather River near Gridley and 120 percent for the Sacramento River at Freeport.

Annual sediment discharge at the four daily stations ranged from 569,000 tons for Feather River near Gridley to 2,900,000 tons for both Cache Creek near Brooks and the Sacramento River at Freeport. Annual sediment discharge per square mile of drainage area ranged from a minimum of 155 tons per square mile for the Feather River station, which is a highly regulated stream, to a maximum of 2,760 tons per square mile for Cache Creek near Brooks (partly regulated).

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide. The data provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis and reporting that the data may be used for, (2) to describe the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) to detect changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) to provide a nationally consistent data base useful for water-quality assessment and hydrologic research.

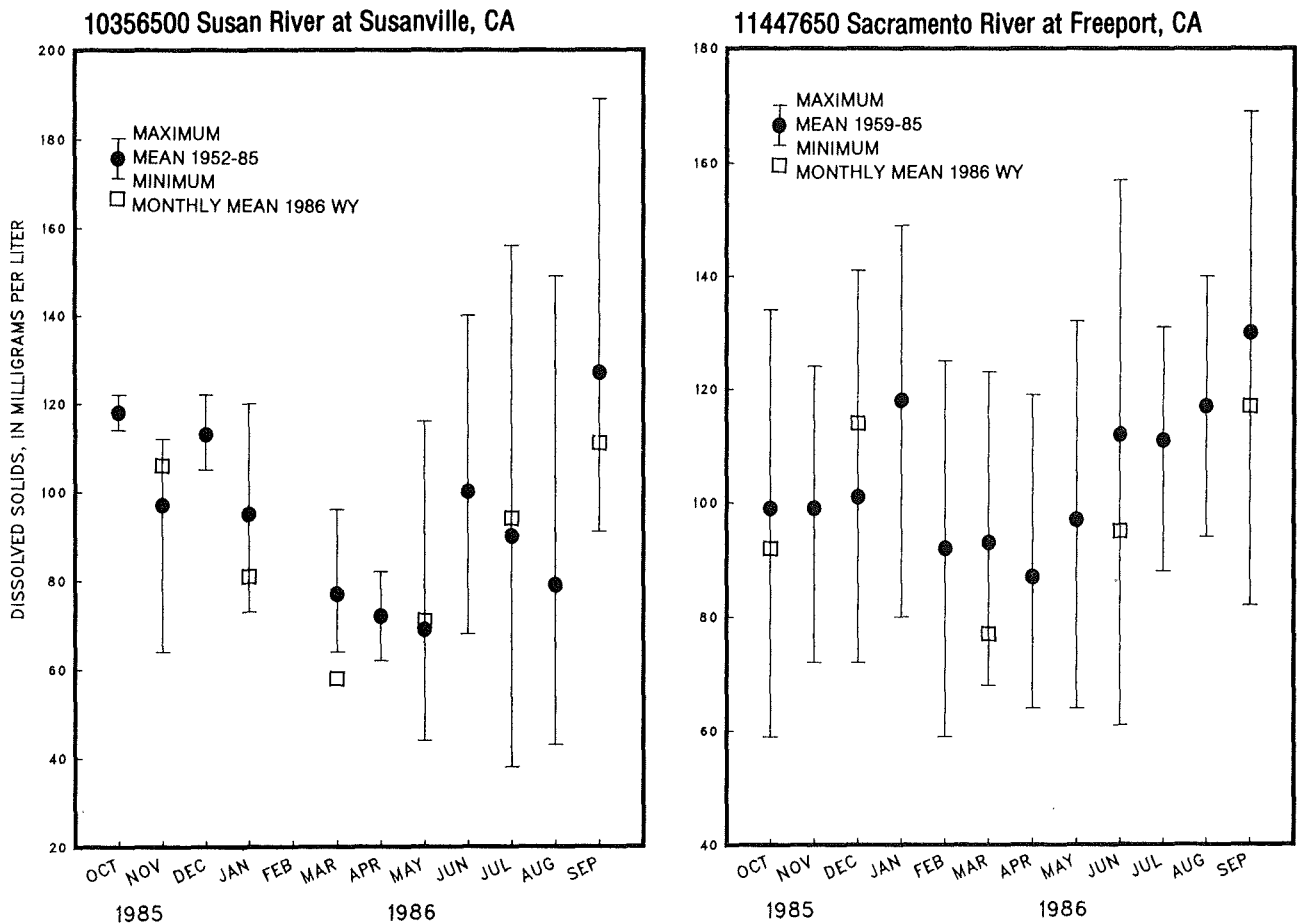


FIGURE 3. — Comparison of monthly mean dissolved-solids concentration during water year 1986 with long-term dissolved-solids concentration of two selected stations.

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1986 water year that began October 1, 1985, and ended September 30, 1986. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and contents data for lakes and reservoirs, and water-quality data for surface water. The locations of the stations where the data were collected are shown in figures 5 through 25. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order System

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

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

Latitude-Longitude System

The identification numbers for miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the other sites within a 1-second grid. 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. 4).

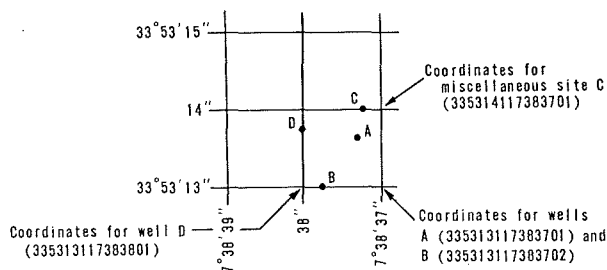


Figure 4.--System for numbering miscellaneous sites (latitude and longitude).

Records of Stage and Water Discharge

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

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Location of all complete-record and crest-stage partial-record stations for which data are given in this report are shown, by county, in figures 5 through 24.

Data Collection and Computation

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

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

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

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

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

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

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

Data Presentation

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

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

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

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

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

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

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

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

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

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

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and 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 and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

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

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

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

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

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

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

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

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

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

Other Records Available

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

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

Records of Surface-Water Quality

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

Classification of Records

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

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 5 through 25.

Arrangement of Records

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

Onsite Measurements and Sample Collection

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

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

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

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

Water Temperature

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

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

Sediment

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

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

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

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

Cross-Section Data

Cross-section surveys of water temperature, pH, specific conductance, dissolved oxygen, and suspended sediment are done at all NASQAN and Hydrologic Bench-mark stations during various seasons and surface-water discharges. Documentation of cross-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, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the U.S Geological Survey laboratories in Arvada, Colorado, or Doraville, Georgia. Methods used in analyzing sediment samples and computing sediment records are given in Techniques of Water-Resources Investigations, Book 5, Chapter C1; methods used by the laboratories are given in Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4.

Data Presentation

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

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

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

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

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

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

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

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

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

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

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

Remark Codes

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

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

ACCESS TO WATSTORE DATA

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

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

General inquiries about WATSTORE may be directed to:

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

DEFINITION OF TERMS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m³) and periphyton and benthic organisms in grams per square meter (g/m²).

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

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

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

Bottom material: See Bed material.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\bar{d} = \sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n},$$

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

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

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

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

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap that is required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO_3).

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

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

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

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

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

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

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

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

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

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

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

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting that the data may be used for, (2) to describe the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) to detect changes in trends with time in the pattern occurrence of water-quality characteristics, and (4) to provide a nationally consistent data base useful for water-quality assessment and hydrologic research.

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

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

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area of the habitat, usually square meter (m²), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Milligrams of oxygen per area or volume per unit time [$\text{mg O}_2/(\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and [$\text{mg O}_2/(\text{m}^3 \cdot \text{time})$] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

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

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

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

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

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

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

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

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

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

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

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

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

Solute is any substance that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

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

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

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

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

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

Kingdom.....	Animal
Phylum.....	Arthropoda
Class.....	Insecta
Order.....	Ephemeroptera
Family.....	Ephemeridae
Genus.....	<u>Hexagenia</u>
Species.....	<u>Hexagenia limbata</u>

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the presence of a thermograph or a digital mechanism that records water temperature in a digital format on punched paper tape.

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

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

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

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

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

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

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

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1986, is called the "1986 water year."

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

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

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

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

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

DISCONTINUED GAGING STATIONS

The following continuous-record streamflow stations in California have been discontinued as of the 1986 water year. Daily streamflow or stage records were collected and published for the period of record shown for each station.

Station No.	Station name	Drainage area (mi ²)	Period of record
11375810	Cottonwood Creek near Olinda	395	1971-86
11375870	South Fork Cottonwood Creek near Olinda	371	1977-86
11384000	Big Chico Creek near Chico	72.4	1986
11394500	Middle Fork Feather River near Merimac	1,062	1952-86
11403200	North Fork Feather River below Rock Creek diversion dam	1,773	1986
11404330	North Fork Feather River below Grizzley Creek	1,914	1986
11405300	West Branch Feather River near Paradise	110	1958-86
11421720	Boardman Canal near Emigrant Gap	--	1965-86
11407500	South Honcut Creek near Bangor	30.6	1951-86
11433420	Maine Bar Canyon Creek near Greenwood	0.76	1972-83, 1984-86
11433800	North Fork American River below Auburn Damsite, near Auburn	973	1972-86
11451760	Cache Creek above Rumsey	955	1961-62, 1965-73, 1984-86
11451950	Cache Creek near Brooks	1,041	1984-86

DISCONTINUED WATER-QUALITY STATIONS

The following water-quality stations in California have been discontinued as of the 1986 water year. Continuous daily records of water temperature and/or sediment were collected and published for the period of record shown for each station.

Station No.	Station name	Drainage area (mi ²)	Type of record	Period of record
11433800	North Fork American River below Auburn Damsite, near Auburn	973	T	1983, 1984-86
11451760	Cache Creek above Rumsey	955	T,S	1961-70 1984-86
11451950	Cache Creek near Brooks	1,041	T,S	1984-86
11452500	Cache Creek at Yolo	1,139	T,S	1959-65, 1967, 1986

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

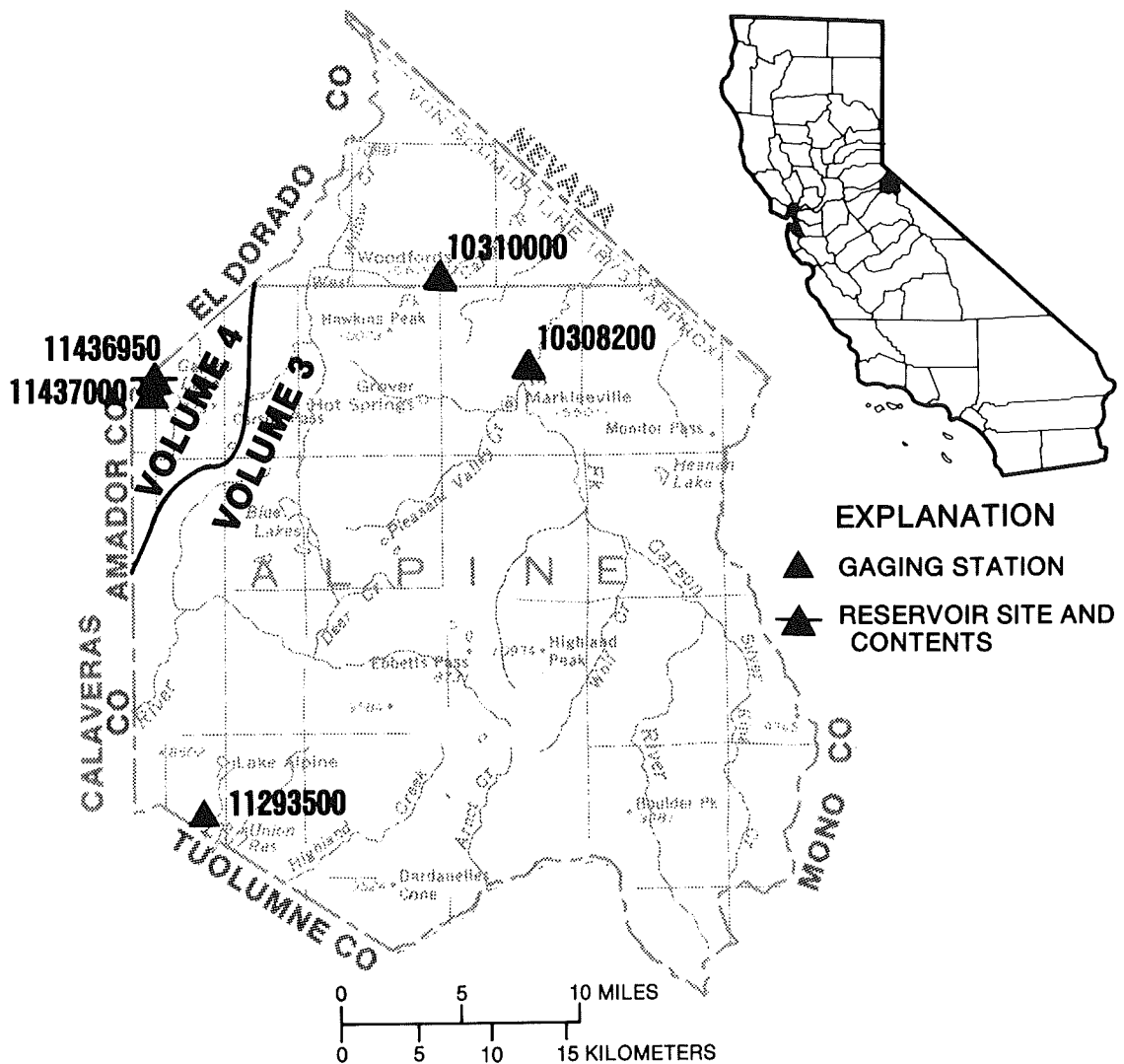


FIGURE 5.—Location of discharge stations in Alpine County.
(Note: Records for stations 10308200, 10310000, and 11293500 published in volume 3)

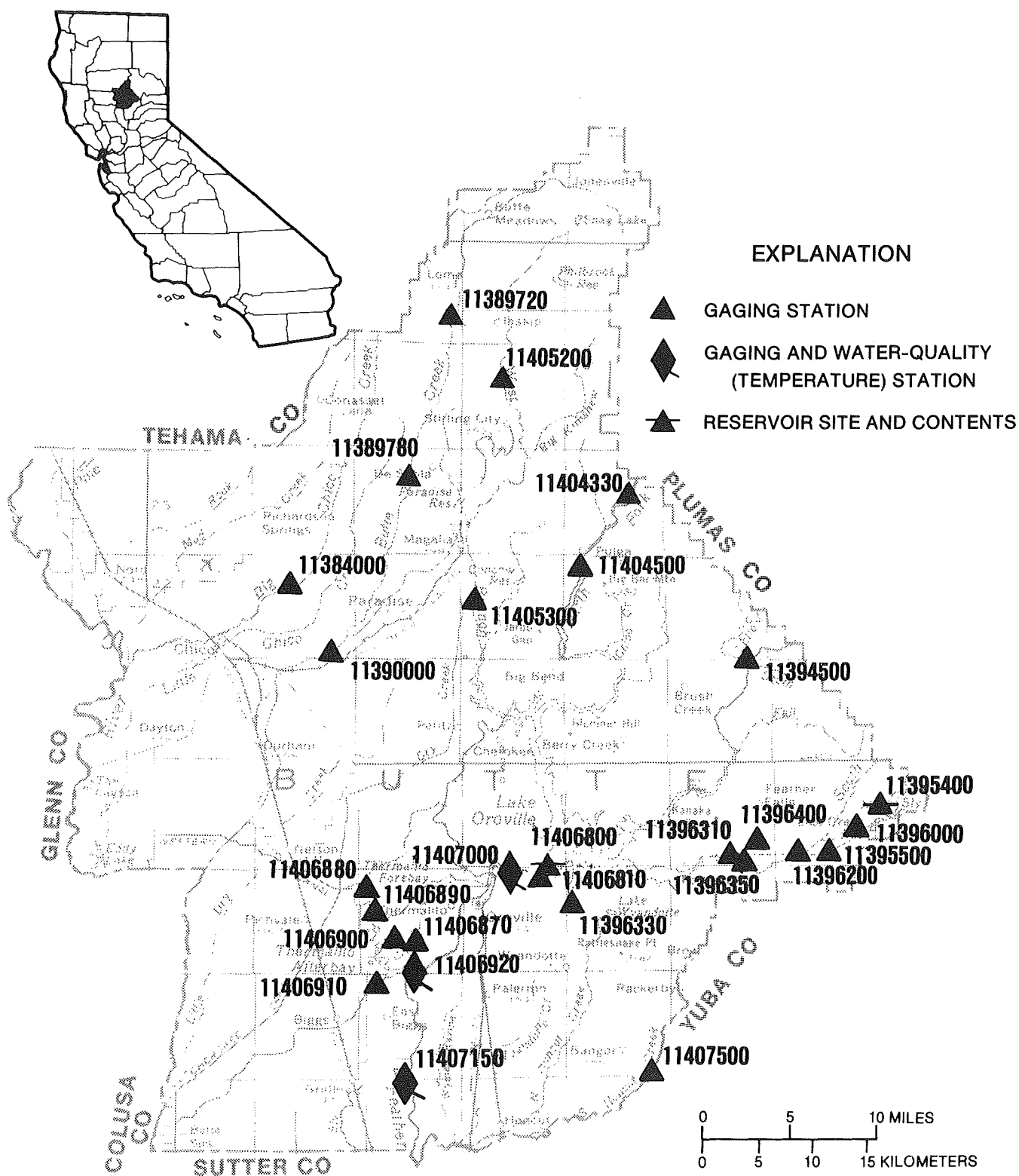


FIGURE 6.—Location of discharge and water-quality stations in Butte County.

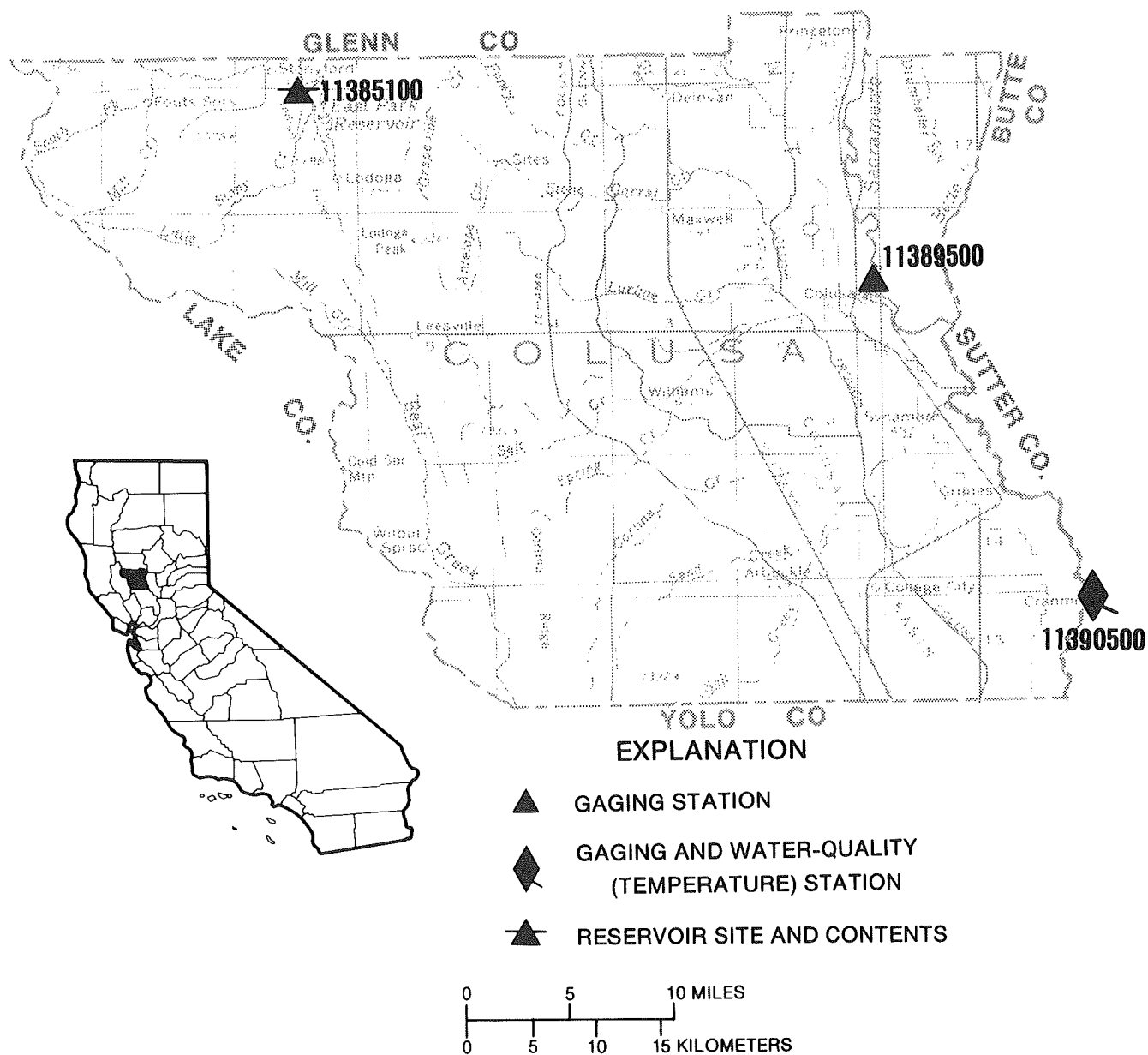
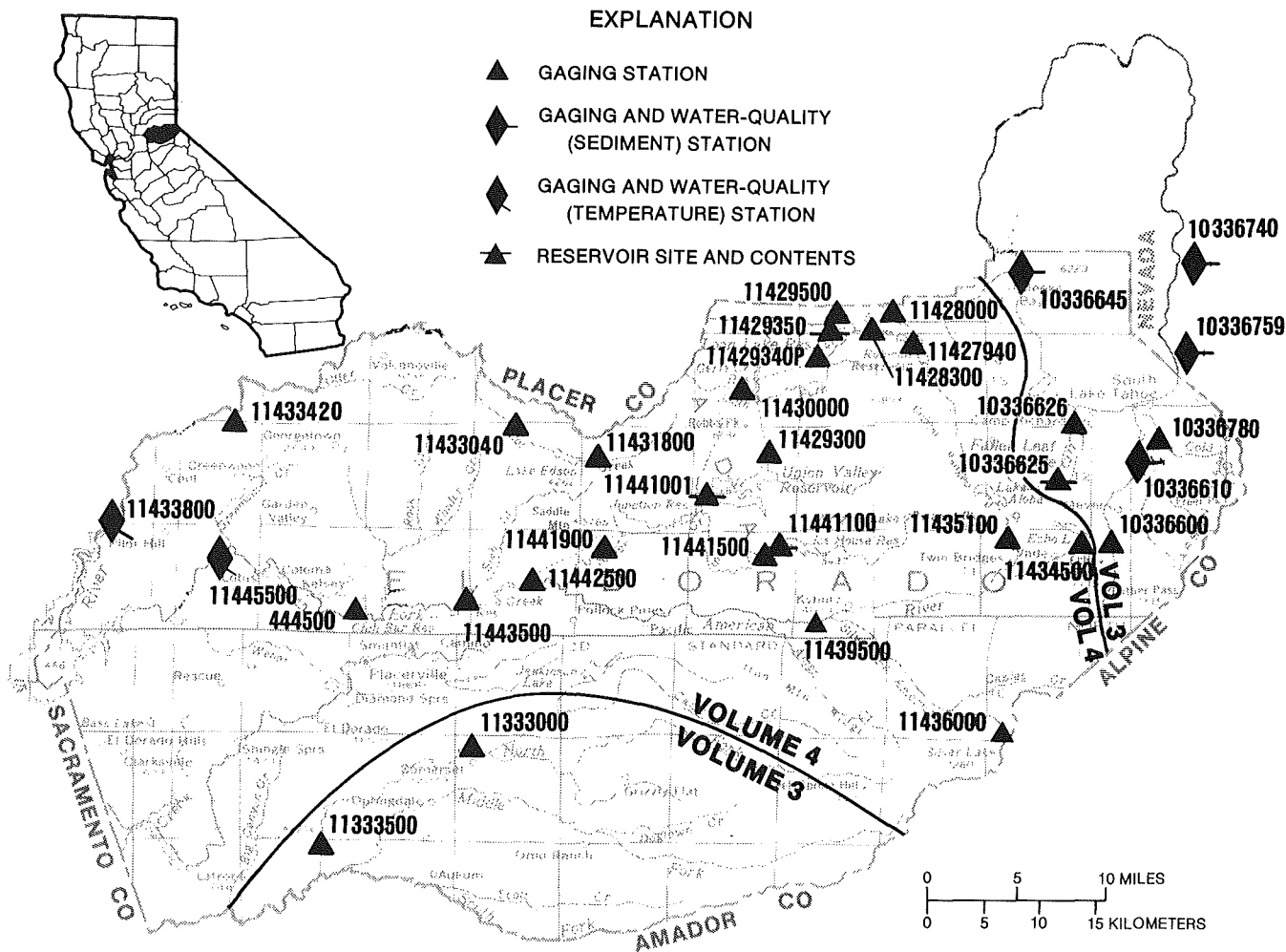


FIGURE 7.—Location of discharge and water-quality stations in Colusa County.



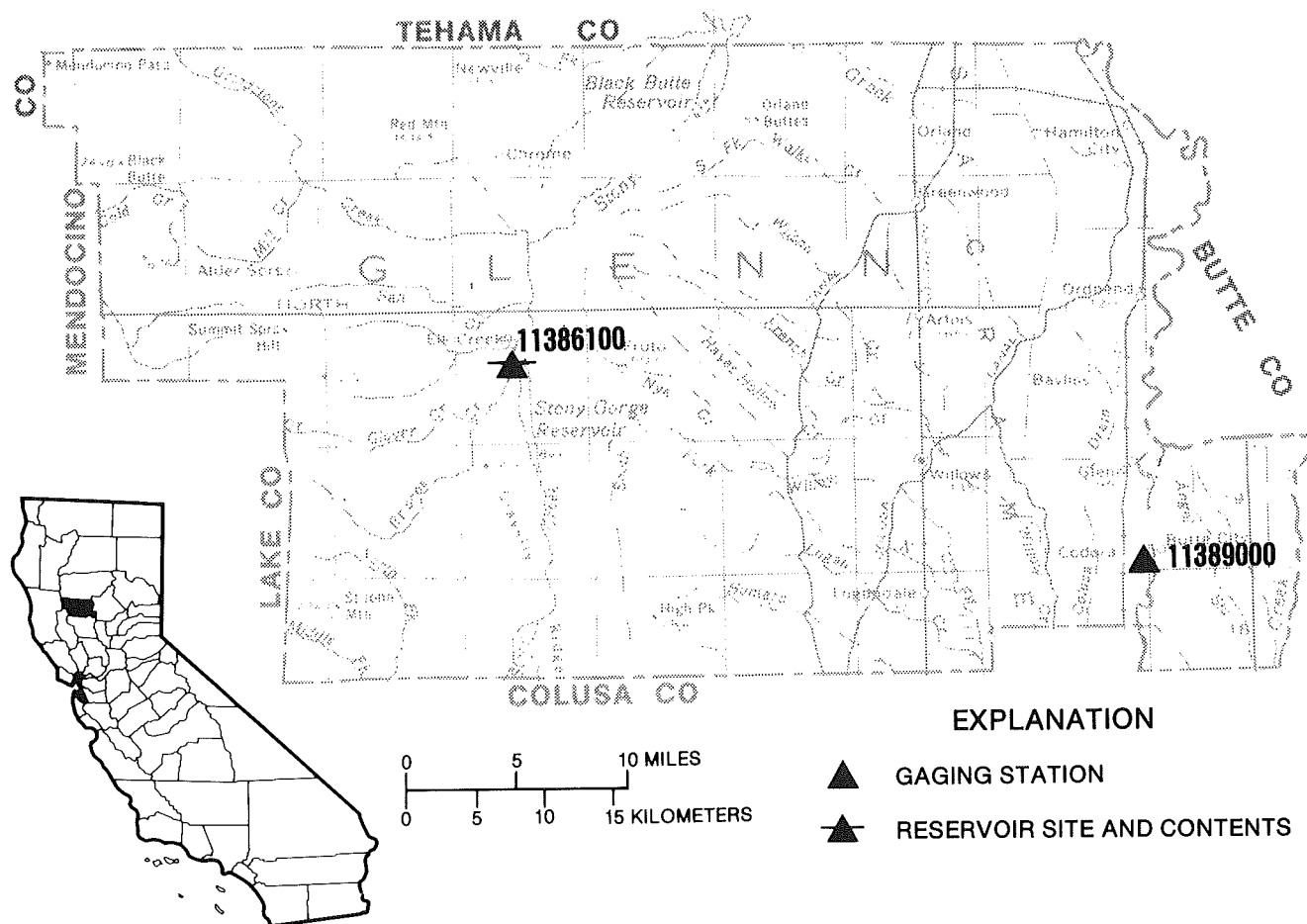
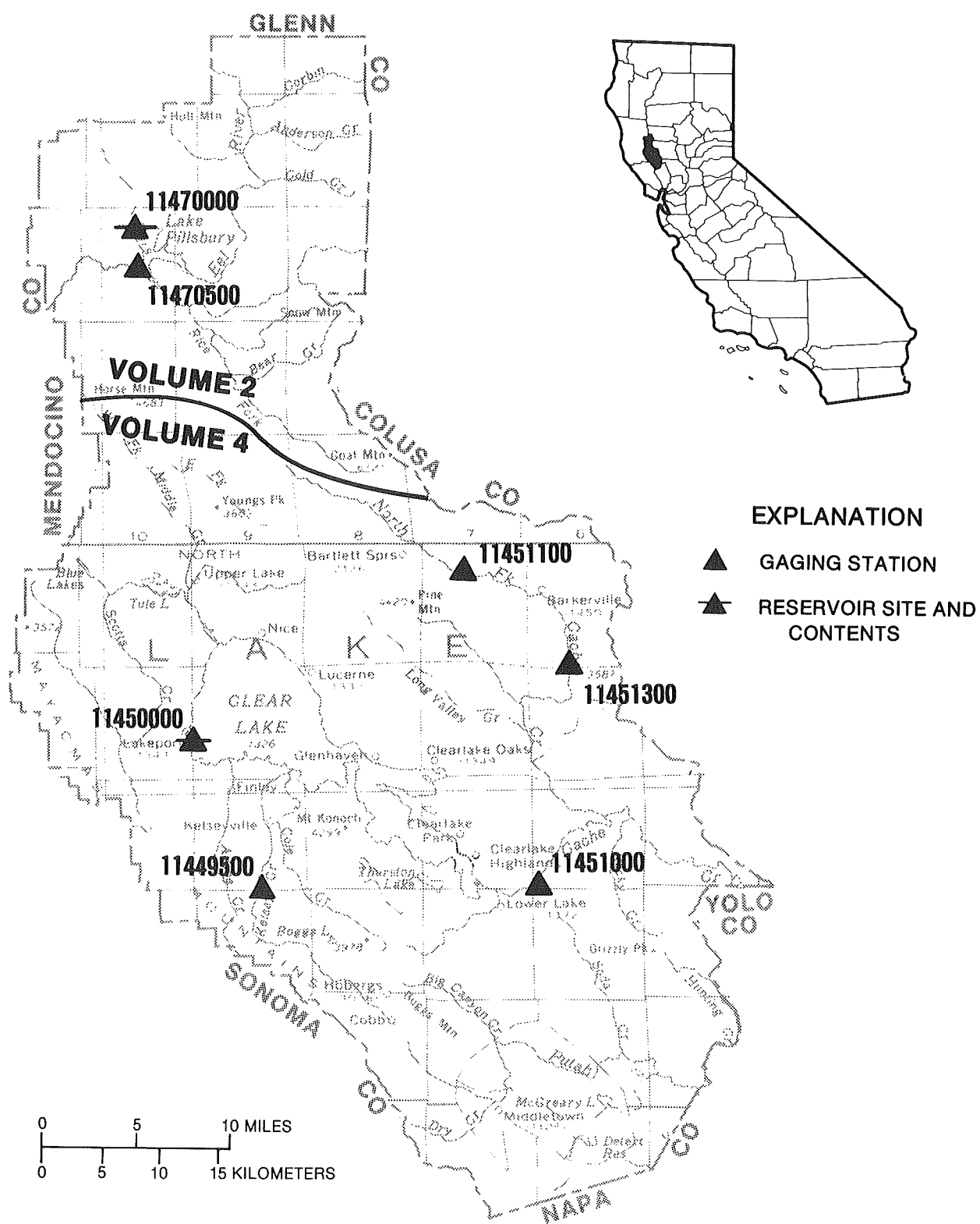


FIGURE 9.—Location of discharge stations in Glenn County.



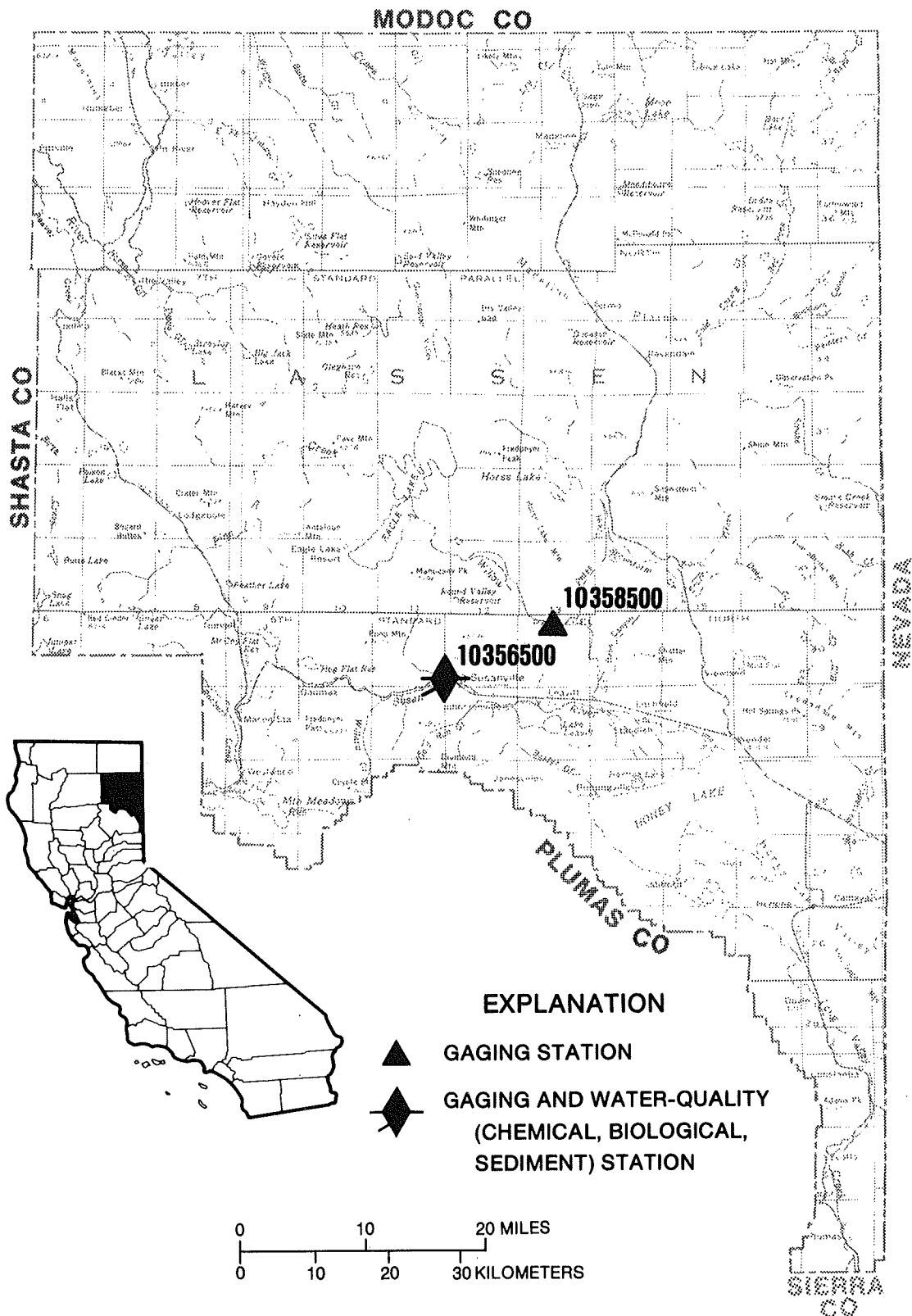


FIGURE 11.— Location of discharge and water-quality stations in Lassen County.

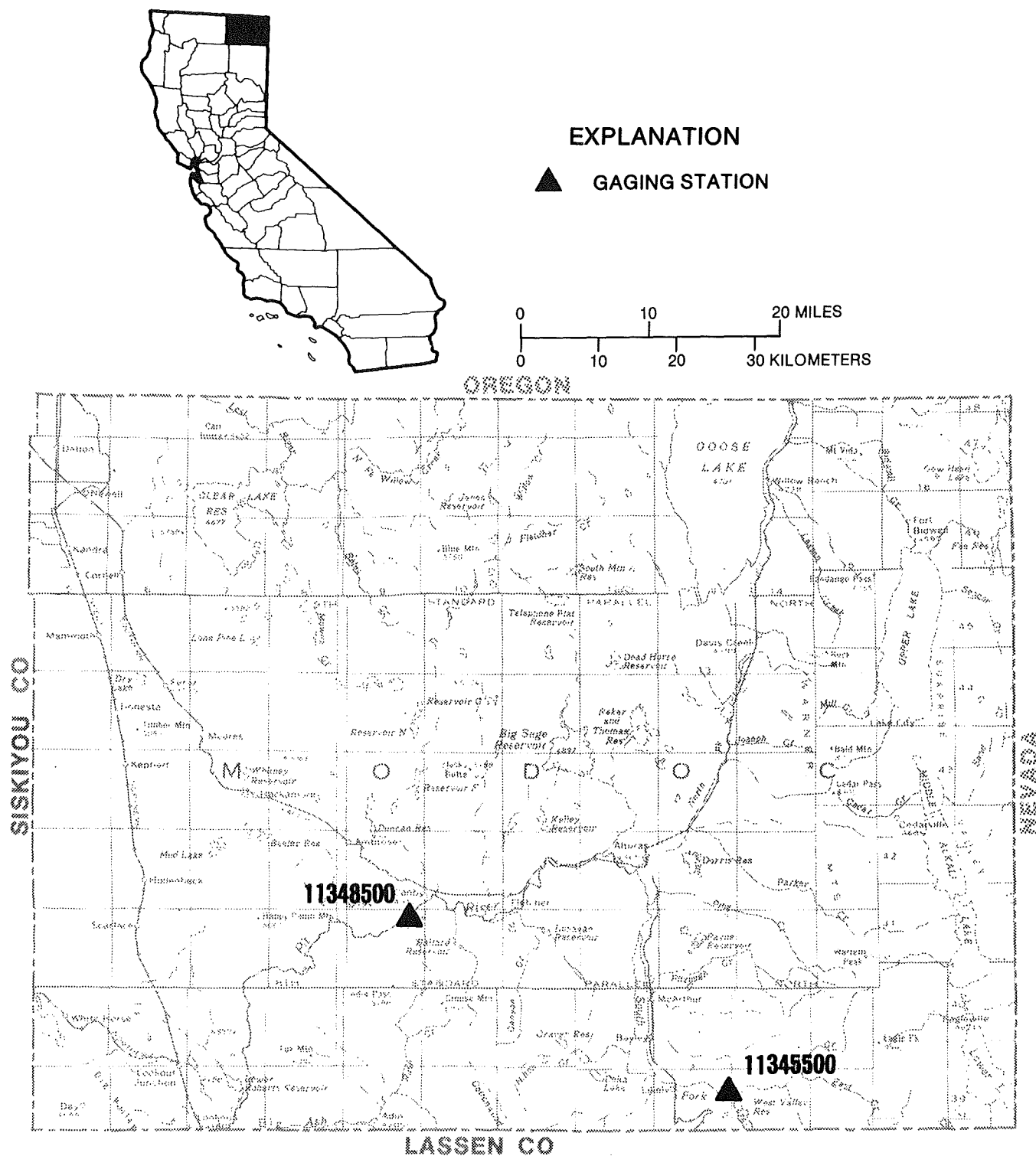


FIGURE 12.—Location of discharge stations in Modoc County.

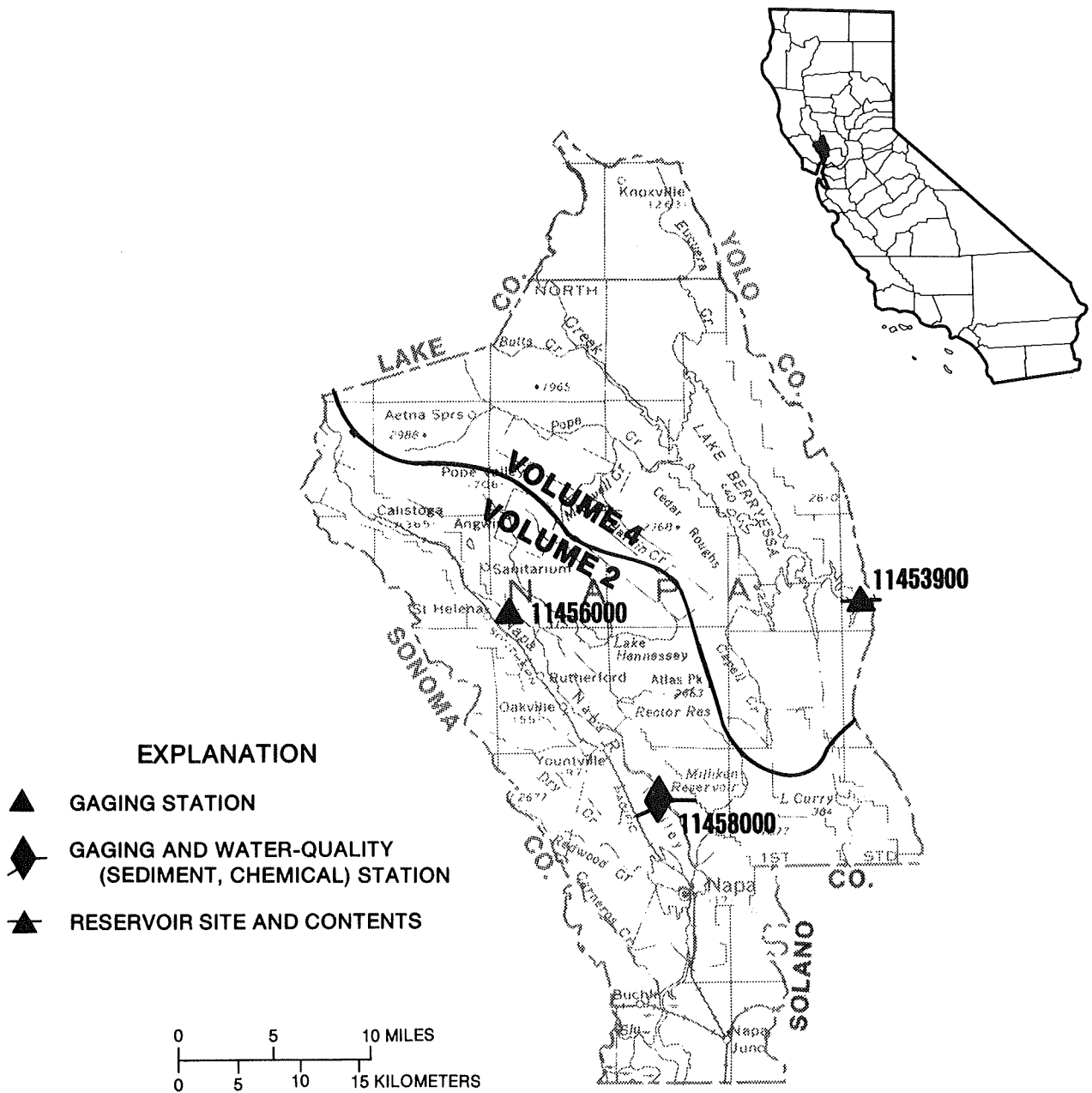


FIGURE 13.—Location of discharge and water-quality stations in Napa County.
 (Note: Records for stations 11456000 and 11458000 published in volume 2)

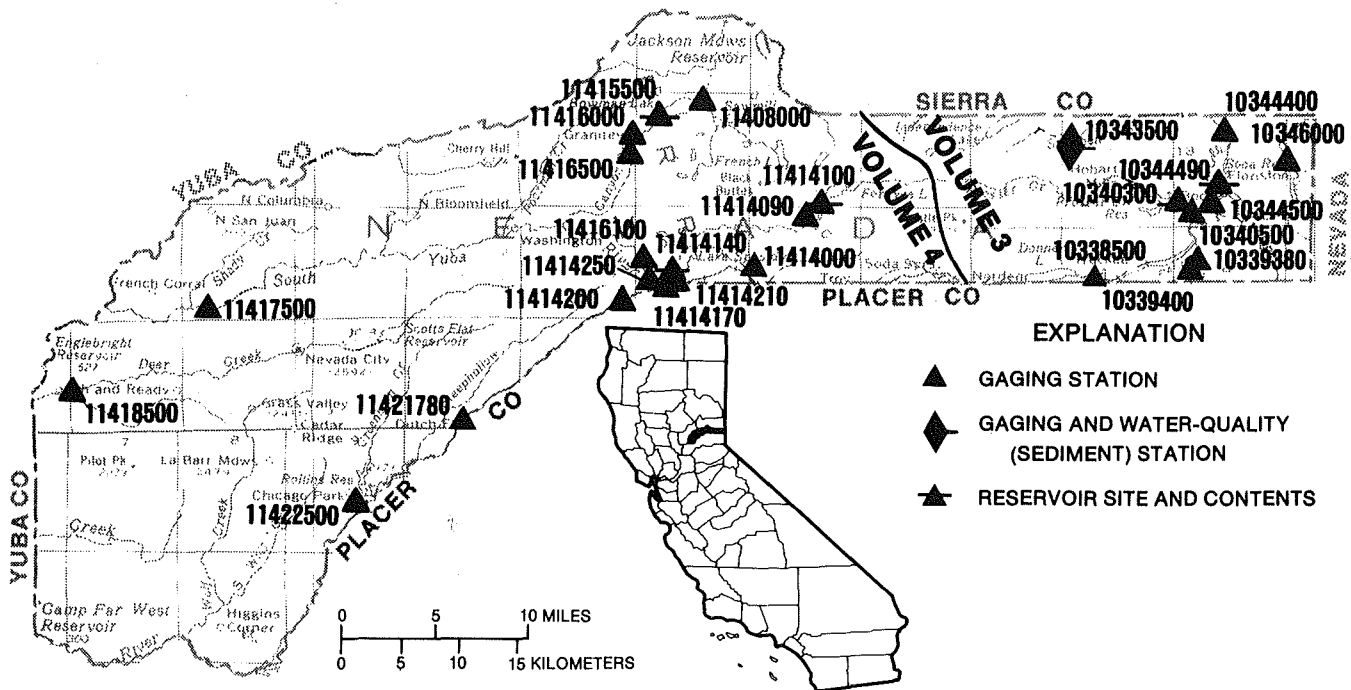


FIGURE 14.—Location of discharge and water-quality stations in Nevada County.
 (Note: Records for stations 10338500 through 10346000 published in volume 3)

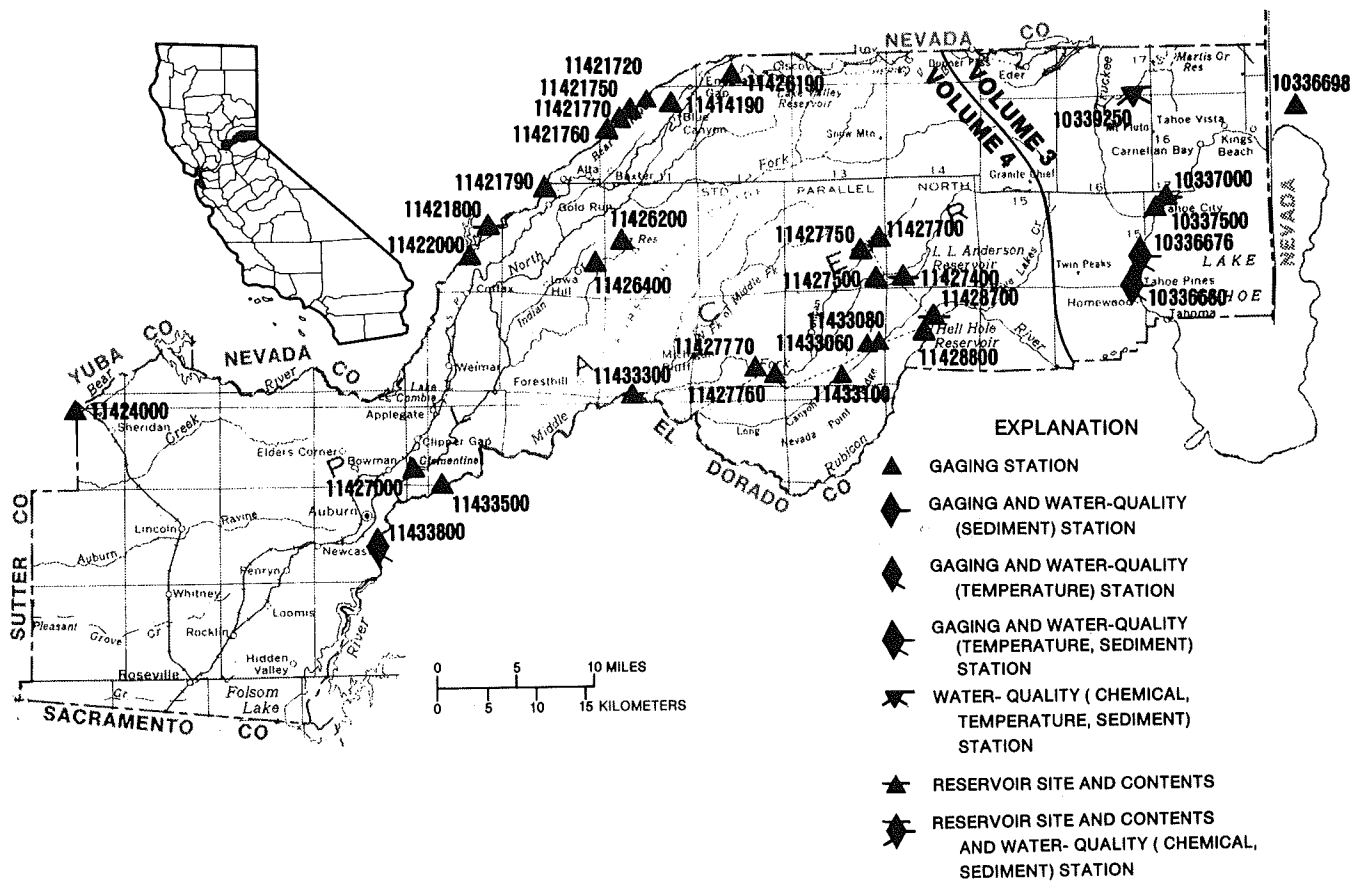


FIGURE 15.—Location of discharge and water-quality stations in Placer County.
 (Note: Records for stations 10336660 through 10339250 published in volume 3)

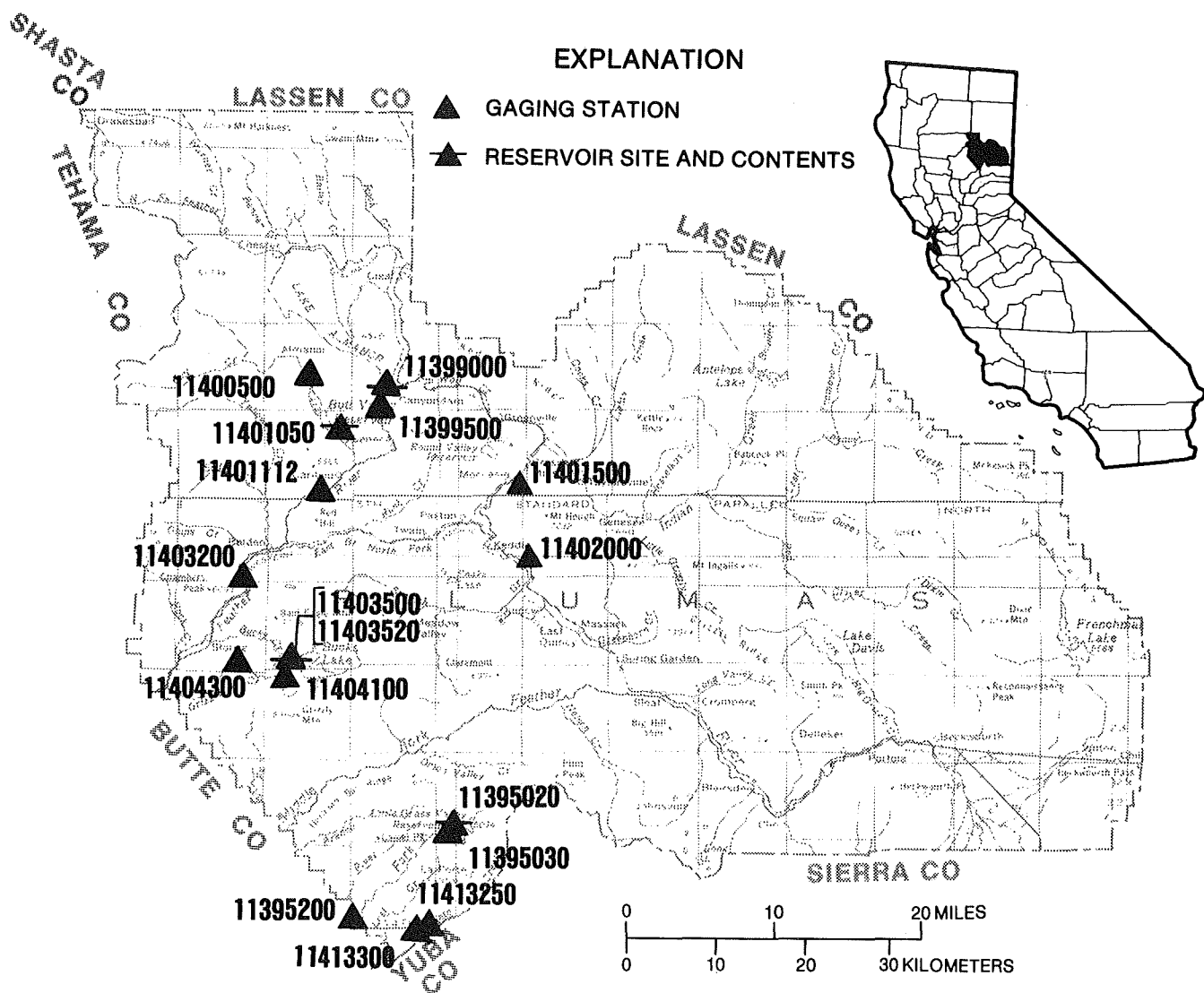


FIGURE 16.—Location of discharge stations in Plumas County.

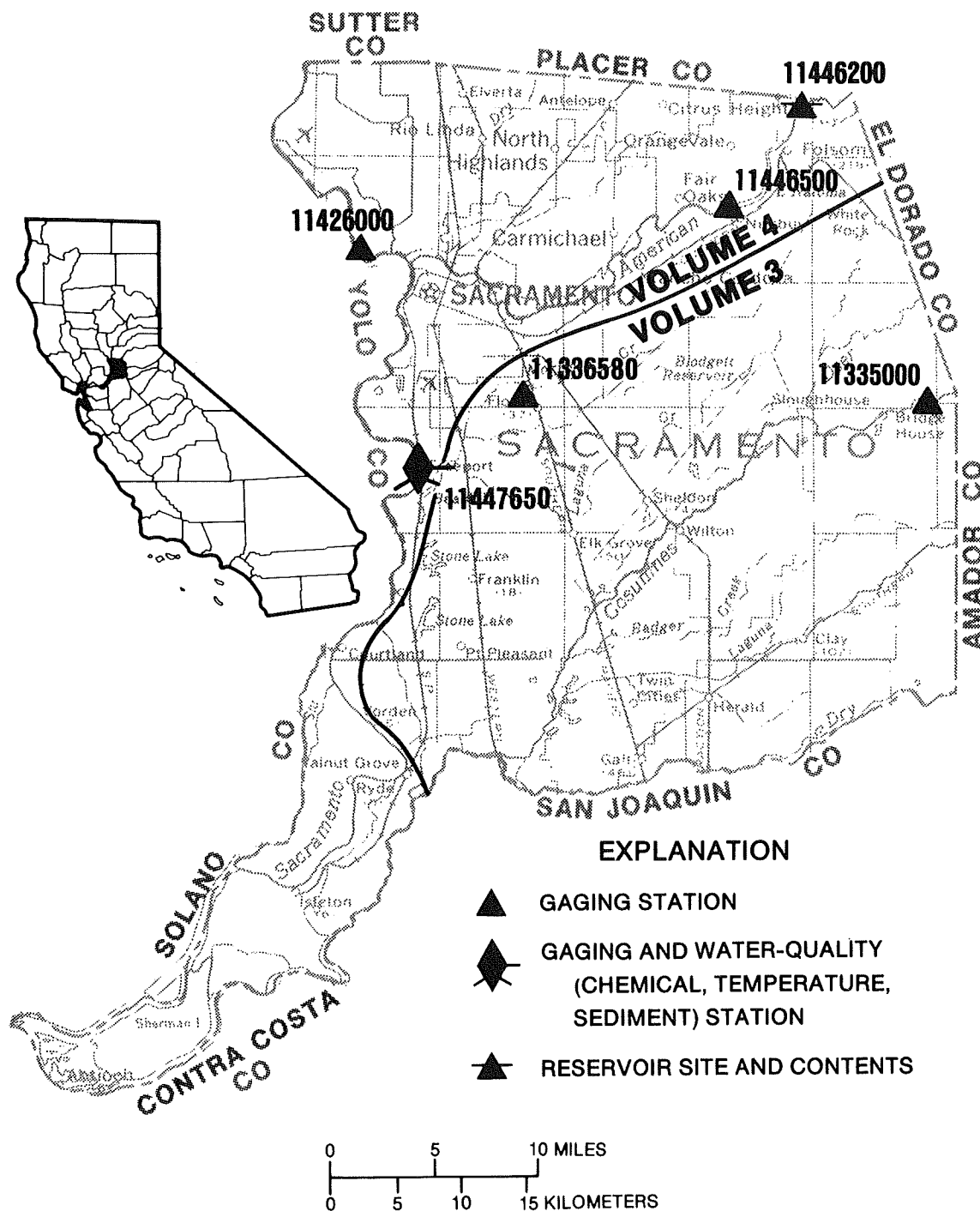


FIGURE 17.—Location of discharge and water-quality stations in Sacramento County.
 (Note: Records for 11335000 and 11336580 published in volume 3)

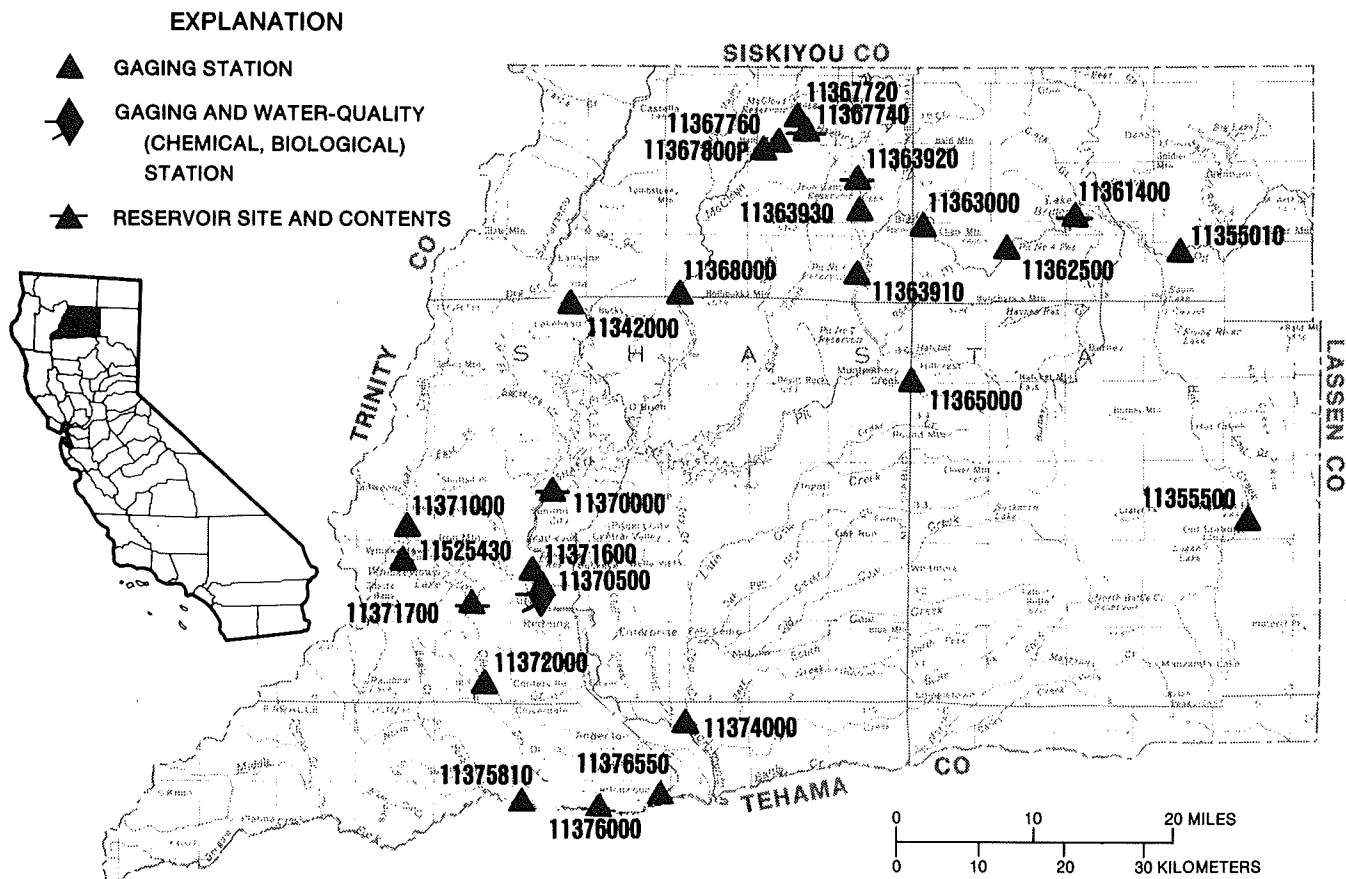


FIGURE 18.—Location of discharge and water-quality stations in Shasta County.

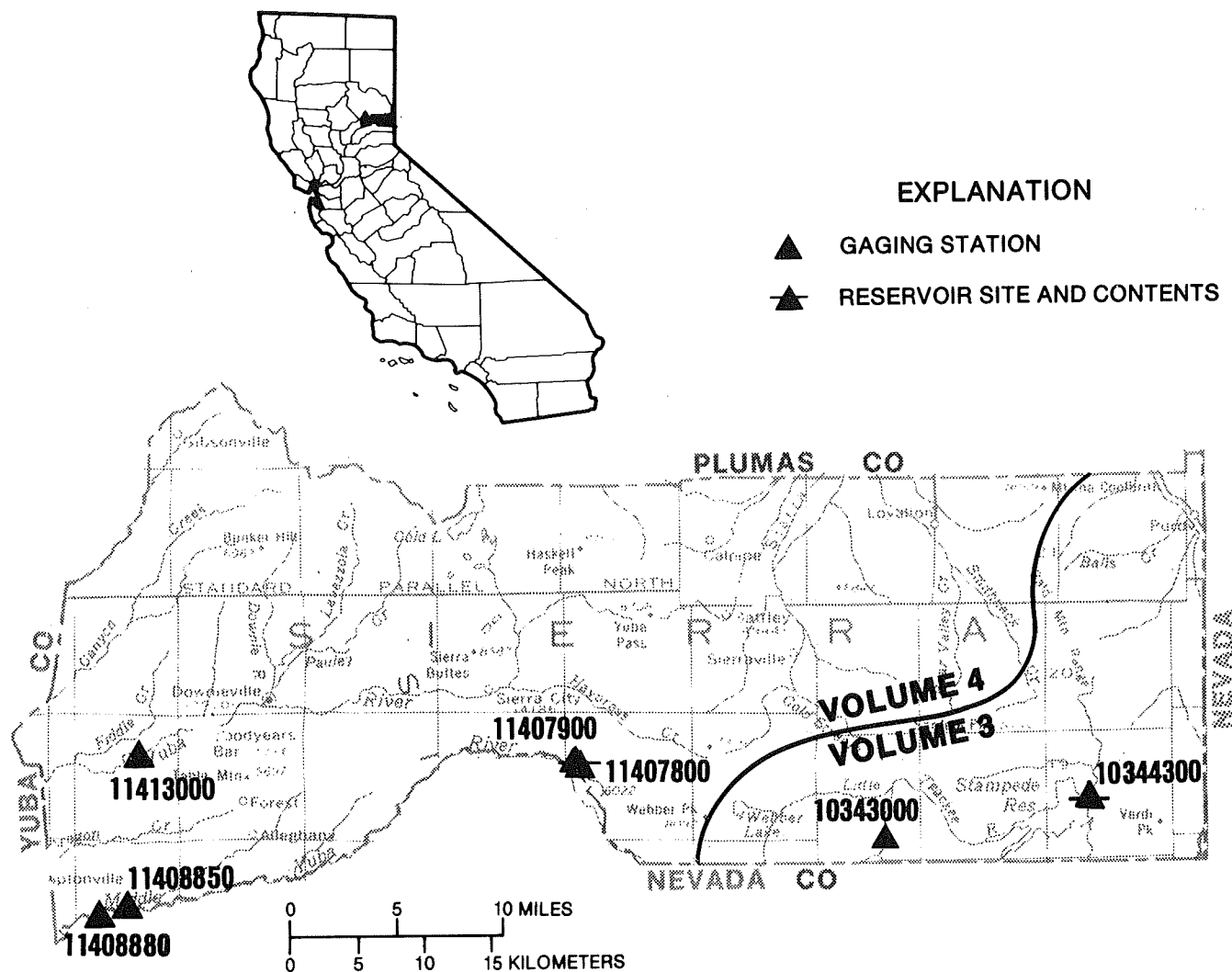


FIGURE 19.—Location of discharge station in Sierra County.
 (Note: Records for stations 10343000 and 10344300 published in volume 3)

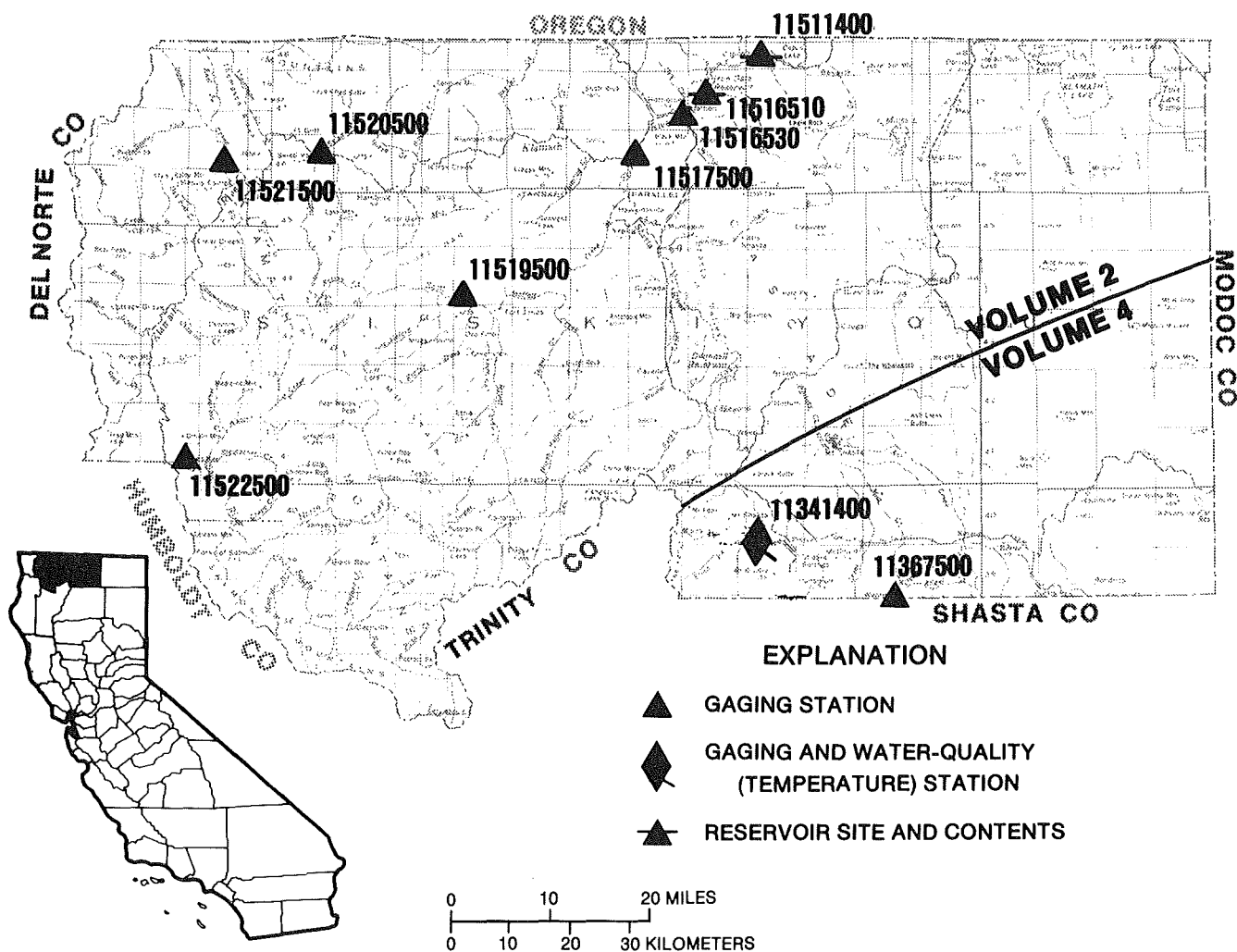
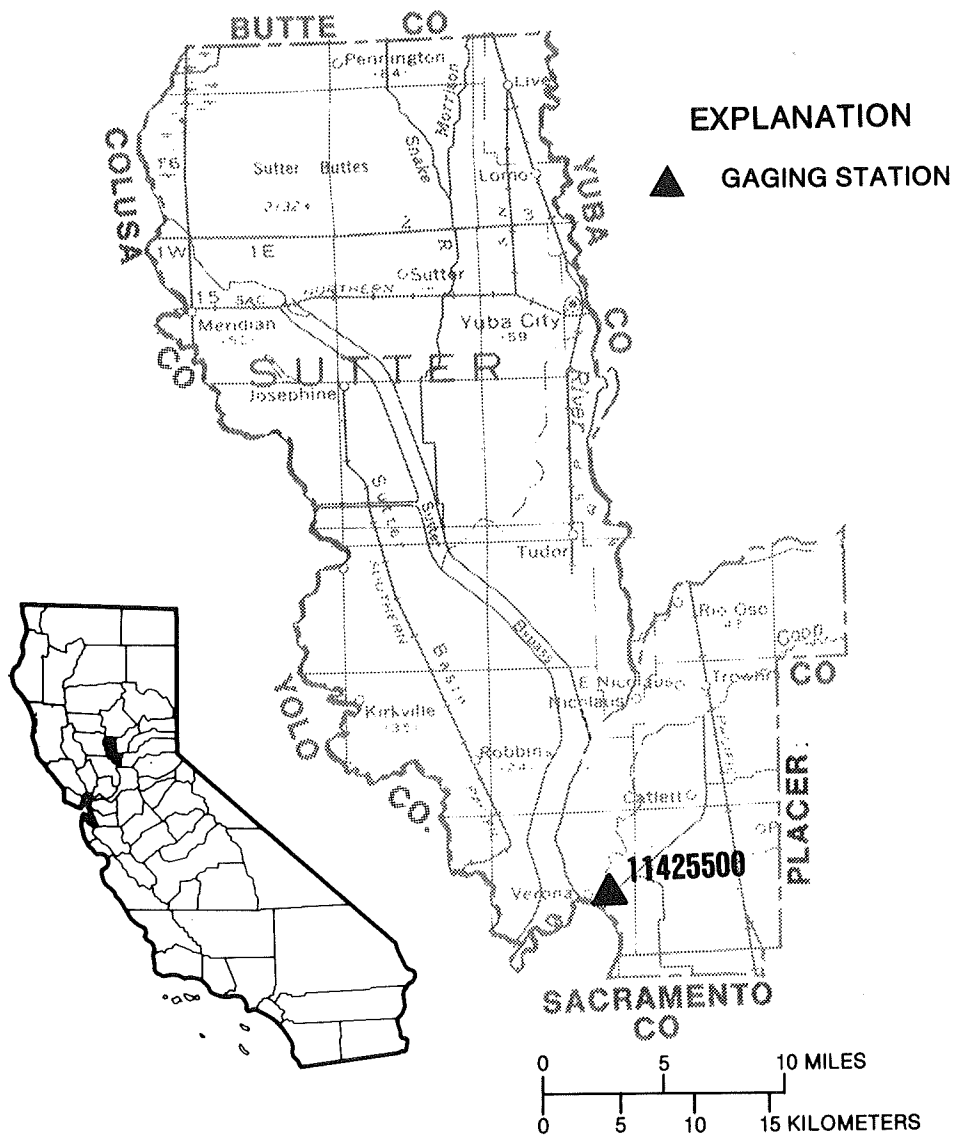


FIGURE 20.—Location of discharge and water-quality stations in Siskiyou County.
 (Note: Records for stations 11511400 through 11522500 published in volume 2)



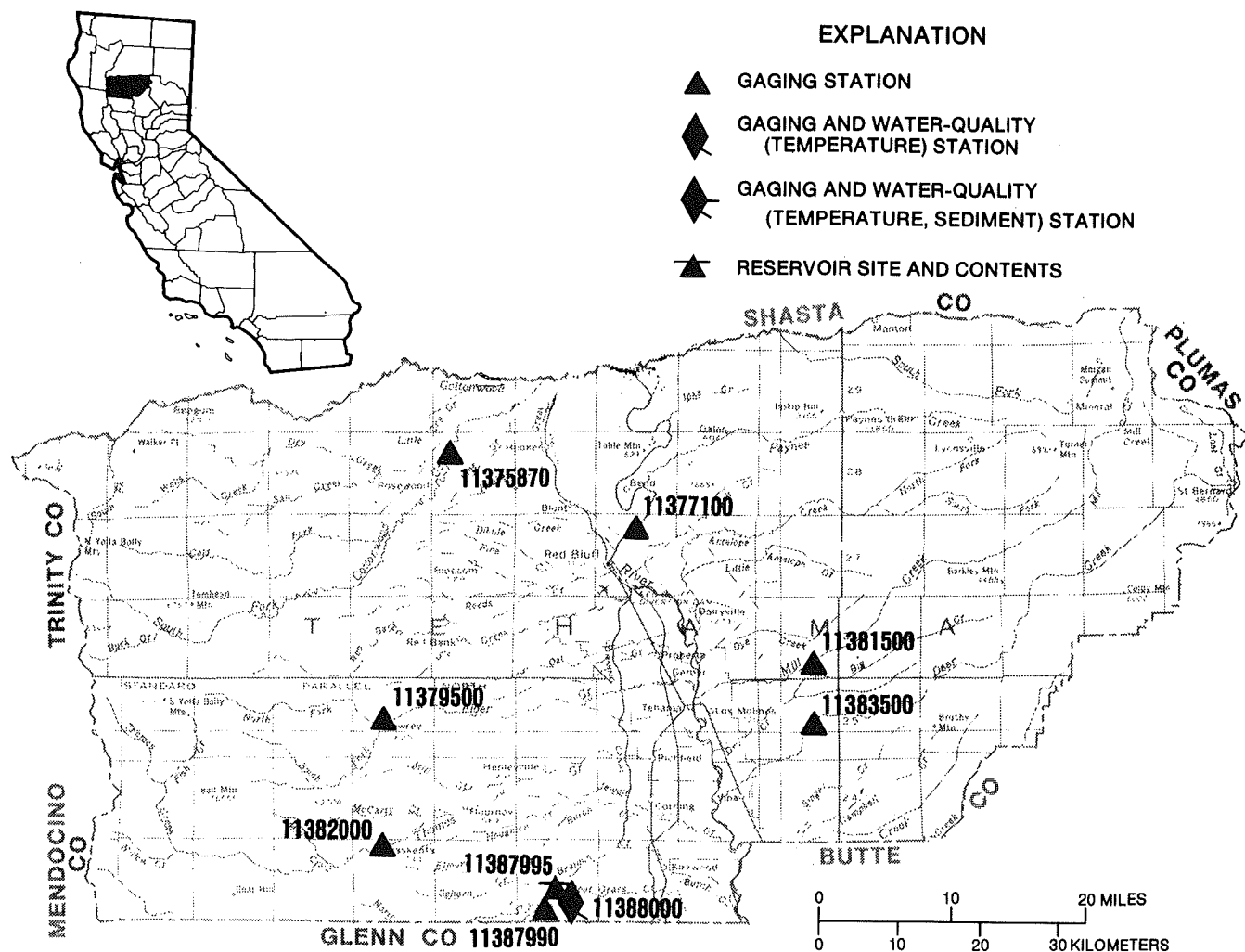


FIGURE 22.—Location of discharge and water-quality stations in Tehama County.

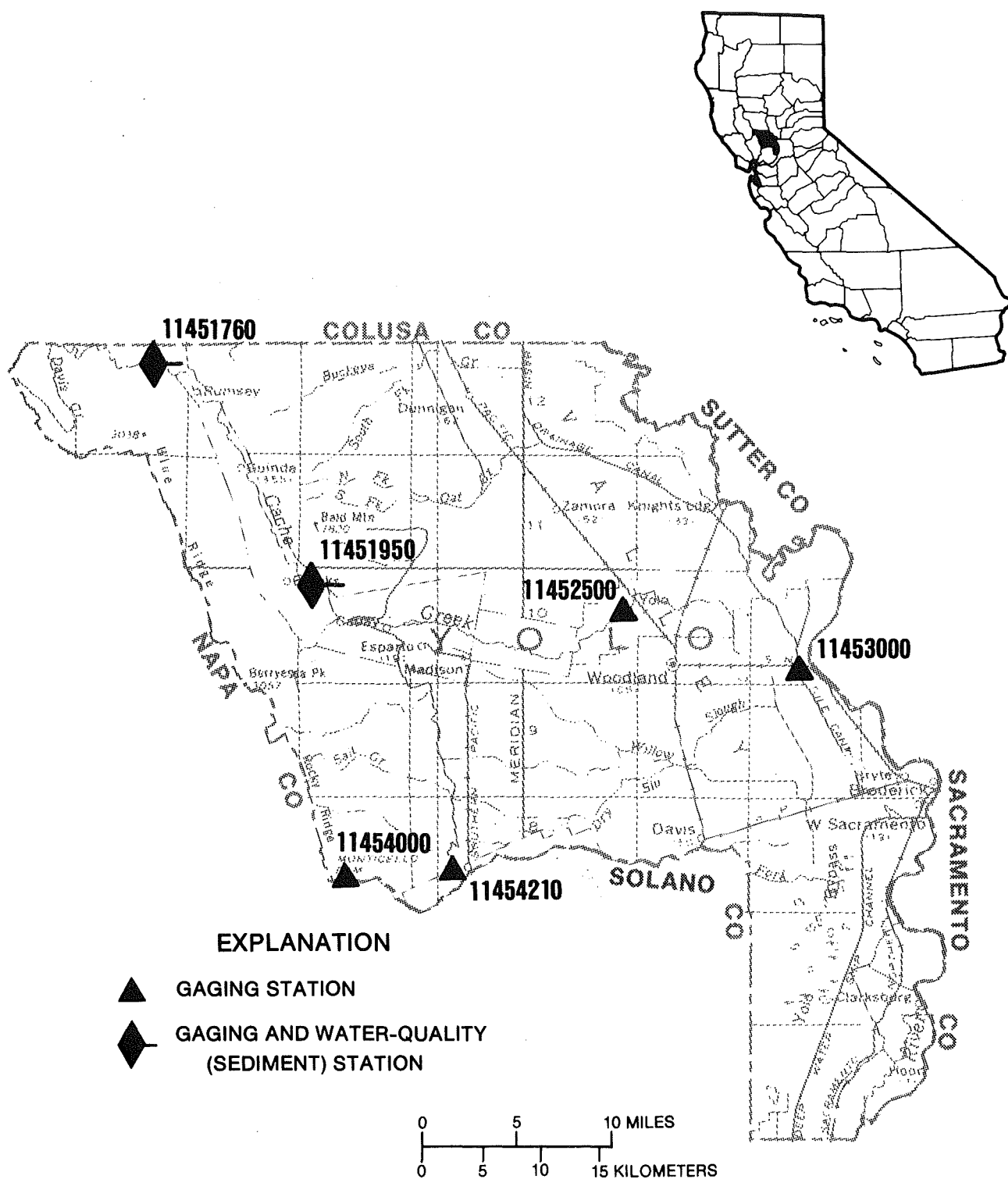


FIGURE 23.—Location of discharge and water-quality stations in Yolo County.

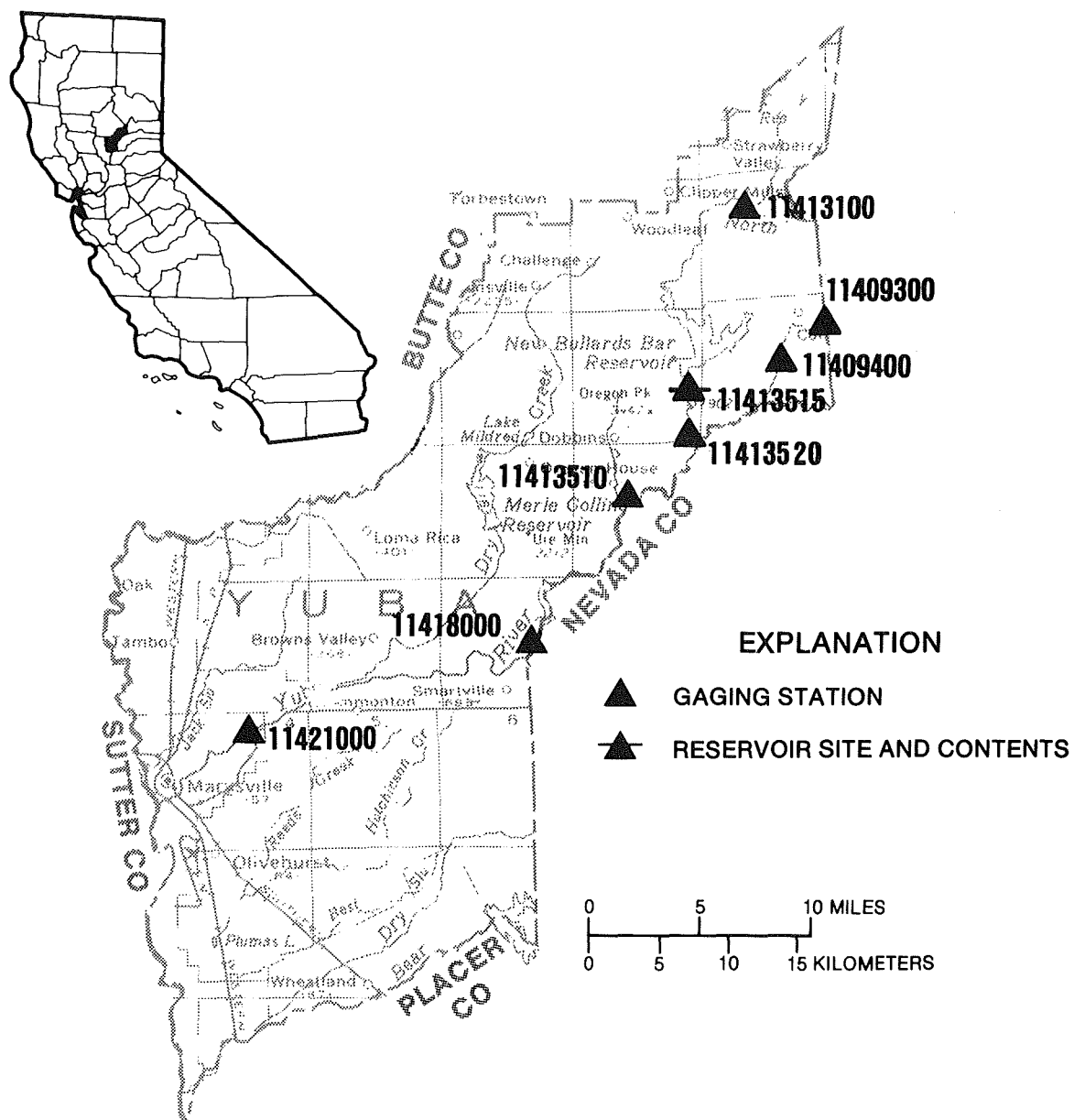


FIGURE 24.—Location of discharge stations in Yuba County.

THE GREAT BASIN

HONEY LAKE BASIN

10356500 SUSAN RIVER AT SUSANVILLE, CA
(National stream-quality accounting network station)

LOCATION.--Lat 40°25'03", long 120°40'15", in SW 1/4 NE 1/4 sec.31, T.30 N., R.12 E., Lassen County, Hydrologic Unit 18080003, on left bank 0.5 mi west of Susanville, 1.1 mi upstream from Piute Creek, and 19.8 mi downstream from McCoy Flat Reservoir.

DRAINAGE AREA.--184 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 4,225.72 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1950, nonrecording gages at several sites in vicinity of old powerplant 0.9 mi upstream at various datums.

REMARKS.--Estimated daily discharges for the following ice affected periods: Oct. 26 to Dec. 4, Dec. 7-9, 11-13, 22, 23, Jan. 7-14, 23-28, and Feb. 6-11. Records good except for periods with ice affect, which are poor. Flow regulated by McCoy Flat Reservoir and Hog Flat Reservoir, combined usable capacity, 25,300 acre-ft. Diversions for irrigation of 1,400 acres above station.

AVERAGE DISCHARGE.--42 years (water years 1901, 1904-5, 1918-20, 1951-86), 98.2 ft³/s, 71,150 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,850 ft³/s, Jan. 24, 1970, gage height, 8.89 ft, in gage well, 10.4 ft, from floodmarks, from rating curve extended above 1,000 ft³/s on basis of slope-area measurement at gage height 6.62 ft and contracted-opening measurement of peak flow; no flow Aug. 15, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,120 ft³/s, Feb. 17, gage height, 8.33 ft; minimum daily, 4.8 ft³/s, Nov. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	9.0	16	25	120	374	374	116	65	89	75	8.6
2	8.0	10	20	22	147	353	359	112	63	87	74	8.2
3	7.4	11	30	21	118	336	328	116	61	85	74	43
4	7.5	11	27	20	87	320	308	138	58	83	75	74
5	9.3	7.0	23	67	74	310	254	156	55	81	74	76
6	9.6	8.0	22	57	56	291	241	174	53	79	73	77
7	10	9.0	20	32	42	683	265	172	51	78	73	76
8	9.6	10	23	24	38	2170	270	152	49	77	73	75
9	9.9	8.5	16	21	35	963	212	120	47	75	72	74
10	10	7.5	15	20	36	771	202	123	88	72	71	46
11	11	6.5	17	19	38	659	185	111	129	71	71	17
12	11	5.5	16	18	44	587	186	109	130	70	71	13
13	11	4.8	16	18	133	528	186	102	128	67	71	9.5
14	11	6.5	15	19	1040	462	185	100	111	65	70	8.0
15	11	7.4	15	21	1460	434	182	97	106	62	70	7.8
16	11	7.7	14	209	1280	403	180	94	104	57	71	12
17	11	7.8	14	430	3690	356	175	89	101	56	70	16
18	11	8.0	14	156	2820	315	163	91	100	53	69	16
19	11	8.2	14	121	1700	289	152	91	98	33	68	20
20	11	8.4	13	114	1070	278	139	89	96	18	67	21
21	14	7.5	13	73	727	268	137	89	94	14	33	18
22	14	8.4	13	56	620	263	138	86	98	12	13	16
23	14	9.0	13	45	543	263	163	84	97	11	10	15
24	14	9.8	13	38	485	280	172	82	96	12	9.4	18
25	11	11	12	35	446	294	190	80	94	12	8.7	29
26	10	10	12	33	416	298	174	78	91	11	7.9	32
27	9.6	11	12	32	401	322	147	76	95	13	7.9	39
28	9.0	13	12	36	392	356	145	73	94	12	7.4	29
29	8.5	14	13	55	---	373	135	71	92	44	7.4	24
30	10	15	15	95	---	385	123	69	91	71	7.9	23
31	6.8	---	20	132	---	382	---	67	---	73	8.2	---
TOTAL	321.5	270.5	508	2064	18058	14366	6070	3207	2635	1643	1552.8	941.1
MEAN	10.4	9.02	16.4	66.6	645	463	202	103	87.8	53.0	50.1	31.4
MAX	14	15	30	430	3690	2170	374	174	130	89	75	77
MIN	6.8	4.8	12	18	35	263	123	67	47	11	7.4	7.8
AC-FT	638	537	1010	4090	35820	28490	12040	6360	5230	3260	3080	1870

CAL YR 1985 TOTAL 12716.1 MEAN 34.8 MAX 194 MIN 2.8 AC-FT 25220

HONEY LAKE BASIN

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952 to current year.

CHEMICAL DATA: Water years 1952 to current year.

BIOLOGICAL DATA: Water years 1978 to current year.

SEDIMENT DATA: Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS. / 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. / 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV 20...	1350	14	169	7.6	0.5	650	1.0	12.0	98	<1	K7	7
JAN 23...	1200	48	110	7.5	2.0	680	5.4	12.8	104	<1	K6	5
MAR 19...	1415	294	69	7.6	6.0	660	11	10.8	100	<1	K4	3
MAY 20...	1440	88	83	8.0	12.0	650	2.0	9.0	98	K1	26	3
JUL 23...	1115	11	127	7.9	19.0	655	2.2	8.6	108	22	K14	6
SEP 24...	1030	16	139	8.2	11.0	640	1.0	9.7	104	K6	21	6

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L CACO3)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVE (MG/L AS CL)
NOV 20...	0	16	8.9	6.1	14	0.3	2.1	119	98	97	1.6	0.4
JAN 23...	0	12	5.1	4.7	16	0.3	1.4	72	59	61	6.3	1.2
MAR 19...	0	7.4	3.0	3.0	17	0.2	0.80	46	38	38	4.1	0.7
MAY 20...	0	9.4	3.6	3.4	16	0.2	1.0	55	45	44	1.8	0.7
JUL 23...	0	13	6.7	4.8	14	0.3	1.9	89	73	72	2.6	0.8
SEP 24...	0	14	7.5	5.2	14	0.3	1.9	112	92	91	4.8	0.8

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
NOV 20...	<0.1	37	106	130	0.14	<0.01	<0.10	0.03	<0.01	0.30	0.11
JAN 23...	0.1	26	81	94	0.11	<0.01	<0.10	0.03	0.02	0.40	0.04
MAR 19...	<0.1	20	58	62	0.08	<0.01	<0.10	0.02	0.02	0.50	0.04
MAY 20...	<0.1	23	71	70	0.10	<0.01	<0.10	0.05	0.03	0.30	0.05
JUL 23...	<0.1	29	94	100	0.13	<0.01	<0.10	0.04	0.03	0.30	0.03
SEP 24...	<0.1	29	111	120	0.15	<0.01	<0.10	<0.01	0.02	0.20	0.03

See footnotes at end of table.

HONEY LAKE BASIN

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	PHOS-PHOS, DIS-SOLVED (MG/L AS P)	PHOS-ORTH, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC, DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM, DIS-SOLVED (UG/L AS CD)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 20...	0.01	0.02	<10	<1	29	<0.5	<1	1	<3	1	50
JAN 23...	0.03	0.02	90	<1	18	<0.5	<1	<2	<3	2	220
MAR 19...	0.02	0.02	--	--	--	--	--	--	--	--	--
MAY 20...	0.02	0.01	30	<1	13	<0.5	<1	<1	<3	1	25
JUL 23...	0.02	0.02	--	--	--	--	--	--	--	--	--
SEP 24...	0.03	0.02	--	--	--	--	--	--	--	--	--
DATE	LEAD, DIS-SOLVED (UG/L AS FB)	LITHIUM, DIS-SOLVED (UG/L AS LI)	MANGANESE, DIS-SOLVED (UG/L AS MN)	MERCURY, DIS-SOLVED (UG/L AS HG)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELENIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRONTIUM, DIS-SOLVED (UG/L AS SR)	VANADIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 20...	<5	<4	19	<0.1	<10	1	<1	<1	120	<6	3
JAN 23...	5	<4	8	<0.1	<10	<1	<1	<1	88	<6	<3
MAR 19...	--	--	--	--	--	--	--	--	--	--	--
MAY 20...	<5	<4	7	<0.1	<10	<1	<1	<1	69	<6	15
JUL 23...	--	--	--	--	--	--	--	--	--	--	--
SEP 24...	--	--	--	--	--	--	--	--	--	--	--

K Results based on colony count outside the acceptable range (non ideal colony count).

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

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	BAROMETRIC PRESSURE (MM HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PERCENT SATURATION)	SEDIMENT, SUSPENDED (MG/L)
JAN 23...	1305	14.0	110	7.50	2.0	680	12.6	102	7
JAN 23...	1310	20.0	110	7.50	2.0	680	12.7	102	6
JAN 23...	1315	25.0	109	7.50	2.0	680	12.7	102	6
JAN 23...	1320	29.0	108	7.50	2.0	680	12.6	102	8
JAN 23...	1325	33.0	110	7.50	2.0	680	12.6	102	10
SEP 24...	1005	14.0	139	8.10	11.0	640	9.8	105	--
SEP 24...	1010	22.0	140	8.10	11.0	640	9.8	105	--
SEP 24...	1015	28.0	139	8.20	11.0	640	9.7	104	7
SEP 24...	1020	34.0	140	8.20	11.0	640	9.7	104	--
SEP 24...	1025	40.0	141	8.20	11.0	640	9.7	104	--

* Instantaneous streamflow at the time of the cross-sectional measurements was

Jan 23: 50 ft³/sSep 24: 16 ft³/s

HONEY LAKE BASIN

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV					
20...	1355	14	0.5	13	0.49
JAN					
23...	1205	48	2.0	6	0.78
MAR					
19...	1430	294	6.0	46	37
MAY					
20...	1445	88	12.0	7	1.7
JUL					
23...	1120	11	19.0	5	0.15
SEP					
24...	1045	16	11.0	7	0.3

HONEY LAKE BASIN

10358500 WILLOW CREEK NEAR SUSANVILLE, CA

LOCATION.--Lat 40°29'21", long 120°32'10", in SW 1/4 NE 1/4 sec.5, T.30 N., R.13 E., Lassen County, Hydrologic Unit 18080003, on left bank 4 mi upstream from Peters Valley Creek, and 8 mi northeast of Susanville.

DRAINAGE AREA.--90.4 mi², excludes that of Eagle Lake Basin.

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

REVISED RECORDS.--WDR CA-75-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,836.27 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records excellent. Diversions for irrigation of 5,200 acres above station. Some flow at times enters Willow Creek from Eagle Lake through a sand plug in an abandoned tunnel.

AVERAGE DISCHARGE.--36 years, 35.6 ft³/s, 25,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,210 ft³/s, Feb. 18, 1986, gage height, 6.25 ft; minimum daily, 6.8 ft³/s on several days during August 1981.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 18	0115	*1,210	*6.25	Mar. 8	1915	447	4.70

Minimum daily, 8.1 ft³/s, Sept. 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	26	35	41	52	117	49	28	11	10	17	9.4
2	28	27	38	39	64	101	47	18	11	10	20	9.2
3	27	31	49	40	80	90	44	16	11	10	20	8.3
4	28	31	53	39	61	81	43	20	11	11	21	8.2
5	27	28	48	62	54	75	42	27	11	11	20	8.2
6	28	16	46	71	51	67	29	34	11	11	21	8.1
7	28	13	48	51	48	74	31	35	12	10	20	8.2
8	29	25	48	45	45	340	47	48	12	10	18	8.4
9	28	31	44	42	44	379	46	48	12	10	14	8.8
10	29	33	40	41	43	291	44	48	12	10	16	9.0
11	29	33	35	41	42	248	43	44	12	10	15	11
12	29	32	35	40	42	182	42	39	13	9.6	14	13
13	29	31	33	39	52	141	40	39	15	9.4	14	16
14	29	32	32	37	111	123	40	36	16	9.2	14	17
15	29	30	32	37	388	111	37	33	17	9.7	14	19
16	30	15	32	67	597	113	21	32	19	11	14	20
17	30	31	31	144	963	108	18	30	20	13	14	24
18	31	31	31	101	1090	92	17	30	19	13	12	25
19	30	28	32	64	933	80	17	28	17	15	9.8	26
20	31	29	31	56	811	75	21	24	16	15	11	29
21	31	28	30	51	573	72	27	23	14	15	11	29
22	32	31	30	48	453	67	20	21	14	16	11	28
23	31	32	30	47	385	63	18	22	13	15	10	27
24	32	32	30	47	324	59	22	20	13	16	9.2	28
25	32	35	30	46	264	58	37	15	12	15	9.1	30
26	31	32	30	48	212	65	25	13	12	13	9.0	31
27	15	32	30	47	172	60	24	13	11	12	9.0	34
28	24	33	30	46	140	56	24	13	11	11	8.8	39
29	15	36	31	46	---	53	26	12	11	11	8.7	35
30	25	35	33	50	---	50	27	12	11	10	8.7	32
31	27	---	41	55	---	49	---	12	---	10	8.6	---
TOTAL	871	879	1118	1628	8094	3540	968	833	400	361.9	421.9	598.8
MEAN	28.1	29.3	36.1	52.5	289	114	32.3	26.9	13.3	11.7	13.6	20.0
MAX	32	36	53	144	1090	379	49	48	20	16	21	39
MIN	15	13	30	37	42	49	17	12	11	9.2	8.6	8.1
AC-FT	1730	1740	2220	3230	16050	7020	1920	1650	793	718	837	1190
CAL YR 1985	TOTAL	9766.5	MEAN	26.8	MAX	110	MIN	7.6	AC-FT	19370		
WTR YR 1986	TOTAL	19713.6	MEAN	54.0	MAX	1090	MIN	8.1	AC-FT	39100		

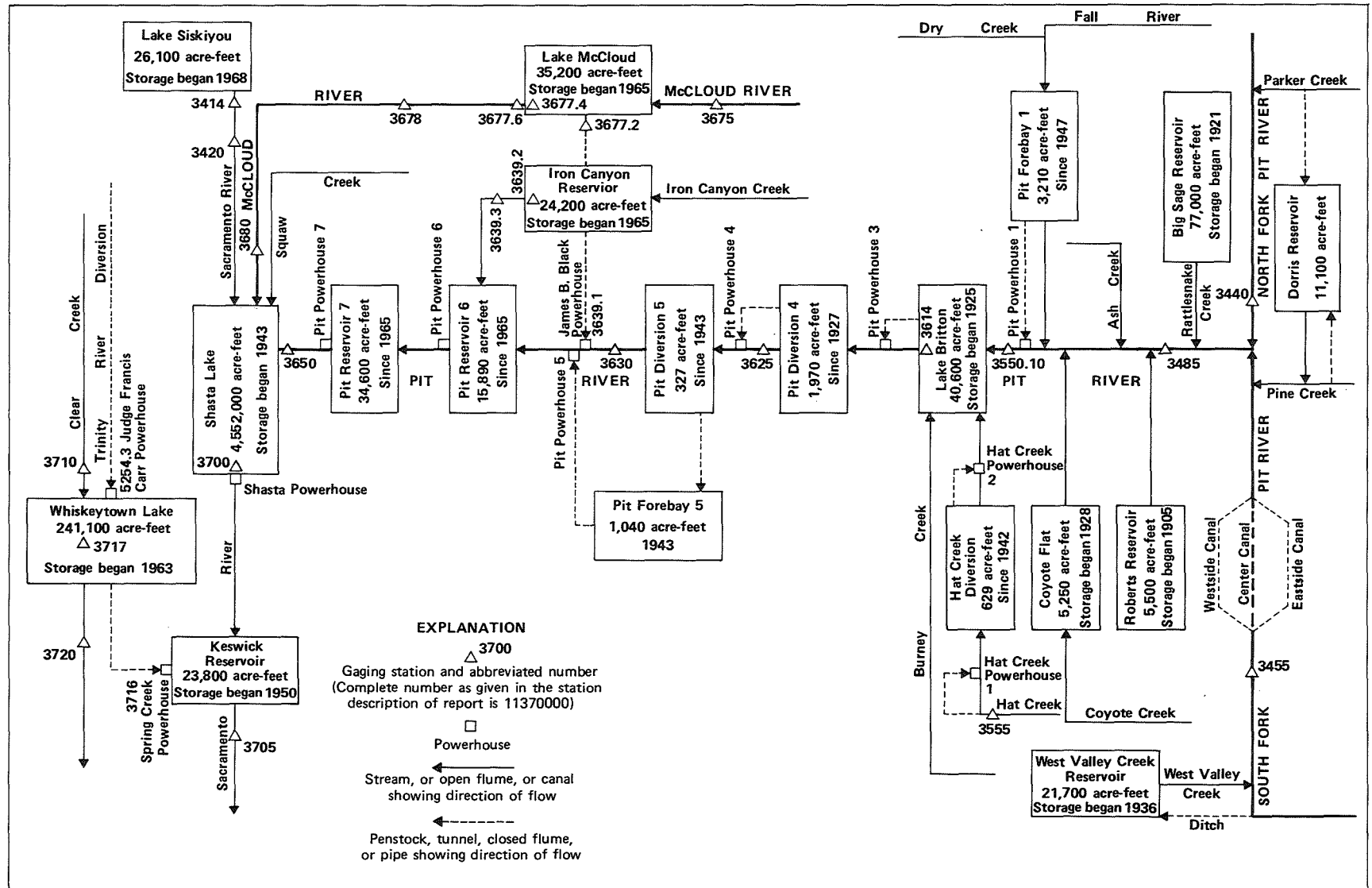


FIGURE 25. — Schematic diagram showing diversions and storage in Pit and McCloud River basins.

SACRAMENTO RIVER BASIN

11341400 SACRAMENTO RIVER NEAR MT SHASTA, CA

LOCATION.--Lat 41°15'56", long 122°18'32", in SE 1/4 SE 1/4 sec.33, T.40 N., R.4 W., Siskiyou County, Hydrologic Unit 18020005, on left bank 200 ft upstream from Stink Creek, 0.3 mi upstream from Southern Pacific Railroad bridge, 1.7 mi downstream from Box Canyon Dam, and 3.3 mi south of town of Mt. Shasta.

DRAINAGE AREA.--135 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,800 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 1, 1966, water-stage recorder at site 500 ft upstream at datum 7.26 ft higher, July 1, 1966, to Aug. 13, 1974, at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Low flow completely regulated by Box Canyon Dam 1.7 mi upstream beginning December 1968, capacity, 26,100 acre-ft. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--26 years (water years 1960-85), 258 ft³/s, 186,900 acre-ft/yr, adjusted for change in contents in Lake Siskiyou. Unadjusted for same period, 257 ft³/s, 186,200 acre-ft/yr. Current year figures for adjustment were not furnished. 27 years (water years 1960-86), 258 ft³/s, 186,900 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s, Dec. 22, 1964, gage height, 15.6 ft from floodmarks, present site and datum, from slope-area measurement of peak flow; minimum, 37 ft³/s, Sept. 6, 1962. Maximum discharge since completion of Box Canyon Dam in 1968, 11,500 ft³/s, Jan. 16, 1974, gage height, 13.2 ft from floodmarks, from rating curve extended above 2,900 ft³/s on basis of flow-over-dam computation of peak flow; minimum daily, 14 ft³/s, Dec. 8-16, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,990 ft³/s, Feb. 14, gage height, 9.31 ft; minimum daily, 40 ft³/s Dec. 12-15.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	58	43	70	1660	766	626	303	481	86	62	52
2	71	58	100	83	1540	556	547	481	285	74	60	46
3	71	58	124	83	923	603	539	686	342	50	60	42
4	71	86	122	78	588	625	546	538	354	68	60	42
5	71	113	124	103	445	615	435	455	313	66	61	42
6	71	113	122	109	356	633	402	403	201	68	63	42
7	97	113	122	116	306	1490	519	365	125	70	62	42
8	113	113	122	114	275	2070	605	339	214	80	50	42
9	113	113	120	113	251	1250	394	332	245	86	42	66
10	113	113	120	109	233	1000	584	352	196	92	43	88
11	113	112	78	109	218	817	748	341	53	92	59	53
12	113	111	40	113	218	712	674	443	117	92	62	63
13	113	111	40	111	301	678	601	406	134	92	50	43
14	111	111	40	111	2330	574	300	372	146	92	50	43
15	111	111	40	117	4620	525	130	248	145	76	57	56
16	111	111	57	291	2230	486	324	390	136	63	61	55
17	111	111	68	364	2080	452	374	286	129	62	61	95
18	109	87	68	435	3330	408	329	399	146	62	53	133
19	109	72	68	401	2150	393	279	545	133	62	46	102
20	108	60	68	420	1380	409	279	553	131	62	47	80
21	114	43	68	314	955	449	412	472	120	58	47	82
22	111	43	68	258	783	489	617	410	111	49	46	145
23	111	43	68	242	733	512	661	355	101	45	42	111
24	109	43	68	215	690	681	482	313	94	43	42	65
25	108	43	68	204	676	612	352	308	94	42	52	65
26	71	43	68	193	692	563	301	395	94	45	63	66
27	41	43	68	193	749	582	366	491	94	57	64	66
28	41	43	68	193	793	596	416	554	92	82	66	66
29	41	43	68	324	---	642	217	471	91	83	68	141
30	51	43	68	797	---	682	181	370	89	73	74	99
31	58	---	68	1820	---	700	---	561	---	64	61	---
TOTAL	2827	2365	2434	8203	31505	21570	13240	12937	5006	2136	1734	2133
MEAN	91.2	78.8	78.5	265	1125	696	441	417	167	68.9	55.9	71.1
MAX	114	113	124	1820	4620	2070	748	686	481	92	74	145
MIN	41	43	40	70	218	393	130	248	53	42	42	42
AC-FT	5610	4690	4830	16270	62490	42780	26260	25660	9930	4240	3440	4230

CAL YR 1985 TOTAL 50545 MEAN 138 MAX 851 MIN 31 AC-FT 100300
WTR YR 1986 TOTAL 106090 MEAN 291 MAX 4620 MIN 40 AC-FT 210400

SACRAMENTO RIVER BASIN

11341400 SACRAMENTO RIVER NEAR MT SHASTA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

CHEMICAL DATA: Water years 1970-72.

WATER TEMPERATURE: Water years 1966 to current year.

SEDIMENT DATA: Water year 1972.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1965 to current year.

INSTRUMENTATION.--Temperature recorder since October 1965.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 23.0°C, July 14-16, 1985; minimum recorded, 1.0°C, on several days in January and February 1982.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 21.5°C, Aug. 12-14; minimum recorded, 3.5°C, Feb. 9.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

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

SACRAMENTO RIVER BASIN

11341400 SACRAMENTO RIVER NEAR MT SHASTA, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

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

SACRAMENTO RIVER BASIN

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 south-east of Delta, and 2.8 mi south of Lamoine.

DRAINAGE AREA.--425 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,075.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--No estimated daily discharges. Records excellent. Some regulation by Lake Siskiyou, capacity, 26,100 acre-ft, 29 mi upstream since December 1968. Some minor diversions for irrigation above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--42 years, 1,199 ft³/s, 868,700 acre-ft/yr.

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 and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 16	1815	10,300	10.80	Feb. 14	2145	*32,400	*16.97
Jan. 31	2045	18,200	12.96	Mar. 8	0530	8,170	10.20

Minimum daily, 182 ft³/s, Nov. 22.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	201	298	362	10400	2720	2010	888	935	337	251	212
2	192	200	1530	376	11700	2460	1800	1620	763	331	246	206
3	190	199	1050	426	7060	2280	1630	2120	740	299	244	196
4	188	198	629	433	4650	2180	1640	1530	713	296	243	193
5	188	249	857	1130	3260	2110	1500	1340	748	309	239	193
6	192	253	702	907	2510	2070	1430	1210	616	307	242	192
7	200	254	781	686	2060	4940	1570	1100	534	307	245	191
8	243	253	685	589	1750	6780	1650	1020	496	312	238	193
9	240	263	561	528	1530	5070	1520	991	596	320	213	198
10	242	285	492	487	1380	6270	1390	1010	560	324	210	261
11	243	266	444	457	1260	5090	1760	980	421	321	213	218
12	240	259	336	435	1380	4900	1660	1030	406	319	243	209
13	240	257	312	419	2040	4690	1470	1010	448	316	225	218
14	237	258	299	437	15400	3840	1310	1030	462	315	218	201
15	237	267	287	1200	25000	3480	920	942	456	312	218	240
16	235	271	278	6680	14300	3190	1100	937	444	274	233	281
17	234	267	305	4800	15300	2940	1110	894	437	274	235	653
18	234	261	305	2870	17600	2600	1060	1010	458	273	234	434
19	233	218	307	2420	11700	2440	967	1090	442	272	214	456
20	248	216	311	2190	7900	2420	989	1200	420	267	214	335
21	497	192	314	1640	5700	2440	1140	1060	418	263	215	310
22	450	182	311	1370	5080	2430	1440	944	400	249	213	309
23	421	191	305	1390	4640	2400	1500	881	385	244	207	377
24	335	214	307	1190	3960	2610	1250	834	369	238	201	333
25	296	203	311	1050	3480	2380	1080	806	364	235	200	319
26	279	191	314	964	3210	2230	958	890	362	248	225	365
27	205	196	307	905	3080	2220	962	963	360	253	236	361
28	191	287	300	872	2940	2210	1040	1040	351	274	235	311
29	186	441	296	2130	---	2220	970	1010	348	289	235	295
30	184	320	310	5950	---	2270	764	835	344	281	243	380
31	202	---	322	11900	---	2190	---	972	---	260	245	---
TOTAL	7697	7312	14166	57193	190270	98070	39590	33187	14796	8919	7073	8640
MEAN	248	244	457	1845	6795	3164	1320	1071	493	288	228	288
MAX	497	441	1530	11900	25000	6760	2010	2120	935	337	251	653
MIN	184	182	278	362	1260	2070	764	806	344	235	200	191
AC-FT	15270	14500	28100	113400	377400	194500	78530	65830	29350	17690	14030	17140

CAL YR 1985	TOTAL	177515	MEAN	486	MAX	2150	MIN	148	AC-FT	352100
WTR YR 1986	TOTAL	486913	MEAN	1334	MAX	25000	MIN	182	AC-FT	965800

SACRAMENTO RIVER BASIN

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, 2 mi downstream from West Valley Reservoir 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.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,507.74 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, at site 1,000 ft downstream at different datum.

REMARKS.--Estimated daily discharges for the following ice-affected periods: Nov. 11-27, 30, Dec. 9-28, Jan. 21, 22, 24-26 and Feb. 6-11. Records good except those for the winter period, which are 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 above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--58 years, 82.4 ft³/s, 59,700 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 486 ft³/s, Mar. 8, gage height, 4.23 ft; minimum daily, 2.2 ft/s, Feb. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	29	23	38	14	55	104	205	337	179	167	155
2	28	28	26	28	14	49	97	203	346	173	163	153
3	28	28	31	28	16	51	87	240	343	174	178	150
4	28	28	29	28	18	51	81	254	321	167	193	152
5	28	29	28	42	17	51	82	277	295	163	191	148
6	28	26	27	41	12	53	91	277	272	163	191	148
7	31	26	27	29	5.2	65	116	264	251	166	188	147
8	30	38	28	26	2.6	300	119	255	230	166	185	147
9	29	28	25	25	2.2	223	90	258	203	162	183	146
10	30	26	21	24	8.2	161	111	409	184	130	207	143
11	30	22	19	23	12	139	115	355	173	90	234	130
12	30	22	17	23	14	116	203	310	167	95	260	127
13	29	14	13	22	16	103	150	292	174	83	273	126
14	29	13	9.0	22	16	95	133	285	166	54	273	121
15	29	14	7.5	22	23	87	123	274	144	91	271	127
16	29	15	9.0	23	27	83	118	267	133	152	267	132
17	29	18	12	28	161	76	114	264	131	155	262	81
18	28	19	16	29	175	60	103	271	161	152	258	32
19	28	15	19	27	186	41	101	288	204	152	245	38
20	28	14	18	23	145	41	107	294	223	150	210	37
21	29	11	18	15	100	43	124	306	217	152	193	35
22	30	9.5	18	14	88	46	151	307	214	148	166	33
23	30	14	19	14	74	49	190	291	208	140	124	31
24	30	19	17	10	61	58	189	277	206	139	90	43
25	29	17	19	8.7	58	54	210	278	204	156	86	53
26	29	16	18	6.6	56	56	209	294	197	183	86	54
27	28	22	17	12	56	65	209	303	193	176	85	60
28	28	23	19	12	57	81	220	307	192	178	92	46
29	29	25	21	12	---	93	218	306	185	173	128	43
30	30	22	26	14	---	107	208	312	184	172	154	44
31	29	---	29	16	---	110	---	323	---	172	155	---
TOTAL	898	630.5	625.5	685.3	1434.2	2662	4173	8846	6458	4606	5758	2882
MEAN	29.0	21.0	20.2	22.1	51.2	85.9	139	285	215	149	186	96.1
MAX	31	38	31	42	186	300	220	409	346	183	273	155
MIN	28	9.5	7.5	6.6	2.2	41	81	203	131	54	85	31
AC-FT	1780	1250	1240	1360	2840	5280	8280	17550	12810	9140	11420	5720

CAL YR 1985. TOTAL 30391 MEAN 83.3 MAX 207 MIN 7.5 AC-FT 60280
WTR YR 1986 TOTAL 39658.5 MEAN 109 MAX 409 MIN 2.2 AC-FT 78660

SACRAMENTO RIVER BASIN

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, 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).

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

GAGE.--Water-stage recorder. Elevation of gage is 4,266.0 ft above National Geodetic Vertical Datum of 1929. 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.--Estimated daily discharges for the following ice-affected periods: Nov. 5, 17-26, 30, Dec. 1, 12, 13, and 18-23. Records good except for periods of ice effect, which are fair. Low flow regulated by many small reservoirs, total capacity about 144,000 acre-ft. Diversions for irrigation of about 39,000 acres above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--56 years (water years 1905, 1932-86), 256 ft³/s, 185,500 acre-ft/yr.

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 discharge, 0.1 ft³/s, Apr. 29, Aug. 5, Sept. 18, 1934, Aug. 18-21, 1935.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 6	2000	878	4.48	Apr. 14	1245	1,020	4.73
Feb. 19	1930	*9,180	*12.87	May 13	0100	1,120	4.91
Mar. 9	1630	5,750	10.24				

Minimum daily, 5.1 ft³/s, Aug. 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	71	150	218	306	1620	649	394	171	99	124	52
2	35	71	163	501	347	1330	692	369	223	118	107	62
3	44	67	306	477	447	1060	673	373	203	92	88	70
4	47	69	343	450	468	902	609	424	225	92	71	56
5	45	64	332	415	373	802	544	515	292	77	63	38
6	47	70	310	727	282	731	501	626	354	71	58	35
7	46	68	311	634	222	752	490	721	349	70	61	36
8	43	69	337	355	184	2080	635	725	308	67	51	37
9	37	69	292	266	161	4940	928	681	270	52	48	38
10	37	77	170	252	152	4800	923	684	251	81	50	42
11	65	82	140	266	155	4210	773	942	227	133	42	62
12	52	90	130	239	163	3910	764	1080	173	133	33	100
13	46	100	120	203	203	3370	903	1100	207	83	23	140
14	45	101	116	183	331	2810	1010	996	165	59	13	162
15	46	108	108	171	718	2350	954	796	148	55	9.7	142
16	47	96	110	164	1460	1950	756	637	132	54	5.6	141
17	51	86	115	273	3230	1600	633	574	126	52	5.1	144
18	57	88	105	466	6960	1280	584	529	101	46	12	165
19	57	96	102	413	8580	1050	533	512	100	42	47	187
20	53	106	100	320	8440	917	477	491	60	39	84	188
21	74	95	102	275	6380	848	444	486	68	40	91	152
22	90	94	105	236	5270	795	437	582	79	40	77	120
23	68	92	108	234	4570	756	444	587	84	46	80	105
24	89	92	114	231	3840	743	453	522	51	47	94	122
25	99	93	115	202	3100	759	446	471	50	41	114	148
26	80	97	115	186	2570	740	482	445	54	41	114	154
27	85	103	114	180	2170	679	474	368	38	46	121	208
28	73	124	112	175	1880	649	483	241	57	85	92	213
29	72	132	102	181	---	645	487	215	86	178	65	211
30	71	140	102	206	---	640	415	203	80	165	55	169
31	71	---	126	254	---	646	---	185	---	148	49	---
TOTAL	1807	2710	5075	9353	62962	50364	18596	17474	4732	2392	1947.4	3499
MEAN	58.3	90.3	164	302	2249	1625	620	564	158	77.2	62.8	117
MAX	99	140	343	727	8580	4940	1010	1100	354	178	124	213
MIN	35	64	100	164	152	640	415	185	38	39	5.1	35
AC-FT	3580	5380	10070	18550	124900	99900	36890	34660	9390	4740	3860	6940

SACRAMENTO RIVER BASIN

11355010 PIT RIVER BELOW PIT NO. 1 POWERHOUSE, 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 powerhouse 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 2,840 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Low flow regulated by many small reservoirs, total usable reservoir capacity, 210,000 acre-ft, and Pit No. 1 powerhouse. Many diversions above station for irrigation.

AVERAGE DISCHARGE.--11 years, 2,067 ft³/s, 1,498,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s, Feb. 20, 1986, gage height, 17.03 ft, from rating curve extended above 16,000 ft³/s on basis of discharge measurement of peak flow; minimum daily, 819 ft³/s, Feb. 1, 1979.

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 and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 20	0915	*30,000	*17.03	Apr. 11	1845	4,170	8.29
Mar. 10	1400	13,800	12.68				

Minimum daily, 1,180 ft³/s, Nov. 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1470	1580	1620	1640	1880	6610	3160	2240	1610	1440	1340	1350
2	1450	1580	1690	1790	2490	6000	3190	2120	1700	1870	1340	1380
3	1440	1570	2080	2020	3320	5460	3280	2420	1620	1660	1390	1300
4	1420	1570	2170	2260	3560	4980	3260	2440	1510	1660	1330	1370
5	1410	1580	2230	2240	3070	4340	3080	2570	1500	1640	1320	1440
6	1420	1180	2140	2350	2580	3870	3060	2740	1450	1630	1360	1340
7	1480	1610	2090	2370	2460	3320	2890	3010	1610	1590	1380	1350
8	1520	1530	2140	2450	1940	7120	3040	2850	1780	1590	1450	1340
9	1590	1510	2080	2270	2100	10600	3480	2870	1870	1580	1300	1410
10	1470	1610	1950	1870	2160	13100	3570	3200	1760	1530	1430	1390
11	1450	1640	1750	1930	1740	12900	3560	2960	1740	1550	1320	1380
12	1440	1530	1590	1680	2120	12000	3460	3090	1630	1600	1440	1400
13	1460	1410	1550	1910	2000	10400	3230	3040	1730	1460	1380	1280
14	1540	1410	1590	1760	2350	9330	3450	3130	1600	1500	1310	1560
15	1540	1470	1570	1710	4320	8390	3580	3240	1580	1570	1350	1450
16	1540	1520	1590	1770	5320	7530	3860	3320	1520	1440	1410	1420
17	1530	1530	1550	2080	9660	6680	3640	3030	1490	1390	1380	1510
18	1530	1490	1630	2670	15400	6050	3120	2690	1460	1620	1330	1640
19	1500	1770	1530	2640	23400	5310	3130	2510	1480	1510	1390	1510
20	1530	1490	1530	2570	28800	4890	2840	2370	1820	1480	1400	1570
21	1580	1510	1510	2260	26900	4450	2680	2310	1740	1480	1320	1540
22	1580	1610	1550	2190	22300	4160	2550	2210	1710	1440	1380	1580
23	1660	1550	1530	2270	16800	3960	2560	2170	1860	1460	1360	1710
24	1650	1580	1550	2360	14000	3760	2360	2050	1620	1360	1350	1810
25	1640	1880	1510	2200	12100	3870	2360	2140	1620	1430	1370	1720
26	1610	1590	1530	2100	10200	3860	2470	2080	1590	1400	1290	1770
27	1540	1490	1520	1990	8630	3730	2420	1980	1820	1440	1390	1860
28	1540	1670	1520	1910	7490	3540	2470	2150	1660	1520	1410	1810
29	1570	1760	1560	1980	---	3430	2400	1870	1750	1360	1350	1630
30	1610	1670	1520	2340	---	3350	2350	1600	1520	1450	1350	1430
31	1590	---	1630	2280	---	3270	---	1770	---	1380	1440	---
TOTAL	47300	46890	53000	65860	239090	190260	90500	78170	49350	47030	42360	45250
MEAN	1526	1563	1710	2125	8539	6137	3017	2522	1645	1517	1366	1508
MAX	1660	1880	2230	2670	28800	13100	3860	3320	1870	1870	1450	1860
MIN	1410	1180	1510	1640	1740	3270	2350	1600	1450	1360	1290	1280
AC-FT	93820	93010	105100	130600	474200	377400	179500	155100	97890	93280	84020	89750

SACRAMENTO RIVER BASIN

11355500 HAT CREEK NEAR HAT CREEK, CA

LOCATION.--Lat 40°41'12", long 121°25'25", in NW 1/4 SE 1/4 sec.28, T.33 N., R.5 E., Shasta County, Hydrologic Unit 18020003, on right bank 0.8 mi northeast of Old Station Post Office, and 8 mi southeast of Hat Creek Post Office.

DRAINAGE AREA.--162 mi², hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--July 1926 to September 1929, April 1930 to current year.

REVISED RECORDS.--WSP 1395: 1938. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,300 ft above National Geodetic Vertical Datum of 1929, from topographic map. July 1926 to April 1928 at site 0.5 mi upstream at different datum. May 1928 to July 1965 at site 80 ft upstream at datum 2.76 ft higher.

REMARKS.--No estimated daily discharges. Records good. Diversions for irrigation of 260 acres above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--59 years (water years 1927-29, 1931-86), 143 ft³/s, 103,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,320 ft³/s, Dec. 11, 1937, gage height, 7.75 ft, in gage well, affected by drawdown, site and datum then in use, from rating curve extended above 610 ft³/s on basis of slope-area measurement of peak flow; minimum, 67 ft³/s, Sept. 7, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 18	0230	620	4.96	May 3	0245	243	3.26
Mar. 8	0900	*702	*5.22	June 2	0015	280	3.47
Apr. 22	2200	235	3.21				

Minimum daily, 139 ft³/s, Oct. 5, Feb. 7-9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	155	152	145	151	200	202	192	271	181	159	162
2	156	155	155	144	150	196	194	203	280	180	159	161
3	155	155	154	144	148	195	189	228	277	180	158	162
4	150	155	154	144	147	194	188	203	253	179	158	162
5	139	155	155	154	148	193	186	197	243	177	159	161
6	145	154	153	151	144	191	188	191	236	175	159	161
7	145	155	154	147	139	280	194	183	228	172	157	162
8	149	156	151	145	139	552	197	183	219	172	157	156
9	156	155	153	145	139	346	192	189	216	175	164	150
10	156	154	144	144	141	278	195	205	216	174	167	150
11	155	153	143	142	142	245	203	198	214	167	166	150
12	155	150	143	143	146	226	213	198	224	169	166	150
13	155	149	143	143	149	216	205	202	221	167	166	151
14	154	150	144	143	191	207	197	206	224	166	165	151
15	155	153	145	143	251	203	195	208	219	166	165	152
16	155	156	147	149	213	195	191	208	218	166	165	154
17	154	156	148	170	339	189	188	213	216	160	165	163
18	154	153	148	161	491	184	183	221	211	163	165	169
19	153	148	149	156	360	181	183	230	203	164	158	171
20	153	150	148	152	279	180	191	236	198	163	153	166
21	161	150	146	149	248	179	206	221	195	162	152	165
22	159	152	146	148	230	179	221	206	194	161	152	165
23	161	153	146	147	219	179	224	206	198	162	152	165
24	159	154	147	144	215	184	206	216	196	172	153	175
25	158	154	146	145	213	182	200	230	194	173	152	171
26	157	153	146	145	207	181	197	241	191	173	152	173
27	157	154	146	145	204	185	198	247	184	172	152	170
28	157	154	146	145	203	192	205	247	186	172	152	167
29	156	156	146	151	---	197	202	259	184	172	159	167
30	156	150	147	151	---	199	194	273	183	165	162	165
31	155	---	146	154	---	199	---	271	---	160	162	---
TOTAL	4786	4597	4591	4589	5746	6707	5927	6711	6492	5260	4931	4847
MEAN	154	153	148	148	205	216	198	216	216	170	159	162
MAX	161	156	155	170	491	552	224	273	280	181	167	175
MIN	139	148	143	142	139	179	183	183	183	160	152	150
AC-FT	9490	9120	9110	9100	11400	13300	11760	13310	12880	10430	9780	9610

SACRAMENTO RIVER BASIN

RESERVOIRS IN PIT AND McCLOUD RIVER BASINS, CA

11361400 LAKE BRITTON NEAR BURNEY.--Lat 41°01'20", long 121°40'32", in SW 1/4 SW 1/4 sec.30, 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. PERIOD OF RECORD, October 1965 to current year (month-end contents only). GAGE, remote telemark read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and 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.

COOPERATION.--Figures given herein represent total contents. Lake is used for power generation and recreation. Record of contents collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. See schematic diagram of Pit and McCloud River basins. Records prior to water year 1977 reported usable contents only.

EXTREMES (at 2400) 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) FOR CURRENT YEAR: Maximum contents, 47,922 acre-ft, Feb. 20, elevation, 2,762.50 ft; minimum, 27,288 acre-ft, Dec. 15, elevation, 2,745.15 ft.

11363920 IRON CANYON RESERVOIR NEAR BIG BEND.--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, 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 National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and 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).

COOPERATION.--Figures given herein represent total contents. Water is used for power generation and recreation. Record of contents collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. See schematic diagram of Pit and McCloud River basins.

EXTREMES (at 2400) 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) FOR CURRENT YEAR: Maximum contents, 21,189 acre-ft, July 18, elevation, 2,658.70 ft; minimum, 3,233 acre-ft, Apr. 8, elevation, 2,593.30 ft.

11367740 LAKE McCLOUD NEAR McCLOUD.--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 National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and 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).

COOPERATION.--Figures given herein represent total content, water is used for power generation and recreation. Record of contents collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. See schematic diagram of Pit and McCloud River basins.

EXTREMES (at 2400) 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) FOR CURRENT YEAR: Maximum contents, 35,079 acre-ft, Mar. 7, 19, 21, 22, 24, elevation, 2,679.70 ft; minimum, 16,264 acre-ft, Dec. 10, elevation, 2,634.50 ft.

SACRAMENTO RIVER BASIN

RESERVOIRS IN PIT AND McCLOUD RIVER BASINS, CA--Continued

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

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (acre- feet)	Elevation (feet)	Contents (acre- feet)	Change in contents (acre- feet)	Elevation (feet)	Contents (acre- feet)	Change in contents (acre- feet)
	11361400	LAKE BRITTON			11363920	IRON CANYON RESERVOIR			11367740 LAKE McCLOUD
Sept. 30.....	2,753.95	36,864	--	2,625.30	9,290	--	2,646.70	20,477	--
Oct. 31.....	2,747.70	29,863	-7,001	2,618.90	7,682	-1,608	2,637.80	17,343	-3,134
Nov. 30.....	2,746.90	29,037	-826	2,617.20	7,287	-395	2,635.60	16,619	-724
Dec. 31.....	2,750.00	32,327	+3,290	2,616.70	7,174	-113	2,635.80	16,684	+65
CAL YR 1985..	--	--	+2,672	--	--	+2,898	--	--	-65
Jan. 31.....	2,750.90	33,327	+1,000	2,599.10	3,987	-3,187	2,651.70	22,385	+5,701
Feb. 28.....	2,756.00	39,368	+6,041	2,594.50	3,379	-608	2,679.40	34,923	+12,538
Mar. 31.....	2,753.50	36,328	-3,040	2,594.90	3,429	+50	2,679.40	34,923	0
Apr. 30.....	2,752.40	35,038	-1,290	2,605.80	5,026	+1,597	2,660.20	25,875	-9,048
May 31.....	2,752.10	34,692	-346	2,635.80	12,334	+7,308	2,667.80	29,258	+3,383
June 30.....	2,754.60	37,648	+2,956	2,648.20	16,702	+4,368	2,674.50	32,449	+3,191
July 31.....	2,752.60	35,271	-2,377	2,646.30	15,969	-733	2,676.60	33,495	+1,046
Aug. 31.....	2,754.90	38,012	+2,741	2,626.70	9,666	-6,303	2,659.20	25,448	-8,047
Sept. 30.....	2,757.30	41,008	+2,996	2,633.30	11,559	+1,893	2,643.70	19,383	-6,065
WTR YR 1986..	--	--	+4,144	--	--	+2,269	--	--	-1,094

SACRAMENTO RIVER BASIN

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 powerhouse.

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 National Geodetic Vertical Datum of 1929, 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.

REMARKS.--Estimated daily discharges: Apr. 28-30. Low flow completely regulated by small reservoirs and powerplants, total usable reservoir capacity, 253,000 acre-ft. Many diversions above station; diversion to Pit No. 4 powerplant began June 9, 1955. See schematic diagram of Pit and McCloud River basins. COOPERATION.--Records were collected by Pacific Gas and Electric Co., under general supervision of the U. S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--32 years (water years 1923-54), 2,511 ft³/s, 1,819,000 acre-ft/yr, prior to diversion; 32 years (water years 1955-86), 3,079 ft³/s, 2,231,000 acre-ft/yr, adjusted for diversion to Pit No. 4 powerplant; unadjusted for same period, 525 ft³/s, 380,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,700 ft³/s, Feb. 20, 1986, gage height, 18.70 ft, from rating curve extended above 17,000 ft³/s; minimum daily, 234 ft³/s, Sept. 13, 1953. Minimum daily, since diversion to Pit No. 4 powerplant in 1955, 22 ft³/s, Dec. 2-4, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33,700 ft³/s, Feb. 20, gage height, 18.70 ft; minimum daily, 61 ft³/s, Jan. 24.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	120	85	63	66	67	4790	715	158	175	172	166	181	
2	108	83	74	67	68	3690	641	160	170	171	164	181	
3	109	85	74	66	68	3420	696	164	169	169	165	183	
4	109	83	65	66	752	2820	679	164	171	171	165	175	
5	108	83	67	68	855	2210	585	171	171	175	165	178	
6	111	82	67	67	306	1680	460	179	167	172	169	175	
7	110	82	66	65	68	1440	395	172	167	178	176	173	
8	110	82	65	64	64	4910	304	181	172	178	170	173	
9	109	83	66	64	64	9190	575	166	170	169	168	170	
10	111	82	65	64	70	11900	736	186	171	167	168	171	
11	111	85	66	63	63	12300	861	428	182	170	172	170	
12	112	85	65	65	68	11400	744	229	176	169	174	170	
13	111	87	67	66	65	9260	577	197	181	168	174	170	
14	107	90	66	67	72	7770	562	703	175	166	171	170	
15	111	91	66	71	426	6730	750	387	169	168	166	173	
16	110	87	66	84	4560	5730	1070	490	174	170	172	170	
17	111	87	65	90	12300	4790	1020	371	174	172	176	170	
18	112	93	64	79	20400	4050	632	220	182	175	181	173	
19	112	95	65	76	26200	3220	385	167	172	172	195	183	
20	113	87	65	71	31100	2730	300	167	173	172	175	176	
21	113	87	66	73	29300	2250	200	167	177	170	178	173	
22	112	88	67	67	23100	1890	193	164	176	174	174	174	
23	111	92	67	64	17600	1670	202	162	172	172	173	173	
24	112	93	65	61	13700	1530	199	175	180	167	172	177	
25	112	90	65	67	11100	1530	202	173	176	164	179	179	
26	112	90	65	69	9020	1500	205	173	173	171	177	181	
27	113	90	65	69	7080	1360	210	170	177	169	175	188	
28	112	89	65	69	5850	1140	207	167	176	170	178	189	
29	112	94	66	71	---	1020	174	171	178	167	173	185	
30	112	90	66	68	---	898	110	170	175	166	178	186	
31	111	---	66	66	---	807	---	169	---	165	179	---	
TOTAL	3447	2620	2050	2133	214386	129625	14589	6921	5221	5279	5368	5290	
MEAN	111	87.3	66.1	68.8	7657	4181	486	223	174	170	173	176	
MAX	120	95	74	90	31100	12300	1070	703	182	178	195	189	
MIN	107	82	63	61	63	807	110	158	167	164	164	170	
AC-FT	6840	5200	4070	4230	425200	257100	28940	13730	10360	10470	10650	10490	
MEAN a	2585	2543	2787	3413	11390	8654	4691	3824	2604	2485	2242	2474	
AC-FT a	158900	151300	171400	209800	632500	532100	279100	235100	155000	152800	137800	147200	
CAL YR 1985	TOTAL	43545	MEAN	119	MAX	196	MIN 55	AC-FT	86370	MEAN	a 2680	AC-FT	a 1941000
WTR YR 1986	TOTAL	396929	MEAN	1087	MAX	31100	MIN 61	AC-FT	787300	MEAN	a 4093	AC-FT	a 2963000

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1912, nonrecording gage, Dec. 28, 1912, to June 21, 1924, water-stage recorder at same site, but at datum 7.69 ft higher.

REMARKS.--Estimated daily discharges: Nov. 14 to Dec. 9 and May 31 to June 2. Low flow completely regulated by many reservoirs and powerplants, total usable reservoir capacity, about 253,000 acre-ft. Many diversions above station; diversion to Pit No. 5 powerhouse began May 1, 1944. See schematic diagram of Pit and McCloud River basins.

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

AVERAGE DISCHARGE.--33 years (water years 1911-43) prior to diversion to Pit No. 5 powerplant, 2,931 ft³/s, 2,122,000 acre-ft/yr; 43 years (water years 1944-86), 592 ft³/s, 428,900 acre-ft/yr, unadjusted.

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, from rating curve extended above 17,000 ft³/s; maximum gage height, 18.70 ft, Feb. 20, 1986; minimum daily, 34 ft³/s, Mar. 29, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,800 ft³/s, Feb. 20, gage height, 18.70 ft; minimum daily, 43 ft³/s, Dec. 28.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	86	104	70	631	6010	1480	197	206	143	121	115
2	103	76	108	79	743	4780	1380	213	171	139	123	123
3	105	75	114	111	896	4520	1410	243	167	136	128	121
4	106	77	120	100	1540	3840	1360	247	159	135	131	129
5	107	79	125	178	1700	3250	1270	253	157	137	128	122
6	111	79	126	152	1090	2660	1130	242	158	137	137	123
7	112	76	113	116	727	2690	1040	525	147	137	129	123
8	107	74	103	97	301	6280	943	635	151	139	133	122
9	107	79	84	87	219	10500	1160	599	154	141	127	129
10	107	86	72	80	199	13400	1350	606	158	135	131	130
11	109	79	65	74	189	13800	1480	863	155	133	129	130
12	107	75	61	69	217	12600	1800	713	159	139	132	117
13	108	76	57	66	290	10700	1230	624	153	135	130	131
14	111	78	55	67	556	9120	1170	586	143	131	123	128
15	110	78	53	79	1510	8040	1400	754	151	135	129	138
16	107	80	51	382	6380	6890	1740	842	144	136	119	139
17	107	78	48	434	13600	5860	1700	757	146	136	123	158
18	107	78	47	298	19000	5070	1340	567	153	137	127	143
19	103	76	48	332	23300	4210	990	365	148	132	129	140
20	105	75	49	286	32800	3690	905	203	145	123	127	137
21	122	74	47	174	36500	3190	755	197	146	128	126	132
22	134	78	45	160	29800	2810	518	187	144	132	125	132
23	152	81	46	164	23500	2580	254	187	152	133	123	129
24	124	84	47	146	19100	2480	263	183	143	134	126	142
25	116	88	45	135	16500	2430	194	182	142	128	122	148
26	113	88	44	128	14000	2370	150	185	142	121	123	176
27	106	90	44	121	10800	2220	143	184	138	134	130	3160
28	105	90	43	116	8710	1990	140	181	144	132	130	360
29	108	90	44	179	---	1840	137	179	140	137	129	294
30	109	95	47	256	---	1700	135	164	147	132	127	1240
31	108	---	48	244	---	1600	---	179	---	122	124	---
TOTAL	3441	2418	2103	4980	264798	163120	28967	12042	4563	4149	3941	8511
MEAN	111	80.6	67.8	161	9457	5262	966	388	152	134	127	284
MAX	152	95	126	434	36500	13800	1800	863	206	143	137	3160
MIN	103	74	43	66	189	1600	135	164	138	121	119	115
AC-FT	6830	4800	4170	9880	525200	323500	57460	23890	9050	8230	7820	16880

CAL YR 1985 TOTAL 36713 MEAN 101 MAX 544 MIN 43 AC-FT 72820

WSP 1345 TOTAL 520220 MEAN 1272 MAX 26500 MIN 43 AC-FT 227320

SACRAMENTO RIVER BASIN

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, 5.8 mi downstream from Big Bend.

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Discharge computed from powerplant output.

REMARKS.--No estimated daily discharges. Water is diverted from Lake McCloud (station 11367740) at SE 1/4 SW 1/4 sec.22, T.38 N., R.2 W., to Iron Canyon Reservoir (station 11363920), and then into the penstock for James B. Black powerplant. Records are combined flow of diversion from McCloud River at McCloud Dam plus Iron Canyon Creek.

COOPERATION.--Records were collected by Pacific Gas and Electric Co., in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--20 years (water years 1967-86), 982 ft³/s, 711,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,420 ft³/s, July 15, 1966; no flow several days during most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	958	685	754	630	1430	1460	1350	998	531	1020	1020	691
2	974	642	733	701	1500	1390	1380	796	497	882	797	841
3	569	706	1310	1060	1480	1340	1380	774	529	411	810	372
4	705	739	529	704	1460	1470	1390	895	771	1200	1090	732
5	655	810	596	811	1320	1440	1280	1030	717	641	1080	1680
6	590	702	1130	759	1240	1380	1630	1000	937	762	832	597
7	871	392	969	1580	1320	1500	1350	1350	74	505	989	553
8	611	836	958	1120	1250	1380	1500	785	557	692	722	1200
9	913	691	582	953	1000	1320	1310	887	1600	521	1090	1270
10	717	505	0	1040	1430	1290	1340	824	627	825	564	681
11	507	587	423	756	1320	1780	1300	626	0	535	1130	832
12	710	551	851	901	1290	1490	1440	966	722	320	479	503
13	668	677	258	1040	1230	1590	1280	1160	898	0	1200	848
14	745	666	186	791	1380	1440	1230	1050	520	587	919	699
15	535	462	466	595	1490	1500	1530	999	783	654	1060	603
16	829	378	817	488	1790	1320	1310	1010	1060	860	910	1280
17	813	630	856	354	1630	1410	1380	775	793	533	852	1120
18	695	814	1180	1210	1540	1470	1330	451	814	543	1090	893
19	583	735	591	1710	1730	1410	1350	435	951	1170	869	1200
20	743	639	637	1570	1740	1520	1310	886	751	718	1010	1080
21	824	507	507	1170	1710	1420	1080	743	920	898	763	607
22	865	873	616	1150	1710	1180	997	751	792	1210	1280	1020
23	693	758	563	1070	1670	1640	999	976	270	1040	1070	839
24	958	561	578	1020	1720	1420	994	874	1100	684	819	789
25	782	459	635	978	1620	1420	1300	1050	934	1140	884	1040
26	448	664	805	1020	705	1340	1790	552	866	130	1090	972
27	673	857	936	1160	1790	1400	1290	669	619	548	1120	317
28	862	265	256	1120	1600	1390	1040	555	917	1380	906	0
29	481	717	784	1130	---	1410	996	911	690	1250	1070	0
30	746	799	528	1100	---	1440	1000	915	871	1160	850	0
31	562	---	690	1030	---	1450	---	1030	---	1100	1030	---
TOTAL	22285	19307	20724	30721	41095	44410	38856	26723	22111	23919	29395	23259
MEAN	719	644	669	991	1468	1433	1295	862	737	772	948	775
MAX	974	873	1310	1710	1790	1780	1790	1350	1600	1380	1280	1680
MIN	448	265	0	354	705	1180	994	435	0	0	479	0
AC-FT	44200	38300	41110	60940	81510	88090	77070	53010	43860	47440	58300	46130
CAL YR 1985	TOTAL	279147.00	MEAN	765	MAX	1560	MIN	0	AC-FT	553700		
WTR YR 1986	TOTAL	342805.00	MEAN	939	MAX	1790	MIN	0	AC-FT	680000		

SACRAMENTO RIVER BASIN

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

LOCATION.--Lat 41°02'27", long 121°59'02", 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.--11.6 mi².

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder, 60' sharp-crested V-notch weir, and concrete control with flashboards in 2 ft x 10 ft opening. Datum of gage is 2,461.52 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--No estimated daily discharges. Flow is completely regulated by Iron Canyon Dam. There is interbasin diversion from Lake McCloud (station 11367790) to Iron Canyon Reservoir (station 11363920) and then into a tunnel to James B. Black Powerplant on the Pit River (station 11363910). See schematic diagram of Pit and McCloud River basins.

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

AVERAGE DISCHARGE.--20 years, 5.86 ft³/s, 4,250 acre-ft/yr.

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 ft x 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 650 ft³/s, Feb. 5, gage height, unknown (flashboards removed from weir); minimum daily, 3.1 ft³/s, Jan. 21.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	3.4	3.7	3.4	5.7	3.5	3.5	3.5	3.6	3.5	3.7	3.5
2	3.4	3.4	3.4	3.4	6.1	3.5	3.5	3.5	3.6	3.7	3.5	3.5
3	3.4	3.4	3.4	3.4	5.7	3.5	3.5	3.5	3.6	3.8	3.5	3.5
4	3.4	3.4	3.4	3.4	4.9	3.5	3.5	3.6	3.5	3.8	3.5	3.6
5	3.4	3.4	3.4	3.4	6.4	3.5	3.5	3.5	3.5	3.8	3.5	3.5
6	3.4	3.4	3.4	3.4	3.6	3.5	3.5	3.5	3.6	3.8	3.5	3.5
7	3.4	3.4	3.4	3.4	3.5	3.7	3.6	3.5	3.5	3.8	3.6	3.6
8	3.4	3.4	3.4	3.4	3.5	3.6	3.5	3.5	3.6	3.8	3.6	3.5
9	3.4	3.4	3.4	3.4	3.6	3.5	3.5	3.5	3.6	3.8	3.5	3.5
10	3.4	3.4	3.4	3.4	3.5	3.5	3.6	3.5	3.5	3.8	3.6	3.5
11	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.5	3.8	3.6	3.5
12	3.4	3.4	3.4	3.4	3.6	3.5	3.5	3.5	3.6	3.8	3.6	3.5
13	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.8	3.5	3.5
14	3.4	3.4	3.4	3.4	3.6	3.5	3.5	3.5	3.5	3.8	3.6	3.5
15	3.4	3.4	3.4	3.4	4.3	3.5	3.5	3.5	3.5	3.8	3.5	3.6
16	3.4	3.4	3.4	3.5	5.4	3.5	3.6	3.5	3.6	3.8	3.6	3.5
17	3.4	3.4	3.4	3.4	8.3	3.5	3.5	3.5	3.6	3.8	3.6	3.6
18	3.4	3.4	3.4	3.4	7.6	3.5	3.6	3.5	3.5	3.8	3.5	3.6
19	3.4	3.4	3.4	3.4	7.4	3.5	3.5	3.5	3.5	3.8	3.5	3.5
20	3.4	3.4	3.4	3.4	5.5	3.5	3.5	3.5	3.6	3.8	3.6	3.5
21	3.4	3.4	3.4	3.1	4.3	3.5	3.5	3.6	3.5	3.8	3.6	3.5
22	3.4	3.4	3.4	3.4	3.9	3.5	3.5	3.6	3.5	3.8	3.6	3.5
23	3.4	3.4	3.4	3.4	3.5	3.5	3.6	3.5	3.6	3.8	3.6	3.5
24	3.4	3.2	3.4	3.4	3.5	3.5	3.6	3.6	3.5	3.8	3.6	3.3
25	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.8	3.6	3.5
26	3.4	3.4	3.4	3.5	3.5	3.5	3.5	3.6	3.5	3.8	3.5	3.5
27	3.4	3.4	3.4	3.7	3.5	3.5	3.5	3.5	3.3	3.8	3.6	3.5
28	3.4	3.4	3.4	3.7	3.5	3.5	3.5	3.6	3.6	3.8	3.6	3.5
29	3.4	3.4	3.4	4.1	---	3.5	3.5	3.5	3.5	3.8	3.5	3.5
30	3.4	3.5	3.4	4.4	---	3.5	3.6	3.6	3.6	3.8	3.5	3.5
31	3.4	---	3.4	4.7	---	3.5	---	3.5	---	3.8	3.5	---
TOTAL	105.4	101.9	105.7	108.9	128.5	108.9	105.8	109.5	106.3	117.4	110.3	105.3
MEAN	3.40	3.40	3.41	3.51	4.59	3.51	3.53	3.53	3.54	3.79	3.56	3.51
MAX	3.4	3.5	3.7	4.7	8.3	3.7	3.6	3.6	3.6	3.8	3.7	3.6
MIN	3.4	3.2	3.4	3.1	3.5	3.5	3.5	3.5	3.3	3.5	3.5	3.3
AC-FT	209	202	210	216	255	216	210	217	211	233	219	209

CAL YR 1985 TOTAL 1205.5 MEAN 3.30 MAX 3.7 MIN 3.0 AC-FT 2390
WTR YR 1986 TOTAL 1313.9 MEAN 3.60 MAX 8.3 MIN 3.1 AC-FT 2610

SACRAMENTO RIVER BASIN

11365000 PIT RIVER NEAR MONTGOMERY CREEK, CA

LOCATION.--Lat 40°50'36", long 122°00'58", 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 0.9 mi downstream from Pit No. 7 Dam and powerhouse, 1.5 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.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). October 1944 to Feb. 17, 1963, at site 0.9 mi upstream at different datum. Feb. 17, 1963, to May 21, 1965, at site 1.7 mi upstream at different datum. May 21, 1965, to June 20, 1981, at site 1.0 mi downstream at datum 1,036.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Feb. 25-28, Apr. 5 to July 2 and Aug. 26 to Sept. 4. Low flow completely regulated by many reservoirs and powerplants, total usable reservoir capacity, 337,000 acre-ft. Many diversions above station for irrigation. Diversion from McCloud River to Iron Canyon Reservoir (station 11363920) began December 1965. See schematic diagram of Pit and McCloud River basins.

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

AVERAGE DISCHARGE.--21 years (water years 1945-65) prior to diversion from McCloud River, 3,759 ft³/s, 2,721,000 acre-ft/yr; 21 years (water years 1966-86), 5,256 ft³/s, 3,808,000 acre-ft/yr.

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 (present datum), Feb. 19, 1986; minimum daily, 30 ft³/s, July 12, 27, 1975, result of construction work below Pit No. 7 powerplant.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55,500 ft³/s, Feb. 19, gage height, 74.65 ft; minimum daily, 71 ft³/s, Sept. 28, result of channel cleaning below Pit No. 7 powerplant.

REVISIONS.--The maximum discharge for water year 1983 has been revised to 38,000 ft³/s, Mar. 13, 1983, gage height, 70.69 ft, superseding the figure published in report for 1983.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4380	2890	4340	4220	9550	13100	8510	4630	6530	4840	4530	2240
2	3280	2090	5650	4560	10600	11700	7860	5960	3170	4170	5700	4140
3	3080	2920	7710	5260	11100	11200	8490	6120	2620	4630	1550	3600
4	4160	3410	4500	5240	9900	11000	8460	5600	2450	3870	3930	5540
5	1550	3320	4810	5710	9500	10300	5960	5900	3170	2600	2760	2730
6	1930	3770	4680	6540	8450	9310	8460	7570	4610	4540	3750	4450
7	3570	2350	5650	7310	8250	11800	7890	6540	3340	3610	3790	2890
8	3220	3330	5360	4970	6560	16900	7180	5420	2450	3260	3860	2540
9	3990	3110	5180	5550	6360	20000	7370	6000	2770	2940	3030	3710
10	3000	3950	4340	5310	6280	22700	7630	6010	3440	5100	2300	3020
11	3290	3060	4020	3840	7210	23700	6750	5930	3410	2410	2800	3080
12	3390	2910	4800	4200	7160	22500	8460	6160	3730	3380	3250	2720
13	2530	4370	2980	4290	7170	20100	6630	6780	4830	2250	3680	3790
14	2710	3230	3120	4850	11100	17800	7570	6190	3510	3400	4370	3440
15	3670	3310	4000	3190	14200	16500	7540	5800	3810	3480	3350	2250
16	3630	1930	3480	7490	22500	14800	7230	6710	2130	3890	4610	4440
17	3860	2640	3930	8690	39500	13700	8510	5080	3390	3390	3480	3490
18	3920	3700	4990	7980	40900	13000	7570	5750	3440	3150	3000	3760
19	2030	3260	5300	8280	45800	11600	7940	5480	2960	4460	4650	5670
20	2620	4170	2300	6980	49000	11200	6950	5070	1480	1710	2740	5750
21	3890	3120	3230	7310	41500	10600	6790	5080	2820	2920	3460	5020
22	4520	3510	1290	6000	35800	9750	5950	4360	3700	6050	3720	5730
23	3490	2950	1430	6180	28300	10100	5740	6030	3820	3530	4670	6610
24	5250	2670	2540	6250	24100	9880	6410	5320	4640	3290	3960	7980
25	4250	3010	4370	5480	19100	9740	4840	4680	3140	3770	2540	7270
26	4440	4100	3780	5330	14900	9450	6540	3320	3270	2120	3280	4110
27	1960	4220	3980	6480	14200	8930	6200	4260	3970	3100	3660	79
28	3370	4280	1720	5670	13900	8900	6520	4530	3330	5280	3800	71
29	3120	3830	2780	6730	---	8680	5780	4140	2600	4370	4020	170
30	4040	5020	2950	7590	---	8530	5280	4560	3640	4050	1840	274
31	3880	---	4430	7450	---	8530	---	4920	---	4170	1750	---
TOTAL	106020	100430	123640	184930	522890	406000	213010	169900	102170	113730	107830	110564
MEAN	3420	3348	3988	5965	18670	13100	7100	5481	3406	3669	3478	3685
MAX	5250	5020	7710	8690	49000	23700	8510	7570	6530	6050	5700	7980
MIN	1550	1930	1290	3190	6280	8530	4840	3320	1480	1710	1550	71
AC-FT	210300	199200	245200	366800	1037000	805300	422500	337000	202700	225600	213900	219300

CAL YR 1985 TOTAL 1561340 MEAN 4278 MAX 9920 MIN 1000 AC-FT 3097000
WTR YR 1986 TOTAL 2261114 MEAN 6195 MAX 49000 MIN 71 AC-FT 4485000

NOTE.--Feb. 25-28 and Apr. 5 to July 2 backwater from Shasta Lake.

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from river-profile map.

REMARKS.--No estimated daily discharges. Two small diversions above 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 and Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--55 years, 936 ft³/s, 678,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft³/s, Dec. 21, 1955, gage heights, 9.42 ft, in gage well, 10.7 ft from floodmarks, from rating curve extended above 8,800 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 524 ft³/s, Nov. 23, 24, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 2	1315	1,660	2.64	Mar. 8	0930	2,500	3.46
Feb. 18	0615	*7,930	*7.40	Mar. 24	1545	1,520	2.47

Minimum daily, 725 ft³/s, Dec. 28-31.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	757	748	738	730	1510	1350	1250	1010	949	859	827	801
2	754	748	749	762	1610	1310	1240	1020	946	859	827	801
3	753	743	750	785	1500	1260	1200	1090	941	859	827	801
4	753	742	744	800	1260	1230	1180	1080	938	858	827	801
5	753	742	764	959	1130	1210	1160	1060	934	853	827	801
6	755	742	769	1000	1050	1190	1150	1050	929	853	825	799
7	754	742	770	887	990	1540	1150	1030	925	853	820	795
8	753	742	761	842	951	2370	1170	1020	920	853	820	795
9	753	742	750	815	922	2010	1150	1010	910	853	820	795
10	753	742	744	798	901	1800	1130	1010	906	853	820	795
11	753	739	739	784	883	1660	1120	1010	900	851	820	795
12	753	736	738	775	882	1610	1140	1000	900	846	818	795
13	753	737	738	768	907	1560	1110	998	900	846	814	795
14	753	736	736	767	1470	1470	1100	995	893	846	814	795
15	753	736	736	782	3200	1420	1090	991	893	846	814	807
16	753	736	736	910	3450	1370	1090	985	893	846	814	811
17	753	736	736	1320	4700	1320	1080	983	888	846	814	834
18	753	736	736	1180	6490	1270	1070	982	886	844	814	815
19	750	736	734	1060	4770	1260	1050	984	886	840	813	811
20	749	736	730	1040	3180	1250	1050	995	884	840	808	801
21	763	736	730	953	2380	1250	1050	1020	879	837	808	797
22	761	736	730	909	2040	1260	1060	999	879	835	808	795
23	757	736	730	885	1900	1260	1060	984	879	834	808	796
24	752	736	730	857	1710	1430	1050	974	877	833	808	797
25	748	736	730	837	1580	1390	1040	969	870	833	808	795
26	748	736	730	824	1500	1330	1030	969	866	833	808	796
27	748	736	729	815	1440	1310	1030	967	866	833	804	795
28	748	739	725	808	1390	1290	1030	962	866	833	802	795
29	748	742	725	875	---	1280	1020	960	866	833	801	795
30	748	737	725	1100	---	1270	1020	955	863	831	801	791
31	748	---	725	1320	---	1260	---	955	---	827	801	---
TOTAL	23330	22167	22907	27947	55696	43790	33070	31017	26932	26166	25240	23995
MEAN	753	739	739	902	1989	1413	1102	1001	898	844	814	800
MAX	763	748	770	1320	6490	2370	1250	1090	949	859	827	834
MIN	748	736	725	730	882	1190	1020	955	863	827	801	791
AC-FT	46280	43970	45440	55430	110500	86860	65590	61520	53420	51900	50060	47590

SACRAMENTO RIVER BASIN

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, 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 Lake McCloud and Iron Canyon Reservoir used to compute record.

REMARKS.--No estimated daily discharges. Water is diverted from Lake McCloud (station 11367740) to Iron Canyon Reservoir (station 11363920) and then 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 and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--20 years (water years 1967-86), 963 ft³/s, 697,700 acre-ft/yr.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	718	645	685	643	1210	1420	1410	1100	823	789	836	830
2	741	641	693	660	1260	1390	1410	1060	798	789	823	822
3	706	651	800	761	1280	1390	1400	1030	776	755	813	759
4	696	625	753	756	1300	1420	1400	999	777	790	829	742
5	680	668	728	790	1300	1420	1370	1000	774	772	840	835
6	657	695	806	812	1280	1410	1400	1010	794	766	829	788
7	684	619	839	950	1280	1420	1390	1060	729	739	836	751
8	666	661	867	969	1270	1390	1410	1010	721	729	819	752
9	694	685	810	959	1220	1370	1390	994	741	685	832	789
10	687	629	667	970	1250	1350	1380	976	744	724	803	763
11	654	615	612	926	1250	1400	1360	934	736	706	825	760
12	663	602	678	903	1250	1400	1370	937	740	671	786	720
13	663	619	584	925	1230	1410	1350	958	755	617	819	730
14	668	600	519	895	1280	1410	1320	965	739	621	816	721
15	639	594	517	844	1360	1410	1350	965	750	625	835	701
16	659	563	569	812	1370	1380	1340	978	772	649	832	766
17	672	582	612	772	1370	1370	1330	935	774	640	827	798
18	667	625	751	896	1260	1400	1320	880	777	632	839	803
19	648	638	720	1030	1240	1400	1320	837	790	683	833	862
20	665	606	712	1130	1220	1410	1310	847	786	686	837	887
21	681	606	660	1140	1230	1410	1260	839	795	703	819	819
22	701	647	654	1150	1320	1380	1210	832	793	738	861	858
23	693	685	640	1140	1360	1420	1170	850	748	757	867	848
24	764	638	630	1110	1400	1420	1140	851	775	745	853	806
25	750	600	632	1090	1420	1420	1160	874	784	770	847	846
26	675	612	656	1070	1320	1410	1260	840	786	715	861	853
27	663	678	729	1070	1380	1410	1280	827	769	698	871	741
28	684	582	630	1070	1420	1410	1220	804	773	751	860	624
29	647	604	656	1080	---	1410	1170	819	763	790	868	529
30	656	632	642	1100	---	1410	1140	832	767	814	851	456
31	641	---	645	1120	---	1420	---	852	---	827	858	---
TOTAL	21082	18847	21096	29543	36330	43490	39340	28695	23049	22376	25925	22959
MEAN	680	628	681	953	1298	1403	1311	926	768	722	836	765
MAX	764	695	867	1150	1420	1420	1410	1100	823	827	871	887
MIN	639	563	517	643	1210	1350	1140	804	721	617	786	456
AC-FT	41820	37380	41840	58600	72060	86260	78030	56920	45720	44380	51420	45540
CAL YR 1985	TOTAL	275837	MEAN 756	MAX 1070	MIN 458	AC-FT 547100						
WTR YR 1986	TOTAL	332732	MEAN 912	MAX 1420	MIN 456	AC-FT 660000						

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.) Prior to April 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. 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 210 ft³/s. See schematic diagram of Pit and McCloud River basins.

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

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	207	161	75	184	83	140	170	190	189	193
2	---	---	183	153	80	204	68	139	170	191	189	195
3	---	---	161	116	73	145	61	135	170	195	189	205
4	---	---	179	123	68	77	70	118	170	194	188	206
5	---	---	179	79	64	70	70	124	171	194	188	206
6	---	---	162	56	62	63	79	126	176	194	189	204
7	---	---	157	83	61	---	82	126	184	194	191	204
8	---	---	162	106	60	---	84	125	183	194	190	204
9	---	---	179	120	61	---	90	128	184	190	189	204
10	---	---	189	129	62	---	99	132	186	188	189	204
11	---	---	193	134	64	---	102	133	187	188	189	204
12	---	---	199	139	67	---	102	135	187	188	189	204
13	---	---	199	139	58	---	103	131	188	189	189	204
14	---	---	201	136	90	---	110	136	188	189	189	204
15	---	---	165	90	---	---	110	139	188	189	188	199
16	---	---	162	61	---	---	110	164	189	189	188	200
17	---	---	162	58	---	145	109	168	189	189	188	185
18	---	---	173	52	---	73	111	168	189	189	188	196
19	---	---	178	51	---	73	115	168	190	190	189	193
20	---	---	178	50	---	117	115	166	188	191	188	200
21	---	---	177	49	---	91	117	163	191	191	188	200
22	208	---	177	55	---	131	119	164	191	191	188	201
23	199	---	177	60	---	130	119	167	191	191	188	201
24	206	---	177	75	---	---	119	167	191	191	187	202
25	208	---	177	87	---	---	122	168	191	191	187	202
26	210	---	177	100	---	187	126	168	191	191	186	198
27	---	---	177	113	---	157	126	168	191	190	186	198
28	---	---	179	115	---	116	128	168	191	190	185	199
29	---	197	179	83	---	116	130	168	191	190	185	202
30	---	203	179	64	---	99	132	169	191	189	185	202
31	---	---	178	76	---	92	---	169	---	189	186	---
TOTAL	---	---	5522	2913	---	---	3111	4640	5557	5909	5827	6019
MEAN	---	---	178	94.0	---	---	104	150	185	191	188	201
MAX	---	---	207	161	---	---	132	169	191	195	191	206
MIN	---	---	157	49	---	---	61	118	170	188	185	185
AC-FT	---	---	10950	5780	---	---	6170	9200	11020	11720	11560	11940

SACRAMENTO RIVER BASIN

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.

GAGE.--Water-stage recorder. Elevation of gage is 2,160 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharge. Flow regulated by Lake McCloud 3.9 mi upstream (station 11367740) since November 1965. Diversion to Iron Canyon Reservoir (station 11363920) through McCloud-Iron Canyon diversion tunnel (station 11367720) started Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins.

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

AVERAGE DISCHARGE.--22 years (water years 1965-86), 348 ft³/s, 252,100 acre-ft/yr, unadjusted. 21 years, (water years 1966-86), 1,255 ft³/s, 909,200 acre-ft/yr, adjusted for diversion to Iron Canyon Reservoir and change in contents in Lake McCloud.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to completion of McCloud Dam, 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. Maximum discharge since completion of McCloud Dam in 1965, 26,400 ft³/s, Jan. 16, 1974, gage height, 13.68 ft, in gage well, 15.38 ft from floodmarks, 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 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.--Maximum discharge, 11,200 ft³/s, Feb. 18, gage height, 9.92 ft; minimum daily, 163 ft³/s, Jan. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216	213	217	179	827	370	222	185	208	207	207	209
2	216	215	244	182	937	375	196	191	209	207	206	209
3	216	215	219	177	741	302	178	208	209	212	206	217
4	216	214	215	176	517	222	182	183	210	212	206	218
5	216	213	242	310	382	207	174	189	208	212	206	217
6	216	215	215	224	303	193	179	190	205	212	206	217
7	217	214	220	181	258	723	178	187	208	212	207	216
8	216	213	215	175	224	2000	176	184	208	212	206	216
9	216	215	215	173	201	1500	177	183	208	208	206	216
10	216	216	217	173	185	1390	181	185	210	206	206	216
11	216	213	216	168	171	1100	183	184	210	206	206	216
12	216	214	217	169	178	1050	181	185	210	206	206	216
13	216	215	215	165	208	1030	176	179	210	206	208	216
14	215	216	215	163	886	788	182	182	210	206	208	216
15	216	216	177	171	2390	657	181	181	210	207	208	222
16	215	216	169	510	4940	649	183	207	210	207	208	221
17	214	215	169	524	7100	365	179	210	210	207	208	232
18	215	214	180	336	9110	269	177	210	209	207	208	221
19	215	215	184	266	6790	259	180	209	209	207	208	221
20	217	216	184	222	4750	307	178	212	207	208	209	219
21	226	216	184	186	1990	290	178	207	210	207	208	217
22	224	216	184	170	1440	335	179	207	210	207	209	217
23	213	216	184	166	1380	338	177	209	209	207	208	216
24	213	218	184	168	845	519	175	209	209	207	209	220
25	213	216	184	169	794	509	176	208	209	207	209	221
26	213	216	184	173	774	392	179	208	209	207	209	224
27	215	218	183	181	707	348	178	208	208	206	209	221
28	214	224	185	179	518	293	178	208	208	206	208	217
29	213	223	184	219	---	282	179	206	208	206	208	218
30	213	215	188	441	---	254	181	208	208	207	208	218
31	214	---	189	673	---	236	---	208	---	207	208	---
TOTAL	6687	6471	6178	7369	49546	17552	5423	6130	6266	6441	6432	6540
MEAN	216	216	199	238	1770	566	181	198	209	208	207	218
MAX	226	224	244	673	9110	2000	222	212	210	212	209	232
MIN	213	213	169	163	171	193	174	179	205	206	206	209
AC-FT	13260	12840	12250	14620	98270	34810	10760	12160	12430	12780	12760	12970
MEAN a	845	832	881	1284	3293	1969	1340	1178	1031	947	913	881
AC-FT a	51950	49500	54160	78920	182900	121100	79740	72460	61340	58210	56130	52440
CAL YR 1985 TOTAL	71186											
MEAN 195												
MAX 244												
MIN 159												
AC-FT 141200												
MEAN a 951												
AC-FT a 688300												

WTP 1086 TOTAL 131035 MEAN 359 MAX 9110 MTN 163 AC-FT 250900 MEAN a 1269 AC-FT a 918800

SACRAMENTO RIVER BASIN

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."

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

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--No estimated daily discharges. 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 and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--20 years (water years 1946-65), 1,699 ft³/s, 1,230,000 acre-ft/yr prior to storage and interbasin diversion to Pit River; 21 years (water years 1966-86), 818 ft³/s, 592,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,500 ft³/s, Jan. 16, 1974, gage height, 28.26 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,600 ft³/s, Feb. 18, gage height, 23.34 ft; minimum daily, 256 ft³/s, Aug. 31.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	283	294	374	314	4820	1410	812	431	392	330	278	262
2	281	293	824	329	5590	1310	746	476	390	324	276	263
3	281	293	712	394	4340	1160	701	642	387	327	277	269
4	278	293	531	389	3060	1010	681	574	385	324	276	272
5	280	293	643	974	2160	932	653	547	383	323	272	274
6	284	293	596	845	1640	868	642	533	381	323	271	273
7	292	293	639	592	1330	1890	630	508	385	322	272	272
8	288	293	590	489	1130	4290	623	486	380	321	269	273
9	287	300	497	436	981	3670	599	471	376	316	269	272
10	288	304	445	401	874	4240	584	464	372	308	269	272
11	289	296	410	375	792	3780	575	449	368	306	268	273
12	287	296	389	359	841	3980	569	440	366	303	267	274
13	285	296	374	344	1180	3650	550	428	369	302	267	277
14	285	296	363	348	6010	3010	540	423	369	302	264	278
15	285	300	331	743	11500	2530	543	417	370	299	263	329
16	285	300	309	3930	13600	2350	565	428	368	297	263	343
17	285	300	302	3510	17400	1920	546	430	365	298	263	516
18	285	300	303	1830	18700	1630	519	426	363	298	263	374
19	286	296	307	1310	13500	1490	508	423	358	298	262	391
20	292	296	306	1050	9450	1460	495	434	350	297	262	330
21	365	296	303	864	5410	1380	488	437	347	294	263	316
22	395	296	300	765	3950	1360	477	417	347	293	261	309
23	403	304	297	827	3840	1310	474	413	344	291	261	306
24	333	316	296	757	2870	1440	466	407	342	290	261	332
25	312	312	296	691	2470	1430	458	402	338	290	260	343
26	303	304	294	631	2200	1220	451	400	339	292	259	385
27	300	308	293	595	2000	1120	447	397	338	290	259	370
28	297	361	291	561	1670	1020	442	394	335	289	257	328
29	295	536	293	884	---	968	436	393	334	288	258	319
30	295	405	301	2560	---	902	431	392	331	285	257	311
31	296	---	300	3880	---	848	---	394	---	282	256	---
TOTAL	9300	9363	12509	31977	143308	59578	16651	13876	10872	9402	8223	9406
MEAN	300	312	404	1032	5118	1922	555	448	362	303	265	314
MAX	403	536	824	3930	18700	4290	812	642	392	330	278	516
MIN	278	293	291	314	792	848	431	392	331	282	256	262
AC-FT	18450	18570	24810	63430	284300	118200	33030	27520	21560	18650	16310	18660
CAL YR 1985	TOTAL	122437	MEAN 335	MAX 824	MIN 221	AC-FT 242900						
WTR YR 1986	TOTAL	334465	MEAN 916	MAX 18700	MIN 256	AC-FT 663400						

SACRAMENTO RIVER BASIN

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.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to July 10, 1944, nonrecording gage at various sites near dam at same datum.

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 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 herein 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.

EXTREMES (at 2400) 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) FOR CURRENT YEAR.--Maximum contents, 4,251,000 acre-ft, Feb. 20, 21, elevation, 1,056.68 ft; minimum, 1,979,000 acre-ft, Oct. 1, elevation, 956.08 ft.

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

830	515,500	870	843,600	910	1,291,900	950	1,877,000	990	2,616,600	1,030	3,533,500
840	587,100	880	943,900	920	1,424,800	960	2,046,800	1,000	2,828,500	1,050	4,063,100
850	665,500	890	1,051,700	930	1,566,200	970	2,226,100	1,010	3,051,800	1,067	4,552,100
860	751,000	900	1,167,900	940	1,717,300	980	2,416,000	1,020	3,286,900		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1979000	2085000	2183000	2425000	3049000	3730000	3724000	4083000	4087000	3795000	3491000	3244000
2	1980000	2087000	2223000	2430000	3138000	3664000	3744000	4087000	4085000	3789000	3486000	3237000
3	1984000	2089000	2253000	2435000	3209000	3623000	3763000	4097000	4081000	3782000	3474000	3231000
4	1990000	2092000	2263000	2442000	3260000	3605000	3784000	4101000	4077000	3774000	3465000	3232000
5	1992000	2095000	2276000	2455000	3300000	3604000	3798000	4105000	4072000	3764000	3457000	3230000
6	1994000	2098000	2288000	2467000	3333000	3601000	3815000	4112000	4065000	3757000	3449000	3232000
7	2000000	2099000	2302000	2480000	3360000	3600000	3835000	4117000	4058000	3749000	3442000	3231000
8	2006000	2102000	2313000	2483000	3378000	3614000	3851000	4119000	4050000	3740000	3435000	3231000
9	2008000	2106000	2323000	2492000	3393000	3622000	3867000	4123000	4042000	3729000	3425000	3233000
10	2010000	2109000	2329000	2501000	3408000	3645000	3884000	4125000	4034000	3722000	3415000	3233000
11	2010000	2111000	2334000	2504000	3426000	3640000	3899000	4126000	4025000	3711000	3406000	3234000
12	2011000	2112000	2341000	2508000	3450000	3630000	3919000	4126000	4016000	3700000	3398000	3234000
13	2011000	2116000	2345000	2510000	3476000	3616000	3933000	4117000	4010000	3688000	3391000	3234000
14	2011000	2118000	2349000	2516000	3581000	3592000	3947000	4107000	3999000	3678000	3385000	3232000
15	2014000	2121000	2354000	2527000	3692000	3587000	3962000	4100000	3991000	3668000	3376000	3227000
16	2017000	2122000	2357000	2600000	3795000	3575000	3976000	4100000	3977000	3660000	3371000	3228000
17	2020000	2123000	2363000	2654000	3999000	3560000	3988000	4099000	3965000	3651000	3363000	3230000
18	2023000	2125000	2370000	2687000	4127000	3552000	4003000	4099000	3955000	3640000	3355000	3231000
19	2023000	2126000	2379000	2712000	4211000	3542000	4017000	4099000	3942000	3631000	3349000	3233000
20	2025000	2130000	2381000	2732000	4251000	3543000	4031000	4101000	3928000	3616000	3340000	3237000
21	2030000	2131000	2384000	2750000	4251000	3542000	4041000	4102000	3914000	3601000	3331000	3237000
22	2040000	2133000	2384000	2765000	4227000	3546000	4051000	4102000	3901000	3595000	3323000	3239000
23	2046000	2135000	2383000	2779000	4180000	3558000	4060000	4102000	3890000	3583000	3319000	3244000
24	2054000	2136000	2385000	2793000	4119000	3568000	4066000	4102000	3880000	3571000	3313000	3250000
25	2058000	2137000	2390000	2804000	4045000	3581000	4069000	4100000	3868000	3560000	3305000	3255000
26	2065000	2141000	2396000	2816000	3961000	3597000	4072000	4095000	3855000	3546000	3296000	3254000
27	2067000	2147000	2401000	2827000	3886000	3617000	4076000	4092000	3844000	3534000	3290000	3243000
28	2070000	2154000	2403000	2837000	3811000	3637000	4082000	4089000	3831000	3525000	3282000	3233000
29	2073000	2165000	2408000	2861000	---	3660000	4083000	4086000	3815000	3515000	3276000	3222000
30	2078000	2173000	2414000	2906000	---	3682000	4084000	4084000	3801000	3506000	3265000	3211000
31	2083000	---	2422000	2973000	---	3703000	---	4083000	---	3498000	3255000	---
MAX	2083000	2173000	2422000	2973000	4251000	3730000	4084000	4126000	4087000	3795000	3491000	3255000
MIN	1979000	2085000	2183000	2425000	3049000	3542000	3724000	4083000	3801000	3498000	3255000	3211000
a	962.07	967.15	980.31	1006.57	1040.73	1036.61	1050.78	1050.74	1040.35	1028.59	1018.69	1016.84
b	+105300	+90800	+248200	+551800	+838000	-108600	+381500	-1100	-281800	-303900	-242600	-44100
c	4380	1770	1570	1300	1770	4290	7930	10080	14510	17780	15610	7100

CAL YR 1985 b -683000

WTR YR 1986 b +1234000

--- in feet NGVD at end of month.

SACRAMENTO RIVER BASIN

11370500 SACRAMENTO RIVER AT KESWICK, CA
(National stream-quality accounting network station)

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.--8,468 mi², excluding Goose Lake basin.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1315-A.
REVISED RECORDS.--WSP 1931: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 479.81 ft above National Geodetic Vertical Datum of 1929. 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.--Estimated daily discharges: Oct. 23 to Nov. 4 and Apr. 16-20. Records good. Flow completely regulated by Shasta Dam (station 11370000) beginning Dec. 30, 1943, and Keswick Reservoir, capacity, 4,170 acre-ft. No diversion for irrigation 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 diagram of Pit and McCloud River basins.
AVERAGE DISCHARGE.--25 years (water years 1939-63), 8,376 ft³/s, 6,064,000 acre-ft/yr, adjusted for change in contents and evaporation from Shasta Lake prior to transbasin diversion to Keswick Reservoir; 23 years (water years 1964-86), 9,142 ft³/s, 6,623,000 acre-ft/yr, including adjustment for transbasin diversion; unadjusted flow for period of record, 9,441 ft³/s, 6,840,000 acre-ft/yr.
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. Maximum discharge since completion of Shasta Dam in 1944, 81,400 ft³/s, Apr. 1, 1974, gage height, 31.92 ft; maximum gage height, 32.22 ft, Jan. 24, 1970; minimum, 154 ft³/s, May 15, 1948.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 76,900 ft³/s, Feb. 19, gage height, 31.93 ft; minimum daily, 3,420 ft³/s, Feb. 8.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5120	4510	4250	4200	4020	62100	4330	8130	8120	11500	10900	9900
2	5160	4550	4620	4190	4720	52000	4070	8150	8210	11100	11000	9930
3	5110	4600	4500	4190	5530	38400	4050	8140	8240	11100	11000	9430
4	5170	4580	4320	4180	5120	26200	4050	8130	8240	11100	10900	7850
5	4790	4600	4220	4200	4930	19100	4040	7870	8260	11200	10400	6450
6	4670	4860	4100	4200	4940	16800	4090	7830	7900	11100	10400	6170
7	4560	4870	4180	4200	3940	30200	4040	8100	8470	11100	10400	5750
8	4540	4730	4170	4190	3420	34400	4030	8190	8500	11000	10400	5130
9	4350	4570	4140	4190	3520	38300	4030	8110	9100	10900	10400	5120
10	4630	4580	4200	4200	3550	43800	4040	8050	9230	10900	10400	5190
11	4430	4550	4200	4240	3590	52300	4080	8040	10200	10900	10400	5220
12	4540	4480	4210	4210	3770	52100	4150	8980	10400	11000	10400	5580
13	4450	4370	4180	4190	4260	51600	4130	14600	10400	10900	10500	6220
14	4630	4440	4160	4230	9440	48300	4150	14700	10900	11000	10500	7770
15	4610	4530	4150	4320	28500	38400	4220	11700	11000	10900	10600	7820
16	4580	4420	4200	5480	38900	38000	4240	9050	11000	11000	10600	7800
17	4620	4400	4180	4880	31100	35300	4260	8630	10900	10900	10600	7790
18	4590	4390	4240	4320	53300	28600	4280	8620	11000	11600	10400	7500
19	4620	4660	4260	4150	69700	22600	4290	8600	11000	12100	10400	7520
20	4560	4690	4220	4350	73700	19100	4300	8090	11000	12000	10500	7530
21	4570	4660	4190	4270	73500	18300	5250	7590	11000	11900	10500	7530
22	4560	4650	4180	4130	73200	16100	5180	7580	11200	11900	10500	7530
23	4320	4670	4190	4150	72900	13900	5040	7620	11100	12000	9970	7640
24	4320	4740	4170	4080	72800	13900	6780	7680	11100	12000	9940	8610
25	4210	4650	4170	3930	72600	11900	6930	7590	11000	12000	9970	8290
26	4340	4190	4180	3970	71700	9780	6940	7610	11000	12100	9940	8360
27	4350	4240	4180	4040	64700	7650	7020	7650	11100	12100	9980	8350
28	4500	4650	4180	4170	63000	6040	6920	7770	11500	12000	9950	8390
29	4310	4710	4180	4380	---	5280	6960	7670	11600	11600	10000	8400
30	4080	4260	4190	4910	---	5260	7530	7750	11500	11000	9930	8270
31	4320	---	4180	4420	---	4960	---	7700	---	11000	9930	---
TOTAL	141610	136800	130690	132760	924350	860670	147420	265920	304170	352900	321710	223040
MEAN	4568	4560	4216	4283	33010	27760	4914	8578	10140	11380	10380	7435
MAX	5170	4870	4620	5480	73700	62100	7530	14700	11600	12100	11000	9930
MIN	4080	4190	4100	3930	3420	4960	4030	7580	7900	10900	9930	5120
AC-FT	280900	271300	259200	263300	1833000	1707000	292400	527500	603300	700000	638100	442400
MEAN a	4298	4557	6578	12850	45450	23960	10050	7932	5015	4653	4235	4570
AC-FT a	264300	271100	404400	790200	2524000	1474000	597900	487700	298400	286100	260400	271900

CAL YR 1985 TOTAL 2675900 MEAN 7331 MAX 15500 MIN 3860 AC-FT 5308000 MEAN a 5340 AC-FT a 3866000
WTR YR 1986 TOTAL 3942040 MEAN 10800 MAX 73700 MIN 3420 AC-FT 7819000 MEAN a 10950 AC-FT a 7800000

SACRAMENTO RIVER BASIN

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected 2.1 mi downstream from gaging station.

PERIOD OF RECORD.--Water years 1951 to current year.

CHEMICAL DATA: Water years 1951 to current year. Published as "near Keswick" in 1951 and 1953; as "at Keswick Dam, near Keswick" in 1968-69.

SPECIFIC CONDUCTANCE: Water years 1981-83.

WATER TEMPERATURE: Water years 1981-83.

SEDIMENT DATA: Water years 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

WATER TEMPERATURE: October 1980 to September 1983.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE (water years 1981-83): Maximum recorded, 149 microsiemens, Sept. 30, 1981; minimum recorded, 75 microsiemens, Jan. 27, 1983.

WATER TEMPERATURE (water years 1981-83): Maximum recorded, 14.5°C, Sept. 19, 1981; minimum recorded, 7.0°C, Feb. 5, 6, 11, 12, 1982.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	
NOV 20...		0815	4690	119	7.4	9.5	750	1.0	9.8	87	K5	K9	47
JAN 22...		0900	4140	127	7.2	9.0	765	2.9	10.1	87	K1	K7	49
MAR 18...		1000	29800	96	7.6	9.0	755	24	12.7	110	K2	<2	40
MAY 20...		0915	8100	91	7.5	10.0	755	18	10.7	96	K2	K4	39
JUL 22...		0900	11800	91	7.4	12.0	745	8.5	9.7	92	K1	<1	39
SEP 23...		0930	7550	96	7.3	12.0	745	4.5	9.0	85	K2	K8	40
DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LITY, CARBON- ATE IT-FLD (MG/L CACO3)	ALKA- LITY WH WAT TOTAL FIELD (MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	
NOV 20...	0	9.1	5.9	6.6	23	0.4	1.4	72	59	60	5.4	2.2	
JAN 22...	0	11	5.3	7.5	24	0.5	1.7	72	59	59	10	2.6	
MAR 18...	0	10	3.7	5.3	22	0.4	1.2	58	48	48	5.0	1.8	
MAY 20...	0	9.0	3.9	4.9	21	0.4	1.2	--	--	44	5.8	1.5	
JUL 22...	0	8.9	4.0	4.5	20	0.3	1.1	55	45	45	4.8	1.5	
SEP 23...	0	8.5	4.6	4.6	19	0.3	1.1	59	48	47	5.6	1.6	
DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)		
NOV 20...	<0.1	24	79	91	0.11	<0.01	<0.10	0.03	<0.01	0.40	0.03		
JAN 22...	<0.1	25	91	99	0.12	<0.01	0.13	0.01	0.01	0.30	0.03		
MAR 18...	<0.1	20	69	75	0.09	<0.01	0.10	<0.01	<0.01	0.20	0.04		
MAY 20...	<0.1	20	76	73	0.10	<0.01	<0.10	0.02	0.02	0.20	0.06		
JUL 22...	<0.1	18	69	70	0.09	<0.01	<0.10	0.03	<0.01	0.20	0.03		
SEP 23...	<0.1	19	83	74	0.11	<0.01	<0.10	<0.01	0.02	<0.20	0.03		

SACRAMENTO RIVER BASIN

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 20...	0.03	0.02	40	1	23	<0.5	1	1	3	2	22
JAN 22...	0.01	0.01	40	1	15	<0.5	<1	<1	<3	5	46
MAR 18...	0.01	0.01	--	--	--	--	--	--	--	--	--
MAY 20...	0.02	0.02	--	<1	12	<0.5	<1	<1	<3	4	29
JUL 22...	0.02	0.02	--	--	--	--	--	--	--	--	--
SEP 23...	0.03	0.03	--	--	--	--	--	--	--	--	--

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 20...	<5	5	5	<0.1	<10	1	<1	<1	52	<6	36
JAN 22...	<5	4	11	<0.1	<10	2	<1	<1	57	<6	63
MAR 18...	--	--	--	--	--	--	--	--	--	--	--
MAY 20...	<5	<4	4	<0.1	<10	<1	<1	<1	43	<6	33
JUL 22...	--	--	--	--	--	--	--	--	--	--	--
SEP 23...	--	--	--	--	--	--	--	--	--	--	--

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

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDED (MG/L)
JAN 22...*	0905	48	127	7.1	9.0	765	10.0	86	4
JAN 22...*	0910	108	126	7.1	9.0	765	10.1	87	6
JAN 22...*	0915	188	127	7.1	9.0	765	10.1	87	4
JAN 22...*	0920	253	124	7.1	9.0	765	10.1	87	5
JAN 22...*	0925	368	116	6.9	9.0	765	10.1	87	6
SEP 23...*	0905	70	95	7.4	12.0	745	9.1	86	22
SEP 23...*	0910	145	96	7.3	12.0	745	9.0	85	11
SEP 23...*	0915	235	95	7.4	12.0	745	9.0	85	12
SEP 23...*	0920	325	97	7.3	12.0	745	9.0	85	12
SEP 23...*	0925	440	96	7.4	12.0	745	9.0	85	12

* Instantaneous streamflow at the time of the cross-sectional measurements was:

Jan 22: 4,140 ft³/s

Sep 23: 7,550 ft³/s

SACRAMENTO RIVER BASIN

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV					
20...	0820	4690	9.5	2	25
JAN					
22...	0855	4140	9.0	3	34
MAR					
18...	1005	29800	9.0	24	1930
MAY					
20...	0920	8100	10.0	10	219
JUL					
22...	0905	11800	12.0	11	350
SEP					
23...	0935	7550	12.0	14	285

SACRAMENTO RIVER BASIN

11371000 CLEAR CREEK AT FRENCH GULCH, CA

LOCATION.--Lat 40°41'42", long 122°38'08", unsurveyed, Shasta County, Hydrologic Unit 18020112, on right bank 1,200 ft downstream from French Gulch, 0.3 mi south of town of French Gulch, and 15 mi northwest of Redding.

DRAINAGE AREA.--115 mi².

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

REVISED RECORDS.--WSP 1285: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,320.60 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1959, at datum 3.0 ft higher.

REMARKS.--Estimated daily discharges: Dec. 1-5. Records good. No large diversion above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--36 years, 224 ft³/s, 162,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft³/s, Jan. 16, 1974, gage height, 14.99 ft, from rating curve extended above 5,200 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 1.5 ft³/s, July 19-22, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 31	2145	3,670	8.96	Mar. 10	0500	2,160	7.03
Feb. 14	2330	*6,680	*11.40				

Minimum daily, 8.2 ft³/s, Sept. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	23	110	52	2300	576	337	120	61	31	15	11
2	14	22	500	53	2760	524	318	143	65	30	14	9.9
3	13	22	300	58	1750	482	303	159	62	29	14	9.4
4	12	22	170	66	1210	439	291	131	60	28	13	9.4
5	12	21	181	99	895	408	279	124	62	26	13	9.4
6	12	21	169	106	699	383	267	119	60	26	12	9.2
7	14	21	178	85	572	442	260	117	60	27	11	8.2
8	14	22	169	74	487	731	251	106	57	27	11	8.9
9	14	23	133	67	424	811	240	104	53	26	11	10
10	15	28	108	61	376	1890	232	105	51	25	11	11
11	15	25	89	57	342	1450	223	99	48	24	11	11
12	15	24	77	54	352	1270	216	96	47	23	11	10
13	16	23	70	52	465	1250	207	91	47	22	11	11
14	16	24	63	54	2840	1130	199	88	47	22	10	11
15	15	26	59	102	4540	1080	194	86	47	22	10	15
16	15	31	56	1010	3050	1060	199	85	47	21	10	22
17	14	28	54	1010	3910	979	189	83	46	22	10	63
18	14	26	53	575	3980	865	180	82	48	21	11	43
19	16	25	53	431	2630	784	167	81	45	21	11	49
20	19	25	53	350	2000	733	156	83	44	21	10	33
21	58	25	53	283	1530	705	150	78	43	19	11	28
22	67	25	53	243	1380	657	145	77	40	17	10	25
23	76	29	52	247	1250	619	143	77	37	18	10	23
24	44	44	51	221	1080	579	141	80	35	19	9.7	28
25	34	43	51	200	920	529	138	79	34	19	9.6	28
26	30	34	52	181	793	484	132	72	33	20	9.6	36
27	27	32	51	165	703	445	129	71	34	20	11	42
28	24	56	49	153	635	416	125	69	32	19	10	32
29	24	113	47	271	---	395	119	66	32	18	11	27
30	22	90	49	1040	---	375	122	63	32	17	11	25
31	22	---	50	2160	---	357	---	62	---	16	11	---
TOTAL	717	973	3203	9580	43873	22848	6052	2896	1409	696	343.9	658.4
MEAN	23.1	32.4	103	309	1567	737	202	93.4	47.0	22.5	11.1	21.9
MAX	76	113	500	2160	4540	1890	337	159	65	31	15	63
MIN	12	21	47	52	342	357	119	62	32	16	9.6	8.2
AC-FT	1420	1930	6350	19000	87020	45320	12000	5740	2790	1380	682	1310
CAL YR 1985	TOTAL	23870.4	MEAN	65.4	MAX	500	MIN	9.0	AC-FT	47350		
WTR YR 1986	TOTAL	93249.3	MEAN	255	MAX	4540	MIN	8.2	AC-FT	185000		

KLAMATH RIVER BASIN

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 Pit and McCloud River basins.

COOPERATION.--Records were provided by Bureau of Reclamation.

AVERAGE DISCHARGE.--23 years, 1,542 ft³/s, 1,117,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,910 ft³/s, Feb. 11, 1970; no flow many days in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3236	1465	1261		0	0	2172	999	1460	2508	2491	2289
2	3260	1461	1264		0	0	2075	1000	1263	2508	2920	2263
3	3556	1424	1264		0	452	2074	938	1102	2448	2631	2328
4	3482	1345	1261		51	1551	2075	1000	609	2595	2605	1935
5	3620	1248	1261		0	1610	1835	999	569	2499	2578	2422
6	3620	1248	1241		0	1670	1944	999	639	2380	2447	2328
7	3623	1248	987		0	414	1903	999	565	2468	2447	2360
8	3144	1245	989		0	0	1867	1026	687	2560	2417	2360
9	1159	1245	988		0	0	1912	1028	591	2058	2693	2187
10	1507	1245	1016		0	0	1752	983	570	1707	2669	2215
11	1420	1245	1003		0	0	1773	997	569	2090	2613	2309
12	1433	1241	1513		0	0	1773	709	539	1807	2560	2367
13	1433	1221	1548		129	0	1773	618	658	1815	2613	2399
14	1433	692	1513		0	0	1876	814	573	1920	2613	2360
15	1296	1336	1513		0	0	1876	704	590	1891	2552	2330
16	1391	1533	1513		0	0	0	706	649	1863	2595	1910
17	1343	1533	1369		0	0	0	716	613	2170	2604	2232
18	1470	1241	1493		0	0	2011	655	576	1834	2669	2030
19	1510	1241	1493		0	0	1977	694	577	1782	2658	2150
20	1451	1241	1193		0	0	1977	682	486	1834	2840	2218
21	1470	1261	1493		0	0	1904	747	553	1781	2239	2111
22	1470	1261	1493		0	1186	1904	756	605	1781	2499	1992
23	1451	1261	1513		0	1510	1977	0	605	1810	2302	2300
24	1470	1261	1513		0	1726	1937	0	585	1913	2453	2108
25	1366	1261	1493		0	1973	1984	0	446	1782	2359	1736
26	1470	1221	1513		0	2190	766	0	352	1810	2360	1791
27	1465	1261	1555		0	2133	685	0	352	2005	2223	1823
28	1465	1261	2766		0	2055	768	217	352	2152	2194	2031
29	1465	1261	2766		---	2133	872	0	346	1771	2287	1860
30	1465	1261	2744		---	2195	1012	335	357	1799	2259	1823
31	1465	---	2744		---	2075	---	532	---	1750	2367	---
TOTAL	60409	38268	47276	0	180	24873	48454	19853	18438	63081	77757	64567
MEAN	1948	1275	1525	0	6.42	802	1615	640	614	2035	2508	2152
MAX	3623	1533	2766	0	129	2195	2172	1028	1460	2595	2920	2422
MIN	1159	692	987	0	0	0	0	0	346	1707	2194	1736
AC-FT	119800	75900	93770	0	357	49340	96110	39380	36570	125100	154200	128100
CAL YR 1985	TOTAL	396949.00	MEAN	1087	MAX	3623	MIN	0	AC-FT	787300		
WTR YR 1986	TOTAL	463166.00	MEAN	1268	MAX	3623	MIN	0	AC-FT	918700		

SACRAMENTO RIVER BASIN

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. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation.

AVERAGE DISCHARGE.--22 years (water years 1965-86), 1,935 ft³/s, 1,402,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,800 ft³/s, May 2, 1983; no flow for many days in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	660	1998	1509	197	2125	927	2373	1170	1462	2511	2511	2176
2	1847	1998	1838	207	2791	649	2152	1023	1499	2440	2559	2218
3	3320	1998	2826	166	4127	507	2215	1155	1521	2440	2500	2327
4	3364	1998	1880	141	4152	2119	2104	1178	830	2590	2628	2269
5	3308	1771	1648	149	3983	2515	1772	1974	645	2483	2614	2292
6	3309	1730	1543	140	4001	2533	1826	1217	296	2376	2522	2459
7	3330	1730	1294	138	2279	686	1653	1465	348	2352	2540	1931
8	3687	1892	1203	141	269	1442	1681	1374	696	2457	2522	2277
9	1184	1892	1084	139	0	2288	1696	1195	647	2243	2460	2228
10	1501	1892	1060	139	229	2266	1798	1147	647	1886	2472	2181
11	1507	2065	1060	140	515	3196	1634	1151	645	1886	2549	2404
12	1505	1881	1332	0	465	3185	1645	650	637	1755	2514	2493
13	1337	1254	1792	228	927	2540	1522	377	609	1898	2618	2437
14	1430	1259	1486	0	2323	1808	1487	608	596	1934	2549	2417
15	1358	1361	1593	0	4320	2005	1618	1393	597	1897	2657	2383
16	1581	1511	1118	1202	4216	2489	0	626	598	2289	2505	2408
17	1982	1511	1918	2069	4190	2656	0	851	611	2260	2568	1982
18	1871	1350	1529	1609	4189	1471	1679	819	604	2104	2618	2235
19	1876	1279	1509	957	4216	0	1752	905	604	1862	2618	2271
20	1871	1321	1566	288	4216	728	1579	929	503	1861	2670	2509
21	1822	1232	1593	232	4243	1149	1699	987	567	1919	2264	2472
22	2026	1249	1617	248	4270	2390	1628	1229	511	2079	2207	2344
23	2002	1215	1593	325	2669	2942	1585	0	517	2044	2361	2437
24	1914	1254	1593	415	2669	2623	1655	0	517	1992	2493	2124
25	1524	1232	1667	413	2688	3036	1676	0	453	1986	2529	1802
26	2556	1350	1548	421	2703	3060	0	0	418	1792	2358	1931
27	2107	1377	1482	0	1183	3140	376	0	383	1787	2134	1962
28	1835	1371	2755	0	1097	2736	500	211	327	1838	2104	2293
29	1990	1354	2755	0	---	2875	439	0	323	1818	2114	2015
30	1990	1429	2755	1287	---	2755	592	328	341	1807	2104	2015
31	1998	---	2755	1798	---	2406	---	633	---	1844	2117	---
TOTAL	63592	46754	52701	13189	75055	65122	42336	24595	18952	64430	75979	67292
MEAN	2051	1558	1700	425	2680	2100	1411	793	631	2078	2450	2243
MAX	3687	2065	2755	2069	4320	3196	2373	1974	1521	2590	2670	2509
MIN	660	1215	1060	0	0	0	0	0	296	1755	2104	1802
AC-FT	126100	92740	104500	26160	148900	129200	83970	48780	37590	127800	150700	133500
CAL YR 1985	TOTAL	422198.00	MEAN	1156	MAX	4064	MIN	0	AC-FT	837400		
WTR YR 1986	TOTAL	609997.00	MEAN	1671	MAX	4320	MIN	0	AC-FT	1210000		

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels 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 herein represent total contents at 2400 hours. Lake is used for power generation and recreation. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation.

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 258,600 acre-ft, Mar. 2, 1983, elevation, 1,215.34 ft; minimum since first filling, 159,000 acre-ft, Oct. 25, 1970, elevation, 1,181.48 ft.

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 239,500 acre-ft, May 14, elevation, 1,209.50 ft; minimum, 202,400 acre-ft, Feb. 7, elevation, 1,197.38 ft.

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

1,015	714	1,080	15,100
1,020	994	1,100	27,500
1,030	1,800	1,120	46,700
1,040	3,060	1,140	74,000
1,050	4,900	1,180	155,300
1,060	7,420	1,220	274,400

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	229600	220000	206100	205400	217300	204500	206700	238400	238600	237500	237800	238000
2	232300	219100	208100	205000	222700	204700	207700	239000	238300	237600	238400	238200
3	232800	218000	206200	204800	220400	205900	208400	239400	237700	237800	238600	238200
4	233200	216000	205700	204900	216200	206100	209400	239200	237300	237700	238500	237500
5	233800	215000	205300	205000	211100	205700	210500	238200	237300	237600	238400	237500
6	234500	214200	205200	204900	205400	205300	211600	238200	238000	237600	238200	237400
7	234800	213200	204600	204900	202400	207200	213000	237600	238500	237800	237900	237400
8	233900	212000	204900	204700	203100	206900	214300	237500	238500	238000	237500	237700
9	234000	210700	205000	204600	204200	205900	215500	237700	238400	237700	237700	237500
10	233900	209500	205100	204400	204700	209500	216300	237700	238300	237500	237800	237700
11	233800	207900	205100	204200	204700	208400	217300	237700	238200	237800	237900	237500
12	233500	206700	205600	204200	205300	206200	218200	238100	238000	238000	237900	237300
13	233600	206500	205400	203800	205400	205100	219500	239000	238000	237900	237800	237300
14	233700	205400	205400	204000	214200	204900	220800	239500	238000	238200	237600	237300
15	233500	205400	205400	205300	222800	205400	222100	238400	238000	238400	237500	237200
16	232800	205700	206400	207700	225600	204500	222800	238600	238000	237900	237500	236400
17	231700	205800	205500	206700	231800	202600	223400	238500	238100	237500	237600	237400
18	230900	205600	205500	204900	234500	202500	224600	238500	238000	237300	237600	237300
19	230200	205600	205600	204700	233500	205000	225700	238300	237900	237400	237600	237200
20	230000	205500	204900	205000	230000	205900	227000	238400	237800	237500	237700	236900
21	229500	205600	204900	205200	224900	205800	227900	238100	237800	237500	237500	236400
22	228900	205700	204700	205500	219100	205600	228900	237800	237900	237100	237800	235700
23	228200	205900	204700	205500	215800	205000	230200	237900	238000	236900	237700	235000
24	228400	206200	204600	205200	212200	205200	231200	238000	238100	236800	237500	235300
25	228100	206400	204500	204900	208800	205000	232300	238100	238100	236900	237000	235300
26	226000	206200	204500	204400	205600	205000	234200	238200	237900	236800	237300	235300
27	224800	206000	204700	204800	205100	204700	235200	238300	237800	237100	237000	235200
28	223900	206000	204900	205200	204700	205000	236100	238400	237800	237500	237200	234800
29	223000	206300	205200	207000	---	204800	237200	238500	237700	237700	237200	234600
30	222000	206100	205400	208300	---	204900	238400	238500	237700	237900	237500	234300
31	221000	---	205600	213500	---	205600	---	238400	---	237900	237900	---
MAX	234800	220000	208100	213500	234500	209500	238400	239500	238600	238400	238600	238200
MIN	221000	205400	204500	203800	202400	202500	206700	237500	237300	236800	237000	234300
a	1203.59	1198.64	1198.46	1201.13	1198.17	1198.48	1209.15	1209.16	1208.94	1209.00	1208.99	1207.87
b	-3800	-14900	-500	+7900	-8800	+900	+32800	0	-700	+200	0	-3600
c	520	140	100	80	140	330	620	1070	1510	1710	1680	740

CAL YR 1985 b + 200

WTR YR 1986 b +9500

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

SACRAMENTO RIVER BASIN

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.

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

GAGE.--Water-stage recorder. Datum of gage is 672.99 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharge: Jan. 16. Records good. 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 diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--22 years (water years 1941-62) prior to storage and diversions, 413 ft³/s, 299,200 acre-ft/yr; 24 years (water years 1963-86), 549 ft³/s, 397,800 acre-ft/yr, adjusted for storage, evaporation, and transbasin diversions to and from Whiskeytown Lake; unadjusted flow for same period was 185 ft³/s, 134,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s, Dec. 21, 1955, gage height, 13.75 ft; minimum daily, 8.6 ft³/s, Sept. 4, 6, 7, 1950. Maximum discharge since completion of Whiskeytown Dam in 1963, 19,200 ft³/s, Mar. 3, 1983, gage height, 12.73 ft; minimum daily, 30 ft³/s, Oct. 10, 11, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,700 ft³/s, Feb. 17, gage height, 8.21 ft; minimum daily, 47 ft³/s, several days during August and September.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	50	97	111	84	400	150	104	74	65	54	48	47		
2	50	94	153	51	527	137	101	77	65	54	48	47		
3	50	87	144	51	369	123	97	87	66	55	48	47		
4	49	88	116	59	257	117	93	80	65	55	48	49		
5	50	90	119	67	186	113	91	80	65	54	48	49		
6	50	90	113	61	149	110	90	79	65	53	48	49		
7	50	90	115	57	128	500	104	77	64	53	48	49		
8	50	90	109	56	115	611	98	75	64	53	48	49		
9	50	90	105	55	105	466	92	74	62	53	48	49		
10	50	90	101	54	97	1060	89	73	61	53	48	49		
11	50	90	99	53	96	501	86	72	61	53	48	49		
12	50	90	97	53	179	397	83	71	61	51	48	49		
13	50	90	97	55	270	384	82	71	61	51	48	49		
14	50	90	95	62	899	320	82	72	61	51	48	49		
15	50	91	95	105	934	616	84	74	61	51	48	49		
16	50	92	95	374	1140	639	103	69	59	51	48	49		
17	50	90	94	375	2710	403	98	69	60	50	47	59		
18	50	90	93	189	1840	300	88	69	61	50	47	59		
19	50	90	93	140	1740	252	84	68	59	50	47	58		
20	52	90	93	115	1330	212	82	78	60	50	47	55		
21	55	90	93	101	1190	187	81	74	58	50	47	55		
22	77	90	93	95	1190	170	80	69	58	49	47	54		
23	76	92	92	99	1120	158	78	69	56	49	47	54		
24	76	97	92	89	1030	147	78	68	56	49	47	60		
25	100	94	92	83	675	138	77	67	56	49	47	57		
26	99	92	92	79	385	131	76	67	56	49	47	58		
27	99	93	92	77	315	124	76	67	57	49	47	57		
28	99	113	92	75	172	119	74	66	56	48	47	56		
29	98	135	92	207	---	114	74	66	56	48	47	55		
30	103	104	93	484	---	111	73	66	55	48	47	54		
31	99	---	92	438	---	107	---	65	---	48	47	---		
TOTAL	1982	2809	3152	3943	19548	8917	2598	2233	1810	1581	1473	1569		
MEAN	63.9	93.6	102	127	698	288	86.6	72.0	60.3	51.0	47.5	52.3		
MAX	103	135	153	484	2710	1060	104	87	66	55	48	60		
MIN	49	87	92	51	96	107	73	65	55	48	47	47		
AC-FT	3930	5570	6250	7820	38770	17690	5150	4430	3590	3140	2920	3110		
MEAN a	114	129	270	682	3216	1606	445	242	91.1	125	17.4	95.0		
AC-FT a	7020	7650	16610	41960	178620	98750	26460	14900	5420	7710	1070	5650		
CAL YR 1985	TOTAL	25173	MEAN	69.0	MAX	381	MIN	49	AC-FT	49930	MEAN a	151	AC-FT a	109300
WTR YR 1986	TOTAL	51615	MEAN	141	MAX	2710	MIN	47	AC-FT	102400	MEAN a	569	AC-FT a	411800

SACRAMENTO RIVER BASIN

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.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 388.7 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Numerous small diversions above station for irrigation.

AVERAGE DISCHARGE.--37 years, 709 ft³/s, 513,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,700 ft³/s, Nov. 16, 1981, gage height, 21.22 ft, from rating curve extended above 36,000 ft³/s; maximum gage height, 21.55 ft, Dec. 27, 1951; minimum daily, 0.02 ft³/s, July 29, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1937 or 1940 reached a stage of 23.8 ft from floodmarks. 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 and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 2	1015	14,700	11.70	Mar. 8	0400	*39,000	18.89
Feb. 17	1445	31,000	16.81				

Minimum daily, 30 ft³/s, Aug. 9, 20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	119	839	193	2870	1330	647	309	238	74	47	39
2	52	118	5410	251	5900	1220	609	297	221	71	47	36
3	50	117	3340	294	4550	1110	572	901	209	71	44	31
4	49	114	894	387	2640	1030	548	873	210	72	41	32
5	46	115	1560	1600	1710	980	531	889	207	69	36	33
6	49	113	1050	1330	1300	924	512	933	202	62	35	31
7	69	114	1660	705	1060	4110	546	646	196	65	34	32
8	97	113	998	504	901	19100	604	574	184	67	33	32
9	74	110	575	437	789	5030	537	534	174	65	30	33
10	74	121	438	384	705	10300	500	535	165	64	32	32
11	85	129	361	341	647	4630	479	495	152	63	34	36
12	82	115	328	316	3750	3450	491	458	144	57	34	35
13	76	112	292	292	5780	3350	468	434	138	59	34	38
14	74	108	275	285	11600	2580	442	415	125	55	33	41
15	67	111	259	441	8010	5910	476	392	119	52	32	41
16	65	126	236	4530	6240	4250	692	370	122	57	31	59
17	59	119	226	3970	21400	2200	752	354	114	57	33	101
18	55	115	216	2240	9330	1630	538	336	106	56	33	187
19	61	110	205	1330	10600	1370	486	329	109	55	33	184
20	68	109	187	1330	7190	1210	458	326	112	54	30	140
21	228	110	178	863	5860	1100	451	318	107	49	33	112
22	245	110	174	704	4200	1010	438	306	104	44	33	108
23	489	117	178	1090	3130	938	425	298	90	43	32	97
24	291	209	173	762	2550	957	400	288	78	47	32	110
25	187	383	170	605	2130	887	398	286	85	46	35	182
26	156	222	165	520	1830	817	377	265	78	46	31	211
27	136	171	167	477	1630	769	354	258	92	45	32	419
28	129	1470	162	453	1460	744	350	254	83	48	35	186
29	124	3850	157	3650	---	701	337	246	79	46	35	139
30	126	1020	178	6050	---	670	328	242	77	44	33	123
31	121	---	209	3580	---	649	---	237	---	46	35	---
TOTAL	3540	9970	21260	39914	129762	84956	14746	13398	4120	1749	1072	2880
MEAN	114	332	686	1288	4634	2741	492	432	137	56.4	34.6	96.0
MAX	489	3850	5410	6050	21400	19100	752	933	238	74	47	419
MIN	46	108	157	193	647	649	328	237	77	43	30	31
AC-FT	7020	19780	42170	79170	257400	168500	29250	26570	8170	3470	2130	5710

SACRAMENTO RIVER BASIN

11375810 COTTONWOOD CREEK NEAR OLINDA, CA

LOCATION.--Lat 40°23'06", long 122°28'31", in SE 1/4 NW 1/4 sec.7, T.29 N., R.5 W., Shasta County, Hydrologic Unit 18020102, on left bank 1.0 mi downstream from Dutch Gulch, and 5.5 mi southwest of Olinda.

DRAINAGE AREA.--395 mi².

PERIOD OF RECORD.--August 1971 to September 1986 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 498.01 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Feb. 16-18. Records good. Numerous pumping diversions above station.

AVERAGE DISCHARGE.--15 years, 514 ft³/s, 372,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,900 ft³/s, Jan. 16, 1974, gage height, 21.44 ft, from rating curve extended above 14,000 ft³/s on basis of slope-area measurement of peak flow; no flow Aug. 30, Sept. 7, 8, 1972, and many days in 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 16	1915	8,950	12.76	Mar. 8	0400	9,250	12.90
Feb. 2	0745	6,600	11.58	Mar. 15	2200	11,400	13.81
Feb. 17	1330	*23,800	*17.86				

Minimum daily, 8.3 ft³/s, Sept. 8, 11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	37	121	84	2190	1230	653	232	122	51	14	10
2	26	37	1650	88	3500	1130	625	236	116	49	14	9.9
3	30	37	668	90	2770	1050	601	259	115	46	14	9.3
4	31	36	326	135	1820	983	579	243	110	42	14	9.3
5	30	35	300	220	1320	928	555	243	108	41	13	9.0
6	28	34	273	212	1070	880	530	238	110	42	11	8.7
7	23	34	255	168	901	1340	571	235	108	42	11	8.5
8	22	32	272	141	790	4260	563	222	100	43	11	8.3
9	20	31	212	126	697	2920	514	213	91	42	9.9	8.6
10	21	31	163	116	626	4170	501	206	86	39	9.6	8.4
11	22	35	139	107	576	2500	475	201	81	34	9.6	8.3
12	22	36	121	101	1320	2400	440	198	78	28	9.4	8.4
13	21	34	111	96	1790	2180	428	188	77	25	9.5	8.9
14	21	39	105	98	7670	1900	411	164	81	22	9.5	9.1
15	21	35	100	142	7910	4180	409	158	81	22	9.3	9.2
16	21	35	95	4360	7070	3340	484	152	80	22	9.7	11
17	21	36	91	2700	17700	1950	536	147	79	23	9.7	37
18	21	36	89	1160	9470	1710	401	145	80	24	9.8	50
19	21	37	89	829	6380	1530	372	147	72	24	9.5	54
20	24	37	87	672	4380	1430	351	145	71	24	9.6	44
21	63	36	91	547	3140	1330	332	147	68	23	9.6	35
22	79	36	91	475	2730	1230	311	144	65	20	9.0	28
23	103	37	88	560	2280	1160	301	142	62	20	9.0	26
24	68	51	86	515	1980	1090	294	137	59	20	9.6	33
25	52	62	85	459	1770	1010	280	131	57	20	9.6	41
26	45	54	84	416	1590	942	270	129	55	18	9.8	46
27	41	49	82	382	1460	890	265	129	55	13	11	61
28	39	164	80	342	1330	826	254	127	53	13	11	69
29	38	280	76	1360	---	759	244	127	52	14	10	55
30	38	177	79	2390	---	719	240	126	52	13	10	48
31	38	---	81	2740	---	686	---	123	---	13	11	---
TOTAL	1068	1650	6190	21831	96230	52653	12790	5434	2424	872	326.7	771.9
MEAN	34.5	55.0	200	704	3437	1698	426	175	80.8	28.1	10.5	25.7
MAX	103	280	1650	4360	17700	4260	653	259	122	51	14	69
MIN	18	31	76	84	576	686	240	123	52	13	9.0	8.3
AC-FT	2120	3270	12280	43300	190900	104400	25370	10780	4810	1730	648	1530

CAL YR 1985	TOTAL	50381.2	MEAN	138	MAX	1800	MIN	8.5	AC-FT	99930
WTR YR 1986	TOTAL	202240.6	MEAN	554	MAX	17700	MIN	8.3	AC-FT	401100

SACRAMENTO RIVER BASIN

11375870 SOUTH FORK COTTONWOOD CREEK NEAR OLINDA, CA

LOCATION.--Lat 40°19'34", long 122°26'40", in SE 1/4 NE 1/4 sec.32, T.29 N., R.5 W., Tehama County, Hydrologic Unit 18020102, on left bank 250 ft downstream from Dry Creek and 8.0 mi south of Olinda.

DRAINAGE AREA.--371 mi².

PERIOD OF RECORD.--November 1976 to September 1986 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 498.28 ft above National Geodetic Vertical Datum of 1929. Prior to June 4, 1986, at datum 3.00 ft higher.

REMARKS.--Estimated daily discharges: Nov. 16, 17 and Feb. 18-25. Records good. No regulation or diversion upstream.

AVERAGE DISCHARGE.--9 years (water years 1978-86) 363 ft³/s, 263,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,800 ft³/s, Feb. 28, 1983, gage height, 18.38 ft present datum, from rating curve extended above 17,000 ft³/s; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 16, 1974 reached a stage of 16.5 ft present datum, from flood-marks, on right bank, discharge, 27,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 31	1615	3,150	4.43	Mar. 10	0130	9,410	7.83
Feb. 17	1345	*19,500	*11.30	Mar. 15	2200	7,560	6.93

No flow many days during August and September.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	7.0	81	52	1320	740	428	150	129	21	3.0	0
2	1.8	7.0	580	52	2660	669	403	148	124	17	3.0	0
3	1.8	7.0	459	52	1710	611	382	166	115	17	2.9	0
4	1.8	7.0	226	88	1040	566	362	158	105	17	2.8	0
5	1.8	7.0	152	196	672	537	348	153	94	16	2.8	0
6	1.8	6.6	140	251	561	511	328	148	82	14	2.6	0
7	1.8	6.1	124	176	472	834	323	143	79	14	2.5	0
8	1.8	5.9	166	134	415	4810	342	131	62	13	2.4	0
9	1.8	5.9	134	110	373	2640	318	122	60	13	2.2	0
10	1.8	5.8	103	94	340	4300	300	116	54	12	2.0	0
11	1.8	6.9	85	83	314	1810	282	114	49	11	2.0	0
12	1.8	7.0	66	75	492	1500	271	111	47	10	1.8	0
13	1.8	7.0	53	66	1270	1290	263	108	45	9.1	1.8	0
14	1.8	7.0	52	60	9170	1070	252	106	46	8.4	1.8	0
15	1.8	7.0	50	78	6620	2430	242	106	45	7.9	1.7	0
16	2.5	13	48	447	4580	2820	260	106	42	7.4	1.6	0
17	3.1	18	46	1520	14700	1340	277	106	40	7.1	1.4	0
18	3.1	21	43	753	7400	1110	225	107	39	6.9	1.1	0
19	3.1	17	43	523	5000	961	210	118	39	6.6	.63	0
20	3.4	9.1	44	427	3350	833	201	125	38	6.4	.21	1.6
21	6.1	8.1	52	360	2550	781	196	124	36	6.1	.07	9.7
22	9.7	8.1	56	317	2000	732	203	119	34	5.6	0	9.9
23	16	8.1	58	341	1600	688	207	110	32	5.1	0	9.9
24	16	12	55	330	1340	656	204	105	31	4.6	0	11
25	16	17	52	298	1170	605	192	100	30	4.4	0	12
26	8.8	17	50	278	1070	556	178	105	28	4.2	0	12
27	8.0	18	50	261	942	532	170	117	27	4.2	0	13
28	7.0	38	48	251	837	513	164	122	25	4.0	0	26
29	7.0	167	48	603	---	490	160	124	24	3.7	0	18
30	7.0	154	48	1630	---	468	154	125	22	3.4	0	15
31	7.0	---	51	2000	---	446	---	127	---	3.0	0	---
TOTAL	150.8	625.6	3263	11906	73968	37849	7845	3820	1623	283.1	40.31	138.1
MEAN	4.86	20.9	105	384	2642	1221	262	123	54.1	9.13	1.30	4.60
MAX	16	167	580	2000	14700	4810	428	166	129	21	3.0	26
MIN	1.8	5.8	43	52	314	446	154	100	22	3.0	0	0
AC-FT	299	1240	6470	23620	146700	75070	15560	7580	3220	562	80	274

CAL YR 1985	TOTAL	29813.10	MEAN	81.7	MAX	845	MIN	0	AC-FT	59130
WTR YR 1986	TOTAL	141511.91	MEAN	388	MAX	14700	MIN	0	AC-FT	280700

SACRAMENTO RIVER BASIN

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.

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 National Geodetic Vertical Datum of 1929 (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.--No estimated daily discharges. Records fair. Small diversions for irrigation above station. At times during irrigation season, Cottonwood Creek receives water above station from Sacramento River by way of Anderson-Cottonwood Canal.

AVERAGE DISCHARGE.--46 years, 899 ft³/s, 651,300 acre-ft/yr.

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; minimum, 15 ft³/s, on several days during September 1945.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1945	*52,400	*17.64	Mar. 16	0045	25,500	14.14
Mar. 8	0645	28,400	14.55				

Minimum daily, 42 ft³/s, Aug. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	77	309	176	4500	2650	1160	457	341	129	59	65
2	82	75	2350	176	6670	2470	1110	457	329	119	59	65
3	90	75	1560	176	5000	2320	1060	542	320	107	64	51
4	89	75	733	205	3530	2200	1020	539	303	95	77	46
5	96	73	549	383	2550	2100	982	545	283	82	79	46
6	100	72	517	486	1910	2030	948	547	283	81	71	50
7	102	71	468	411	1500	2990	938	544	281	88	60	57
8	101	71	490	338	1280	14000	967	526	263	93	45	57
9	101	71	452	293	1090	4800	897	511	243	95	44	61
10	121	71	367	265	966	12800	845	470	225	99	45	66
11	147	71	312	244	882	4480	798	432	217	97	63	68
12	151	71	272	230	1830	3600	756	420	205	91	67	68
13	145	71	245	216	4340	3150	734	397	202	75	47	73
14	97	71	233	208	17300	2830	711	375	201	72	42	83
15	84	71	220	227	18100	5280	701	357	193	67	43	90
16	85	71	209	2860	13200	9960	704	351	196	67	55	91
17	80	71	198	5300	38100	3550	922	349	198	66	69	90
18	99	73	190	2270	26900	2860	715	336	188	76	64	109
19	100	75	186	1410	14400	2560	661	342	182	76	60	138
20	103	75	184	1130	10200	2390	626	371	174	78	63	153
21	167	75	184	905	7030	2260	603	376	170	86	51	135
22	206	75	184	766	5530	2140	573	353	161	83	50	127
23	208	75	184	879	4600	2010	564	338	148	82	51	129
24	161	84	184	803	4030	1910	567	321	138	78	56	155
25	131	103	184	693	3630	1770	556	305	136	74	61	169
26	109	110	184	620	3290	1660	515	298	142	69	53	192
27	98	110	184	564	3060	1560	509	322	135	65	48	173
28	90	164	184	524	2840	1460	499	328	130	58	63	160
29	86	450	178	1060	---	1360	482	332	134	55	69	170
30	82	514	176	5460	---	1290	471	336	134	65	67	159
31	80	---	176	5410	---	1220	---	340	---	64	58	---
TOTAL	3463	3211	12046	34688	208258	107660	22594	12517	6255	2532	1803	3096
MEAN	112	107	389	1119	7438	3473	753	404	208	81.7	58.2	103
MAX	208	514	2350	5460	38100	14000	1160	547	341	129	79	192
MIN	72	71	176	176	882	1220	471	298	130	55	42	46
AC-FT	6870	6370	23890	68800	413100	213500	44820	24830	12410	5020	3580	6140

SACRAMENTO RIVER BASIN

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 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.

GAGE.--Water-stage recorder. Elevation of gage is 415 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Some regulation at low flows by five small power-plants, several small reservoirs, and Coleman Fish Hatchery. Coleman Fish Hatchery diverts from 50 ft³/s to 90 ft³/s and pumps ground water for temperature control which is returned above the station. At times, 10 ft³/s diverted above station for irrigation.

AVERAGE DISCHARGE.--25 years, 533 ft³/s, 386,200 acre-ft/yr.

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 since 1961, 52 ft³/s, Aug. 8, 1962.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 29	1000	5,990	7.43	Mar. 8	0915	8,170	8.66
Feb. 17	2000	*8,760	*9.05				

Minimum daily, 276 ft³/s, Oct. 3-5, 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286	311	481	363	1260	991	791	557	632	377	336	303
2	278	310	1230	373	1340	950	769	556	630	375	342	302
3	276	309	696	363	1370	913	732	752	623	370	342	297
4	276	321	524	497	930	888	712	726	600	370	334	297
5	276	353	766	786	747	870	695	887	576	375	333	298
6	277	351	565	628	651	850	684	827	557	368	326	293
7	300	351	489	485	586	1250	716	699	538	371	324	293
8	284	349	481	433	550	5530	745	673	529	383	329	296
9	276	350	424	410	521	2370	710	632	510	367	319	296
10	282	356	389	393	503	3070	683	657	497	357	319	295
11	293	359	367	382	486	2130	673	644	503	359	321	308
12	301	356	344	375	1260	1570	697	616	502	358	318	348
13	298	327	339	371	2230	1390	679	608	495	352	315	364
14	295	315	345	379	4460	1260	652	602	503	347	317	370
15	305	322	344	464	5010	1440	654	600	501	351	320	376
16	294	345	345	530	2760	1450	673	594	488	357	319	382
17	294	354	340	927	6700	1150	672	592	471	378	312	407
18	293	348	339	695	4870	1010	631	600	466	369	308	483
19	294	344	337	698	4140	962	605	610	458	366	334	429
20	298	343	334	786	2710	938	596	610	443	369	330	397
21	416	353	332	553	2000	909	609	604	426	359	327	363
22	372	368	332	505	1610	879	635	580	419	354	330	356
23	443	364	328	498	1410	877	652	565	422	343	326	356
24	372	456	329	479	1280	897	617	561	427	331	319	496
25	341	572	330	453	1180	878	605	559	424	325	326	525
26	324	450	331	439	1100	839	588	565	419	323	319	649
27	326	449	329	428	1050	825	580	578	423	320	316	674
28	322	1130	327	417	1020	823	596	587	402	309	317	434
29	318	2000	328	1050	---	813	571	588	394	302	311	394
30	314	602	356	1430	---	810	562	615	385	309	301	378
31	312	---	367	1350	---	797	---	639	---	332	304	---
TOTAL	9636	13518	13168	17940	53734	40329	19784	19483	14663	10926	9994	11459
MEAN	311	451	425	579	1919	1301	659	628	489	352	322	382
MAX	443	2000	1230	1430	6700	5530	791	887	632	383	342	674
MIN	276	309	327	363	486	797	562	556	385	302	301	293
AC-FT	19110	26810	26120	35580	106600	79990	39240	38640	29080	21670	19820	22730
CAL YR 1985	TOTAL	135398	MEAN	371	MAX	2000	MIN	235	AC-FT	268600		
WTR YR 1986	TOTAL	234634	MEAN	643	MAX	6700	MIN	276	AC-FT	465400		

SACRAMENTO RIVER BASIN

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.

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 National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to September 1968.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated by Shasta Lake (station 11370000) 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.

AVERAGE DISCHARGE.--71 years (water years 1892-1962), prior to transbasin diversion from Trinity River, 11,400 ft³/s, 8,259,000 acre-ft/yr; 24 years (water years 1963-86), 13,830 ft³/s, 10,020,000 acre-ft/yr.

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 1892-1986), 2,000 ft³/s, Mar. 29, 1944. Maximum discharge since completion of Shasta Dam in 1944, 157,000 ft³/s, Jan. 24, 1970, gage height, 36.60 ft, from rating curve extended above 131,000 ft³/s; minimum, 2,000 ft³/s, Mar. 29, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 134,000 ft³/s, Feb. 17, gage height, 32.84 ft; minimum daily, 4,980 ft³/s, Nov. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5320	5020	6160	5090	17500	68900	7980	9330	8670	11500	10700	9770
2	5290	5030	19600	5060	24500	61800	7190	9370	8750	11200	10700	9740
3	5310	5080	15800	5090	22600	50900	6920	10400	8910	11000	10700	9460
4	5320	5130	7760	5380	16400	36800	6720	10900	8830	11000	10700	8560
5	5240	5050	8190	7420	11700	28300	6550	10500	8830	11000	10400	7040
6	5060	5290	7080	7480	10100	23400	6360	10800	8470	11000	10100	6440
7	5050	5350	7550	6210	8490	32100	6440	10100	8690	11000	10100	6330
8	5040	5300	7000	5730	6920	91500	6560	9910	8810	10900	10100	6000
9	5000	5170	6120	5500	6380	57200	6370	9780	9170	10700	10100	5730
10	5050	5140	5730	5380	6190	77700	6220	9600	9370	10800	10100	5730
11	5100	5090	5510	5290	5960	73300	6110	9390	10200	10800	10100	5690
12	5050	5120	5370	5250	12200	66900	6070	9290	10600	10800	10100	5820
13	5060	4980	5270	5170	25500	64800	6080	14400	10700	10800	10100	6260
14	5090	4990	5200	5170	48800	62700	5870	16100	11000	10800	10200	7260
15	5090	5120	5160	5550	68100	58000	5850	14200	11200	10800	10200	7800
16	5030	5030	5130	18200	68400	67900	6270	10800	11200	10800	10300	7940
17	5050	5010	5140	22700	108000	51200	6980	9560	11300	10700	10300	8360
18	5030	5000	5090	12400	104000	41800	6350	9500	11200	11200	10100	8060
19	5060	5070	5120	9280	99400	35300	6150	9510	11100	11700	10100	7920
20	5070	5190	5100	9850	104000	29600	6070	9210	11100	12000	10100	7890
21	5530	5180	5040	7550	93800	27200	6650	8780	11100	11800	10200	7760
22	5690	5150	5040	6690	89800	24300	6970	8430	11100	11800	10200	7740
23	5880	5190	5050	7840	86000	21500	6940	8370	11200	11800	9870	7690
24	5490	5450	5030	6880	84000	20000	7510	8380	11100	11800	9770	8760
25	5220	5680	5000	6220	82400	18100	8310	8320	11000	11800	9750	8950
26	5190	5190	5000	5900	81000	15600	8100	8270	11000	11900	9690	8950
27	5170	4990	5000	5860	74900	12800	8160	8300	11100	11900	9740	9530
28	5280	7940	5010	5770	70200	10600	8210	8460	11400	11900	9700	8910
29	5290	16200	4990	10500	---	9560	8100	8320	11600	11600	9760	8770
30	5050	7970	5020	28700	---	9000	8320	8330	11500	11000	9740	8730
31	5030	---	5050	19900	---	8480	---	8500	---	10700	9670	---
TOTAL	161130	171100	198310	269010	1437240	1257240	206380	305110	310200	348500	313390	233590
MEAN	5198	5703	6397	8678	51330	40560	6879	9842	10340	11240	10110	7786
MAX	5880	16200	19600	28700	108000	91500	8320	16100	11600	12000	10700	9770
MIN	5000	4980	4990	5060	5960	8480	5850	8270	8470	10700	9670	5690
AC-FT	319600	339400	393300	533600	2851000	2494000	409400	605200	615300	691200	621600	463300

CAL YR 1985 TOTAL 2980920 MEAN 8167 MAX 19600 MIN 4980 AC-FT 5913000
WTR YR 1986 TOTAL 5211200 MEAN 14280 MAX 108000 MIN 4980 AC-FT 10340000

SACRAMENTO RIVER BASIN

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.

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.

GAGE.--Water-stage recorder. Datum of gage is 718.1 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 13, 1965, water-stage recorder at site 300 ft downstream at elevation 5.13 ft lower.

REMARKS.--No estimated daily discharges. Records excellent. No regulation or large diversion above station.

AVERAGE DISCHARGE.--38 years, 106 ft³/s, 76,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,700 ft³/s, Feb. 28, 1983, gage height, 12.10 ft, present site and datum, 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 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 2	0745	1,850	6.09	Mar. 9	2345	5,190	8.60
Jan. 31	1230	2,610	6.84	Mar. 15	1900	2,350	6.60
Feb. 14	1600	*15,300	*11.62				

Minimum daily, 1.3 ft³/s, Sept. 3, 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	6.0	63	19	699	281	181	61	24	9.4	3.1	1.8
2	3.2	5.9	731	18	1270	254	162	62	24	8.9	2.9	1.5
3	2.7	5.9	137	18	645	231	146	62	24	8.4	2.8	1.3
4	2.3	6.0	60	71	395	214	139	62	23	7.8	2.6	1.4
5	2.2	5.8	49	82	285	200	132	62	23	7.5	2.4	1.5
6	2.3	5.6	40	65	225	193	127	60	24	7.3	2.4	1.4
7	2.9	5.7	37	45	188	288	151	58	23	7.5	2.3	1.3
8	3.0	5.7	36	36	160	1050	139	54	21	7.4	2.2	1.4
9	2.6	5.7	29	31	140	984	125	50	19	7.3	2.2	1.8
10	2.6	7.3	24	27	125	1420	119	48	18	7.0	2.2	1.7
11	2.8	7.6	21	24	114	589	112	48	17	6.2	2.2	1.7
12	2.8	7.1	18	22	310	450	107	46	17	5.8	2.1	1.9
13	2.6	6.7	18	21	477	399	100	45	17	5.6	2.0	2.3
14	2.6	6.8	17	23	5070	331	96	43	16	5.5	1.8	2.6
15	2.6	6.9	16	37	3010	1030	93	42	17	5.5	1.9	4.0
16	2.6	7.8	15	663	2330	840	101	40	17	5.4	2.0	4.8
17	2.5	8.8	15	453	5820	475	95	39	16	5.5	2.1	6.8
18	2.6	8.0	15	201	3090	384	83	38	15	5.5	2.2	7.7
19	2.8	7.5	15	135	1840	352	78	37	15	5.6	2.0	8.1
20	3.7	7.3	16	99	1230	336	74	37	14	5.2	1.8	7.5
21	13	7.2	17	78	885	320	74	36	13	4.5	1.8	6.6
22	13	7.2	17	68	663	305	77	36	13	4.3	1.8	6.2
23	20	8.0	16	80	542	292	76	34	12	4.4	2.0	5.5
24	12	13	15	63	476	281	73	33	12	4.5	1.9	6.0
25	9.2	14	16	55	422	257	70	31	11	4.6	1.9	6.3
26	7.9	11	16	49	374	239	68	31	11	4.9	1.9	6.8
27	7.2	10	16	45	343	232	66	30	11	4.7	2.0	9.2
28	6.6	36	15	43	311	224	65	29	11	4.4	2.0	7.9
29	6.4	147	15	353	---	212	62	28	10	4.1	2.1	6.5
30	6.4	43	18	569	---	201	62	26	10	3.8	2.3	5.9
31	6.2	---	20	1290	---	191	---	25	---	3.5	2.2	---
TOTAL	162.8	430.5	1553	4783	31439	13055	3053	1333	498	182.0	67.1	129.4
MEAN	5.25	14.4	50.1	154	1123	421	102	43.0	16.6	5.87	2.16	4.31
MAX	20	147	731	1290	5820	1420	181	62	24	9.4	3.1	9.2
MIN	2.2	5.6	15	18	114	191	62	25	10	3.5	1.8	1.3
AC-FT	323	854	3080	9490	62360	25890	6060	2640	988	361	133	257

SACRAMENTO RIVER BASIN

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.

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.

GAGE.--Water-stage recorder. Elevation of gage is 385 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to September 1913, nonrecording gage at site 0.3 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. No storage or large diversion above station.

AVERAGE DISCHARGE.--58 years (water years 1929-86), 308 ft³/s, 223,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1929-86): 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 and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 29	1015	3,360	7.79	Feb. 17	2000	*11,800	*12.85
Feb. 2	1130	2,700	7.14	Mar. 8	0730	7,070	10.43

Minimum daily, 102 ft³/s, Oct. 4, 5, 14, 15.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	117	191	147	1040	545	437	343	513	250	134	112
2	105	116	731	156	1660	511	416	335	502	253	132	111
3	103	115	566	145	1290	487	393	420	484	253	131	111
4	102	115	291	194	791	474	380	409	438	253	130	110
5	102	115	341	395	535	468	372	403	391	248	129	110
6	103	113	247	345	409	452	369	419	377	242	128	109
7	105	113	214	249	342	923	388	373	368	237	127	109
8	105	113	211	204	301	3940	397	361	350	228	127	109
9	104	113	176	181	266	1690	379	349	338	220	126	109
10	104	123	155	165	243	2310	373	379	329	214	123	109
11	104	123	140	154	228	1400	378	364	330	206	123	110
12	104	117	130	146	788	1130	397	351	335	200	122	110
13	103	114	126	141	1430	945	385	359	349	192	122	112
14	102	115	121	149	4190	783	359	369	340	187	121	111
15	102	116	118	214	5550	1070	352	376	323	181	118	112
16	103	123	115	381	3350	947	358	379	304	176	117	117
17	103	121	113	1170	8440	693	354	382	291	172	117	149
18	103	120	111	733	5080	570	333	405	285	169	117	196
19	103	117	111	551	3690	517	318	430	267	166	116	186
20	104	116	110	802	2340	498	320	428	253	161	116	153
21	139	115	110	401	1560	479	349	403	247	158	116	132
22	125	114	110	320	1120	459	392	364	246	155	115	128
23	143	119	109	315	907	460	405	357	252	152	116	126
24	145	328	109	264	786	471	373	354	253	151	115	140
25	130	239	108	233	702	459	354	382	250	149	115	174
26	124	152	109	215	631	434	338	418	248	148	115	189
27	122	146	109	203	596	434	332	430	240	146	115	279
28	121	363	109	194	579	441	340	436	239	143	115	162
29	119	1140	111	688	---	444	349	456	241	141	114	145
30	119	308	142	958	---	450	344	509	245	139	114	142
31	117	---	150	1300	---	443	---	567	---	136	113	---
TOTAL	3474	5359	5594	11713	48844	25327	11034	12310	9628	5826	3739	4072
MEAN	112	179	180	378	1744	817	368	397	321	188	121	136
MAX	145	1140	731	1300	8440	3940	437	567	513	253	134	279
MIN	102	113	108	141	228	434	318	335	239	136	113	109
AC-FT	6890	10630	11100	23230	96880	50240	21890	24420	19100	11560	7420	8080
CAL YR 1985	TOTAL	64183	MEAN	176	MAX	1140	MIN	97	AC-FT	127300		
WTR YR 1986	TOTAL	146920	MEAN	403	MAX	8440	MIN	102	AC-FT	291400		

SACRAMENTO RIVER BASIN

11382000 THOMES CREEK AT PASKENTA, CA

LOCATION.--Lat 39°53'16", long 122°31'41", in SE 1/4 SW 1/4 sec.34, T.24 N., R.6 W., Tehama County, Hydrologic Unit 18020103, on left bank 1.2 mi downstream from Digger Creek, and 1.0 mi downstream from highway bridge at Paskenta.

DRAINAGE AREA.--203 mi².

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to 1943, published as Thomas Creek at Paskenta.

REVISED RECORDS.--WSP 1345: 1923, 1924-28(M), 1938, 1940(M). WDR CA-78-4: Drainage area. WDR CA-79-4(M). WDR CA-81-4(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 720 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 20, 1942, nonrecording gage and water-stage recorder at several sites about 1.5 mi upstream at different datums; June 21, 1942, to Sept. 30, 1959, water-stage recorder at site 1.4 mi upstream at datum 732.85 ft; and Oct. 1, 1959, to Oct. 9, 1974, at datum 731.10 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 21-23 and July 15-28. Records fair. No storage or large diversions above station.

AVERAGE DISCHARGE.--66 years, 299 ft³/s, 216,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,800 ft³/s, Dec. 22, 1964, gage height, 12.7 (revised) ft, from floodmarks, present site and datum, from rating curve extended above 6,000 ft³/s on basis of slope-area measurements at gage height 10.10 ft and of peak flow; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 16	2245	5,580	7.06	Feb. 17	2115	*32,900	*12.11
Jan. 31	1645	2,860	5.88	Mar. 8	0700	6,800	7.61

Minimum daily, 1.7 ft³/s, Sept. 8.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	11	108	131	1510	1080	656	196	121	20	6.8	2.6
2	3.9	11	645	127	1760	987	567	206	105	19	5.8	2.3
3	3.8	11	515	124	1490	938	512	218	89	19	5.0	2.1
4	2.7	10	228	192	1070	946	496	199	74	17	4.5	2.1
5	2.6	8.9	201	526	833	942	476	189	67	15	3.7	2.1
6	2.6	7.3	185	477	708	935	468	192	56	14	3.9	2.1
7	2.8	8.1	268	316	605	2620	527	180	49	13	3.9	1.9
8	2.8	8.2	264	231	548	4790	503	176	44	13	3.9	1.7
9	2.8	7.8	158	183	461	2760	467	171	52	14	3.9	1.9
10	2.8	11	116	154	421	2240	454	170	53	13	3.9	2.2
11	2.8	16	96	132	393	1680	435	163	49	13	3.8	2.2
12	2.8	14	80	118	549	1410	442	161	63	12	4.3	2.2
13	2.8	14	74	109	1300	1240	394	181	79	12	3.0	2.4
14	2.8	12	70	105	6530	1040	368	187	77	12	3.0	2.8
15	2.8	12	68	149	6230	1300	347	193	72	12	3.0	3.9
16	3.0	23	66	1910	6620	1150	341	194	64	12	3.1	5.0
17	3.1	48	69	2240	25500	967	296	188	59	11	3.2	7.1
18	3.1	33	80	1120	13900	858	261	201	55	11	3.1	38
19	3.1	26	100	716	7910	878	267	210	49	10	3.0	39
20	3.8	21	135	557	4620	944	236	194	45	10	3.0	38
21	33	20	146	421	2980	950	263	175	41	10	3.0	29
22	33	18	137	338	2220	953	309	147	38	9.0	3.0	31
23	74	17	123	383	1990	886	319	127	36	9.0	4.3	26
24	47	29	122	308	1780	886	261	116	30	8.0	3.7	24
25	31	35	130	280	1640	785	244	127	29	8.0	2.6	44
26	22	31	133	253	1430	748	229	144	28	8.0	2.3	78
27	17	29	119	232	1320	781	220	143	28	7.5	2.2	194
28	15	86	105	228	1210	786	230	141	28	7.5	2.2	72
29	14	309	98	793	---	750	216	121	25	7.4	2.3	57
30	13	133	135	1270	---	735	208	118	21	6.9	3.0	47
31	12	---	149	1750	---	680	---	124	---	7.0	3.0	---
TOTAL	371.8	1020.3	4923	15873	97528	38645	11012	5252	1626	360.3	109.4	763.6
MEAN	12.0	34.0	159	512	3483	1247	367	169	54.2	11.6	3.53	25.5
MAX	74	309	645	2240	25500	4790	656	218	121	20	6.8	194
MIN	2.6	7.3	66	105	393	680	208	116	21	6.9	2.2	1.7
AC-FT	737	2020	9760	31480	193400	76650	21840	10420	3230	715	217	1510

CAL YR 1985	TOTAL	43451.4	MEAN	119	MAX	1170	MIN	1.3	AC-FT	86190
WTR YR 1986	TOTAL	177484.4	MEAN	486	MAX	25500	MIN	1.7	AC-FT	352000

SACRAMENTO RIVER BASIN

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 diversion dam, and 7.9 mi northeast of Vina.

DRAINAGE AREA.--208 mi².

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

REVISED RECORDS.--WSP 1315-A: 1940-42(M). WSP 1931: Drainage area. WDR CA-82-4: Datum.

GAGE.--Water-stage recorder. Datum of gage is 479.2 ft above National Geodetic Vertical Datum of 1929 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.--No estimated daily discharges. Records excellent. No storage or large diversions above station.

AVERAGE DISCHARGE.--68 years (water years 1912-15, 1921-37, 1940-86), 325 ft³/s, 235,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft³/s, Dec. 10, 1937, gage height, 19.2 ft present datum, from floodmarks, from rating curve extended above 9,200 ft³/s on basis of velocity-area studies; minimum, 43 ft³/s, Dec. 13, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 2	0830	3,330	8.22	Mar. 8	1015	5,830	9.54
Feb. 17	1600	*16,100	*14.11				

Minimum daily, 92 ft³/s, Oct. 5, 14-16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	101	218	164	1450	787	491	266	216	143	121	110
2	95	100	877	180	2030	729	473	268	215	141	119	110
3	94	100	732	169	1580	679	443	371	207	140	118	109
4	93	100	390	211	1050	639	427	395	198	139	117	109
5	92	100	352	416	765	613	412	396	196	138	116	109
6	93	99	286	449	607	583	404	451	193	138	116	109
7	95	98	250	314	509	1020	431	385	191	137	115	109
8	96	99	257	251	443	4200	444	356	192	137	115	109
9	94	100	219	218	389	2420	416	333	184	135	115	108
10	94	109	192	196	352	3310	387	359	178	134	115	109
11	95	112	172	180	324	2290	373	328	175	133	114	109
12	94	107	162	170	815	1880	376	309	175	132	114	109
13	94	103	155	163	1590	1600	363	297	173	132	114	110
14	92	103	150	191	5260	1340	347	290	170	131	114	110
15	92	105	145	276	7570	1710	351	282	167	129	114	112
16	92	113	140	538	5130	1530	384	272	166	129	114	115
17	94	115	135	1590	11800	1160	377	264	164	130	114	136
18	94	112	132	908	7990	950	346	259	162	129	113	181
19	94	105	132	593	6670	839	325	255	160	129	112	209
20	95	103	130	529	4410	781	313	252	159	128	112	161
21	145	103	129	423	2910	727	310	252	157	127	112	134
22	136	103	127	360	2110	689	311	246	155	126	112	127
23	143	107	125	354	1680	665	332	240	153	126	112	123
24	132	249	124	318	1390	657	315	235	151	126	112	137
25	117	274	124	285	1180	634	306	229	149	126	111	164
26	111	155	124	263	1020	594	297	224	148	127	111	159
27	107	137	123	247	930	570	287	221	148	126	112	286
28	105	302	122	234	859	550	285	218	146	124	111	170
29	103	975	125	875	---	532	278	215	145	123	111	143
30	102	369	159	1240	---	515	271	212	145	122	111	134
31	102	---	167	1850	---	501	---	212	---	121	111	---
TOTAL	3181	4858	6675	14155	72813	35694	10875	8892	5138	4058	3528	4020
MEAN	103	162	215	457	2600	1151	362	287	171	131	114	134
MAX	145	975	877	1850	11800	4200	491	451	216	143	121	286
MIN	92	98	122	163	324	501	271	212	145	121	111	108
AC-FT	6310	9640	13240	28080	144400	70800	21570	17640	10190	8050	7000	7970
CAL YR 1985	TOTAL	58054	MEAN	159	MAX	1100	MIN	78	AC-FT	115200		
WTR YR 1986	TOTAL	173887	MEAN	476	MAX	11800	MIN	92	AC-FT	344900		

SACRAMENTO RIVER BASIN

11384000 BIG CHICO CREEK NEAR CHICO, CA

LOCATION.--Lat 39°46'35", long 121°45'10", in Arroyo Chico Grant, Butte County, Hydrologic Unit 18020119, on right bank 1.8 mi upstream from golf clubhouse in Bidwell Park, 2.6 mi upstream from Lindo Channel, and 7 mi northeast of Chico.

DRAINAGE AREA.--72.4 mi².

PERIOD OF RECORD.--May 1930 to September 1986 (discontinued). Prior to October 1952, published as Chico Creek near Chico.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 300 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1955, at site 0.6 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. No storage or large diversion above station.

AVERAGE DISCHARGE.--56 years, 149 ft³/s, 108,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s, Feb. 17, 1986, gage height, 14.00 ft; maximum gage height, 15.36 ft, Jan. 5, 1965; minimum daily, 10 ft³/s, Dec. 11, 1932, Aug. 15, 1939, Sept. 18, 1947.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1700	*10,600	*14.00	Mar. 10	1230	2,560	6.58

Minimum daily, 23 ft³/s, Aug. 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	27	102	34	785	253	162	67	50	32	26	25
2	25	27	371	33	975	224	153	67	46	31	25	25
3	25	27	357	32	818	204	145	98	52	31	26	24
4	24	27	185	52	576	189	139	114	47	31	29	24
5	24	27	149	202	412	178	135	132	46	32	26	25
6	31	26	121	187	325	167	132	170	46	32	26	26
7	25	26	102	128	269	265	141	150	43	32	26	28
8	25	26	105	96	233	1550	131	133	43	32	26	28
9	25	26	87	77	205	981	125	119	48	32	26	28
10	24	31	73	64	184	1900	117	113	43	31	26	29
11	24	33	60	55	171	1480	112	103	41	31	26	30
12	24	31	52	49	441	1160	107	95	41	30	26	31
13	24	29	47	45	1590	916	104	88	40	30	26	29
14	24	29	43	52	3480	767	100	82	38	30	24	32
15	24	29	40	110	4860	1020	103	76	35	29	24	34
16	24	30	38	537	3480	986	120	73	42	29	24	36
17	24	31	36	787	7070	747	126	67	38	29	23	37
18	24	31	35	388	4040	585	116	65	37	29	25	49
19	25	29	34	258	2670	486	106	63	36	29	24	45
20	25	29	33	208	2080	423	97	61	36	29	28	42
21	43	29	32	169	1420	377	93	61	35	28	24	30
22	36	29	31	144	997	340	90	59	34	28	24	28
23	32	30	30	144	751	308	103	59	35	27	24	28
24	30	92	29	128	587	281	93	57	35	28	25	37
25	28	127	29	113	472	254	88	56	34	28	24	56
26	27	55	29	100	389	228	84	55	34	28	24	41
27	27	41	29	91	333	214	79	53	34	27	25	71
28	27	118	28	83	288	201	76	53	33	27	24	43
29	27	412	29	185	---	189	73	52	31	27	25	36
30	27	185	40	500	---	178	71	52	32	26	25	33
31	27	---	36	792	---	168	---	51	---	26	25	---
TOTAL	826	1689	2412	5843	39901	17219	3321	2544	1185	911	781	1030
MEAN	26.6	56.3	77.8	188	1425	555	111	82.1	39.5	29.4	25.2	34.3
MAX	43	412	371	792	7070	1900	162	170	52	32	29	71
MIN	24	26	28	32	171	167	71	51	31	26	23	24
AC-FT	1640	3350	4780	11590	79140	34150	6590	5050	2350	1810	1550	2040

CAL YR 1985	TOTAL	19075	MEAN	52.3	MAX	1160	MIN	19	AC-FT	37840
WTR YR 1986	TOTAL	77662	MEAN	213	MAX	7070	MIN	23	AC-FT	154000

SACRAMENTO RIVER BASIN

RESERVOIRS IN STONY CREEK BASIN, CA

11385100 EAST PARK RESERVOIR NEAR STONYFORD.--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 National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

Reservoir is formed by a concrete arch-type dam. Storage began in 1910. Capacity, 48,211 acre-ft, between elevations 1,131.68 ft, invert of sluice pipe, and 1,198.18 ft, crest of spillway. Capacity increased to 50,889 acre-ft with the addition of flashboards to an elevation of 1,199.68 ft. Dead storage, 279 acre-ft. Records of contents provided by U.S. Bureau of Reclamation.

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, 52,390 acre-ft, Feb. 18, elevation, 1,200.50 ft; minimum, 10,670 acre-ft, Oct. 1, elevation, 1,166.50 ft.

11386100 STONY GORGE RESERVOIR NEAR ELK CREEK.--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 National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

Reservoir is formed by slab and buttress-type dam. Storage began in 1928. Capacity, 50,383 acre-ft between elevations 728.0 ft, top of low intake, and 841.0 ft, crest of spillway. No dead storage. Records of contents provided by U.S. Bureau of Reclamation.

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, 52,330 acre-ft, Apr. 3, elevation, 842.48 ft; minimum, 10,100 acre-ft, Oct. 9, elevation, 795.78 ft.

MONTHEND ELEVATION NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
11385100 EAST PARK RESERVOIR				11386100 STONY GORGE RESERVOIR		
Sept. 30.....	1,166.50	10,670	-2,190	798.22	11,370	-4,720
Oct. 31.....	1,167.10	11,070	+400	797.73	11,110	-260
Nov. 30.....	1,171.41	14,270	+3,200	801.06	12,970	+1,860
Dec. 31.....	1,180.44	22,860	+8,590	814.13	22,070	+9,100
CAL YR 1985	--	--	-10,530	--	--	-9,090
Jan. 31.....	1,193.70	40,710	+17,850	833.67	41,360	+19,290
Feb. 28.....	1,198.42	48,640	+7,930	834.25	42,040	+680
Mar. 31.....	1,198.26	48,360	-280	840.59	49,850	+7,810
Apr. 30.....	1,199.98	51,430	+3,070	841.15	50,580	+730
May 31.....	1,199.76	51,040	-390	840.87	50,220	-360
June 30.....	1,198.10	48,070	-2,970	829.88	37,070	-13,150
July 31.....	1,191.74	37,660	-10,410	823.46	30,410	-6,660
Aug. 31.....	1,187.92	32,130	-5,530	822.74	29,710	-700
Sept. 30.....	1,185.54	28,960	-3,170	819.76	26,920	-2,790
WTR YR 1986	--	--	+18,290	--	--	+15,550

SACRAMENTO RIVER BASIN

11387990 SOUTH DIVERSION CANAL NEAR ORLAND, CA

LOCATION.--Lat 39°48'36", long 122°19'45", in SW 1/4 NE 1/4 sec.32, T.23 N., R.4 W., Tehama County, Hydrologic Unit 18020103, on left bank canal 0.4 mi downstream from Black Butte Dam, and 8.2 mi northwest of Orland.

PERIOD OF RECORD.--July 1955 to current year. Prior to October 1961, published as an adjustment to Snow Creek at Black Butte damsite, near Orland.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 372.64 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 23, 1956, at site 0.5 mi upstream at different datum. Oct. 23, 1956, to Sept. 30, 1960, at present site and datum. Oct. 1, 1960, to Sept. 30, 1961, at datum 1.00 ft lower.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from Black Butte Lake at right end of Black Butte Dam; water is used for irrigation. A pump with a capacity of 6 ft³/s diverted water at times above station and was included in the canal record prior to Mar. 1, 1970. Total diverted during the current year was 538 acre-ft.

AVERAGE DISCHARGE.--31 years, 99.0 ft³/s, 71,730 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 320 ft³/s, May 8, 1969; no flow at times most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126	2.0	.90	.50	.10	.20	.20	142	233	161	209	165
2	117	2.0	2.2	.50	.50	.20	3.0	170	222	221	227	166
3	125	2.0	.70	.50	.60	.20	42	161	203	225	196	200
4	102	1.7	.40	1.9	.10	.20	69	148	191	243	130	211
5	58	.50	1.6	.70	.10	1.0	51	156	158	239	115	229
6	61	24	1.9	.40	.10	2.6	50	123	149	227	160	228
7	119	56	1.1	.20	.10	2.0	38	68	185	244	207	203
8	137	69	1.1	.10	.10	2.1	1.5	72	182	216	205	154
9	109	61	.90	.10	.10	2.1	2.3	84	161	168	187	129
10	75	43	.80	.10	.10	2.7	2.3	103	202	138	173	130
11	40	32	.80	.10	.10	.90	2.3	118	240	140	208	163
12	2.9	36	.70	.10	1.3	.50	2.3	155	220	126	227	175
13	2.7	36	.80	.10	.50	.70	11	154	224	156	220	187
14	101	30	1.2	.10	4.0	1.0	76	197	246	186	203	153
15	155	17	1.4	.10	1.0	3.7	91	242	234	207	173	118
16	158	3.7	1.5	.10	.40	2.3	88	258	180	227	160	132
17	107	3.9	1.5	.20	1.5	1.5	120	262	144	209	142	116
18	45	2.8	1.5	.10	6.1	1.4	155	256	133	230	145	93
19	.80	2.1	.80	.10	6.2	1.4	174	218	135	254	185	104
20	1.4	2.1	.30	.10	4.2	1.4	174	174	184	254	180	78
21	1.5	2.3	.30	.10	.10	1.4	157	149	222	190	180	74
22	4.9	2.3	.30	.10	.10	1.4	166	129	238	149	191	78
23	2.5	2.3	.30	.10	.10	1.4	125	127	246	129	208	103
24	1.6	2.4	.30	.10	.10	1.4	97	116	254	114	227	60
25	2.2	2.3	.30	.10	.10	1.4	69	105	238	172	220	62
26	2.7	1.5	.30	.10	.10	1.4	61	133	207	217	164	59
27	2.0	1.0	.30	.10	.10	1.4	61	191	216	215	137	50
28	2.1	1.0	.30	.10	.10	.60	112	244	158	207	128	46
29	1.7	1.7	.40	1.2	---	.10	132	270	103	196	146	53
30	3.2	.60	.30	.90	---	3.8	132	242	108	222	173	94
31	2.9	---	.40	.60	---	.70	---	230	---	233	194	---
TOTAL	1670.10	444.20	25.60	9.60	28.00	43.10	2264.90	5197	5816	6115	5620	3813
MEAN	53.9	14.8	.83	.31	1.00	1.39	75.5	168	194	197	181	127
MAX	158	69	2.2	1.9	6.2	3.8	174	270	254	254	227	229
MIN	.80	.50	.30	.10	.10	.10	.20	68	103	114	115	46
AC-FT	3310	881	51	19	56	85	4490	10310	11540	12130	11150	7560

CAL YR 1985 TOTAL 33194.3 MEAN 90.9 MAX 273 MIN 0 AC-FT 65840
WTR YR 1986 TOTAL 31046.50 MEAN 85.1 MAX 270 MIN .10 AC-FT 61580

SACRAMENTO RIVER BASIN

11387995 BLACK BUTTE LAKE NEAR ORLAND, CA

LOCATION.--Lat 39°48'50", long 122°20'12", in SE 1/4 SW 1/4 sec.29, T.23 N., R.4 W., Tehama County, Hydrologic Unit 18020115, in control tower in right abutment of main dam on Stony Creek, 8 mi northwest of Orland.

DRAINAGE AREA.--738 mi².

PERIOD OF RECORD.--October 1963 to current year. Prior to October 1971, published as Black Butte Reservoir near Orland.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

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

REMARKS.--Lake is formed by seven earthfill dams. Storage began Oct. 28, 1963. Usable capacity, 143,676 acre-ft, between elevations 375.0 ft, invert of control tower, and 473.5 ft, spillway crest. Normal operating pool is from elevation 414.6 ft, capacity, 6,640 acre-ft, to 473.5 ft, capacity, 143,676 acre-ft. South Diversion Canal (station 11387990) diverts at right end of dam. Lake is used for irrigation, flood control and recreation. Water is released down Stony Creek (station 11388000) for irrigation. Figures given herein represent total contents at 2400 hours.

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

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 168,198 acre-ft, Feb. 18, 1986, elevation, 478.76 ft; minimum since first filling, 1,006 acre-ft, Nov. 6, 1977, elevation, 397.20 ft.

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 168,198 acre-ft, Feb. 18, elevation, 478.76 ft; minimum, 28,342 acre-ft, Sept. 30, elevation, 435.08 ft.

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

375	0	397	950	415	6,874	460	90,634
385	74	400	1,432	420	10,340	470	128,571
388	178	403	2,070	430	20,845	480	174,303
391	346	406	2,897	440	37,172		
394	597	409	3,948	450	60,258		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43314	37427	28935	38259	53669	33299	60874	83700	79911	76782	68157	38379
2	42882	37368	32521	38359	54592	32343	62170	83733	79500	76597	67383	37270
3	42560	37349	33866	38420	54216	32058	63815	84091	79122	76380	66558	36413
4	42453	37349	34477	39064	50983	31969	65908	84385	78807	76042	65851	35684
5	42432	37290	34851	39490	46980	31318	67698	84254	78870	75796	65290	35058
6	42453	37191	35210	39899	43270	31109	69140	84614	78902	75582	64563	34477
7	42177	37035	35551	40187	41605	31792	70307	85106	78870	75367	63759	33848
8	41541	36820	36009	40414	42304	34440	71722	85139	78776	75276	62989	33280
9	41038	36646	36278	40601	43076	36086	72706	85205	78776	75215	62279	33080
10	40767	36452	36471	40767	44141	46029	73637	85238	78682	75276	61439	32918
11	40559	36297	36723	40871	45023	44779	74666	85436	78462	75306	60525	32719
12	40373	36182	36898	40975	46889	42240	75582	85271	78306	75306	59620	32503
13	40290	35990	37016	41080	48129	39796	76473	85106	78118	75276	58697	32236
14	39919	35722	37113	41247	80737	36201	77029	84876	77900	75123	57757	32164
15	39449	35361	37191	41394	109938	37153	77993	84647	77744	74879	56878	32253
16	38942	35002	37231	42882	112707	43509	78619	84221	77744	74636	56007	32253
17	38480	34571	37309	46639	155056	42496	79279	83863	77837	74423	55070	32093
18	38239	34199	37349	48245	168198	41753	80069	83537	77931	74150	54191	31792
19	38200	33756	37388	49249	161027	43033	80323	83342	77962	73878	53174	31440
20	38200	33299	37447	50028	141547	44405	80800	83180	77993	73637	52242	31161
21	38140	32791	37506	49981	125664	45401	80960	82986	77837	73486	51248	30918
22	38060	32289	37585	49555	106607	46096	81280	82856	77681	73456	50099	30590
23	38001	31828	37644	49437	86627	46480	81728	82791	77495	73456	48921	30162
24	37941	31581	37723	49508	70160	47117	81889	82727	77246	73486	47598	29822
25	37882	31022	37763	49461	56186	49155	82436	82694	76936	73035	46299	29502
26	37822	30401	37822	49390	44979	51731	82986	82630	76782	72466	45178	29284
27	37782	29856	37882	49319	37467	54266	83212	82371	76597	71722	44097	29351
28	37703	29468	37921	49272	34051	56570	83342	81953	76566	70983	43076	29284
29	37644	29974	38021	51683	---	57731	83440	81408	76689	70365	42028	28985
30	37585	29552	38080	53867	---	58881	83407	81056	76813	69634	40913	28342
31	37506	---	38180	55221	---	59832	---	80514	---	68879	39633	---
MAX	43314	37427	38180	55221	168198	59832	83440	85436	79911	76782	68157	38379
MIN	37506	29468	28935	38259	34051	31109	60874	80514	76566	68879	39633	28342
a	440.17	435.81	440.51	448.06	438.36	449.84	457.83	456.93	455.75	453.10	441.23	435.08
b	-6242	-7954	+8628	+17041	-21170	+25781	+23575	-2893	-3701	-7934	-29246	-11291
c	1177	467	183	189	443	544	1162	2028	2596	2816	2293	1067

CAL YR 1985 b -5677

WTR YR 1986 b -15406

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

b Change in contents, in acre-feet.

c Unreviewed evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

11388000 STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, CA

LOCATION.--Lat 39°49'07", long 122°19'26", in NW 1/4 SW 1/4 sec.28, T.23 N., R.4 W., Tehama County, Hydrologic Unit 18020103, on left bank 200 ft downstream from road bridge, 0.6 mi downstream from Black Butte Dam, 8.1 mi northwest of Orland.
DRAINAGE AREA.--738 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1955 to current year. Prior to October 1962, published as Stony Creek at Black Butte damsite, near Orland.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

GAGE.--Water-stage recorder and grouted rock control. Datum of gage is 366.02 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Dec. 12, 1960, water-stage recorder at site 0.6 mi upstream at different datum. Dec. 12, 1960, to Nov. 30, 1963, nonrecording gage at bridge 200 ft upstream at datum 4.04 ft higher.

REMARKS.--No estimated daily discharges. Records good. Many diversions above station for irrigation. Flow completely regulated by Black Butte Lake (station 11387995), East Park Reservoir (station 11385100), and Stony Gorge Reservoir (station 11386100). Prior to October 1956, figures of daily discharge included water diverted to South Diversion Canal, which diverts 0.6 mi above station.

AVERAGE DISCHARGE.--31 years, 688 ft³/s, 498,500 acre-ft/yr, adjusted for diversions to South Diversion Canal since 1956, Wackerman Ranch since 1979, and for change in contents in and evaporation from Black Butte Lake since 1964; unadjusted for same period, 573 ft³/s, 415,100 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,300 ft³/s, Feb. 24, 1958, gage height, 11.82 ft, site and datum then in use, from rating curve extended above 7,500 ft³/s on basis of slope-area measurement of peak flow; no flow many days in 1956, 1957, 1962. Maximum discharge since completion of Black Butte Dam in 1964, 23,300 ft³/s, Feb. 18, 1986, gage height, 11.40 ft; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,300 ft³/s, Feb. 18, gage height, 11.40 ft; minimum daily, 0.40 ft³/s, Nov. 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	28	497	32	3960	2120	40	112	134	135	201	415
2	59	29	423	32	4170	2030	38	111	129	155	205	370
3	55	21	132	32	4640	1640	42	119	115	139	202	269
4	36	.40	43	32	4620	1050	59	118	107	143	204	214
5	33	3.3	38	32	3870	1020	65	87	98	143	211	158
6	32	22	35	32	3140	1020	89	104	120	134	248	122
7	94	28	33	32	1850	1480	80	111	128	129	251	109
8	117	29	30	29	498	3230	37	117	121	123	223	113
9	106	28	22	31	493	4280	36	109	119	131	221	119
10	85	32	1.8	32	495	5110	34	95	147	122	227	117
11	65	32	1.2	32	496	5440	32	109	160	120	238	119
12	34	30	.60	32	698	4790	32	116	162	139	271	120
13	34	58	9.5	32	3160	4810	44	117	160	146	296	106
14	76	100	27	32	7910	4490	88	128	157	147	297	96
15	97	169	26	32	13500	4400	98	132	125	155	308	89
16	96	178	29	32	14600	4520	107	136	97	150	311	96
17	124	196	32	32	16100	4540	84	136	106	141	311	101
18	80	200	31	32	22500	2960	4.5	119	115	149	308	97
19	34	216	32	32	22900	1930	69	97	118	143	331	91
20	33	228	32	29	21200	1760	83	98	119	126	326	77
21	33	241	32	250	14700	1760	89	114	132	133	359	65
22	31	251	30	509	14100	1760	114	112	133	142	421	79
23	31	250	29	382	13200	1770	128	102	134	144	420	113
24	32	250	31	257	11800	1570	112	96	156	143	419	116
25	32	275	32	247	9720	811	109	82	192	130	370	92
26	32	299	32	246	8000	135	99	94	163	136	396	77
27	32	302	32	224	5990	54	95	118	145	142	425	38
28	35	303	32	202	3620	58	89	136	125	137	434	28
29	34	336	32	211	---	53	90	138	115	153	430	110
30	32	426	32	1880	---	24	105	140	115	197	430	184
31	29	---	32	3650	---	12	---	138	---	200	421	---
TOTAL	1733	4560.70	1821.10	8691	231930	70627	2232	3541	3947	4427	9715	3900
MEAN	55.9	152	58.7	280	8283	2278	74.4	114	132	143	313	130
MAX	124	426	497	3650	22900	5440	128	140	192	200	434	415
MIN	29	.40	.60	29	493	12	32	82	97	120	201	28
AC-FT	3440	9050	3610	17240	460000	140100	4430	7020	7830	8780	19270	7740

CAL YR 1985 TOTAL 40196.3 MEAN 110 MAX 497 MIN .40 AC-FT 79730 MEAN a 216 AC-FT a 156300
WTR YR 1986 TOTAL 347124.80 MEAN 951 MAX 22900 MIN .40 AC-FT 688500 MEAN a 1036 AC-FT a 750200

a Adjusted for diversions to South Diversion Canal near Orland, Wackerman Ranch, and for change in contents and unreviewed evaporation from Black Butte Lake.

SACRAMENTO RIVER BASIN

11388000 STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

CHEMICAL DATA: Water years 1958-79. Published as "at damsite" in 1959-64.

WATER TEMPERATURE: Water years 1969 to current year.

SEDIMENT DATA: Water years 1958-59, 1961-62.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1969 to current year.

INSTRUMENTATION.--Temperature recorder since June 1969.

REMARKS.--Interruptions in record were due to battery failure May 2-5, Sept. 15-30, and no flow Nov. 5.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 31.5°C, Aug. 15, 1977; minimum recorded, 3.5°C, Jan. 3, 4, Feb. 2, Dec. 9, 1972, Jan. 10, 1974, Dec. 21, 1978, Dec. 12, 1985.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 27.0°C, Sept. 7; minimum recorded, 3.5°C, Dec. 12.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	22.0	20.0	17.0	14.0	9.5	9.0	8.5	8.0	10.5	10.0	13.5	13.0
2	22.5	20.0	17.0	14.0	10.5	8.0	9.0	8.0	10.5	10.5	14.0	13.5
3	22.5	20.0	17.5	14.0	11.0	9.5	8.5	8.0	10.5	10.5	14.5	13.5
4	23.5	20.0	16.5	15.5	11.0	9.5	8.5	7.5	10.5	10.5	14.0	14.0
5	22.5	19.5	---	---	11.0	9.5	10.0	8.0	10.5	10.0	14.0	14.0
6	21.5	20.0	16.5	13.0	10.0	9.0	9.5	7.5	10.0	10.0	14.5	14.0
7	21.5	19.5	16.0	13.5	11.0	9.5	9.5	7.5	10.0	9.5	16.0	14.0
8	21.0	18.5	15.5	13.5	10.5	8.5	9.5	7.5	10.0	9.5	16.5	15.0
9	20.0	18.0	15.0	12.0	10.0	8.0	10.0	8.0	10.0	9.5	15.0	14.0
10	19.0	16.5	14.5	12.0	9.0	6.0	10.0	7.5	9.5	9.0	14.5	12.5
11	18.0	16.0	13.5	12.0	5.5	4.0	10.0	7.5	9.5	9.0	13.0	12.5
12	17.5	14.0	13.0	10.0	5.5	3.5	10.0	8.0	9.5	9.0	13.0	12.5
13	18.0	14.0	12.0	10.0	6.5	4.0	9.0	8.0	9.5	9.0	13.0	12.5
14	17.5	14.5	12.0	10.0	8.0	6.0	8.5	8.0	10.0	9.0	12.5	12.0
15	17.5	15.5	11.0	10.5	8.5	6.0	9.5	8.0	10.5	10.0	12.5	12.0
16	17.5	15.5	11.5	10.5	8.5	6.0	10.5	9.0	10.5	10.5	12.0	10.5
17	17.0	15.5	11.5	10.5	8.5	5.5	10.0	9.5	11.0	10.5	11.5	11.0
18	18.0	15.5	11.0	10.5	8.5	6.0	10.0	9.5	11.5	11.0	11.5	11.5
19	17.0	15.0	10.5	10.0	7.5	6.0	11.0	9.5	11.5	11.0	12.0	11.5
20	16.0	15.0	10.5	10.0	8.5	6.0	11.0	9.0	11.5	11.0	12.5	12.0
21	18.0	14.5	10.5	9.5	8.5	6.5	9.5	8.5	11.5	11.0	12.5	12.0
22	15.0	14.5	10.0	9.0	8.5	6.0	9.5	9.5	11.5	11.5	12.5	12.0
23	17.0	15.0	9.5	9.0	8.0	4.5	10.0	9.5	12.0	11.5	13.0	12.0
24	17.0	14.5	9.5	9.0	8.5	5.0	10.0	9.5	12.0	11.5	13.0	12.5
25	17.0	14.0	10.0	9.0	8.0	4.0	10.0	9.5	12.5	12.0	14.5	12.5
26	17.0	14.5	9.5	9.0	8.5	6.5	10.0	9.5	13.0	12.5	17.0	12.5
27	17.0	14.0	9.5	9.0	9.0	6.5	10.0	9.5	13.5	13.0	14.5	12.0
28	17.0	14.0	9.5	9.0	8.0	5.5	10.0	9.5	13.5	13.0	15.0	11.5
29	16.5	14.0	9.5	9.0	8.0	7.0	10.0	9.5	---	---	14.5	12.0
30	16.5	14.5	9.5	9.0	8.5	7.5	10.0	10.0	---	---	17.0	12.0
31	16.0	13.5	---	---	9.0	7.5	10.0	10.0	---	---	19.5	13.5
MONTH	23.5	13.5	---	---	11.0	3.5	11.0	7.5	13.5	9.0	19.5	10.5

SACRAMENTO RIVER BASIN

11388000 STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

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

SACRAMENTO RIVER BASIN

11389000 SACRAMENTO RIVER AT BUTTE CITY, CA

LOCATION.--Lat 39°27'28", long 121°59'35", in SE 1/4 NE 1/4 sec.32, T.19 N., R.1 W., Glenn County, Hydrologic Unit 18020104, on left bank 100 ft upstream from highway bridge, 0.5 mi south of Butte City, and at mile 115.8 upstream from Sacramento.

DRAINAGE AREA.--12,080 mi² (revised).

PERIOD OF RECORD.--April 1921 to September 1938 (low-water periods only), October 1938 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.92 ft below National Geodetic Vertical Datum of 1929. Prior to December 1930, at site 0.5 mi upstream at same datum.

REMARKS.--No estimated daily discharge. Records good. Natural flow affected by storage reservoirs, power developments, diversions for irrigation and return flow from irrigated areas. During floods, overbank flow into Butte basin occurs upstream from left (east) bank levee. The combined overbank flow and tributary runoff then flows south on the east bank floodplain into the Butte Sink and Sutter Bypass. Records tabulated below do not include overbank flow into the Butte basin.

AVERAGE DISCHARGE.--48 years (water years 1939-86), 13,680 ft³/s, 9,911,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1940-86), 170,000 ft³/s, Feb. 7, 1942, gage height, 96.87 ft, from rating curve extended above 101,000 ft³/s; minimum recorded, 1,050 ft³/s, July 15, 25, 26, 1931, gage height, 67.49 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 145,000 ft³/s, Feb. 19, gage height, 94.91 ft; minimum daily, 3,830 ft³/s Sept. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4670	4430	10800	5700	41900	75400	13900	6050	6090	7190	6470	6830
2	4740	4540	12000	5720	34100	72900	12800	6630	6190	7100	6430	6910
3	4700	4560	29100	5740	44600	67300	11500	6810	6280	6790	6430	6860
4	4700	4600	18100	5880	42100	56400	10900	8510	6220	6640	6490	6740
5	4710	4680	10900	7860	29100	42900	10400	8560	6010	6660	6450	6150
6	4610	4560	11400	10200	21700	34500	10000	8610	6050	6690	6150	5140
7	4510	4790	9400	9460	18400	30300	9690	8650	5800	6840	5940	4480
8	4500	4850	9190	7860	14400	46900	9670	7950	5910	6710	6010	4320
9	4480	4820	8630	7130	11700	84200	9670	7570	6050	6540	6130	4030
10	4450	4760	7510	6690	10600	82300	9490	7400	6180	6450	6130	3830
11	4540	4720	6790	6420	9920	99200	9230	7150	6180	6480	6280	3840
12	4610	4740	6400	6230	9800	92200	8930	6980	6520	6340	6370	3910
13	4510	4760	6150	6120	37000	79200	8700	6800	6690	6370	6310	4100
14	4560	4580	5960	6010	50900	75400	8580	10600	6780	6380	6230	4590
15	4510	4570	5840	6430	88200	73900	8260	12100	7000	6360	6320	5560
16	4550	4840	5740	7300	123000	78700	7840	10700	7250	6260	6410	6330
17	4410	4820	5640	24000	113000	80900	7810	8400	7280	6270	6450	6680
18	4410	4790	5610	25500	130000	65200	7810	7360	7210	6210	6580	7430
19	4430	4760	5530	16300	142000	52100	7740	7290	7150	6400	6490	7780
20	4420	4780	5600	14500	130000	43200	7340	7330	7210	6900	6660	7660
21	4700	4920	5590	13500	124000	37900	6910	7140	7170	7260	6350	7490
22	5170	4960	5580	10600	114000	35300	6730	6820	7100	7220	6460	7360
23	5340	5100	5550	9550	107000	32300	6620	6620	6970	7100	6560	7330
24	5460	5280	5530	10200	101000	29500	6530	6440	6900	7170	6460	7350
25	5230	6950	5490	9010	96800	27900	6760	6450	6810	7190	6470	8480
26	4950	6690	5460	8230	92200	24900	7060	6380	6710	7260	6450	8620
27	4910	5860	5450	7760	88500	22000	6780	6320	6680	7320	6430	8850
28	4800	5890	5440	7520	82400	19300	6650	6170	6700	7470	6410	9460
29	4830	11800	5480	7600	---	17200	6550	6190	6840	7400	6460	8830
30	4910	23600	5480	29300	---	15700	6140	6100	7190	7110	6590	8570
31	4680	---	5560	39600	---	14800	---	5970	---	6690	6680	---
TOTAL	146000	175000	246900	343920	1908320	1609900	256990	232050	199120	210770	198050	195510
MEAN	4710	5833	7965	11090	68150	51930	8566	7485	6637	6799	6389	6517
MAX	5460	23600	29100	39600	142000	99200	13900	12100	7280	7470	6680	9460
MIN	4410	4430	5440	5700	9800	14800	6140	5970	5800	6210	5940	3830
AC-FT	289600	347100	489700	682200	3785000	3193000	509700	460300	395000	418100	392800	387800
CAL YR 1985	TOTAL	2594860	MEAN	7109	MAX	29100	MIN	3990	AC-FT	5147000		
WTR YR 1986	TOTAL	5722530	MEAN	15680	MAX	142000	MIN	3830	AC-FT	11350000		

SACRAMENTO RIVER BASIN

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.

PERIOD OF RECORD.--April 1921 to October 1939 (low-water periods only), June 1940 to current year.

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 National Geodetic Vertical Datum of 1929. Prior to December 1930, water-stage recorder in center fender pier 50 ft upstream from bridge at same datum.

REMARKS.--Estimated daily discharges: Dec. 11 to Jan. 8, Apr. 15-20, and Sept. 7-15, 22-24. 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.

AVERAGE DISCHARGE.--46 years (water years 1941-86), 11,780 ft³/s, 8,535,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1941-86), 51,800 ft³/s, Mar. 4, 1983, gage height, 68.50 ft, from rating curve extended above 47,000 ft³/s; maximum gage height, 69.20 ft, Feb. 18, 1942; minimum recorded, 820 ft³/s, July 25, 26, 1931, gage height, 34.79 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,100 ft³/s, Feb. 19, gage height, 67.97 ft; minimum daily, 3,850 ft³/s, Sept. 11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4780	4350	15200	5780	35200	42100	14100	6130	6600	7910	6490	6780
2	4800	4400	10100	5800	33400	41500	13200	6430	6640	7720	6420	6860
3	4730	4400	22200	5800	35800	40900	12000	6640	6790	7520	6400	6800
4	4730	4400	23000	5900	36000	39300	11300	7270	6860	7340	6430	6770
5	4680	4510	14200	6820	31900	36000	10800	8490	6570	7260	6430	6440
6	4680	4420	11500	8500	25000	32900	10500	7970	6550	7230	6270	5650
7	4520	4550	10800	9820	20200	30100	10200	8490	6500	7320	5970	4550
8	4490	4710	9470	9200	16700	32700	10200	7880	6370	7230	5930	4300
9	4430	4730	9490	7630	13400	40900	10300	7550	6600	7060	6020	4150
10	4450	4660	8570	7090	11800	43300	10000	7340	6560	6930	6120	3900
11	4390	4610	7000	6740	11000	43700	9680	7100	6630	6870	6180	3850
12	4470	4650	6250	6480	10600	44200	9430	6910	6650	6790	6240	3950
13	4430	4610	6050	6280	20400	42900	9210	6750	6980	6760	6250	4150
14	4430	4500	5950	6180	37000	42200	9150	8340	7060	6750	6170	4350
15	4390	4440	5820	6270	41400	41800	8750	11000	7150	6710	6210	5150
16	4420	4550	5780	7080	46600	42000	8450	10800	7360	6600	6290	6080
17	4380	4740	5680	14000	46600	43300	8400	9090	7450	6530	6350	6510
18	4360	4650	5620	26300	47200	41400	8400	7790	7440	6460	6410	7000
19	4360	4620	5620	20500	49600	38300	8200	7580	7370	6490	6460	7700
20	4350	4590	5600	14800	49500	35600	7850	7650	7310	6950	6420	7710
21	4480	4770	5600	15000	48400	33600	7680	7570	7340	7290	6430	7730
22	4830	4780	5580	12000	47100	32500	7550	7290	7370	7330	6370	7400
23	5150	4870	5560	10500	45700	31300	7500	7030	7390	7200	6430	7250
24	5240	5050	5560	10400	44800	29400	7110	6910	7470	7210	6460	7200
25	5280	5950	5550	10000	44200	27300	6930	6920	7490	7220	6370	8080
26	4910	7000	5550	9070	43700	25400	7340	6980	7370	7260	6380	8800
27	4790	6170	5500	8430	43400	22700	7050	6860	7390	7340	6340	8750
28	4710	5630	5480	8080	42900	20100	6910	6720	7360	7390	6330	9540
29	4640	8490	5460	7960	---	17500	6780	6710	7470	7410	6400	9200
30	4790	19000	5480	16200	---	15800	6430	6640	7790	7180	6470	8900
31	4600	---	5510	34000	---	14800	---	6540	---	6860	6580	---
TOTAL	143690	162800	254730	328610	979500	1065500	271400	233370	211880	220120	196020	195500
MEAN	4635	5427	8217	10600	34980	34370	9047	7528	7063	7101	6323	6517
MAX	5280	19000	23000	34000	49600	44200	14100	11000	7790	7910	6580	9540
MIN	4350	4350	5460	5780	10600	14800	6430	6130	6370	6460	5930	3850
AC-FT	285000	322900	505300	651800	1943000	2113000	538300	462900	420300	436600	388800	387800
CAL YR 1985	TOTAL	2683740	MEAN	7353	MAX	23000	MIN	4290	AC-FT	5323000		
WTR YR 1986	TOTAL	4263120	MEAN	11680	MAX	49600	MIN	3850	AC-FT	8456000		

SACRAMENTO RIVER BASIN

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 (gage damaged by flood) and June to September 1986.

GAGE.--Water-stage recorder. Elevation of gage is 2,840 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. 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.

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

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---					---	20	21	20
2				---					---	20	21	---
3				16					---	21	21	---
4				---					---	20	21	---
5				---					---	20	21	---
6				---					---	20	21	---
7				---					---	21	20	---
8				---					---	22	18	---
9				37					---	21	18	---
10				29					---	23	18	---
11				24					---	22	18	---
12				21					---	22	18	---
13				19					---	22	18	---
14				25					---	21	18	---
15				---					---	21	18	---
16				---					---	21	18	---
17				---					---	21	18	---
18				---					---	20	18	---
19				---					20	20	18	---
20				---					19	21	18	---
21				---					24	21	18	---
22				---					28	21	18	---
23				---					26	21	18	---
24				---					25	21	18	---
25				---					25	21	18	---
26				---					25	21	18	---
27				---					22	21	18	---
28				---					20	21	18	17
29				---					20	21	18	19
30				---					20	21	18	---
31				---					---	21	18	---
TOTAL				---					---	650	578	---
MEAN				---					---	21.0	18.6	---
MAX				---					---	23	21	---
MIN				---					---	20	18	---
AC-FT				---					---	1290	1150	---

SACRAMENTO RIVER BASIN

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 18020121, 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.--Nov. 26 to Feb. 18 (gage damaged by flood) and June 17 to September 1986.

GAGE.--Water-stage recorder. Elevation of gage is 1,130 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. 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.

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

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	43	---					20	46	22
2			---	44	---					23	45	24
3			---	42	---					29	45	29
4			---	---	---					33	60	34
5			---	---	---					39	54	38
6			---	---	---					42	48	41
7			---	---	---					39	48	41
8			---	---	---					38	52	41
9			---	---	---					27	51	41
10			---	---	---					24	47	40
11			---	---	---					26	47	27
12			---	---	---					29	46	10
13			---	---	---					34	46	10
14			---	---	---					40	46	---
15			---	---	---					46	46	44
16			---	---	---					47	46	42
17			---	---	---				41	47	45	---
18			---	---	---				34	45	46	---
19			---	---	---				32	37	46	---
20			---	---	---				39	38	46	---
21			---	---	---				29	45	46	---
22			44	---	---				22	45	46	42
23			45	---	---				14	45	45	40
24			46	---	---				16	45	40	40
25			47	---	---				24	46	40	45
26		---	47						22	47	36	---
27		---	46						20	47	35	---
28		---	46						21	46	27	43
29		---	45						23	46	24	---
30		---	---						21	46	27	---
31		---	46						---	46	26	---
TOTAL		---	---	---	---				---	1207	1348	---
MEAN		---	---	---	---				---	38.9	43.5	---
MAX		---	---	---	---				---	47	60	---
MIN		---	---	---	---				---	20	24	---
AC-FT		---	---	---	---				---	2390	2670	---

SACRAMENTO RIVER BASIN

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.

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 National Geodetic Vertical Datum of 1929, 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.--Estimated daily discharges: Oct. 21 to Nov. 5 and June 24 to July 9. Records good. 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 above station for irrigation and domestic use of about 7,000 acre-ft annually. Butte Creek receives water above station from West Branch Feather River by way of Toadtown Canal.

AVERAGE DISCHARGE (unadjusted).--56 years, 418 ft³/s, 302,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s, Feb. 17, 1986, gage height, 14.52 ft; minimum discharge, 10 ft³/s, Nov. 29, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 16	2345	2,860	4.79	Mar. 8	0700	5,840	5.33
Feb. 17	1830	*22,000	*14.52				

Minimum daily, 70 ft³/s, Sept. 1.

CORRECTIONS.--The maximum discharge for Dec. 22, 1964, as revised in the report for water year 1985, is in error. The previously published maximum discharge of 21,200 ft³/s is correct.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	102	235	189	1900	902	767	453	362	164	124	70
2	97	102	727	195	1990	909	717	456	346	162	122	78
3	96	101	798	180	1700	854	706	573	344	160	120	80
4	94	101	450	212	1250	822	683	601	341	159	120	80
5	94	101	408	696	977	794	661	621	332	158	117	80
6	94	102	364	555	829	757	646	648	325	157	118	80
7	98	102	301	401	730	1240	694	576	317	156	117	82
8	104	102	319	339	664	3950	671	554	297	153	116	82
9	96	101	260	312	606	2210	641	528	277	151	117	82
10	97	116	225	293	562	2950	618	528	266	149	116	87
11	96	115	197	259	526	2380	609	507	266	146	112	84
12	99	110	184	246	1030	2110	600	483	255	144	114	87
13	100	104	176	232	2790	1870	576	472	255	143	111	146
14	99	105	167	242	5140	1670	560	465	249	141	112	179
15	95	104	161	339	7060	2060	561	458	235	141	112	189
16	98	117	151	1410	6040	1870	582	448	225	134	115	199
17	98	118	150	1980	14100	1510	590	440	220	137	106	246
18	99	110	148	965	9890	1290	573	436	219	140	110	251
19	98	105	146	663	6700	1160	553	434	201	136	110	273
20	98	104	144	603	4340	1080	532	431	202	133	109	243
21	195	105	145	507	3020	1040	529	423	194	131	110	219
22	185	103	139	450	2250	1010	527	412	190	130	111	212
23	210	106	140	451	1820	984	601	406	180	128	111	209
24	180	256	141	413	1520	988	559	400	178	130	109	263
25	130	323	142	385	1280	958	529	396	176	128	99	288
26	110	174	146	357	1160	895	511	389	174	129	80	269
27	103	143	140	340	1060	858	497	391	172	128	84	372
28	103	268	140	327	971	830	477	381	170	126	84	219
29	103	890	142	563	---	806	467	369	168	126	84	169
30	102	402	205	1280	---	788	463	372	166	127	74	157
31	102	---	199	1980	---	776	---	364	---	126	72	---
TOTAL	3472	4892	7390	17364	81905	42321	17700	14415	7302	4373	3316	5075
MEAN	112	163	238	560	2925	1365	590	465	243	141	107	169
MAX	210	890	798	1980	14100	3950	767	648	362	164	124	372
MIN	94	101	139	180	526	757	463	364	166	126	72	70
AC-FT	6890	9700	14660	34440	162500	83940	35110	28590	14480	8670	6580	10070
a	1500	1880	3610	6260	4720	6780	6610	7050	4790	2270	1350	3130

CAL YR 1985 TOTAL 79467 MEAN 218 MAX 1780 MIN 79 AC-FT 157600
WTR YR 1986 TOTAL 209525 MEAN 574 MAX 14100 MIN 70 AC-FT 415600

a Diversion, in acre-feet, to Toadtown Canal from West Branch Feather River, provided by Pacific Gas and

SACRAMENTO RIVER BASIN

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 September 1938 (low-water periods only), October 1938 to current year. 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 30 to Dec. 11 and Feb. 6-10. 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.

AVERAGE DISCHARGE.--48 years (water years 1939-86), 10,350 ft³/s, 7,499,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1939-86), 32,700 ft³/s, Feb. 20, 1986, gage height, 52.50 ft from rating curve extended above 30,000 ft³/s; maximum gage height, 52.75 ft, Mar. 1, 1940; minimum discharge, 100 ft³/s, Aug. 1, 1931, gage height, 14.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 32,700 ft³/s, Feb. 20, gage height, 52.50 ft; minimum daily, 4,080 ft³/s, Nov. 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4690	4170	15500	5600	26400	28700	14700	5020	5200	5810	5620	6560
2	4700	4080	11000	5720	26400	28500	14000	4870	5280	5740	5470	6730
3	4730	4200	15500	5800	26500	28300	13000	5270	5420	5640	5490	6770
4	4680	4210	23100	5980	27100	27900	12000	5620	5450	5440	5500	6820
5	4650	4250	16000	6420	26400	27000	11400	7170	5270	5370	5470	6730
6	4650	4250	12800	8850	24800	26000	11100	6990	5110	5330	5360	6220
7	4520	4390	11000	10600	23200	25200	10600	7310	5140	5400	5010	5480
8	4410	4620	9800	10000	18600	25300	10500	7170	4950	5390	4860	5020
9	4300	4680	9000	8780	16000	27800	10600	6780	5050	5230	4930	4780
10	4240	4660	8000	8000	13400	29000	10500	6340	4980	5100	5080	4440
11	4150	4600	7800	7510	12500	28900	10000	6080	4920	5050	5140	4340
12	4210	4550	7660	7220	11900	29100	9830	5800	4770	5020	5250	4340
13	4240	4490	7170	7030	15300	28900	9530	5510	4950	4990	5310	4290
14	4170	4380	6790	6900	26500	28600	9400	5830	5110	5050	5230	4540
15	4220	4210	6530	6850	28100	28500	9110	8820	5260	5000	5190	5030
16	4250	4210	6350	7480	30100	28400	8690	9700	5440	4960	5350	6120
17	4280	4430	6210	10400	30700	28600	8630	8380	5570	4940	5440	6880
18	4180	4500	5980	22300	30900	28400	9010	8860	5500	4950	5540	7330
19	4420	4440	5630	21800	32000	27500	8810	6360	5420	4860	5680	8090
20	4370	4390	5560	16700	32600	26600	8090	6370	5250	5290	5650	8320
21	4380	4420	5560	15600	32000	25900	7620	6390	5270	5780	5790	8350
22	4630	4600	5550	13900	31200	25500	7170	6190	5290	6020	5740	8200
23	5090	4670	5510	12100	30600	25200	7240	5930	5220	5960	5800	7970
24	5270	4930	5490	11300	30000	24700	6830	5770	5310	5960	5920	7890
25	5400	5510	5460	11200	29600	24100	6370	5660	5160	6070	5810	8000
26	5140	7180	5420	10300	29300	23700	6620	5670	5070	6140	5820	8850
27	4880	7320	5370	9480	29100	22700	6660	5640	5080	6260	5860	8970
28	4720	6670	5350	8910	29000	20800	6260	5640	5180	6380	5890	9400
29	4620	7610	5380	8650	---	18300	5920	5570	5360	6420	6000	9510
30	4500	19000	5460	11600	---	16600	5580	5530	5640	6280	6160	9090
31	4490	---	5500	25000	---	15500	---	5410	---	6040	6360	---
TOTAL	141180	159620	257430	327980	720200	800200	275770	195650	156620	171870	171720	205060
MEAN	4554	5321	8304	10580	25720	25810	9192	6311	5221	5544	5539	6835
MAX	5400	19000	23100	25000	32600	29100	14700	9700	5640	6420	6360	9510
MIN	4150	4080	5350	5600	11900	15500	5580	4870	4770	4860	4860	4290
AC-FT	280000	316600	510600	650500	1429000	1587000	547000	388100	310700	340900	340600	406700
CAL YR 1985	TOTAL	2426360	MEAN	6648	MAX	23100	MIN	3810	AC-FT	4813000		
WTR YR 1986	TOTAL	3583300	MEAN	9817	MAX	32600	MIN	4080	AC-FT	7107000		

SACRAMENTO RIVER BASIN

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1966 to current year.

INSTRUMENTATION.--Temperature recorder since October 1966.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum record, 25.5°C, Sept. 6-8, 1977; minimum recorded, 4.0°C, Dec. 26, 1968.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 23.0°C, June 2-4; minimum recorded, 6.5°C, Dec. 13-17.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	20.0	15.5	15.0	10.0	10.0	10.0	9.0	11.0	11.0	11.5	11.5
2	20.0	20.0	15.0	14.5	10.0	10.0	10.5	10.0	11.5	11.0	11.5	11.5
3	20.0	20.0	14.5	14.5	10.5	10.0	10.5	10.5	11.0	11.0	11.5	11.5
4	20.5	20.0	14.5	14.5	10.5	10.5	10.5	10.5	11.0	10.5	11.5	11.5
5	20.0	20.0	14.5	14.5	11.0	10.5	11.5	10.5	10.5	10.0	11.5	11.5
6	20.0	20.0	14.5	14.5	11.0	11.0	11.5	11.5	10.0	9.5	12.0	11.5
7	20.0	19.5	14.5	14.0	11.0	11.0	11.5	11.5	9.5	9.5	12.0	12.0
8	19.5	18.0	14.0	14.0	11.0	11.0	11.5	11.5	9.5	9.0	12.0	12.0
9	18.0	16.0	14.0	13.5	11.0	10.5	11.5	11.0	9.0	9.0	12.0	12.0
10	15.5	15.0	13.0	12.5	10.5	9.5	11.0	11.0	9.0	8.5	12.0	11.0
11	15.0	14.5	12.5	11.5	9.5	8.0	11.0	10.5	8.5	8.5	11.0	10.5
12	14.5	14.5	11.0	10.5	8.0	7.0	10.5	10.0	8.5	8.5	10.5	10.5
13	14.5	14.5	10.5	9.5	7.0	6.5	10.0	9.5	9.5	9.0	10.5	10.5
14	14.5	14.5	9.5	9.5	6.5	6.5	9.5	9.5	9.5	9.5	10.5	10.5
15	14.5	14.0	9.5	9.5	6.5	6.5	9.5	9.0	11.0	9.5	10.5	10.0
16	15.0	14.5	9.5	9.5	6.5	6.5	9.5	9.0	11.0	11.0	10.0	10.0
17	15.0	15.0	9.5	9.5	7.0	6.5	11.0	9.5	11.0	11.0	10.0	10.0
18	15.5	15.0	9.5	9.5	7.0	7.0	11.0	11.0	11.0	11.0	10.0	10.0
19	15.5	15.5	9.5	9.5	7.5	7.0	11.0	11.0	11.0	11.0	10.5	10.0
20	15.5	15.5	9.5	9.0	7.5	7.5	11.5	11.0	11.0	11.0	11.5	10.5
21	15.5	15.5	9.0	9.0	7.5	7.5	11.5	11.5	11.0	11.0	12.0	11.5
22	15.0	15.0	9.0	9.0	7.5	7.5	11.5	11.0	11.0	11.0	12.0	12.0
23	15.0	14.5	9.0	9.0	7.5	7.5	11.0	11.0	11.0	11.0	12.0	12.0
24	14.5	14.5	9.0	9.0	7.5	7.5	11.0	11.0	11.0	11.0	12.0	12.0
25	14.5	14.5	9.0	9.0	7.5	7.5	11.0	11.0	11.0	11.0	12.5	12.0
26	15.0	14.5	9.5	9.0	7.5	7.5	11.0	11.0	11.0	11.0	12.5	12.5
27	15.5	15.0	9.5	9.5	7.5	7.5	11.0	11.0	11.5	11.0	13.0	12.5
28	15.5	15.5	9.5	9.5	7.5	7.5	11.0	11.0	11.5	11.5	14.0	13.0
29	15.5	15.5	10.0	9.5	7.5	7.5	12.0	11.0	---	---	15.0	14.0
30	15.5	15.5	10.0	10.0	9.0	7.5	11.0	11.0	---	---	15.5	15.0
31	15.5	15.5	---	---	9.0	8.5	11.0	11.0	---	---	16.0	15.5
MONTH	20.5	14.0	15.5	9.0	11.0	6.5	12.0	9.0	11.5	8.5	16.0	10.0

SACRAMENTO RIVER BASIN

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

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	16.0	16.5	16.5	22.5	22.5	21.0	21.0	21.5	20.0	20.5	20.5
2	16.0	15.5	16.5	16.5	23.0	22.5	21.0	21.0	20.5	20.0	21.0	20.5
3	15.5	14.5	16.5	16.0	23.0	23.0	21.0	21.0	21.0	20.5	21.0	21.0
4	14.5	14.5	16.0	15.5	23.0	22.5	21.0	21.0	21.5	21.0	21.0	21.0
5	14.5	14.5	15.5	15.5	22.5	22.0	21.0	21.0	21.5	21.5	21.0	21.0
6	14.5	14.5	15.5	14.5	22.5	22.0	21.0	21.0	21.5	21.5	21.5	21.0
7	14.5	14.5	14.5	14.5	22.0	21.5	21.0	21.0	21.5	21.5	21.5	21.5
8	14.5	14.5	15.0	14.5	21.5	21.5	21.0	21.0	21.5	21.5	21.5	21.5
9	14.5	14.5	16.0	15.0	21.5	21.5	21.0	21.0	21.5	21.5	21.5	21.5
10	15.0	14.5	17.0	16.0	22.0	21.5	21.0	21.0	21.5	21.5	21.5	21.0
11	16.0	15.0	17.0	17.0	22.0	22.0	21.5	21.0	21.5	21.5	21.5	21.0
12	16.0	16.0	17.0	17.0	22.0	22.0	22.0	21.5	21.5	21.5	21.0	20.5
13	16.0	16.0	17.5	17.0	22.0	22.0	22.0	22.0	21.5	21.5	20.5	20.0
14	16.0	16.0	18.0	17.5	22.0	22.0	22.0	22.0	21.5	21.5	20.0	19.5
15	16.0	15.0	18.0	18.0	22.0	22.0	22.0	22.0	21.5	21.5	19.5	19.0
16	15.0	14.0	17.5	16.5	22.0	21.5	22.0	21.5	21.5	21.0	19.0	18.5
17	14.0	13.5	17.0	16.5	21.5	21.5	21.5	21.5	21.0	21.0	18.5	18.0
18	13.5	13.5	18.0	17.0	21.5	21.0	21.5	20.5	21.0	20.5	18.0	17.5
19	14.0	13.5	19.0	18.5	21.5	21.0	20.5	20.5	21.0	21.0	17.5	17.0
20	15.5	14.0	19.0	19.0	21.0	21.0	20.5	20.5	21.0	21.0	17.0	17.0
21	17.0	15.5	19.0	19.0	21.0	21.0	20.5	20.5	21.0	21.0	17.0	16.5
22	18.0	17.0	19.0	18.5	21.0	21.0	20.5	20.5	21.0	21.0	17.0	17.0
23	18.0	18.0	18.5	18.5	22.0	21.0	20.5	20.5	21.0	21.0	17.0	17.0
24	18.0	18.0	18.5	18.5	22.0	22.0	20.5	20.5	21.0	20.5	17.0	17.0
25	17.5	17.5	19.5	18.5	22.0	22.0	20.5	20.5	21.0	20.5	17.0	17.0
26	17.0	16.5	20.5	19.5	22.0	22.0	20.5	20.5	20.5	20.5	17.0	16.0
27	16.5	15.5	21.5	20.5	22.0	21.5	20.5	20.0	20.5	20.5	16.0	15.5
28	16.0	15.5	22.0	21.5	21.5	21.5	20.0	20.0	20.5	20.5	15.5	15.5
29	16.0	16.0	22.5	22.0	21.5	21.0	20.0	20.0	20.5	20.5	15.5	15.5
30	---	---	22.5	22.5	21.0	21.0	20.0	20.0	20.5	20.5	16.0	15.5
31	---	---	22.5	22.5	---	---	21.0	20.0	20.5	20.5	---	---
MONTH	---	---	22.5	14.5	23.0	21.0	22.0	20.0	21.5	20.0	21.5	15.5

SACRAMENTO RIVER BASIN

11394500 MIDDLE FORK FEATHER RIVER NEAR MERRIMAC, CA

LOCATION.--Lat 39°42'30", long 121°16'10", in NW 1/4 NE 1/4 sec.2, T.21 N., R.6 E., Butte County, Hydrologic Unit 18020123, Plumas National Forest, on left bank 400 ft downstream from bridge on Milsap Bar Road, 500 ft downstream from Little North Fork, 4.5 mi southeast of Merrimac, and 20 mi northeast of Oroville.

DRAINAGE AREA.--1,062 mi².

PERIOD OF RECORD.--October 1951 to September 1986 (discontinued).

REVISED RECORDS.--WSP 1931: 1960, drainage area. WDR CA-68-2: 1956(M), 1963(M).

GAGE.--Water-stage recorder. Elevation of gage is 1,560 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 21, 1965, on right bank at same site and datum.

REMARKS.--Estimated daily discharge: Feb. 18-25 and Apr. 21-25. Records good. Diversions above station for irrigation of about 1,000 acres between stations near Clio and near Merrimac. Flow partly regulated by Antelope Lake beginning in 1963, Lake Davis beginning in 1966, and Frenchman Lake beginning in 1961.

AVERAGE DISCHARGE.--35 years, 1,484 ft³/s, 1,075,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,200 ft³/s, Dec. 22, 1964, gage height, 26.5 ft, from floodmarks, present site, from rating curve extended above 19,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 51 ft³/s, Sept. 14, 15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 10, 1937, reached a stage of 19.4 ft, from floodmarks, discharge, 46,100 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 17	0600	9,140	10.80	Mar. 8	0700	34,600	16.81
Feb. 18	0330	*79,900	*24.25				

Minimum daily, 179 ft³/s, Oct. 5, Sept. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	184	240	507	745	3750	5420	3980	1680	1320	389	255	186
2	186	238	1550	798	3840	5100	3800	1660	1280	379	250	187
3	182	235	2350	758	3890	4850	3490	1990	1200	366	243	188
4	182	232	1300	970	2930	4640	3280	1940	1100	358	241	185
5	179	233	1040	3410	2450	4470	3120	1830	1000	360	239	184
6	180	232	948	2320	2100	4280	3040	1800	939	352	237	183
7	187	228	1030	1500	1820	8900	3410	1630	867	341	233	184
8	188	227	1020	1230	1600	26000	3200	1620	820	349	232	183
9	195	234	807	1070	1430	16200	3010	1600	784	346	233	179
10	206	332	678	940	1310	15100	2880	1670	758	342	231	182
11	209	304	551	844	1230	13000	2710	1640	739	331	227	190
12	219	276	492	779	1670	11900	2670	1560	729	324	224	193
13	215	251	469	732	5240	9320	2440	1560	765	317	221	191
14	215	248	450	731	12200	7560	2270	1550	703	304	219	191
15	215	256	438	811	19000	6560	2170	1540	667	295	218	190
16	215	284	419	3130	21700	5750	2060	1510	612	284	216	224
17	210	292	406	7550	56700	5110	1970	1510	591	283	211	346
18	210	280	403	3740	57500	4590	1880	1550	575	281	208	338
19	212	262	396	2720	24000	4220	1810	1570	555	281	203	388
20	210	252	390	2580	16500	4060	2070	1510	532	279	202	352
21	302	250	385	2030	12900	3930	2340	1430	514	269	196	284
22	322	257	381	1720	11100	3890	2370	1290	499	266	193	259
23	359	267	378	1680	9970	3900	2290	1240	482	269	193	251
24	316	495	380	1490	8340	4040	2110	1200	467	272	193	470
25	288	615	379	1330	7190	3950	1920	1240	450	275	193	628
26	271	490	374	1230	6530	3830	1770	1300	439	273	193	1090
27	261	407	371	1160	6100	3850	1700	1310	424	279	193	1310
28	256	506	368	1110	5770	3920	1760	1240	414	268	191	652
29	249	1080	393	1330	---	4010	1830	1240	406	264	188	493
30	248	699	775	2360	---	4070	1730	1330	399	262	188	449
31	244	---	764	3790	---	4110	---	1340	---	259	188	---
TOTAL	7115	10202	20592	56588	308760	210530	75080	47080	21030	9517	6652	10330
MEAN	230	340	664	1825	11030	6791	2503	1519	701	307	215	344
MAX	359	1080	2350	7550	57500	26000	3980	1990	1320	389	255	1310
MIN	179	227	368	731	1230	3830	1700	1200	399	259	188	179
AC-FT	14110	20240	40840	112200	612400	417600	148900	93380	41710	18880	13190	20490

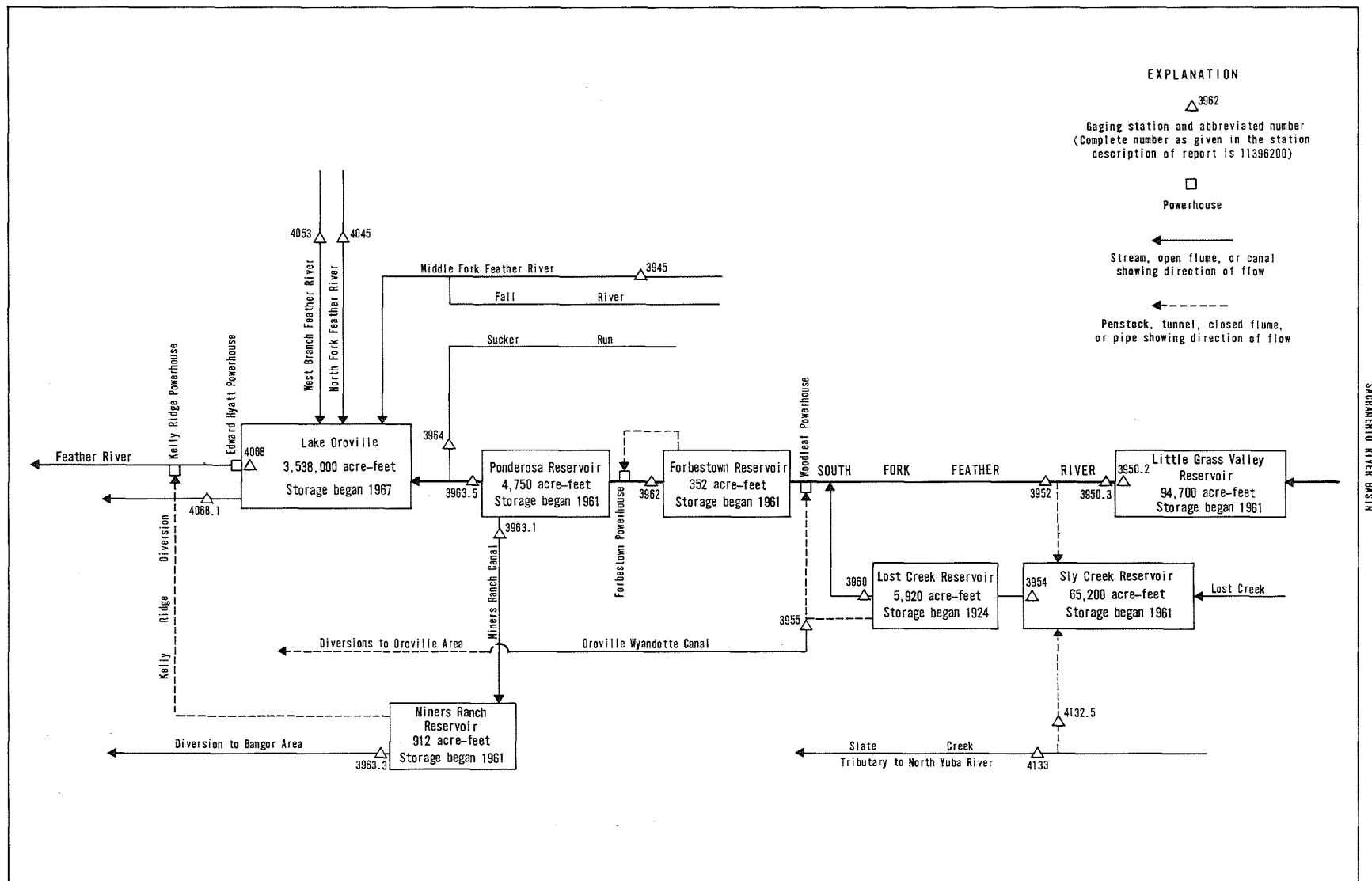


FIGURE 26. — Schematic diagram showing diversions and storage in South Fork Feather River basin.

SACRAMENTO 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, 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 National Geodetic Vertical Datum of 1929 (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, 93,000 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 downstream. Records, including extremes, represent contents at 2400 hours. See schematic diagram of South Fork Feather River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 96,100 acre-ft, Apr. 29, 1965, elevation, 5,047.9 ft; minimum since reservoir first filled, 30,300 acre-ft, on many days in 1977, elevation, 4,994.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 89,800 acre-ft, May 30,31, elevation, 5,044.0 ft; minimum, 44,700 acre-ft, Oct. 20, Nov. 5-8, 5,010.2 ft.

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

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		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45400	44800	45900	45900	60800	76500	76300	85100	89800	88500	73900	64300
2	45400	44800	46600	46000	61900	76300	76500	85200	89800	88500	73300	64200
3	45400	44800	47100	46200	62600	76300	77100	85700	89800	88400	72800	63900
4	45400	44800	47200	46700	63300	76300	77400	86000	89800	88200	72400	63800
5	45200	44700	47400	47900	63700	76300	77800	86300	89800	88200	71800	63600
6	45200	44700	47400	48400	63900	76200	78200	86500	89800	88200	71400	63400
7	45200	44700	47600	48800	64200	77900	78700	86600	89800	87700	70900	63200
8	45100	44700	47800	49000	64500	79500	79000	86800	89800	87300	70500	63000
9	45100	44800	47900	49200	64700	78700	79400	87100	89800	86600	69900	62800
10	45100	44800	47900	49500	65000	77900	79700	87300	89600	86000	69500	62600
11	45000	44900	47900	49600	65100	77400	80100	87400	89600	85500	69200	62500
12	45000	44900	47900	49800	65900	76900	80400	87600	89600	84900	68900	62300
13	45000	44900	48000	49900	67100	76800	80700	87700	89600	84300	68600	62000
14	44900	44900	48000	50200	70800	76500	81100	87900	89500	83800	68400	61900
15	44900	44900	48000	50400	75200	76300	81300	88100	89500	83000	68100	61600
16	44900	44900	48100	51500	78800	76200	81400	88200	89500	82500	68000	61600
17	44900	44900	47900	52900	85400	76000	81700	88400	89300	81900	67700	61600
18	44800	44900	47500	53700	83300	75900	82000	88500	89300	81400	67500	61500
19	44800	44900	47100	54400	81300	75900	82300	88700	89200	80900	67300	61600
20	44700	44900	46700	55000	79400	75700	82500	88900	89200	80300	67100	61500
21	44800	44900	46300	55400	78200	75700	82800	88900	89200	79700	66800	61300
22	44900	44900	45900	55900	77600	75700	82900	89000	89200	79100	66500	61100
23	44900	45000	45500	56300	77200	75700	83200	89200	89000	78700	66400	61000
24	44900	45200	45200	56700	76900	75700	83500	89200	89000	78100	66200	61100
25	44900	45400	45200	56900	76800	75900	83800	89300	89000	77500	65900	61100
26	44900	45400	45400	57100	76600	75900	84100	89300	88900	76900	65800	61500
27	44900	45500	45400	57300	76500	76000	84400	89500	88900	76300	65500	61500
28	44900	45600	45400	57600	76500	76000	84600	89500	88700	75700	65200	61300
29	44900	45800	45500	57800	---	76200	84700	89600	88700	75200	65000	61200
30	44900	45900	45700	58700	---	76200	85100	89800	88500	74700	64700	61100
31	44800	---	45800	60000	---	76300	---	89800	---	74300	64600	---
MAX	45400	45900	48100	60000	85400	79500	85100	89800	89800	88500	73900	64300
MIN	44700	44700	45200	45900	60800	75700	76300	85100	88500	74300	64600	61000
a	5010.3	5011.3	5011.2	5023.2	5035.2	5035.1	5041.0	5044.0	5043.2	5033.7	5026.7	5024.0
b	-600	+1100	-100	+14200	+16500	-200	+8800	+4700	-1300	-14200	-9700	-3500

CAL YR 1985 b +14500

WTR YR 1986 b +15700

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929. 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Feb. 16-20. Records good. Flow regulated by Little Grass Valley Reservoir (station 11395020) beginning in October 1961. No diversion above station. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE (adjusted for change in contents in Little Grass Valley Reservoir).--32 years, 103 ft³/s, 74,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,780 ft³/s Feb. 18, 1986, gage height, 14.78 ft; minimum, 0.2 ft³/s, Oct. 28-31, Nov. 2, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,780 ft³/s Feb. 18, gage height, 14.78 ft; minimum daily, 5.1 ft³/s, several days in November and December.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	13	13	5.2	6.4	9.7	313	292	30	27	24	227	95		
2	13	13	9.0	6.1	9.3	298	192	30	27	24	227	86		
3	13	13	9.6	5.9	8.2	284	6.0	31	27	24	227	79		
4	13	9.1	6.3	8.6	7.1	277	5.8	30	26	24	226	79		
5	13	5.1	6.0	15	6.8	273	5.8	30	26	24	226	79		
6	13	5.1	5.8	9.1	6.5	263	6.0	29	26	24	226	79		
7	13	5.1	6.3	7.1	6.3	460	6.7	29	26	161	226	79		
8	13	5.1	5.9	6.5	6.2	1490	6.3	29	26	285	226	76		
9	13	5.2	5.7	6.2	6.0	1340	6.3	29	26	285	225	74		
10	13	5.2	5.5	6.0	6.0	1040	6.7	29	25	285	225	74		
11	13	5.1	5.5	5.9	6.0	818	6.7	29	24	284	154	74		
12	13	5.1	5.3	5.8	7.8	653	6.7	29	24	284	95	74		
13	13	5.1	5.3	5.8	13	506	6.3	29	24	283	95	74		
14	13	5.1	5.3	5.8	30	384	6.2	28	24	283	95	74		
15	13	5.1	5.3	5.8	25	326	6.3	28	24	283	95	74		
16	13	5.1	5.3	13	534	274	6.3	28	24	282	95	74		
17	13	5.1	100	15	3350	231	6.1	28	24	283	95	74		
18	13	5.1	168	9.1	5200	191	6.3	28	24	282	95	74		
19	13	5.1	163	8.3	3340	162	6.3	28	24	282	95	75		
20	13	5.1	161	8.1	2020	147	6.9	27	24	281	95	75		
21	13	5.1	158	7.0	1250	136	7.5	27	24	281	95	74		
22	13	5.1	158	6.6	862	129	7.6	27	24	281	95	74		
23	13	5.1	156	6.4	694	129	7.7	27	24	280	95	74		
24	13	5.2	68	6.2	537	140	7.5	27	24	280	95	75		
25	13	5.5	5.1	6.2	439	153	7.3	27	24	280	95	76		
26	13	5.3	5.1	6.0	379	162	7.0	27	24	279	95	77		
27	13	5.3	5.1	6.0	348	173	7.2	27	24	279	95	76		
28	13	5.3	5.1	6.0	329	196	7.4	27	24	279	95	75		
29	13	5.6	5.3	6.4	---	225	7.3	27	24	278	95	75		
30	13	5.3	6.7	10	---	249	18	27	24	249	95	74		
31	13	---	6.1	12	---	273	---	27	---	227	95	---		
TOTAL	403	182.7	1267.8	238.3	19435.9	11695	682.2	875	742	6980	4315	2292		
MEAN	13.0	6.09	40.9	7.69	694	377	22.7	28.2	24.7	225	139	76.4		
MAX	13	13	168	15	5200	1490	292	31	27	285	227	95		
MIN	13	5.1	5.1	5.8	6.0	129	5.8	27	24	24	95	74		
AC-FT	799	362	2510	473	38550	23200	1350	1740	1470	13840	8560	4550		
CAL YR 1985	TOTAL	10081.3	MEAN	27.6	MAX	271	MIN	5.1	AC-FT	20000	MEAN a	47.6	AC-FT a	34480
WTR YR 1986	TOTAL	49108.9	MEAN	135	MAX	5200	MIN	5.1	AC-FT	97410	MEAN a	156	AC-FT a	113100

a Adjusted for change in contents in Little Grass Valley Reservoir.

SACRAMENTO RIVER BASIN

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 right 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 July 23, 1982, 130° V notch weir. Datum of gage is 3,535.02 ft above National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District).

REMARKS.--Estimated daily discharges: Feb. 17-21 and Mar. 7-9. Records good. Flow regulated by Little Grass Valley Reservoir (station 11395020). 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.

AVERAGE DISCHARGE (adjusted for diversion to South Fork tunnel).--26 years, 162 ft³/s, 117,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,870 ft³/s, Feb. 17, 1986, gage height, 14.92 ft, from rating curve extended above 40 ft³/s on basis of computation of peak flow over diversion dam from floodmark; minimum daily, 0.3 ft³/s, Dec. 25, 1962, to Jan. 2, 1963, Mar. 1-3, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,870 ft³/s, Feb. 17, gage height, 14.92 ft; minimum daily, 4.8 ft³/s, Nov. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	11	8.1	5.9	5.5	6.1	288	12	7.8	12	12	12	12		
2	11	4.9	6.4	5.5	6.2	269	21	11	12	12	12	12		
3	11	4.9	6.4	5.5	6.1	206	5.2	11	11	11	12	12		
4	11	4.9	5.8	5.7	6.0	91	5.1	11	11	12	12	12		
5	11	4.9	5.6	5.9	5.9	7.1	5.1	12	11	12	12	12		
6	11	4.9	5.5	5.8	5.9	7.1	5.1	12	11	11	12	12		
7	11	4.8	5.7	5.7	5.7	476	5.2	11	11	12	12	12		
8	11	5.6	5.6	5.6	5.7	2200	5.1	11	11	12	12	11		
9	11	5.8	5.5	5.5	5.7	1810	5.1	11	11	12	12	11		
10	11	5.8	5.5	5.5	5.7	1370	5.1	12	11	12	12	11		
11	11	5.7	5.5	5.5	5.7	1030	5.1	12	11	12	12	11		
12	10	5.7	5.6	5.5	5.9	819	5.0	12	11	12	12	11		
13	10	5.7	5.5	5.5	6.3	653	5.0	12	11	12	12	11		
14	10	5.7	5.4	5.5	321	314	5.0	12	11	12	12	11		
15	10	5.7	5.4	5.4	532	9.6	5.0	12	11	12	12	11		
16	10	5.9	5.9	6.0	1350	5.2	5.0	12	11	12	12	11		
17	10	5.9	5.5	6.2	6600	5.1	5.0	12	11	12	12	11		
18	10	5.7	5.8	5.9	7970	5.1	5.0	12	11	12	12	11		
19	10	5.7	5.9	5.7	4720	5.1	5.0	12	11	12	12	11		
20	10	5.7	5.9	5.7	2930	5.1	5.0	12	12	12	12	11		
21	11	5.7	5.9	5.7	1800	5.1	5.0	12	12	12	12	11		
22	11	5.7	5.9	5.7	1210	5.1	5.0	12	11	12	12	11		
23	11	5.8	5.9	5.7	923	5.1	5.0	12	12	12	12	11		
24	11	6.1	5.8	5.6	730	5.1	5.0	12	12	12	12	11		
25	11	6.0	5.5	5.5	607	5.1	5.0	12	12	12	12	11		
26	11	5.9	5.5	5.5	524	5.1	5.0	12	12	12	12	11		
27	11	5.9	5.5	5.5	477	5.1	5.0	12	12	12	12	11		
28	11	5.9	5.5	5.5	383	5.2	5.0	12	12	12	12	11		
29	11	6.2	5.6	5.6	---	5.1	5.0	12	12	12	12	11		
30	11	6.0	5.5	5.9	---	5.2	5.0	12	12	12	12	11		
31	11	---	5.5	6.1	---	6.0	---	12	---	12	12	---		
TOTAL	332	171.2	176.4	175.4	31153.9	9632.6	174.1	361.8	342	370	372	337		
MEAN	10.7	5.71	5.69	5.66	1113	311	5.80	11.7	11.4	11.9	12.0	11.2		
MAX	11	8.1	6.4	6.2	7970	2200	21	12	12	12	12	12		
MIN	10	4.8	5.4	5.4	5.7	5.1	5.0	7.8	11	11	12	11		
AC-FT	659	340	350	348	61790	19110	345	718	678	734	738	668		
MEAN a	16.9	15.5	85.4	106	1260	531	73.9	58.1	38.1	226	143	86.5		
AC-FT a	1040	921	5250	6490	69870	32650	4400	3570	2270	13910	8780	5150		
b	382	581	4900	6140	8080	13540	4050	2850	1590	13180	8040	4480		
CAL YR 1985	TOTAL	2988.0	MEAN	8.19	MAX	12	MIN	4.8	AC-FT	5930	MEAN a	50.8	AC-FT a	36780
WTR YR 1986	TOTAL	43598.4	MEAN	119	MAX	7970	MIN	4.8	AC-FT	86480	MEAN a	213	AC-FT a	154300

SACRAMENTO RIVER BASIN

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, 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 National Geodetic Vertical Datum of 1929 (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, including extremes, show contents at 2400 hours. See schematic diagram of South Fork Feather River basin. Reservoir completely drained Sept. 12 to Oct. 17, 1981, for powerhouse construction.

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.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 64,000 acre-ft, May 28, 29, 31, June 1, 2, elevation, 3,528.3 ft; minimum, 17,200 acre-ft, Nov. 16, elevation, 3,422.1 ft.

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

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 (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23200	20000	19900	18900	29900	54800	56300	55000	64000	57200	58000	44500
2	22900	20000	21400	18800	32000	54300	57100	55500	64000	56800	58200	43900
3	22300	20000	23000	19000	33900	54300	57700	56200	63800	56400	58100	43400
4	21900	19800	23500	19800	35400	54700	58000	56900	63700	56200	58100	42800
5	21400	19400	23800	21300	36300	55200	58000	57700	63900	56000	58100	42400
6	21100	18900	23600	22300	36700	55500	57900	58400	63800	55800	58000	41900
7	20800	18600	23300	22900	36700	56700	57900	59000	63800	55600	57900	41300
8	20400	18400	22500	23500	36500	57200	57900	59700	63800	55700	57900	40600
9	19800	18200	21700	24000	36300	56700	57700	60100	63600	55900	57800	39900
10	19500	18300	20800	23600	35900	56600	57500	60700	63300	56200	57900	39200
11	19500	18100	20200	22800	35500	56300	57100	61300	63200	56300	57700	38400
12	19500	18000	19700	22200	36300	55900	57000	61900	63000	56400	57000	37600
13	19200	18000	19000	21600	38900	55500	56800	62200	62900	56400	56300	36900
14	19200	17700	18400	20800	42900	55300	56500	62400	62800	56500	55600	36100
15	19200	17400	18200	20300	47500	55600	56300	62800	62800	56600	54800	36000
16	19300	17200	17900	21500	52200	55700	55900	63000	62700	56700	54100	36300
17	19300	17300	17800	23900	59300	55600	55900	62900	62400	56900	53400	36500
18	19300	17300	18200	25400	58900	55300	56300	62900	62200	57000	52800	36800
19	19300	17300	18400	26200	58400	55400	56200	63100	62100	57200	52200	37100
20	19300	17400	18800	26800	57600	55700	56000	63400	62100	57300	51600	37300
21	19400	17400	19100	27000	57400	56100	55800	63800	61900	57300	51200	37500
22	19500	17400	19200	27000	57400	56500	55400	63700	61800	57500	50600	37700
23	19700	17500	19200	27000	57300	56700	55100	63500	61600	57600	50100	37800
24	19700	17800	19200	26800	57200	56700	54600	63700	61500	57800	49500	38200
25	19800	18200	19000	26400	57100	56400	54100	63800	61000	57900	48900	38600
26	19800	18400	18800	26000	56600	56100	53700	63900	60100	58000	48300	39600
27	19900	18500	18400	25700	55800	55900	54100	63900	59400	58000	48000	40500
28	19900	18700	18200	25100	55300	55800	54100	64000	58900	58100	47200	41000
29	19900	19400	18100	25200	---	55700	54200	64000	58300	58200	46500	41300
30	19900	19700	18500	26200	---	55500	54400	63900	57800	58200	45800	41600
31	19900	---	18700	27800	---	55600	---	64000	---	58100	45200	---
MAX	23200	20000	23800	27800	59300	57200	58000	64000	64000	58200	58200	44500
MIN	19200	17200	17800	18800	29900	54300	53700	55000	57800	55600	45200	36000
a	3431.2	3430.4	3427.2	3454.1	3513.4	3513.9	3511.8	3528.2	3517.7	3518.3	3494.1	3486.6
b	-3300	-200	-1000	+9100	+27500	+300	-1200	+9600	-6200	+300	-12900	-3600

CAL YR 1985 b + 7100

WTR YR 1986 b +18400

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (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 portion of canal, 0.3 mi downstream from Lost Creek Dam.

REMARKS.--No estimated daily discharges. Records good. Water is discharged to canal through valve in Woodleaf penstock. Prior to Nov. 16, 1962, canal diverted from Lost Creek Dam. Water is used for irrigation and domestic supply. Demand for water reduced when a large lumber mill closed at Woodleaf in 1962. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--23 years (water years 1928-41, 1954-62, prior to closure of lumber mill), 21.0 ft³/s, 15,200 ac-ft/yr; 24 years (water years 1963-86), 8.30 ft³/s, 6,010 acre-ft/yr.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	7.2	.48	0				0	8.1	12	16	18
2	14	6.9	.19	.79				0	7.2	12	17	18
3	14	6.7	0	1.9				0	7.0	13	17	18
4	14	6.7	0	.80				0	7.0	14	17	18
5	14	6.7	0	0				0	7.0	14	17	18
6	15	6.7	0	0				0	6.9	14	17	18
7	16	6.6	0	0				0	6.9	14	17	18
8	16	6.7	0	0				0	6.9	14	16	18
9	16	6.2	0	0				0	6.9	14	17	18
10	16	6.3	0	0				0	7.0	14	17	18
11	15	4.9	0	0				0	8.2	14	17	18
12	15	3.1	0	0				0	9.2	14	17	18
13	14	3.1	0	0				0	9.5	14	17	18
14	12	3.5	0	0				0	9.7	15	18	18
15	9.0	3.2	0	0				0	9.7	16	18	17
16	9.0	3.0	.58	0				0	9.7	16	18	17
17	8.8	3.2	1.5	0				0	9.7	16	18	15
18	8.7	3.5	1.6	0				.52	9.7	16	18	12
19	8.8	3.9	1.6	0				1.1	9.7	16	18	13
20	8.8	3.9	1.6	0				2.5	9.8	16	17	13
21	8.3	3.8	1.6	0				4.5	9.7	16	17	13
22	6.4	3.8	1.6	0				4.5	9.8	16	17	15
23	5.1	3.9	1.6	0				4.5	9.8	16	17	17
24	5.5	3.8	1.6	0				4.5	11	16	17	12
25	5.6	1.8	1.6	0				4.4	12	16	17	6.8
26	5.6	.32	1.6	0				5.4	12	16	17	6.8
27	5.6	.55	1.5	0				6.7	12	16	18	6.8
28	5.3	.54	1.5	0				7.0	12	16	18	6.8
29	6.0	.48	1.5	0				8.2	12	16	18	6.8
30	7.4	.48	.56	0				9.0	12	16	18	6.6
31	7.4	---	0	0				9.1	---	16	18	---
TOTAL	326.3	121.47	22.21	3.49	0	0	0	71.92	278.1	464	536	436.6
MEAN	10.5	4.05	.72	.11	0	0	0	2.32	9.27	15.0	17.3	14.6
MAX	16	7.2	1.6	1.9	0	0	0	9.1	12	16	18	18
MIN	5.1	.32	0	0	0	0	0	0	6.9	12	16	6.6
AC-FT	647	241	44	6.9	0	0	0	143	552	920	1060	866
CAL YR 1985	TOTAL	2938.78	MEAN 8.05	MAX 22	MIN 0	AC-FT 5830						
WTR YR 1986	TOTAL	2260.09	MEAN 6.19	MAX 18	MIN 0	AC-FT 4480						

SACRAMENTO RIVER BASIN

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 U.S. Geological Survey.

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

GAGE.--Water-stage recorder. Elevation of gage is 3,170 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. 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 from North Yuba River basin. Woodleaf tunnel diverts from Lost Creek Reservoir to Woodleaf powerhouse. Oroville-Wyandotte Canal (station 11395500) diverts from Woodleaf penstock for irrigation and domestic use. Records represent seepage, release, or spill from Lost Creek Dam to Lost Creek. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--27 years (water years 1928-41, 1949-61, prior to regulation by Sly Creek Reservoir), 73.0 ft³/s, 52,850 acre-ft/yr; 25 years (water years 1962-86), 26.0 ft³/s, 18,840 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s, Dec. 22, 1955, gage height, 6.90 ft; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,680 ft³/s, Feb. 17, gage height, 6.94 ft; minimum daily, 0.44 ft³/s, many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.7	1.6	1.1	2.7	151	.86	.56	.47	.45	.47	2.1
2	1.4	1.7	3.5	1.1	3.1	145	.86	.56	.47	.44	.46	2.2
3	1.5	1.7	2.6	1.1	3.0	139	.82	.64	.47	.44	.44	2.2
4	1.5	1.7	1.6	1.5	2.4	125	7.3	.60	.47	.44	.46	2.2
5	1.5	1.6	1.6	2.1	2.0	78	6.1	.61	.47	.44	.46	2.1
6	1.6	1.6	1.4	1.7	1.8	78	4.4	.60	.47	.44	.46	2.1
7	1.7	1.7	1.6	1.5	1.6	153	4.2	.59	.45	.44	.47	2.1
8	1.5	1.6	1.5	1.4	1.4	663	4.1	.56	.44	.44	.47	2.1
9	1.5	1.7	1.4	1.4	1.4	436	4.0	.56	.44	.45	.47	2.2
10	2.4	2.0	1.3	1.3	1.2	359	2.7	.56	.44	.45	.47	2.2
11	1.9	1.8	1.3	1.3	1.2	234	.81	.56	.44	.44	1.2	2.2
12	1.6	1.7	1.3	1.3	2.7	186	.82	.56	.44	.44	2.1	2.2
13	1.5	1.7	1.3	1.3	4.2	168	.79	.56	.44	.44	2.1	2.2
14	1.3	1.6	1.3	1.5	6.4	153	.70	.53	.44	.44	2.1	2.2
15	1.3	1.7	1.3	1.5	9.9	164	.71	.51	.44	.46	2.1	2.3
16	1.4	1.7	1.3	4.6	12	147	.70	.51	.44	.47	2.1	2.5
17	1.4	1.7	1.3	2.8	1560	141	.71	.51	.44	.47	2.1	2.5
18	1.4	1.6	1.3	1.7	3300	130	.66	.51	.44	.47	2.1	2.5
19	1.4	1.6	1.2	1.5	2660	112	.65	.51	.44	.47	2.1	2.6
20	1.5	1.6	1.2	1.4	1880	116	.65	.51	.44	.47	2.1	2.4
21	1.9	1.6	1.2	1.3	1130	104	.60	.51	.44	.47	2.1	2.4
22	1.6	1.6	1.2	1.3	960	112	.60	.48	.44	.48	2.1	2.4
23	1.6	1.7	1.2	1.8	811	194	.61	.48	.44	.50	2.1	2.4
24	1.6	2.6	1.2	1.4	649	316	.60	.47	.44	.47	2.1	2.9
25	1.7	1.8	1.2	1.3	540	167	.60	.47	.44	.45	2.1	2.8
26	1.7	1.6	1.2	1.2	448	99	.60	.47	.44	.44	2.1	3.0
27	1.7	1.6	1.1	1.2	239	99	.60	.47	.47	.44	2.1	2.6
28	1.7	2.0	1.1	1.2	99	93	.60	.47	.47	.44	2.1	2.4
29	1.7	2.9	1.3	1.3	---	92	.58	.47	.47	.44	2.1	2.3
30	1.7	1.7	1.2	2.0	---	91	.56	.47	.47	.44	2.1	2.3
31	1.7	---	1.2	2.9	---	61	---	.47	---	.44	2.1	---
TOTAL	49.4	52.8	44.0	50.0	14333.0	5306	48.49	16.34	13.51	14.01	47.83	70.6
MEAN	1.59	1.76	1.42	1.61	512	171	1.62	.53	.45	.45	1.54	2.35
MAX	2.4	2.9	3.5	4.6	3300	663	7.3	.64	.47	.50	2.1	3.0
MIN	1.3	1.6	1.1	1.1	1.2	61	.56	.47	.44	.44	.44	2.1
AC-FT	98	105	87	99	28430	10520	96	32	27	28	95	140
a	4290	4170	17630	25780	22370	34790	27930	8060	11330	14650	22510	12500

CAL YR 1985 TOTAL 532.10 MEAN 1.46 MAX 20 MIN .75 AC-FT 1060

SACRAMENTO RIVER BASIN

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 U.S. Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 1,690 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: June 11-24. Records good. 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 above station. Tunnel 600 ft above station diverts most flow through Forbestown powerplant except fishwater releases and uncontrolled spill over Forbestown Fork Feather River basin.

AVERAGE DISCHARGE.--24 years, 71.9 ft³/s, 52,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,400 ft³/s, Feb. 17, 1986, from rating curve extended above 5,400 ft³/s on basis of flow-over-dam measurement of peak flow, gage height, 16.07 ft; minimum daily, 0.6 ft³/s, Apr. 4, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,400 ft³/s, Feb. 17, gage height, 16.07 ft; minimum daily, 5.2 ft³/s, Nov. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	9.7	5.3	5.4	5.6	304	149	42	40	30	32	12
2	11	8.9	5.6	5.4	5.6	283	100	97	40	30	31	12
3	11	8.9	5.5	5.4	5.7	246	91	43	42	30	32	11
4	11	8.9	5.4	5.4	5.5	208	64	43	42	30	32	11
5	11	8.9	5.3	5.5	5.5	118	70	44	41	30	32	11
6	11	8.8	5.3	5.4	5.5	117	67	44	41	30	30	11
7	11	8.9	5.3	5.4	5.4	516	72	44	40	30	32	11
8	11	8.8	5.3	5.4	5.4	3550	65	44	40	30	32	11
9	11	8.7	5.3	5.4	5.4	2860	72	44	40	30	33	11
10	12	8.7	5.3	7.0	5.4	2280	58	44	40	30	33	11
11	11	8.6	5.3	5.4	5.3	1590	57	43	40	30	32	11
12	11	6.8	5.3	5.5	5.6	1170	56	43	40	30	32	11
13	11	5.2	5.3	5.5	5.8	909	55	44	40	31	33	11
14	12	6.1	5.3	5.4	579	589	53	43	40	31	33	11
15	15	6.1	5.4	5.4	1290	284	76	42	40	31	33	11
16	16	6.0	5.4	5.8	2050	261	51	41	38	31	33	19
17	18	6.0	5.4	5.6	11100	230	51	41	30	30	34	35
18	18	5.5	5.5	5.5	13900	216	47	41	30	31	34	30
19	15	5.4	5.4	5.5	9560	192	43	42	30	31	34	36
20	14	5.3	5.8	5.4	5850	188	41	42	30	31	34	28
21	33	5.3	5.4	5.4	3470	179	40	41	30	31	34	25
22	25	5.4	5.4	5.5	2280	176	39	40	30	31	34	24
23	17	5.3	5.4	5.4	1690	216	40	41	30	31	24	24
24	21	5.5	5.4	5.4	1330	280	40	42	30	31	18	43
25	22	5.5	5.4	5.4	1040	224	41	42	30	31	14	49
26	19	5.4	5.4	5.4	849	166	41	42	30	32	10	56
27	18	5.6	5.3	5.4	571	152	41	41	29	31	10	58
28	18	5.5	5.4	5.5	366	151	41	59	30	31	10	33
29	14	5.6	5.4	5.5	---	151	41	39	31	31	10	29
30	12	5.4	5.4	5.6	---	152	41	40	31	31	20	28
31	11	---	5.4	5.8	---	151	---	40	---	32	12	---
TOTAL	462	204.7	167.0	171.0	55996.7	17909	1743	1378	1065	950	847	684
MEAN	14.9	6.82	5.39	5.52	2000	578	58.1	44.5	35.5	30.6	27.3	22.8
MAX	33	9.7	5.8	7.0	13900	3550	149	97	42	32	34	58
MIN	11	5.2	5.3	5.4	5.3	117	39	39	29	30	10	11
AC-FT	916	406	331	339	111100	35520	3460	2730	2110	1880	1680	1360
a	3870	4680	18390	29380	27850	37220	29420	6520	10120	13310	21270	12480
CAL YR 1985	TOTAL	3240.8	MEAN	8.88	MAX	33	MIN	5.2	AC-FT	6430		
WTR YR 1986	TOTAL	81577.4	MEAN	223	MAX	13900	MIN	5.2	AC-FT	161800		

a Diversion, in acre-feet, to Forbestown powerplant, provided by Oroville-Wyandotte Irrigation District.

SACRAMENTO RIVER BASIN

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.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 975 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1 to Nov. 11 and July 12 to Aug. 5. Records good except for periods of estimated record, which are fair. 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.

AVERAGE DISCHARGE.--24 years, 206 ft³/s, 149,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 314 ft³/s, May 13, 1984; no flow at times in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	201	17	165	261	262	260	260	170	258	281	288	283
2	196	70	163	253	259	260	257	84	254	276	280	285
3	200	152	235	255	256	259	255	91	273	278	282	287
4	201	150	260	257	256	257	257	93	275	274	286	288
5	204	200	265	256	256	256	261	93	241	276	294	289
6	200	249	264	254	256	268	268	93	197	277	294	289
7	201	249	261	238	256	242	270	73	206	276	294	290
8	203	164	257	215	258	268	268	197	203	277	284	290
9	202	33	257	238	260	250	268	201	236	278	286	290
10	202	33	257	273	260	250	268	96	255	275	292	292
11	201	33	257	283	260	252	270	94	251	287	295	291
12	200	129	257	286	259	257	266	201	254	290	297	290
13	114	203	257	227	250	257	262	277	241	294	295	288
14	29	206	257	285	242	256	258	279	235	292	295	289
15	28	205	258	267	235	254	258	264	246	290	280	104
16	28	149	260	254	234	254	209	242	225	287	296	53
17	28	44	260	252	147	241	262	262	227	284	296	99
18	25	27	240	252	83	181	267	279	214	287	296	73
19	22	14	257	253	119	183	273	266	218	284	296	41
20	28	14	243	256	142	222	274	256	209	284	296	41
21	34	14	239	257	225	259	272	214	203	284	294	41
22	50	15	251	257	218	276	270	206	231	286	289	41
23	66	15	241	257	214	274	268	270	212	287	284	144
24	66	16	239	259	229	220	266	278	232	275	276	218
25	64	115	237	261	255	271	266	274	242	280	283	195
26	64	253	255	262	262	271	265	248	248	282	287	176
27	62	193	272	262	265	269	265	248	271	289	287	142
28	60	107	271	261	263	261	249	251	233	292	288	100
29	38	187	265	262	---	251	266	227	269	289	283	27
30	17	223	266	262	---	255	259	251	285	272	283	0
31	17	---	268	262	---	259	---	248	---	290	284	---
TOTAL	3251	3479	7734	7977	6481	7793	7877	6326	7144	8773	8960	5536
MEAN	105	116	249	257	231	251	263	204	238	283	289	185
MAX	204	253	272	286	265	276	274	279	285	294	297	292
MIN	17	14	163	215	83	181	209	73	197	272	276	0
AC-FT	6450	6900	15340	15820	12860	15460	15620	12550	14170	17400	17770	10980
a	4680	5680	14280	15080	12410	14740	14480	9970	11370	14560	14660	9080

CAL YR 1985 TOTAL 67020.00 MEAN 184 MAX 299 MIN 0 AC-FT 132900
WTR YR 1986 TOTAL 81331.00 MEAN 223 MAX 297 MIN 0 AC-FT 161300

a Diversion, in acre-feet, to Kelly Ridge powerplant, provided by Oroville-Wyandotte Irrigation District.

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. 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.

AVERAGE DISCHARGE.--23 years, 14.3 ft³/s, 10,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 65 ft³/s, Aug. 17-20, 1963; no flow for several days in 1965, 1969.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	10	4.2	4.4	4.2	4.2	4.5	11	19	19	21	21
2	17	11	4.0	4.4	4.3	4.2	4.6	11	18	18	21	21
3	16	11	4.1	4.4	4.4	4.2	5.3	13	18	18	21	21
4	16	11	4.2	4.4	4.4	4.2	6.4	14	19	18	21	20
5	16	11	4.2	4.4	4.4	4.2	6.4	16	19	18	21	20
6	16	11	4.2	4.4	4.4	4.2	6.4	16	18	18	21	20
7	16	11	4.2	4.4	4.3	4.2	6.4	17	19	18	21	20
8	15	11	4.2	4.3	4.2	4.2	6.2	16	18	19	21	20
9	14	10	4.2	4.2	4.2	4.0	6.2	16	17	19	21	21
10	15	11	4.2	4.2	4.1	3.9	6.2	16	18	19	21	21
11	15	11	4.2	4.2	4.2	3.9	6.4	15	19	19	21	21
12	15	11	4.2	4.4	4.2	3.7	6.4	14	19	19	22	20
13	14	9.8	4.2	4.3	4.2	3.7	6.3	14	19	19	22	19
14	13	8.2	4.2	4.3	4.1	3.7	5.9	14	18	19	22	18
15	12	8.2	4.2	4.4	3.9	3.9	6.1	14	19	19	22	18
16	12	7.7	4.2	4.4	3.7	3.9	6.6	16	19	19	22	17
17	12	7.4	4.2	4.4	3.5	3.7	7.8	17	18	19	22	14
18	12	8.4	4.2	4.4	2.9	3.7	8.1	17	18	20	22	12
19	12	8.6	4.2	4.4	2.7	3.2	8.1	17	19	20	21	12
20	12	7.7	4.2	4.4	2.5	3.0	8.3	18	18	20	20	12
21	12	5.9	4.1	4.4	2.4	2.9	8.4	19	18	20	20	12
22	11	6.2	3.9	4.4	2.4	2.9	8.6	19	19	20	20	12
23	10	6.2	3.9	4.4	2.5	3.0	8.7	20	18	19	20	12
24	11	6.3	3.9	4.3	4.1	3.1	8.7	19	18	19	20	10
25	9.1	6.4	3.8	4.2	5.3	3.1	8.8	19	19	20	20	7.4
26	9.3	6.4	3.7	4.2	5.4	3.3	8.7	18	19	20	20	7.5
27	10	6.8	3.8	4.2	4.8	3.5	7.5	17	18	19	20	7.5
28	10	6.6	4.1	4.2	4.2	3.3	8.1	19	18	19	20	8.2
29	9.8	5.6	4.2	4.4	---	3.3	12	18	19	20	21	8.9
30	9.8	4.2	4.2	4.4	---	3.3	11	18	20	20	21	8.8
31	10	---	4.2	4.3	---	3.9	---	19	---	20	21	---
TOTAL	398.0	256.6	127.5	134.5	109.9	113.5	219.1	507	555	593	649	462.3
MEAN	12.8	8.55	4.11	4.34	3.93	3.66	7.30	16.4	18.5	19.1	20.9	15.4
MAX	17	11	4.2	4.4	5.4	4.2	12	20	20	20	22	21
MIN	9.1	4.2	3.7	4.2	2.4	2.9	4.5	11	17	18	20	7.4
AC-FT	789	509	253	267	218	225	435	1010	1100	1180	1290	917
CAL YR 1985	TOTAL	4183.54	MEAN	11.5	MAX	23	MIN	.84	AC-FT	8300		
WTR YR 1986	TOTAL	4125.40	MEAN	11.3	MAX	22	MIN	2.4	AC-FT	8180		

SACRAMENTO RIVER BASIN

11396350 SOUTH FORK FEATHER RIVER AT PONDEROSA DAM, CA

LOCATION.--Lat 39°32'52", long 121°18'11", in NW 1/4 SE 1/4 sec.33, T.20 N., R.6 E., Butte County, Hydrologic Unit 18020123, at entrance to Miners Ranch Canal on the left end of Ponderosa Dam, 2,800 ft upstream from Sucker Run, and 2.6 mi northwest of Forbestown.

DRAINAGE AREA.--108 mi².

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

GAGE.--Water-stage recorder, high level sluice gate, and concrete spillway of Ponderosa Dam. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District). Prior to Oct. 1, 1967, at site 1,800 ft downstream at different datum.

REMARKS.--No estimated daily discharges. Records good except those for Aug. 12 to Sept. 14, which are poor, when releases were made under partially open spillway gates. Records are combined flow through sluice gate and flow over spillway. There was no flow through sluice gate during 1986 water year. Flow regulated by several reservoirs and diversions. Water is imported from North Yuba River basin through Slate Creek tunnel (station 11413250). Miners Ranch Canal (station 11396310) diverts at Ponderosa Dam for power development and irrigation; diversion began in October 1962. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE (adjusted for diversion to Miners Ranch Canal).--24 years, 477 ft³/s, 345,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s, Feb. 17, 1986, gage height, 67.23 ft; no flow for several months most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,000 ft³/s, Feb. 17, gage height, 67.23 ft; no flow many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1			0	0	529	961	391	0			0	45		
2			0	0	523	954	4.3	0			0	46		
3			15	0	535	886	0	0			0	40		
4			206	0	440	796	112	0			0	40		
5			186	0	473	634	504	0			0	42		
6			174	0	455	592	496	0			0	44		
7			357	0	429	1070	506	0			0	45		
8			361	0	423	4670	494	.54			0	45		
9			361	0	415	3800	496	0			0	44		
10			358	159	412	3540	470	0			0	44		
11			333	358	410	2820	469	0			0	45		
12			329	355	454	2340	468	0			23	46		
13			328	415	672	2060	470	0			50	47		
14			62	361	1330	1680	465	0			51	28		
15			4.9	381	2540	1170	353	0			52	0		
16			0	543	3380	1140	509	0			53	0		
17			0	608	13800	1050	464	0			53	0		
18			0	468	15900	1040	455	0			53	0		
19			0	436	11300	984	441	0			53	0		
20			0	421	7200	870	436	0			53	0		
21			0	410	4450	796	430	0			53	0		
22			0	406	3330	760	418	0			53	0		
23			0	435	2710	788	435	0			45	0		
24			0	424	2260	979	442	0			40	0		
25			0	409	1930	847	437	0			43	0		
26			0	407	1740	679	377	0			45	0		
27			0	400	1390	666	3.1	0			39	0		
28			0	267	1110	679	1.2	0			32	0		
29			0	375	---	660	89	0			38	0		
30			0	446	---	647	4.9	0			42	0		
31		---	0	496	---	634	---	0	---		44	---		
TOTAL	0	0	3074.9	8980	80540	41192	10640.5	.54	0	0	915	601		
MEAN	0	0	99.2	290	2876	1329	355	.017	0	0	29.5	20.0		
MAX	0	0	361	608	15900	4670	509	.54	0	0	53	47		
MIN	0	0	0	0	410	592	0	0	0	0	0	0		
AC-FT	0	0	6100	17810	159800	81700	21110	1.1	0	0	1810	1190		
MEAN a	105	116	349	547	3109	1580	617	204	238	283	318	205		
AC-FT a	6450	6900	21440	33630	172700	97160	36730	12550	14170	17400	19580	12170		
CAL YR 1985	TOTAL	14013.76	MEAN	38.4	MAX	739	MIN	0	AC-FT	27800	MEAN a	222	AC-FT a	160700
WTR YR 1986	TOTAL	145943.94	MEAN	400	MAX	15900	MIN	0	AC-FT	289500	MEAN a	623	AC-FT a	450800

a Adjusted for diversion to Miners Ranch Canal.

SACRAMENTO RIVER BASIN

11396400 SUCKER RUN NEAR FORBESTOWN, CA

LOCATION.--Lat 39°33'12", long 121°18'04", in NW 1/4 NE 1/4 sec.33, T.20 N., R.6 E., Butte County, Hydrologic Unit 18020123, on left bank at upstream side of road bridge, 0.7 mi upstream from confluence with South Fork Feather River, and 2.8 mi northwest of Forbestown.

DRAINAGE AREA.--18.7 mi².

PERIOD OF RECORD.--June 1965 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 960 ft above National Geodetic Vertical Datum of 1929, from topographic map. June 1965 to Aug. 19, 1986, at datum 1.35 ft higher.

REMARKS.--Estimated daily discharges: Feb. 28 to Mar. 6 and Apr. 21 to May 9. Records fair. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--21 years, 28.2 ft³/s, 20,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,600 ft³/s, Apr. 11, 1982, gage height, 9.90 ft, from floodmarks, from rating curve extended above 750 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 0.40 ft³/s, Oct. 7, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 7.4 ft from floodmarks, discharge, 2,190 ft³/s from rating curve extended above 600 ft³/s on basis of computation of peak flow over rock control.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1715	*2,320	*8.25	Mar. 8	0500	526	4.01

Minimum daily, 3.2 ft³/s, Sept. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	5.0	13	8.8	64	51	39	24	16	11	6.0	3.4
2	3.9	5.0	44	8.6	73	48	38	23	15	11	5.8	3.4
3	3.7	5.0	32	8.3	69	45	36	28	15	11	5.7	3.4
4	3.6	5.0	18	12	53	43	35	29	15	10	5.6	3.4
5	3.6	5.0	18	25	39	42	35	26	15	10	5.4	3.4
6	3.7	5.0	14	17	32	40	34	24	15	10	5.4	3.3
7	3.9	4.9	14	13	28	121	39	23	15	11	5.1	3.2
8	4.2	5.0	13	11	25	270	35	22	14	10	5.0	3.3
9	4.1	5.2	12	11	22	121	33	22	14	9.6	5.0	3.4
10	3.9	8.8	11	10	21	257	32	22	13	9.5	5.0	3.5
11	3.9	7.3	10	9.8	20	181	32	22	13	9.4	4.7	3.4
12	3.9	6.3	9.8	9.5	47	183	31	21	14	9.1	4.6	3.4
13	3.8	5.8	9.5	9.2	139	165	31	21	14	8.8	4.4	3.6
14	3.6	5.9	9.3	11	319	133	30	21	14	8.4	4.3	3.7
15	3.6	6.0	9.1	15	379	152	30	21	13	8.1	4.3	4.0
16	3.6	7.2	8.9	84	373	147	30	20	13	8.3	4.4	6.1
17	3.7	7.2	8.6	73	1380	117	30	19	13	9.1	4.4	10
18	3.8	6.5	8.5	31	469	99	30	19	12	8.8	4.2	9.0
19	3.8	6.0	8.3	23	399	89	29	18	12	8.1	4.0	11
20	3.9	5.9	8.2	21	245	80	28	19	12	7.8	4.0	9.0
21	9.3	5.9	8.0	18	170	72	27	19	12	7.4	4.0	7.6
22	5.9	5.9	8.0	17	122	66	27	19	12	7.4	3.9	7.3
23	5.8	7.1	7.8	27	95	61	26	19	12	8.5	3.9	7.2
24	5.4	26	7.7	21	80	58	26	19	12	9.2	3.8	17
25	5.2	23	7.7	18	68	54	25	18	11	8.3	3.7	20
26	5.1	11	7.6	16	62	51	25	17	11	8.3	3.7	22
27	5.1	9.0	7.5	15	59	48	25	17	11	7.8	3.8	20
28	5.0	18	7.5	15	55	46	24	16	11	7.6	3.7	9.4
29	5.0	48	8.2	20	---	43	24	16	11	7.4	3.7	8.0
30	5.0	20	14	53	---	42	24	16	11	6.9	3.7	7.5
31	5.0	---	9.4	67	---	40	---	16	---	6.4	3.7	---
TOTAL	138.2	291.9	372.6	698.2	4907	2965	910	636	391	274.2	138.9	222.9
MEAN	4.46	9.73	12.0	22.5	175	95.6	30.3	20.5	13.0	8.85	4.48	7.43
MAX	9.3	48	44	84	1380	270	39	29	16	11	6.0	22
MIN	3.6	4.9	7.5	8.3	20	40	24	16	11	6.4	3.7	3.2
AC-FT	274	579	739	1380	9730	5880	1800	1260	776	544	276	442

CAL YR 1985 TOTAL 4176.6 MEAN 11.4 MAX 276 MIN 2.0 AC-FT 8280

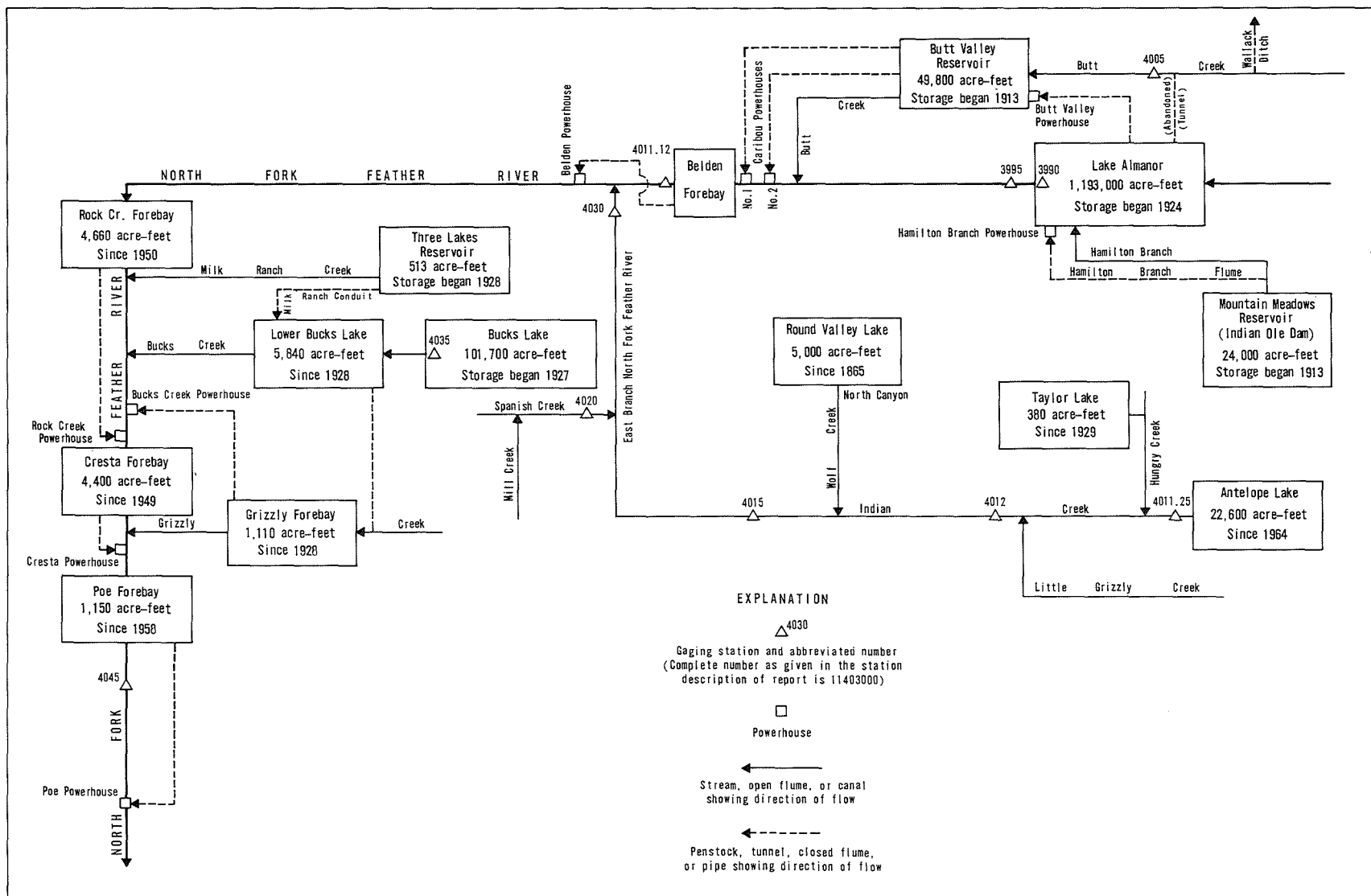


FIGURE 27. — Schematic diagram showing diversions and storage in North Fork Feather River basin.

SACRAMENTO 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 National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and 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. Capacity, 1,183,835 acre-ft between gage heights 4,495.5 ft, upper storage limit and 4,422 ft, bottom of lowest outlet, of which 8,948 acre-ft is not available for release. Water is diverted by tunnel and penstock to Butt Valley powerplant and reservoir for use in Caribou powerplants; some water also released down North Fork Feather River (station 11399500). Figures given herein, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to Geological Survey standards.

EXTREMES (at 2400) 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 (at 2400) FOR CURRENT YEAR.--Maximum contents, 1,103,890 acre-ft, June 1-3, gage height, 4,492.55 ft; minimum, 593,360 acre-ft, Oct. 27, gage height, 4,471.34 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

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	294,531		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	635040	597570	629190	662230	708390	899260	1011710	1043880	1103890	1059170	997200	922190
2	633090	598200	631140	663560	713610	902990	1013530	1043620	1103890	1057320	995130	918430
3	631360	599050	634180	664440	716110	904970	1015090	1045200	1103890	1054950	993060	915690
4	629620	600100	635040	666880	717480	906460	1017960	1046510	1103090	1053360	991260	912440
5	627890	601160	636570	668650	719310	908210	1019000	1049940	1102280	1050460	989450	908950
6	625730	602010	637870	670210	719760	911440	1020570	1052570	1101210	1048620	986880	905220
7	622930	602850	639180	671320	722270	920930	1022390	1054950	1100680	1046250	984300	901500
8	621640	603280	639400	672430	723870	938510	1023700	1057060	1099870	1044140	982250	897530
9	619490	604340	641580	672430	724330	948610	1025000	1059170	1098000	1042040	979940	894060
10	616490	606670	642450	672430	725930	959510	1026310	1061290	1097200	1040200	977630	891100
11	614350	607730	642670	673550	726660	966130	1027880	1064200	1095330	1038100	975320	889120
12	611570	607310	643540	674440	730740	971230	1029450	1067110	1094260	1035740	973270	885670
13	609440	607950	643760	674660	733270	975580	1030500	1069500	1093190	1033640	970720	881730
14	606670	608800	645290	675770	744090	978910	1032070	1072150	1090520	1031020	968680	878050
15	606250	609220	645950	676000	754510	983020	1034690	1074550	1089190	1028400	966380	874370
16	603910	610500	647040	679350	765930	985330	1034690	1076670	1087320	1027620	963830	872160
17	604340	611360	648140	683590	787060	988680	1035470	1079330	1085190	1024740	961290	869960
18	602850	612000	649010	685840	812220	991000	1034950	1081990	1083330	1022390	959000	869470
19	603700	612850	649890	689200	832350	992290	1035710	1084920	1081460	1020300	956720	868980
20	602850	613490	650330	691670	847320	993840	1037050	1086790	1079870	1017960	954430	865800
21	600950	614350	650330	692570	856550	994610	1037570	1089990	1078270	1015610	951900	862880
22	600310	614990	650330	693920	864580	995650	1039670	1091590	1076670	1013790	949370	859710
23	599050	616700	652750	694820	871180	996680	1040990	1094260	1074810	1011970	947090	856790
24	597570	619700	653630	695270	876080	997710	1040460	1096660	1073220	1009370	944570	854360
25	595460	619270	654070	696850	881730	1002110	1043090	1098800	1071360	1006000	942040	851930
26	593780	619920	654730	697980	885920	1002890	1044410	1101480	1069240	1004440	940020	850720
27	593360	621420	656050	697300	890360	1004700	1044410	1102550	1067110	1005480	937500	847810
28	593990	623360	657150	697300	895050	1005220	1044140	1102550	1064730	1004960	935240	846660
29	596040	625300	658250	699110	---	1005740	1044140	1102550	1063140	1003150	931720	842240
30	595670	627240	659360	702270	---	1007820	1043620	1102820	1061550	1001080	928450	841040
31	596940	---	661340	705890	---	1009110	---	1102550	---	999010	925440	---
MAX	635040	627240	661340	705890	895050	1009110	1044410	1102820	1103890	1059170	997200	922190
MIN	593360	597570	629190	662230	708390	899260	1011710	1043620	1061550	999010	925440	841040
a	4471.51	4472.93	4474.49	4476.48	4484.46	4488.96	4490.28	4492.50	4490.96	4488.57	4485.68	4482.25
b	-38760	+30300	+34100	+44550	+189160	+114060	+34510	+58930	-41000	-62540	-73570	-84400

CAL YR 1985 b -202760

WTR YR 1986 b +205340

SACRAMENTO RIVER BASIN

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 (daily discharges for July 1921 to September 1936 include water diverted through Almanor-Butt Creek tunnel). Records for water year 1911 incomplete, yearly estimate published in WSP 1315-A. Published as "below Prattville" prior to 1911. Supplemental records for Almanor-Butt Creek tunnel diversion computed November 1924 to Dec. 30, 1958, as difference of flow between Butt Creek above Almanor-Butt Creek tunnel (unpublished prior to 1936 and since 1964), and Butt Creek below Almanor-Butt Creek tunnel (station 11400500), (unpublished prior to 1936 and 1960-64).

REVISED RECORDS.--WSP 1245: 1951 (yearly summaries). WSP 1285: 1952 (yearly summaries).

GAGE.--Water-stage recorder and broad-crested weir. Datum of gage is 4,390.09 ft above National Geodetic Vertical Datum of 1929. 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.--No estimated daily discharges. Flow regulated by Lake Almanor (station 11399000) 0.5 mi upstream and Mountain Meadows Reservoir since 1924, capacity, 24,000 acre-ft. Water diverted for power from Lake Almanor through old Almanor-Butt Creek tunnel to Butt Creek until Dec. 30, 1958. Diversion through new tunnel to Butt Valley powerplant began Dec. 31, 1958. See schematic diagram of North Fork Feather River basin.

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

AVERAGE DISCHARGE (adjusted for change in contents in Lake Almanor, diversion to Butt Valley powerplant, and leakage from Almanor-Butt Creek tunnel at Outlet. Prior to 1984 adjusted for diversion to Butt Valley powerplant and leakage from Almanor-Butt tunnel at Outlet).--81 years, 917 ft³/s, 664,400 acre-ft/yr.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 52 ft³/s, Feb. 18, gage height, 2.68 ft; minimum daily, 34 ft³/s, Dec. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	37	36	36	36	36	37	35	37	37	41	40
2	35	37	37	35	37	36	36	35	37	36	41	40
3	35	37	37	35	37	36	35	35	37	36	41	40
4	35	37	37	36	37	36	35	35	37	37	41	40
5	35	37	37	36	37	36	35	35	37	36	41	40
6	35	37	37	36	36	36	35	35	37	36	41	40
7	35	37	37	36	36	36	35	35	37	36	41	40
8	35	37	37	36	36	38	35	35	37	36	41	40
9	35	37	37	36	36	37	35	36	37	36	41	40
10	36	37	34	36	36	38	35	36	37	36	41	40
11	37	37	36	36	36	38	35	36	37	36	41	40
12	36	37	37	36	36	38	35	36	37	36	41	40
13	36	37	35	36	36	38	35	36	37	37	41	40
14	37	36	38	36	39	37	35	37	37	37	41	40
15	37	37	38	36	41	37	35	37	37	37	41	40
16	37	37	37	37	40	37	35	37	37	37	41	40
17	37	36	36	37	47	37	35	37	37	37	41	40
18	37	36	35	36	46	37	35	37	37	37	41	39
19	37	36	35	36	43	37	35	37	37	37	41	40
20	37	36	35	36	40	37	35	37	37	37	41	39
21	37	36	35	36	38	37	35	37	37	37	41	39
22	37	36	35	36	37	37	35	37	37	37	41	39
23	37	36	35	36	37	37	35	37	37	37	41	39
24	37	37	35	36	37	37	35	37	37	36	41	39
25	37	37	35	36	36	37	35	37	37	36	41	39
26	37	36	35	36	36	37	35	37	37	36	41	39
27	37	36	35	36	36	37	35	37	37	36	41	39
28	37	36	35	36	36	37	35	37	36	36	41	39
29	37	37	35	36	---	37	35	37	36	36	41	38
30	37	36	35	36	---	37	35	37	36	38	40	38
31	37	---	35	36	---	37	---	37	---	41	40	---
TOTAL	1126	1098	1113	1116	1061	1145	1053	1126	1107	1136	1269	1186
MEAN	36.3	36.6	35.9	36.0	37.9	36.9	35.1	36.3	36.9	36.6	40.9	39.5
MAX	37	37	38	37	47	38	37	37	37	41	41	40
MIN	35	36	34	35	36	36	35	35	36	36	40	38
AC-FT	2230	2180	2210	2210	2100	2270	2090	2230	2200	2250	2520	2350
MEAN a	425	594	598	1020	3457	2514	1462	1358	994	661	372	461
AC-FT a	26120	35320	36790	62720	192000	154600	87000	83500	59150	40660	22890	27410
CAL YR 1985	TOTAL	13100	MEAN 35.9	MAX 39	MIN 33	AC-FT 25980	MEAN a 611	AC-FT a 442300				
WTR YR 1986	TOTAL	13536	MEAN 37.1	MAX 47	MIN 34	AC-FT 26850	MEAN a 1144	AC-FT a 828000				

Adjusted for change in contents in Lake Almanor, diversion through Butt Valley powerplant, and leakage

SACRAMENTO RIVER BASIN

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.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,300 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 5, 1937, at site 200 ft downstream at datum 4 ft lower.

REMARKS.--No estimated daily discharges. No regulation upstream from station. Howell-Bunger valve in conduit from Lake Almanor to Butt Valley powerplant is opened for short periods several times a year causing sharp peaks. Wallack ditch, upstream from station, diverts several cubic feet per second during each irrigation season into Yellow Creek basin. There is some inflow 500 ft upstream that is the leakage from the abandoned Almanor-Butt Creek tunnel at outlet (station 11400200) that is included in the table below. Discharge to Butt Valley Powerplant (station 11400600) is shown as a line item below this table. See schematic diagram of North Fork Feather River basin.

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

AVERAGE DISCHARGE (adjusted for inflow from Almanor-Butt Creek tunnel at Outlet since 1965).--50 years (records for station 11400000 Butt Creek above Almanor-Butt Creek tunnel near Prattville used for water years 1937-64), 85.2 ft³/s, 61,730 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,870 ft³/s, Feb. 17, 1986, gage height, 5.90 ft, from rating curve extended above 1,400 ft³/s; minimum daily, 26 ft³/s, several days during May and June 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,870 ft³/s, Feb. 17, gage height, 5.90 ft; minimum daily, 40 ft³/s, Oct. 3-8.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	46	53	61	179	243	184	114	91	55	53	49
2	41	46	68	60	173	234	168	117	88	54	53	50
3	40	46	84	58	144	224	159	152	84	54	52	47
4	40	45	68	60	115	217	154	138	81	53	52	46
5	40	45	63	110	102	214	150	147	79	53	52	48
6	40	45	60	92	92	205	152	141	74	53	53	47
7	40	45	63	71	86	645	170	130	76	53	52	47
8	40	45	62	65	81	1410	170	127	73	51	52	47
9	41	45	57	62	77	689	154	124	71	50	52	48
10	41	49	50	60	75	538	151	152	69	53	52	48
11	41	51	56	58	73	457	150	130	64	56	51	47
12	41	50	60	57	78	386	162	124	64	56	51	47
13	41	47	65	57	134	369	145	122	63	56	50	49
14	41	49	66	58	610	339	140	122	62	56	50	48
15	41	50	66	57	892	304	139	119	61	55	50	48
16	41	52	65	83	846	284	141	117	61	56	51	55
17	41	52	64	236	2830	251	134	116	60	56	51	81
18	41	48	63	135	2740	232	126	117	60	56	51	76
19	41	47	63	103	1830	230	122	116	59	55	51	85
20	41	48	62	97	965	232	123	113	59	55	52	70
21	56	47	63	83	619	229	129	109	59	55	51	63
22	52	48	63	77	498	229	136	101	59	52	51	60
23	58	49	64	75	422	232	160	100	58	54	51	60
24	53	50	63	70	381	215	137	97	57	53	51	69
25	50	50	62	67	320	175	131	96	57	54	48	73
26	48	50	61	65	277	169	124	95	57	53	48	95
27	48	51	61	64	265	171	123	91	57	54	48	89
28	47	53	60	63	258	174	124	92	56	54	48	69
29	46	56	59	128	---	178	120	92	55	53	48	64
30	46	54	62	172	---	181	117	93	55	53	48	63
31	46	---	61	234	---	182	---	93	---	53	48	---
TOTAL	1364	1459	1937	2738	15162	9838	4295	3597	1969	1674	1571	1788
MEAN	44.0	48.6	62.5	88.3	542	317	143	116	65.6	54.0	50.7	59.6
MAX	58	56	84	236	2830	1410	184	152	91	56	53	95
MIN	40	45	50	57	73	169	117	91	55	50	48	46
AC-FT	2710	2890	3840	5430	30070	19510	8520	7130	3910	3320	3120	3550
a	446	464	480	496	433	533	525	595	551	549	520	464
b	62200	2380	0	15460	341	37690	49880	21740	97400	100400	93420	109000
CAL YR 1985	TOTAL	22025	MEAN	60.3	MAX	153	MIN	34	AC-FT	43690		
WTR YR 1986	TOTAL	47392	MEAN	130	MAX	2830	MIN	40	AC-FT	94000		

a Inflow in acre-feet from Almanor-Butt Creek tunnel at outlet, provided by Pacific Gas and Electric Co.

SACRAMENTO RIVER BASIN

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 September 1986.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (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). Records since 1983 water year available in files of the Geological Survey. Figures given herein, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to Geological Survey standards.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 52,667 acre-ft, Feb. 18, 19, elevation, 4,133.80 ft; minimum, 36,141 acre-ft, Mar. 25, elevation, 4,123.15 ft.

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

4,100	8,024	4,130	46,591
4,110	18,395	4,137	57,891
4,120	31,592		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46512	43157	45727	41010	46670	40097	38666	38666	46512	45492	45963	46670
2	46749	43003	46355	40705	46749	38516	38143	39795	45806	45492	46120	46434
3	46355	42772	46670	40781	46198	38890	38292	42772	45570	45021	46277	45884
4	46434	42541	46908	40857	46987	40022	38143	44165	44477	45178	46198	45669
5	45963	42541	47145	41162	47303	41010	38292	44554	44865	46120	46434	45335
6	46277	42695	47303	41620	46591	39569	38217	44865	45099	46277	46277	45099
7	46277	42772	47541	41849	45178	38965	38591	45021	45335	46277	46277	46198
8	45413	42849	47699	40399	44710	40399	39267	45335	45021	45570	45884	46908
9	47145	43003	47699	39418	43854	39871	39569	45570	46198	45669	45669	47145
10	47224	43311	47145	40467	42618	39191	39191	46041	46591	45099	45570	46670
11	47620	43388	45884	40467	41010	38143	38890	46198	46591	44787	46670	44865
12	47382	44243	44710	40399	39191	38516	38591	46277	46120	44554	46355	44865
13	47541	44321	43699	40705	39166	38741	38292	46591	45806	46041	45727	45335
14	47541	44554	42310	40399	41620	38815	39569	46591	46277	46041	46198	45335
15	46670	44865	41467	40324	44854	38591	37844	46277	46591	46198	46512	45099
16	46749	44943	41620	40933	45021	39795	38292	46512	47145	45335	46434	45021
17	46908	45099	41849	41772	49450	38815	38292	46591	47224	45806	46277	45256
18	46434	45178	41696	42233	52667	38217	39191	46749	46828	46198	46277	45099
19	46434	45178	41849	42464	52667	38217	38890	47066	45963	46277	46041	45335
20	42618	45335	41925	42695	51536	38068	38367	46749	45806	45884	46355	45413
21	43003	45570	42156	42772	50330	38441	38441	46987	45099	45570	46041	45256
22	43003	45806	41849	43080	49450	38591	38292	46987	45415	45884	45884	45021
23	42618	46041	42079	42926	48413	38890	38591	46828	45492	46591	46198	45099
24	41772	46277	41466	42772	47303	37919	39493	46908	45570	45727	45806	45099
25	42156	47620	41544	43003	45884	36141	37919	47224	45492	46512	46041	44632
26	42233	48016	41620	43234	44477	36584	37175	46591	45727	46670	46355	44787
27	42618	48095	41010	43777	43157	36584	38217	46908	45492	45806	46277	45099
28	42618	48413	41010	44010	41696	37620	38367	46828	45669	45492	45806	44943
29	42772	47145	41239	45099	---	38741	37695	47699	45570	46041	45727	44399
30	42849	47303	41162	45806	---	38666	38068	46908	45335	45727	46277	42233
31	42926	---	41162	46828	---	38890	---	47066	---	46120	46987	---
MAX	47620	48413	47699	46828	52667	41010	39569	47699	47224	46670	46987	47145
MIN	41772	42541	41010	39418	39166	36141	37175	38666	44477	44554	45570	42233
a	4127.65	4130.45	4126.50	4130.15	4126.85	4125.00	4124.45	4130.30	4129.20	4129.70	4130.25	4127.20
b	-4061	+4377	-6141	+5666	-5132	-2806	-822	+8998	-1731	+785	+867	-4754
c	70560	3830	11910	19470	42510	65070	62040	19070	94750	93000	93760	125400

CAL YR 1985 b -1456

WTR YR 1986 b -4754

SACRAMENTO RIVER BASIN

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 and Electric Co.

REVISED RECORDS.--WDR CA-78-4: 1977 (monthly and yearly summaries).

GAGE.--Water-stage recorder. Datum of gage is 2,811.00 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--No estimated daily discharges. 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 and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (adjusted for diversion to Belden powerplant).--17 years, 1,187 ft³/s, 860,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,040 ft³/s, Nov. 18, 1974, gage height, 8.89 ft; minimum daily, 2.3 ft³/s, Oct. 25, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,800 ft³/s, Feb. 19, gage height, 7.43 ft; minimum daily, 53 ft³/s, Nov. 26.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	62	62	61	61	63	65	141	141	140	140	137
2	59	62	62	61	61	63	65	142	141	141	140	61
3	58	61	62	61	61	63	65	141	141	140	141	61
4	60	62	63	61	61	63	65	142	140	140	140	62
5	60	63	63	62	62	63	65	140	142	140	140	62
6	59	62	63	61	61	63	65	141	142	140	140	61
7	59	67	63	61	61	63	65	141	140	140	140	61
8	61	65	62	62	62	63	65	141	141	140	140	62
9	63	63	62	61	63	62	65	140	140	140	140	61
10	68	61	63	62	62	64	65	141	140	140	140	60
11	64	62	63	61	63	64	65	141	140	141	140	61
12	62	62	62	61	63	63	64	141	140	141	140	61
13	60	63	62	62	62	63	64	141	140	141	140	61
14	61	62	62	61	64	63	64	141	140	141	140	61
15	61	62	62	61	63	63	64	141	140	140	141	61
16	68	62	62	61	128	63	64	141	141	141	140	61
17	61	62	62	62	552	65	64	142	163	140	140	61
18	60	62	62	61	1060	64	64	141	140	140	140	61
19	61	62	62	61	1490	64	64	147	140	141	140	60
20	58	62	62	61	551	64	63	146	140	141	140	61
21	64	63	62	62	74	64	64	146	140	141	140	61
22	67	63	63	62	62	63	63	146	140	140	140	61
23	111	63	64	62	63	62	62	146	140	140	141	61
24	78	62	63	62	63	63	70	146	141	140	141	64
25	95	63	61	62	63	64	145	146	141	140	140	60
26	65	53	61	62	63	65	146	146	140	140	140	60
27	64	63	62	61	62	65	146	146	141	140	140	60
28	62	62	63	61	63	65	146	146	140	140	140	59
29	64	62	61	62	---	65	146	143	140	140	141	60
30	70	63	61	62	---	65	142	140	140	140	140	60
31	61	---	61	61	---	65	---	141	---	140	140	---
TOTAL	2023	1866	1928	1904	5224	1972	2420	4424	4235	4349	4345	1903
MEAN	65.3	62.2	62.2	61.4	187	63.6	80.7	143	141	140	140	63.4
MAX	111	67	64	62	1490	65	146	147	163	141	141	137
MIN	58	53	61	61	61	62	62	140	140	140	140	59
AC-FT	4010	3700	3820	3780	10360	3910	4800	8780	8400	8630	8620	3770
MEAN a	1245	155	369	521	1246	1193	1103	421	1686	1599	1614	2147
AC-FT a	76580	9200	22710	32040	69180	73340	65620	25860	100300	98350	99250	127800
CAL YR 1985	TOTAL	33500	MEAN	91.8	MAX	161	MIN	49	AC-FT	66450	MEAN a	1026
									AC-FT a	743000		

SACRAMENTO RIVER BASIN

11401500 INDIAN CREEK NEAR CRESCENT MILLS, CA

LOCATION.--Lat 40°04'41", long 120°55'37", in SW 1/4 SW 1/4 sec.25, T.26 N., R.9 E., Plumas County, Hydrologic Unit 18020122, on left bank 0.7 mi upstream from Dixie Creek, and 1.5 mi southwest of Crescent Mills.

DRAINAGE AREA.--739 mi².

PERIOD OF RECORD.--January 1906 to December 1909, September 1911 to March 1918, October 1930 to current year.

REVISED RECORDS.--WSP 1445: 1906-9. WSP 1931: 1956, 1958(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,500 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to March 1918, nonrecording gage at site 800 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow affected by storage in Round Valley Reservoir since 1865, capacity 5,000 acre-ft, Taylor Lake since 1929, capacity, 380 acre-ft, and Antelope Lake since November 1963, capacity, 22,500 acre-ft. Diversions upstream from station for irrigation of about 11,800 acres of which 9,700 acres are in Indian and Genesee Valleys. See schematic diagram of North Fork Feather River basin.

AVERAGE DISCHARGE.--65 years (water years 1907-9, 1912-17, 1931-86), 565 ft³/s, 409,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,200 ft³/s, Feb. 18, 1986, gage height, 20.80 ft; minimum daily, 0.90 ft³/s, July 28, 29, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 17	1045	2,660	7.28	Mar. 8	2315	12,300	13.37
Feb. 18	1045	*36,200	*20.80				

Minimum daily, 28 ft³/s, Sept. 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	84	163	158	932	2910	1570	687	374	77	47	38
2	45	84	365	169	1250	2650	1510	651	347	75	46	36
3	44	84	450	164	1270	2500	1390	700	317	72	43	35
4	47	84	303	185	960	2380	1300	841	291	68	43	32
5	44	81	228	473	779	2290	1230	824	266	68	38	30
6	51	79	201	619	655	2170	1190	824	241	67	37	28
7	48	79	196	386	557	2750	1290	785	229	67	37	29
8	49	79	212	289	479	8400	1430	746	225	67	38	30
9	52	81	183	244	416	9730	1260	693	208	50	39	34
10	50	114	159	216	393	6900	1190	744	196	50	33	37
11	47	117	143	194	372	5780	1160	756	174	50	33	39
12	50	106	121	189	429	4810	1140	685	169	46	35	38
13	49	92	126	178	943	4010	1110	637	170	45	35	37
14	52	92	131	177	2890	3250	1040	616	158	42	31	35
15	52	97	132	223	6960	2750	977	610	134	41	32	51
16	52	103	126	504	8090	2400	921	608	124	38	36	62
17	52	108	121	2280	15400	2050	881	578	119	34	35	86
18	51	105	120	1320	33000	1820	828	568	117	37	38	87
19	58	93	117	886	23200	1710	766	571	112	40	37	98
20	60	97	116	818	13300	1690	748	518	114	40	32	101
21	91	98	111	649	7580	1660	770	507	115	36	30	84
22	99	97	110	538	5440	1640	817	482	113	39	32	86
23	101	101	110	560	4580	1620	959	455	107	40	35	83
24	96	117	110	480	4000	1630	1010	433	109	45	34	90
25	91	134	111	416	3690	1610	934	410	101	44	32	111
26	88	136	108	384	3290	1530	839	401	99	51	29	136
27	91	139	106	365	3110	1520	780	395	98	57	29	228
28	91	178	108	352	3040	1540	764	380	88	53	36	174
29	87	249	114	406	---	1580	754	378	83	52	34	139
30	85	217	138	609	---	1600	720	374	80	46	33	119
31	83	---	151	866	---	1610	---	348	---	48	35	---
TOTAL	2004	3325	4990	15297	147005	90490	31278	18205	5078	1585	1104	2213
MEAN	64.6	111	161	493	5250	2919	1043	587	169	51.1	35.6	73.8
MAX	101	249	450	2280	33000	9730	1570	841	374	77	47	228
MIN	44	79	106	158	372	1520	720	348	80	34	29	28
AC-FT	3970	6600	9900	30340	291600	179500	62040	36110	10070	3140	2190	4390

CAL YR 1985 TOTAL 96806 MEAN 265 MAX 2320 MIN 22 AC-FT 192000
 WTR YR 1986 TOTAL 222574 MEAN 884 MAX 33000 MIN 28 AC-FT 639800

SACRAMENTO RIVER BASIN

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 Keddle.

DRAINAGE AREA.--184 mi².

PERIOD OF RECORD.--October 1933 to current year. Prior to October 1953 published as "at Keddle." Records for October 1911 to September 1933 at site 1.2 mi downstream not equivalent owing to inflow.

REVISED RECORDS.--WSP 1041: 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 3,129.86 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records excellent. 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.

AVERAGE DISCHARGE.--53 years, 278 ft³/s, 201,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft³/s, Feb. 17, 1986, gage height, 14.88 ft, from rating curve extended above 5,200 ft³/s on basis of slope-area measurement of peak flow; minimum, 3.8 ft³/s, Aug. 12, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 17	0115	3,210	6.64	Feb. 17	2300	*19,600	*14.88
Feb. 2	1,830	1910	5.45	Mar. 8	0900	7,680	9.71

Minimum daily, 24 ft³/s, Sept. 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	47	100	118	1130	682	479	242	175	52	32	29
2	38	47	382	127	1530	620	444	238	193	53	30	27
3	35	46	484	114	1300	572	402	265	165	48	30	29
4	35	46	246	150	799	539	378	300	147	48	32	31
5	34	44	179	825	560	519	360	279	135	48	34	28
6	35	44	164	513	443	486	352	283	125	48	31	24
7	40	45	171	280	370	1250	421	255	115	49	29	26
8	37	44	192	208	321	5110	379	248	111	48	29	26
9	45	45	144	171	283	2490	349	239	96	45	29	29
10	43	64	118	148	256	2390	342	255	94	43	29	29
11	41	61	101	133	236	1970	337	242	92	45	29	32
12	41	55	89	124	302	1620	339	233	89	44	26	27
13	40	52	85	116	1430	1310	315	231	80	41	27	31
14	39	51	82	116	4390	1030	296	229	77	41	25	32
15	40	52	80	177	6980	910	283	227	77	39	25	32
16	39	58	78	850	6030	804	276	220	74	37	26	40
17	40	63	75	1910	14100	691	267	214	71	38	27	64
18	39	58	73	761	14200	601	255	215	75	38	28	67
19	40	52	71	492	9220	559	244	222	75	38	29	81
20	40	52	69	457	5010	560	245	215	70	36	28	85
21	65	52	67	350	2890	566	263	204	67	34	30	61
22	63	51	66	290	1900	574	285	190	63	35	29	55
23	57	53	65	346	1420	575	326	181	66	33	27	50
24	55	73	65	292	1140	606	306	172	66	37	29	54
25	51	92	65	250	982	572	278	175	60	36	29	91
26	49	85	64	228	857	519	258	180	57	45	30	132
27	48	76	64	213	790	503	246	178	54	44	28	241
28	47	103	64	204	740	505	257	178	52	40	27	120
29	47	223	68	297	---	503	257	175	48	36	25	91
30	45	144	111	705	---	500	247	184	52	34	27	83
31	46	---	113	1160	---	491	---	179	---	32	29	---
TOTAL	1350	1978	3795	12125	79609	30627	9486	6848	2721	1285	885	1747
MEAN	43.5	65.9	122	391	2843	988	316	221	90.7	41.5	28.5	58.2
MAX	65	223	484	1910	14200	5110	479	300	193	53	34	241
MIN	34	44	64	114	236	486	244	172	48	32	25	24
AC-FT	2680	3920	7530	24050	157900	60750	18820	13580	5400	2550	1760	3470

SACRAMENTO RIVER BASIN

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 (destroyed by flood of February 1986).

GAGE.--Water-stage recorder. Elevation of gage is 2,120 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Low and medium flow regulated by Rock Creek Dam 0.7 mi upstream. Most of the flow is diverted to Rock Creek powerplant (station 11403800). Diversion to Rock Creek powerplant began on Feb. 28, 1950. Records of daily discharge since October 1981 are available in files of the Geological Survey. See schematic diagram of North Fork Feather River Basin.

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

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 79,400 ft³/s, Feb. 19, gage height, unknown, on basis of slope-area measurement of peak discharge; minimum daily, 79 ft³/s, Oct. 1-3.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1985 TO FEBRUARY 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	159	211	310	1420							
2	79	101	223	299	2080							
3	79	107	222	296	2200							
4	93	176	211	299	359							
5	285	220	213	330	254							
6	308	225	211	318	249							
7	310	220	222	304	252							
8	308	217	227	293	254							
9	251	226	225	289	254							
10	212	234	228	293	260							
11	212	231	283	296	260							
12	212	257	297	276	240							
13	213	305	291	285	501							
14	212	256	313	288	10100							
15	212	225	300	293	20500							
16	212	229	298	312	19300							
17	215	227	289	3740	---							
18	212	226	279	865	---							
19	212	221	277	449	---							
20	213	220	278	377	---							
21	212	221	279	369	---							
22	213	220	281	336	---							
23	212	231	291	252	---							
24	212	230	293	246	---							
25	212	223	295	250	---							
26	212	221	294	257	---							
27	212	226	289	263	---							
28	213	224	295	263	---							
29	219	237	291	258	---							
30	220	213	294	258	---							
31	216	---	300	1110	---							
TOTAL	6482	6528	8300	14074	---							
MEAN	209	218	268	454	---							
MAX	310	305	313	3740	---							
MIN	79	101	211	246	---							
AC-FT	12860	12950	16460	27920	---							
a	84200	17360	35540	88330	81770	88390	147300	91280	120500	101000	103100	132800

a Diversion, in acre-feet, to Rock Creek powerplant, provided by Pacific Gas and Electric Co.

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (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 (station 11404100) that discharges into Grizzly Creek. Figures given herein, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 106,720 acre-ft, June 8-10, 1982, elevation, 5,157.6 ft; minimum, 12,330 acre-ft, Feb. 27, 1929, elevation, 5,090.7 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 105,420 acre-ft, Mar. 8, elevation, 5,156.9 ft; minimum, 42,618 acre-ft, Dec. 31, elevation, 5,117.9 ft.

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

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 (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47977	43831	45335	42751	54450	97220	102109	101926	104497	102843	93127	87540
2	47558	43831	46027	43426	55335	97938	102109	102293	104313	102293	93127	87023
3	47139	43831	46999	43561	55632	98478	101744	103026	104128	101744	93127	86506
4	46859	43831	47278	43831	55632	99201	102109	102293	103759	101198	93127	85989
5	46720	43966	47558	44924	55781	99743	101926	103944	103576	101016	93127	85647
6	46720	43966	47558	45335	56377	100105	101926	103944	103759	101016	92071	85133
7	46582	43966	47698	45472	56228	102293	101926	103759	103944	100833	91544	84619
8	46027	44101	47838	45472	56377	105420	101744	103759	104128	100469	91017	83937
9	45888	44238	47977	45888	56526	104628	101744	104128	104128	100105	90668	83427
10	45611	44375	47977	45888	56675	104128	101744	104313	104128	99743	90668	83087
11	45335	44375	47838	46166	56824	103576	101744	104313	104128	99020	90668	82577
12	45335	44375	47558	46166	57274	103209	101744	104682	103928	99201	90144	82071
13	45335	44512	47139	46166	58630	102843	101744	105051	104128	99201	89795	81584
14	45198	44512	46720	46304	62458	102476	101198	105051	103928	99020	89621	80889
15	44924	44512	46304	46582	65109	102293	101198	105051	103928	98659	89273	80386
16	44924	44619	46166	47698	68434	102293	101016	105051	103928	98297	89273	80051
17	44787	44619	45611	48823	71649	102109	101016	105236	103759	97938	89273	80051
18	44619	44619	45198	49247	78381	101926	101016	104867	103759	97400	89273	79716
19	44512	44619	44787	49530	82577	101744	100833	105236	103576	97400	88926	79548
20	44512	44619	44512	50100	85818	101744	100833	105236	103576	97400	88752	79716
21	44619	44787	44101	50100	89273	101562	101016	104867	103576	97400	88752	79716
22	44512	44787	43696	50100	92247	101562	101744	104867	103392	97041	88926	79548
23	44375	44787	43291	50528	93658	101562	102109	104682	103576	96502	88926	79381
24	43966	44924	43021	50814	94324	101562	102109	104497	103392	95967	87885	79213
25	43831	44924	42751	50957	94543	101562	102109	104497	103209	95433	87885	79381
26	43696	44924	42751	51100	95076	101562	101926	104313	103026	95076	87885	79548
27	43831	44924	42886	51245	95789	101562	101926	104128	102843	95255	87885	79716
28	43831	44924	42886	51389	96502	101562	101926	104128	102843	95076	87540	80051
29	43831	45198	43021	51967	---	101744	101926	103944	102843	94543	87540	79883
30	43831	45335	43021	52837	---	101744	101926	103944	102843	94189	87540	79548
31	43831	---	42618	53861	---	101744	---	104682	---	93658	87540	---
MAX	47977	45335	47977	53861	96502	105420	102109	105236	104497	102843	93127	87540
MIN	43696	43831	42618	42751	54450	97220	100833	101926	102843	93658	87540	79213
a	5118.8	5119.9	5117.9	5125.9	5152.0	5154.9	5115.0	5156.5	5155.5	5150.4	5146.9	5142.2
b	-4567	+1504	-2717	+11243	+42641	+5242	+182	+2756	-1840	-9184	-6118	-7992

CAL YR 1985 b +7135

WTR YR 1986 b +31150

a Elevation, in feet at end of month.

b Storage contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 September 1986.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and 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 draw down and 5,021.95 ft, crest of spillway. Water is received from Milk Ranch Conduit and release from Bucks Lake near Bucks Lodge (station 11403500). Most of the water is diverted through Buck Creek tunnel (station 11404100) and discharges into Grizzly Creek for power development downstream. Records since October 1980 are available in the files of the Geological Survey. Figures given herein, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to Geological Survey standards.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,091 acre-ft, Mar. 8, elevation, 5,023.8 ft; minimum, 3,006 acre-ft, Sept. 30, elevation, 4,998.4 ft.

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

4,980	1,314	5,020	5,573
4,990	2,171	5,030	6,981
5,000	3,175	5,040	8,524
5,010	4,307		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4464	4574	4635	4635	5231	5667	4367	5547	4936	5231	5309	5231
2	4476	4574	4722	4660	5361	5573	4416	5218	5101	5218	5375	5218
3	4488	4574	4760	4673	5427	5493	4501	4974	5296	5322	5388	5101
4	4488	4574	4772	4735	5348	5414	4513	4785	5454	5348	5127	4999
5	4586	4574	4797	4860	5012	5296	4513	4710	5493	5401	5127	5012
6	4586	4574	4810	4910	4760	5205	4513	4822	5427	5401	5153	5205
7	4488	4574	4835	4948	4673	5708	4574	4885	5348	5338	5153	5401
8	4635	4574	4847	4974	4722	6091	4611	4835	5218	5348	5127	5493
9	4549	4586	4860	4999	4772	6022	4635	4586	5231	5401	5375	5493
10	4525	4598	4623	5012	4810	5967	4648	4623	5361	5427	5375	5533
11	4501	4598	4331	5037	4860	5912	4648	4598	5440	5414	5218	5507
12	4501	4598	4236	5050	4923	5884	4660	4574	5467	5427	5283	5480
13	4501	4598	4141	5012	5101	5857	4648	4537	5348	5427	5322	5480
14	4513	4598	4145	4760	5520	5830	4611	4513	5427	5309	5335	5480
15	4586	4598	4177	4797	5843	5816	4611	4611	5427	5257	5335	5493
16	4464	4598	4130	4923	5884	5789	4635	4598	5401	5257	5361	5480
17	4586	4598	4130	5050	5925	5748	4673	4623	5401	5231	5388	5348
18	4537	4598	4118	5114	5967	5613	4722	4586	5348	5375	5309	5348
19	4574	4611	4106	5166	5980	5493	4810	4697	5454	5427	5335	5283
20	4574	4611	4106	4948	5980	5348	4910	4857	5335	5440	5520	4785
21	4343	4611	4094	4835	5980	5179	4772	4961	5309	5309	5361	4307
22	4130	4611	4083	4785	5871	5012	4452	4999	5335	5114	5283	4248
23	4153	4611	4153	4735	5547	4847	4416	4986	5205	5114	5296	4130
24	4319	4623	4488	4722	5427	4697	4648	5025	5270	5153	5283	4331
25	4379	4623	4648	4760	5694	4549	4722	5089	5257	5140	5520	4319
26	4574	4623	4648	4785	5694	4404	4797	5153	5283	5427	5388	4319
27	4574	4623	4648	4810	5560	4295	4948	5205	5309	5427	5270	4094
28	4574	4623	4660	4772	5735	4224	5127	5296	5309	5283	5309	3624
29	4574	4623	4673	4822	---	4189	5309	5440	5322	5309	5322	3016
30	4574	4635	4488	4948	---	4248	5547	5440	5244	5283	5322	3006
31	4574	---	4623	5101	---	4319	---	5101	---	5286	5322	---
MAX	4635	4635	4860	5166	5980	6091	5547	5547	5493	5440	5520	5533
MIN	4130	4574	4083	4635	4673	4189	4367	4513	4936	5114	5127	3006
a	5012.2	5012.7	5012.6	5016.4	5021.2	5010.1	5019.8	5016.4	5017.5	5017.8	5018.1	4998.4
b	+110	+61	-12	+478	+634	-1416	+1228	-446	+143	+42	+36	-2316

CAL YR 1985 b -187

WTR YR 1986 b -1458

SACRAMENTO RIVER BASIN

11404100 BUCKS CREEK TUNNEL OUTLET NEAR STORRIE, CA

LOCATION.--Lat 39°53'03", long 121°13'42", in NW 1/4 NW 1/4 sec.5, T.23 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on right bank near outlet of Bucks Creek tunnel 0.3 mi upstream from Grizzly Creek, 1.1 mi south of Lower Bucks Lake, and 5.5 mi southeast of Storrie.

PERIOD OF RECORD.--October 1985 to September 1986. Records of daily discharge since October 1976 are available in files of the Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 4,900 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Tunnel diverts from Lower Bucks Lake (station 11403520). Water is used for power at Bucks Creek powerplant. See schematic diagram of North Fork Feather River basin.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 472 ft³/s, Mar. 9, 10; minimum daily, 0.63 ft³/s, Jan. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	207	1.2	1.2	1.2	.72	124	352	243	265	242	210	66
2	207	1.2	1.2	.98	.72	124	354	241	266	241	.72	266
3	190	1.2	1.2	.64	79	123	356	211	269	242	.72	326
4	74	1.2	1.2	.64	208	122	359	180	270	242	159	320
5	.64	1.2	1.2	.64	203	142	359	252	221	71	284	207
6	29	1.2	1.2	.64	144	246	360	277	164	.72	255	160
7	157	1.2	1.2	.64	69	177	362	309	120	161	288	162
8	90	1.2	1.2	.64	.73	467	365	282	120	240	288	219
9	163	1.2	1.2	.63	.69	472	366	257	120	198	19	242
10	156	1.2	115	.64	.64	472	366	256	120	232	.72	251
11	133	1.2	239	.64	.64	471	367	271	120	200	144	287
12	.66	1.2	260	.64	.66	470	370	304	122	.74	167	280
13	.64	1.2	256	26	.68	471	372	304	125	.72	167	269
14	90	1.2	207	139	.72	469	374	304	124	135	167	259
15	53	1.2	206	.64	.72	469	355	303	125	214	108	256
16	87	1.2	237	.68	.75	469	329	304	125	214	.72	221
17	2.3	1.2	165	.68	.86	466	331	285	124	214	.72	202
18	87	1.2	220	.64	.83	462	319	285	125	132	75	258
19	.82	1.2	220	.64	.82	459	288	285	125	.78	102	260
20	.64	1.2	220	136	.77	455	290	286	125	.72	103	285
21	132	1.2	220	72	.72	448	285	289	124	171	102	241
22	205	1.2	219	42	.72	441	253	345	124	287	89	128
23	181	1.2	171	42	33	436	251	379	124	286	.73	226
24	129	1.6	56	18	29	431	238	335	124	263	.72	146
25	173	45	1.2	.64	.72	426	271	321	124	283	205	36
26	.64	52	1.2	.64	.72	420	298	323	124	2.9	98	175
27	.64	29	1.2	.64	57	416	255	326	81	.72	77	212
28	.68	1.2	1.2	48	119	412	248	299	.72	155	107	288
29	1.2	1.2	1.2	9.7	---	393	236	278	.72	246	61	327
30	1.2	1.2	47	.72	---	348	240	281	103	284	.72	259
31	1.2	---	67	.72	---	350	---	275	---	283	.72	---
TOTAL	2554.26	158.8	3141.8	547.91	954.83	11651	9569	8890	4104.44	5243.30	3281.49	6834
MEAN	82.4	5.29	101	17.7	34.1	376	319	287	137	169	106	228
MAX	207	52	260	139	208	472	374	379	270	287	288	327
MIN	.64	1.2	1.2	.63	.64	122	236	180	.72	.72	.72	.36
AC-FT	5070	315	6230	1090	1890	23110	18980	17630	8140	10400	6510	13560
WTR YR 1986	TOTAL	56930.83	MEAN	156	MAX	472	MIN	.63	AC-FT	112900		

SACRAMENTO RIVER BASIN

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 September 1986. Records of daily discharge since October 1975 are available in files of the Geological Survey.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,320 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by diversion dam 0.2 mi upstream. There is considerable inflow upstream from the diversion dam from Bucks Creek tunnel outlet (station 11404100). Most of the flow is diverted to Bucks Creek powerplant (station 11403700) on the North Fork Feather River. See schematic diagram of North Fork Feather River basin.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,870 ft³/s, Feb. 17, gage height, 9.54 ft, from rating curve extended above 260 ft³/s on basis of computation of spill over dam of peak flow; minimum daily, 2.4 ft³/s, many days November to January.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	3.3	2.4	2.5	3.0	3.1	93	3.8	4.1	4.2	4.1	4.1
2	4.2	2.4	2.9	2.5	3.2	3.0	63	4.4	4.2	4.2	4.2	4.1
3	4.2	2.4	2.7	2.4	3.1	3.0	53	4.5	4.1	4.2	4.2	4.1
4	4.1	2.4	2.6	2.6	3.0	2.9	48	4.4	4.0	4.2	4.2	4.1
5	4.1	2.4	2.6	84	2.9	2.9	47	4.4	4.1	4.2	4.2	4.1
6	4.2	2.4	2.5	2.6	2.8	2.8	65	4.4	4.1	4.2	4.1	4.1
7	4.1	2.4	2.5	2.5	2.8	575	89	4.4	4.1	4.2	4.1	4.1
8	4.1	2.4	2.5	2.5	2.7	998	64	4.4	4.1	4.1	4.2	4.1
9	4.1	2.4	2.5	2.5	2.7	329	55	4.3	4.1	4.2	4.2	4.1
10	4.1	2.5	2.5	2.4	2.7	250	56	4.3	4.1	4.2	4.2	4.1
11	4.1	2.4	2.4	2.4	2.7	211	76	4.3	4.1	4.2	4.2	4.2
12	4.1	2.4	2.5	2.4	2.7	184	101	4.3	4.1	4.2	4.1	4.2
13	4.1	2.4	2.5	2.4	139	168	81	4.3	4.1	4.2	4.2	4.2
14	4.1	2.4	2.4	2.5	795	149	71	4.3	4.0	4.2	4.1	4.2
15	4.1	2.4	2.4	2.5	712	144	52	4.3	4.0	4.2	4.1	4.1
16	4.1	2.4	2.4	132	918	133	15	4.3	4.0	4.2	4.1	4.2
17	4.2	2.4	2.4	144	3250	124	13	4.3	4.0	4.2	4.1	4.1
18	4.2	2.4	2.5	2.7	1870	116	8.4	4.3	4.0	4.1	4.1	4.2
19	4.1	2.4	2.4	2.6	1040	113	2.9	4.3	4.0	4.2	4.1	4.2
20	4.1	2.4	2.4	2.6	547	112	2.9	4.3	4.0	4.2	4.1	4.2
21	4.1	2.4	2.4	2.6	367	108	2.9	4.3	4.0	4.2	4.1	4.2
22	4.1	2.4	2.4	2.6	322	109	2.9	4.2	4.0	4.1	4.1	4.1
23	4.1	2.4	2.4	2.6	441	124	3.9	4.3	4.0	4.2	4.1	4.2
24	4.1	2.5	2.4	2.5	307	112	3.2	4.3	4.0	4.2	4.1	4.2
25	4.1	12	2.4	2.5	166	110	2.8	4.3	4.0	4.2	4.1	4.3
26	4.1	2.4	2.4	2.5	54	116	2.8	4.3	4.0	4.2	4.1	4.4
27	4.1	6.7	2.4	2.5	3.2	130	2.8	4.2	4.1	4.2	4.1	4.3
28	4.1	2.4	2.4	2.5	3.1	128	2.8	4.2	4.2	4.2	4.1	4.2
29	4.1	2.5	2.5	2.8	---	96	2.8	4.2	4.2	4.2	4.1	4.2
30	4.1	2.4	2.5	97	---	98	2.7	4.2	4.2	4.2	4.1	4.1
31	4.2	---	2.4	106	---	96	---	4.2	---	4.2	4.2	---
TOTAL	127.8	87.1	76.6	628.7	10968.6	4850.7	1085.8	133.0	122.0	129.9	128.1	125.0
MEAN	4.12	2.90	2.47	20.3	392	156	36.2	4.29	4.07	4.19	4.13	4.17
MAX	4.2	12	2.9	144	3250	998	101	4.5	4.2	4.2	4.2	4.4
MIN	4.1	2.4	2.4	2.4	2.7	2.8	2.7	3.8	4.0	4.1	4.1	4.1
AC-FT	253	173	152	1250	21760	9620	2150	264	242	258	254	248
a	5110	1010	8220	7820	9770	21430	21110	19610	7570	9180	6100	13060

WTR YR 1986 TOTAL 18463.3 MEAN 50.6 MAX 3250 MIN 2.4 AC-FT 36620

a Diversion, in acre-feet, to Bucks Creek powerplant, provided by Pacific Gas and Electric Co.

SACRAMENTO RIVER BASIN

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 (destroyed by flood of February 1986). Records of daily discharge since October 1981 are available in files of the Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 1,480 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. 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 and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period October 1985 to February 1986, about 86,000 ft³/s, Feb. 19, gage height, unknown, on basis of flood routing the peak discharge between North Fork Feather River below Rock Creek Diversion Dam and North Fork Feather River at Pulga (stations 11403200, 11404500); minimum daily, 48 ft³/s, Oct. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	203	163	157	3100							
2	253	228	582	157	3360							
3	312	66	405	154	3700							
4	308	71	218	216	1270							
5	305	82	204	671	319							
6	309	136	158	218	254							
7	257	162	158	171	223							
8	162	161	163	157	200							
9	161	162	160	160	180							
10	161	163	156	157	169							
11	161	176	157	157	158							
12	160	175	157	157	362							
13	160	178	157	157	2760							
14	160	165	156	178	15500							
15	161	170	154	178	25200							
16	160	161	156	1710	25100							
17	160	163	158	6220	39500							
18	158	163	158	1770	---							
19	160	163	160	324	---							
20	159	162	160	257	---							
21	167	161	157	215	---							
22	160	162	157	200	---							
23	164	165	157	189	---							
24	159	222	158	162	---							
25	160	213	158	156	---							
26	160	161	156	158	---							
27	160	165	157	158	---							
28	161	167	158	158	---							
29	161	358	166	239	---							
30	163	174	154	454	---							
31	163	---	156	3340	---							
TOTAL	5653	5058	5674	18755	---							
MEAN	182	169	183	605	---							
MAX	312	358	582	6220	---							
MIN	48	66	154	154	---							
AC-FT	11210	10030	11250	37200	---							
a	96230	25230	67930	132000	112300	0	0	23660	127100	115100	114200	154700

a Diversion, in acre-feet, to Cresta powerplant, provided by Pacific Gas and Electric Co.

SACRAMENTO RIVER BASIN

11405300 WEST BRANCH FEATHER RIVER NEAR PARADISE, CA

LOCATION.--Lat 39°47'12", long 121°33'42", in SE 1/4 SE 1/4 sec.6, T.22 N., R.4 E., Butte County, Hydrologic Unit 18020121, on right bank 0.6 mi upstream from Griffin Gulch, and 4.0 mi northeast of Paradise.

DRAINAGE AREA.--110 mi².

PERIOD OF RECORD.--October 1957 to September 1986 (discontinued).

REVISED RECORDS.--WSP 2131: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,370 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 1, 1970, on left bank at same datum.

REMARKS.--Estimated daily discharges: Mar. 15-27, Apr. 25 to May 2. Records good. Dewey, Miners, and Hendricks Canals divert from headwaters of West Branch Feather River into Butte Creek basin for power development at DeSabra and Centerville plants of Pacific Gas and Electric Co. Upper Miocene Canal diverts about 50 ft³/s to Lime Saddle powerplant. Flow regulated by Round Valley Reservoir, usable capacity, 5,000 acre-ft and Philbrook Reservoir, capacity, 5,010 acre-ft.

AVERAGE DISCHARGE.--29 years, 324 ft³/s, 234,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,300 ft³/s, Dec. 22, 1964, gage height, 26.2 ft, from floodmarks, from rating curve extended above 14,000 ft³/s; minimum daily, 0.29 ft³/s, Aug. 24, 1977.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 5	1215	2,130	8.62	Feb. 17	1800	*25,900	*25.00
Jan. 16	2215	4,900	11.62	Mar. 8	0600	14,400	18.43
Jan. 31	0645	3,110	9.80				

Minimum daily, 2.0 ft³/s, several days during October and September.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	2.9	73	101	1930	801	877	270	234	18	3.2	15
2	3.5	2.9	685	99	1950	666	797	275	230	16	3.0	14
3	2.8	2.9	881	78	1510	620	686	527	206	14	4.7	13
4	2.7	2.9	302	197	1040	587	643	458	167	13	3.3	13
5	2.5	2.9	241	1340	806	561	617	506	133	12	3.2	13
6	2.4	2.8	159	642	657	517	621	481	103	14	4.6	15
7	2.3	2.8	144	298	539	2910	756	380	100	11	4.4	13
8	2.2	2.8	139	181	460	7940	680	390	94	10	4.3	12
9	2.0	2.8	102	131	389	2900	585	396	87	9.2	3.9	11
10	2.0	4.8	82	109	334	2950	540	417	81	8.4	3.8	12
11	2.0	3.9	67	95	297	2260	522	373	78	7.6	3.6	12
12	2.1	3.1	61	85	738	1930	518	335	74	7.1	4.3	7.0
13	2.5	2.9	56	81	2690	1720	453	337	72	6.8	3.9	2.0
14	2.5	2.8	50	90	7280	1500	410	339	67	6.3	3.9	2.0
15	2.5	2.8	44	133	7950	1750	409	334	62	6.4	3.9	2.0
16	2.5	2.8	39	1790	7540	1500	407	327	59	5.6	3.6	4.7
17	2.5	2.9	36	2440	19400	1350	400	328	54	6.3	3.6	70
18	2.5	2.9	35	1040	11000	1230	352	348	52	7.2	3.4	87
19	2.5	2.9	35	658	7790	1120	319	356	49	6.5	3.0	149
20	2.5	2.8	35	600	4710	1050	331	343	45	6.4	3.2	67
21	25	2.8	36	428	3080	1010	389	311	40	5.5	3.2	30
22	9.9	2.8	36	327	2230	990	412	244	38	5.3	3.2	15
23	26	2.9	35	315	1800	960	490	230	35	6.0	3.5	7.9
24	15	110	33	242	1510	950	373	215	32	6.8	4.2	139
25	7.2	111	39	202	1310	940	310	245	29	6.2	7.2	148
26	3.8	35	42	175	1150	920	295	263	27	6.5	26	269
27	3.5	18	39	157	1040	915	290	264	25	5.7	17	406
28	3.4	113	34	145	962	915	285	253	23	4.8	17	81
29	3.2	628	35	576	---	920	280	265	21	4.2	16	52
30	3.2	141	141	1440	---	916	275	287	20	3.8	15	50
31	3.1	---	106	2560	---	891	---	268	---	3.5	15	---
TOTAL	153.4	1224.8	3842	16755	92092	46189	14322	10365	2337	250.1	202.1	1731.6
MEAN	4.95	40.8	124	540	3289	1490	477	334	77.9	8.07	6.52	57.7
MAX	26	628	881	2560	19400	7940	877	527	234	18	26	406
MIN	2.0	2.8	33	78	297	517	275	215	20	3.5	3.0	2.0
AC-FT	304	2430	7620	33230	182700	91620	28410	20560	4640	496	401	3430

CAT. YR 1985 TOTAL 33968.6 MEAN 93.1 MAX 1590 MIN 1.2 AC-FT 67380

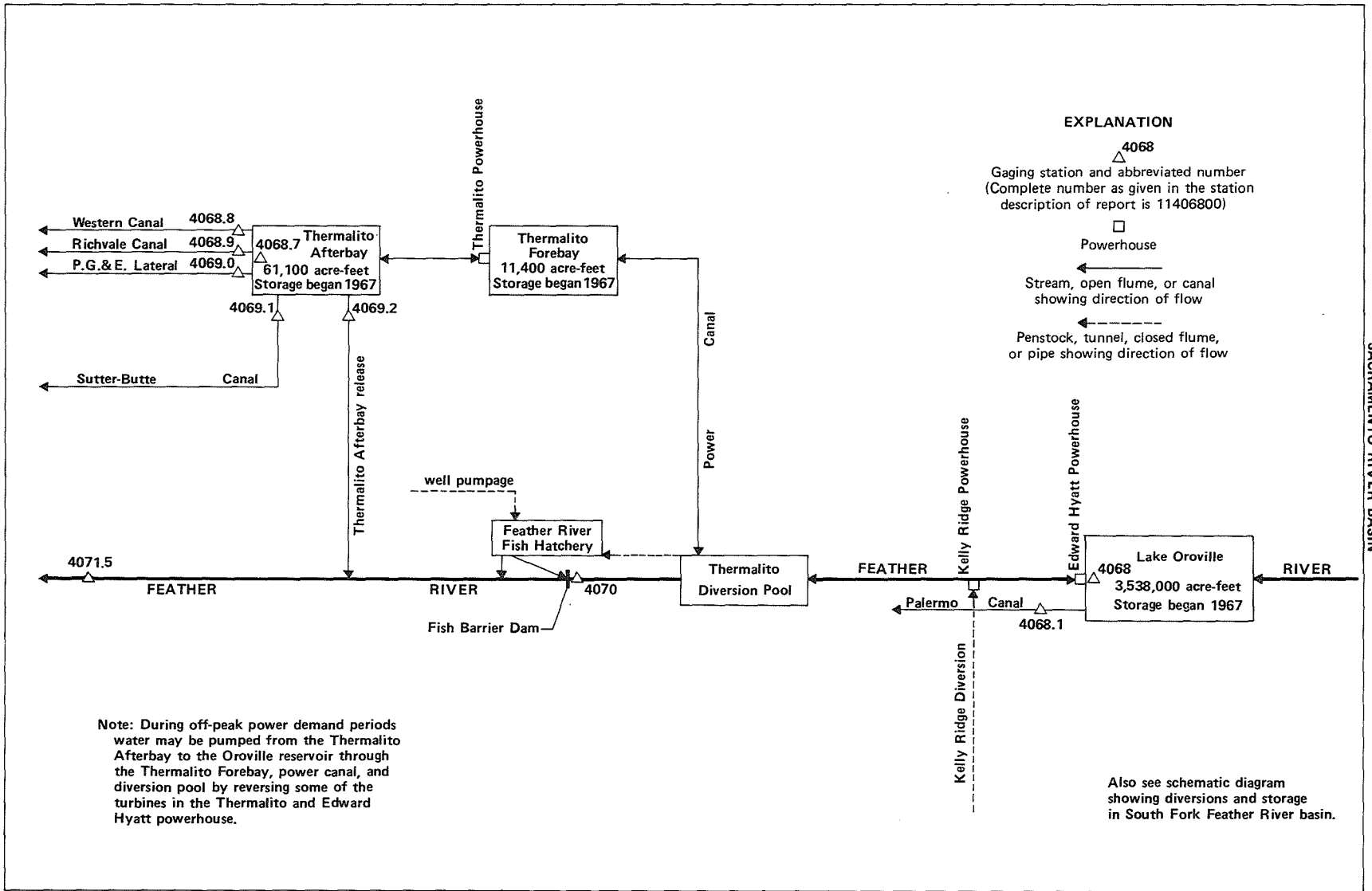


FIGURE 28. — Schematic diagram showing diversions and storage from Feather River at Lake Oroville.

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

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 powerhouse 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. See schematic diagram showing diversions and storage from Feather River at Lake Oroville. Maximum inflow of 266,000 ft³/s during a 2 hour period Feb. 17, 1986.

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. 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, 3,326,353 acre-ft, June 15, gage height 886.34 ft; minimum, 1,987,994 acre-ft, Nov. 23, gage height, 781.31 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

640	852,192	730	1,498,175	820	2,425,571
650	911,975	740	1,586,086	830	2,548,850
660	974,560	750	1,677,554	840	2,676,446
670	1,040,003	760	1,772,690	850	2,808,349
680	1,108,406	770	1,871,511	860	2,944,741
690	1,179,915	780	1,974,240	870	3,085,747
700	1,254,634	790	2,080,969	880	3,231,454
710	1,332,547	800	2,191,742	890	3,382,038
720	1,413,685	810	2,306,597	900	3,537,577

SACRAMENTO RIVER BASIN

11406800 LAKE OROVILLE NEAR OROVILLE, CA--Continued

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2127662	2053372	2011565	2101924	2460638	2897859	2883076	3192379	3298007	3246738	2934495	2761942
2	2123578	2049174	2019216	2102690	2494203	2894295	2880208	3192526	3301015	3233085	2931729	2751747
3	2116416	2049927	2030734	2096125	2522730	2888955	2878843	3205171	3306734	3219625	2937817	2745273
4	2108832	2046916	2037688	2102362	2541583	2881027	2876250	3220511	3310651	3214015	2937401	2738282
5	2106088	2043479	2043050	2121814	2555001	2872842	2892788	3224058	3309898	3207381	2926618	2730252
6	2109819	2038974	2047131	2132859	2565948	2863313	2911594	3228792	3308391	3210475	2915310	2725258
7	2109819	2033835	2052188	2137621	2574527	2870389	2924684	3227756	3311104	3199138	2902798	2729067
8	2110588	2032231	2057791	2141614	2587180	2914897	2936155	3228200	3319251	3186803	2895802	2720402
9	2105321	2030948	2061246	2145278	2598095	2903210	2947519	3227608	3315930	3176696	2893610	2711100
10	2102909	2032765	2063299	2145945	2603820	2887451	2959053	3236049	3315326	3165443	2849093	2704563
11	2100391	2031161	2061570	2149281	2610956	2864944	2968666	3245103	3316986	3151163	2887450	2697645
12	2102800	2028063	2066002	2154181	2626294	2838371	2987257	3243617	3316835	3142152	2876114	2690609
13	2106746	2024542	2071091	2160094	2663749	2812911	3008182	3243023	3315780	3143314	2865761	2690349
14	2106308	2018897	2074127	2165678	2752805	2787611	3019036	3243172	3318949	3131566	2853535	2696341
15	2105321	2013581	2078687	2170158	2863177	2775089	3031333	3242132	3326353	3116528	2846893	2686576
16	2105321	2011245	2078470	2196822	2947381	2773625	3045085	3242281	3321516	3100678	2841886	2678393
17	2101266	2013050	2078687	2243377	3184164	2780546	3058596	3244211	3316231	3086032	2847571	2674629
18	2094704	2009017	2078579	2269743	3268192	2789346	3071435	3253878	3311857	3069721	2834994	2672943
19	2096125	2004143	2077492	2287827	3249563	2797498	3087035	3250753	3307788	3063299	2825419	2664913
20	2100391	2000969	2077384	2304259	3210475	2805800	3102692	3248373	3301466	3066152	2818286	2668019
21	2097655	1996638	2079231	2317604	3164568	2811569	3111623	3250604	3306734	3056175	2812642	2675018
22	2093066	1990205	2081731	2326648	3102117	2816807	3124041	3248373	3314873	3041395	2807409	2670869
23	2091319	1987994	2078253	2336070	3053044	2832564	3136204	3247184	3308240	3027372	2800442	2665560
24	2089901	1993261	2079448	2342918	3008182	2839047	3145639	3250753	3300112	3016214	2802718	2660904
25	2087284	1990205	2082058	2352030	2975366	2838911	3152181	3259091	3290348	3001711	2793620	2653931
26	2089355	1989363	2082275	2359861	2955993	2839993	3166174	3263117	3278658	2997917	2784543	2654705
27	2091537	1988520	2083146	2364377	2932697	2840534	3179623	3266848	3267445	2995531	2777749	2661033
28	2087393	1993684	2084561	2367590	2910906	2841210	3182699	3272525	3266549	2982637	2767248	2668278
29	2083363	2001817	2088374	2378321	---	2843103	3190911	3275366	3271927	2971457	2758761	2666595
30	2071958	2007745	2092847	2399163	---	2869164	3193260	3281652	3259837	2957245	2752143	2660904
31	2065461	---	2097874	2429331	---	2880344	---	3287497	---	2945438	2757039	---
MAX	2127662	2053372	2097874	2429331	3268192	2914897	3193260	3287497	3326353	3246738	2937817	2761942
MIN	2065461	1987994	2011565	2096125	2460638	2773625	2876250	3192379	3259837	2945438	2752143	2653931
a	788.57	783.18	791.55	802.31	857.55	855.32	877.41	883.76	881.91	860.05	846.15	838.80
b	-66955	-57716	+90129	+331457	+481575	-30562	+312916	+94237	-27660	-314399	-188399	-96135
c	4149	1400	624	787	1071	2594	3784	6821	9537	10424	10121	5797
CAL YR 1985	b	-574810										
WTR YR 1986	b	+528488										

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

b Change in contents, in acre-feet.

c Unreviewed evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

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 of diversion from Kelly Ridge penstock for period April 1965 to October 1968 when Kelly Ridge penstock supplied the entire flow of Palermo Canal are in files of California district office of U.S. Geological Survey.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 547.67 ft above National Geodetic Vertical Datum of 1929 (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.

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.

AVERAGE DISCHARGE.--21 years, 11.2 ft³/s, 8,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 28 ft³/s, on several days during July to September 1967; no flow at times in some years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	3.2	1.2	2.3	2.1	2.2	3.2	12	21	21	19	20
2	17	3.2	1.2	2.3	2.1	2.2	3.2	13	21	21	19	20
3	17	3.2	1.1	2.3	2.1	2.2	3.2	16	21	21	19	20
4	17	3.2	1.1	2.3	2.1	2.2	3.2	16	22	21	20	20
5	17	3.2	1.1	2.3	2.1	2.2	3.9	15	22	21	20	20
6	17	3.2	1.1	2.3	2.1	2.2	5.2	12	22	21	20	20
7	15	3.2	1.1	2.3	2.1	2.2	4.0	12	21	21	20	20
8	14	3.2	1.1	2.3	2.1	2.2	3.3	12	21	21	20	20
9	13	3.2	1.1	2.3	2.1	2.2	3.3	12	21	21	19	20
10	12	3.2	1.1	2.3	2.1	2.2	3.3	12	21	21	19	20
11	12	3.2	1.8	2.3	2.1	2.2	3.3	12	21	21	19	20
12	12	3.2	2.2	2.3	2.1	2.2	3.3	12	21	21	19	20
13	12	3.2	2.2	2.3	2.2	2.2	3.3	13	21	21	19	20
14	12	3.2	2.2	2.3	2.2	2.2	3.3	14	21	21	19	20
15	12	3.2	2.2	2.3	2.2	2.2	3.3	14	21	21	19	20
16	12	3.2	2.3	2.3	2.3	2.2	3.3	16	21	21	19	19
17	12	3.2	2.3	2.3	2.3	2.2	3.3	18	21	21	19	16
18	12	3.2	2.3	2.3	2.3	2.2	3.4	20	21	21	19	15
19	12	3.2	2.3	2.4	2.3	2.1	4.4	21	21	20	20	15
20	12	3.2	2.3	2.4	2.3	2.2	6.8	21	21	19	20	15
21	8.5	3.2	2.3	2.4	2.3	2.2	8.4	21	21	19	20	15
22	5.7	3.2	2.3	2.4	2.3	2.2	8.4	21	21	20	20	15
23	5.7	3.2	2.3	2.4	2.3	2.2	8.5	21	21	19	20	16
24	5.7	3.2	2.3	2.4	2.3	2.2	8.6	21	21	19	20	10
25	4.7	3.2	2.3	2.4	2.3	2.2	8.7	21	21	19	21	7.3
26	4.3	3.2	2.3	2.4	2.3	2.2	9.3	21	21	19	21	7.3
27	4.3	2.0	2.3	2.4	2.2	2.5	11	21	21	19	21	7.4
28	4.3	1.3	2.4	2.2	2.2	3.2	12	21	21	19	21	7.3
29	4.3	1.3	2.4	2.1	---	3.2	12	21	21	19	21	7.3
30	4.3	1.3	2.4	2.2	---	3.1	12	21	21	19	21	7.3
31	3.7	---	2.4	2.2	---	3.2	---	21	---	19	21	---
TOTAL	331.5	89.1	59.0	71.7	61.5	72.3	172.4	524	633	627	614	479.9
MEAN	10.6	2.97	1.90	2.31	2.19	2.33	5.74	16.9	21.1	20.2	19.8	15.9
MAX	17	3.2	2.4	2.4	2.3	3.2	12	21	22	21	21	20
MIN	3.7	1.3	1.1	2.1	2.1	2.1	3.2	12	21	19	19	7.3
AC-FT	658	177	117	142	122	143	342	1040	1260	1240	1220	952

CAL YR 1985 TOTAL 3624.3 MEAN 9.92 MAX 20 MIN 1.1 AC-FT 7190
WTR YR 1986 TOTAL 3735.4 MEAN 10.2 MAX 22 MIN 1.1 AC-FT 7410

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (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 ft and 139.0 ft extreme operating levels. Normal operating range is 123 ft 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 during off-peak periods to be re-released through Thermalito powerplant for power generation during peak demand periods. Records, including extremes, represent total contents at 2400 hours. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the 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, 54,358 acre-ft, Nov. 15, gage height, 135.87 ft; minimum, 15,890 acre-ft, Sept. 1, gage height, 124.31 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

119	5,465	128	25,832
120	7,054	130	32,150
122	10,792	134	46,719
124	15,157	139	68,198
126	20,171		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25148	52018	49276	25621	24208	37998	21634	36010	25087	28751	51232	15890
2	26951	52599	51935	25711	22077	38250	29513	40701	24998	34346	46129	21250
3	32150	49560	53937	33392	23803	38829	33697	32618	23116	40036	31919	23259
4	38178	49925	52890	31162	26615	39011	40294	22216	23803	38250	25146	25831
5	40184	50006	52474	28688	29705	39412	32618	25711	27380	34896	28751	29194
6	36115	51358	51646	28751	32987	39595	27319	25413	30542	22946	32987	27968
7	35451	53769	50578	29577	35069	40627	28093	29290	29194	25413	38070	18778
8	33527	52890	48430	30705	32752	41484	30607	31688	23458	30251	38070	21579
9	35520	52308	47392	33087	30478	43414	31064	35382	26737	32385	33697	25087
10	37818	49074	48591	35277	31985	43951	33697	28972	28406	37568	21060	27319
11	39157	48310	52474	34175	34586	43759	37318	22467	27042	41484	24470	29865
12	35869	49641	50576	31820	37568	43682	33867	25771	28249	39156	29577	32518
13	31522	49925	47234	29801	39412	43070	26041	28312	29194	26951	32920	28187
14	29799	52890	46681	28688	46208	42614	26131	29253	25353	28909	37747	18727
15	29799	54358	44220	29417	45384	43414	26737	31688	18908	32385	37175	22467
16	27596	53475	44840	29641	46484	44762	27104	33936	21965	36115	35451	28625
17	28625	48994	44491	29577	44840	37926	26951	33867	27473	40036	23202	29929
18	33222	49074	44956	27104	38756	32285	26524	27380	30154	43147	29577	29577
19	30153	50210	46286	24734	37568	28531	23116	29929	34827	37318	31688	34414
20	25563	48792	46484	23059	36502	23921	19773	34931	40701	23803	32052	27906
21	26464	49925	44762	21250	35625	22160	23003	34414	32451	23602	31162	18188
22	29864	52391	42349	21579	35870	24266	21634	37247	21882	27165	30025	17033
23	30834	51977	45384	21332	36679	16861	22467	39668	23803	32752	28625	17381
24	31390	49803	43951	23717	36998	18086	24121	37926	27906	36962	20870	20627
25	33629	52101	41484	21141	37318	26131	27689	32618	33156	42614	24324	27042
26	30997	52101	40183	18778	37425	30380	24529	29290	38322	36679	26615	28312
27	27165	52474	39522	20119	37568	35069	17909	30025	42085	27473	27751	24529
28	26829	49925	37104	22160	37818	40812	23202	30316	33528	30705	32618	17481
29	27257	53350	34827	24005	---	44840	23918	31227	20119	35069	34586	16738
30	35625	51152	32285	26403	---	26131	30154	31919	23803	42880	34175	19273
31	40369	---	28187	25562	---	19959	---	30770	---	47592	24324	---
MAX	40369	54358	53937	35277	46484	44840	40294	40701	42085	47592	51232	34414
MIN	25148	48310	28187	18778	22077	16861	17909	22216	18908	22946	20870	15890
a	132.34	135.10	128.77	127.91	131.64	125.92	129.39	129.58	127.31	134.22	127.49	125.66
b	+18012	+10783	-22965	-2625	+12256	-17859	+10195	+616	-6967	+23789	-23268	-5051
c	1283	746	159	209	444	735	1054	1740	1992	2236	2093	1306
CAL YR 1985	b	-3084										
WTR YR 1986	b	+4671										

a Gage height, in feet, at end of month

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

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 Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--18 years, 313 ft³/s, 226,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,200 ft³/s, May 12, 1981, May 6,7, 1984; no flow for several months most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138	357	0	104			0	552	422	843	781	423
2	138	356	0	103			0	589	408	824	780	381
3	139	357	0	105			0	649	413	809	771	337
4	138	356	0	103			0	650	424	800	776	294
5	138	355	0	106			0	650	451	801	772	265
6	138	357	0	104			0	650	474	799	771	239
7	198	356	0	44			0	650	489	785	771	198
8	256	357	0	0			0	704	499	774	772	166
9	256	358	0	0			0	787	529	791	771	119
10	256	358	0	0			0	877	586	800	771	80
11	256	358	0	0			0	953	641	800	772	80
12	255	336	0	0			0	997	697	802	772	80
13	256	308	0	0			0	1050	747	802	766	68
14	272	308	0	0			0	1130	771	803	756	47
15	288	308	0	0			0	1150	775	817	745	25
16	307	307	0	0			0	1090	775	826	741	25
17	306	307	60	0			0	1020	775	826	741	25
18	306	308	106	0			0	967	775	824	729	25
19	306	297	107	0			0	895	774	816	720	25
20	306	284	107	0			0	798	825	800	704	25
21	318	284	106	0			15	722	873	797	680	25
22	333	283	105	0			34	653	917	793	650	25
23	332	284	106	0			50	569	979	798	632	25
24	346	283	108	0			50	518	999	801	619	25
25	357	282	107	0			49	501	998	801	601	25
26	358	283	106	0			63	462	998	801	574	25
27	357	282	105	0			93	377	973	800	546	25
28	357	283	104	0			135	348	924	801	521	25
29	357	108	105	0	---		256	371	898	789	476	25
30	357	0	106	0	---		438	401	884	781	434	83
31	357	---	105	0	---		---	413	---	781	433	---
TOTAL	8482	9060	1543	668	0	0	1183	22143	21693	24885	21348	3235
MEAN	273	302	49.7	21.5	0	0	39.4	714	723	802	688	107
MAX	358	358	108	106	0	0	438	1150	999	843	781	423
MIN	138	0	0	0	0	0	0	348	408	774	433	25
AC-FT	16820	17970	3060	1330	0	0	2350	43920	43030	49360	42340	6420
CAL YR 1985 TOTAL	134678.00		MEAN 368	MAX 1170	MIN 0	AC-FT 267100						
WTR YR 1986 TOTAL	114241.00		MEAN 312	MAX 1150	MIN 0	AC-FT 226600						

SACRAMENTO RIVER BASIN

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.

GAGE.--Water-stage recorder. Datum of gage is 100.47 ft above National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

REMARKS.--Canal diverts from Thermalito Afterbay; water is used for irrigation. The canal is part of the Oroville project. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--18 years, 116 ft³/s, 84,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 511 ft³/s, May 16, 1974; no flow for several months in each year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31						0	227	270	372	310	223
2	32						0	303	272	372	311	207
3	32						0	365	271	373	311	183
4	21						0	371	234	364	311	173
5	0						0	372	219	358	311	173
6	0						0	368	220	357	311	173
7	0						0	365	245	357	311	172
8	0						0	365	256	358	311	141
9	0						0	364	267	357	311	74
10	0						0	364	268	358	310	48
11	0						0	364	294	358	303	49
12	0						0	364	327	350	303	47
13	0						0	330	338	347	296	30
14	0						0	314	337	345	293	22
15	0						0	312	338	343	293	29
16	0						0	298	338	342	292	30
17	0						0	296	343	343	293	30
18	0						0	298	347	343	293	30
19	0						0	298	347	343	293	30
20	0						0	261	365	342	293	30
21	0						27	210	372	342	279	30
22	0						80	194	372	342	273	30
23	0						95	193	372	343	273	30
24	0						95	193	372	343	273	30
25	0						129	193	372	335	274	18
26	0						213	227	372	332	256	0
27	0						262	241	372	332	231	0
28	0						232	239	372	332	223	0
29	0				---		210	240	372	317	224	0
30	0				---		183	263	372	311	224	0
31	0	---			---		---	272	---	310	223	---
TOTAL	116	0	0	0	0	0	1526	9064	9616	10721	8813	2032
MEAN	3.74	0	0	0	0	0	50.8	292	320	345	284	67.7
MAX	32	0	0	0	0	0	262	372	372	373	311	223
MIN	0	0	0	0	0	0	0	193	219	310	223	0
AC-FT	230	0	0	0	0	0	3030	17980	19070	21270	17480	4030
CAL YR 1985	TOTAL	45492.00	MEAN 124	MAX 408	MIN 0	AC-FT	90230					
WTR YR 1986	TOTAL	41888.00	MEAN 114	MAX 373	MIN 0	AC-FT	83080					

SACRAMENTO RIVER BASIN

11406900 PACIFIC GAS AND 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 National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

REMARKS.--Flow regulated at outlet works from Thermalito Afterbay; water is used for irrigation.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--18 years, 4.86 ft³/s, 3,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 46 ft³/s, Apr. 24, 1977, May 16, 1978; no flow for several months in each year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	0	.97			0	23	12	13	11	2.9
2		0	0	.56			0	23	7.6	13	11	2.6
3		0	0	0			0	22	2.5	13	11	2.0
4		0	0	0			0	22	2.5	13	12	1.4
5		0	0	0			0	26	2.6	13	12	1.0
6		0	0	0			0	28	2.8	13	11	1.0
7		0	0	0			0	23	3.1	13	11	1.0
8		0	0	0			0	16	3.5	13	11	1.0
9		0	0	0			0	11	16	13	11	1.6
10		0	0	0			0	11	30	13	11	2.0
11		0	0	0			0	19	29	13	11	2.1
12		0	0	0			0	24	28	13	11	2.1
13		0	0	0			0	22	19	14	11	2.1
14		0	0	0			0	14	14	14	12	2.1
15		0	0	0			0	8.1	14	14	11	.70
16		0	0	0			0	8.1	12	14	11	0
17		0	0	0			0	8.1	11	14	11	0
18		0	0	0			0	8.1	16	14	11	0
19		0	2.9	0			0	7.4	20	14	11	0
20		17	5.0	0			0	7.0	20	14	11	0
21		27	5.0	0			0	7.1	18	15	11	0
22		25	4.8	0			0	7.0	16	15	11	0
23		25	3.2	0			0	8.7	16	14	11	0
24		25	2.0	0			0	12	15	14	11	0
25		17	1.9	0			0	11	15	14	10	0
26		9.8	1.0	0			0	9.9	14	14	9.4	0
27		6.7	1.0	0			0	11	13	13	6.7	0
28		2.9	1.0	0			14	12	12	12	4.0	0
29		1.4	1.0	0	---		23	13	11	12	4.0	0
30		0	1.0	0	---		23	12	12	12	4.0	0
31		---	1.0	0	---		---	12	---	12	3.5	---
TOTAL	0	156.8	30.8	1.53	0	0	60	446.5	407.6	415	308.6	25.60
MEAN	0	5.23	.99	.049	0	0	2.00	14.4	13.6	13.4	9.95	.85
MAX	0	27	5.0	.97	0	0	23	28	30	15	12	2.9
MIN	0	0	0	0	0	0	0	7.0	2.5	12	3.5	0
AC-FT	0	311	61	3.0	0	0	119	886	808	823	612	51
CAL YR 1985	TOTAL	1875.98	MEAN 5.14	MAX 33	MIN 0	AC-FT 3720						
WTR YR 1986	TOTAL	1852.43	MEAN 5.08	MAX 30	MIN 0	AC-FT 3670						

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (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 Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--18 years, 647 ft³/s, 468,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,110 ft³/s, Apr. 22-24, 1968; no flow for several months in each year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	447	20					0	1360	1360	1580	1470	1300
2	439	0					0	1450	1340	1590	1450	1250
3	425	0					0	1510	1330	1610	1450	1180
4	414	0					0	1550	1350	1590	1460	1150
5	413	0					0	1600	1350	1580	1470	1100
6	412	0					0	1610	1310	1560	1470	1060
7	399	0					0	1610	1320	1570	1470	1020
8	383	0					0	1660	1350	1590	1470	985
9	384	0					0	1700	1360	1600	1450	926
10	384	0					0	1730	1380	1590	1440	850
11	386	0					0	1730	1450	1580	1440	787
12	386	0					0	1730	1440	1580	1430	735
13	380	0					0	1720	1440	1570	1440	710
14	383	0					171	1710	1430	1560	1440	698
15	387	0					252	1680	1430	1580	1430	659
16	385	0					283	1630	1460	1580	1410	602
17	385	0					334	1600	1520	1570	1410	554
18	410	0					350	1580	1550	1530	1430	498
19	417	0					376	1570	1580	1490	1440	446
20	418	0					380	1510	1580	1510	1450	421
21	422	0					430	1410	1560	1520	1430	420
22	388	0					553	1380	1550	1520	1420	424
23	360	0					658	1370	1550	1540	1410	409
24	359	0					775	1340	1580	1510	1390	403
25	358	0					880	1310	1620	1490	1390	377
26	355	0					997	1300	1620	1490	1400	306
27	355	0					1130	1300	1620	1520	1430	278
28	356	0					1230	1330	1620	1490	1410	278
29	356	0					1250	1350	1620	1480	1360	285
30	360	0					1220	1370	1610	1480	1360	293
31	166	---					---	1380	---	1480	1330	---
TOTAL	11872	20	0	0	0	0	11269	47080	44280	47930	44250	20404
MEAN	383	.67	0	0	0	0	376	1519	1476	1546	1427	680
MAX	447	20	0	0	0	0	1250	1730	1620	1610	1470	1300
MIN	166	0	0	0	0	0	0	1300	1310	1480	1330	278
AC-FT	23550	40	0	0	0	0	22350	93380	87830	95070	87770	40470
CAL YR 1985	TOTAL	252277.00	MEAN	691	MAX	1800	MIN	0	AC-FT	500400		
WTR YR 1986	TOTAL	227105.00	MEAN	622	MAX	1730	MIN	0	AC-FT	450500		

SACRAMENTO RIVER BASIN

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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 113.47 ft above National Geodetic Vertical Datum of 1929 (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 Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--18 years, 4,391 ft³/s, 3,181,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,600 ft³/s, Jan. 28, 1970, gage height, 23.30 ft previous datum; no flow for many days in 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,800 ft³/s, Feb. 18; minimum daily, 768 ft³/s, May 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2110	1300	1290	1310	1300	17300	9690	805	901	3910	3130	3050
2	2110	1280	1290	1320	1300	17300	9170	799	912	3920	3100	3370
3	2110	1280	1300	1320	1320	17300	8140	782	912	3910	3100	3630
4	1900	1260	1280	1290	1320	17300	7090	768	902	3910	3100	3640
5	1730	1250	1280	1290	1320	17300	5030	778	907	3900	3130	3880
6	1700	1260	1270	1300	1300	17300	3590	778	909	3880	3130	4100
7	1670	1280	1280	1300	1290	17300	3610	780	897	3930	3130	4020
8	1660	1290	1280	1310	1300	17300	3620	782	896	3940	3120	4060
9	1680	1290	1280	1300	1280	17300	3590	777	905	3930	3100	4060
10	1680	1290	1300	1310	1290	17300	2830	773	902	3940	3090	4070
11	1680	1310	1320	1290	1300	17200	2110	775	891	4600	3120	4080
12	1690	1300	1290	1290	1310	17200	1760	791	887	4590	3100	4070
13	1680	1280	1300	1290	1310	17200	1690	803	870	4540	3100	4020
14	1690	1500	1330	1290	5990	17200	1500	798	857	5100	3120	4000
15	1710	1990	1310	1310	16300	17200	1300	801	863	5120	3120	4070
16	1690	1990	1300	1310	17000	17300	1080	803	879	5110	3100	4070
17	1710	2010	1300	1320	17000	17100	900	803	886	5110	3080	4050
18	1720	2020	1300	1310	18300	14900	800	793	888	5140	3130	4040
19	2010	2010	1310	1300	17200	12400	792	802	909	5110	3130	4590
20	2000	1990	1310	1300	17100	12400	778	802	924	5090	3130	4500
21	2030	1990	1300	1300	17000	11800	801	914	1630	5160	3120	4480
22	2030	2010	1290	1300	17000	9600	800	910	1880	4610	3120	4540
23	2020	2020	1310	1300	17100	9510	795	914	1910	4120	3100	4570
24	2030	2000	1310	1310	17200	9600	797	900	1900	4130	3080	4550
25	1850	1910	1290	1310	17200	9640	793	903	1900	4120	3110	4540
26	1620	1700	1290	1300	17300	9640	793	906	2640	4080	3100	4540
27	1440	1510	1290	1320	17300	9640	783	916	3660	4080	3100	4510
28	1290	1370	1290	1330	17300	9640	799	912	3850	3840	3100	4490
29	1290	1300	1290	1320	---	9630	797	913	3840	3360	3080	4540
30	1300	1310	1300	1340	---	9520	800	918	3910	3130	3080	4550
31	1290	---	1300	1320	---	9540	---	910	---	3120	3060	---
TOTAL	54120	47300	40180	40510	263230	440860	77028	25809	45017	132430	96310	124680
MEAN	1745	1576	1296	1306	9401	14221	2567	832	1500	4271	3106	4156
MAX	2110	2020	1330	1340	18300	17300	9690	918	3910	5160	3130	4590
MIN	1290	1250	1270	1290	1280	9510	778	768	857	3120	3060	3050
AC-FT	107300	93820	79700	80350	522100	874400	152800	51190	89290	262700	191000	247300
CAL YR 1985	TOTAL	872790	MEAN	2391	MAX	5160	MIN	1250	AC-FT	1731000		
WTR YR 1986	TOTAL	1387474	MEAN	3801	MAX	18300	MIN	768	AC-FT	2752000		

SACRAMENTO RIVER BASIN

11406920 THERMALITO AFTERBAY RELEASE TO FEATHER RIVER NEAR OROVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: May 1968 to current year.

INSTRUMENTATION.--Temperature recorder since May 1968.

REMARKS.--Temperature is listed only when water is released from Thermalito Afterbay. Because of the complete regulation of the Feather River below Oroville Dam, the temperature of the water released from Thermalito Afterbay affects the temperature of the Feather River downstream from the Oroville project.

COOPERATION.--Records provided by California Department of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 28.5°C, June 23, 1977; minimum recorded, 1.5°C, Dec. 13, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 25.5°C, June 23; minimum recorded, 5.5°s, Dec. 26-31.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

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

SACRAMENTO RIVER BASIN

11406920 THERMALITO AFTERBAY RELEASE TO FEATHER RIVER NEAR OROVILLE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

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

SACRAMENTO RIVER BASIN

11407000 FEATHER RIVER AT OROVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1906-7, 1951 to current year.

CHEMICAL DATA: Water years 1906-7, 1951-77.

SPECIFIC CONDUCTANCE: Water years 1972-78.

WATER TEMPERATURE: Water years 1954 to current year.

SEDIMENT DATA: Water years 1957-79.

PERIOD OF DAILY RECORD.--

CHEMICAL DATA: January to December 1906.

SPECIFIC CONDUCTANCE: March 1972 to September 1978.

WATER TEMPERATURE: October 1953 to September 1954, November 1956 to current year.

SUSPENDED-SEDIMENT DISCHARGE: November 1956 to September 1979.

REVISED RECORDS.--WDR CA-74-2: 1966, sediment.

INSTRUMENTATION.--Temperature recorder October 1953 to September 1954, and since November 1956.

REMARKS.--Extremes affected by construction of Oroville Dam in 1967, and are given for two separate periods--water years 1954, 1957-67, and 1969 to current year.

COOPERATION.--Records of discharge and temperature data furnished by California Department of Water Resources and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: (Water years 1954, 1957-67): Maximum, 27.0°C, Sept. 10, 12, 1959; minimum, 1.5°C, Dec. 27, 1959, Jan. 23-25, 1962.

WATER TEMPERATURE: Water years 1969-86): Maximum recorded, 20.0°C, on several days in 1977; minimum recorded, 6.5°C, on many days in 1971-73, 1974-75, 1979.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 17.0°C, several days during July and August; minimum recorded 8.0°C, many days during December, January, February and March.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

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

SACRAMENTO RIVER BASIN

11407000 FEATHER RIVER AT OROVILLE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

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

SACRAMENTO RIVER BASIN

11407150 FEATHER RIVER NEAR GRIDLEY, CA

LOCATION.--Lat 39°22'00", long 121°38'46", in Boga Fernandez Grant, T.18 N., R.3 E., Butte County, Hydrologic Unit 18020106, on right bank 300 ft upstream from highway bridge, and 2.7 mi east of Gridley.

DRAINAGE AREA.--3,676 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year. January 1944 to September 1964 are published in reports by California Department of Water Resources.

REVISED RECORDS.--WDR CA-66-2: 1965. WDR CA-80-4: 1967 (M), 1968 (M).

GAGE.--Water-stage recorder. Datum of gage is 2.91 ft below National Geodetic Vertical Datum of 1929. Prior to Mar. 13, 1966, water-stage recorder on left bank, at same datum. Mar. 14, 1966, to Sept. 30, 1973, gage at present location, with datum 47.09 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharge: Mar. 28 to Apr. 17. Flow regulated by Lake Oroville since November 1967 (station 11406800) and Thermalito Afterbay release to the Feather River since December 1968 (station 11406920). See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

AVERAGE DISCHARGE.--22 years, 5,417 ft³/s, 3,925,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 151,000 ft³/s, Dec. 23, 1964, gage height, 100.43 ft, present datum; minimum daily, 117 ft³/s, June 27, 1966. Maximum discharge since construction of Oroville Dam in 1967, 150,000 ft³/s, Feb. 19, 1986, gage height, 100.06 ft; minimum daily, 366 ft³/s, July 26, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 102.25 ft present datum, discharge unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 150,000 ft³/s, Feb. 19, gage height, 100.06 ft; minimum daily, 1,080 ft³/s, May 7-11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2520	1610	1720	1710	1860	24800	10000	1140	1210	4630	3550	3470
2	2530	1590	1790	1690	1840	19400	9660	1150	1210	4620	3540	3700
3	2540	1580	1760	1700	1840	18800	9000	1140	1250	4620	3520	4050
4	2360	1570	1710	1680	1810	18500	8600	1120	1240	4590	3520	4070
5	2150	1550	1710	1680	1800	18200	6100	1130	1240	4570	3530	4250
6	2130	1550	1700	1660	1740	18000	4250	1100	1240	4570	3530	4520
7	2060	1580	1680	1660	1730	19800	4100	1080	1230	4600	3520	4450
8	2040	1630	1670	1670	1690	45000	4100	1080	1210	4610	3540	4460
9	2020	1630	1650	1670	1660	55700	4100	1080	1220	4600	3550	4470
10	2060	1640	1660	1660	1650	54400	3650	1080	1240	4580	3530	4470
11	2060	1650	1660	1650	1690	52200	2800	1080	1220	5190	3540	4480
12	2080	1630	1670	1640	1790	49500	2380	1090	1210	5290	3540	4470
13	2050	1650	1660	1640	1910	44200	2100	1120	1200	5240	3530	4430
14	2050	1790	1670	1660	5480	38700	1960	1100	1200	5690	3540	4390
15	2090	2290	1670	1690	18000	33000	1830	1130	1180	5790	3550	4430
16	2110	2380	1670	1750	32700	23400	1680	1120	1190	5760	3520	4460
17	2100	2390	1670	1740	64700	18800	1510	1120	1210	5790	3510	4450
18	2100	2410	1660	1700	127000	16600	1270	1120	1190	5810	3540	4420
19	2380	2410	1660	1670	146000	14200	1250	1110	1210	5780	3550	4800
20	2430	2390	1670	1650	124000	13700	1220	1140	1230	5740	3570	4860
21	2480	2390	1670	1650	93700	13100	1230	1210	1840	5770	3560	4800
22	2460	2380	1650	1670	78100	11000	1220	1230	2360	5240	3560	4840
23	2400	2400	1650	1680	59400	10600	1210	1240	2380	4730	3530	4890
24	2350	2490	1670	1670	50300	10500	1190	1230	2380	4630	3540	4920
25	2210	2400	1670	1660	42600	10600	1190	1240	2370	4620	3530	4870
26	1980	2160	1660	1650	31900	10500	1160	1230	3020	4550	3510	4860
27	1790	1950	1670	1650	30400	10400	1160	1240	4210	4540	3510	4810
28	1620	1870	1670	1700	29400	10200	1160	1250	4570	4380	3520	4810
29	1580	1820	1680	1730	---	10200	1140	1250	4560	3910	3500	4840
30	1610	1770	1710	1830	---	10100	1140	1260	4610	3560	3510	4810
31	1590	---	1720	1880	---	10100	---	1240	---	3570	3490	---
TOTAL	65930	58550	52130	52340	956690	714200	93360	35850	56630	151570	109480	135550
MEAN	2127	1952	1682	1688	34170	23040	3112	1156	1888	4889	3532	4518
MAX	2540	2490	1790	1880	146000	55700	10000	1260	4610	5810	3570	4920
MIN	1580	1550	1650	1640	1650	10100	1140	1080	1180	3560	3490	3470
AC-FT	130800	116100	103400	103800	1898000	1417000	185200	71110	112300	300600	217200	268900

CAL YR 1985 TOTAL 998840 MEAN 2737 MAX 5530 MIN 1430 AC-FT 1981000
WTR YR 1986 TOTAL 2482280 MEAN 6801 MAX 146000 MIN 1080 AC-FT 4924000

SACRAMENTO RIVER BASIN

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: October 1979-81.

WATER TEMPERATURE: Water years 1965 to current year.

SEDIMENT DATA: Water years 1965 to current.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1964 to June 1978.

SUSPENDED-SEDIMENT DISCHARGE: October 1964 to current year.

REMARKS.--Sediment samples obtained by the observer above 4,000 ft³/s are partial depth samples.

REVISED RECORDS.--WRD CA-73-2: 1966, sediment. WRD CA-74-2: 1965, 1970, 1971, 1973, sediment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (Water years 1965-69, 1971-78): Maximum recorded, 29.5°C, June 25, 1977; minimum recorded, 4.0°C, several days in December and January of most years.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,340 mg/L, Dec. 25, 1964; minimum daily mean, 1 mg/L, Dec. 12, 1968, Dec. 4, 1969, Sept. 1, 1970, Dec. 14, 1971, several days in 1982 and 1985.

SEDIMENT LOAD: Maximum, 527,000 tons, Dec. 23, 1964; minimum daily, 1.4 tons, Oct. 27, 1966.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 474 mg/L, Feb. 18; minimum daily mean, 3 mg/L, Dec. 25.

SEDIMENT LOAD: Maximum daily, 181,000 tons, Feb. 19; minimum daily, 12 tons, on several days in May.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	10.0	---	10.5	12.0					---	---
2	20.0	---	11.5	7.5	11.0	---					---	17.5
3	---	---	10.0	9.5	---	10.0					---	---
4	20.0	---	10.5	10.5	11.0	---					---	16.0
5	---	---	11.0	10.5	---	9.0					---	---
6	---	---	10.0	9.0	11.0	9.0					---	---
7	---	---	10.0	9.0	12.0	9.0					---	---
8	---	---	---	11.0	12.5	9.0					---	19.0
9	20.0	---	10.0	10.0	13.5	9.0					---	---
10	18.5	---	---	9.0	---	10.0					---	19.5
11	---	---	---	8.5	12.0	9.0					---	---
12	---	---	7.5	---	12.0	9.0					---	15.5
13	---	---	7.5	8.5	11.0	10.0					---	---
14	---	---	6.5	8.5	---	8.5					---	15.5
15	18.5	---	7.0	8.0	---	9.0					---	---
16	---	---	---	8.0	---	9.0					---	---
17	17.0	---	8.0	8.0	---	11.0					---	---
18	---	---	7.0	8.0	---	13.0					---	---
19	---	---	7.5	8.0	---	9.5					---	---
20	---	---	7.0	8.5	---	---					---	---
21	---	---	7.0	---	---	13.5					---	---
22	15.0	---	6.0	9.0	---	---					15.5	---
23	12.5	---	---	10.5	---	10.5					---	---
24	---	---	6.0	12.0	12.0	11.0					16.0	---
25	---	10.0	6.0	12.5	---	---					---	---
26	---	10.0	7.0	12.5	---	14.0					---	13.5
27	---	---	---	12.0	---	---					---	---
28	---	10.0	---	11.5	---	---					---	---
29	---	9.0	6.5	11.0	---	---					---	13.0
30	---	10.0	6.5	10.5	---	---					---	---
31	---	---	7.5	11.0	---	---					---	---
MONTH	---	---	---	9.5	---	---				---	---	

SACRAMENTO RIVER BASIN

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	2520	6	41	1610	5	22	1720	10	46
2	2530	6	41	1590	5	21	1790	6	29
3	2540	6	41	1580	5	21	1760	6	28
4	2360	6	38	1570	5	21	1710	6	28
5	2150	5	29	1550	5	21	1710	6	28
6	2130	5	29	1550	5	21	1700	5	23
7	2060	5	28	1580	5	21	1680	5	23
8	2040	5	28	1630	5	22	1670	4	18
9	2020	5	27	1630	5	22	1650	4	18
10	2060	5	28	1640	5	22	1660	4	18
11	2060	5	28	1650	4	18	1660	5	22
12	2080	5	28	1630	4	18	1670	5	23
13	2050	5	28	1650	4	18	1660	5	22
14	2050	6	33	1790	4	19	1670	5	23
15	2090	6	34	2290	4	25	1670	4	18
16	2110	5	28	2380	4	26	1670	7	32
17	2100	4	23	2390	4	26	1670	9	41
18	2100	4	23	2410	4	26	1660	4	18
19	2380	4	26	2410	4	26	1660	5	22
20	2430	4	26	2390	4	26	1670	6	27
21	2480	4	27	2390	5	32	1670	6	27
22	2460	5	33	2380	5	32	1650	6	27
23	2400	6	39	2400	5	32	1650	5	22
24	2350	6	38	2490	5	34	1670	5	23
25	2210	6	36	2400	6	39	1670	3	14
26	1980	6	32	2160	6	35	1660	5	22
27	1790	6	29	1950	7	37	1670	5	23
28	1620	6	26	1870	7	35	1670	4	18
29	1580	6	26	1820	6	29	1680	4	18
30	1610	6	26	1770	4	19	1710	6	28
31	1590	6	26	---	---	---	1720	4	19
TOTAL	65930	---	945	58550	---	766	52130	---	748
JANUARY			FEBRUARY			MARCH			
1	1710	4	18	1860	11	55	24800	57	3820
2	1690	4	18	1840	12	60	19400	58	3040
3	1700	7	32	1840	12	60	18800	54	2740
4	1680	8	36	1810	12	59	18500	49	2450
5	1680	6	27	1800	11	53	18200	48	2360
6	1660	7	31	1740	11	52	18000	47	2280
7	1660	7	31	1730	6	28	19800	48	2570
8	1670	5	23	1690	7	32	45000	91	11800
9	1670	6	27	1660	10	45	55700	92	13800
10	1660	4	18	1650	8	36	54400	69	10100
11	1650	8	36	1690	5	23	52200	65	9160
12	1640	6	27	1790	8	39	49500	45	6010
13	1640	5	22	1910	15	77	44200	39	4650
14	1660	5	22	5480	29	429	38700	42	4390
15	1690	6	27	18000	54	2620	33000	44	3920
16	1750	7	33	32700	45	3920	23400	45	2840
17	1740	7	33	64700	103	20200	18800	44	2230
18	1700	8	37	127000	474	163000	16600	41	1840
19	1670	7	32	146000	456	181000	14200	37	1420
20	1650	6	27	124000	231	77500	13700	32	1180
21	1650	6	27	93700	125	32900	13100	31	1100
22	1670	7	32	78100	99	20900	11000	31	921
23	1680	9	41	59400	86	13800	10600	34	973
24	1670	7	32	50300	61	8280	10500	36	1020
25	1660	8	36	42600	57	6560	10600	28	801
26	1650	9	40	31900	59	5080	10500	19	539
27	1650	8	36	30400	63	5170	10400	18	505
28	1700	10	46	29400	63	5000	10200	17	468
29	1730	8	37	---	---	---	10200	16	441
30	1830	10	49	---	---	---	10100	15	409
31	1880	11	56	---	---	---	10100	20	545
TOTAL	52340	---	989	956690	---	546978	714200	---	100322

SACRAMENTO RIVER BASIN

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	10000	26	702	1140	6	18	1210	6	20
2	9660	18	469	1150	6	19	1210	7	23
3	9000	15	365	1140	7	22	1250	9	30
4	8600	15	348	1120	6	18	1240	10	33
5	6100	14	231	1130	7	21	1240	11	37
6	4250	13	149	1100	8	24	1240	13	44
7	4100	13	144	1080	6	17	1230	15	50
8	4100	12	133	1080	4	12	1210	15	49
9	4100	11	122	1080	5	15	1220	15	49
10	3650	11	108	1080	7	20	1240	14	47
11	2800	10	76	1080	7	20	1220	12	40
12	2380	9	58	1090	6	18	1210	11	36
13	2100	8	45	1120	5	15	1200	11	36
14	1960	8	42	1100	4	12	1200	11	36
15	1830	9	44	1130	4	12	1180	10	32
16	1680	11	50	1120	5	15	1190	10	32
17	1510	9	37	1120	4	12	1210	7	23
18	1270	8	27	1120	4	12	1190	7	22
19	1250	7	24	1110	6	18	1210	7	23
20	1220	6	20	1140	7	22	1230	8	27
21	1230	5	17	1210	6	20	1840	8	40
22	1220	5	16	1230	5	17	2360	9	57
23	1210	6	20	1240	4	13	2380	10	64
24	1190	7	22	1230	4	13	2380	9	58
25	1190	7	22	1240	6	20	2370	8	51
26	1160	8	25	1230	8	27	3020	7	57
27	1160	8	25	1240	10	33	4210	10	114
28	1160	7	22	1250	8	27	4570	14	173
29	1140	7	22	1250	6	20	4560	14	172
30	1140	6	18	1260	6	20	4610	14	174
31	---	---	---	1240	5	17	---	---	---
TOTAL	93360	---	3403	35850	---	569	56630	---	1649
JULY			AUGUST			SEPTEMBER			
1	4630	12	150	3550	7	67	3470	9	84
2	4620	11	137	3540	6	57	3700	9	90
3	4620	10	125	3520	6	57	4050	9	98
4	4590	10	124	3520	6	57	4070	9	99
5	4570	10	123	3530	7	67	4250	8	92
6	4570	11	136	3530	8	76	4520	8	98
7	4600	11	137	3520	9	86	4450	8	96
8	4610	12	149	3540	8	76	4460	8	96
9	4600	12	149	3550	7	67	4470	8	97
10	4580	12	148	3530	7	67	4470	8	97
11	5190	12	168	3540	7	67	4480	7	85
12	5290	12	171	3540	7	67	4470	7	84
13	5240	11	156	3530	7	67	4430	7	84
14	5690	11	169	3540	7	67	4390	8	95
15	5790	10	156	3550	7	67	4430	9	108
16	5760	10	156	3520	7	67	4460	8	96
17	5790	9	141	3510	8	76	4450	8	96
18	5810	9	141	3540	6	57	4420	9	107
19	5780	10	156	3550	6	58	4800	10	130
20	5740	10	155	3570	7	67	4860	9	118
21	5770	12	187	3560	7	67	4800	9	117
22	5240	13	184	3560	7	67	4840	8	105
23	4730	11	140	3530	8	76	4890	8	106
24	4630	9	113	3540	8	76	4920	8	106
25	4620	8	100	3530	6	57	4870	8	105
26	4550	8	98	3510	9	85	4860	8	105
27	4540	9	110	3510	9	85	4810	7	91
28	4380	10	118	3520	9	86	4810	7	91
29	3910	9	95	3500	9	85	4840	7	91
30	3560	9	87	3510	9	85	4810	7	91
31	3570	8	77	3490	9	85	---	---	---
TOTAL	151570	---	4256	109480	---	2191	135550	---	2958

SACRAMENTO RIVER BASIN

11407500 SOUTH HONCUT CREEK NEAR BANGOR, CA

LOCATION.--Lat 39°22'04", long 121°22'16", in SE 1/4 SE 1/4 sec.35, T.18 N., R.5 E., Butte County, Hydrologic Unit 18020124, on right bank 2.3 mi southeast of Bangor, 3.3 mi upstream from Tennessee Creek, and 16.3 mi southeast of Oroville.

DRAINAGE AREA.--30.6 mi².

PERIOD OF RECORD.--October 1950 to September 1986 (discontinued).

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 620 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: June 9 to July 2. Records good except for periods of estimated record, which are fair. Some small diversions upstream for irrigation.

AVERAGE DISCHARGE.--36 years, 37.8 ft³/s, 27,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft³/s, Dec. 26, 1964, gage height, 19.25 ft, from rating curve extended above 2,200 ft³/s on basis of slope-area measurements at gage heights 11.15 ft and 19.25 ft; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 16	1730	1,840	7.60	Mar. 10	1000	1,780	7.53
Feb. 17	1945	*4,720	*9.99				

Minimum daily, 0.12 ft³/s, Aug. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.26	.94	13	5.5	150	42	26	7.7	3.3	.69	.31	.25
2	.31	1.0	72	4.7	215	38	28	8.0	3.0	.60	.25	.24
3	.49	1.1	37	4.2	224	35	22	15	2.8	.52	.23	.23
4	.39	1.1	18	15	138	32	21	13	2.6	.47	.22	.24
5	.23	1.1	33	87	78	30	20	11	2.6	.51	.23	.21
6	.24	1.1	20	40	55	28	21	12	2.6	.52	.20	.18
7	.41	1.1	19	20	42	478	34	9.7	2.5	.60	.17	.20
8	.74	1.1	17	14	34	610	26	8.3	2.4	.59	.15	.20
9	1.1	1.2	11	11	28	171	22	7.5	1.9	.49	.15	.24
10	.87	2.5	8.3	9.0	24	695	19	7.1	1.8	.45	.15	.24
11	.91	4.9	6.4	7.9	22	273	18	6.8	1.7	.47	.16	.18
12	1.0	3.8	5.5	7.0	204	491	18	6.4	1.7	.49	.16	.21
13	1.0	2.5	5.0	6.4	400	244	17	5.9	1.8	.44	.14	.27
14	.86	1.8	4.6	9.1	826	152	15	5.6	1.8	.38	.12	.36
15	.86	1.4	4.0	27	823	412	15	5.2	1.8	.27	.18	.49
16	.82	1.4	3.6	519	1090	257	16	4.7	1.8	.20	.20	.99
17	.67	1.4	3.3	216	2840	148	23	4.3	1.9	.21	.27	2.2
18	.70	1.4	3.1	66	886	107	18	4.0	1.8	.38	.27	3.0
19	.83	1.4	3.2	38	804	86	14	3.8	1.8	.50	.24	2.2
20	.95	1.3	3.6	47	293	74	13	3.7	1.6	.54	.22	1.5
21	4.9	1.3	3.0	27	166	65	12	3.8	1.5	.57	.20	1.1
22	3.1	1.3	2.9	21	117	58	12	3.9	1.4	.62	.15	.86
23	1.9	1.7	2.9	86	94	53	11	3.9	1.4	.77	.14	.58
24	1.5	38	2.8	36	80	48	10	3.9	1.1	.82	.16	4.8
25	1.0	52	2.8	24	69	43	9.5	3.7	1.0	.71	.22	7.0
26	.83	8.6	2.7	20	61	38	10	3.4	.85	.58	.28	9.7
27	.81	4.5	2.7	18	53	35	9.4	3.1	.87	.55	.34	22
28	.82	76	2.6	16	46	32	9.5	3.1	.85	.58	.28	4.4
29	.82	208	3.1	68	---	29	8.7	3.1	.87	.62	.24	2.2
30	.81	41	12	312	---	27	8.1	3.1	.79	.51	.24	1.2
31	.80	---	7.3	238	---	26	---	3.3	---	.38	.24	---
TOTAL	30.93	465.94	335.4	2019.8	9862	4857	506.2	188.0	53.83	16.03	6.51	67.47
MEAN	1.00	15.5	10.8	65.2	352	157	16.9	6.06	1.79	.52	.21	2.25
MAX	4.9	208	72	519	2840	695	34	15	3.3	.82	.34	22
MIN	.23	.94	2.6	4.2	22	26	8.1	3.1	.79	.20	.12	.18
AC-FT	61	924	665	4010	19560	9630	1000	373	107	32	13	134

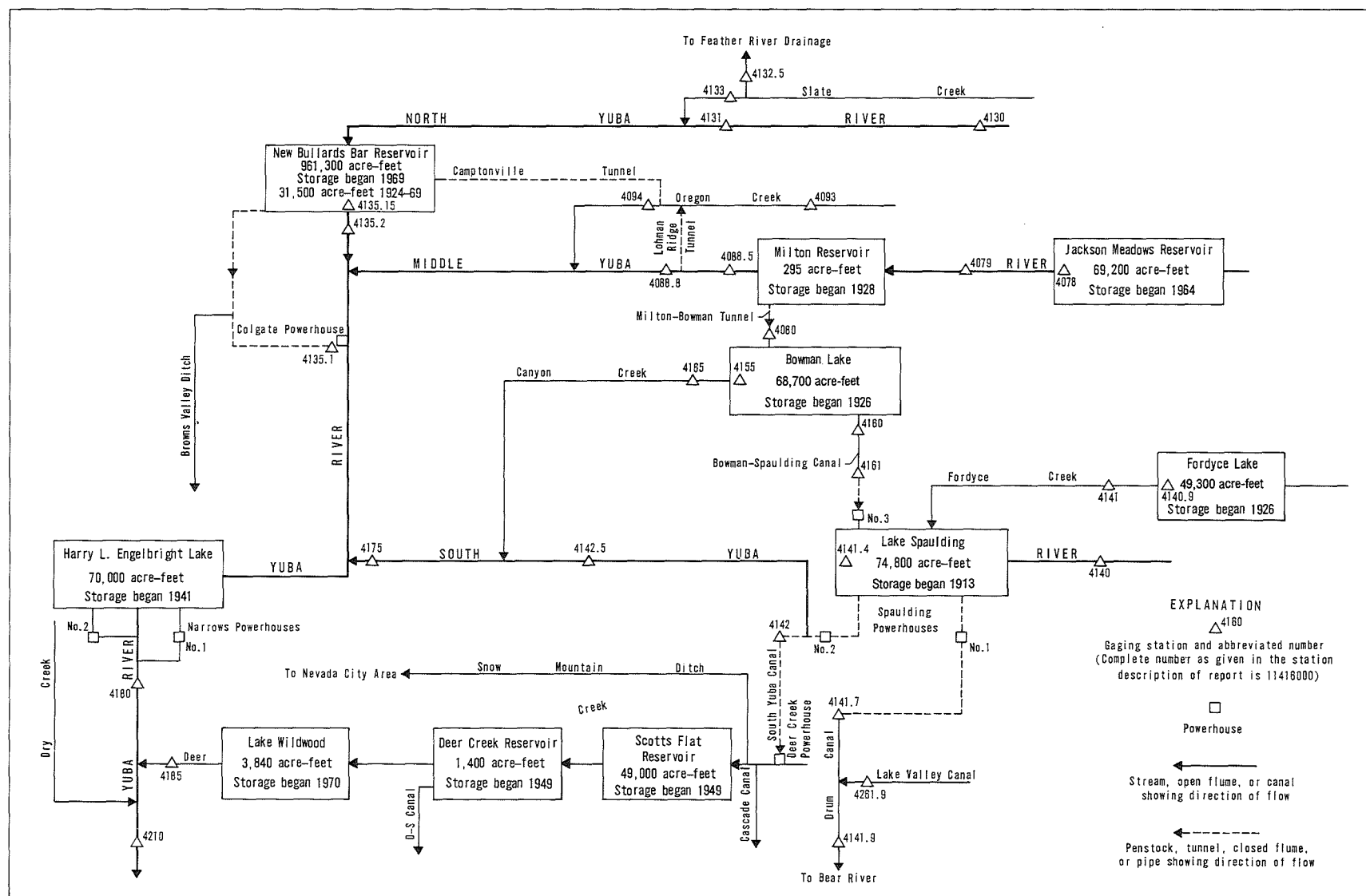


FIGURE 29. — Schematic diagram showing diversions and storage in Yuba River basin.

SACRAMENTO 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 National Geodetic Vertical Datum of 1929 (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 at 2400 hours. See schematic diagram of Yuba River basin.

COOPERATION.--Capacity table provided by Nevada Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 71,000 acre-ft, on several days in 1969-71, elevation, 6,037.7 ft; minimum since reservoir first filled, 2,500 acre-ft, Sept. 27-29, 1976, elevation, 5,933.1 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 70,700 acre-ft, May 29, elevation, 6,037.4 ft; minimum, 26,500 acre-ft, Nov. 7-9, elevation, 5,988.4 ft.

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

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 (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26900	26600	27000	27900	33400	55300	55400	55600	70400	69400	62200	57400
2	26900	26600	27200	28000	33600	55300	55300	55500	70300	69100	62100	57000
3	26900	26600	27300	28000	33900	55300	55200	55600	70200	68800	62100	56600
4	26800	26600	27300	28100	34000	55300	55100	55400	69900	68500	62100	56200
5	26800	26600	27400	28500	34000	55400	55100	55300	69600	68200	62100	55700
6	26800	26600	27400	28700	34200	55300	55200	55200	69500	67800	62000	55300
7	26800	26500	27500	28800	34300	56800	55300	55300	69300	67500	62000	55000
8	26800	26500	27500	28900	34400	58000	55200	55700	69100	67200	62000	54900
9	26800	26500	27500	28900	34400	56500	55200	56300	68900	66900	62000	54600
10	26800	26600	27500	29000	34400	56000	55300	56700	68700	66700	61900	54200
11	26800	26600	27500	29100	34500	55600	55400	57300	68400	66400	61900	53800
12	26800	26600	27500	29100	34900	55400	55300	58000	68400	66100	61900	53500
13	26800	26600	27500	29200	35300	55200	55200	58700	68700	65800	61800	53000
14	26800	26600	27500	29200	36800	55100	55200	59500	68900	65500	61800	52500
15	26700	26600	27500	29300	37900	55000	55100	60300	69100	65100	61800	52100
16	26700	26600	27500	29800	38900	54900	55100	61100	69200	64800	61700	51800
17	26700	26600	27500	30700	45600	54900	55000	62000	69400	64500	61700	51500
18	26700	26600	27500	31100	53200	54900	55000	63100	69500	64200	61700	51100
19	26600	26600	27500	31400	55700	54900	55100	64000	69500	63900	61500	50900
20	26600	26600	27500	31700	55800	54800	55200	64800	69600	63600	61200	50700
21	26600	26600	27500	31800	55500	54800	55500	65500	69600	63400	60900	50400
22	26600	26600	27500	32000	55400	54900	55700	66200	69600	63300	60600	50300
23	26700	26700	27500	32100	55400	54900	55700	66800	69700	63200	60300	50000
24	26700	26800	27500	32300	55300	54900	55600	67500	69700	63100	60000	49900
25	26600	26800	27500	32400	55300	54900	55500	68400	69600	63000	59700	49700
26	26600	26800	27500	32400	55300	54900	55400	69200	69600	62900	59400	49700
27	26600	26800	27500	32500	55300	55000	55400	70000	69600	62800	59100	49500
28	26600	26900	27500	32700	55300	55100	55600	70500	69500	62600	58700	49300
29	26600	27000	27600	32800	---	55200	55700	70700	69500	62600	58400	49100
30	26600	27000	27800	33000	---	55300	55600	70600	69500	62500	58100	48900
31	26600	---	27800	33200	---	55400	---	70500	---	62300	57800	---
MAX	26900	27000	27800	33200	55800	58000	55700	70700	70400	69400	62200	57400
MIN	26600	26500	27000	27900	33400	54800	55000	55200	68400	62300	57800	48900
a	5988.6	5989.1	5990.3	5997.4	6022.2	6022.3	6022.5	6037.2	6036.3	6029.3	6024.8	6015.4
b	-300	+400	+800	+5400	+22100	+100	+200	+14900	-1000	-7200	-4500	-8900

CAL YR 1985 b +6600

WTR YR 1986 b +22000

SACRAMENTO RIVER BASIN

11407900 MIDDLE YUBA RIVER BELOW JACKSON MEADOWS DAM, NEAR SIERRA CITY, CA

LOCATION.--Lat 39°30'56", long 120°33'37", in SE 1/4 NW 1/4 sec.18, T.19 N., R.13 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 0.6 mi downstream from Jackson Meadows Dam, and 5.2 mi southeast of Sierra City.

DRAINAGE AREA.--38.3 mi².

PERIOD OF RECORD.--October 1964 to current year. If record for Milton-Bowman tunnel outlet near Graniteville is added to record published as Middle Yuba River at Milton, a record equivalent to this site can be obtained for the period 1928-64.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 5,717.20 ft above National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District). Prior to Aug. 12, 1982, at site 160 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Jackson Meadows Reservoir (station 11407800) since November 1964. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE (adjusted for change in contents in Jackson Meadows Reservoir).--22 years, 120 ft³/s, 86,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,660 ft³/s, Dec. 20, 1981, gage height, 9.61 ft, from rating curve extended above 400 ft³/s on basis of computation of flow over Milton Dam, adjusted for diversion and inflow, maximum gage height, 17.57 ft, Mar. 8, 1986; no flow on many days in 1976-77.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known since at least 1925, 10,000 ft³/s, Jan. 31, 1963, gage height, 10.57 ft from floodmarks, by computation of flow over Milton Dam, adjusted for diversion and inflow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,630 ft³/s, Mar. 8, gage height, 17.57 ft; minimum daily, 7.2 ft³/s, May 12-14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	8.0	8.0	9.0	11	13	338	438	501	589	98	65	148		
2	8.0	8.0	14	11	13	334	404	501	536	150	13	169		
3	8.0	8.0	12	11	13	333	339	532	503	154	12	213		
4	8.0	8.0	11	12	12	342	301	459	447	160	11	213		
5	8.0	8.0	10	19	12	349	283	379	387	160	11	213		
6	8.5	8.0	9.6	15	12	349	284	316	341	160	11	213		
7	8.5	8.0	9.8	13	12	582	332	170	308	160	11	143		
8	8.3	8.0	9.7	12	11	2910	318	8.9	301	160	10	23		
9	8.1	8.0	9.4	11	11	1660	287	7.5	301	158	10	99		
10	8.0	8.2	9.3	11	11	939	309	8.5	300	152	10	189		
11	8.0	8.0	9.3	11	11	599	347	7.6	300	152	10	190		
12	8.0	8.0	9.3	11	13	444	386	7.2	180	152	10	190		
13	8.0	8.0	9.3	10	22	353	343	7.2	38	152	10	188		
14	8.0	8.0	9.1	9.9	39	289	294	7.2	38	152	10	187		
15	8.0	8.0	9.0	10	34	250	273	7.8	38	152	10	187		
16	8.0	8.0	9.0	22	34	223	253	8.7	38	152	11	187		
17	8.0	8.0	9.0	31	168	194	228	8.7	38	152	12	187		
18	8.0	8.0	9.0	19	117	173	207	8.7	50	152	12	157		
19	8.0	8.0	9.0	16	296	159	215	8.7	62	152	75	113		
20	8.0	8.0	9.0	16	631	157	263	9.2	68	152	138	113		
21	8.5	8.0	9.0	14	537	157	372	9.5	69	95	140	113		
22	8.0	8.0	9.0	13	431	161	503	9.5	70	48	140	113		
23	8.1	8.2	9.0	13	378	168	549	9.5	71	48	140	113		
24	8.3	8.9	9.0	12	345	176	527	9.0	71	48	138	113		
25	8.3	9.5	9.0	12	330	182	471	8.7	69	48	138	113		
26	8.3	9.0	9.0	12	319	189	400	8.1	65	48	142	113		
27	8.3	9.0	9.0	12	322	212	361	64	61	48	148	113		
28	8.3	9.0	9.0	12	332	246	400	253	58	48	148	113		
29	8.1	9.0	9.3	11	---	286	466	491	52	48	148	113		
30	8.0	9.0	12	13	---	337	480	672	48	48	148	113		
31	8.0	---	11	14	---	408	---	644	---	92	148	---		
TOTAL	251.6	247.8	299.1	419.9	4479	13499	10633	5142.2	5497	3651	2040	4452		
MEAN	8.12	8.26	9.65	13.5	160	435	354	166	183	118	65.8	148		
MAX	8.5	9.5	14	31	631	2910	549	672	589	160	148	213		
MIN	8.0	8.0	9.0	9.9	11	157	207	7.2	38	48	10	23		
AC-FT	499	492	593	833	8880	26780	21090	10200	10900	7240	4050	8830		
CAL YR 1985	TOTAL	26172.9	MEAN	71.7	MAX	230	MIN	6.3	AC-FT	51910	MEAN a	62.6	AC-FT a	75300
WTR YR 1986	TOTAL	50611.6	MEAN	139	MAX	2910	MIN	7.2	AC-FT	100400	MEAN a	169	AC-FT a	122400

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929. Prior to Sept. 22, 1964, at datum 0.56 ft higher.

REMARKS.--Estimated daily discharges: Oct. 1-9. Records excellent except for estimated daily discharges, which are good. Tunnel diverts from Middle Yuba River at Milton, 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.

AVERAGE DISCHARGE.--58 years, 74.3 ft³/s, 53,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 492 ft³/s, Feb. 11, 1941; minimum daily, 0.4 ft³/s, Oct. 7, 1944.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	6.8	8.6	16	27	313	320	10	6.4	69	89	146
2	6.8	6.7	20	15	26	312	319	9.9	6.2	125	13	164
3	6.8	6.7	22	14	23	312	173	10	6.0	134	10	213
4	6.8	6.7	16	18	21	313	14	9.7	5.8	140	9.7	212
5	6.8	6.7	13	42	20	313	14	9.5	5.7	141	9.5	212
6	7.3	6.7	12	32	19	313	13	9.1	5.5	141	9.4	212
7	7.7	6.7	13	23	18	325	13	8.7	5.5	141	8.6	195
8	7.6	6.7	13	20	17	370	13	8.0	5.5	141	4.3	25
9	7.3	7.1	11	18	17	349	13	7.8	5.2	144	8.2	63
10	7.0	8.5	11	17	16	334	13	7.7	5.2	148	8.7	180
11	6.9	8.1	10	16	16	325	13	7.6	5.2	148	8.5	186
12	6.9	7.3	10	15	20	319	12	7.6	15	149	8.5	187
13	6.7	7.0	9.8	15	59	314	12	7.6	33	154	8.5	186
14	6.6	7.2	9.7	14	95	307	12	7.6	33	152	8.5	186
15	6.6	7.3	9.4	15	107	283	12	7.6	33	151	8.6	186
16	6.7	8.1	9.2	36	102	247	12	7.5	32	151	8.7	188
17	6.7	7.8	9.1	99	321	208	11	7.4	32	150	8.6	189
18	6.7	7.7	9.1	49	324	182	11	7.5	41	150	8.6	176
19	6.7	7.3	9.1	37	273	167	11	7.4	58	150	44	114
20	6.7	7.3	9.1	34	326	164	11	7.3	58	149	128	111
21	8.4	7.3	9.1	28	322	164	12	7.2	58	142	135	110
22	7.7	7.0	9.1	25	318	167	12	7.0	58	60	137	110
23	8.5	8.1	9.0	23	315	173	12	7.0	58	47	138	110
24	8.0	10	9.0	21	313	182	12	6.7	58	47	139	115
25	7.6	13	9.1	20	313	191	11	6.3	63	47	139	115
26	7.3	10	9.1	19	312	197	11	6.3	72	47	139	118
27	7.2	9.0	9.1	18	312	213	10	6.3	69	46	142	116
28	7.0	10	9.1	18	312	245	11	6.3	65	46	144	113
29	7.0	11	9.9	18	---	283	11	6.5	60	46	145	111
30	7.0	9.2	19	24	---	314	10	6.7	53	46	145	111
31	6.9	---	16	32	---	319	---	6.5	---	73	146	---
TOTAL	220.8	239.0	351.6	791	4364	8218	1134	238.3	1011.2	3475	1959.9	4460
MEAN	7.12	7.97	11.3	25.5	156	265	37.8	7.69	33.7	112	63.2	149
MAX	8.5	13	22	99	326	370	320	10	72	154	146	213
MIN	6.6	6.7	8.6	14	16	164	10	6.3	5.2	46	4.3	25
AC-FT	438	474	697	1570	8660	16300	2250	473	2010	6890	3890	8850
CAL YR 1985	TOTAL	28313.4	MEAN	77.6	MAX	233	MIN	6.6	AC-FT	56160		
WTR YR 1986	TOTAL	26462.8	MEAN	72.5	MAX	370	MIN	4.3	AC-FT	52490		

SACRAMENTO RIVER BASIN

11408850 MIDDLE YUBA RIVER NEAR CAMPTONVILLE, CA

LOCATION.--Lat 30°25'01", long 120°57'06", in SW 1/4 SE 1/4 sec.15, T.18 N., R.9 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 0.6 mi downstream from Kanaka Creek, and 5.8 mi southeast of Camptonville.

DRAINAGE AREA.--136 mi².

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,170 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Feb. 17-24, July 22 to Aug. 7. Records good, except for estimated periods and Feb. 25 to Aug. 21, which are fair. Natural flow of stream affected by Jackson Meadows Reservoir since November 1964 (station 11407800), Milton-Bowman tunnel (station 11408000) which diverts above station to Bowman Lake (station 11415500), and other small diversions above station. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--19 years, 359 ft³/s, 260,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,600 ft³/s, Feb. 17, 1986, gage height, 17.90 ft, from crest-stage gage, from rating curve extended above 8,000 ft³/s; minimum daily, 11 ft³/s, July 29, Aug. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,600 ft³/s, Feb. 17, gage height, 17.90 ft from crest-stage gage, from rating curve extended above 8,000 ft³/s; minimum daily, 30 ft³/s, Oct. 3-5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	33	124	226	694	778	879	809	853	68	41	35
2	31	33	543	201	777	721	805	827	781	65	41	35
3	30	33	782	171	863	673	707	925	733	64	40	35
4	30	33	350	181	680	638	891	902	663	64	40	35
5	30	33	234	682	536	615	844	810	578	68	39	35
6	31	33	186	563	435	579	818	729	513	78	39	35
7	38	33	197	362	369	1390	938	626	462	78	38	34
8	36	33	214	284	327	7410	874	372	434	78	38	34
9	33	34	166	234	290	4020	793	322	418	77	43	34
10	33	73	140	202	263	3270	794	327	408	72	39	34
11	33	58	120	180	241	2380	821	327	403	60	38	33
12	33	47	108	164	398	1760	863	317	394	57	39	33
13	33	44	100	152	1270	1460	803	328	165	57	39	33
14	32	43	94	150	1810	1200	717	334	119	55	38	33
15	32	45	89	166	3580	1060	676	339	111	53	39	33
16	31	61	84	600	4990	968	643	338	107	52	39	43
17	31	61	81	1740	16800	851	603	338	103	51	38	54
18	31	54	79	834	8300	750	553	352	99	47	38	49
19	31	47	79	596	3800	699	531	365	96	48	38	47
20	31	45	83	535	1670	711	568	349	94	48	38	47
21	48	43	85	416	1470	713	692	323	93	47	37	41
22	44	41	86	350	1370	724	894	289	90	46	36	39
23	43	50	86	342	1260	738	940	275	92	46	36	38
24	43	184	86	292	1150	763	920	261	90	45	36	59
25	39	239	88	262	1050	749	854	273	88	45	35	110
26	36	130	89	237	950	718	762	294	83	44	35	159
27	35	92	88	219	882	728	696	297	75	44	36	216
28	34	159	84	204	837	749	725	431	72	43	36	86
29	34	404	88	195	---	754	812	625	71	43	36	63
30	33	195	420	369	---	790	820	949	68	42	35	56
31	33	---	276	661	---	863	---	911	---	42	35	---
TOTAL	1063	2413	5329	11770	57062	40222	23236	14964	8356	1727	1175	1618
MEAN	34.3	80.4	172	380	2038	1297	775	483	279	55.7	37.9	53.9
MAX	48	404	782	1740	16800	7410	940	949	853	78	43	216
MIN	30	33	79	150	241	579	531	261	68	42	35	33
AC-FT	2110	4790	10570	23350	113200	79780	46090	29680	16570	3430	2330	3210
CAL YR 1985	TOTAL	52090	MEAN 143	MAX 883	MIN 30	AC-FT 103300						
WTR YR 1986	TOTAL	168935	MEAN 463	MAX 16800	MIN 30	AC-FT 335100						

SACRAMENTO RIVER BASIN

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 400 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. Datum of gage is 1,957.51 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 4, 1970, at datum 10.0 ft higher.

REMARKS.--Estimated daily discharges: Feb. 17-22, Aug. 22-29, Sept. 16-27. Records good except for estimated periods, which are poor. Natural flow of stream affected by Jackson Meadows Reservoir since November 1964 (station 11407800), Milton-Bowman tunnel (station 11408000) which diverts above station to Bowman Lake (station 11415500), and Lohman Ridge tunnel since October 1968 which diverts 400 ft upstream to Oregon Creek and then to New Bullards Bar Reservoir via Camptonville tunnel. Other small diversions above station. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--18 years, 151 ft³/s, 109,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft³/s, Feb. 17, 1986, gage height, 27.4 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,600 ft³/s, Feb. 17, gage height, 27.4 ft, from floodmark; minimum daily, 5.9 ft³/s, July 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	29	34	35	38	35	493	131	648	61	7.5	32
2	29	29	51	34	56	33	430	114	601	58	7.3	30
3	29	29	71	33	71	34	313	178	574	57	7.1	30
4	28	29	36	33	39	38	502	160	526	57	6.8	31
5	28	29	34	44	37	40	461	94	457	52	7.0	30
6	27	29	34	39	35	40	438	71	392	67	6.8	30
7	27	29	33	36	35	785	539	53	331	68	6.6	29
8	28	29	33	36	35	8660	486	46	295	68	6.3	28
9	28	29	33	35	35	3700	323	142	282	62	7.1	30
10	29	29	33	34	36	2880	195	149	280	71	8.4	29
11	29	30	33	34	36	2010	219	148	278	56	8.3	28
12	29	30	32	34	36	1520	265	136	271	55	14	27
13	29	30	32	33	458	1070	221	147	35	54	16	27
14	29	30	32	33	815	771	147	157	22	39	18	27
15	29	30	32	33	2580	665	117	166	25	27	17	26
16	27	30	32	113	3770	613	94	166	32	5.9	16	30
17	27	30	32	873	17000	524	65	167	28	6.8	15	34
18	28	30	32	136	8000	422	60	182	31	6.5	14	34
19	28	30	32	105	3500	353	77	197	43	6.6	14	33
20	28	30	32	100	1800	357	100	184	43	6.6	19	32
21	28	30	32	95	1300	352	187	153	39	7.5	36	30
22	29	31	32	84	1050	365	228	116	40	8.9	150	27
23	29	31	32	69	720	377	185	103	42	8.8	90	32
24	29	32	32	60	485	398	159	91	39	8.9	40	50
25	29	35	32	60	312	384	117	107	35	8.6	34	95
26	29	33	32	60	164	350	62	128	32	8.3	34	120
27	29	32	32	52	85	360	36	135	32	7.9	34	110
28	29	32	32	37	47	375	61	288	52	8.7	34	44
29	29	36	32	35	---	377	119	491	64	9.9	34	42
30	29	35	36	35	---	408	125	721	60	8.4	34	40
31	29	---	36	37	---	478	---	689	---	7.8	31	---
TOTAL	883	917	1073	2477	42575	28774	6824	5810	5629	978.1	773.2	1187
MEAN	28.5	30.6	34.6	79.9	1521	928	227	187	188	31.6	24.9	39.6
MAX	29	36	71	873	17000	8660	539	721	648	71	150	120
MIN	27	29	32	33	35	33	36	46	22	5.9	6.3	26
AC-FT	1750	1820	2130	4910	84450	57070	13540	11520	11170	1940	1530	2350
a	443	3330	9350	20850	43490	26550	33870	18810	5670	1600	868	1020
CAL YR 1985	TOTAL	14189.0	MEAN	38.9	MAX	359	MIN	25	AC-FT	28140		
WTR YR 1986	TOTAL	97900.3	MEAN	268	MAX	17000	MIN	5.9	AC-FT	194200		

a Lohman Ridge tunnel diversion, in acre-feet, to Oregon Creek. Flow through diversion is computed from upstream and downstream flow records adjusted for runoff from ungaged drainage area.

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Feb. 4-21 and Mar. 2-28. Records good prior to July and poor thereafter, except for estimated record, which is poor. No regulation or diversion above station. Swimmers often build dams on control during summer months. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--19 years, 74.6 ft³/s, 54,050 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,550 ft³/s, Feb. 17, 1986, gage height, 11.56 ft from rating curve extended above 1,600 ft³/s; minimum daily, 0.53 ft³/s, Aug. 14-16, 1977.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 16	2330	816	6.47	Mar. 8	unknown	unknown	unknown
Feb. 17	unknown	*4,550	*11.56				

Minimum daily, 1.4 ft³/s, Sept. 8, 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	3.7	24	40	225	123	108	28	16	6.2	3.7	2.1
2	2.9	3.8	142	35	298	120	99	27	16	6.0	3.5	2.0
3	2.2	3.8	205	31	352	116	89	39	15	5.9	3.3	1.9
4	1.7	3.8	87	40	275	112	81	38	15	5.6	3.2	1.7
5	1.6	3.9	59	134	240	107	76	39	15	5.4	3.1	1.7
6	2.3	4.1	47	133	200	102	72	42	14	5.4	3.1	1.7
7	3.2	4.1	65	91	175	148	86	38	14	5.3	3.1	1.5
8	3.3	4.2	67	67	148	905	75	36	14	5.2	3.1	1.4
9	3.2	4.6	46	52	125	465	69	34	13	5.1	3.1	1.4
10	3.2	9.9	35	42	113	286	65	33	13	5.0	3.0	1.7
11	3.1	6.4	28	35	113	208	61	31	12	4.9	3.0	1.8
12	3.1	4.8	22	30	165	167	59	30	12	4.8	2.9	1.9
13	3.1	4.3	19	27	475	148	56	28	12	4.7	2.8	1.9
14	3.1	4.2	17	27	1300	120	53	27	12	4.6	2.7	2.1
15	3.1	4.5	15	33	1650	103	51	26	12	4.4	2.8	2.4
16	3.1	6.1	14	271	2500	91	50	25	11	4.3	2.8	5.3
17	3.1	6.7	13	477	3200	85	49	24	11	4.3	2.9	10
18	3.1	5.6	12	245	2700	77	46	23	11	4.3	2.8	7.4
19	3.2	4.6	11	167	1250	80	43	22	11	4.2	2.5	6.7
20	3.2	4.3	11	136	750	85	41	22	11	3.9	2.5	5.6
21	6.3	4.2	11	109	580	91	40	22	11	3.8	2.5	4.2
22	5.3	4.3	11	92	423	97	38	21	10	3.7	2.3	3.7
23	5.6	5.4	11	96	344	102	37	20	10	3.7	2.4	3.5
24	4.7	45	11	81	272	107	36	20	9.3	3.9	2.3	9.0
25	3.9	55	11	71	221	105	35	19	9.0	3.8	2.2	17
26	3.6	19	11	61	188	102	34	18	8.8	3.8	2.4	22
27	3.5	12	11	54	161	100	32	18	8.0	3.6	2.4	56
28	3.5	37	10	49	139	118	31	17	6.5	3.4	2.2	13
29	3.5	125	11	46	---	128	30	17	6.4	3.3	2.2	7.3
30	3.6	44	60	98	---	121	29	17	6.3	3.3	2.1	5.6
31	3.6	---	45	169	---	114	---	16	---	3.4	2.1	---
TOTAL	104.8	448.3	1142	3039	18582	4833	1671	817	345.3	139.2	85.0	203.5
MEAN	3.38	14.9	36.8	98.0	664	156	55.7	26.4	11.5	4.49	2.74	6.78
MAX	6.3	125	205	477	3200	905	108	42	16	6.2	3.7	56
MIN	1.6	3.7	10	27	113	77	29	16	6.3	3.3	2.1	1.4
AC-FT	208	889	2270	6030	36860	9590	3310	1620	685	276	169	404
CAL YR 1985	TOTAL	11445.8	MEAN	31.4	MAX	475	MIN	1.5	AC-FT	22700		
WTR YR 1986	TOTAL	31410.1	MEAN	86.1	MAX	3200	MIN	1.4	AC-FT	62300		

SACRAMENTO RIVER BASIN

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 right 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.

REVISED RECORDS.--WDR CA-81-4: 1980(M).

GAGE.--Water-stage recorder. Datum of gage is 1,919.96 ft above National Geodetic Vertical Datum of 1929 (levels by Yuba County Water Agency). Prior to July 24, 1973, at site 470 ft downstream at datum 8.40 ft lower.

REMARKS.--Estimated daily discharges: Apr. 11 to Aug. 20. Records fair prior to February 17, poor thereafter. Camptonville tunnel, maximum capacity, about 1,000 ft³/s, 520 ft upstream, diverts to New Bullards Bar Reservoir (station 11413515); diversion began October 1968. See schematic diagram showing diversions and storage in Yuba River basin.

AVERAGE DISCHARGE.--18 years, 35.5 ft³/s, 25,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,400 ft³/s, Feb. 17, 1986, gage height, 11.24 ft, from rating curve extended above 50 ft³/s based on flow over dam computation; minimum daily, 0.34 ft³/s, Sept. 18, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,400 ft³/s, Feb. 17, gage height, 11.24 ft; minimum daily, 2.9 ft³/s, Aug. 21.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	7.2	13	12	13	61	14	8.0	8.0	13	14	3.9
2	4.6	6.3	16	12	14	59	8.3	8.0	8.0	13	14	3.8
3	4.2	6.0	18	12	15	57	7.9	8.0	8.0	13	14	3.7
4	3.9	6.0	14	12	13	56	7.9	8.0	8.0	13	14	3.7
5	3.8	6.1	12	15	12	55	7.6	8.0	8.0	13	14	3.7
6	4.0	6.2	12	15	12	47	7.5	8.0	8.0	13	14	3.9
7	10	5.7	12	13	11	51	7.5	8.0	8.0	13	14	3.9
8	11	5.3	12	13	11	690	7.3	8.0	8.0	13	14	3.7
9	8.2	6.3	12	12	11	77	7.5	8.0	8.0	13	14	3.8
10	5.9	12	11	12	10	78	8.0	8.0	8.0	13	14	4.0
11	5.9	12	11	12	10	44	7.9	8.0	8.0	13	14	4.1
12	5.5	11	11	12	11	36	8.0	8.0	9.0	13	14	4.1
13	4.9	11	11	12	59	34	8.0	8.0	13	13	14	4.1
14	4.0	11	11	11	77	31	8.0	8.0	13	13	14	4.2
15	3.6	11	11	12	874	29	8.0	8.0	13	13	14	4.4
16	3.6	12	10	54	1740	29	8.0	8.0	13	14	14	4.8
17	3.6	12	10	152	5340	28	8.0	8.0	13	14	14	6.2
18	3.6	12	10	15	3310	26	8.0	8.0	13	14	14	4.9
19	3.6	11	10	14	2870	26	8.0	8.0	13	14	14	4.6
20	3.6	11	10	13	1230	26	8.0	8.0	13	14	10	3.9
21	10	11	10	13	689	25	8.0	8.0	13	14	2.9	4.7
22	11	11	10	12	374	24	8.0	8.0	13	14	3.1	6.0
23	11	11	10	12	211	24	8.0	8.0	13	14	3.2	5.8
24	11	14	10	12	98	23	8.0	8.0	13	14	3.3	8.7
25	11	15	10	12	61	20	8.0	8.0	13	14	3.6	14
26	11	13	10	12	64	25	8.0	8.0	13	14	3.9	15
27	10	12	10	11	63	21	8.0	8.0	13	14	4.1	16
28	9.3	13	10	11	62	18	8.0	8.0	13	14	4.0	15
29	8.5	16	10	11	---	17	8.0	8.0	13	14	4.0	14
30	7.9	14	13	12	---	17	8.0	8.0	13	14	4.0	13
31	7.7	---	12	13	---	16	---	8.0	---	14	3.9	---
TOTAL	210.6	311.1	352	566	17265	1770	243.4	248.0	331.0	419	316.0	195.6
MEAN	6.79	10.4	11.4	18.3	617	57.1	8.11	8.00	11.0	13.5	10.2	6.52
MAX	11	16	18	152	5340	690	14	8.0	13	14	14	16
MIN	3.6	5.3	10	11	10	16	7.3	8.0	8.0	13	2.9	3.7
AC-FT	418	617	698	1120	34250	3510	483	492	657	831	627	388
a	288	3830	11520	27360	55880	35170	37580	20370	5880	1120	455	1140

CAL YR 1985 TOTAL 3860.1 MEAN 10.6 MAX 195 MIN 2.6 AC-FT 7660
WTR YR 1986 TOTAL 22227.7 MEAN 60.9 MAX 5340 MIN 2.9 AC-FT 44090

a Camptonville tunnel diversion, in acre-feet, to New Bullards Bar Reservoir. Flow through diversion is computed from upstream and downstream flow records adjusted for runoff from ungaged drainage area.

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Estimated daily discharges: June 6 to July 1. Records good except for Feb. 17-21, and Mar. 14 to July 1, which are fair. Several small diversions above station for irrigation and mining. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--56 years, 777 ft³/s, 562,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s, Feb. 1, 1963, gage height, 25.8 ft, from floodmarks, from rating curve extended above 8,500 ft³/s on basis of one float measurement at 17,900 ft³/s and slope-area measurements at gage heights 19.15 ft 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 and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 17	0115	4,810	9.28	Mar. 8	0730	18,800	16.38
Feb. 17	2145	*29,000	*20.12				

Minimum daily, 124 ft³/s, Oct. 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	132	240	476	1290	2400	2180	1370	1580	340	221	163
2	127	132	942	436	1420	2240	2000	1360	1480	332	217	161
3	126	130	1220	372	1470	2160	1750	1460	1380	321	213	159
4	125	130	651	473	1190	2120	1620	1410	1230	313	210	157
5	124	129	445	1690	975	2060	1540	1250	1080	307	207	156
6	127	129	368	1240	838	1970	1520	1180	1000	301	203	155
7	141	128	423	786	741	4200	1630	1070	900	299	200	154
8	137	129	442	622	678	13100	1520	1060	830	295	199	153
9	138	143	350	525	622	6330	1390	1050	790	294	197	153
10	135	204	301	471	582	4910	1390	1110	760	289	196	158
11	136	160	270	430	549	4050	1440	1160	730	286	194	156
12	134	152	250	402	824	3360	1480	1140	710	279	191	154
13	130	148	244	378	2590	2900	1360	1200	670	272	190	155
14	128	148	233	378	3970	2740	1250	1240	660	266	188	155
15	127	152	225	398	6830	2680	1200	1310	630	261	186	161
16	127	179	217	1470	8070	2250	1160	1340	610	256	185	201
17	127	173	214	3640	20700	1980	1100	1380	590	255	184	255
18	127	161	213	1830	19900	1800	1050	1480	570	251	181	243
19	127	147	216	1340	14000	1670	1040	1580	540	247	179	233
20	126	146	223	1180	8310	1680	1110	1540	515	244	179	222
21	171	144	225	928	5330	1660	1320	1410	500	242	177	204
22	152	142	225	792	4080	1680	1570	1230	480	244	176	194
23	182	163	224	768	3400	1710	1600	1200	460	244	175	186
24	188	310	228	671	2990	1790	1490	1160	450	254	173	304
25	162	399	234	621	2820	1770	1400	1290	440	246	171	461
26	150	266	235	580	2750	1720	1260	1430	430	251	170	564
27	143	213	231	553	2730	1780	1190	1490	405	246	169	597
28	140	263	226	531	2620	1890	1310	1480	385	241	167	321
29	138	543	232	536	---	1990	1430	1500	370	236	167	273
30	137	324	702	909	---	2100	1400	1600	360	230	165	273
31	134	---	525	1310	---	2190	---	1640	---	225	164	---
TOTAL	4295	5719	10974	26736	122269	86880	42700	41120	21535	8367	5794	6881
MEAN	139	191	354	862	4367	2803	1423	1326	718	270	187	229
MAX	188	543	1220	3640	20700	13100	2180	1640	1580	340	221	597
MIN	124	128	213	372	549	1660	1040	1050	360	225	164	153
AC-FT	8520	11340	21770	53030	242500	172300	84700	81560	42710	16600	11490	13650

SACRAMENTO RIVER BASIN

11413100 NORTH YUBA RIVER ABOVE SLATE CREEK, NEAR STRAWBERRY VALLEY, CA

LOCATION.--Lat 39°31'29", long 121°05'26", in NE 1/4 SW 1/4 sec.9, T.19 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 500 ft upstream from Slate Creek, and 2.8 mi southeast of Strawberry Valley.

DRAINAGE AREA.--351 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,953.44 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Feb. 11 to Mar. 18, June 7 to Aug. 12, Sept. 25-30. Records good except for the periods of estimated record, which are fair. Several small diversions above station for irrigation and mining. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--18 years, 1,289 ft³/s, 933,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,500 ft³/s, Feb. 17, 1986, gage height, 26.90 ft, from crest-stage gage; minimum daily, 71 ft³/s, Sept. 7-15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 29.8 ft, from floodmarks, discharge, 63,400 ft³/s, from slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 5	1415	4,540	10.18	Feb. 17	Unknown	*56,500	*26.90
Jan. 17	0030	8,810	12.12	Mar. 8	Unknown	Unknown	Unknown

Minimum daily, 134 ft³/s, Oct. 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	146	390	768	1890	3500	3050	1820	2170	380	234	174
2	140	144	2010	711	1980	3300	2770	1810	2040	365	230	172
3	137	143	2510	603	1830	3200	2460	2020	1880	350	227	170
4	135	143	1180	798	1550	3100	2300	1900	1700	340	223	167
5	134	141	803	3400	1420	3000	2210	1750	1530	332	220	167
6	135	138	658	2250	1240	3000	2170	1690	1420	326	217	166
7	150	136	749	1380	1110	8200	2390	1500	1320	322	213	164
8	153	136	796	1060	1060	27000	2150	1510	1180	316	210	162
9	150	151	619	883	964	10800	1980	1480	1040	311	208	162
10	147	274	514	778	909	6800	1990	1590	920	310	205	165
11	147	196	446	694	875	5200	2060	1610	840	306	202	167
12	149	173	406	637	1550	4400	2100	1560	790	300	200	165
13	144	164	388	598	6710	3900	1900	1650	765	290	198	163
14	139	164	362	594	10800	3800	1770	1690	745	284	198	163
15	138	170	342	664	15600	3740	1720	1750	725	278	198	168
16	138	209	325	2990	15700	3200	1660	1770	705	271	195	211
17	138	212	314	6630	44300	2830	1580	1830	690	268	194	310
18	138	191	310	3230	36900	2620	1510	1970	660	264	191	331
19	135	165	312	2270	19600	2530	1490	2090	630	261	188	294
20	135	161	324	2000	10000	2550	1600	2040	605	261	188	286
21	207	156	329	1590	6500	2560	1890	1860	580	260	186	237
22	196	154	330	1350	5100	2600	2160	1670	550	265	185	222
23	222	176	328	1370	5000	2650	2170	1630	525	269	182	210
24	235	504	335	1180	4400	2770	2010	1570	500	274	181	377
25	193	746	349	1070	4100	2740	1880	1760	485	262	179	780
26	177	421	352	971	4000	2650	1700	1930	465	267	179	1070
27	166	300	347	914	3900	2740	1630	2060	450	270	178	990
28	159	431	335	897	3700	2880	1800	2040	430	263	175	530
29	154	1200	341	919	---	2970	1920	2100	415	252	176	400
30	151	587	1080	1420	---	3060	1850	2280	395	246	176	380
31	149	---	866	1960	---	3100	---	2290	---	239	175	---
TOTAL	4835	8032	18750	46579	212688	137390	59870	56220	27150	9002	6111	9123
MEAN	156	268	605	1503	7596	4432	1996	1814	905	290	197	304
MAX	235	1200	2510	6630	44300	27000	3050	2290	2170	380	234	1070
MIN	134	136	310	594	875	2530	1490	1480	395	239	175	162
AC-FT	9590	15930	37190	92390	421900	272500	118800	111500	53850	17860	12120	18100

SACRAMENTO RIVER BASIN

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.--October 1966 to current year. Records of daily discharge for December 1961 to September 1966 are in files of U.S. Geological Survey. Monthly diversion used to adjust Slate Creek below diversion dam near Strawberry Valley since February 1962.

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

REMARKS.--Estimated daily discharges: Aug. 5-18. Records good. Tunnel diverts water from Slate Creek to Sly Creek Reservoir (station 11395400) for power development. See schematic diagrams of South Fork Feather and Yuba River basins.

AVERAGE DISCHARGE.--20 years, 96.1 ft³/s, 69,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 863 ft³/s Apr. 6, 1963; no flow many days in each year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	41	201	838	0	0	161	104	16	3.7	0
2	0	0	472	171	838	0	0	156	104	15	3.3	0
3	0	0	577	133	836	296	230	221	89	14	3.1	0
4	0	0	285	303	652	456	353	226	77	14	2.9	0
5	0	0	191	533	515	431	327	232	67	13	2.8	0
6	0	0	147	468	413	397	320	215	61	13	2.6	0
7	0	0	211	392	352	639	372	191	57	12	2.5	0
8	0	0	183	288	302	43	321	197	51	12	2.3	0
9	0	1.5	123	223	266	0	291	191	48	11	2.1	0
10	0	9.4	90	183	237	0	285	210	45	11	1.9	0
11	0	8.9	69	154	217	0	282	191	43	10	1.8	0
12	0	6.4	59	135	375	0	278	178	43	9.7	1.7	0
13	0	5.9	54	123	801	0	248	175	41	9.0	1.5	0
14	0	6.9	47	124	775	0	227	172	40	8.3	1.3	0
15	0	7.9	43	129	588	0	218	167	37	7.7	.73	0
16	0	16	39	472	546	0	208	160	35	7.4	0	0
17	0	15	37	713	83	0	196	157	33	7.2	0	0
18	0	9.1	36	831	0	0	183	161	26	7.1	0	0
19	0	5.1	36	660	0	214	173	162	30	6.8	0	0
20	0	5.2	38	574	0	371	187	154	26	6.5	0	0
21	9.4	2.9	39	436	440	392	219	139	25	6.0	0	0
22	14	4.5	39	357	829	417	231	121	24	5.6	0	0
23	26	5.4	39	326	818	445	231	115	23	6.3	0	0
24	16	45	41	270	811	304	219	110	22	6.7	0	0
25	8.8	108	46	241	818	0	197	115	20	6.0	0	0
26	5.1	52	47	221	496	0	178	117	20	5.8	0	208
27	3.0	36	47	210	0	0	168	116	18	5.3	0	245
28	1.4	41	44	202	0	0	184	111	18	4.7	0	84
29	.29	170	56	246	---	0	182	111	17	4.4	0	54
30	0	64	291	633	---	0	169	114	17	4.1	0	43
31	0	---	199	799	---	0	---	111	---	3.9	0	---
TOTAL	83.99	626.1	3666	10751	12846	4405	6677	4957	1261	269.5	34.23	634
MEAN	2.71	20.9	118	347	459	142	223	160	42.0	8.69	1.10	21.1
MAX	26	170	577	831	838	639	372	232	104	16	3.7	245
MIN	0	0	36	123	0	0	0	110	17	3.9	0	0
AC-FT	167	1240	7270	21320	25480	8740	13240	9830	2500	535	68	1260
CAL YR 1985	TOTAL	30837.62	MEAN	84.5	MAX	618	MIN	0	AC-FT	61170		
WTR YR 1986	TOTAL	46210.82	MEAN	127	MAX	838	MIN	0	AC-FT	91660		

SACRAMENTO RIVER BASIN

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 Fenev 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 ft V-notch weir since October 1982. Elevation of gage is 3,570 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Sept. 18-30. Records good. Slate Creek tunnel (station 11413250) diverts at diversion dam, 300 ft upstream, up to 900 ft³/s from Slate Creek Reservoir, capacity, 223 ac-ft, to Sly Creek Reservoir (station 11395400). Diversion began in February 1962. See schematic diagrams of South Fork Feather and Yuba River basins. Daily records represent flow in Slate Creek below the diversion dam.

AVERAGE DISCHARGE (adjusted for diversion to Slate Creek tunnel).--26 years, 220 ft³/s, 159,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Creek only: Maximum discharge, 13,600 ft³/s, Feb. 17, 1986, gage height, 16.89 ft, from rating curve extended above 5,500 ft³/s on basis of computed flow over dam at gage heights 12.75 ft, 15.90 ft, and 16.89 ft; minimum, 0.3 ft³/s, Mar. 4, 5, 1962.
Combined flow: Maximum discharge, 13,900 ft³/s, Dec. 22, 1964; minimum daily, 2.3 ft³/s, Nov. 23, 1961.

EXTREMES FOR CURRENT YEAR.--Creek only: Maximum discharge, 13,600 ft³/s, Feb. 17, gage height, 16.89 ft; minimum daily, 7.8 ft³/s, Nov. 9.
Combined flow: Maximum discharge, 13,600 ft³/s, Feb. 17; minimum daily, 7.8 ft³/s Nov. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	11	11	11	197	507	481	12	11	11	11	9.7
2	8.9	11	120	11	203	466	447	12	11	11	11	9.5
3	8.6	11	204	11	129	184	168	12	11	11	11	9.4
4	8.4	11	11	11	11	11	11	12	11	11	11	9.3
5	8.3	11	11	595	11	11	11	12	11	11	11	9.2
6	8.5	11	11	175	11	11	11	13	11	11	11	9.1
7	9.5	11	11	11	11	807	11	11	11	11	11	9.1
8	9.5	10	11	11	11	4150	11	11	11	11	11	9.0
9	9.3	7.8	11	11	11	1760	11	11	11	11	11	9.0
10	9.1	8.1	11	11	11	1270	11	11	11	11	11	9.3
11	8.9	8.3	11	11	11	1030	11	11	11	11	11	9.5
12	8.9	8.4	11	11	40	838	12	11	11	11	11	9.2
13	8.7	8.3	11	11	581	680	12	11	11	11	11	9.2
14	8.5	8.3	11	11	1970	541	12	11	11	11	11	9.3
15	8.5	8.3	11	11	3500	473	12	11	11	11	11	9.6
16	8.5	8.3	11	669	3930	411	12	11	11	11	11	18
17	8.3	9.4	11	1220	10500	372	12	11	11	11	11	33
18	8.3	11	11	125	7460	338	11	11	11	11	11	24
19	8.3	11	11	11	4840	150	11	11	11	11	11	15
20	8.3	11	11	11	2580	12	11	11	11	11	11	13
21	12	11	11	11	1180	12	11	11	11	11	10	12
22	12	11	11	11	496	12	11	11	11	11	10	12
23	12	11	11	11	291	12	11	11	11	11	10	11
24	12	11	11	11	154	181	12	11	11	11	10	11
25	12	11	11	11	92	455	12	11	11	11	10	11
26	12	11	11	11	237	441	12	11	11	11	10	15
27	12	11	11	11	592	467	12	11	11	11	10	38
28	12	11	11	11	557	506	12	11	11	11	9.9	12
29	12	11	11	11	---	533	12	11	11	11	9.9	12
30	12	11	11	44	---	540	12	11	11	11	9.8	12
31	12	---	11	226	---	514	---	11	---	11	9.8	---
TOTAL	306.4	305.2	643	3318	39617	17695	1406	348	330	341	329.4	388.4
MEAN	9.88	10.2	20.7	107	1415	571	46.9	11.2	11.0	11.0	10.6	12.9
MAX	12	11	204	1220	10500	4150	481	13	11	11	11	38
MIN	8.3	7.8	11	11	11	11	11	11	11	11	9.8	9.0
AC-FT	608	605	1280	6580	78580	35100	2790	690	655	676	653	770
MEAN a	12.6	31	139	454	1870	713	269	171	53	19.7	11.7	34.1
AC-FT a	775	1845	8550	27900	104100	43840	16030	10520	3155	1211	721	2030

CAL YR 1985	TOTAL	4274.4	MEAN	11.7	MAX	204	MIN	7.5	AC-FT	61160	MEAN a	305	AC-FT a	220700
WTR YR 1986	TOTAL	65027.4	MEAN	178	MAX	10500	MIN	7.8	AC-FT	129000	MEAN a	96.2	AC-FT a	69640

SACRAMENTO RIVER BASIN

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 Dam (station 11413515). Colgate powerplant was rebuilt during the 1970 water year with an increased capacity. Browns Valley ditch diverted up to 10 ft³/s at times from the head of the penstock for use in irrigation. This diversion discontinued Oct. 31, 1973. See schematic diagram of Yuba River basin.

COOPERATION.--Records collected by Yuba County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--20 years, 1,459 ft³/s, 1,057,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,200 ft³/s June 2, 1971; no flow for several days in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	745	195	683	574	3310	3500	0	1670	2150	1960	646
2	351	563	183	865	665	3390	3510	912	2700	2450	1860	1810
3	8.1	262	187	689	765	3490	2260	0	2540	1830	2040	1480
4	0	942	266	532	1080	3490	3530	0	1750	2450	2080	1440
5	.50	1060	238	404	2290	3470	3500	0	1730	2810	1850	1180
6	68	591	231	340	3020	3500	3510	130	1280	1820	2020	1580
7	576	174	196	318	3130	3490	3410	270	1560	2090	1910	1000
8	543	745	210	544	2540	2220	3530	754	1260	2470	1910	1720
9	1150	357	221	1080	2320	1130	3060	276	1240	1700	1660	1370
10	599	193	229	376	2350	1470	2530	655	1470	2300	1950	1430
11	277	710	100	939	3140	3060	3050	490	68	1490	1220	1290
12	671	443	0	1070	2430	3380	3190	389	724	1740	1130	358
13	416	811	68	898	455	3440	2480	350	592	1590	1170	689
14	471	642	146	825	747	3500	1520	1050	777	1800	1410	1640
15	360	145	463	825	247	3480	978	469	1170	2140	1040	1430
16	1110	463	754	630	1980	3490	2000	468	682	1940	1440	1710
17	1040	424	871	236	1140	3490	503	0	1030	1730	812	1890
18	299	507	596	225	0	3480	1880	274	1160	1840	1320	1450
19	168	660	1500	226	0	3490	1790	633	1240	1760	1240	2210
20	643	508	637	235	0	3500	1720	0	1080	2630	1200	1480
21	775	502	802	247	718	3500	1590	0	941	1310	1070	2750
22	508	580	994	1470	1990	3490	722	12	721	1820	1740	1290
23	842	543	0	1040	2660	3500	0	1680	819	1700	420	1930
24	532	400	712	1170	3170	3490	0	2060	1470	1970	1140	1960
25	1180	173	695	1710	3350	3500	311	2030	1660	2030	1370	1610
26	181	317	893	1980	3370	3500	445	1600	1240	1920	1070	2760
27	1250	708	906	1590	3360	3500	498	1450	686	2020	1520	3430
28	468	245	739	1450	3320	3500	1090	772	1360	1970	1160	3300
29	720	209	681	916	---	3500	956	2420	1560	2000	1490	3130
30	683	202	645	1880	---	3510	169	1910	1150	2440	815	2440
31	554	---	213	1010	---	3510	---	770	---	1760	932	---
TOTAL	16443.60	14824	14571	26403	50811	101770	57232	21824	37330	61670	43949	52403
MEAN	530	494	470	852	1815	3283	1908	704	1244	1989	1418	1747
MAX	1250	1060	1500	1980	3370	3510	3530	2420	2700	2810	2080	3430
MIN	0	145	0	225	0	1130	0	0	68	1310	420	358
AC-FT	32620	29400	28900	52370	100800	201900	113500	43290	74040	122300	87170	103900
CAL YR 1985	TOTAL	230673.60	MEAN	632	MAX	2680	MIN	0	AC-FT	457500		
WTR YR 1986	TOTAL	499230.60	MEAN	1368	MAX	3530	MIN	0	AC-FT	990200		

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (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 Colgate powerplant through a tunnel at the dam. Water is diverted into the reservoir from Middle Yuba River via Lohman Ridge tunnel to Oregon Creek then via Camptonville tunnel. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Yuba River basin.

COOPERATION.--Records collected 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, 966,103 acre-ft June 12, 1982, elevation, 1,956.00 ft; minimum since reservoir first filled, 178,230 acre-ft Dec. 29, 1980, elevation, 1,700.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 963,412 acre-ft Feb. 18, elevation, 1,955.44 ft; minimum, 496,134 acre-ft Nov. 23, elevation, 1,836.44.

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

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 (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	531663	509363	508314	534153	629517	805135	817795	873839	958764	943395	849582	782696
2	531629	508568	513097	534481	638158	795089	818956	877212	957807	939851	846676	779523
3	531794	508314	523395	534481	647180	792263	821326	883079	956517	937541	843424	776941
4	532121	506885	525341	535795	653487	792473	820550	888517	956804	933589	840006	774614
5	532514	504983	527356	544883	654604	793023	819516	893794	956517	928806	837033	772663
6	532678	504192	528920	551151	653859	793401	818440	898315	956801	926421	833806	770138
7	531663	504129	530813	554403	652185	801990	818440	901977	956612	923294	830674	768484
8	531009	502928	533103	556084	651071	830327	817365	904502	956612	919318	827724	766173
9	528953	502928	534055	556320	649698	811919	816678	907493	956517	916923	825039	763949
10	528105	503876	534973	557600	648364	799869	817494	909751	956039	913263	821800	761482
11	527780	502928	535992	557701	644964	796398	817494	912338	957951	911321	819947	759349
12	526640	502296	537111	557160	645776	795934	816936	915210	958716	908737	818225	758939
13	526315	501161	537967	557026	661332	796483	817365	918362	959625	906342	816420	758078
14	525666	500247	538758	557262	681443	796906	819430	920221	959913	904043	814361	755134
15	525341	500436	538791	557667	722717	796483	822404	923247	959386	900373	812647	752768
16	523330	500121	538099	566576	770552	795342	822965	926328	959913	897353	810508	750202
17	521519	499901	537111	587230	903125	797329	826164	930305	959530	894432	809227	747602
18	521228	499336	536913	596325	963412	798937	826857	934012	958907	892154	807264	745332
19	521131	498455	534743	602319	943916	800081	827550	937777	958094	889425	805306	741612
20	520163	497576	534350	607283	914697	800717	828591	941883	957472	885342	803519	738709
21	519647	497262	533661	611202	906572	801353	830544	945764	956995	883531	801863	734689
22	519196	496572	532841	612059	896166	801863	834764	949470	956517	880819	799022	732685
23	518005	496134	533300	614062	882942	802585	840575	949845	956517	878113	798514	729485
24	517586	497764	532841	615137	869891	803264	846060	949370	955133	875097	796821	727092
25	515659	499461	531990	614921	857544	805178	850341	949370	952987	871909	794456	725977
26	515659	500594	531467	613776	844785	806370	854442	950321	951748	868862	792854	723670
27	513417	500499	530943	613060	830457	807862	857988	951748	951748	865734	790369	720337
28	513097	501350	529898	613167	818526	809654	860876	954607	949940	862701	788646	715198
29	511914	505902	529703	613847	---	811449	864219	953892	948040	859498	786212	710081
30	510861	507361	531401	615495	---	813675	868683	954702	946522	855505	785123	705771
31	510542	---	533366	621970	---	815647	---	957711	---	852263	783574	---
MAX	532678	509363	538791	621970	963412	830327	868683	957711	959913	943395	849582	782696
MIN	510542	496134	508314	534153	629517	792263	816678	873839	946522	852673	783574	705771
a	1841.00	1840.00	1848.06	1873.80	1923.57	1922.90	1935.00	1954.25	1951.95	1931.40	1915.33	1896.10
b	-20827	-3181	+26005	+88604	+196556	-2879	+53036	+89028	-11189	-93849	-69099	-77803

CAL YR 1985 b +140554

SACRAMENTO RIVER BASIN

11413520 NORTH YUBA RIVER BELOW NEW BULLARDS BAR DAM, NEAR NORTH SAN JUAN, CA

LOCATION.--Lat 39°22'48", long 121°08'19", in SW 1/4 NE 1/4 sec.36, T.18 N., R.7 E., Yuba County, Hydrologic Unit 18020125, Plumas National Forest, on right bank 1.1 mi downstream from New Bullards Bar Dam, and 2 mi northwest of North San Juan.

DRAINAGE AREA.--490 mi².

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,280 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Feb. 17 to Mar. 18. Records poor prior to Mar. 27, good thereafter. Flow regulated by New Bullards Bar Reservoir since 1969 (station 11413515). Colgate powerplant (station 11413510) diverts from New Bullards Bar Dam 1.1 mi upstream. Water is diverted out of basin through Slate Creek tunnel (station 11413250). See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE (since construction of New Bullards Bar Dam, unadjusted).--17 years (water years 1970-86), 274 ft³/s, 198,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,200 ft³/s, Jan. 22, 1970, gage height, 35.29 ft, from rating curve extended above 40,000 ft³/s, on basis on 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, from computation of flow over old Colgate Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,000 ft³/s, Feb. 19, gage height, 35.62 ft, from crest-stage gage; minimum daily, 5.0 ft³/s, many days in October.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	5.6	8.5	8.4	14	9500	9.6	14	9.9	9.1	7.6	6.8
2	5.6	5.6	11	8.2	21	7260	9.6	14	9.9	9.1	7.5	6.8
3	5.6	5.6	12	7.9	21	3010	9.6	14	11	9.1	7.4	6.8
4	5.6	5.6	10	8.8	18	771	9.3	14	11	9.1	7.4	6.8
5	5.6	5.6	9.0	11	14	11	9.1	14	11	9.1	7.4	6.8
6	5.6	5.6	9.0	8.9	13	11	9.0	14	11	9.1	7.4	6.8
7	5.6	5.6	10	7.5	12	1520	9.2	14	11	9.1	7.4	6.8
8	5.6	5.6	9.0	7.2	12	14300	9.2	14	11	9.1	7.4	6.8
9	5.0	5.6	7.6	7.2	11	23400	9.0	14	11	9.1	7.2	6.8
10	5.3	6.4	7.2	6.9	11	18100	10	14	11	9.1	7.2	6.8
11	5.0	6.4	7.2	6.8	11	10400	11	14	11	9.1	7.2	6.8
12	5.0	6.0	7.2	7.0	14	6700	11	14	11	9.1	7.2	6.8
13	5.0	5.6	7.6	6.9	20	5020	11	14	11	9.1	7.2	6.8
14	5.0	5.6	7.7	7.8	22	4000	11	13	11	9.1	7.2	6.8
15	5.0	5.3	7.3	9.3	32	4000	50	9.7	11	9.3	7.2	6.8
16	5.0	5.3	8.1	22	67	3590	334	9.2	11	9.4	7.2	6.8
17	5.0	5.3	9.2	22	1290	1100	14	9.3	11	9.4	7.2	7.1
18	5.0	5.3	9.2	12	26800	11	13	9.5	11	9.4	7.2	7.3
19	5.0	5.3	9.0	10	48200	11	13	9.6	11	9.0	7.2	7.2
20	5.0	5.3	9.2	9.3	41200	10	13	9.6	9.8	8.7	7.3	7.0
21	6.8	5.3	9.4	9.2	17100	11	13	9.6	9.5	8.7	7.4	6.8
22	5.6	5.3	9.5	9.5	13000	10	13	9.6	9.4	8.7	7.4	6.8
23	5.3	5.3	9.5	11	12300	9.9	13	9.8	9.4	8.3	7.3	6.8
24	5.3	5.6	9.5	9.8	10600	9.9	13	9.9	9.4	7.9	7.0	7.5
25	5.0	6.8	9.0	9.6	9500	9.8	13	9.9	9.4	7.9	7.0	7.7
26	5.0	6.8	9.0	9.5	9500	9.7	13	9.9	9.4	7.9	7.0	8.2
27	5.0	6.4	9.0	9.3	9500	9.4	14	9.9	9.1	7.7	7.0	8.7
28	5.3	8.5	8.7	9.5	9500	9.6	14	9.9	9.1	7.6	7.0	7.4
29	5.6	14	9.3	10	---	9.6	14	9.9	9.1	7.6	6.9	7.0
30	5.6	9.5	10	13	---	9.6	14	9.9	9.1	7.6	6.8	7.0
31	5.6	---	8.9	14	---	9.6	---	9.9	---	7.6	6.8	---
TOTAL	165.2	185.7	276.8	309.5	208803	112833.1	708.6	360.1	309.5	270.1	223.6	211.3
MEAN	5.33	6.19	8.93	9.98	7457	3640	23.6	11.6	10.3	8.71	7.21	7.04
MAX	6.8	14	12	22	48200	23400	334	14	11	9.4	7.6	8.7
MIN	5.0	5.3	7.2	6.8	11	9.4	9.0	9.2	9.1	7.6	6.8	6.8
AC-FT	328	368	549	614	414200	223800	1410	714	614	536	444	419

CAL YR 1985 TOTAL 2412.9 MEAN 6.61 MAX 36 MIN 2.4 AC-FT 4790
WTR YR 1986 TOTAL 324656.5 MEAN 889 MAX 48200 MIN 5.0 AC-FT 644000

SACRAMENTO RIVER BASIN

11414000 SOUTH YUBA RIVER NEAR CISCO, CA

LOCATION.--Lat 39°19'12", long 120°33'38", in SE 1/4 SW 1/4 sec.19, T.17 N., R.13 E., Nevada County, Hydrologic Unit 18020125, on right bank 0.7 mi downstream from Rattlesnake Creek, 1.3 mi west of Cisco Grove, and 1.5 mi northwest of Cisco.

DRAINAGE AREA.--51.8 mi².

PERIOD OF RECORD.--April 1942 to current year. Prior to October 1949, published as South Fork Yuba River near Cisco.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,520 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1945, water-stage recorder at site 200 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 10-13, 16-20, Dec. 7, 8, 10-12, 24-26, Apr. 29 to May 20. Records excellent except for estimated daily discharges, which are good. Low flow regulated by several small lakes operated by Pacific Gas and Electric Co.

AVERAGE DISCHARGE.--44 years, 207 ft³/s, 150,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s, Jan. 31, 1963, gage height, 19.6 ft from floodmarks in gage house, 20.6 ft from outside floodmarks, from rating curve extended above 5,000 ft³/s on basis of slope-area measurement at gage height 15.8 ft; minimum daily, 0.1 ft³/s, Nov. 5-7, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 16	2345	2,150	7.26	Mar. 8	0645	*7,910	*13.25
Feb. 18	0030	7,520	12.95	May 30	2145	1,650	6.64

Minimum daily, 2.1 ft³/s, Oct. 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	5.7	17	174	218	558	834	810	1010	56	5.8	7.0
2	9.6	5.3	132	143	180	533	623	910	962	53	5.4	6.8
3	8.5	5.3	139	108	156	564	441	1010	880	47	4.9	6.6
4	7.4	5.3	83	342	139	598	415	700	690	40	4.8	7.0
5	4.4	5.2	59	852	125	602	436	520	593	33	7.3	8.1
6	3.4	5.1	48	395	113	552	490	440	529	29	9.6	8.1
7	3.3	5.0	54	212	103	1970	573	350	443	27	9.4	8.0
8	3.5	5.0	51	162	97	5220	417	320	393	24	9.5	7.8
9	3.6	5.4	41	137	93	1360	358	340	398	22	9.5	7.8
10	3.2	5.8	37	125	89	661	466	580	395	19	9.3	7.7
11	3.0	6.3	33	118	87	453	581	700	369	17	8.9	7.4
12	3.0	6.7	31	112	133	353	583	800	353	16	8.6	9.4
13	2.6	7.1	28	102	689	294	386	890	363	15	8.5	10
14	2.6	7.4	27	101	1500	255	330	940	358	13	8.9	11
15	2.6	7.6	27	96	1100	227	336	950	306	12	9.1	11
16	2.5	7.8	27	524	717	206	289	970	273	10	9.2	14
17	2.2	7.9	28	1450	5110	183	251	990	258	9.5	9.0	16
18	2.1	8.0	31	558	5600	171	255	1100	259	9.2	9.0	37
19	2.7	8.1	35	376	2710	180	355	1100	198	8.2	9.0	42
20	3.7	8.2	38	314	885	223	625	900	164	7.1	9.0	39
21	6.5	8.4	39	224	507	259	943	652	154	7.1	9.1	37
22	7.7	8.0	41	180	423	295	1050	558	158	6.6	8.8	36
23	8.6	9.8	42	159	448	325	905	616	155	6.6	8.5	35
24	16	16	43	137	485	378	696	727	147	6.6	8.5	49
25	13	22	45	129	525	382	549	1010	128	6.9	8.4	54
26	11	18	46	127	534	419	439	1080	111	7.6	8.5	59
27	8.7	16	47	130	576	539	510	1040	102	8.9	8.1	61
28	7.8	17	46	133	592	636	794	1010	91	7.2	7.9	49
29	7.1	23	74	140	---	728	900	1110	75	6.5	7.9	49
30	6.7	18	408	316	---	837	800	1190	62	5.8	7.5	58
31	6.2	---	218	345	---	882	---	1170	---	6.2	7.3	---
TOTAL	184.2	284.4	2015	8419	23934	20843	16630	25483	10377	543.0	255.2	758.7
MEAN	5.94	9.48	65.0	272	855	672	554	822	346	17.5	8.23	25.3
MAX	16	23	408	1450	5600	5220	1050	1190	1010	56	9.6	61
MIN	2.1	5.0	17	96	87	171	251	320	62	5.8	4.8	6.6
AC-FT	365	564	4000	16700	47470	41340	32990	50550	20580	1080	506	1500

SACRAMENTO RIVER BASIN

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 Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is 6,290.5 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co). Prior to November 29, 1976, nonrecording gage on upstream side of dam at same datum.

REMARKS.--Lake is formed by a rockfill dam; storage began in 1928. 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 and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 49,903 acre-ft, June 27, July 4, 6, 1982 and June 9, 15-17, 1984, gage height, 114.60 ft; minimum, 250 acre-ft, Oct. 31 to Nov. 7, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 49,580 acre-ft, June 15, gage height, 114.18 ft; minimum, 3,199 acre-ft, Oct. 17, gage height, 22.49 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

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 (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6170	3753	4469	5627	5679	23493	40242	40923	48019	44959	25150	11477
2	6235	3776	4590	5714	5411	23922	40331	40916	48670	44638	24284	11281
3	6326	3801	4658	5767	5139	24392	40296	41027	48982	44712	23418	10294
4	6388	3827	4718	5978	4333	24866	40248	40861	48921	44749	22533	9676
5	6456	3847	4762	6494	4721	25401	40248	40682	49020	44749	21719	9115
6	6512	3868	4773	6744	4213	25860	40262	40489	49036	44749	21297	8561
7	6550	3891	4806	6883	4048	27632	40338	40345	49234	44271	21234	8024
8	6586	3937	4806	6986	4108	32394	40262	40283	49518	43353	21218	7504
9	6625	3950	4899	7065	4166	34148	40214	40296	49380	42396	21170	7004
10	6464	4030	4916	7147	4232	35065	40283	40496	49089	41520	21122	6470
11	6025	4061	4936	7197	4284	35589	40420	40592	49082	40599	20753	5960
12	5578	4072	4949	7255	4412	35998	40475	40813	49166	39634	20018	5688
13	5125	4079	4961	7252	4734	36220	40365	40979	49388	38761	19401	5726
14	4699	4072	4977	7190	5928	36390	40269	41166	49541	37830	18838	5735
15	4217	3963	4988	7129	6723	36633	40200	41353	49580	36916	18453	5743
16	3865	4161	4999	7382	7234	36495	40132	41416	49572	35985	17851	5711
17	3199	4111	5011	8199	10522	37028	40057	41555	49533	35686	17251	5732
18	3216	4085	5016	8538	15447	36698	40023	41764	49503	34199	16651	5764
19	3250	4234	5027	8724	16500	36942	40098	41813	49326	33254	16197	5764
20	3278	4255	5041	8805	17500	37140	40434	41645	49013	33014	15684	5834
21	3335	4269	5052	8815	18500	37388	40854	41729	49013	31513	15535	5860
22	3382	4269	5072	8698	19500	37597	41145	41911	48511	30634	15633	5843
23	3445	4300	5083	8382	20800	37903	41082	42079	48223	29759	15745	5869
24	3485	4324	5103	8176	21340	36370	40923	42318	47974	29216	15872	5989
25	3522	4338	5117	7718	21745	36574	40702	42806	47575	29187	15572	6043
26	3562	4338	5137	7376	22149	36574	40523	43182	47268	29156	14987	6149
27	3602	4354	5151	7047	22571	37226	40509	43606	46865	29125	14389	6191
28	3624	4394	5179	6732	23030	37730	40757	44322	46427	28565	13774	6232
29	3659	4426	5235	6432	---	38324	40889	45105	45903	27721	13195	6291
30	3687	4442	5406	6191	---	39064	40896	46168	45434	26863	12617	6379
31	3723	---	5523	5963	---	39756	---	47238	---	26027	12037	---
MAX	6625	4442	5523	8815	23030	39756	41145	47238	49580	44959	25150	11477
MIN	3199	3753	4469	5627	4048	23493	40023	40283	45434	26027	12037	5688
a	24.59	27.35	31.24	32.75	73.40	100.61	102.77	111.09	108.65	78.72	50.60	34.16
b	-2376	+719	+1081	+440	+17067	+16726	+1140	+6342	-1804	-19407	-13990	-5658

CAL YR 1985 b +1846

WTR YR 1986 b +280

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

b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 10 to Apr. 23. Flow regulated by Fordyce Lake (station 11414090). See schematic diagram of Yuba River basin.

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

AVERAGE DISCHARGE.--20 years, 141 ft³/s, 102,200 acre-ft/yr.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 883 ft³/s, May 27, gage height, 4.38 ft; minimum daily, 6.0 ft³/s, Oct. 19-23.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	6.2	6.7	7.7	185	29	220	522	443	342	436	340
2	10	6.2	9.8	7.7	184	29	249	483	471	223	433	337
3	9.8	6.2	7.7	7.7	183	29	235	515	638	55	429	336
4	9.8	6.2	7.5	9.7	181	30	220	497	586	55	418	332
5	9.9	6.2	7.5	12	179	30	220	430	480	55	409	325
6	10	6.2	7.2	10	177	30	224	370	417	55	195	318
7	10	6.2	7.7	10	104	42	242	315	269	308	27	312
8	10	6.2	7.7	10	6.5	42	226	275	201	539	27	306
9	10	6.2	7.5	10	6.5	41	213	267	443	520	27	299
10	89	6.2	7.5	10	6.5	41	231	309	542	504	27	292
11	240	6.2	7.5	10	6.5	41	259	361	349	499	199	285
12	234	6.2	7.5	10	6.7	41	278	405	334	498	366	160
13	230	6.2	7.5	41	10	41	249	490	306	493	348	9.5
14	225	6.2	7.2	68	17	41	227	479	300	492	343	9.5
15	222	6.2	7.2	67	13	41	218	481	302	492	341	9.5
16	218	6.2	7.0	70	13	41	199	578	311	488	339	9.5
17	213	6.2	7.0	73	37	41	185	619	323	487	339	9.5
18	139	6.2	6.7	72	31	41	178	681	334	479	337	9.5
19	6.0	6.2	6.7	72	27	41	193	751	337	471	340	9.5
20	6.0	6.2	6.7	72	26	41	263	745	339	465	331	9.5
21	6.0	6.2	6.7	72	26	41	445	471	339	462	157	9.5
22	6.0	6.2	6.7	124	26	41	612	326	338	458	22	9.5
23	6.0	6.5	6.7	202	26	41	538	447	341	454	22	9.5
24	6.1	6.5	6.7	202	27	41	517	531	341	279	22	9.6
25	6.2	6.7	6.7	199	27	41	492	630	332	32	216	9.8
26	6.2	6.7	6.7	197	27	41	410	776	314	32	380	9.8
27	6.2	6.7	6.7	196	28	41	374	685	314	32	377	9.8
28	6.2	6.7	6.7	194	28	41	445	453	331	261	364	9.9
29	6.2	6.7	7.4	192	---	41	520	455	334	454	369	10
30	6.2	6.7	8.9	189	---	41	566	454	335	448	361	11
31	6.2	---	7.8	189	---	129	---	440	---	442	347	---
TOTAL	1979.0	189.6	225.5	2605.8	1614.7	1292	9448	15241	11044	10874	8348	3816.4
MEAN	63.8	6.32	7.27	84.1	57.7	41.7	315	492	368	351	269	127
MAX	240	6.7	9.8	202	185	129	612	776	638	539	436	340
MIN	6.0	6.2	6.7	7.7	6.5	29	178	267	201	32	22	9.5
AC-FT	3930	376	447	5170	3200	2560	18740	30230	21910	21570	16560	7570
CAL YR 1985	TOTAL	28115.2	MEAN	77.0	MAX	512	MIN	5.8	AC-FT	55770		
WTR YR 1986	TOTAL	66678.0	MEAN	183	MAX	776	MIN	6.0	AC-FT	132300		

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and 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. Flow through powerplant No. 1 is transported out of Yuba River basin by Drum Canal to Bear River basin. See schematic diagram of Yuba River and Bear River basins.

COOPERATION.--Records were collected by Pacific Gas and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to 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, 74,591 acre-ft, June 13, 14, gage height, 204.74 ft; minimum, 17,767 acre-ft, Dec. 24, gage height, 95.08 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

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 (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32742	35573	22290	21639	33896	63776	63968	66470	73764	71743	60301	55091
2	33186	34956	23257	21880	34358	63764	63949	66398	73868	71342	60183	54901
3	33634	34524	23776	21937	34591	63796	63987	66928	73986	70632	60066	54470
4	34080	33830	23603	23260	34434	63847	64128	66810	73535	69812	59719	54012
5	34524	33237	22913	27242	34217	63840	64173	66411	73722	68996	59288	53742
6	34980	32719	22178	28395	33924	63719	64378	65936	73597	68166	58729	53801
7	35400	32213	21960	28343	33535	67592	65145	65378	73376	67618	57997	53877
8	35751	31675	21571	28017	32816	67184	65210	64674	73100	67592	57457	53950
9	36143	31190	21014	27578	32053	64971	64893	64032	73100	67631	57161	53066
10	36566	30979	20403	27100	31281	64045	64906	63674	74145	67631	56871	52550
11	37354	30746	19791	26554	30509	63343	65203	63426	74424	67644	56456	51990
12	38155	30127	19344	26010	30433	62873	65359	63419	74556	68730	56360	51239
13	38774	29800	19045	25471	33845	62581	65074	63949	74591	68910	56288	50158
14	38874	29229	18990	25076	40465	62265	64996	64739	74591	68850	56228	49128
15	39615	28672	18969	24692	45864	62064	64977	65663	74584	68790	56234	48091
16	40327	28240	18740	27003	49961	61812	64867	66790	74473	68763	56793	47114
17	40736	27680	18441	30460	69257	61573	64552	68080	74326	68684	57348	46163
18	40808	27058	18144	33624	68810	61298	64173	69771	74194	68644	57475	45280
19	40567	26479	18002	34273	65877	61529	63981	71702	73930	68504	57342	44310
20	40342	25828	17987	34628	65042	61580	64546	72235	73618	68312	57233	43344
21	40235	25186	18027	34349	63949	61711	65832	71234	73494	67743	56715	42377
22	40067	24591	18044	33957	63744	61969	66281	69852	73494	67085	55995	41411
23	39945	24266	17870	33788	63687	62196	66216	69290	73459	66398	55751	40398
24	39646	24214	17767	33493	63674	62442	65955	70040	73348	65514	55465	39605
25	39267	23963	17831	33121	63470	62537	65676	71627	73169	64269	55055	38905
26	38704	23386	17899	32696	63432	62632	65384	73197	73010	63400	54949	38414
27	38155	22855	17948	32259	63489	62923	65365	73577	72818	62531	54812	38429
28	37640	22672	17991	31775	63649	63266	65819	73653	72584	61730	54706	39040
29	37271	22676	18230	31611	---	63591	66111	73902	72337	61354	54635	39742
30	36590	22521	20586	32484	---	63827	66424	73882	72036	60954	54812	40444
31	36065	---	21237	33512	---	63840	---	73833	---	60612	54943	---
MAX	40808	35573	23776	34628	69257	67592	66424	73902	74591	71743	60301	55091
MIN	32742	22521	17767	21639	30433	61298	63949	63419	72036	60612	54635	38414
a	139.06	107.91	104.55	133.69	188.33	188.63	192.63	203.66	201.04	183.51	174.17	147.86
b	+3797	-13544	-1284	+12275	+30137	+191	+2584	+7409	-1797	-11424	-5669	-14499

CAL YR 1985 b +9448

WTR YR 1986 b +8176

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

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1968, in powerplant 0.7 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Canal diverts from Spaulding No. 1 powerplant at Lake Spaulding Dam. Water is used for irrigation and power in the Bear River basin. See schematic diagrams of Yuba River and Bear River basins.

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

AVERAGE DISCHARGE.--22 years, 547 ft³/s, 396,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 860 ft³/s, May 17, 1986; no flow for several days in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	417	286	287	717	13	565	849	819	790	505	490
2	0	408	460	284	680	13	635	846	834	747	401	737
3	0	405	485	264	669	13	702	841	746	701	401	804
4	0	465	483	132	763	13	754	827	824	742	487	804
5	0	483	606	126	769	13	806	833	828	740	548	671
6	0	495	619	391	769	13	804	848	832	739	548	510
7	0	476	466	551	764	15	784	848	832	736	547	512
8	0	455	463	549	763	17	802	846	832	734	546	746
9	0	400	464	545	770	61	815	846	832	734	430	790
10	23	333	470	542	775	244	806	844	834	734	391	783
11	0	279	461	538	772	381	791	843	822	734	406	780
12	63	400	361	534	728	379	793	843	827	714	620	785
13	350	396	278	530	358	389	787	843	835	650	621	791
14	12	399	162	525	408	398	787	844	842	724	621	792
15	7.6	389	154	520	311	396	785	848	835	719	623	791
16	138	349	248	446	480	403	802	856	834	691	525	786
17	310	405	289	412	721	408	840	860	822	721	296	778
18	265	405	299	583	366	408	851	854	823	723	299	769
19	254	381	240	587	402	178	851	832	823	723	513	789
20	247	411	174	648	202	396	853	815	818	723	656	794
21	252	427	155	743	161	397	845	821	813	723	662	793
22	253	380	160	746	13	396	841	820	793	716	661	789
23	321	288	261	740	13	397	840	817	809	707	658	791
24	385	277	235	750	94	397	832	816	822	707	382	791
25	410	388	160	772	289	397	839	823	826	598	397	760
26	415	465	160	789	299	394	843	812	809	402	455	704
27	410	418	155	787	296	395	845	826	818	408	658	452
28	414	298	151	786	193	396	851	830	820	497	647	57
29	411	290	150	739	---	396	853	826	817	543	656	2.1
30	409	288	221	723	---	396	849	826	818	543	655	0
31	409	---	285	710	---	444	---	827	---	543	584	---
TOTAL	5758.6	11670	9561	17279	13545	8556	24051	25910	24639	20334	16399	19841.1
MEAN	186	389	308	557	484	276	802	836	821	656	529	661
MAX	415	495	619	789	775	444	853	860	842	790	662	804
MIN	0	277	150	126	13	13	565	812	746	142	296	0
AC-FT	11420	23150	18960	34270	26870	16970	47710	51390	48870	40330	32530	39350
CAL YR 1985	TOTAL	144391.79	MEAN	396	MAX	851	MIN	0	AC-FT	286400		
WTR YR 1986	TOTAL	197543.70	MEAN	541	MAX	860	MIN	0	AC-FT	391800		

SACRAMENTO RIVER BASIN

11414190 DRUM CANAL ABOVE DRUM FOREBAY, NEAR BLUE CANYON, CA

LOCATION.--Lat 39°15'54", long 120°43'44", in NE 1/4 SW 1/4 sec.10, T.16 N., R.11 E., Placer County, Hydrologic Unit 18020126, on right bank 1.2 mi northwest of Blue Canyon, and 1.5 mi upstream from Drum Forebay.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow is water diverted from South Yuba River through Spaulding No. 1 powerplant plus diversion from North Fork American River basin by way of Lake Valley Canal (station 11426190). Water from Drum Canal enters the Bear River at Drum Afterbay. See schematic diagrams of Yuba River and Bear River basins.

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

AVERAGE DISCHARGE.--22 years, 553 ft³/s, 400,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 856 ft³/s, May 8, 1982; no flow at times in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	452	317	330	793	13	572	794	759	745	519	506
2	0	455	520	325	767	12	667	791	759	733	412	654
3	0	453	564	313	732	12	723	789	689	689	411	768
4	0	457	534	149	821	11	739	778	719	730	507	771
5	0	441	643	173	838	11	792	781	733	728	547	674
6	0	461	663	398	828	10	801	794	736	726	545	521
7	0	450	520	611	829	37	792	794	738	723	546	525
8	0	461	510	606	827	91	793	791	737	722	540	717
9	0	454	509	600	830	81	807	790	736	722	411	784
10	0	390	513	594	834	256	806	796	736	721	412	778
11	26	309	512	589	834	401	797	796	724	720	537	781
12	37	461	410	583	822	392	797	795	726	725	619	789
13	91	457	311	579	489	398	796	796	732	575	616	796
14	404	459	158	586	525	402	796	796	739	727	616	801
15	52	458	153	590	496	400	795	796	734	733	582	802
16	44	389	260	557	586	405	789	798	732	709	294	803
17	158	465	303	482	754	407	788	795	725	736	295	798
18	336	465	317	656	439	406	798	796	730	736	489	793
19	283	438	249	657	568	178	800	795	729	735	640	817
20	273	463	166	702	197	393	800	763	726	734	644	819
21	265	464	140	797	236	395	798	755	722	732	642	820
22	270	420	145	800	31	397	794	752	709	729	614	815
23	271	304	263	797	14	400	789	748	726	726	350	822
24	353	313	250	803	22	403	780	745	731	722	400	827
25	425	427	152	826	22	403	787	755	735	633	544	807
26	454	510	152	840	20	402	791	749	721	423	636	776
27	458	461	147	837	53	403	793	763	736	431	635	557
28	454	327	142	836	141	405	779	764	752	503	634	149
29	456	336	150	797	---	404	784	763	753	553	615	18
30	456	322	255	797	---	405	795	764	752	551	493	13
31	455	---	329	786	---	452	---	764	---	550	513	---
TOTAL	6021	12722	10257	18996	14348	8785	23338	24146	21976	20412	16258	20301
MEAN	194	424	331	613	512	283	778	779	733	658	524	677
MAX	458	510	663	840	838	452	807	798	759	745	644	827
MIN	0	304	140	149	14	10	572	745	689	215	294	13
AC-FT	11940	25230	20340	37680	28460	17430	46290	47890	43590	40490	32250	40270
CAL YR 1985	TOTAL	152215	MEAN	417	MAX	842	MIN	0	AC-FT	301900		
WTR YR 1986	TOTAL	197560	MEAN	541	MAX	840	MIN	0	AC-FT	391900		

SACRAMENTO RIVER BASIN

11414200 SOUTH YUBA CANAL NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°18'49", long 120°39'43", in SE 1/4 NE 1/4 sec.30, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on left bank of concrete flume 400 ft downstream from Bowman Lake Road and 2.5 mi northeast of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,590 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Canal diverts from Spaulding No. 2 powerplant at Lake Spaulding Dam. Downstream from the gage some flow was diverted to Boardman Canal (station 11421720) via the Bear River prior to Feb. 17, 1986. The remainder of the water enters Deer Creek at Deer Creek powerplant. See schematic diagrams of Yuba River and Bear River basins.

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

AVERAGE DISCHARGE.--22 years, 93.4 ft³/s, 67,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 165 ft³/s, Aug. 3, 1965; no flow Apr. 20-22, 1966, Apr. 6-11, 1971, and Apr. 5-21, 1986.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	105	46	51	55	87	4.3	142	88	71	62	69
2	87	115	37	51	55	88	4.5	142	94	68	64	73
3	80	115	38	53	55	87	4.4	142	91	58	64	72
4	55	111	39	51	57	87	2.8	142	100	57	64	72
5	74	113	59	46	57	88	0	142	101	56	64	72
6	75	107	41	48	64	88	0	142	101	55	64	72
7	74	98	51	48	68	75	0	141	102	57	67	71
8	71	97	50	54	68	26	0	142	102	58	68	72
9	72	98	41	52	69	41	0	142	103	58	67	73
10	75	82	41	51	73	41	0	142	103	57	68	73
11	75	94	42	51	75	41	0	142	103	57	70	73
12	75	92	47	51	68	41	0	142	103	57	70	73
13	76	71	52	50	42	44	0	142	104	60	70	74
14	76	50	52	50	35	46	0	142	104	58	70	73
15	81	49	52	49	26	56	0	142	103	57	70	73
16	95	48	52	45	59	62	0	142	103	58	70	64
17	96	47	52	36	84	63	0	143	102	58	70	55
18	96	48	52	45	36	62	0	142	103	59	70	57
19	95	48	52	45	11	60	0	73	103	59	69	58
20	94	48	53	45	16	60	0	62	102	59	68	57
21	92	47	53	45	18	60	0	63	102	59	68	58
22	91	48	53	54	19	60	2.0	63	101	59	70	59
23	91	53	52	68	19	60	39	77	102	60	70	59
24	89	48	52	70	33	60	89	88	103	62	71	60
25	88	42	52	69	79	60	90	86	103	59	71	56
26	91	42	52	68	88	60	121	86	102	57	71	56
27	90	46	52	69	88	60	142	88	90	58	72	52
28	90	51	52	69	86	60	141	88	70	62	73	54
29	91	52	54	67	---	60	147	88	68	65	71	70
30	91	50	43	60	---	60	142	88	69	66	71	108
31	91	---	52	57	---	24	---	88	---	64	71	---
TOTAL	2603	2115	1516	1668	1503	1867	929.0	3594	2925	1848	2128	2008
MEAN	84.0	70.5	48.9	53.8	53.7	60.2	31.0	116	97.5	59.6	68.6	66.9
MAX	96	115	59	70	88	88	147	143	104	71	73	108
MIN	55	42	37	36	11	24	0	62	68	55	62	52
AC-FT	5160	4200	3010	3310	2980	3700	1840	7130	5800	3670	4220	3980

CAL YR 1985 TOTAL 23971.0 MEAN 65.7 MAX 115 MIN 2.8 AC-FT 47550
WTR YR 1986 TOTAL 24704.0 MEAN 67.7 MAX 147 MIN 0 AC-FT 49000

SACRAMENTO RIVER BASIN

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 September 1986. Records of daily discharge since October 1964 are available in files of the Geological Survey.

GAGE.--Water-stage recorder and steel lipped rectangular weir with Parshall flume. Elevation of gage is 4,670 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 13 to Apr. 4. 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 diagram of Yuba River and Bear River basins.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 194 ft³/s, Apr. 14, June 8, 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.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.5	1.8	1.7	2.1	84	156	23	154	4.6	1.5	1.4
2	1.4	1.6	6.2	1.6	2.6	83	156	22	155	1.6	1.5	1.5
3	1.4	1.6	3.5	1.5	1.8	83	156	23	158	1.5	1.5	1.5
4	.98	.67	1.9	2.7	1.5	83	156	22	159	1.6	1.5	1.5
5	1.5	.09	2.2	3.3	1.4	83	153	22	158	1.5	1.5	1.5
6	1.7	.09	1.7	1.7	1.4	83	153	22	158	1.5	1.5	1.5
7	1.6	.09	2.4	1.5	1.3	100	152	21	158	1.5	1.5	1.5
8	1.6	.55	1.7	1.5	1.3	149	153	21	162	1.5	1.5	1.5
9	1.6	1.6	1.4	1.5	1.2	125	148	21	153	1.5	1.5	1.6
10	1.6	1.4	1.4	1.5	1.5	124	139	21	165	1.5	1.5	1.5
11	1.6	1.5	1.5	1.6	1.7	123	137	21	165	1.6	1.5	1.5
12	1.6	1.5	1.5	1.6	4.5	124	158	21	165	1.6	1.5	1.5
13	1.6	1.4	1.5	1.7	3.5	117	158	22	165	1.6	1.5	1.5
14	1.6	1.3	1.5	1.7	5.0	115	161	22	166	1.5	1.5	1.5
15	1.6	1.3	1.5	1.9	6.6	115	157	23	165	1.5	1.5	1.5
16	1.7	1.7	1.5	5.3	37	115	157	26	166	1.5	1.5	1.6
17	1.5	1.4	1.5	2.8	94	115	158	93	165	1.7	1.5	1.5
18	1.5	1.3	1.5	1.9	133	115	157	154	165	1.8	1.5	1.6
19	1.5	1.3	1.5	1.9	163	115	158	154	165	1.7	1.5	1.7
20	1.5	1.4	1.5	1.9	81	115	156	158	129	1.7	1.5	1.7
21	1.6	1.6	1.5	1.8	119	115	120	157	67	1.7	1.5	1.6
22	1.5	1.6	1.5	1.8	144	115	77	158	8.7	1.7	1.5	1.6
23	1.5	1.8	1.5	2.0	146	115	75	159	8.5	1.7	1.5	1.5
24	1.4	3.2	1.5	1.9	150	115	47	159	8.6	1.7	1.5	2.3
25	1.4	3.4	1.5	1.9	159	115	31	160	8.2	1.7	1.9	2.6
26	1.5	1.6	1.5	1.9	160	115	26	159	7.2	1.7	2.4	2.9
27	1.4	1.6	1.5	1.8	159	115	22	160	7.2	1.7	2.0	2.9
28	1.4	2.0	1.5	1.8	136	115	22	162	7.0	1.7	1.5	1.6
29	1.4	3.5	2.5	1.8	---	115	22	159	7.0	1.7	1.5	1.6
30	1.4	1.9	3.2	3.1	---	115	22	158	6.8	1.6	1.4	1.9
31	1.4	---	1.7	2.3	---	136	---	157	---	1.5	1.4	---
TOTAL	46.38	45.49	58.6	62.9	1718.4	3452	3543	2660	3332.2	52.9	48.1	51.1
MEAN	1.50	1.52	1.89	2.03	61.4	111	118	85.8	111	1.71	1.55	1.70
MAX	1.7	3.5	6.2	5.3	163	149	161	162	166	4.6	2.4	2.9
MIN	.98	.09	1.4	1.5	1.2	83	22	21	6.8	1.5	1.4	1.4
AC-FT	92	90	116	125	3410	6850	7030	5280	6610	105	95	101

WTR YR 1986 TOTAL 15071.07 MEAN 41.3 MAX 166 MIN .09 AC-FT 29890

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--No estimated daily discharges. Flow regulated by Lake Spaulding (station 11414140) 0.8 mi upstream. See schematic diagram of Yuba River and Bear River basins.

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

AVERAGE DISCHARGE.--20 years (water years 1967-86), 113 ft³/s, 81,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft³/s, Feb. 18, 1986, gage height, 19.95 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,400 ft³/s, Feb. 18, gage height, 19.95 ft; minimum daily, 5.0 ft³/s, Nov. 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	6.8	12	12	30	1350	1040	575	1530	8.4	6.7	7.5
2	6.5	6.8	114	11	36	1350	679	464	1340	5.6	6.7	7.3
3	6.5	6.8	72	9.7	35	1380	320	466	1500	6.0	6.7	6.7
4	5.9	5.0	21	15	22	1440	186	525	1430	5.9	6.7	7.5
5	6.2	6.0	17	36	19	1440	184	414	642	6.1	6.6	7.5
6	6.8	7.8	14	20	16	1390	185	295	723	6.0	6.8	6.9
7	6.9	8.2	18	15	14	2630	102	208	475	6.7	6.8	6.5
8	6.9	11	16	12	12	14100	233	181	292	6.9	6.9	7.2
9	6.6	9.6	12	11	12	4150	235	147	198	6.4	8.1	7.3
10	6.5	6.2	11	9.9	11	1890	195	182	185	6.8	7.7	7.3
11	6.5	5.8	10	9.3	11	1050	231	172	182	7.0	6.9	7.3
12	6.5	5.7	9.6	8.9	41	650	361	98	183	9.3	6.9	7.3
13	9.5	5.9	8.6	8.5	85	449	293	27	238	7.3	7.0	6.6
14	7.7	6.0	8.0	8.6	101	318	229	24	219	6.8	6.7	7.4
15	7.1	6.5	7.7	9.6	164	240	217	24	187	6.6	6.7	7.6
16	7.4	8.5	7.5	57	271	195	210	41	185	6.6	6.7	8.6
17	6.8	6.9	7.4	118	3260	156	191	97	183	7.1	6.2	8.3
18	6.8	6.1	7.3	38	18000	141	186	106	183	7.0	6.2	7.7
19	6.0	5.6	7.3	29	9200	140	185	207	186	6.8	7.0	8.3
20	6.3	5.6	7.3	20	3160	141	183	681	148	6.3	7.6	8.0
21	8.0	5.6	7.3	14	1860	148	308	1110	79	6.9	7.5	7.7
22	7.4	5.6	7.1	12	1470	186	1120	983	10	7.0	7.3	7.2
23	7.1	7.8	7.0	12	1380	232	1330	648	12	7.1	7.3	6.9
24	6.5	24	6.8	12	1370	283	984	379	16	7.0	7.3	16
25	6.4	23	6.8	12	1290	356	648	407	12	7.4	7.1	21
26	6.3	13	6.8	11	1180	376	366	692	12	7.7	6.9	30
27	6.6	10	6.8	11	1240	469	243	1460	11	7.4	7.8	36
28	6.8	16	6.7	10	1250	636	404	1400	9.9	7.4	7.3	15
29	6.8	31	9.6	10	---	828	538	1450	10	7.2	6.5	11
30	6.8	16	32	22	---	1070	485	1810	10	7.0	5.9	10
31	6.8	---	15	28	---	1250	---	1760	---	6.7	5.8	---
TOTAL	211.4	288.8	499.6	612.5	45540	40434	12071	17033	10390.9	214.4	214.3	309.6
MEAN	6.82	9.63	16.1	19.8	1626	1304	402	549	346	6.92	6.91	10.3
MAX	9.5	31	114	118	18000	14100	1330	1810	1530	9.3	8.1	36
MIN	5.9	5.0	6.7	8.5	11	140	102	24	9.9	5.6	5.8	6.5
AC-FT	419	573	991	1210	90330	80200	23940	33780	20610	425	425	614

CAL YR 1985 TOTAL 3111.9 MEAN 8.53 MAX 114 MIN 5.0 AC-FT 6170
WTR YR 1986 TOTAL 127819.5 MEAN 350 MAX 18000 MIN 5.0 AC-FT 253500

SACRAMENTO RIVER BASIN

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 Sigra 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 National Geodetic Vertical Datum of 1929 (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 and Electric Co. Water is eventually used for irrigation by Nevada Irrigation District. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Yuba River basin.

COOPERATION.--Selected gage-height readings provided by Nevada Irrigation District.

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, 69,000 acre-ft, May 28-31, elevation, 5,564.0 ft; minimum, 31,600 acre-ft, Dec. 28, 29, Jan. 2, 3, elevation, 5,512.6 ft.

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

5,419.6	0	5,435	1,400	5,460	6,900	5,510	30,000
5,425	500	5,440	2,100	5,470	10,200	5,540	49,800
5,430	900	5,450	4,100	5,480	14,200	5,570	73,800

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55400	41500	34000	31700	35000	65500	65600	65400	68900	64800	67800	61200
2	54900	41000	34200	31600	35000	65500	65600	65500	68900	64700	68000	60900
3	54400	40600	34300	31600	34900	65500	65400	65700	68900	64600	68200	60800
4	53800	40200	34200	31700	34700	65600	64900	65900	68800	64500	68400	60600
5	53200	39800	34100	32600	34400	65600	64800	65900	68700	64500	68600	60400
6	52700	39400	34000	32900	34100	65500	64800	65900	68600	64400	68500	60300
7	52200	39000	34000	33100	33800	67600	64800	66000	68400	64400	68300	60000
8	51700	38500	33800	33100	33500	67800	64800	66300	68300	64300	68000	59500
9	51200	38000	33700	33100	33100	66500	64800	66500	68000	64200	67600	59200
10	50800	37800	33600	33100	32800	66000	64800	66800	67700	64200	67200	59200
11	50300	37300	33500	33100	32300	65700	64800	67200	67500	64100	66800	59200
12	49800	36900	33400	33000	32200	65600	64800	67600	67400	64100	66400	59200
13	49400	36700	33400	33000	32900	65500	64600	67900	67200	64000	66000	59000
14	49000	36500	33200	33000	35000	65400	64300	68200	67100	64000	65700	58800
15	48500	36400	33100	33000	36700	65300	64100	68300	66900	63900	65200	58600
16	48100	36200	33000	33900	38300	65200	64000	68300	66700	63800	64800	58500
17	47700	36000	32900	35200	47400	65200	63900	68400	66600	63700	64400	58400
18	47300	35800	32800	35600	56400	65000	63700	68400	66500	63600	64000	58300
19	46900	35700	32600	35800	59200	65000	63600	68300	66400	63600	63600	58000
20	46400	35600	32500	36000	60600	65000	63600	68200	66300	63900	63600	57800
21	46000	35400	32400	36100	61600	65000	63900	68400	66200	64400	63500	57500
22	45700	35300	32300	36100	62800	65100	64400	68400	66100	64700	63300	57200
23	45200	35100	32200	35900	63700	65100	64700	68400	66000	64900	63200	56800
24	44900	35000	32000	35800	64700	65200	64800	68400	65800	65200	62900	56600
25	44500	34900	31900	35600	65200	65200	64900	68500	65800	65500	62800	56400
26	44100	34700	31900	35500	65400	65200	64900	68700	65600	65700	62600	56400
27	43600	34600	31700	35300	65500	65300	64900	68800	65500	66000	62400	56100
28	43200	34500	31600	35100	65500	65400	65100	69000	65300	66300	62100	55800
29	42700	34300	31600	34700	---	65600	65300	69000	65200	66700	61900	55500
30	42300	34100	31700	34900	---	65600	65300	69000	64900	67000	61600	55200
31	42000	---	31700	35100	---	65700	---	69000	---	67400	61400	---
MAX	55400	41500	34300	36100	65500	67800	65600	69000	68900	67400	68600	61200
MIN	42000	34100	31600	31600	32200	65000	63600	65400	64900	63600	61400	55200
a	5528.7	5516.9	5512.8	5518.5	5559.6	5559.9	5559.4	5564.0	5558.9	5562.0	5554.5	5546.7
b	-14000	-7900	-2400	+3400	+30400	+200	-400	+3700	-4100	+2500	-6000	-6200

CAL YR 1985 b +2800
WTR YR 1986 b -800

SACRAMENTO RIVER BASIN

11416000 BOWMAN-SPAULDING CANAL INTAKE NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°26'26", long 120°39'29", in NW 1/4 SW 1/4 sec.8, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 0.6 mi downstream from Bowman Dam, 4.2 mi east of Graniteville, and 8.5 mi south of Sierra City.

PERIOD OF RECORD.--October 1927 to current year. Prior to October 1970, published as Bowman-Spauldung Canal at intake or Bowman-Spauldung Canal intake, near Sierra City.

REVISED RECORDS.--WSP 1395: 1935-36, 1940.

GAGE.--Water-stage recorder. Datum of gage is 5,390.39 ft above National Geodetic Vertical Datum of 1929. Prior to July 1965 at site 0.3 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records excellent except flows below 1 ft³/s, which are poor. Canal diverts from left bank of Canyon Creek at diversion dam 500 ft downstream from Bowman Dam. Water is diverted to Lake Spaulding and after passing through several powerhouses is used for irrigation by Nevada Irrigation District. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--59 years, 161 ft³/s, 116,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 345 ft³/s, Sept. 5, 1986; no flow at times in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	271	212	76	82	211	15	.47	215	231	288	.41	315
2	262	211	88	82	225	15	.45	217	238	300	.44	322
3	265	212	85	81	175	10	.37	218	249	295	.43	322
4	266	213	80	84	221	8.0	.24	218	259	294	.45	297
5	266	215	81	88	239	9.7	.04	219	264	294	.41	345
6	265	215	81	84	238	9.7	.02	218	264	293	125	320
7	247	215	83	84	237	15	1.0	94	264	293	236	320
8	230	216	81	83	236	9.3	.35	30	263	292	290	320
9	230	215	81	83	245	5.7	.22	48	280	292	275	200
10	229	215	81	83	263	3.2	.18	57	290	292	296	266
11	229	214	80	82	262	1.9	.18	56	290	291	292	176
12	228	214	80	82	250	1.4	.18	57	290	290	299	179
13	228	156	64	82	152	1.2	132	58	290	291	297	273
14	227	101	95	82	107	.96	221	57	290	291	296	273
15	225	101	86	82	75	.79	218	56	290	290	292	273
16	223	103	80	92	80	.70	218	40	290	290	294	274
17	221	97	80	89	107	.66	218	31	290	289	293	259
18	219	91	81	84	101	.77	218	30	304	289	297	251
19	218	91	81	84	74	1.2	217	37	292	289	293	235
20	218	91	81	84	47	1.4	217	32	291	103	244	252
21	217	91	81	105	47	1.6	202	12	291	.29	210	259
22	217	91	81	145	38	1.7	147	14	292	.10	276	261
23	218	124	81	165	11	1.7	182	79	293	.09	310	263
24	216	148	81	164	10	2.3	182	222	295	.23	311	264
25	217	109	81	163	13	.86	194	235	294	4.9	304	265
26	216	92	81	162	16	.96	211	257	291	.41	280	264
27	215	102	81	162	15	.94	215	258	287	.27	317	257
28	214	123	81	219	14	.72	215	244	286	.28	312	265
29	214	163	83	271	---	.64	215	229	285	.33	325	273
30	213	131	85	171	---	.66	215	234	284	.39	315	263
31	212	---	82	130	---	.48	---	232	---	.40	316	---
TOTAL	7136	4572	2523	3534	3709	124.14	3640.70	4004	8417	5653.69	7437.73	8106
MEAN	230	152	81.4	114	132	4.00	121	129	281	182	240	270
MAX	271	216	95	271	263	15	221	258	304	300	325	345
MIN	212	91	64	81	10	.48	.02	12	231	.09	.41	176
AC-FT	14150	9070	5000	7010	7360	246	7220	7940	16700	11210	14750	16080
CAL YR 1985	TOTAL	55587.43	MEAN	152	MAX	299	MIN	0	AC-FT	110300		
WTR YR 1986	TOTAL	58857.26	MEAN	161	MAX	345	MIN	.02	AC-FT	116700		

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records show water diverted from Bowman Lake (station 11415500) plus numerous small tributaries before it enters Lake Spaulding (station 11414140). See schematic diagram of Yuba River Basin.

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

AVERAGE DISCHARGE.--22 years, 228 ft³/s, 165,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 335 ft³/s, Dec. 25, 1983; no flow at times in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	290	218	113	132	289	182	189	294	292	290	0	295
2	277	217	125	126	317	175	175	289	286	294	0	295
3	263	217	149	120	287	170	147	295	288	294	0	297
4	270	218	126	123	287	165	133	305	293	293	0	294
5	265	207	114	199	300	159	126	305	296	293	0	291
6	262	223	107	216	303	155	121	301	294	293	76	296
7	264	217	108	161	299	190	140	249	292	292	199	297
8	243	225	111	142	295	306	141	97	288	291	274	297
9	236	223	106	132	291	164	121	48	286	290	277	258
10	233	230	102	128	299	142	117	0	294	288	280	264
11	232	226	100	124	304	164	118	5.4	294	294	287	255
12	231	223	97	121	311	152	115	.10	297	293	287	228
13	230	209	88	120	332	161	137	0	297	292	291	271
14	229	138	91	119	332	148	256	0	295	290	295	307
15	229	120	105	121	319	136	295	0	293	289	297	309
16	228	121	100	148	334	128	308	33	291	289	297	307
17	225	118	97	294	320	114	303	58	289	288	298	306
18	224	110	96	278	316	104	298	52	289	288	299	298
19	223	105	96	220	288	98	293	47	296	288	299	283
20	218	104	96	213	209	99	293	11	280	240	293	293
21	226	102	96	190	142	99	299	0	312	62	241	297
22	224	104	96	201	127	102	273	0	304	4.3	251	299
23	225	107	96	232	103	108	273	30	298	.21	278	296
24	217	158	96	232	88	113	281	254	291	0	290	299
25	231	138	96	227	118	121	278	276	278	0	293	310
26	225	127	96	223	172	122	284	293	304	0	285	314
27	222	119	96	220	193	131	287	302	296	0	285	313
28	220	127	96	230	185	147	292	307	293	0	292	304
29	222	147	97	287	---	159	297	293	292	0	294	301
30	221	174	152	301	---	172	297	293	291	0	297	296
31	219	---	147	302	---	178	---	296	---	0	296	---
TOTAL	7324	4972	3291	5882	7160	4564	6687	4733.50	8789	5835.51	7151	8770
MEAN	236	166	106	190	256	147	223	153	293	188	231	292
MAX	290	230	152	302	334	306	308	307	312	294	299	314
MIN	217	102	88	119	88	98	115	0	278	0	0	228
AC-FT	14530	9860	6530	11670	14200	9050	13260	9390	17430	11570	14180	17400
CAL YR 1985	TOTAL	66864.00	MEAN	183	MAX	307	MIN	0	AC-FT	132600		
WTR YR 1986	TOTAL	75159.01	MEAN	206	MAX	334	MIN	0	AC-FT	149100		

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 9-13, 16, 17, Mar. 7-18, and Mar. 26 to Apr. 4. Records good. Flow regulated by French Lake, usable capacity, 13,840 acre-ft, Bowman Lake (station 11415500), several smaller reservoirs, and diversion into Bowman-Spaulding Canal (station 11416000). See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--59 years, 36.4 ft³/s, 26,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,970 ft³/s, Mar. 8, 1986, gage height, 9.08 ft from rating curve extended above 1,500 ft³/s on basis of computation of flow over Bowman dam, maximum gage height 9.42 ft, in gage well, 10.32 ft from floodmarks Jan. 22, 1970; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,970 ft³/s, Mar. 8, gage height, 9.08 ft, minimum daily, 3.8 ft³/s, Oct. 1, 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	4.4	5.2	6.1	8.2	560	641	5.2	153	5.2	6.2	4.7
2	3.8	4.4	21	5.4	7.8	556	627	5.2	108	5.2	6.5	4.8
3	3.9	4.4	14	5.0	6.6	558	583	5.8	114	5.2	6.7	4.7
4	3.9	4.4	6.7	8.8	6.0	565	349	6.2	78	5.1	6.8	4.7
5	4.0	4.4	6.1	16	5.8	563	243	6.3	25	5.0	7.0	4.8
6	4.1	4.4	5.6	7.1	5.4	557	219	6.3	7.0	5.0	7.3	4.7
7	4.2	4.4	7.5	5.5	5.2	906	250	5.6	5.1	5.0	7.8	4.7
8	4.4	4.4	6.0	5.0	5.1	3120	246	5.1	5.4	5.0	7.9	4.7
9	4.4	4.4	5.2	4.7	5.0	1710	212	5.2	6.6	5.0	7.9	6.3
10	4.4	4.4	4.9	4.6	5.1	1060	209	6.3	4.8	5.0	7.9	5.7
11	4.4	4.4	4.8	4.5	5.0	760	234	8.2	4.5	5.0	6.6	8.0
12	4.4	4.4	4.6	4.4	11	645	250	8.1	4.4	5.0	5.7	9.0
13	4.4	4.4	4.5	4.4	20	572	200	5.4	4.4	4.9	5.7	9.6
14	4.4	4.4	4.6	4.4	28	525	76	71	4.4	4.9	5.7	9.7
15	4.4	4.5	4.4	4.4	30	497	26	157	4.4	4.9	5.7	9.7
16	4.4	4.5	4.5	26	40	457	10	218	4.4	4.9	5.7	10
17	4.8	4.5	4.5	15	93	402	6.2	218	4.3	4.9	5.7	10
18	5.3	4.4	4.6	6.7	48	327	6.9	249	4.4	4.9	5.7	9.8
19	5.9	4.3	4.6	6.0	34	279	5.8	360	4.3	4.8	5.7	9.5
20	6.6	4.2	4.5	6.0	8.0	272	5.8	346	4.2	4.5	5.6	9.5
21	7.0	4.2	4.4	5.2	5.9	280	5.5	147	4.2	5.5	5.4	9.4
22	7.1	4.2	4.4	5.0	8.4	293	5.1	164	4.2	7.7	5.5	9.3
23	7.4	4.9	4.4	5.1	14	309	5.1	118	4.2	5.5	5.6	9.3
24	5.9	7.5	4.5	4.9	50	332	5.2	4.5	4.2	5.6	5.6	10
25	4.5	10	4.6	4.8	337	355	5.2	4.2	4.1	9.1	5.7	11
26	4.4	5.9	4.6	4.8	481	379	5.2	4.2	4.1	7.2	5.5	16
27	4.4	5.3	4.5	4.8	536	418	5.2	4.2	5.1	6.7	5.4	13
28	4.3	6.0	4.4	5.0	563	473	5.1	49	5.1	6.3	5.3	11
29	4.3	8.2	6.9	5.2	---	541	5.1	125	5.1	6.0	5.0	10
30	4.3	5.8	14	11	---	605	5.1	175	5.1	6.0	4.8	9.8
31	4.4	---	6.4	9.3	---	636	---	199	---	6.1	4.7	---
TOTAL	147.9	150.0	190.9	215.1	2372.5	19512	4451.5	2692.0	596.0	171.1	188.3	253.4
MEAN	4.77	5.00	6.16	6.94	84.7	629	148	86.8	19.9	5.52	6.07	8.45
MAX	7.4	10	21	26	563	3120	641	360	153	9.1	7.9	16
MIN	3.8	4.2	4.4	4.4	5.0	272	5.1	4.2	4.1	4.5	4.7	4.7
AC-FT	293	298	379	427	4710	38700	8830	5340	1180	339	373	503

CAL YR 1985 TOTAL 1858.0 MEAN 5.09 MAX 21 MIN 3.4 AC-FT 3690
WTR YR 1986 TOTAL 30940.7 MEAN 84.8 MAX 3120 MIN 3.8 AC-FT 61370

SACRAMENTO RIVER BASIN

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.

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 National Geodetic Vertical Datum of 1929, from river-profile map. Oct. 1, 1940, to Sept. 30, 1948, at site 150 ft upstream at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Jan. 5-10 and Mar. 12-14. Records fair. Flow regulated by Lake Spaulding, Fordyce Lake, Bowman Lake (stations 11414040, 11414090, 11415500), and many smaller reservoirs. Diversions into and out of basin for several powerhouses and for irrigation of about 20,000 acres by the Nevada Irrigation District. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--35 years, 481 ft³/s, 348,500 acre-ft/yr.

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, 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,100 ft³/s, Feb. 17, 19, gage height, 17.90 ft, 19.12 ft, from crest-stage gage; minimum daily, 43 ft³/s, Oct. 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	54	217	249	988	2310	2320	798	1710	88	59	49
2	47	53	927	218	1170	2270	1980	776	1420	87	57	48
3	46	53	1210	203	1490	2220	1550	760	1570	80	56	48
4	45	53	500	205	1020	2220	1070	888	1550	79	56	48
5	44	53	328	1380	732	2190	936	811	900	76	55	48
6	43	50	266	1040	604	2130	879	694	859	75	55	48
7	47	50	291	620	497	3410	1010	561	710	75	54	47
8	54	53	352	430	434	17200	879	544	550	75	54	45
9	52	53	256	275	387	8940	985	495	390	75	54	47
10	50	127	208	210	353	7180	865	534	315	74	55	50
11	48	117	180	191	327	4880	860	524	313	74	55	62
12	48	83	160	176	479	4200	1000	502	312	73	54	54
13	47	72	148	167	2200	3260	1030	401	331	73	52	57
14	47	68	140	168	2160	2490	781	378	369	72	51	55
15	46	68	133	218	5740	2380	659	482	334	68	51	58
16	44	84	126	718	7290	2190	625	553	299	66	51	70
17	44	106	121	2130	17900	1800	589	581	299	66	51	98
18	44	89	118	756	20600	1560	554	606	299	66	50	92
19	44	75	115	512	17400	1400	534	725	294	66	50	81
20	45	68	115	456	8330	1330	514	1200	294	65	50	77
21	74	66	115	377	5080	1290	518	1460	221	64	50	75
22	82	65	113	325	3730	1310	1130	1390	167	63	50	69
23	68	68	111	359	3010	1360	1490	1220	106	66	49	67
24	70	235	109	316	2620	1430	1260	630	100	71	49	80
25	63	450	109	283	2500	1520	1000	605	99	69	50	179
26	58	221	111	264	2400	1510	768	643	98	68	50	228
27	56	143	111	248	2390	1580	558	1450	95	71	50	436
28	54	270	108	235	2360	1750	568	1450	91	67	50	185
29	54	874	110	228	---	1930	852	1580	90	64	50	124
30	54	389	586	455	---	2240	671	1680	89	62	50	102
31	54	---	341	921	---	2430	---	1800	---	62	49	---
TOTAL	1619	4210	7835	14333	114191	93910	28435	26721	14274	2200	1617	2727
MEAN	52.2	140	253	462	4078	3029	948	862	476	71.0	52.2	90.9
MAX	82	874	1210	2130	20600	17200	2320	1800	1710	88	59	436
MIN	43	50	108	167	327	1290	514	378	89	62	49	45
AC-FT	3210	8350	15540	28430	226500	186300	56400	53000	28310	4360	3210	5410

CAL YR 1985 TOTAL 59740 MEAN 164 MAX 2350 MIN 38 AC-FT 118500
WTR YR 1986 TOTAL 312072 MEAN 855 MAX 20600 MIN 43 AC-FT 619000

SACRAMENTO RIVER BASIN

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 Sept. 30, 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.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 278.68 ft above National Geodetic Vertical Datum of 1929 (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.--Estimated daily discharges Feb. 17-21. Records good except for period of missing record, which is fair. Diversions out of basin for power and irrigation above station up to 1,800 ft³/s; see stations 11413250, 11414190, 11414200. Flow regulation by Lake Spaulding (station 11414140), Jackson Meadows and New Bullards Bar Reservoirs (stations 11407800, 11413515), Englebright Reservoir beginning in 1941, capacity, 70,000 acre-ft, Bowman and Fordyce Lakes (stations 11415500, 11414090), and many smaller reservoirs. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--45 years, 2,585 ft³/s, 1,873,000 acre-ft/yr.

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, no flow through powerplant, 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 ft and 546.14 ft; no flow at times in 1942, 1949, 1956, 1958-61, 1968-69.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 100,000 ft³/s, Feb. 19, gage height, 33.0 ft, from floodmarks; minimum daily, 545 ft³/s, Oct. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	545	671	727	1080	2370	15400	6230	1160	4140	2330	1900	1140
2	619	671	814	1100	2360	13700	5910	1080	4130	2340	1900	1230
3	627	671	830	1090	2740	9400	4460	1080	4160	2340	1910	1290
4	659	671	819	1090	3210	6760	4670	1080	4120	2330	1910	1290
5	667	671	817	1090	3510	6160	4790	1080	3310	2340	1900	1300
6	676	671	826	1090	3540	6010	4710	1080	2480	2330	1870	1300
7	682	671	847	1090	3370	7870	4830	1090	2330	2060	1860	1290
8	688	671	873	1090	2870	46300	4790	1090	2340	1870	1840	1290
9	661	671	888	1110	2840	40300	4650	1090	2040	1870	1870	1290
10	661	671	888	1090	2870	31800	4120	1090	1560	1870	1850	1290
11	665	653	888	1100	2870	21600	4110	1090	1280	1870	1530	1290
12	667	663	882	1100	2880	17000	4090	1090	1100	1890	1150	1290
13	661	666	877	1100	3530	13900	4090	1080	1100	1880	1190	1270
14	661	666	879	1100	3850	11100	3310	1080	1060	1880	1240	1290
15	685	666	893	1100	4730	11000	2700	1080	1070	1880	1190	1520
16	673	666	910	802	16800	10200	2480	1080	1080	1880	1150	1660
17	669	666	897	2250	51000	7670	2270	1080	1080	1880	1140	1690
18	661	666	900	1800	77400	5960	2280	1080	1080	1860	1140	1780
19	668	666	900	1480	87200	5590	2360	1070	1070	1900	1130	2110
20	671	666	900	1700	56700	5430	2370	1070	1060	1930	1130	2310
21	761	666	900	1850	25400	5320	2060	1290	1060	1920	1130	2350
22	801	666	900	1830	21600	5280	1930	1760	1060	1900	1140	2350
23	832	666	900	1890	19800	5290	1930	2210	1170	1770	1130	2360
24	801	666	900	1880	18000	5310	1930	2390	1240	1910	1130	2350
25	801	666	900	1920	16400	5390	1400	2350	1240	1890	1140	2590
26	735	666	900	1920	15800	5330	1800	2800	1240	1890	1150	3120
27	870	666	900	1920	15800	5350	1820	3320	1240	1890	1150	3330
28	870	666	900	1860	15700	5490	1580	3340	1230	1890	1150	3390
29	783	754	900	1900	---	5660	1460	3340	1230	1890	1150	3400
30	672	724	896	2080	---	5930	1350	3350	1700	1900	1150	2970
31	671	---	900	2360	---	6220	---	3690	---	1910	1150	---
TOTAL	21763	20160	27151	45862	485140	353720	96480	51560	54000	61290	43370	57130
MEAN	702	672	876	1479	17330	11410	3216	1663	1800	1977	1399	1904
MAX	870	754	910	2360	87200	46300	6230	3690	4160	2340	1910	3400
MIN	545	653	727	802	2360	5280	1350	1070	1060	1770	1130	1140
AC-FT	43170	39990	53850	90970	962300	701600	191400	102300	107100	121600	86020	113300

SACRAMENTO RIVER BASIN

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.

REVISED RECORDS.--WSP 1395: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 630 ft above National Geodetic Vertical Datum of 1929, from river-profile map. June 21, 1935, to Nov. 30, 1938, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream is affected by Scotts Flat Reservoir beginning in 1949, usable capacity, 26,300 acre-ft, increased to 49,000 acre-ft in July 1964; Deer Creek Reservoir, capacity, 1,400 acre-ft; Lake Wildwood, capacity, 3,840 acre-ft beginning in 1970, power developments, and diversion for irrigation. At times water from South Yuba River is diverted to Deer Creek and water from Deer Creek is diverted to Bear River. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--51 years, 133 ft³/s, 96,360 acre-ft/yr.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,100 ft³/s, Feb. 17, gage height, 14.05 ft; minimum daily, 1.7 ft³/s, Oct. 19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	6.2	31	35	291	271	168	28	13	5.2	3.0	6.2
2	6.6	6.1	163	30	423	276	161	40	12	4.7	3.9	5.5
3	6.3	6.2	339	26	739	234	161	81	11	3.9	4.5	4.5
4	5.5	6.2	121	42	390	231	159	101	12	5.1	3.8	4.5
5	5.0	6.9	106	345	168	219	158	101	11	4.4	3.5	4.9
6	4.8	6.3	72	142	119	272	114	93	11	4.0	3.2	7.0
7	6.3	5.2	84	67	92	834	193	87	11	3.3	4.2	6.3
8	7.0	4.5	100	46	82	2330	168	71	11	3.3	3.7	5.3
9	5.3	4.1	60	38	67	1150	124	58	9.4	3.4	3.9	4.9
10	4.0	17	46	33	60	2120	115	49	9.7	2.7	3.9	5.2
11	2.1	21	32	30	54	1310	77	49	8.5	3.4	4.2	4.5
12	2.2	16	28	28	196	1330	59	44	7.9	4.2	3.7	4.7
13	3.2	10	26	26	770	1050	55	39	6.8	3.9	3.5	5.7
14	3.3	7.2	24	33	632	746	51	35	6.3	3.2	3.4	6.3
15	3.2	6.3	23	104	1830	1140	49	31	5.4	3.5	3.5	5.7
16	3.0	6.9	22	448	2470	928	50	27	4.3	3.1	3.7	9.9
17	2.8	7.5	21	659	10200	620	56	25	4.0	2.4	4.4	20
18	1.8	6.5	20	161	6670	485	48	23	3.7	2.5	4.3	13
19	1.7	5.6	19	98	5590	466	41	22	3.3	3.8	3.9	10
20	1.8	5.3	20	75	2710	511	37	22	4.5	4.5	4.2	7.9
21	269	5.3	21	59	1590	485	34	23	5.8	4.1	4.3	5.9
22	430	5.3	19	53	1060	301	33	23	6.4	3.7	5.0	4.8
23	416	5.4	18	102	781	211	32	17	5.5	4.0	6.3	4.2
24	235	110	18	70	612	205	32	17	5.8	7.1	5.8	11
25	4.2	107	17	55	495	192	31	16	5.1	5.8	4.9	30
26	3.3	25	16	47	417	187	32	16	5.2	4.9	4.8	31
27	3.0	14	16	43	365	180	30	15	5.4	4.6	4.7	82
28	230	246	16	42	311	157	29	16	6.0	3.5	5.5	27
29	153	505	19	69	---	155	28	14	6.2	3.0	5.1	15
30	6.3	97	144	276	---	168	27	13	5.1	3.5	5.5	16
31	6.5	---	60	385	---	167	---	13	---	3.1	6.3	---
TOTAL	1839.3	1281.0	1721	3667	39184	18931	2352	1209	222.3	121.8	134.6	368.9
MEAN	59.3	42.7	55.5	118	1399	611	78.4	39.0	7.41	3.93	4.34	12.3
MAX	430	505	339	659	10200	2330	193	101	13	7.1	6.3	82
MIN	1.7	4.1	16	26	54	155	27	13	3.3	2.4	3.0	4.2
AC-FT	3650	2540	3410	7270	77720	37550	4670	2400	441	242	267	732

CAL YR 1985 TOTAL 17865.8 MEAN 48.9 MAX 3080 MIN 1.6 AC-FT 35440
WTR YR 1986 TOTAL 71031.9 MEAN 195 MAX 10200 MIN 1.7 AC-FT 140900

SACRAMENTO RIVER BASIN

11421000 YUBA RIVER NEAR MARYSVILLE, CA

LOCATION.--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.

PERIOD OF RECORD.--October 1940 to September 1943 (low-water periods only), October 1943 to current year.
Published as "at Marysville" October 1940 to September 1957. Records published for two sites August 1954 to September 1955. Yearly discharge for the 1945 water year published in WSP 1315-A.

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 National Geodetic Vertical Datum of 1929. 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.--Estimated daily discharges: Jan. 21-31. Records good except those for Jan. 21-31 and Feb. 20-22, which are fair. Flow regulated by several reservoirs above station. Many diversions above station for power. Diversions for irrigation of about 13,000 acres between stations below Englebright Dam and near Marysville. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--43 years (water years 1944-86), 2,626 ft³/s, 1,903,000 acre-ft/yr.

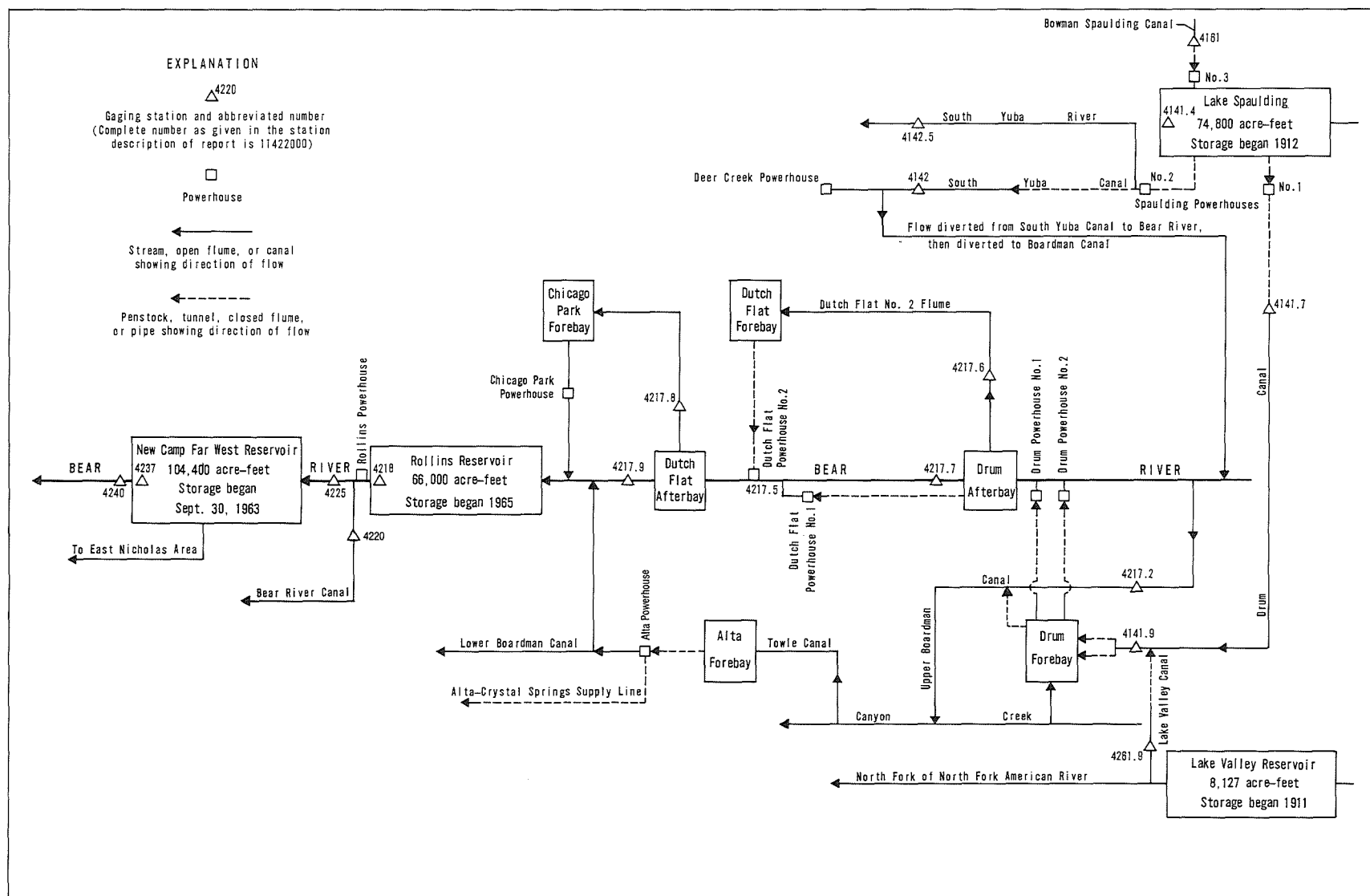
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1944, 1947-86), 180,000 ft³/s, Dec. 22, 1964, gage height, 90.15 ft, from floodmarks, from rating curve extended above 91,000 ft³/s on basis of U.S. Army Corps of Engineers flood routing study; minimum recorded, 10 ft³/s, July 2, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 111,000 ft³/s, Feb. 19, gage height, 85.92 ft; minimum daily, 307 ft³/s, June 20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	326	367	705	1000	3630	15800	6770	721	3300	1300	1200	752
2	438	364	925	1050	4240	14600	6560	585	3300	1390	1190	790
3	433	370	1210	1050	4500	10500	5480	595	3290	1390	1190	914
4	413	365	1000	1080	4720	7370	5060	639	3260	1420	1190	921
5	440	365	955	1380	4560	6720	5320	664	2780	1450	1200	933
6	449	390	915	1310	4440	6680	5250	696	1820	1460	1190	937
7	455	398	918	1150	4330	7720	5420	677	1580	1360	1190	944
8	475	396	960	1120	3630	40700	5470	675	1600	1140	1160	951
9	447	388	928	1130	3530	43000	5320	675	1450	1140	1190	998
10	446	398	897	1120	3520	35400	4490	675	1110	1130	1190	1020
11	444	425	871	1190	3500	25700	4430	669	847	1140	1080	1040
12	436	447	851	1210	3740	20300	4450	671	596	1140	647	1040
13	438	469	832	1240	5410	16000	4400	650	542	1140	615	1030
14	440	473	823	1270	6030	12700	3830	642	503	1130	677	1040
15	456	478	837	1380	9150	12900	2950	644	476	1130	646	1150
16	451	483	850	1360	18900	12300	2750	659	454	1130	569	1360
17	425	480	823	3140	64100	9500	2520	647	372	1120	560	1510
18	409	480	829	2660	92700	7370	2450	654	350	1110	558	1600
19	404	476	825	1870	101000	6760	2430	656	327	1130	563	1710
20	409	476	830	1950	68500	6490	2390	643	307	1140	559	1950
21	525	476	836	2400	33000	6480	2130	724	309	1130	560	1980
22	803	474	831	2400	27500	6250	1800	1060	329	1140	586	1960
23	867	473	822	2500	23700	6090	1700	1430	378	1050	602	2010
24	795	630	808	2500	20900	6080	1610	1660	458	1130	602	2080
25	529	730	805	2500	18200	6130	1150	1670	446	1130	640	2210
26	351	561	802	2600	16900	6080	1320	1840	447	1130	665	2720
27	474	521	802	2600	16500	6010	1360	2520	454	1120	715	3100
28	571	822	802	2600	16200	6020	1320	2550	457	1130	767	3130
29	709	1350	817	2600	---	6120	1070	2540	472	1140	788	3120
30	408	1060	968	2800	---	6470	953	2560	607	1150	786	2900
31	372	---	933	3400	---	6700	---	2710	---	1180	761	---
TOTAL	15038	15585	27010	57560	587030	386940	102153	34401	32621	36920	25836	47800
MEAN	485	520	871	1857	20970	12480	3405	1110	1087	1191	833	1593
MAX	867	1350	1210	3400	101000	43000	6770	2710	3300	1460	1200	3130
MIN	326	364	705	1000	3500	6010	953	585	307	1050	558	752
AC-FT	29830	30910	53570	114200	1164000	767500	202600	68230	64700	73230	51250	94810

CAL YR 1985 TOTAL 266034 MEAN 729 MAX 6340 MIN 212 AC-FT 527700



SACRAMENTO RIVER BASIN

11421720 BOARDMAN CANAL NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°17'49", long 120°42'08", in SE 1/4 NE 1/4 sec.35, T.17 N., R.11 E., Placer County, Hydrologic Unit 18020126, on right bank 0.4 mi downstream from Boardman diversion dam and 1.7 mi west of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to September 1986 (discontinued).

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 4,490 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 14, 1967, water-stage recorder 0.2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. No flow after Feb. 16 because canal was destroyed by landslide. Water is diverted from Bear River to be used for power development and irrigation in the Bear River basin. See schematic diagram of Bear River basin.

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

AVERAGE DISCHARGE.--22 years, 18.7 ft³/s, 13,550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 43 ft³/s, Dec. 21, 1964; no flow for several days in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	35	8.6	11	4.0							
2	18	34	7.0	8.9	4.0							
3	19	32	5.9	6.6	3.8							
4	15	32	5.9	6.7	3.6							
5	14	32	6.0	6.9	3.6							
6	18	26	6.0	6.6	3.6							
7	17	17	8.2	6.5	3.6							
8	16	16	11	6.5	3.6							
9	14	16	10	6.5	3.7							
10	17	15	9.8	6.5	3.7							
11	17	15	9.6	6.5	3.6							
12	16	15	9.5	6.5	4.1							
13	16	15	9.4	6.5	3.9							
14	16	15	9.3	6.5	3.9							
15	21	15	9.3	6.6	4.6							
16	32	16	9.3	6.6	4.7							
17	33	15	9.4	5.2	0							
18	34	14	9.5	4.8	0							
19	34	14	9.5	4.7	0							
20	34	14	9.5	4.7	0							
21	35	14	9.5	4.5	0							
22	33	13	9.5	4.3	0							
23	34	15	9.5	4.2	0							
24	30	13	9.5	4.0	0							
25	28	5.0	9.4	4.0	0							
26	34	8.4	11	4.0	0							
27	34	13	13	4.0	0							
28	34	13	13	4.0	0							
29	34	14	13	4.0	---							
30	34	12	13	4.1	---							
31	34	---	12	4.0	---		---		---			---
TOTAL	782	523.4	295.1	176.4	62.0	0	0	0	0	0	0	0
MEAN	25.2	17.4	9.52	5.69	2.21	0	0	0	0	0	0	0
MAX	35	35	13	11	4.7	0	0	0	0	0	0	0
MIN	14	5.0	5.9	4.0	0	0	0	0	0	0	0	0
AC-FT	1550	1040	585	350	123	0	0	0	0	0	0	0
CAL YR 1985	TOTAL	6166.18	MEAN	16.9	MAX	35	MIN	.08	AC-FT	12230		
WTR YR 1986	TOTAL	1838.90	MEAN	5.04	MAX	35	MIN	0	AC-FT	3650		

SACRAMENTO RIVER BASIN

11421750 DUTCH FLAT NO. 1 POWERPLANT NEAR DUTCH FLAT, CA

LOCATION.--Lat 39°13'02", long 120°50'04", in SE 1/4 SE 1/4 sec.27, T.16 N., R.10 E., Placer County, Hydrologic Unit 18020126, in powerplant on left bank of Dutch Flat Afterbay and 0.8 mi north of Dutch Flat.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Discharge computed from powerplant output. Elevation of gage is 2,740 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Water is diverted from Drum Afterbay through Dutch Flat tunnel and discharges into Dutch Flat Afterbay. See schematic diagram of Bear River basin.

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

AVERAGE DISCHARGE.--22 years, 246 ft³/s, 178,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 571 ft³/s, Apr. 13, May 9, 1982, Nov. 17, 1983; no flow at times in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	418	228	303	349	0	228	408	543	438	103	158
2	0	418	173	270	245	0	438	438	529	111	119	134
3	0	418	142	261	278	0	339	487	543	119	173	134
4	0	418	173	181	286	0	418	529	428	134	142	212
5	0	398	261	220	330	0	448	487	461	142	95	197
6	0	428	197	197	312	0	474	557	529	150	173	236
7	0	408	95	228	303	0	398	543	543	142	173	261
8	0	418	197	189	303	0	320	529	529	142	134	189
9	0	408	126	189	286	0	378	543	543	150	87	197
10	36	388	173	158	320	0	448	557	557	189	270	205
11	0	181	103	166	303	0	378	529	515	103	71	212
12	0	320	173	103	349	0	408	557	487	0	181	134
13	36	378	197	150	368	0	408	529	543	142	158	197
14	295	388	71	173	253	0	368	557	543	150	134	181
15	36	438	142	126	388	0	378	529	543	134	126	205
16	0	278	278	158	461	0	378	543	529	119	0	189
17	181	418	245	150	543	0	398	557	543	119	103	205
18	261	438	228	270	270	0	418	529	529	166	205	189
19	228	408	253	253	0	0	461	529	543	126	150	197
20	253	408	150	261	0	0	438	543	543	111	181	205
21	236	330	158	286	0	0	418	557	543	166	212	212
22	236	398	134	303	0	0	418	543	529	134	126	197
23	236	286	220	312	0	0	418	529	529	142	173	197
24	339	181	103	236	0	0	418	557	543	134	286	253
25	388	253	0	253	0	9.9	438	557	529	95	142	261
26	418	418	0	286	0	103	438	543	543	253	36	189
27	438	339	119	303	0	236	428	543	543	220	103	270
28	398	0	126	253	0	320	448	543	529	270	134	134
29	438	0	150	270	---	303	448	543	529	134	158	0
30	388	236	303	205	---	312	408	529	501	87	134	0
31	448	---	261	398	---	388	---	557	---	181	126	---
TOTAL	5289	10216	5179	7111	5947	1671.9	12202	16481	15841	4703	4408	5550
MEAN	171	341	167	229	212	53.9	407	532	528	152	142	185
MAX	448	438	303	398	543	388	474	557	557	438	286	270
MIN	0	0	0	103	0	0	228	408	428	0	0	0
AC-FT	10490	20260	10270	14100	11800	3320	24200	32690	31420	9330	8740	11010
CAL YR 1985	TOTAL	52541.70	MEAN 144	MAX 543	MIN 0	AC-FT 104200						
WTR YR 1986	TOTAL	94598.90	MEAN 259	MAX 557	MIN 0	AC-FT 187600						

SACRAMENTO RIVER BASIN

11421760 DUTCH FLAT NO. 2 FLUME NEAR BLUE CANYON, CA

LOCATION.--Lat 39°15'16", long 120°46'28", in SE 1/4 NE 1/4 sec.18, T.16 N., R.11 E., Placer County, Hydrologic Unit 18020126, on left bank 600 ft downstream from Drum Afterbay, and 3.6 mi west of Blue Canyon.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,348.09 ft above National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Estimated daily discharges: Oct. 1-10 and Feb. 21 to Mar. 28. Records good except flows below 4 ft³/s, which are poor. Water is diverted from Drum Afterbay through the flume to Dutch Flat No. 2 powerplant and then to Dutch Flat Afterbay. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE.--20 years, 350 ft³/s, 253,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 626 ft³/s, Sept. 29, 1983; no flow at times in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	7.4	98	8.5	516	.50			0	306	357	321
2	0	7.4	426	8.7	553	.50			0	471	216	419
3	0	7.4	483	9.2	539	.50			0	499	210	554
4	0	7.4	348	9.2	488	.50			0	501	342	566
5	0	7.4	292	8.7	542	.50			0	500	357	442
6	0	7.4	428	277	506	.50			0	504	326	286
7	0	7.4	407	389	498	.50			0	491	324	210
8	0	7.0	307	409	489	.50			0	493	333	400
9	0	7.0	340	397	482	.50			0	485	175	516
10	5.5	37	270	395	478	.50			0	495	162	511
11	6.5	57	344	443	458	.50			0	484	344	496
12	7.2	90	213	419	536	.50			0	128	450	491
13	7.6	58	65	401	374	.50			0	434	405	540
14	7.9	14	12	378	377	.50			0	503	437	537
15	8.3	14	8.0	425	536	.50			0	533	428	537
16	8.2	14	5.9	408	537	.50			0	515	107	536
17	8.5	10	24	525	493	.50			0	529	113	535
18	8.5	7.8	17	415	479	.50			0	535	348	536
19	8.6	7.6	7.1	410	490	.50			0	511	408	538
20	8.7	7.7	7.4	428	90	.50			3.3	518	412	537
21	30	89	7.4	447	.50	.50			21	510	379	537
22	19	7.5	7.4	484	.50	.50			37	521	421	538
23	13	7.7	7.4	495	.50	.50			72	530	82	538
24	7.4	173	128	498	.50	.50			68	522	38	540
25	7.4	126	169	527	.50	.50			63	447	383	537
26	7.4	8.3	190	525	.50	.40			82	61	477	537
27	7.4	87	70	508	.50	.20			85	38	556	183
28	7.4	325	7.0	508	.50	.10			103	226	472	15
29	7.6	396	7.4	522	---	0			114	361	389	7.3
30	7.7	39	8.1	494	---	0			148	349	323	7.9
31	7.4	---	8.4	498	---	0			---	322	341	---
TOTAL	207.2	1641.4	4712.5	11669.3	9465.00	13.20	0	0	796.3	13322	10115	12948.2
MEAN	6.68	54.7	152	376	338	.43	0	0	26.5	430	326	432
MAX	30	396	483	527	553	.50	0	0	148	535	556	566
MIN	0	7.0	5.9	8.5	.50	0	0	0	0	38	38	7.3
AC-FT	411	3260	9350	23150	18770	26	0	0	1580	26420	20060	25680
CAL YR 1985	TOTAL	92209.7	MEAN	253	MAX	597	MIN	0	AC-FT	182900		
WTR YR 1986	TOTAL	64890.10	MEAN	178	MAX	566	MIN	0	AC-FT	128700		

SACRAMENTO RIVER BASIN

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.

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 National Geodetic Vertical Datum of 1929, 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.--Estimated daily discharges: Feb. 17 to Apr. 14. 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 and Electric Co., under general supervision of the Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--20 years, 23.1 ft³/s, 16,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,530 ft³/s, Apr. 11, 1982, gage height, 4.64 ft, from rating curve extended above 1,200 ft³/s; minimum daily, 1.0 ft³/s, Dec. 9, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,930 ft³/s, Feb. 17; minimum daily, 5.7 ft³/s, many days October to February.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	5.7	5.7	5.7	5.8	122	412	463	152	46	24	24
2	5.7	5.8	5.7	5.8	5.8	75	235	253	122	48	27	27
3	5.8	5.7	5.7	5.8	5.7	55	444	266	118	38	23	27
4	5.8	5.7	5.7	5.7	5.7	52	357	315	153	35	21	29
5	5.7	5.7	5.7	5.7	5.8	58	408	276	152	36	23	20
6	5.7	5.7	5.7	5.8	5.8	73	370	264	95	54	28	11
7	5.8	5.7	5.8	5.8	5.8	173	436	264	127	44	26	12
8	5.8	5.8	5.8	5.8	5.8	801	510	245	96	40	32	11
9	5.8	5.8	5.8	5.7	5.8	397	466	209	124	43	28	10
10	5.7	5.7	5.8	5.8	5.8	650	405	282	119	41	28	12
11	5.7	5.8	5.8	5.8	5.8	722	454	242	84	35	31	12
12	5.7	6.1	5.8	5.8	5.8	568	403	250	143	32	22	11
13	5.7	5.7	5.8	5.8	5.7	599	421	223	91	29	26	11
14	5.7	5.7	5.8	5.8	5.7	587	451	213	133	39	26	10
15	5.8	5.7	5.8	5.8	159	548	354	229	115	34	28	10
16	5.8	5.7	5.7	5.7	699	535	356	283	97	35	44	10
17	5.8	5.7	5.7	5.7	1930	480	375	270	97	30	30	10
18	5.7	5.7	5.8	5.8	1360	546	427	278	49	34	16	11
19	5.8	5.8	5.7	5.8	1360	295	342	181	106	28	25	10
20	5.7	5.7	5.8	5.8	786	462	373	138	97	32	23	10
21	5.8	5.7	5.8	5.8	454	489	405	142	86	24	20	10
22	5.7	5.7	5.7	5.8	416	483	388	143	92	28	26	10
23	5.7	5.7	5.8	5.8	217	483	372	132	36	28	34	11
24	5.7	5.7	5.8	5.8	158	472	418	123	60	31	27	10
25	5.8	5.8	5.8	5.8	220	457	386	129	71	26	27	10
26	5.7	5.7	5.8	5.8	287	357	450	123	47	31	29	10
27	5.7	5.7	5.8	5.7	220	220	468	116	59	39	26	11
28	5.7	5.7	5.8	5.8	218	132	487	124	50	26	27	12
29	5.8	5.7	5.8	6.0	---	147	453	149	35	28	27	12
30	5.8	5.7	5.8	5.8	---	139	498	138	42	27	26	12
31	5.8	---	5.7	5.8	---	121	---	125	---	29	24	---
TOTAL	180.1	172.0	178.7	179.3	8564.8	11298	12324	6588	2848	1070	824	396
MEAN	5.81	5.73	5.76	5.78	306	364	411	213	94.9	34.5	26.6	13.2
MAX	7.7	6.1	5.8	6.0	1930	801	510	463	153	54	44	29
MIN	5.7	5.7	5.7	5.7	5.7	52	235	116	35	24	16	10
AC-FT	357	341	354	356	16990	22410	24440	13070	5650	2120	1630	785
CAL YR 1985	TOTAL	3063.3	MEAN	8.39	MAX	11	MIN	5.7	AC-FT	6080		
WTR YR 1986	TOTAL	44622.9	MEAN	122	MAX	1930	MIN	5.7	AC-FT	88510		

SACRAMENTO RIVER BASIN

11421780 CHICAGO PARK FLUME NEAR DUTCH FLAT, CA

LOCATION.--Lat 39°12'55", long 120°50'23", in NW 1/4 NE 1/4 sec.34, T.16 N., R.10 E., Nevada County, Hydrologic Unit 18020126, on left bank 670 ft downstream from Dutch Flat Afterbay, and 0.6 mi north of Dutch Flat.

PERIOD OF RECORD.--November 1965 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,600 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 8, 1968, at site 420 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Oct. 1-10, Sept. 28-30. Records excellent except discharges below 70 ft³/s, which are poor. Water is diverted from Dutch Flat Afterbay through the flume to Chicago Park powerplant and then to Bear River. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE.--20 years, 643 ft³/s, 465,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,130 ft³/s, Nov. 19, 1983; no flow several days in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	434	357	407	988	171	680	958	786	771	536	525
2	0	436	665	373	944	101	665	914	749	775	405	703
3	0	437	854	330	1020	67	817	916	747	758	406	793
4	0	436	610	190	876	62	661	939	722	703	477	781
5	0	436	605	419	1020	71	894	953	751	703	550	723
6	0	437	692	459	911	98	864	1020	752	742	553	502
7	0	437	553	730	883	210	856	1020	752	781	563	503
8	0	436	609	645	853	1050	849	960	706	781	549	656
9	0	436	544	584	853	536	864	842	727	781	416	777
10	.40	424	517	583	834	847	880	1030	750	721	421	774
11	31	323	515	584	853	863	851	1020	748	713	567	776
12	2.5	442	427	585	938	600	814	1020	652	319	680	774
13	50	401	325	583	1010	583	846	925	739	476	656	775
14	74	453	117	580	771	568	828	874	795	742	615	785
15	20	434	212	583	1020	629	833	962	709	754	570	782
16	20	368	314	687	1020	602	825	1020	710	755	333	785
17	212	458	346	881	1020	504	887	1020	714	752	342	726
18	314	449	221	632	1020	519	939	995	710	742	452	716
19	314	448	246	721	1020	353	928	935	712	704	683	790
20	326	447	207	790	1020	483	860	715	729	703	683	814
21	230	410	192	868	656	529	915	834	727	702	685	805
22	282	423	189	775	309	517	695	838	723	702	631	804
23	282	303	276	774	293	515	954	833	724	704	356	804
24	346	344	252	814	194	494	879	804	724	726	445	836
25	415	487	181	821	223	485	977	776	724	628	582	905
26	434	494	183	870	390	474	971	714	726	411	685	967
27	432	475	208	871	305	472	971	716	729	409	628	671
28	431	388	211	869	248	475	986	741	737	476	629	169
29	498	544	202	802	---	473	1010	823	766	561	593	0
30	478	448	371	893	---	474	1030	813	769	562	451	0
31	433	---	345	849	---	540	---	788	---	561	538	---
TOTAL	5624.90	12888	11546	20552	21492	14365	26029	27718	22009	20618	16680	20421
MEAN	181	430	372	663	768	463	868	894	734	665	538	681
MAX	498	544	854	893	1020	1050	1030	1030	795	781	685	967
MIN	0	303	117	190	194	62	661	714	652	319	333	0
AC-FT	11160	25560	22900	40760	42630	28490	51630	54980	43650	40900	33080	40510
CAL YR 1985	TOTAL	159275.90	MEAN	436	MAX	917	MIN	0	AC-FT	315900		
WTR YR 1986	TOTAL	219942.90	MEAN	603	MAX	1050	MIN	0	AC-FT	436300		

SACRAMENTO RIVER BASIN

11421790 BEAR RIVER BELOW DUTCH FLAT AFTERBAY, NEAR DUTCH FLAT, CA

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 the 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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records excellent except those above 13 ft³/s, which are good. Water is imported from South Yuba River basin via Drum Canal above forebay (station 11414190). Chicago Park flume (station 11421780) diverts upstream from station to Chicago Park powerplant. Records include spill over Dutch Flat Afterbay Dam. This station measures flow from Dutch Flat Afterbay in connection with a Federal Energy Regulatory Commission Project. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE.--20 years, 30.3 ft³/s, 21,950 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,240 ft³/s, Feb. 17, 1986; minimum daily, 0.08 ft³/s, Mar. 8-19, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,240 ft³/s, Feb. 17; minimum daily, 6.3 ft³/s, several days in November and December.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	8.5	6.3	6.6	6.7	43	12	11	12	12	12	12
2	11	6.7	6.3	6.5	6.7	30	12	11	12	12	12	12
3	11	6.7	6.3	6.5	6.6	30	12	12	12	12	12	12
4	11	6.7	6.3	6.5	6.6	30	142	12	12	12	12	12
5	11	6.7	6.3	6.7	6.6	30	12	12	12	12	12	12
6	11	6.7	6.3	6.5	6.5	31	12	12	12	12	12	12
7	11	6.7	6.4	6.5	6.6	66	10	12	12	12	12	12
8	11	6.7	6.4	6.5	6.8	287	9.1	12	12	12	12	12
9	11	6.7	6.3	6.5	7.7	100	9.1	66	12	12	12	12
10	11	6.7	6.3	6.5	7.1	101	9.2	13	12	12	12	12
11	11	6.4	6.3	6.5	7.1	101	9.1	12	12	12	12	12
12	11	6.3	6.3	6.5	7.1	100	9.2	11	12	12	12	12
13	11	6.3	6.3	6.5	7.1	169	9.2	12	25	12	12	12
14	12	6.3	6.5	6.5	7.0	160	9.1	12	12	12	12	12
15	12	6.3	6.5	6.5	398	30	9.1	12	12	12	12	12
16	12	6.4	6.5	6.5	1110	31	8.9	12	12	12	12	12
17	12	6.5	6.5	6.5	3400	31	8.9	12	12	12	12	12
18	12	6.4	6.5	6.5	2110	132	8.9	12	12	12	12	12
19	12	6.3	6.5	6.6	1860	31	8.9	11	12	12	12	12
20	12	6.3	6.6	6.5	449	31	8.9	12	12	12	12	12
21	12	6.3	6.5	6.5	142	31	9.1	12	12	12	12	12
22	12	6.3	6.5	6.5	421	31	175	12	12	12	12	12
23	12	6.3	6.5	6.5	88	31	9.2	11	12	12	12	12
24	12	6.3	6.5	6.6	83	31	8.9	11	12	12	12	12
25	12	6.4	6.6	6.5	163	31	8.9	11	12	12	12	12
26	12	6.5	6.7	6.6	111	31	8.8	11	12	12	12	12
27	12	6.5	6.7	6.5	81	24	8.9	12	12	12	12	12
28	12	6.5	6.6	6.5	134	13	9.0	12	12	12	12	12
29	12	6.5	6.5	6.5	---	12	9.1	12	12	12	12	15
30	12	6.3	6.7	6.5	---	12	10	12	12	12	12	28
31	12	---	6.6	6.5	---	12	---	12	---	12	12	---
TOTAL	361	196.2	200.1	202.1	10646.2	1823	586.5	419	373	372	372	379
MEAN	11.6	6.54	6.45	6.52	380	58.8	19.6	13.5	12.4	12.0	12.0	12.6
MAX	13	8.5	6.7	6.7	3400	287	175	66	25	12	12	28
MIN	11	6.3	6.3	6.5	6.5	12	8.8	11	12	12	12	12
AC-FT	716	389	397	401	21120	3620	1160	831	740	738	738	752

CAL YR 1985 TOTAL 3423.6 MEAN 9.38 MAX 58 MIN 6.1 AC-FT 6790
WTR YR 1986 TOTAL 15930.1 MEAN 43.6 MAX 3400 MIN 6.3 AC-FT 31600

SACRAMENTO RIVER BASIN

11421800 ROLLINS RESERVOIR NEAR COLFAX, CA

LOCATION.--Lat 39°08'08", long 120°57'03", 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, 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 National Geodetic Vertical Datum of 1929 (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. Stored water is released into Bear River, part of which is diverted to Bear River Canal (station 11422000) for power development. Water is later used for irrigation. See schematic diagram of Bear River basin.

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, 71,700 acre-ft, Feb. 17, elevation, 2,177.7 ft; minimum, 17,600 acre-ft, Oct. 16, elevation, 2,082.7 ft.

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

2,020	3,920	2,100	23,900
2,030	5,320	2,120	32,700
2,040	6,990	2,140	43,800
2,050	8,940	2,160	57,300
2,060	11,200	2,178	72,000
2,080	16,800		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32800	26900	39400	36900	61200	66100	66500	66600	66500	65400	63400	60300
2	31800	27600	40700	37300	62800	65600	66500	66600	66400	65400	63000	60400
3	30700	28400	42100	37500	64800	64800	66700	66700	66400	65400	62600	60400
4	29600	29200	42300	37500	66300	64100	66700	66700	66200	65400	62300	60400
5	28500	30100	42400	38600	66700	63400	66600	66700	66200	65300	62300	60400
6	27400	30800	42600	39100	66700	62700	66600	66700	66200	65200	62200	60300
7	26300	31300	42500	40000	66700	63900	66700	66700	66200	65300	62100	60200
8	25300	32000	42700	41100	66600	67800	66700	66600	66200	65400	62000	60100
9	24600	32800	42600	41900	66600	67200	66600	66500	66100	65500	61700	60100
10	23000	33600	42300	42700	66500	67900	66700	66600	66100	65400	61400	60100
11	22000	34200	42000	43600	66500	67500	66600	66600	66100	65300	61300	60000
12	21000	35000	41500	44400	66900	67200	66500	66600	65800	64500	61500	60100
13	19900	35300	40800	45000	67000	67200	66500	66600	65700	63900	61700	60500
14	18900	35300	39900	45400	67200	67000	66500	66500	65800	63900	61800	60900
15	17800	35300	39100	45900	68400	67000	66600	66600	65700	64000	61900	61300
16	17600	35100	38200	47600	70000	66900	66600	66700	65600	64000	61300	61800
17	17800	35200	37800	50200	71700	66700	66700	66700	65500	64100	60800	62300
18	18300	35200	37300	50700	70000	66800	66700	66700	65300	64100	60600	62600
19	18900	35200	36900	51300	69200	66500	66700	66700	65200	64100	60800	62700
20	19500	35200	36500	51800	68300	66700	66600	66300	65200	64100	61000	62800
21	19900	35100	36300	52400	67200	66700	66700	66400	65200	64000	61200	62800
22	20400	35200	36100	52800	67000	66600	66700	66400	65200	64000	61300	62800
23	20900	35000	36100	53400	66700	66600	66700	66500	65200	64000	60800	62900
24	21200	35300	36100	54200	66600	66500	66600	66500	65200	64000	60500	63200
25	21900	35900	36000	55000	66700	66400	66700	66400	65200	64100	60400	63900
26	22100	36200	35800	55800	66700	66400	66600	66300	65200	64000	60500	65000
27	22700	36400	35600	56400	66500	66400	66600	66200	65200	64000	60600	65600
28	23500	36800	35500	56900	66500	66300	66600	66200	65200	63900	60600	64900
29	24400	38500	35400	57200	---	66300	66700	66300	65200	63700	60700	63900
30	25300	39100	36200	58300	---	66200	66700	66400	65300	63600	60400	62900
31	26100	---	36600	59600	---	66300	---	66400	---	63500	60400	---
MAX	32800	39100	42700	59600	71700	67900	66700	66700	66500	65500	63400	65600
MIN	17600	26900	35400	36900	61200	62700	66500	66200	65200	63500	60400	60000
a	2105.5	2132.1	2127.4	2163.0	2171.6	2171.4	2171.8	2171.5	2170.2	2168.0	2164.0	2167.2
b	-7200	+13000	-2500	+23000	+6900	-200	+400	-300	-1100	-1800	-3100	+2500

CAL YR 1985 b -17300

WTR YR 1986 b +29600

SACRAMENTO RIVER BASIN

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 and 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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 25, 1946, water-stage recorder at site 1.5 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Canal diverts from left bank of Bear River. Water is first used to develop power at Halsey and Wise powerplants, part of it is then distributed for irrigation and part is eventually spilled into North Fork American River. See schematic diagram showing diversion and storage in Bear River basin.

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

AVERAGE DISCHARGE.--63 years (water years 1913-53, 1965-86), 307 ft³/s, 222,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 531 ft³/s, Oct. 5, 6, 1980; no flow at times in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	223	36	324	267	410	365	310	471	453	461	452	456
2	345	98	340	268	409	366	373	468	454	461	451	457
3	465	79	420	268	410	366	409	468	453	461	453	459
4	468	40	420	268	442	367	383	468	452	462	455	460
5	469	32	419	269	463	367	318	469	451	462	455	459
6	469	109	434	391	464	367	318	469	450	462	455	457
7	469	162	464	461	464	266	318	469	450	462	455	457
8	468	121	464	256	464	189	318	469	449	461	454	457
9	467	95	464	253	464	186	318	470	449	460	453	456
10	466	154	463	252	464	189	318	466	448	460	453	456
11	466	96	463	250	464	186	318	463	449	461	453	456
12	464	122	463	250	437	185	318	464	448	460	454	457
13	465	248	462	357	392	182	318	465	447	460	454	457
14	465	437	463	446	383	181	318	466	447	459	454	457
15	464	436	463	448	360	181	318	466	446	458	454	457
16	34	436	462	449	351	181	318	462	446	457	454	457
17	30	436	462	450	107	180	318	460	447	456	454	457
18	30	436	460	453	33	180	343	459	453	456	454	456
19	0	436	459	457	11	179	390	458	457	455	455	456
20	0	436	405	461	0	252	390	458	458	460	456	457
21	0	436	274	461	0	311	390	457	459	467	456	457
22	0	408	266	461	0	312	405	456	459	467	456	457
23	0	359	266	461	0	312	430	454	459	467	456	457
24	106	361	266	461	0	311	430	455	459	459	456	457
25	97	400	266	461	0	311	438	454	459	404	457	456
26	284	425	265	461	0	311	457	453	459	332	456	455
27	145	424	265	462	130	311	461	451	461	331	457	455
28	0	400	264	463	313	311	468	450	461	402	457	455
29	0	309	264	463	---	311	473	454	461	453	456	455
30	0	324	265	463	---	310	473	455	461	453	456	456
31	0	---	266	439	---	310	---	454	---	453	456	---
TOTAL	7359	8291	11701	12030	7435	8336	11157	14301	13605	13882	14097	13701
MEAN	237	276	377	388	266	269	372	461	454	448	455	457
MAX	469	437	464	463	464	367	473	471	461	467	457	460
MIN	0	32	264	250	0	179	310	450	446	331	451	455
AC-FT	14600	16450	23210	23860	14750	16530	22130	28370	26990	27530	27960	27180

CAL YR 1985 TOTAL 153355 MEAN 420 MAX 485 MIN 0 AC-FT 304200
WTR YR 1986 TOTAL 135895 MEAN 372 MAX 473 MIN 0 AC-FT 269500

SACRAMENTO RIVER BASIN

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 left bank 100 ft downstream 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. Datum of gage is 1,919.41 ft above National Geodetic Vertical Datum of 1929. 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 site 160 ft upstream at datum 8.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. 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.

AVERAGE DISCHARGE (unadjusted).--27 years (water years 1913, 1916, 1951-53, 1965-86), 418 ft³/s, 302,800 acre-ft/yr.

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, 22,500 ft³/s, Feb. 17, 1986, gage height, 20.62 ft, from rating curve extended above 11,600 ft³/s; minimum daily, 0.5 ft³/s, Nov. 17, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,500 ft³/s, Feb. 17, gage height, 20.62 ft; minimum daily, 20 ft³/s, Dec. 26.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	68	23	21	402	549	529	647	420	302	143	106
2	78	23	177	21	407	478	536	592	407	302	133	173
3	79	23	324	21	417	475	577	608	396	302	122	331
4	77	22	324	22	390	472	593	638	386	303	116	330
5	80	22	327	25	847	472	846	628	384	303	115	259
6	80	25	315	24	944	472	748	702	384	304	114	102
7	78	23	285	23	777	596	753	688	386	303	126	97
8	76	22	285	22	739	2470	739	719	386	302	115	230
9	77	23	285	22	681	2330	770	556	385	302	90	337
10	78	24	284	22	639	2950	706	634	387	301	90	337
11	79	23	283	22	625	2700	758	660	385	298	90	338
12	77	23	282	22	764	2280	663	655	387	297	91	259
13	78	23	280	22	1530	1730	702	626	389	293	92	122
14	83	24	276	24	1220	1530	664	545	389	291	91	122
15	78	24	271	23	2850	1450	653	548	389	284	91	124
16	88	24	169	30	5570	1400	664	641	390	279	91	125
17	83	24	24	134	19300	1180	725	650	390	278	91	119
18	81	23	23	326	14200	1050	726	638	384	279	91	115
19	86	23	23	323	11500	965	679	592	377	278	93	260
20	80	23	22	320	5640	736	684	468	356	272	93	342
21	82	23	21	322	3040	756	619	447	310	263	94	344
22	80	24	21	317	2000	730	560	457	311	263	94	344
23	81	23	21	232	1470	704	644	459	308	262	94	344
24	86	27	21	168	1160	709	672	451	300	270	95	265
25	79	28	21	168	1100	654	675	448	300	203	125	117
26	82	25	20	168	1120	619	743	409	300	98	148	91
27	81	28	21	248	935	588	651	389	301	98	138	90
28	80	32	21	326	626	580	606	384	299	130	130	89
29	81	31	22	327	---	557	633	389	300	152	118	87
30	80	24	24	338	---	536	657	414	300	155	104	90
31	81	---	21	369	---	526	---	419	---	156	104	---
TOTAL	2485	774	4516	4452	80893	33244	20175	17101	10786	7923	3322	6089
MEAN	80.2	25.8	146	144	2889	1072	672	552	360	256	107	203
MAX	88	68	327	369	19300	2950	846	719	420	304	148	344
MIN	76	22	20	21	390	472	529	384	299	98	90	87
AC-FT	4930	1540	8960	8830	160500	65940	40020	33920	21390	15720	6590	12080

SACRAMENTO RIVER BASIN

11424000 BEAR RIVER NEAR WHEATLAND, CA

LOCATION.--Lat 39°00'01", long 121°24'21", in SE 1/4 SW 1/4 sec.3, T.13 N., R.5 E., Placer County, Hydrologic Unit 18020108, on right bank 100 ft downstream from bridge on State Highway 65, 1 mi southeast of Wheatland, and 6.5 mi downstream from Rock Creek.

DRAINAGE AREA.--292 mi².

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 National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to May 28, 1970.

REMARKS.--Estimated daily discharges: Oct. 6-11 and Feb. 28 to Mar. 5. Records fair except for estimated daily discharges, which are poor. Natural flow of stream affected by inflow from Yuba and American River basins. Flow regulated by Lake Combie, usable capacity, 7,840 acre-ft, 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 diagram of Bear River basin.

AVERAGE DISCHARGE (prior to regulation by New Camp Far West Reservoir).--34 years (water years 1930-63), 417 ft³/s, 301,900 acre-ft/year; 23 years (water years 1964-86), 457 ft³/s, 331,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,000 ft³/s Feb. 17, 1986, gage height, 21.60 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 48,000 ft³/s Feb. 17, gage height, 21.60 ft; minimum daily, 4.4 ft³/s, Oct. 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	11	18	16	36	1360	697	317	31	31	12	9.0
2	13	12	23	15	35	1010	682	193	31	24	11	11
3	11	10	23	15	49	670	677	117	32	14	11	10
4	11	10	17	23	40	474	450	219	29	12	12	12
5	11	11	21	36	25	424	784	288	34	13	11	11
6	9.4	13	18	23	118	389	837	271	41	14	11	12
7	8.5	12	18	18	661	554	895	287	38	16	11	12
8	8.0	11	17	17	664	4830	676	271	34	16	11	12
9	7.2	12	16	16	664	8550	831	257	26	14	11	11
10	6.4	13	16	16	663	6460	1040	248	26	15	11	10
11	5.6	15	15	16	661	6650	859	236	24	12	12	12
12	4.4	13	15	16	675	5150	805	239	23	13	11	11
13	5.8	13	15	16	685	3830	741	234	24	12	11	12
14	8.5	13	16	17	796	2990	694	201	29	13	11	11
15	6.4	13	16	19	4010	3040	659	60	29	11	12	11
16	5.7	13	16	22	8310	3410	617	44	28	12	9.4	13
17	5.7	13	16	28	35900	2970	621	40	26	12	11	13
18	5.5	13	16	20	30500	2140	640	33	26	13	11	12
19	5.0	13	16	18	24000	1790	646	36	25	11	11	13
20	4.5	13	15	18	12400	1510	625	97	25	12	12	13
21	7.4	14	16	17	7610	1250	600	272	24	12	11	13
22	9.5	13	16	17	4830	1140	558	192	24	12	11	13
23	20	14	16	17	3260	1070	424	47	26	11	9.9	12
24	33	21	15	16	2410	1010	459	31	29	12	11	14
25	15	19	15	16	1850	972	525	31	33	11	11	13
26	14	17	15	16	1650	916	506	34	31	10	11	13
27	15	16	15	17	1580	867	453	33	31	11	13	12
28	16	22	14	17	1540	817	427	31	30	11	15	11
29	18	28	14	29	---	786	379	29	31	12	15	11
30	16	23	23	51	---	752	357	31	33	14	13	11
31	13	---	18	46	---	719	---	32	---	12	11	---
TOTAL	331.5	434	520	644	145622	66500	19164	4451	873	418	355.3	354.0
MEAN	10.7	14.5	16.8	20.8	5201	2145	639	144	29.1	13.5	11.5	11.8
MAX	33	28	23	51	35900	6650	1040	317	41	31	15	14
MIN	4.4	10	14	15	25	389	357	29	23	10	9.4	9.0
AC-FT	658	861	1030	1280	288800	131900	38010	8830	1730	829	705	702

CAL YR 1985 TOTAL 44390.7 MEAN 122 MAX 2350 MIN 4.4 AC-FT 88050
WTR YR 1986 TOTAL 239666.8 MEAN 657 MAX 35900 MIN 4.4 AC-FT 475400

SACRAMENTO RIVER BASIN

11425500 SACRAMENTO RIVER AT VERONA, CA

LOCATION.--Lat 38°46'51", long 121°36'12", in SW 1/4 SE 1/4 sec.23, T.11 N., R.3 E., Sutter County, Hydrologic Unit 18020109, on left bank 0.8 mi southeast of Verona, 1 mi downstream from Feather River, 6.2 mi east of Knights Landing, and at mile 19.6 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.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3.00 ft below National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. 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, 3.0 mi upstream on right bank, into Yolo Bypass (station 11453000).

AVERAGE DISCHARGE.--57 years (water years 1930-86), 19,450 ft³/s, 14,090,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,900 ft³/s, Feb. 20, 1986, gage height, 42.11 ft, from rating curve extended above 75,000 ft³/s; minimum daily, 304 ft³/s, July 23, 24, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 92,900 ft³/s, Feb. 20, gage height, 42.11 ft; minimum daily, 7,240 ft³/s, Nov. 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8750	7530	23800	10800	40200	70800	37900	9070	11600	11700	12500	13700
2	8810	7240	21800	10700	42900	69700	36500	8330	11900	12500	12200	13900
3	8880	7330	21700	10500	46500	68300	34500	8120	11800	12500	12100	14300
4	8800	7410	27700	10700	50900	67100	31200	8350	12000	12600	12100	14800
5	8710	7430	27000	12600	54300	65900	28700	9170	12000	12300	12100	15100
6	8610	7440	23200	15000	54300	64100	26400	10300	11200	12300	12000	15100
7	8510	7470	20800	16800	49800	62200	24500	10700	10300	12300	11900	14900
8	8460	7770	19200	16700	42500	64500	24200	10800	9970	12000	11600	14100
9	8050	7890	17500	15500	35200	71400	23700	10400	9670	11700	11400	13800
10	7910	8040	16200	14200	30100	74300	23400	9800	9230	11600	11500	13500
11	7940	8210	14600	13300	27400	75700	22200	9080	8620	11600	11700	13300
12	7940	8330	13100	12700	25200	75300	20900	8550	8070	12100	11600	13400
13	7970	8310	12000	12300	26200	75000	19800	8360	7590	12300	11400	13300
14	7880	8070	11300	12200	37000	73700	18800	8230	7520	12400	11400	13100
15	7820	7990	10900	12600	51100	72200	17400	9620	7530	12600	11500	13100
16	7830	8340	10500	13400	68700	72000	16500	12000	7630	12700	11600	13900
17	7900	8640	10200	15400	76800	70500	15400	12700	7710	12700	11500	15100
18	7920	8840	9930	25200	85300	69300	15000	11600	7860	12800	11600	16300
19	8020	8640	9600	30500	90600	67700	15100	10500	7810	12900	11700	17100
20	8110	8490	9380	27600	92300	65700	14500	10200	7590	13100	12000	18000
21	8430	8490	9430	24500	87600	63700	14000	10400	7540	13700	12100	18200
22	8570	8650	9420	23500	82600	61700	13000	10800	7900	14100	12100	17900
23	8910	8770	9420	21800	79500	59900	12500	11000	8660	13900	12000	17500
24	9210	9290	9430	20300	76900	58500	12300	11100	8810	13400	12100	17500
25	9230	10700	9470	19300	75200	56900	11500	11300	8830	13400	12100	17500
26	8870	12000	9430	18300	73600	54900	10700	11300	8570	13500	12100	18000
27	8290	13000	9400	17000	72200	52100	11200	11500	8670	13600	12400	18800
28	8000	12600	9440	15800	71600	49000	11200	11800	9700	13900	12600	18900
29	7920	13400	9490	15300	---	45500	10600	11800	10400	13700	12800	19200
30	7860	18300	10000	18500	---	42000	9820	11600	10900	13300	13000	18900
31	7650	---	11000	31400	---	39400	---	11500	---	12800	13300	---
TOTAL	257760	274610	436340	534400	1646500	1979000	583420	319980	277580	396000	372000	472200
MEAN	8315	9154	14080	17240	58800	63840	19450	10320	9253	12770	12000	15740
MAX	9230	18300	27700	31400	92300	75700	37900	12700	12000	14100	13300	19200
MIN	7650	7240	9380	10500	25200	39400	9820	8120	7520	11600	11400	13100
AC-FT	511300	544700	865500	1060000	3266000	3925000	1157000	634700	550600	785500	737900	936600
CAL YR 1985	TOTAL	4374100	MEAN	11980	MAX	30400	MIN	7240	AC-FT	8676000		
WTR YR 1986	TOTAL	7549790	MEAN	20680	MAX	92300	MIN	7240	AC-FT	14980000		

SACRAMENTO RIVER BASIN

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 at mile 4.2 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 National Geodetic Vertical Datum of 1929. October 1939 to September 1942, October 1959 to September 1963, water-stage recorder or nonrecording gage at downstream end of weir. October 1942 to September 1959, water-stage recorder on left bank at Sacramento River opposite center of weir. 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.

COOPERATION.--Records provided by California Department of Water Resources.

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.--Maximum discharge, 128,000 ft³/s, Feb. 20, gage height, 30.84 ft; no flow most of year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					.00	3020						
2					.00	2760						
3					.00	2390						
4					.00	2100						
5					.00	1850						
6					.00	1280						
7					.00	1220						
8					.00	3330						
9					.00	9140						
10					.00	12000						
11					.00	7730						
12					.00	6130						
13					.00	5960						
14					.00	5620						
15					52	4710						
16					546	4540						
17					49800	3610						
18					98600	3090						
19					122000	2220						
20					123000	1670						
21					96600	1270						
22					58400	914						
23					46500	586						
24					33200	347						
25					19600	114						
26					11000	.30						
27					7010	.00						
28					3540	.00						
29					---	.00						
30					---	.00						
31					---	.00						
TOTAL	0	0	0	0	669848.00	87601.30	0	0	0	0	0	0
MEAN	0	0	0	0	23920	2826	0	0	0	0	0	0
MAX	0	0	0	0	123000	12000	0	0	0	0	0	0
MIN	0	0	0	0	.00	.00	0	0	0	0	0	0
AC-FT	0	0	0	0	1329000	173800	0	0	0	0	0	0
CAL YR 1985 TOTAL		0		MEAN	0	MAX	0	MIN	0	AC-FT		0
WTR YR 1986 TOTAL	757449.30			MEAN	2075	MAX	123000	MIN	0	AC-FT	1502000	

SACRAMENTO RIVER BASIN

11426190 LAKE VALLEY CANAL NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°17'56", long 120°38'31", in SE 1/4 NE 1/4 sec.32, T.17 N., R.12 E., Placer County, Hydrologic Unit 18020128, on right bank 0.8 mi upstream from inlet to Carpenter Flat siphon and 1.5 mi east of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 5,410 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1979, on right bank 0.7 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Canal diverts from right bank of the North Fork of North Fork American River, 2.0 mi downstream from Lake Valley Reservoir to the Drum Canal in the Bear River basin. See schematic diagram of Bear River and Yuba River basins.

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

AVERAGE DISCHARGE.--22 years, 16.8 ft³/s, 12,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 75 ft³/s, Jan. 13, 1980; no flow many days in each year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	34	21	19	36	28	31	35	37	.81	.41	12
2	.14	34	33	18	31	28	34	35	30	.81	.41	12
3	.14	34	40	15	24	28	36	36	24	.81	.41	12
4	.14	34	21	19	22	28	35	36	18	.81	.41	12
5	.14	34	16	26	27	28	35	36	9.3	.91	.41	14
6	.14	36	14	23	28	27	35	36	9.0	1.4	.41	17
7	.14	36	21	22	31	32	36	35	9.9	.82	4.7	17
8	.14	36	18	21	29	41	36	33	10	1.3	18	17
9	.14	36	12	19	28	30	35	24	10	1.6	17	20
10	.14	37	17	16	28	29	35	20	7.7	1.6	17	22
11	9.5	36	38	14	29	28	35	17	4.3	1.0	17	25
12	28	36	40	13	36	28	35	15	3.8	1.2	16	26
13	29	35	23	14	38	27	34	15	3.2	1.3	13	26
14	29	35	22	24	38	27	34	15	2.8	1.3	13	26
15	29	35	22	30	39	27	34	14	2.2	1.2	13	26
16	29	36	19	36	39	27	34	14	2.2	.57	13	27
17	29	35	5.8	38	30	27	33	13	2.2	.50	13	28
18	31	35	5.7	34	19	26	32	15	2.2	.73	13	27
19	31	34	6.0	35	14	26	31	23	2.1	.66	13	29
20	33	25	6.3	36	7.7	27	32	37	1.3	.50	13	28
21	33	10	5.9	33	18	27	34	38	1.3	.60	13	28
22	34	9.8	5.5	35	32	27	35	36	1.3	.75	13	28
23	34	12	5.4	35	31	27	35	30	1.5	.76	13	28
24	34	24	6.4	33	31	28	35	25	1.4	.79	15	34
25	33	29	7.3	34	31	27	35	29	1.3	.70	15	35
26	33	18	7.2	34	30	27	34	36	1.1	.62	14	37
27	34	8.3	6.6	32	28	28	34	37	.90	.60	12	34
28	35	16	6.1	31	28	28	34	37	.93	.60	12	14
29	33	30	8.8	31	---	28	34	37	.93	.60	12	3.9
30	35	24	22	38	---	28	34	37	.86	.58	12	.19
31	35	---	19	37	---	28	---	37	---	.41	12	---
TOTAL	651.90	874.1	501.0	845	802.7	872	1026	883	202.72	26.84	339.16	665.09
MEAN	21.0	29.1	16.2	27.3	28.7	28.1	34.2	28.5	6.76	.87	10.9	22.2
MAX	35	37	40	38	39	41	36	38	37	1.6	18	37
MIN	.14	8.3	5.4	13	7.7	26	31	13	.86	.41	.41	.19
AC-FT	1290	1730	994	1680	1590	1730	2040	1750	402	53	673	1320
CAL YR 1985	TOTAL	5565.76	MEAN	15.2	MAX	40	MIN	0	AC-FT	11040		
WTR YR 1986	TOTAL	7689.51	MEAN	21.1	MAX	41	MIN	.14	AC-FT	15250		

SACRAMENTO RIVER BASIN

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 spillway at 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.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 715.0 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Minor regulation by Lake Clementine, usable capacity, 12,800 acre-ft formed by North Fork Dam. Storage in Big Reservoir and Lake Valley Reservoir, combined capacity, 10,300 acre-ft above station. Lake Valley Canal (station 11426190) diverts from North Fork of North Fork American River into Bear River basin for power development in powerhouses of Pacific Gas and Electric Co. Combined storage and diversion have small effect on natural flow.

AVERAGE DISCHARGE.--45 years, 856 ft³/s, 620,200 acre-ft/yr.

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 spillway of dam at gage height 10.22 ft; no flow Aug. 27-30, Sept. 2-11, 1944, Oct. 5, 6, 1963, Nov. 7-10, 1965, caused by operation of valve in North Fork Dam.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 5	1900	4,580	3.64	Feb. 17	2315	*60,600	*11.40
Jan. 17	0445	10,200	4.98	Mar. 8	1015	33,000	8.34

Minimum daily, 36 ft(3)/2, Oct. 4, 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	52	382	715	2010	2590	2160	1150	1220	179	77	51
2	39	52	1190	632	1890	2370	1970	1070	1090	173	75	51
3	37	52	2190	494	2280	2250	1610	1210	1060	169	72	51
4	36	52	1150	465	2060	2180	1450	1340	909	164	72	50
5	36	52	686	2690	1570	2070	1380	1060	746	157	70	50
6	37	51	556	2240	1300	1940	1360	1030	674	150	69	49
7	42	51	503	1190	1080	3950	1620	851	612	145	68	48
8	46	51	677	841	945	21600	1520	880	535	142	67	47
9	44	50	511	672	827	8590	1290	871	508	137	66	48
10	44	157	396	576	754	8370	1300	911	490	134	66	48
11	41	166	330	518	690	7440	1360	956	479	132	65	48
12	39	110	287	475	741	6290	1400	926	450	129	60	48
13	40	80	264	439	4860	4900	1220	996	465	129	58	48
14	40	69	239	417	5060	3750	1070	1080	455	128	58	48
15	40	66	223	484	10900	3350	1020	1130	421	126	58	49
16	40	76	209	851	15800	3270	979	1130	376	124	57	56
17	40	108	198	6560	45900	2900	928	1150	352	120	57	76
18	41	106	193	2580	43800	2470	870	1240	341	116	57	96
19	41	88	194	1680	37700	2180	850	1360	330	109	56	80
20	44	75	201	1520	16900	2090	948	1270	289	103	55	71
21	71	73	205	1180	9630	2010	1240	1090	265	99	55	67
22	76	72	202	951	6700	1990	1550	930	257	96	54	63
23	62	71	199	896	5230	1960	1560	884	261	95	54	60
24	58	186	198	787	4040	1960	1390	840	259	96	53	78
25	59	697	209	703	3550	1990	1200	999	251	95	52	142
26	57	357	219	649	3230	1870	1040	1190	236	91	52	167
27	55	215	217	602	3030	1950	960	1250	228	89	52	326
28	53	326	204	571	2820	2060	1110	1170	218	87	52	221
29	55	1080	204	548	---	2130	1250	1230	207	84	52	144
30	54	749	1560	970	---	2280	1180	1350	190	80	51	122
31	52	---	1160	2200	---	2340	---	1340	---	78	52	---
TOTAL	1458	5390	15156	36096	235297	117090	38785	33884	14174	3756	1862	2503
MEAN	47.0	180	489	1164	8403	3777	1293	1093	472	121	60.1	83.4
MAX	76	1080	2190	6560	45900	21600	2160	1360	1220	179	77	326
MIN	36	50	193	417	690	1870	850	840	190	78	51	47
AC-FT	2890	10690	30060	71600	466700	232200	76930	67210	28110	7450	3690	4960

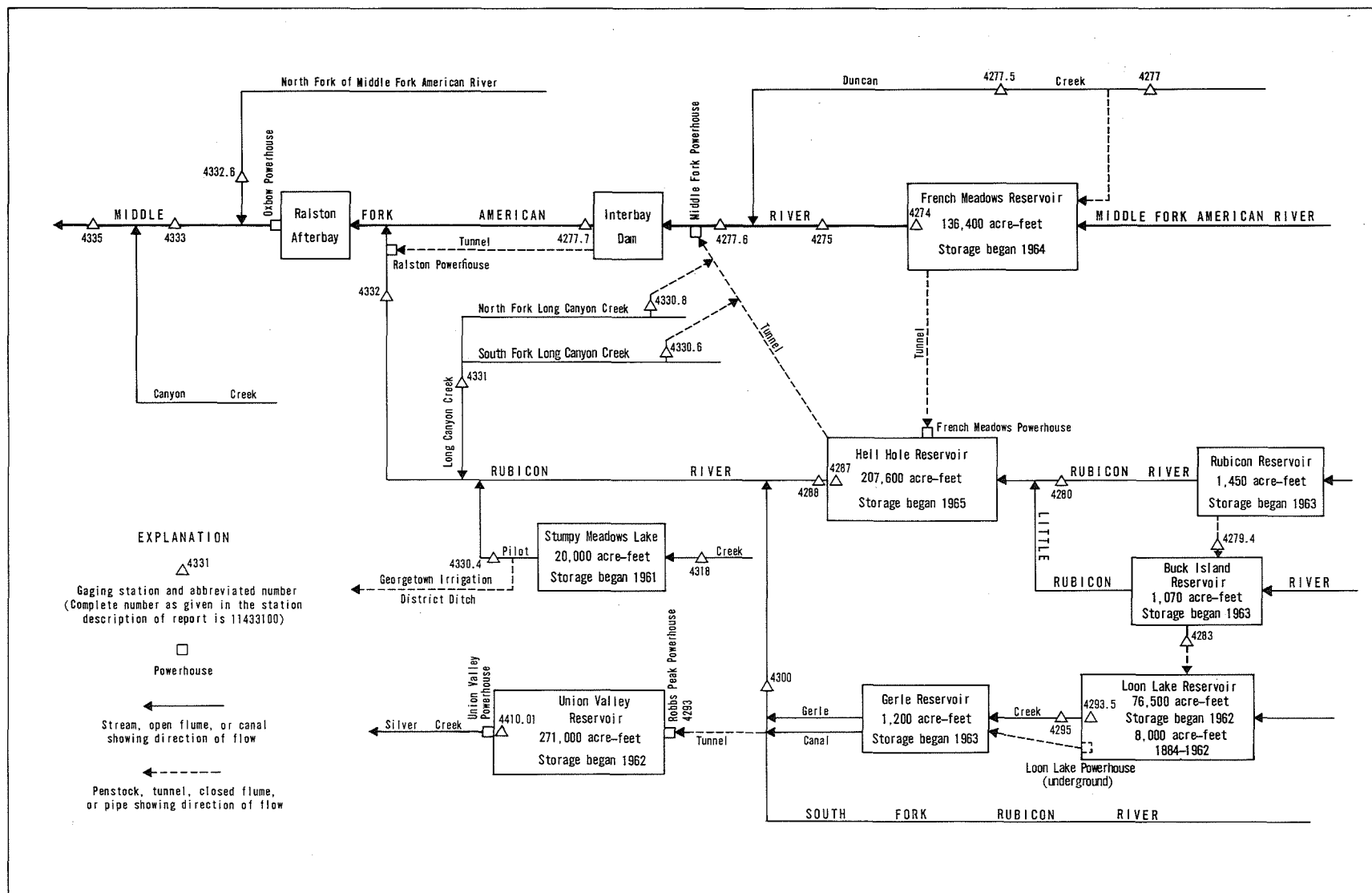


FIGURE 31. — Schematic diagram showing diversions and storage in Middle Fork American and Rubicon River basins.

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (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 at Hell Hole Reservoir on the Rubicon River; releases began Dec. 13, 1965. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Middle Fork American and Rubicon River basins.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 137,700 acre-ft, May 19, 1966, elevation, 5,263.9 ft; minimum since reservoir first filled, 37,722 acre-ft, Nov. 20, 1977, elevation, 5,170.86 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 136,000 acre-ft, May 30, elevation, 5,262.7 ft; minimum, 55,500 acre-ft, Nov. 5-9, elevation 5,192.5 ft.

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

5,125	10,800	5,200	62,400
5,130	13,100	5,230	94,100
5,150	23,700	5,270	146,500
5,170	37,100		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78800	57800	56800	60000	69200	113600	113500	119500	135400	132100	112200	100400
2	78000	57100	57600	60300	69200	113600	113500	120300	135100	131400	112100	99800
3	77300	56400	58100	60600	69100	113800	113300	121300	135100	130700	112100	99100
4	76600	55800	58200	61600	68800	113800	113100	122100	135100	130100	111700	98400
5	75900	55500	58400	63500	68500	113800	112900	122900	135000	129700	111100	97700
6	75300	55500	58500	64500	68100	113600	112700	123400	135100	129400	110500	97100
7	74600	55500	58700	65000	67900	116700	112900	124000	135300	129100	110000	96400
8	73900	55500	58900	65400	68100	121200	112700	124500	135300	128600	109600	95700
9	73200	55500	58700	65800	68400	119100	112700	125200	135100	127900	109500	95000
10	72600	55700	58100	66100	68200	117200	112900	125900	135000	127200	109500	94400
11	71800	55700	57400	66400	67800	114700	113000	126400	134900	126600	109100	93700
12	71100	55700	56800	66600	67800	112700	113100	127000	134900	126000	108300	93200
13	70500	55700	56400	66500	68800	112700	113100	127800	134900	125300	107700	92500
14	69800	55700	56400	66200	71500	112500	113000	128600	134900	124500	107100	91800
15	69100	55700	56500	65800	74800	112400	112900	129400	134700	123800	106600	91100
16	68400	55700	56500	66600	78100	112100	112700	130200	134600	123000	106600	90500
17	67700	55800	56600	68900	93200	111900	112500	131200	134300	122200	106600	89800
18	67000	55800	56600	70100	104500	111600	112200	132300	134200	121600	106200	89300
19	66400	55800	56700	71100	111200	111400	112000	133000	133900	120900	105500	88600
20	65600	55800	56700	71500	112600	111100	112000	133600	133600	120100	104900	87900
21	65100	55800	56800	71400	113000	111000	112400	133900	133700	119500	104200	87300
22	64500	55800	56900	71300	113100	110800	112900	133900	133900	118700	103800	86600
23	63800	55900	56900	71100	113100	110700	113300	134000	133900	118200	103800	85900
24	63100	56100	57000	70800	113100	110700	113900	134200	133600	117400	103800	85500
25	62400	56100	57000	70500	113300	110600	114700	134600	133300	116600	103300	84900
26	61900	56200	57100	70100	113300	110800	115300	135000	133000	115900	102700	84500
27	61300	56200	57300	69700	113400	111400	116100	135300	132800	115200	102000	84000
28	60600	56500	57400	69400	113500	111600	116900	135600	132900	114500	101300	83400
29	59900	56700	57800	69000	---	112100	117800	135800	133000	113900	101000	82700
30	59300	56700	59100	69100	---	112900	118500	136000	132800	113300	101000	82100
31	58500	---	59500	69300	---	113300	---	135800	---	112600	101000	---
MAX	78800	57800	59500	71500	113000	121000	118000	136000	135000	132000	112000	100000
MIN	58500	55500	56400	60000	67800	111000	112000	119000	133000	113000	101000	82100
a	5195.8	5193.8	5196.9	5207.0	5246.0	5245.8	5249.9	5262.6	5260.4	5245.3	5235.8	5219.3
b	-20900	-1800	+2800	+9800	+44200	-200	+5200	+17300	-3000	-20200	-11600	-18900

CAL YR 1985 b +4600

WTR YR 1986 b +2700

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

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1962, at site 0.8 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Mar. 8-27. Records fair except those for estimated period, which are poor. 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 to Hell Hole Reservoir since December 1965. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--13 years (water years 1952-64, prior to regulation by French Meadows Reservoir), 149 ft³/s, 107,900 acre-ft/yr; 22 years (water years 1965-86), 22.9 ft³/s, 16,590 acre-ft/yr.

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, 2,870 ft³/s, Mar. 8, 1986, gage height, 10.4 ft, from floodmarks, from flow over spillway of French Meadows Reservoir; minimum daily, 0.8 ft³/s, Oct. 22-25, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,870 ft³/s, Mar. 8, gage height, 10.4 ft, from floodmarks, from flow over spillway of French Meadows Reservoir; minimum daily, 8.2 ft³/s, Nov. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	9.1	9.4	12	15	273	110	11	420	9.7	9.2	8.8
2	8.9	9.0	16	12	15	289	120	11	306	9.7	9.2	8.8
3	10	8.7	14	11	14	299	109	11	123	9.7	9.2	8.8
4	10	8.7	11	17	13	308	94	12	10	9.7	9.2	8.8
5	10	8.8	10	23	13	313	81	11	10	9.7	9.2	8.8
6	10	8.7	10	16	13	302	72	11	9.9	9.7	9.1	8.8
7	10	8.6	11	13	13	503	78	11	9.7	9.7	9.0	8.8
8	10	8.4	10	12	12	2380	41	12	9.8	9.6	9.0	8.8
9	10	8.2	10	12	12	2180	12	11	10	9.5	9.0	8.8
10	10	8.5	9.4	12	12	1450	12	11	9.9	9.5	9.0	8.8
11	10	8.4	9.1	11	9.8	1460	11	11	10	9.5	9.0	8.8
12	10	8.3	9.1	11	15	1090	12	11	10	9.5	8.8	8.8
13	10	8.3	9.1	11	24	128	11	10	10	9.5	8.8	8.8
14	10	8.3	9.1	11	33	109	11	10	10	9.5	8.8	8.8
15	9.8	8.3	9.0	12	57	90	11	10	10	9.5	8.8	8.8
16	9.7	8.3	8.8	25	74	69	9.7	10	10	9.5	8.8	9.4
17	9.7	8.3	8.8	29	178	41	12	10	10	9.5	8.8	9.4
18	9.5	8.3	8.9	16	124	22	12	10	10	9.5	8.8	9.3
19	9.4	11	8.8	15	100	14	12	10	10	9.5	8.8	9.3
20	9.4	12	8.8	14	93	14	11	10	10	9.5	8.8	9.2
21	10	9.1	8.8	13	259	14	11	10	9.8	9.5	8.8	9.2
22	9.8	9.1	9.0	13	194	14	11	10	9.7	9.5	8.8	9.2
23	9.7	9.4	9.1	12	192	14	11	10	9.7	9.3	8.8	9.2
24	9.7	11	9.1	12	186	14	11	10	9.7	9.2	8.8	9.8
25	9.7	11	9.1	12	191	14	11	10	9.7	9.2	8.8	9.7
26	9.6	9.4	9.1	12	197	14	11	10	9.7	9.2	8.8	10
27	9.2	9.3	9.2	12	213	14	11	10	9.7	9.2	8.8	10
28	9.1	9.7	9.4	12	252	15	11	10	9.7	9.2	8.8	9.4
29	9.1	11	10	12	---	17	11	65	9.7	9.2	8.8	9.2
30	9.1	9.5	20	15	---	54	11	269	9.7	9.2	8.8	9.3
31	9.1	---	13	15	---	93	---	421	---	9.2	8.8	---
TOTAL	299.3	274.7	316.1	435	2523.8	11611	951.7	1049	1115.4	293.4	276.1	273.6
MEAN	9.65	9.16	10.2	14.0	90.1	375	31.7	33.8	37.2	9.46	8.91	9.12
MAX	10	12	20	29	259	2380	120	421	420	9.7	9.2	10
MIN	8.8	8.2	8.8	11	9.8	14	9.7	10	9.7	9.2	8.8	8.8
AC-FT	594	545	627	863	5010	23030	1890	2080	2210	582	548	543
a	20570	2941	2889	10836	15007	21562	17898	8625	13636	21570	11674	19700
CAL YR 1985 TOTAL	3422.5		MEAN 9.4	MAX 20	MIN 8.1	AC-FT 6790						
WTR YR 1986 TOTAL	19419.1		MEAN 53.2	MAX 2380	MIN 8.2	AC-FT 38520						

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 3, 1965, at site 150 ft upstream at datum 9.56 ft higher.

REMARKS.--Estimated daily discharges for the following periods of ice effect: Nov. 9, 10, 19, 21, Dec. 2, 8-14. Records fair. Station is upstream from all diversion to French Meadows Reservoir. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--26 years, 39.5 ft³/s, 28,620 acre-ft/yr.

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; minimum daily, 0.10 ft³/s, on several days during July and August 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 30	0145	352	7.38	Feb. 17	2200	*3,220	*10.35
Jan. 5	1200	419	7.52	Mar. 8	0445	2,540	9.90
Jan. 16	2315	664	7.98				

Minimum daily, 0.59 ft³/s, Sept. 6-8, 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.93	1.3	4.4	47	63	144	174	83	64	5.1	1.7	.75
2	.86	1.2	127	38	59	142	143	82	56	5.0	1.6	.71
3	.80	1.1	56	30	50	140	117	103	48	4.7	1.5	.68
4	.79	1.1	23	138	43	136	103	84	40	4.5	1.5	.65
5	.76	1.1	18	248	39	132	93	70	34	4.4	1.4	.64
6	1.2	1.1	15	128	36	121	90	60	30	4.2	1.4	.59
7	1.7	1.1	23	72	33	492	96	60	26	4.2	1.3	.59
8	1.7	1.0	17	52	31	1180	80	62	23	4.1	1.3	.59
9	1.7	1.0	13	42	29	388	80	63	21	3.8	1.3	.63
10	1.3	1.0	12	37	27	247	91	69	19	3.5	1.2	.68
11	1.2	2.2	11	33	25	171	96	69	17	3.3	1.2	.65
12	1.1	2.2	10	31	47	130	91	72	16	3.2	1.1	.59
13	1.1	2.1	9.4	29	187	103	77	80	15	3.1	1.1	.63
14	1.0	2.4	8.5	27	300	83	72	88	14	3.0	.98	.67
15	.98	2.9	8.0	25	312	72	69	91	12	2.8	.98	.75
16	.98	6.3	8.0	206	288	62	61	93	11	2.7	.98	1.8
17	.94	4.1	8.2	358	2230	54	57	100	11	2.6	.98	3.1
18	.93	4.1	9.2	168	1690	50	56	111	10	2.6	.93	2.6
19	.92	3.2	10	121	1040	50	62	112	9.5	2.5	.93	2.9
20	.88	2.7	11	101	346	51	82	97	9.0	2.4	.93	2.5
21	1.8	2.4	11	74	213	51	112	82	8.6	2.3	.91	1.8
22	2.1	2.3	11	59	172	53	128	71	8.1	2.3	.84	1.7
23	4.6	3.3	12	50	154	54	122	65	7.5	2.3	.82	1.6
24	3.2	4.8	13	43	144	63	110	69	7.0	2.5	.76	7.2
25	2.5	7.3	14	38	140	65	94	80	6.7	2.4	.76	7.3
26	2.0	6.9	15	35	142	72	81	86	6.3	2.4	.76	9.6
27	1.8	5.8	14	33	149	87	85	84	6.0	2.2	.76	9.5
28	1.6	6.4	13	32	152	102	93	84	5.7	2.1	.76	7.7
29	1.5	7.5	47	31	---	132	92	87	5.5	1.9	.76	8.7
30	1.4	5.0	156	84	---	181	89	84	5.3	1.9	.76	10
31	1.3	---	57	81	---	173	---	75	---	1.7	.76	---
TOTAL	45.57	94.9	764.7	2491	8141	4981	2796	2516	552.2	95.7	32.96	87.80
MEAN	1.47	3.16	24.7	80.4	291	161	93.2	81.2	18.4	3.09	1.06	2.93
MAX	4.6	7.5	156	358	2230	1180	174	112	64	5.1	1.7	10
MIN	.76	1.0	4.4	25	25	50	56	60	5.3	1.7	.76	.59
AC-FT	90	188	1520	4940	16150	9880	5550	4990	1100	190	65	174

CAL YR 1985 TOTAL 8258.72 MEAN 22.6 MAX 198 MIN .46 AC-FT 16380
WTR YR 1986 TOTAL 22598.83 MEAN 61.9 MAX 2230 MIN .59 AC-FT 44820

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges for the following periods of ice effect: Nov. 9, 10, 28, 29, Dec. 10-12. Records good except for periods of estimated record, which are fair. 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.

AVERAGE DISCHARGE.--22 years, 15.2 ft³/s, 11,000 acre-ft/yr.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,180 ft³/s, Feb. 17, gage height, 8.09 ft; minimum daily, 0.88 ft³/s, Sept. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.4	5.2	17	16	18	16	12	9.8	4.9	1.7	1.0
2	1.1	1.4	15	16	16	18	15	12	9.7	4.6	1.6	.98
3	1.0	1.4	14	14	15	17	14	11	9.6	4.4	1.5	.94
4	1.0	1.3	12	49	14	16	13	11	9.5	4.3	1.5	.93
5	1.0	1.3	11	106	12	15	13	11	9.4	4.2	1.4	.91
6	1.5	1.3	11	34	9.5	14	13	11	9.2	4.0	1.4	.89
7	2.0	1.2	12	18	9.3	314	13	11	9.3	4.0	1.4	.88
8	2.0	1.2	11	16	9.2	1070	13	12	9.2	3.8	1.3	.90
9	2.1	1.3	11	15	8.9	351	13	12	9.1	3.7	1.3	.94
10	1.5	1.4	10	15	8.8	191	13	11	8.9	3.5	1.3	1.0
11	1.4	2.7	9.8	14	8.7	114	13	9.9	8.9	3.3	1.2	.99
12	1.3	2.6	9.5	14	11	71	13	9.7	8.9	3.2	1.2	.98
13	1.3	2.4	8.9	14	22	42	12	9.6	8.9	3.0	1.2	1.0
14	1.2	2.6	8.6	13	81	23	12	9.5	8.9	3.0	1.2	1.1
15	1.2	3.2	8.2	12	72	14	11	9.5	9.5	2.8	1.2	1.2
16	1.2	6.7	8.2	96	79	8.4	11	9.5	10	2.7	1.2	2.0
17	1.2	4.7	8.7	171	2020	7.9	11	9.4	9.8	2.6	1.2	3.3
18	1.1	3.3	9.6	21	1620	7.7	10	9.7	9.6	2.5	1.2	2.9
19	1.1	3.1	11	19	993	7.9	9.9	10	9.1	2.5	1.1	3.1
20	1.1	2.8	12	18	393	8.3	9.2	9.8	8.5	2.4	1.1	2.7
21	2.1	2.7	12	23	240	9.2	9.0	9.8	8.0	2.3	1.1	2.0
22	2.3	2.6	12	15	197	10	8.8	10	7.5	2.2	1.1	1.9
23	4.9	3.7	12	15	178	11	12	9.9	7.0	2.2	1.1	1.8
24	3.9	5.9	12	14	169	15	15	9.8	6.6	2.3	1.0	5.8
25	2.9	8.4	13	14	166	15	15	10	6.2	2.2	1.0	7.2
26	2.3	7.8	13	13	169	16	14	10	5.9	2.3	1.0	8.2
27	2.0	6.6	12	13	86	17	14	9.9	5.7	2.2	1.0	8.4
28	1.8	6.4	12	13	19	18	14	9.9	5.5	2.0	1.0	7.1
29	1.7	6.0	15	13	---	18	14	10	5.3	1.9	1.0	7.0
30	1.6	5.8	41	16	---	17	14	10	5.0	1.8	1.0	7.3
31	1.5	---	18	17	---	16	---	9.8	---	1.7	1.0	---
TOTAL	53.4	103.2	378.7	858	6642.4	2490.4	377.9	319.7	248.5	92.5	37.5	85.34
MEAN	1.72	3.44	12.2	27.7	237	80.3	12.6	10.3	8.28	2.98	1.21	2.84
MAX	4.9	8.4	41	171	2020	1070	16	12	10	4.9	1.7	8.4
MIN	1.0	1.2	5.2	12	8.7	7.7	8.8	9.4	5.0	1.7	1.0	.88
AC-FT	106	205	751	1700	13180	4940	750	634	493	183	74	169
CAL YR 1985	TOTAL	2667.64	MEAN	7.3	MAX	41	MIN	.63	AC-FT	5290		
WTR YR 1986	TOTAL	11687.54	MEAN	32.0	MAX	2020	MIN	.88	AC-FT	23180		

SACRAMENTO RIVER BASIN

11427760 MIDDLE FORK AMERICAN RIVER ABOVE MIDDLE FORK POWERHOUSE, 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 powerhouse, 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 National Geodetic Vertical Datum of 1929, 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.--No estimated daily discharges. Records fair below 1,500 ft³/s, poor above. 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. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--21 years, 110 ft³/s, 79,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft³/s, Jan. 13, 1980, gage height, 8.47 ft, datum then in use, from rating curve extended above 2,500 ft³/s; minimum daily, 5.3 ft³/s, Sept. 10, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,100 ft³/s, Feb. 17, gage height, 11.60 ft; minimum daily, 15 ft³/s, Sept. 6-15.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	19	44	104	176	549	438	90	399	31	20	16
2	19	19	168	92	199	533	468	87	335	30	19	16
3	18	19	184	81	213	520	413	101	209	28	19	16
4	19	19	98	146	182	513	356	101	59	28	19	16
5	19	19	73	407	164	495	309	103	55	27	19	16
6	21	18	66	254	145	467	281	107	54	27	18	15
7	22	18	75	159	131	866	306	99	54	27	18	15
8	21	18	76	126	119	3180	248	102	54	26	19	15
9	21	18	63	108	110	2530	157	99	52	25	18	15
10	20	29	55	96	102	2090	153	92	51	25	19	15
11	20	24	50	88	95	1890	143	85	51	25	19	15
12	19	22	46	81	134	1640	141	82	50	25	19	15
13	19	21	45	76	433	616	135	80	48	24	18	15
14	19	21	44	74	591	525	129	78	48	24	18	15
15	19	21	41	78	1290	461	125	77	47	23	18	15
16	19	30	40	238	1980	412	123	75	49	23	17	18
17	18	31	40	720	4750	345	122	73	47	23	17	22
18	18	26	40	271	3960	300	117	72	47	23	17	23
19	18	22	41	211	3510	279	112	71	45	23	17	23
20	18	25	42	189	1980	278	108	70	44	23	17	21
21	23	25	43	165	1510	274	106	69	43	22	17	20
22	25	22	44	138	1060	274	104	68	41	22	17	18
23	22	24	44	132	902	274	103	67	39	23	17	18
24	23	50	44	115	808	278	106	66	37	23	16	29
25	23	92	46	106	735	276	104	65	36	23	16	52
26	21	49	47	99	691	269	101	64	35	22	16	55
27	21	38	47	93	621	265	98	62	34	22	16	76
28	20	53	47	88	553	259	96	61	33	22	16	40
29	20	116	50	85	---	249	94	77	32	21	16	31
30	20	60	249	138	---	293	92	243	32	20	17	29
31	19	---	127	162	---	382	---	402	---	20	16	---
TOTAL	623	968	2119	4920	27144	21582	5388	2988	2160	750	545	705
MEAN	20.1	32.3	68.4	159	969	696	180	96.4	72.0	24.2	17.6	23.5
MAX	25	116	249	720	4750	3180	468	402	399	31	20	76
MIN	18	18	40	74	95	249	92	61	32	20	16	15
AC-FT	1240	1920	4200	9760	53840	42810	10690	5930	4280	1490	1080	1400
CAL YR 1985	TOTAL	20315	MEAN	55.7	MAX	253	MIN	17	AC-FT	40290		
WTR YR 1986	TOTAL	69892	MEAN	191	MAX	4750	MIN	15	AC-FT	138600		

SACRAMENTO RIVER BASIN

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 right bank 500 ft downstream from 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 September 1985. October 1985 to current year operated as low flow station only.

GAGE.--Staff gage and V-notch sharp-crested weir. Prior to February 1986, water-stage recorder at same site. Elevation of gage is 2,470 ft above National Geodetic Vertical Datum of 1929, from topographic map. Gage extensively damaged by flood of February 1986.

REMARKS.--Estimated daily discharges: May 1-3, 9, 28, June 5 to Sept. 30. Records fair prior to May, poor thereafter. Flow regulated by French Meadows Reservoir (station 11427400) and after Aug. 22, 1966, by Interbay Reservoir, capacity, 130 acre-ft between normal operating limits of 2,502.0 ft and 2,526.0 ft. Water is diverted from Hell Hole Reservoir through a tunnel to Middle Fork powerplant (station 11428600) and re-diverted to Ralston powerplant. Beginning October 1985, only flows less than 35 ft³/s are computed. Flows equivalent to those published prior to October 1985 can be obtained by combining flow through Middle Fork powerplant with flow for Middle Fork American River above Middle Fork powerhouse (station 11427760).

AVERAGE DISCHARGE.--20 years (water years 1966-85), 66.2 ft³/s, 47,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 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.

EXTREMES FOR CURRENT YEAR.--Minimum daily, 17 ft³/s, Oct. 14-20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	30	25	25	23			25	--	29	30	22
2	26	30	25	25	23			25	--	28	29	21
3	26	30	25	25	23			25	--	26	29	21
4	26	30	25	25	23			--	--	--	33	20
5	26	28	25	25	23			--	32	30	33	20
6	26	25	25	25	23			--	32	30	33	19
7	25	25	25	25	23			--	32	29	29	19
8	25	25	25	25	23			--	30	29	28	23
9	25	25	25	25	23			25	30	29	26	22
10	25	25	25	25	24			--	28	29	21	22
11	25	26	25	25	24			--	28	30	20	21
12	22	24	25	25	25			--	27	29	30	20
13	18	25	25	25	25			--	25	28	28	20
14	17	25	25	25	--			--	34	--	28	21
15	17	25	25	25	--			--	33	--	22	19
16	17	25	25	--	--			--	30	--	22	30
17	17	24	25	--	--			--	31	--	22	29
18	17	25	25	23	--			--	29	33	22	29
19	17	25	25	23	--			--	28	33	22	28
20	17	25	25	23	--			--	32	33	21	28
21	24	25	25	23	--			--	28	31	21	27
22	24	25	25	23	--			--	33	31	21	27
23	22	25	25	23	--			--	30	31	21	28
24	23	25	25	23	--			--	33	30	21	28
25	24	25	25	23	--			--	33	30	21	28
26	24	25	25	23	--			--	30	28	20	26
27	24	25	25	23	--			--	33	35	20	30
28	27	25	25	23	--			26	30	35	19	29
29	30	25	25	23	---			--	28	33	19	28
30	30	25	25	23	---			---	30	33	19	27
31	30	---	25	22	---			---	---	32	19	---
TOTAL	721	772	775	---	---			---	---	---	749	732
MEAN	23.3	25.7	25.0	---	---			---	---	---	24.2	24.4
MAX	30	30	25	---	---			---	---	---	33	30
MIN	17	24	25	---	---			---	---	---	19	19
AC-FT	1430	1530	1540	---	---			---	---	---	1490	1450
a	10651	11104	15634	36064	20988	28869	55313	54237	40417	37931	42241	44012

a Diversion, in acre-feet, to Ralston powerplant.

NOTE: Record May 20 to Sept. 30 estimated based on once-daily staff-gage readings provided by the Placer County Water Agency.

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District). Auxiliary water-stage recorder since Aug. 26, 1966, 220 ft downstream from tunnel outlet at different datum.

REMARKS.--No estimated daily discharges. Records good. 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 for power development. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--23 years, 111 ft³/s, 80,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,120 ft³/s, Dec. 23, 1964, no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	8.3	31	99	50	156	317	365	885	198	35	.30
2	0	6.5	171	66	39	157	254	388	845	232	37	.27
3	0	5.3	158	48	35	170	173	487	817	239	32	.27
4	0	4.6	89	131	34	183	148	333	709	212	29	.27
5	0	4.0	55	487	30	183	148	212	552	182	26	.27
6	0	3.5	40	275	27	185	156	157	496	153	27	.27
7	0	2.9	41	121	22	402	153	125	446	142	28	.27
8	.62	2.3	44	74	21	990	125	122	361	133	25	.27
9	22	1.7	34	53	20	696	110	151	361	137	22	.27
10	30	5.9	28	45	18	298	154	232	372	69	20	.27
11	40	4.3	25	42	17	168	218	270	398	20	18	.27
12	34	9.3	22	39	21	119	246	304	412	60	16	.27
13	26	11	20	36	143	95	169	363	490	118	13	.27
14	17	12	19	34	268	77	126	408	514	167	11	.27
15	11	13	18	33	374	68	121	452	485	130	9.8	57
16	7.2	21	17	120	158	64	108	475	410	103	9.6	47
17	5.4	28	17	659	500	57	92	501	400	76	8.6	10
18	4.0	24	17	282	980	52	94	547	410	65	7.0	4.4
19	3.0	19	19	152	875	52	120	666	348	63	6.1	2.6
20	2.0	16	20	118	474	64	199	679	262	67	5.4	2.5
21	2.9	14	21	79	229	78	331	470	239	73	5.5	1.8
22	11	13	21	57	141	88	456	360	283	71	5.6	1.2
23	46	15	21	45	108	97	483	354	318	84	5.2	.75
24	68	37	21	38	106	94	376	370	342	77	4.3	2.8
25	57	53	21	34	123	99	294	566	321	73	3.2	15
26	39	46	22	33	134	116	245	754	326	58	2.3	22
27	29	32	23	34	143	164	273	798	331	49	1.8	27
28	23	29	21	36	148	218	402	774	302	48	1.3	32
29	19	32	34	36	---	256	418	855	244	46	.90	34
30	15	32	220	77	---	303	362	881	202	39	.62	47
31	11	---	175	75	---	336	---	900	---	34	.38	---
TOTAL	523.12	505.6	1485	3458	5238	6085	6871	14319	12881	3218	416.60	310.86
MEAN	16.9	16.9	47.9	112	187	196	229	462	429	104	13.4	10.4
MAX	68	53	220	659	980	990	483	900	885	239	37	57
MIN	0	1.7	17	33	17	52	92	122	202	20	.38	.27
AC-FT	1040	1000	2950	6860	10390	12070	13630	28400	25550	6380	826	617
CAL YR 1985	TOTAL	24758.90	MEAN	67.8	MAX	504	MIN	0	AC-FT	49110		
WTR YR 1986	TOTAL	55311.18	MEAN	152	MAX	990	MIN	0	AC-FT	109700		

SACRAMENTO RIVER BASIN

11428000 RUBICON RIVER AT RUBICON SPRINGS, NEAR MEEKS BAY, CA

LOCATION.--Lat 39°01'10", long 120°14'46", in SW 1/4 NE 1/4 sec.31, T.14 N., R.16 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 200 ft downstream from Rubicon Springs, 0.7 mi upstream from Miller Creek, 3.5 mi downstream from Rubicon diversion dam, and 7 mi west of Meeks Bay.

DRAINAGE AREA--31.4 mi².

PERIOD OF RECORD.--February 1910 to March 1914 (published as "at Rubicon Springs"), October 1956 to September 1986 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 6,052.97 ft above National Geodetic Vertical Datum of 1929. Feb. 1, 1910, to Mar. 31, 1914, nonrecording gage or water-stage recorder at site 0.4 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 10, 16-18, Dec. 7, 8, 20, 25-27. Records good, including estimated daily discharges. Flow below 1,200 ft³/s controlled by Rubicon diversion dam 3.5 upstream. Diversion to Rubicon-Rockbound tunnel (station 11427940) began Dec. 26, 1963. See Schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE (adjusted for diversion to Rubicon-Rockbound tunnel).--33 years (water years 1911-13, 1957-86), 129 ft³/s, 93,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s, Feb. 1, 1963, gage height, 14.28 ft, from rating curve extended above 1,200 ft³/s on basis of slope-conveyance computation of peak flow; no flow at times in some years prior to construction of Rubicon diversion dam in 1963 and 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1955 reached a stage of 13.0 ft, from floodmarks, present site and datum, discharge, 9,270 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,170 ft³/s, Mar. 8, gage height, 8.46 ft; minimum daily, 4.8 ft³/s, Oct. 4, 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	6.0	11	24	21	56	57	33	263	7.1	7.1	6.7
2	5.0	5.8	114	20	20	60	42	38	99	7.1	7.3	6.7
3	5.0	5.8	35	16	18	68	32	44	105	6.1	7.9	6.6
4	4.8	5.8	21	85	16	63	34	31	16	6.8	7.8	6.7
5	4.8	6.0	17	135	15	58	38	25	12	6.9	7.6	6.7
6	5.3	5.8	14	44	14	54	43	27	12	6.9	7.5	6.5
7	5.5	5.8	17	24	13	258	48	25	11	7.0	7.6	6.3
8	8.4	5.8	14	19	12	1620	34	25	11	6.8	7.3	6.4
9	9.7	5.9	13	16	12	88	38	27	10	6.8	7.2	6.7
10	7.7	6.8	12	15	12	48	48	30	9.7	6.8	7.3	6.6
11	7.4	7.2	11	15	11	40	48	29	9.7	8.7	7.4	6.6
12	7.1	7.7	10	14	25	34	40	29	10	7.4	7.3	6.6
13	6.8	8.1	10	13	141	31	28	30	9.7	8.1	7.8	6.4
14	6.6	8.4	9.6	13	210	27	27	30	9.3	8.1	7.1	6.3
15	6.6	8.7	9.4	14	77	25	30	30	9.1	7.9	7.2	6.5
16	6.3	8.8	9.4	147	53	24	26	29	9.2	7.8	7.0	6.8
17	6.3	9.0	9.5	180	853	22	23	29	9.0	7.8	6.8	6.7
18	6.3	9.0	10	43	1230	21	24	31	9.0	7.8	6.8	6.3
19	6.3	8.6	11	35	503	24	31	30	8.8	7.8	6.8	6.5
20	6.3	8.3	11	30	67	33	46	27	8.5	7.8	7.0	6.5
21	9.4	8.1	11	21	43	39	57	24	8.2	7.9	7.0	6.4
22	11	8.0	11	18	40	42	57	20	8.2	7.6	7.0	6.2
23	12	10	11	17	48	42	48	20	8.2	7.9	7.0	6.2
24	9.0	23	11	15	62	45	39	19	7.9	8.4	6.9	8.8
25	8.1	23	11	15	62	44	35	22	7.6	8.0	7.0	12
26	7.4	15	11	15	68	48	30	22	7.5	7.6	6.7	13
27	6.8	12	11	15	67	58	34	25	7.5	7.5	6.7	17
28	6.6	13	11	15	62	59	40	20	7.5	7.4	6.6	13
29	6.2	14	20	15	---	64	37	68	7.3	7.4	6.6	11
30	6.0	12	67	41	---	75	35	183	7.1	7.2	6.8	10
31	6.0	---	29	28	---	66	---	348	---	7.0	6.7	---
TOTAL	215.7	281.4	572.9	1117	3775	3236	1149	1370	718.0	231.4	220.8	234.7
MEAN	6.96	9.38	18.5	36.0	135	104	38.3	44.2	23.9	7.46	7.12	7.82
MAX	12	23	114	180	1230	1620	57	348	263	8.7	7.9	17
MIN	4.8	5.8	9.4	13	11	21	23	19	7.1	6.1	6.6	6.2
AC-FT	428	558	1140	2220	7490	6420	2280	2720	1420	459	438	466
MEAN a	23.9	26.2	66.5	148	311	301	267	506	453	111	20.5	18.2
AC-FT a	1470	1560	4090	9080	17880	18490	15910	31120	26970	6840	1260	1080

CAL YR 1985 TOTAL 5439.31 MEAN 14.9 MAX 114 MIN .88 AC-FT 10790 MEAN a 82.7 AC-FT a 59900
 MEAN 12121.00 MEAN 26.0 MAX 1620 MIN 4.8 AC-FT 26020 MEAN a 182 AC-FT a 135700

SACRAMENTO RIVER BASIN

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, 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 National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District).

REMARKS.--Estimated daily discharges: May 31 to June 12 and July 7-10. Records good except May 31 to July 10, which are fair. Tunnel diverts water from Buck Island Lake and discharges into Loon Lake. Buck Island Lake receives water from Rubicon River via Rubicon-Rockbound tunnel (station 11427940). Gates are closed at the tunnel entrance during the summer and opened each fall to raise the level of Buck Island Lake for recreation purposes. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--23 years, 142 ft³/s, 102,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,240 ft³/s, Dec. 23, 1964; no flow at times in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.37	14	40	168	90	182	383	449	1090	206	19	3.9
2	.22	11	166	109	70	185	325	451	1040	226	20	3.9
3	.08	9.3	267	76	59	201	226	607	1000	258	20	3.8
4	0	7.8	158	113	51	219	174	478	860	240	18	3.7
5	0	6.6	98	628	44	223	169	289	720	209	17	3.7
6	0	5.8	65	505	40	222	182	199	630	164	16	3.6
7	0	5.0	59	221	34	349	190	149	570	160	16	3.5
8	.13	4.2	63	126	32	1120	162	133	460	150	16	3.4
9	1.9	3.6	54	85	29	982	135	152	480	145	15	3.3
10	16	9.3	44	67	27	503	172	242	510	69	14	3.2
11	38	13	37	58	25	244	245	321	540	7.9	13	3.2
12	44	12	32	54	34	155	299	356	496	41	12	3.1
13	37	12	30	50	171	116	232	428	625	134	11	3.0
14	28	13	28	46	316	91	158	495	735	196	10	2.9
15	20	15	27	50	589	79	136	561	774	143	9.1	31
16	14	21	25	112	311	70	126	600	644	90	8.5	52
17	11	33	24	878	611	60	107	611	584	59	8.0	37
18	8.5	36	24	540	1150	52	98	689	577	42	7.5	20
19	6.6	30	24	249	1110	49	113	811	534	36	7.0	12
20	5.0	26	26	178	786	57	187	866	400	36	6.3	8.5
21	5.7	23	27	126	367	73	354	663	252	39	5.6	6.5
22	7.0	21	27	89	213	89	545	471	288	41	5.0	4.7
23	23	21	27	71	152	101	628	436	352	45	4.6	3.3
24	70	38	27	57	134	107	519	434	432	51	4.3	3.8
25	75	65	27	49	146	112	392	640	457	48	4.3	12
26	58	65	28	45	162	121	315	910	437	39	4.3	27
27	42	52	29	45	175	163	284	1020	460	31	4.2	41
28	32	46	29	46	178	233	416	1000	422	27	4.2	42
29	27	50	34	49	---	285	539	1070	341	26	4.1	44
30	22	45	240	85	---	344	464	1090	244	24	4.1	54
31	18	---	278	116	---	398	---	1110	---	21	4.0	---
TOTAL	610.50	713.6	2064	5091	7106	7185	8275	17731	16954	3003.9	312.1	447.0
MEAN	19.7	23.8	66.6	164	254	232	276	572	565	96.9	10.1	14.9
MAX	75	65	278	878	1150	1120	628	1110	1090	258	20	54
MIN	0	3.6	24	45	25	49	98	133	244	7.9	4.0	2.9
AC-FT	1210	1420	4090	10100	14090	14250	16410	35170	33630	5960	619	887
CAL YR 1985	TOTAL	32179.82	MEAN	88.2	MAX	658	MIN	0	AC-FT	63830		
WTR YR 1986	TOTAL	69493.10	MEAN	190	MAX	1150	MIN	0	AC-FT	137800		

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (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. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Middle Fork American and Rubicon River basins.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 211,050 acre-ft, Dec. 20, 1981, elevation, 4,632.75 ft; minimum since reservoir first filled, 37,499 acre-ft, Mar. 23, 1973, elevation, 4,428.28 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 210,700 acre-ft, Mar. 8, elevation, 4,632.5 ft; minimum, 105,100 acre-ft, Oct. 6, elevation, 4,528.7 ft.

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

4,340	5,220	4,500	83,000
4,360	9,840	4,550	122,700
4,380	16,200	4,600	171,900
4,400	24,200	4,650	233,400
4,450	49,600		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106300	117000	112300	115400	129600	199800	207100	203800	208100	198600	181500	149200
2	106100	117600	114200	115200	130600	200300	207300	203800	208300	198100	180000	148500
3	105700	118200	115000	115100	131800	200800	207300	204000	208200	197500	178600	147700
4	105400	118100	114600	116600	132600	201300	207200	203700	208000	197000	177700	146900
5	105200	117400	114300	119500	133200	201600	207200	203000	207700	196000	177000	146100
6	105100	116600	113700	120500	133300	202000	207100	202000	207200	194900	176400	145400
7	105300	115600	113800	120800	133200	207000	207300	201000	206600	194100	175700	144600
8	105400	115100	113800	120800	132300	210700	207300	200300	206100	193200	174600	144000
9	105600	114800	113200	120400	131500	209100	207100	201000	205600	192600	173200	143200
10	105700	115000	112900	119800	131100	209000	207100	200500	205000	193100	171600	142400
11	106000	115000	112700	119300	130800	208700	207200	199900	204300	192000	170600	141500
12	106600	115000	112500	118700	131400	208600	207200	199400	203800	191400	170000	140600
13	107300	114900	112100	118100	134900	208200	207100	198900	203100	190800	169100	139800
14	107800	114100	112200	118200	139200	207600	206700	198600	202400	190300	168300	138900
15	108500	113600	112100	118100	142600	207300	206500	198300	202100	189900	167500	137800
16	109100	113700	111800	121400	145600	207100	206100	198100	201900	189100	166200	137000
17	109800	113800	111900	126000	163000	206600	205600	197900	201700	188700	164800	136400
18	110400	113500	112000	126800	181400	206100	205100	197900	201500	188200	163800	135300
19	111000	113000	112200	127700	191900	205700	204700	198400	201100	188900	163000	134200
20	111700	112600	112300	128100	194300	205300	204700	198700	200900	188500	162300	133100
21	112400	112100	112400	128500	195400	205000	205200	198700	200900	187800	161500	131800
22	113100	111600	112500	128800	196000	204800	205800	198900	200600	187200	160500	130600
23	113900	111800	112100	128900	196500	204500	206300	198900	200600	186600	159100	129500
24	114600	112200	111800	128800	197100	204300	206300	198900	200500	185900	157600	128500
25	115300	112000	112000	128500	197700	204200	205700	199400	200100	185300	156500	127700
26	115600	111800	112000	128300	198300	204000	205000	200300	199800	185100	155800	127000
27	116100	111300	112000	127900	198900	203700	204300	201100	199300	185000	155100	126900
28	116200	111800	112100	127500	199400	204100	204100	202000	199400	184400	154300	126700
29	116500	112200	112700	127200	---	204700	203700	203100	199500	183700	153200	126500
30	116600	112200	114300	128000	---	205600	203400	204700	199000	182900	151800	126400
31	116800	---	114600	128000	---	206300	---	206500	---	182300	150300	---
MAX	116800	118200	115000	128900	199400	210700	207300	206500	208300	198600	181500	149200
MIN	105100	111300	111800	115100	129600	199800	203400	197900	199000	182300	150300	126400
a	4543.0	4537.5	4540.4	4557.0	4623.4	4629.0	4626.6	4629.1	4623.1	4609.1	4579.8	4554.3
b	+10100	-4600	+2400	+13400	+71400	+6900	-2900	+3100	-7500	-16700	-32000	-23900

CAL YR 1985 b +11300

WTR YR 1986 b +19700

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

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels by Placer County Water Agency).

REMARKS.--No estimated daily discharges. Records good. 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 American River powerplant. Diversion began Sept. 8, 1966. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--20 years, 32.3 ft³/s, 23,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s, Mar. 8, 1986, including flow over spillway; no flow Aug. 25 to Sept. 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,700 ft³/s, Mar. 8, including flow over spillway; minimum daily, 12 ft³/s, Dec. 20-29.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	24	26	13	17	37	35	33	99	23	23	22
2	23	24	34	13	19	36	34	33	469	23	23	22
3	23	24	30	13	17	36	34	33	531	23	23	22
4	23	24	25	15	16	36	33	33	327	23	23	22
5	24	24	26	21	16	35	33	33	138	23	23	22
6	24	24	25	16	15	35	33	33	32	23	23	22
7	24	24	26	15	15	47	34	33	22	23	23	22
8	24	24	26	15	15	6650	34	33	22	23	23	22
9	24	23	25	14	15	2670	33	24	22	23	23	21
10	24	23	25	14	15	1380	33	14	22	23	23	22
11	24	23	25	14	15	1260	33	13	22	23	23	22
12	24	25	24	14	21	1060	33	13	22	23	23	22
13	25	25	25	14	27	775	33	13	22	23	23	22
14	25	21	25	14	28	185	33	16	22	23	23	22
15	25	25	17	14	41	36	33	20	22	23	22	22
16	25	25	15	23	48	35	33	23	23	23	22	22
17	25	25	13	24	136	34	33	23	23	23	22	22
18	25	22	13	18	111	34	33	23	23	23	22	21
19	25	24	13	17	97	34	33	23	23	23	22	21
20	25	20	12	17	54	34	33	22	23	23	22	21
21	25	19	12	16	42	34	33	22	23	23	22	21
22	24	24	12	16	45	34	34	22	23	23	22	21
23	24	25	12	16	43	34	33	22	23	23	22	21
24	24	27	12	15	42	34	33	22	23	23	22	21
25	24	25	12	15	40	34	33	21	23	23	22	21
26	23	24	12	15	40	31	33	21	23	23	22	21
27	24	25	12	15	39	31	33	21	23	23	22	22
28	24	27	12	15	38	34	33	21	23	23	22	21
29	24	28	12	15	---	35	33	21	23	23	22	21
30	24	25	18	17	---	35	33	21	23	23	22	21
31	24	---	14	17	---	35	---	21	---	23	22	---
TOTAL	748	722	590	490	1067	14820	997	726	2139	713	696	647
MEAN	24.1	24.1	19.0	15.8	38.1	478	33.2	23.4	71.3	23.0	22.5	21.6
MAX	25	28	34	24	136	6650	35	33	531	23	23	22
MIN	23	19	12	13	15	31	33	13	22	23	22	21
AC-FT	1480	1430	1170	972	2120	29400	1980	1440	4240	1410	1380	1280
a	10656	10258	12138	27369	32223	48700	57965	54311	41163	39214	43046	44201
CAL YR 1985	TOTAL	7097	MEAN 19.4	MAX	34	MIN	12	AC-FT	14080			
WTR YR 1986	TOTAL	24355	MEAN 66.7	MAX	6650	MIN	12	AC-FT	48310			

a Diversion, in acre-feet, from Hell Hole Reservoir to Middle Fork powerplant, furnished by Placer County Water Agency.

SACRAMENTO RIVER BASIN

11429300 ROBBS PEAK POWERPLANT NEAR KYBURZ, CA

LOCATION.--Lat 38°53'50", long 120°22'38", in SE 1/4 SW 1/4 sec.11, T.12 N., R.14 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, in powerplant on shore of Union Valley Reservoir and 9.5 mi northwest of Kyburz.

PERIOD OF RECORD.--October 1962 to current year. Prior to October 1965, published as Robbs Peak tunnel near Riverton.

GAGE.--Discharge computed from powerplant output. Elevation of gage is 4,880 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1965, water-stage recorder and concrete control in abandoned section of canal 0.5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Tunnel diverts at South Fork Rubicon River diversion dam in NE 1/4 sec.27, T.13 N., R.14 E., and discharges into Union Valley Reservoir (station 11441001). Water is imported from Rubicon River basin via Rubicon-Rockbound tunnel and Buck-Loon tunnel to Loon Lake, then via Loon Lake powerplant or Gerle Creek to Robbs Peak tunnel and powerplant. The water is later used in the South Fork American River basin for power development. See schematic diagrams of Middle Fork American and Rubicon River basins and South Fork American River basin.

COOPERATION.--Records provided by Sacramento Municipal Utility District, rounded to Geological Survey standards.

AVERAGE DISCHARGE.--24 years, 257 ft³/s, 186,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,440 ft³/s, Dec. 22-24, 1964; no flow many days in most years.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	261	75	205	479	418	935	669	748	246	133	15
2	10	302	336	265	268	401	853	615	708	143	141	310
3	33	309	325	257	167	422	747	713	278	159	1.0	45
4	79	312	169	401	147	414	742	657	446	14	149	1.0
5	82	297	116	885	351	387	739	618	469	1.0	124	1.0
6	110	314	84	509	379	345	721	592	813	1.0	125	1.0
7	137	302	110	255	385	636	837	572	814	214	131	2.0
8	101	315	159	241	371	1020	763	476	803	179	130	1.0
9	125	308	88	284	128	1110	730	616	803	155	153	3.0
10	138	322	59	262	367	1180	790	610	624	170	1.0	1.0
11	91	335	52	209	345	1170	783	603	466	176	120	5.0
12	132	133	54	113	444	1100	784	601	562	169	133	1.0
13	116	291	54	217	886	869	707	624	438	1.0	132	1.0
14	133	309	1.0	321	834	848	683	613	587	184	154	1.0
15	116	292	77	310	1020	689	695	603	546	158	99	3.0
16	167	305	6.0	508	978	552	711	605	533	172	154	1.0
17	116	321	51	906	987	530	716	602	531	117	1.0	4.0
18	1.0	319	68	477	1060	519	707	631	562	136	100	4.0
19	70	326	59	288	914	522	719	650	544	2.0	200	1.0
20	111	306	61	298	367	584	778	370	549	1.0	170	1.0
21	115	316	64	210	367	616	821	618	547	138	108	1.0
22	134	315	72	367	392	643	817	566	537	136	104	1.0
23	123	327	70	369	462	647	792	458	508	139	123	1.0
24	30	342	51	375	503	661	747	448	542	156	1.0	7.0
25	1.0	64	76	342	536	682	717	250	534	124	271	168
26	1.0	363	77	128	468	943	688	193	557	156	272	370
27	1.0	345	77	322	487	1040	669	523	541	1.0	262	464
28	329	358	61	307	415	1070	736	581	565	128	220	9.0
29	335	127	90	299	---	1070	637	671	114	145	283	488
30	80	2.0	672	361	---	1090	458	688	404	137	319	446
31	298	---	304	324	---	1040	---	690	---	129	1.0	---
TOTAL	3316.0	8538.0	3618.0	10615	14507	23218	22222	17726	16673	3787.0	4315.0	2357.0
MEAN	107	285	117	342	518	749	741	572	556	122	139	78.6
MAX	335	363	672	906	1060	1180	935	713	814	246	319	488
MIN	1.0	2.0	1.0	113	128	345	458	193	114	1.0	1.0	1.0
AC-FT	6580	16940	7180	21050	28770	46050	44080	35160	33070	7510	8560	4680
CAL YR 1985	TOTAL	59522.0	MEAN 163	MAX 672	MIN 1.0	AC-FT 118100						
WTR YR 1986	TOTAL	130892.0	MEAN 359	MAX 1180	MIN 1.0	AC-FT 259600						

SACRAMENTO RIVER BASIN

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 powerhouse intake structure, 1.6 mi southwest of right bank end of Loon Lake Dam on Gerle Creek, and 10 mi southwest of town of Meeks Bay.

DRAINAGE AREA.--7.96 mi².

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

REVISED RECORDS.--WDR CA-76-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (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, 73,900 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 at 2400 hours. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Capacity tables provided by Sacramento Municipal Utility District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 77,700 acre-ft, June 6, 1969, elevation, 6,411.1 ft; minimum since reservoir first filled, 3,690 acre-ft, Nov. 3, 1970, elevation, 6,330.3 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 75,900 acre-ft, Mar. 9, elevation, 6,409.8 ft; minimum, 33,200 acre-ft, Nov. 28, elevation, 6,374.9 ft.

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

6,330	3,600	6,350	12,500	6,370	28,500	6,412	79,000
6,340	7,200	6,360	19,600	6,390	50,000		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54800	47700	33500	38900	45600	66300	63700	54300	67500	67200	66500	57600
2	54500	47100	34000	38900	45900	66900	63500	54400	68300	67500	66200	56800
3	54400	46400	34800	38800	46200	67500	63100	55000	70300	67600	66200	56800
4	54200	45800	35100	39200	46300	68200	62400	55300	71300	68200	66000	56800
5	53900	45200	35300	41000	45900	68700	61900	55300	71700	68600	65700	56700
6	53700	44500	35500	42200	45400	69300	61500	54900	71600	68900	65600	56700
7	53400	43800	35700	42600	44800	71300	61200	54400	71200	68900	65300	56700
8	53300	43200	35800	42600	44400	75100	60700	54300	70600	68900	65000	56600
9	52900	42600	36000	42500	44400	75900	60000	53800	70000	68900	64800	56600
10	52600	42400	36200	42400	43800	75800	59500	53500	69800	68700	64800	56400
11	52400	41700	36200	42300	43400	74800	59100	53400	69900	68300	64500	56600
12	52300	41500	36200	42400	43100	73800	58900	53400	69900	68200	64300	56400
13	52000	40900	36200	42300	43800	73000	58500	53500	70300	68400	63900	56400
14	51800	40200	36300	42100	45200	72000	57800	53700	70500	68400	63600	56300
15	51500	39700	36300	41700	47100	71600	57100	54000	70600	68400	63400	56300
16	51100	39100	36400	42300	48200	71200	56300	54500	70600	68300	63100	56400
17	50900	38600	36400	44500	52100	70600	55500	54900	70500	68300	63100	56400
18	50900	38100	36400	45800	56600	70000	54500	55500	70500	68200	62700	56400
19	50600	37400	36500	46500	59800	69500	53800	56200	70200	68300	62400	56400
20	50400	36900	36600	47000	61500	68900	53200	57500	69800	68300	62100	56400
21	50300	36300	36600	47200	62400	68600	53000	58100	69200	68200	61800	56400
22	50000	35600	36700	47000	63100	68200	53300	58100	68800	68000	61500	56400
23	49800	35100	36700	46800	63500	67800	53700	58600	68600	68000	61300	56200
24	49800	34700	36800	46300	63900	67500	53900	58700	68200	67900	61300	56300
25	49900	34800	36800	45900	64300	67000	53800	60000	67900	67600	60600	55900
26	50000	34100	36900	46000	64800	66100	53500	61700	67600	67500	60000	55300
27	50000	33600	36900	45700	65200	65200	53300	62800	67200	67500	59500	54500
28	49500	33200	36900	45400	65700	64500	53300	64000	67000	67400	59000	54700
29	49000	33300	37100	45200	---	64000	53500	64900	67600	67100	58300	53700
30	48900	33400	38000	45600	---	63900	54200	65800	67100	66900	57600	52800
31	48300	---	38500	45900	---	63700	---	66700	---	66600	57600	---
MAX	54800	47700	38500	47200	65700	75900	63700	66700	71700	68900	66500	57600
MIN	48300	33200	33500	38800	43100	63700	53000	53400	67000	66600	57600	52800
a	6388.6	6375.1	6379.9	6386.6	6402.3	6400.8	6393.3	6403.1	6403.4	6403.0	6396.0	6392.2
b	-6500	-14900	+5100	+7400	+19800	-2000	-9500	+12500	+400	-500	-9000	-4800

CAL YR 1985 b +6000

WTR YR 1986 b -2000

a Elevation, in feet, at end of month.

SACRAMENTO RIVER BASIN

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 concrete weir. Elevation of gage is 6,250 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to August 1962, nonrecording gage at site 1,400 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records excellent. 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. Storage began Dec. 5, 1963. Loon Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (stations 11427940, 11428300). Diversion to Loon Lake powerplant starting August 1971, bypasses station and returns to Gerle Creek at Gerle Creek Dam. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--10 years (water years, 1911, 1963-71, prior to diversion to Loon Lake powerplant), 131 ft³/s, 94,910 acre-ft/yr; 15 years (water years 1972-86), 8.50 ft³/s, 6,160 acre-ft/yr.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 306 ft³/s, July 29, gage height, 5.41 ft; minimum daily, 8.0 ft³/s, many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	8.3	8.6	9.2	9.2	9.5	11	8.9	8.9	8.9	8.0	9.2
2	8.3	8.3	12	8.9	9.1	9.8	9.5	9.0	8.9	8.9	8.0	9.2
3	8.3	8.3	9.2	8.9	8.9	10	9.2	9.8	8.9	8.8	8.0	9.1
4	8.3	8.3	8.9	12	8.9	10	9.0	9.1	8.9	8.6	8.0	9.0
5	8.3	8.3	8.9	13	8.9	9.9	9.1	8.9	8.9	8.6	8.0	8.9
6	8.4	8.2	8.9	9.8	8.9	9.7	9.3	8.9	8.9	8.6	8.2	8.9
7	8.3	8.0	9.2	9.4	8.9	17	9.2	9.2	8.9	8.6	8.4	8.8
8	8.6	8.1	8.9	9.2	8.9	20	8.9	8.9	8.9	8.6	8.6	8.8
9	8.3	8.3	8.9	9.2	8.9	13	9.2	8.9	8.9	8.6	8.6	8.6
10	8.1	8.3	8.9	9.2	8.8	19	9.3	8.9	8.9	8.6	8.6	8.6
11	8.0	8.3	8.8	9.2	8.6	10	9.5	8.8	8.9	8.6	8.6	8.5
12	8.0	8.3	8.6	8.9	10	9.5	8.9	8.8	8.9	8.6	8.6	8.3
13	8.0	8.3	8.7	8.9	12	9.5	8.6	8.9	8.9	8.6	8.6	8.3
14	8.0	8.3	8.6	8.9	15	9.5	8.8	8.8	8.9	8.6	8.6	8.3
15	8.0	8.3	8.6	8.9	11	9.5	8.6	8.8	8.9	8.6	8.6	8.1
16	8.0	8.5	8.6	14	10	9.2	8.6	8.7	8.9	8.6	8.6	8.1
17	8.0	8.2	8.6	13	31	9.2	8.8	8.6	8.9	8.6	8.6	8.2
18	8.1	8.0	8.6	9.9	27	9.2	9.0	8.6	8.9	8.6	8.6	8.0
19	8.3	8.4	8.6	9.9	16	9.3	9.4	8.6	8.9	8.6	8.5	8.0
20	8.3	8.6	8.6	9.8	10	9.3	10	8.6	8.9	8.6	8.5	8.0
21	8.6	8.6	8.6	9.5	9.6	9.3	10	8.6	8.9	8.6	8.3	8.0
22	8.6	8.6	8.6	9.2	9.4	9.3	10	8.6	9.2	10	8.3	8.0
23	8.6	8.7	8.6	8.9	9.5	9.3	9.5	8.6	9.2	9.5	8.3	8.0
24	8.4	8.8	8.6	8.9	9.7	9.6	9.2	8.6	9.0	9.0	8.4	9.0
25	8.3	9.0	8.6	8.9	9.6	9.6	9.1	8.6	8.9	8.3	8.8	8.6
26	8.3	8.6	8.6	8.9	9.7	9.7	8.9	8.7	8.9	8.3	9.2	8.6
27	8.3	8.6	8.6	8.9	9.8	9.9	9.1	8.9	8.9	8.2	9.2	8.7
28	8.3	8.6	8.6	8.9	9.7	9.9	9.1	8.9	8.9	8.0	9.2	8.6
29	8.3	8.6	9.7	8.9	---	10	9.0	8.9	8.9	12	9.2	8.7
30	8.3	8.6	11	10	---	11	9.0	8.9	8.9	8.0	9.2	8.6
31	8.3	---	9.2	9.4	---	10	---	8.9	---	8.0	9.1	---
TOTAL	256.2	252.3	277.4	300.6	317.0	329.7	276.8	273.9	267.7	270.7	265.4	255.7
MEAN	8.26	8.41	8.95	9.70	11.3	10.6	9.23	8.84	8.92	8.73	8.56	8.52
MAX	8.6	9.0	12	14	31	20	11	9.8	9.2	12	9.2	9.2
MIN	8.0	8.0	8.6	8.9	8.6	9.2	8.6	8.6	8.9	8.0	8.0	8.0
AC-FT	508	500	550	596	629	654	549	543	531	537	526	507
a	7020	16940	474	6530	4690	24400	31190	25140	31860	7300	9120	5030

CAL YR 1985 TOTAL 3140.5 MEAN 8.60 MAX 12 MIN 7.9 AC-FT 6230

SACRAMENTO RIVER BASIN

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.

REVISrainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,970 ft above National Geodetic Vertical Datum of 1929, from topographic map. Feb. 1, 1910, to June 21, 1914, nonrecording gage at site about 700 ft downstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 10, 15-17, Dec. 7, 8. Records excellent except estimated daily discharges, which are 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 Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (stations 11427940, 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 1,320 ft³/s to Silver Creek basin began in October 1962. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE (unadjusted).--24 years (water years 1963-86), 25.5 ft³/s, 18,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s, Jan. 31, 1963, gage height, 12.32 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,720 ft³/s, Feb. 17, gage height, 11.01 ft; minimum daily, 5.0 ft³/s, Nov. 2, 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	8.0	7.2	8.7	11	8.8	8.6	12	11	11	11	11
2	10	5.0	23	8.1	11	8.4	8.3	12	11	10	11	11
3	11	5.0	15	7.7	10	8.1	7.9	13	10	10	11	16
4	10	5.2	9.5	56	8.8	7.7	7.7	13	10	11	11	13
5	11	6.0	8.8	123	8.3	7.5	7.6	13	10	11	10	12
6	12	6.0	8.0	13	7.9	7.3	11	13	11	11	11	11
7	12	5.8	8.6	9.1	7.5	522	9.2	13	11	11	11	11
8	12	5.5	8.0	8.1	7.2	2930	8.3	13	11	11	11	11
9	12	5.5	7.6	7.7	6.8	127	7.9	13	11	11	11	11
10	12	5.5	7.4	7.3	6.7	147	7.5	12	11	11	11	11
11	12	5.5	7.0	6.6	6.5	30	7.3	12	11	11	11	11
12	12	5.3	6.8	6.4	16	16	7.2	12	10	11	11	11
13	11	5.1	6.6	6.4	237	14	7.1	12	10	11	11	11
14	12	5.4	6.5	6.8	365	13	6.9	12	10	11	11	11
15	12	5.5	6.5	7.0	394	12	6.8	11	10	11	11	11
16	11	5.6	6.3	214	334	11	6.9	11	10	11	11	12
17	11	5.6	6.3	728	5380	11	6.9	11	10	11	11	13
18	11	5.7	6.3	12	4340	11	6.7	11	10	11	11	13
19	11	5.6	6.2	9.8	2580	11	6.5	11	10	11	11	17
20	11	5.6	6.1	9.3	463	11	6.5	11	11	11	11	33
21	12	5.6	6.1	8.4	191	11	6.4	11	11	11	10	17
22	12	5.6	6.1	7.8	123	11	6.3	11	11	11	11	13
23	12	7.0	6.0	7.9	92	11	6.1	11	11	11	11	13
24	12	11	6.0	7.4	13	10	6.1	10	11	11	11	14
25	11	9.8	6.1	7.2	12	10	6.7	10	11	11	11	13
26	12	7.1	6.1	7.0	24	9.7	6.1	10	11	11	11	15
27	12	6.8	6.0	6.6	10	9.5	5.9	10	11	11	11	15
28	12	9.0	5.9	6.6	9.3	9.3	5.9	10	11	11	11	13
29	11	11	7.2	6.9	---	17	6.4	11	10	11	12	14
30	11	7.6	15	11	---	17	8.0	11	10	10	12	13
31	11	---	9.7	11	---	9.0	---	11	---	11	11	---
TOTAL	354	192.9	247.9	1342.8	14675.0	4038.3	216.7	357	317	338	341	401
MEAN	11.4	6.43	8.00	43.3	524	130	7.22	11.5	10.6	10.9	11.0	13.4
MAX	12	11	23	728	5380	2930	11	13	11	11	12	33
MIN	10	5.0	5.9	6.4	6.5	7.3	5.9	10	10	10	10	11
AC-FT	702	383	492	2660	29110	8010	430	708	629	670	676	795

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 10-13, 16, 17, 19, 20, Dec. 7, 8, 12, 13. Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--26 years, 27.3 ft³/s, 19,780 acre-ft/yr.

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, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 2	1445	161	2.92	Feb. 17	2000	*3,510	*7.15
Jan. 17	0130	226	3.17	Mar. 8	0645	820	4.48

Minimum daily, 3.8 ft³/s, Oct. 4, 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	4.5	15	25	49	80	51	23	15	9.7	6.6	4.9
2	4.0	4.5	101	22	60	74	49	23	15	9.4	6.6	4.8
3	3.9	4.4	78	20	66	67	46	29	14	9.3	6.5	4.7
4	3.8	4.4	35	46	57	62	44	28	14	9.1	6.3	4.7
5	3.8	4.4	28	80	51	57	43	27	14	9.2	6.2	4.7
6	4.3	4.4	23	57	46	53	43	28	14	9.1	6.2	4.7
7	5.5	4.3	25	40	41	105	53	26	14	9.0	6.1	4.6
8	5.5	4.3	23	32	38	469	46	25	13	8.9	6.1	4.6
9	5.9	4.5	20	27	35	211	42	23	13	8.7	6.1	4.8
10	4.8	5.0	17	25	33	189	40	23	13	8.6	6.0	5.0
11	4.6	5.4	15	24	31	169	38	22	13	8.5	5.8	4.8
12	4.5	5.6	14	22	64	150	37	21	13	8.4	5.7	4.8
13	4.4	5.8	13	20	251	133	37	20	12	8.3	5.7	4.9
14	4.3	6.0	12	20	199	116	35	20	12	8.1	5.6	5.1
15	4.3	6.2	11	21	487	107	34	19	12	7.9	5.7	5.5
16	4.2	6.2	11	64	1140	98	34	19	12	7.9	5.8	6.9
17	4.2	6.2	10	140	2840	89	34	19	12	7.9	5.7	7.7
18	4.1	6.2	10	74	1600	81	32	18	12	7.9	5.5	7.2
19	4.1	6.0	9.9	57	1500	76	31	18	12	7.9	5.5	7.7
20	4.1	5.9	9.9	49	573	74	29	18	11	7.7	5.5	6.9
21	6.1	5.7	9.8	41	312	72	28	18	11	7.5	5.5	6.6
22	5.7	5.5	9.6	36	223	71	28	17	11	7.6	5.4	6.4
23	6.1	11	9.6	36	177	70	27	17	11	7.9	5.4	6.3
24	6.0	37	9.5	32	147	69	27	17	11	7.6	5.4	11
25	5.5	39	9.6	29	126	67	27	17	10	7.4	5.3	14
26	5.1	16	9.6	27	110	64	26	16	10	7.4	5.2	16
27	4.9	12	9.3	26	99	63	25	16	10	7.3	5.2	24
28	4.7	22	9.1	25	89	60	25	16	10	7.1	5.0	12
29	4.6	46	12	24	---	57	24	15	9.9	7.0	5.0	9.3
30	4.6	20	63	44	---	54	24	15	9.8	6.9	5.0	8.2
31	4.6	---	31	45	---	52	---	15	---	6.8	5.0	---
TOTAL	146.5	318.4	662.9	1230	10444	3159	1059	628	363.7	252.0	176.6	222.8
MEAN	4.73	10.6	21.4	39.7	373	102	35.3	20.3	12.1	8.13	5.70	7.43
MAX	6.1	46	101	140	2840	469	53	29	15	9.7	6.6	24
MIN	3.8	4.3	9.1	20	31	52	24	15	9.8	6.8	5.0	4.6
AC-FT	291	632	1310	2440	20720	6270	2100	1250	721	500	350	442

CAL YR 1985	TOTAL	5506.8	MEAN	15.1	MAX	101	MIN	3.1	AC-FT	10920
WTR YR 1986	TOTAL	18662.9	MEAN	51.1	MAX	2840	MIN	3.8	AC-FT	37020

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 11, 16, 17, 21. 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 (revised), diverts water out of Pilot Creek, 500 ft upstream from station. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--25 years, 34.2 ft³/s, 24,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,330 ft³/s, Feb. 18, 1986, gage height, 10.86 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,330 ft³/s, Feb. 18, gage height, 10.86 ft; minimum daily, 1.0 ft³/s, Oct. 1, 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.1	3.4	3.1	8.2	134	65	6.0	3.9	3.3	2.5	4.7
2	1.0	1.1	12	2.8	11	118	64	5.9	3.8	3.2	2.5	4.7
3	2.2	1.1	11	2.6	11	104	58	19	3.7	3.2	2.5	4.6
4	2.9	1.1	5.6	5.1	7.6	93	54	24	3.7	3.1	2.4	4.6
5	2.8	1.1	5.0	7.5	6.5	84	53	16	3.7	3.1	2.4	4.6
6	3.6	1.1	4.4	4.9	6.1	76	54	18	3.7	3.1	2.3	4.6
7	3.7	1.1	6.0	3.8	16	153	81	12	3.7	3.1	2.3	4.6
8	3.6	1.1	4.9	3.4	29	535	64	9.2	3.6	3.0	2.3	4.6
9	3.3	1.1	4.1	3.1	32	350	54	7.4	3.5	3.0	2.4	4.6
10	3.1	1.3	3.7	2.9	23	315	49	5.9	3.4	3.0	2.3	4.6
11	2.0	1.3	3.4	2.8	18	314	45	5.4	3.4	2.9	3.2	4.6
12	1.3	1.3	3.1	2.7	67	277	43	5.3	3.3	2.9	5.0	4.6
13	1.2	1.3	3.0	2.7	309	248	44	5.1	3.4	2.9	4.9	4.6
14	1.2	1.3	2.9	2.9	264	216	35	5.0	3.4	2.9	4.9	4.6
15	1.1	1.3	2.8	3.7	550	205	22	4.9	3.4	2.9	4.9	4.7
16	1.1	1.3	2.7	12	1360	189	24	4.8	3.6	2.8	4.9	4.9
17	1.1	1.3	2.6	14	4350	167	25	4.7	3.8	2.8	4.9	4.9
18	1.1	1.3	2.5	6.3	3050	149	21	6.4	3.8	2.8	4.9	4.8
19	1.1	1.3	2.5	5.3	2730	134	18	5.1	3.7	2.8	4.9	4.9
20	1.1	1.2	2.4	5.0	1130	125	18	4.6	3.7	2.8	4.9	4.8
21	1.9	1.2	2.3	4.5	628	117	15	4.6	3.6	2.7	4.8	4.7
22	1.5	1.2	2.3	4.3	424	112	12	4.5	3.6	2.7	4.8	4.6
23	1.4	1.6	2.2	5.3	331	105	11	4.4	3.5	2.8	4.9	4.6
24	1.2	5.3	2.2	4.5	269	100	11	4.4	3.5	2.7	4.8	6.8
25	1.2	6.5	2.1	4.1	229	97	10	4.2	3.5	2.6	4.8	6.2
26	1.2	2.7	2.1	3.9	197	89	11	4.2	3.4	2.7	4.8	6.9
27	1.2	2.2	2.0	3.7	173	81	11	4.1	3.4	2.6	4.8	8.5
28	1.1	6.3	2.0	3.6	153	84	8.8	4.1	3.3	2.6	4.8	5.1
29	1.1	11	2.9	3.5	---	79	7.6	4.0	3.3	2.6	4.8	4.8
30	1.1	4.5	8.2	6.4	---	72	6.4	3.9	3.3	2.5	4.8	4.6
31	1.1	---	3.8	6.6	---	66	---	3.9	---	2.5	4.7	---
TOTAL	53.5	66.6	120.1	147.0	16382.4	4988	994.8	221.0	106.6	88.6	124.1	150.4
MEAN	1.73	2.22	3.87	4.74	585	161	33.2	7.13	3.55	2.86	4.00	5.01
MAX	3.7	11	12	14	4350	535	81	24	3.9	3.3	5.0	8.5
MIN	1.0	1.1	2.0	2.6	6.1	66	6.4	3.9	3.3	2.5	2.3	4.6
AC-FT	106	132	238	292	32490	9890	1970	438	211	176	246	298
CAL YR 1985	TOTAL	2578.1	MEAN	7.06	MAX	78	MIN	1.0	AC-FT	5110		
WTR YR 1986	TOTAL	23443.1	MEAN	64.2	MAX	4350	MIN	1.0	AC-FT	46500		

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Jan. 17-19, Apr. 25-28. Records fair. 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.

AVERAGE DISCHARGE.--21 years, 9.59 ft³/s, 6,950 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 251 ft³/s, Nov. 12, 1973; no flow for part of each year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	2.0	17	36		0	18	8.4			
2		0	34	14	35		0	18	7.4			
3		0	30	11	32		0	23	6.7			
4		0	13	31	28		0	23	5.8			
5		0	9.8	74	27		0	21	5.2			
6		0	7.7	41	24		0	20	2.4			
7		0	11	25	22		0	20	0			
8		0	9.8	20	20		0	15	0			
9		0	7.4	16	19		0	18	0			
10		0	5.8	14	18		0	17	0			
11		0	4.6	12	17		0	15	0			
12		0	3.8	11	67		0	14	0			
13		0	3.1	10	47		0	14	0			
14		0	2.9	9.8	0		0	14	0			
15		0	2.4	10	0		0	14	0			
16		0	2.2	47	0		0	14	0			
17		0	2.2	55	0		0	14	0			
18		0	2.6	43	0		0	15	0			
19		0	3.1	40	0		0	16	0			
20		0	3.1	37	0		0	16	0			
21		0	3.1	30	0		0	16	0			
22		0	3.1	25	0		0	14	0			
23		0	2.9	25	0		0	13	0			
24		0	3.3	23	0		0	11	0			
25		0	4.1	22	0		12	11	0			
26		0	3.8	20	0		21	11	0			
27		0	3.3	19	0		20	11	0			
28		0	3.1	18	0		20	10	0			
29		2.8	6.0	18	---		20	9.8	0			
30		3.3	50	41	---		19	9.4	0			
31		---	20	37	---		---	9.1	---			
TOTAL	0	6.1	263.2	815.8	392	0	112	464.3	35.9	0	0	0
MEAN	0	.20	8.49	26.3	14.0	0	3.73	15.0	1.20	0	0	0
MAX	0	3.3	50	74	67	0	21	23	8.4	0	0	0
MIN	0	0	2.0	9.8	0	0	0	9.1	0	0	0	0
AC-FT	0	12	522	1620	778	0	222	921	71	0	0	0
CAL YR 1985	TOTAL	2588.88	MEAN	7.09	MAX 63	MIN 0	AC-FT	5140				
WTR YR 1986	TOTAL	2089.30	MEAN	5.72	MAX 74	MIN 0	AC-FT	4140				

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No regulation or diversion above station. Tunnel completed in September 1965 and diversions began in February 1966. Flow is diverted from North Fork Long Canyon Creek to a tunnel from Hell Hole Reservoir to Middle Fork powerplant on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--21 years, 3.74 ft³/s, 2,710 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 75 ft³/s, May. 25, 1983; no flow for part of each year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	1.1	12	19		0	4.2	.96			
2		0	39	9.3	18		0	3.9	.66			
3		0	27	7.0	16		0	6.4	0			
4		0	9.3	25	14		0	7.0	0			
5		0	7.9	27	13		0	6.6	0			
6		0	6.0	19	12		0	6.0	0			
7		0	12	15	11		0	9.1	0			
8		0	8.1	12	9.9		0	11	0			
9		0	4.7	9.9	9.3		0	9.1	0			
10		0	3.0	8.5	8.7		0	7.7	0			
11		0	2.3	7.3	8.3		0	6.0	0			
12		0	1.8	6.6	19		0	5.2	0			
13		0	1.5	6.0	41		0	4.5	0			
14		0	1.4	5.9	28		0	4.2	0			
15		0	1.1	5.9	0		0	3.8	0			
16		0	1.3	31	0		0	3.3	0			
17		0	1.7	24	0		0	2.8	0			
18		0	2.4	29	0		0	2.5	0			
19		0	3.0	24	0		5.2	2.3	0			
20		0	3.3	22	0		9.5	2.0	0			
21		0	3.0	16	0		9.1	2.0	0			
22		0	2.9	13	0		8.1	1.8	0			
23		0	3.0	12	0		7.3	1.5	0			
24		0	3.8	12	0		6.8	1.2	0			
25		0	4.4	12	0		6.4	1.5	0			
26		0	3.8	11	0		5.7	1.9	0			
27		0	3.0	10	0		5.5	1.7	0			
28		0	2.6	9.7	0		5.5	1.6	0			
29		2.4	8.9	9.3	---		5.0	1.4	0			
30		2.1	30	25	---		4.5	1.3	0			
31		---	15	20	---		---	1.1	---			
TOTAL	0	4.5	218.3	456.4	227.2	0	78.6	124.6	1.62	0	0	0
MEAN	0	.15	7.04	14.7	8.11	0	2.62	4.02	.054	0	0	0
MAX	0	2.4	39	31	41	0	9.5	11	.96	0	0	0
MIN	0	0	1.1	5.9	0	0	0	1.1	0	0	0	0
AC-FT	0	8.9	433	905	451	0	156	247	3.2	0	0	0
CAL YR 1985	TOTAL	1286.93	MEAN 3.53	MAX	39	MIN 0	AC-FT 2550					
WTR YR 1986	TOTAL	1111.22	MEAN 3.04	MAX	41	MIN 0	AC-FT 2200					

SACRAMENTO RIVER BASIN

11433100 LONG CANYON CREEK NEAR FRENCH MEADOWS, CA

LOCATION.--Lat 39°01'16", long 120°30'53", in SE 1/4 NW 1/4 sec.34, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 75 ft downstream from North Fork Long Canyon, 6.5 mi south of French Meadows, and 18 mi east of Foresthill.

DRAINAGE AREA.--18.0 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 4,100 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-3 due to construction of weir at station; Nov. 9-11, 15-19 due to ice effect. Records good. Since February 1966, natural flow of stream affected by transbasin diversions 3 mi upstream from station through tunnels from South Fork and North Fork Long Canyon Creek diversion dams (stations 11433060, 11433080) to Middle Fork American River powerplant via tunnel from Hell Hole Reservoir (station 11428700). See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--20 years (water years 1967-86), 35.8 ft³/s, 25,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,690 ft³/s, Dec. 23, 1964, gage height, 11.20 ft, from rating curve extended above 300 ft³/s on basis of slope-area measurements at gage heights 6.62 ft and 10.27 ft; minimum daily discharge, 0.08 ft³/s, Sept. 27, 28, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,250 ft³/s, Feb. 17, gage height, 10.00 ft, from rating curve extended above 600 ft³/s based on slope-area measurements at gage heights 10.05 ft and 10.27 ft; minimum daily, 0.82 ft³/s, Sept. 12.

REVISIONS.--The maximum discharges for some water years have been revised, as shown in the following table. They supersede figures published in the reports for 1980, 1982-84.

Water year	Date	Discharge (ft ³ /s)	Gage height (ft)
1980	Jan. 13, 1980	3,310	10.05
1982	Feb. 16, 1982	2,850	9.59
1983	Mar. 13, 1983	1,420	7.80
1984	Nov. 17, 1983	1,200	7.43

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.0	12	20	43	163	100	18	10	4.4	2.0	1.1
2	1.5	1.9	44	18	50	151	91	18	9.9	4.2	1.9	1.1
3	1.4	1.7	37	17	53	138	82	22	9.8	4.0	1.9	1.1
4	1.3	1.7	22	25	45	127	77	22	9.3	3.9	1.9	1.0
5	1.3	1.8	18	74	41	117	73	21	8.9	3.8	1.8	.93
6	1.7	1.8	17	48	36	107	71	23	9.9	3.7	1.7	.83
7	2.6	1.9	20	31	33	350	86	22	13	3.7	1.6	.85
8	2.4	1.8	19	26	30	962	82	27	12	3.7	1.6	.86
9	2.2	1.9	16	24	28	424	77	23	11	3.6	1.6	.86
10	2.0	1.9	15	21	27	365	74	22	11	3.4	1.5	.89
11	1.9	2.1	14	20	25	299	68	21	10	3.4	1.5	.87
12	1.9	2.3	13	18	45	254	66	21	10	3.2	1.4	.82
13	1.8	2.3	12	17	249	216	61	20	9.5	3.1	1.3	.87
14	1.7	2.3	12	17	389	181	58	19	8.8	3.1	1.3	.89
15	1.6	2.3	11	18	695	162	56	19	8.3	2.9	1.3	.94
16	1.6	2.3	11	64	880	145	55	19	7.9	2.9	1.3	1.6
17	1.6	2.3	11	188	2640	129	54	18	7.6	2.8	1.2	1.9
18	1.6	2.3	11	49	1930	119	50	18	7.4	2.8	1.1	1.6
19	1.6	2.9	11	39	1730	121	45	17	7.0	2.8	1.1	1.8
20	1.6	3.2	10	35	691	127	40	15	6.6	2.7	1.1	1.5
21	3.7	3.0	10	31	489	130	41	14	6.3	2.6	1.2	1.4
22	2.8	2.9	10	29	371	129	42	14	6.1	2.6	1.2	1.3
23	2.7	5.5	10	28	312	125	41	14	5.8	2.5	1.2	1.2
24	3.5	24	10	25	286	126	40	13	5.5	2.5	1.2	3.4
25	2.7	31	11	23	248	118	32	13	5.2	2.4	1.1	4.6
26	2.5	16	10	22	223	112	21	11	5.1	2.4	1.1	6.9
27	2.3	12	10	21	202	109	20	11	4.9	2.3	1.1	18
28	2.4	20	10	20	182	105	20	11	4.8	2.3	1.1	6.2
29	2.4	38	12	19	---	104	18	11	4.6	2.2	1.1	5.0
30	2.3	14	46	31	---	109	18	11	4.5	2.1	1.1	4.1
31	2.1	---	23	35	---	101	---	10	---	2.0	1.1	---
TOTAL	64.2	209.1	498	1053	11973	5925	1659	538	240.7	94.0	42.6	74.41
MEAN	2.07	6.97	16.1	34.0	428	191	55.3	17.4	8.02	3.03	1.37	2.48
MAX	3.7	38	46	188	2640	962	100	27	13	4.4	2.0	18
MIN	1.3	1.7	10	17	25	101	18	10	4.5	2.0	1.1	.82
AC-FT	127	415	988	2090	23750	11750	3290	1070	477	186	84	148

SACRAMENTO RIVER BASIN

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 powerhouse, and 3.3 mi east of Foresthill.

DRAINAGE AREA.--524 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 1,070 ft above National Geodetic Vertical Datum of 1929, from topographic map. Oct. 22, 1965, to Aug. 28, 1985, at site 400 ft downstream at different datum. Prior to Oct. 22, 1965, at site 3.2 mi downstream at different datum.

REMARKS.--Flow regulated by French Meadows Reservoir, Hell Hole Reservoir, Loon Lake (stations 11427400, 11428700, 11429350), Stumpy Meadows Lake, usable capacity, 17,500 acre-ft, and Ralston and Oxbow powerplants. Robbs Peak powerplant (station 11429300) and Georgetown Divide ditch, capacity about 60 ft³/s, divert water out of basin above station. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--28 years, 1,210 ft³/s, 876,600 acre-ft/yr.

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, 113,000 ft³/s, Feb. 1, 1963, gage height, 38.00 ft, site and datum then in use; minimum, 35 ft³/s, Oct. 10-20, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 78,400 ft³/s, Feb. 17, gage height, 26.82 ft; minimum daily, 82 ft³/s, Oct. 19, 25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	626	367	434	590	1610	3370	2470	1210	1480	808	764	816
2	612	83	1510	793	1650	3120	2440	827	1590	820	811	716
3	590	84	1920	710	1910	2950	2310	1350	1830	836	790	806
4	576	494	1280	610	1640	2780	2220	1400	1490	842	725	743
5	519	573	935	2150	1530	2620	2110	1530	1320	839	700	740
6	501	520	959	1790	1460	2600	2080	1610	1210	871	696	718
7	359	557	810	1230	1410	5080	2310	1540	1150	797	755	768
8	393	336	870	1020	1370	23200	2150	1460	1110	821	765	662
9	382	185	1020	1070	1340	11400	1950	1130	1110	839	747	764
10	348	226	836	1110	1320	8990	1940	757	1110	247	845	758
11	473	143	816	932	1300	7830	1880	1380	1100	992	711	835
12	599	129	810	984	1380	7330	1840	1360	1100	812	770	790
13	142	159	826	1090	4680	5280	1830	1300	1100	761	754	765
14	94	494	299	841	4210	4730	1760	1310	1100	755	768	798
15	92	394	334	1130	8110	4040	1750	1310	876	723	693	903
16	92	146	479	1440	16000	3720	1740	1300	806	804	710	877
17	91	184	217	5030	46400	3380	1730	1300	750	711	800	769
18	83	378	220	1960	45800	3160	1710	1430	807	692	738	868
19	82	325	212	1500	35000	2940	1650	1450	784	267	766	970
20	83	372	215	1530	19800	2900	1610	983	758	536	736	1020
21	97	340	224	1370	12100	2800	1600	1240	387	844	759	1030
22	103	400	270	1300	8540	2790	1600	1470	448	758	786	1000
23	92	109	468	1320	6320	2730	1600	1370	575	745	766	1000
24	85	387	430	1290	5300	2700	1590	900	577	823	771	1030
25	82	992	236	1280	4690	2670	1560	1200	710	765	789	1080
26	84	636	288	1270	4250	2520	1530	1160	673	576	755	1030
27	85	524	316	1260	4060	2480	1510	1150	645	536	664	1260
28	84	388	217	1250	3630	2480	1500	1150	298	697	789	856
29	309	1140	333	1200	---	2420	1470	1170	131	795	773	600
30	365	588	1420	1290	---	2470	1530	1220	661	770	790	565
31	361	---	1070	1470	---	2490	---	1500	---	677	772	---
TOTAL	8484	11653	20274	41810	246810	139970	54970	39467	27686	22759	23458	25537
MEAN	274	388	654	1349	8815	4515	1832	1273	923	734	757	851
MAX	626	1140	1920	5030	46400	23200	2470	1610	1830	992	845	1260
MIN	82	83	212	590	1300	2420	1470	757	131	247	664	565
AC-FT	16830	23110	40210	82930	489500	277600	109000	78280	54920	45140	46530	50650
CAL YR 1985	TOTAL	221652	MEAN	607	MAX	1920	MIN	82	AC-FT	439600		
WTR YR 1986	TOTAL	662878	MEAN	1816	MAX	46400	MIN	82	AC-FT	1315000		

SACRAMENTO RIVER BASIN

11433420 MAINE BAR CANYON CREEK NEAR GREENWOOD, CA

LOCATION.--Lat 38°55'34", long 120°56'51", in NW 1/4 NW 1/4 sec.2, T.12 N., R.9 E., El Dorado County, Hydrologic Unit 18020128, on right bank 2.8 mi northwest of Greenwood, and 4.5 mi northeast of Cool.

DRAINAGE AREA.--0.76 mi².

PERIOD OF RECORD.--March to September 1972 (discharge measurements only), October 1972 to September 1983, June 28, 1984, to September 1986 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 1,520 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Some regulation by Indian Bow Lake.

AVERAGE DISCHARGE.--13 years, (water years 1973-83, 1985-86), 1.17 ft³/s, 848 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 367 ft³/s, Feb. 18, 1986, gage height, 2.58 ft, from rating curve extended above 50 ft³/s on basis of slope-area measurement at gage height of 2.35 ft; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 29	0845	23	1.14	Feb. 18	2200	*367	*2.58
Jan. 16	2145	41	1.35	Mar. 8	0400	82	1.66
Jan. 30	1645	191	2.14				

Minimum daily, 0.01 ft³/s several days during July and August.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.06	1.1	.65	7.9	1.8	.87	.30	.13	.02	.02	.06
2	.03	.14	5.2	.57	7.5	1.6	.80	.31	.12	.02	.02	.06
3	.04	.16	3.1	.52	6.4	1.4	.75	.47	.12	.02	.02	.06
4	.03	.18	1.4	2.4	4.7	1.3	.73	.41	.12	.02	.01	.06
5	.03	.18	.98	4.2	3.4	1.2	.69	.42	.14	.03	.01	.05
6	.04	.19	.71	2.3	2.6	1.1	.70	.41	.13	.03	.02	.04
7	.03	.19	.99	1.5	1.9	17	1.4	.35	.13	.02	.02	.03
8	.04	.19	.75	1.0	1.5	27	.86	.31	.10	.02	.02	.05
9	.03	.25	.61	.83	1.2	9.0	.73	.30	.08	.02	.02	.07
10	.05	1.1	.53	.71	1.0	19	.68	.27	.07	.03	.01	.06
11	.05	.47	.44	.63	.97	13	.64	.26	.06	.02	.01	.06
12	.05	.31	.39	.59	4.0	10	.61	.26	.06	.02	.01	.07
13	.04	.23	.35	.54	6.9	7.4	.58	.25	.06	.02	.01	.09
14	.04	.19	.34	1.0	6.9	4.9	.57	.25	.07	.02	.01	.06
15	.06	.20	.34	1.2	24	7.5	.60	.25	.05	.01	.02	.02
16	.06	.23	.31	9.3	41	8.4	.64	.23	.04	.01	.02	.09
17	.05	.22	.28	10	122	5.6	.66	.23	.04	.01	.03	.15
18	.05	.17	.28	3.8	88	3.9	.57	.22	.05	.02	.02	.03
19	.06	.15	.28	3.0	61	3.1	.53	.21	.04	.01	.02	.03
20	.08	.15	.28	2.0	19	2.5	.38	.23	.04	.01	.02	.03
21	.18	.15	.29	1.4	12	2.0	.36	.24	.03	.01	.03	.04
22	.03	.13	.31	1.2	7.5	1.7	.36	.22	.03	.01	.04	.04
23	.02	.19	.28	1.7	5.4	1.6	.35	.21	.03	.02	.04	.04
24	.02	3.4	.29	1.1	4.1	1.5	.36	.20	.02	.01	.04	.38
25	.03	3.4	.28	1.0	3.4	1.3	.34	.19	.03	.01	.04	.33
26	.05	.55	.28	.89	2.8	1.2	.33	.15	.03	.01	.05	.30
27	.04	.36	.29	.85	2.3	1.1	.32	.14	.04	.01	.06	.27
28	.04	3.3	.28	.77	2.0	1.0	.31	.14	.04	.02	.06	.07
29	.04	7.8	.67	.78	---	.97	.31	.13	.03	.01	.07	.05
30	.04	2.3	2.6	18	---	.93	.30	.12	.03	.02	.07	.04
31	.05	---	.85	11	---	.90	---	.13	---	.01	.07	---
TOTAL	1.43	26.54	25.08	85.43	451.37	160.90	17.33	7.81	1.96	.52	.91	2.73
MEAN	.046	.88	.81	2.76	16.1	5.19	.58	.25	.065	.017	.029	.091
MAX	.18	7.8	5.2	18	122	27	1.4	.47	.14	.03	.07	.38
MIN	.02	.06	.28	.52	.97	.90	.30	.12	.02	.01	.01	.02
AC-FT	2.8	53	50	169	895	319	34	15	3.9	1.0	1.8	5.4

CAL YR 1985 TOTAL 180.30 MEAN .49 MAX 31 MIN 0 AC-FT 358
WTR YR 1986 TOTAL 782.01 MEAN 2.14 MAX 122 MIN .01 AC-FT 1550

SACRAMENTO RIVER BASIN

11433500 MIDDLE FORK AMERICAN RIVER NEAR AUBURN, CA

LOCATION.--Lat 38°55'05", long 121°00'51", in NE 1/4 SW 1/4 sec.6, T.12 N., R.9 E., Placer County, Hydrologic Unit 18020128, on right bank at quarry, 1.4 mi upstream from mouth, and 3.3 mi northeast of Auburn.

DRAINAGE AREA.--614 mi².

PERIOD OF RECORD.--October 1911 to January 1986 (discontinued). Prior to October 1934, published as "near East Auburn".

REVISED RECORDS.--WSP 861: 1928. WSP 1315-A: 1913-15, 1919, 1921, 1923(M), 1929(M), 1930. WSP 1931: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Gaging station inundated by flood of February 1986, and not repaired. Datum of gage is 552.35 ft above National Geodetic Vertical Datum of 1929 (levels by Murray Engineers). Prior to December 1930, nonrecording gage near present site at different datum. December 1930 to Mar. 1, 1963, water-stage recorder at site 0.4 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Jan. 11, 27-31. Records good. Natural flow of stream affected by French Meadows Reservoir (station 11427400), Hell Hole Reservoir (station 11428700), Loon Lake (station 11429350), Stumpy Meadows Lake, usable capacity, 20,000 acre-ft, diversion dams on Rubicon and Little Rubicon Rivers, and Ralston and Oxbow powerplants. Robbs Peak powerplant (station 11429300) diverts water out of basin. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--74 years (water years 1912-85), 1,342 ft³/s, 972,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 253,000 ft³/s, Dec. 23, 1964, gage height, 60.4 ft, from floodmarks, from rating curve extended above 69,000 ft³/s on basis of slope-area measurement of peak flow (caused by overtopping of the partly constructed Hell Hole Dam); next highest peak, 121,000 ft³/s, Feb. 1, 1963, gage height, 43.1 ft, from floodmarks, site and datum then in use; maximum gage height, 102.65 ft, Jan. 14, 1980, backwater from construction at Auburn Damsite; minimum discharge, 20 ft³/s, Sept. 6, 1931, Sept. 19, 1934.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1985 TO JANUARY 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	611	363	490	718								
2	557	317	1410	707								
3	596	103	2310	698								
4	513	197	1530	668								
5	524	496	991	2040								
6	463	608	950	2160								
7	500	560	854	1340								
8	291	500	923	1130								
9	387	211	1030	1000								
10	347	352	1030	1150								
11	338	272	884	992								
12	781	189	883	950								
13	255	157	789	1090								
14	124	463	521	840								
15	106	249	340	1140								
16	103	407	462	1220								
17	102	184	351	6540								
18	102	262	250	2540								
19	90	343	249	1750								
20	90	361	241	1730								
21	116	376	243	1550								
22	126	431	256	1430								
23	118	240	316	1420								
24	105	285	612	1390								
25	97	1110	259	1370								
26	96	804	265	1350								
27	96	567	347	1310								
28	97	515	277	1290								
29	128	1450	244	1250								
30	354	933	1260	1410								
31	372	---	1250	1890								
TOTAL	8585	13305	21817	46063								
MEAN	277	443	704	1486								
MAX	781	1450	2310	6540								
MIN	90	103	241	668								
AC-FT	17030	26390	43270	91370								

CAL YR 1985 TOTAL 225745 MEAN 618 MAX 2910 MIN 90 AC-FT 447800

SACRAMENTO RIVER BASIN

11433800 NORTH FORK AMERICAN RIVER BELOW AUBURN DAMSITE, NEAR AUBURN, CA

LOCATION.--Lat 38°52'24", long 121°03'13", in SE 1/4 SW 1/4 sec.23, T.12 N., R.8 E., El Dorado County, Hydrologic Unit 18020128, on left bank 1,300 ft upstream from Knickerbocker Creek, 4,000 ft downstream from Auburn damsite, and 2.0 mi southeast of Auburn.

DRAINAGE AREA.--973 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1972 to February 1986 (discontinued).

REVISED RECORDS.--WDR CA-80-4: 1973-75(M), 1978(M), 1979(M).

GAGE.--Water-stage recorder. Datum of gage is 400.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to Oct. 27, 1983, at site 200 ft downstream on right bank at same datum. Station destroyed by flood of February 1986.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by many reservoirs and diversions (see REMARKS for stations 11427000, 11433500).

AVERAGE DISCHARGE.--13 years (water years 1973-85), 2,262 ft³/s, 1,639,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,700 ft³/s, Jan. 14, 1980, gage height, 87.5 ft from floodmarks, affected by temporary storage at Auburn damsite; minimum daily, 51 ft³/s, July 12, 1977.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1985 TO FEBRUARY 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	651	412	946	1490	4030							
2	622	401	2270	1360	3910							
3	634	162	4570	1240	4630							
4	586	196	2780	1190	4230							
5	576	538	1740	4310	3410							
6	509	658	1540	4580	2990							
7	568	616	1430	2580	---							
8	355	550	1620	2010	---							
9	449	316	1580	1700	---							
10	401	491	1490	1780	---							
11	399	490	1280	1510	---							
12	802	319	1220	1440	---							
13	317	252	1120	1560	---							
14	177	504	867	1290	---							
15	142	334	602	1650	---							
16	149	490	718	1900	---							
17	150	294	608	12100	---							
18	151	355	486	5210	---							
19	168	431	477	3400	---							
20	141	429	479	3190	---							
21	196	458	484	2700	---							
22	215	486	497	2340	---							
23	191	363	536	2260	---							
24	163	424	854	2140	---							
25	152	1790	520	2040	---							
26	211	1240	505	1970	---							
27	157	811	594	1910	---							
28	155	875	532	1860	---							
29	156	2440	470	1800	---							
30	402	1820	2620	2380	---							
31	413		2500	4090	---							
TOTAL	10358	18945	37935	80980	---							
MEAN	334	631	1224	2612	---							
MAX	802	2440	4570	12100	---							
MIN	141	162	470	1190	---							
AC-FT	20550	37580	75240	160600	---							

CAL YR 1985 TOTAL 376873 MEAN 1033 MAX 5340 MIN 141 AC-FT 747600

SACRAMENTO RIVER BASIN

11433800 NORTH FORK AMERICAN RIVER BELOW AUBURN DAMSITE, NEAR AUBURN, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1982 to September 1983, October 1984 to February 1986 (discontinued).

INSTRUMENTATION.--Temperature recorder since October 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 25.0°C, Oct. 3, 1982; minimum recorded, 2.5°C, Feb. 5, 1985.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO FEBRUARY 1986

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

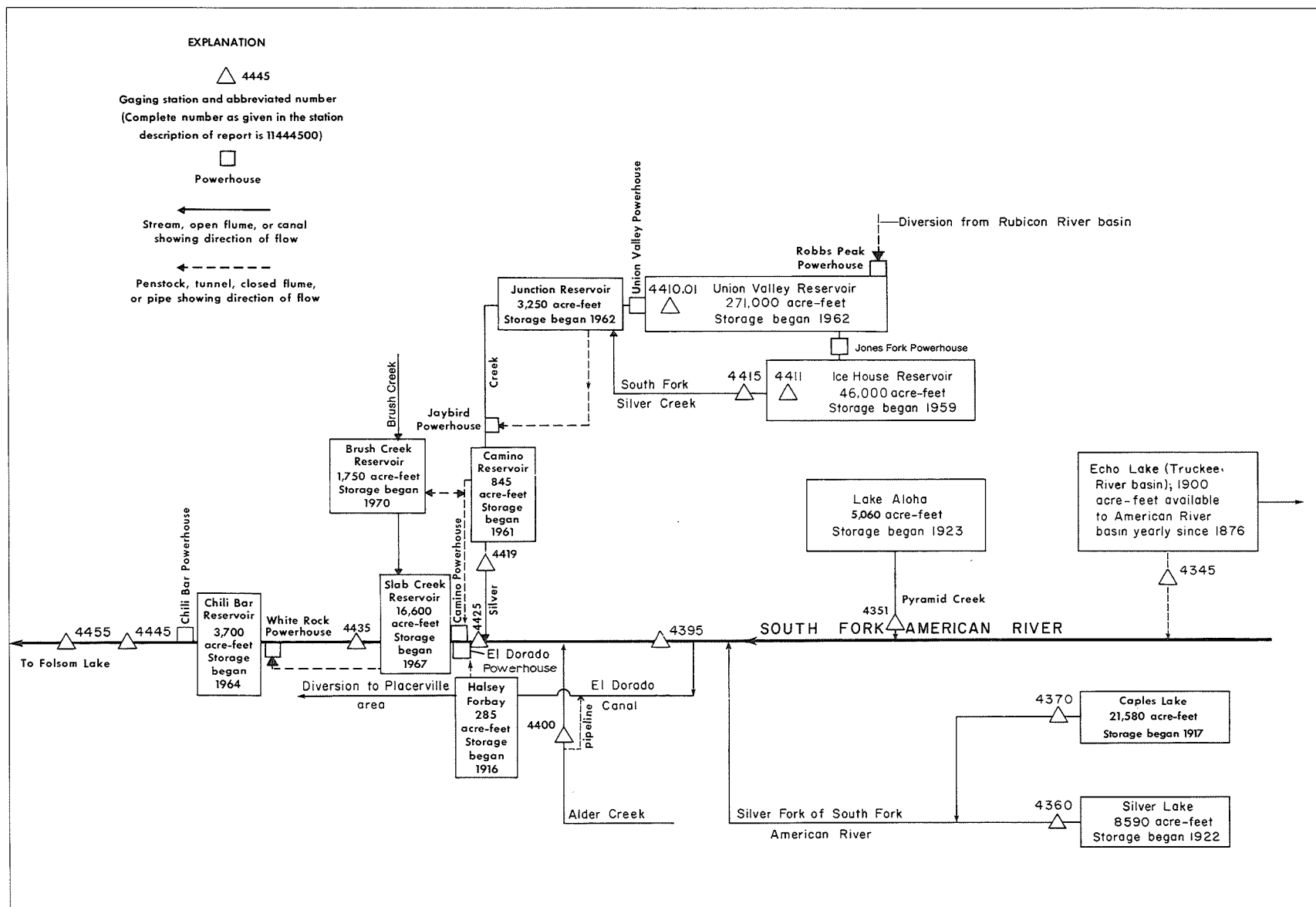


FIGURE 32. — Schematic diagram showing diversions and storage in South Fork American River basin.

SACRAMENTO RIVER BASIN

11434500 ECHO LAKE CONDUIT NEAR PHILLIPS, CA

LOCATION.--Lat 38°49'52", long 120°02'12", in NW 1/4 NW 1/4 sec.6, T.11 N., R.18 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank in Berkeley Municipal Camp, 0.5 mi downstream from intake, and 2.4 mi northeast of Phillips.

PERIOD OF RECORD.--August 1923 to current year. Prior to October 1974 diversion seasons only. Monthly discharge only for July 1933, published in WSP 1315-A. Published as Echo Lake flume near Vade prior to 1943 and as Echo Lake conduit near Vade for seasons 1944-53.

GAGE.--Water-stage recorder. Elevation of gage is 7,420 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 16, 1929, nonrecording gage at site 0.4 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Conduit diverts from Echo Lake, capacity, 1,900 acre-ft in Truckee River basin into South Fork American River basin for power and irrigation. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE.--63 years, 2.27 ft³/s, 1,640 acre-ft/yr.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 33 ft³/s Sept. 10, 11, 1980; no flow most of each year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	17										0
2	18	16										0
3	18	15										0
4	19	14										0
5	19	13										0
6	19	12										0
7	19	11										0
8	14	9.7										0
9	19	8.6										0
10	19	10										0
11	18	11										0
12	18	10										0
13	9.5	10										0
14	0	0										0
15	11	0										8.4
16	26	0										21
17	26	0										24
18	25	0										16
19	21	0										16
20	7.4	0										16
21	12	0										16
22	23	0										15
23	23	0										15
24	23	0										15
25	22	0										15
26	22	0										15
27	21	0										15
28	21	0										15
29	20	0										8.9
30	19	0										0
31	18	---										---
TOTAL	567.9	157.3	0	0	0	0	0	0	0	0	0	231.3
MEAN	18.3	5.24	0	0	0	0	0	0	0	0	0	7.71
MAX	26	17	0	0	0	0	0	0	0	0	0	24
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	1130	312	0	0	0	0	0	0	0	0	0	459
CAL YR 1985	TOTAL 935.96	MEAN 2.56	MAX 30	MIN 0	AC-FT 1860							
WTR YR 1986	TOTAL 956.50	MEAN 2.62	MAX 26	MIN 0	AC-FT 1900							

SACRAMENTO 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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges for the following ice-affected periods: Nov. 18-22, Dec. 9-12, Feb. 7-9. Flow regulated by Lake Aloha, capacity, 5,060 acre-ft. Lake of the Woods, Ropi Lake, and Toem Lake (unknown capacities) are also regulated at times. See schematic diagram of South Fork American River basin.

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

AVERAGE DISCHARGE.--16 years, 42.4 ft³/s, 30,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 858 ft³/s, June 26, 1971, gage height, 4.62 ft, from rating curve extended above 300 ft³/s; minimum daily, 0.07 ft³/s, Sept. 20-24, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 338 ft³/s, May 31, gage height, 3.21 ft; minimum daily, 3.4 ft³/s, Oct. 3, 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	7.7	14	24	16	45	68	78	271	100	112	5.1
2	3.7	6.8	27	20	15	47	56	89	250	114	110	4.9
3	3.4	6.4	23	17	17	50	45	104	235	114	109	4.7
4	3.4	6.1	17	39	16	51	41	78	210	104	107	4.7
5	3.8	5.9	15	76	14	51	40	62	188	91	106	4.7
6	4.6	5.6	13	39	13	48	39	56	175	82	106	4.7
7	15	5.4	16	25	12	93	41	50	153	79	104	4.5
8	14	5.3	17	20	12	210	35	47	139	77	103	4.4
9	20	4.9	13	18	11	82	33	54	138	76	102	4.3
10	21	13	12	17	11	54	43	71	140	72	100	4.3
11	21	19	12	16	11	43	50	78	141	70	98	4.2
12	16	12	11	16	13	36	51	86	161	83	97	4.1
13	13	8.8	11	14	24	32	41	105	167	95	94	4.0
14	9.9	8.2	11	14	52	28	35	141	181	95	92	4.0
15	8.5	8.3	10	15	45	27	32	140	171	79	83	4.0
16	7.8	14	10	39	39	27	30	139	165	64	27	4.1
17	7.2	12	11	87	78	24	28	142	167	57	45	4.9
18	6.7	11	12	44	131	23	28	158	172	98	48	5.4
19	6.2	10	13	35	109	24	32	182	140	94	50	6.0
20	5.6	8.8	12	28	61	28	50	157	122	95	61	6.3
21	9.0	9.1	13	21	39	32	73	131	121	103	60	5.6
22	13	8.5	13	18	32	34	96	120	124	106	59	5.2
23	29	10	13	17	33	35	91	123	130	113	56	5.0
24	32	14	13	16	42	34	71	137	134	102	53	7.5
25	25	17	13	15	48	35	60	169	128	102	50	14
26	18	13	13	16	48	42	52	183	119	94	46	14
27	15	11	12	16	48	54	60	185	137	72	39	17
28	13	16	12	16	47	60	88	192	132	75	15	15
29	11	19	29	16	---	63	88	218	112	101	7.2	17
30	9.8	18	63	19	---	70	78	249	99	114	5.9	23
31	8.6	---	32	17	---	71	---	275	---	113	5.5	---
TOTAL	378.1	314.8	506	790	1037	1553	1575	3999	4722	2834	2150.6	216.6
MEAN	12.2	10.5	16.3	25.5	37.0	50.1	52.5	129	157	91.4	69.4	7.22
MAX	32	19	63	87	131	210	96	275	271	114	112	23
MIN	3.4	4.9	10	14	11	23	28	47	99	57	5.5	4.0
AC-FT	750	624	1000	1570	2060	3080	3120	7930	9370	5620	4270	430
CAL YR 1985	TOTAL	9985.2	MEAN	27.4	MAX	98	MIN	2.1	AC-FT	19810		
WTR YR 1986	TOTAL	20076.1	MEAN	55.0	MAX	275	MIN	3.4	AC-FT	39820		

[illegible]

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co).

REMARKS.--No estimated daily discharges. Flow regulated by Silver Lake (station 11435900) 1,000 ft upstream, capacity, 3,840 acre-ft at spillway level and 8,590 acre-ft with 11 ft of flashboards. 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 listed monthly figures below. See schematic diagram of South Fork American River basin.

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

AVERAGE DISCHARGE (adjusted for leakage from Silver Lake bypassing the gage).--64 years, 40.2 ft³/s, 29,120 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,160 ft³/s, Feb. 19, 1986, gage height, 6.22 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,160 ft³/s, Feb. 19, gage height, 6.22 ft; minimum daily, 0.73 ft³/s, Sept. 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	51	20	4.2	6.8	73	176	202	314	18	3.8	3.7
2	3.5	50	20	4.2	6.8	75	156	204	370	13	3.4	2.4
3	5.6	48	13	4.3	6.8	78	121	243	378	13	3.6	1.1
4	8.3	47	4.9	4.5	6.8	86	103	204	370	14	3.3	1.6
5	9.4	45	4.9	4.8	6.8	91	91	149	320	14	3.3	.73
6	9.1	44	4.9	4.9	6.8	94	85	115	201	14	3.4	1.3
7	9.1	42	4.9	4.9	17	111	84	92	93	13	3.1	1.1
8	9.0	40	4.9	4.9	24	405	76	80	99	13	3.1	1.8
9	8.9	39	4.9	4.9	24	376	68	81	62	12	3.5	8.5
10	8.7	38	13	4.9	24	227	70	102	47	11	3.4	9.2
11	8.7	37	22	5.0	24	141	89	129	46	9.2	3.4	60
12	8.7	36	22	5.2	24	96	110	154	39	6.9	3.7	136
13	8.7	35	22	5.2	16	74	103	185	45	6.4	3.7	102
14	17	33	22	5.2	4.4	58	86	203	57	5.9	3.3	40
15	22	32	22	5.2	14	50	78	237	80	5.2	19	48
16	24	31	22	5.4	31	44	72	251	92	5.1	2.9	22
17	31	30	16	5.9	45	37	65	259	102	5.3	2.7	5.3
18	31	29	3.5	5.8	118	31	60	290	111	5.6	2.7	5.2
19	31	28	3.5	5.8	543	28	63	337	107	5.6	2.4	5.1
20	31	26	3.5	5.8	287	29	84	354	90	5.1	2.5	5.0
21	31	25	3.5	5.8	165	32	140	214	67	4.5	2.5	4.8
22	30	24	3.5	6.1	104	36	218	154	64	3.7	2.7	4.8
23	30	23	3.5	6.1	76	41	251	170	66	3.7	2.6	4.7
24	30	23	3.5	6.1	63	42	229	184	71	3.8	3.0	4.9
25	30	23	3.6	6.1	62	45	193	232	76	3.8	3.9	4.6
26	29	22	3.7	6.1	64	52	167	281	79	4.0	3.6	4.3
27	44	21	3.7	6.2	67	69	154	322	79	4.0	3.6	4.3
28	57	21	3.7	6.4	70	88	190	314	72	3.9	3.4	4.2
29	56	21	3.8	6.6	---	108	213	298	62	3.0	2.1	4.2
30	54	21	4.1	6.8	---	155	206	308	37	3.3	2.5	4.2
31	53	---	4.2	6.8	---	172	---	286	---	3.8	3.6	---
TOTAL	732.3	985	294.7	170.1	1907.2	3044	3801	6634	3696	236.8	113.7	505.03
MEAN	23.6	32.8	9.51	5.49	68.1	98.2	127	214	123	7.64	3.67	16.8
MAX	57	51	22	6.8	543	405	251	354	378	18	19	136
MIN	3.5	21	3.5	4.2	4.4	28	60	80	37	3.0	2.1	.73
AC-FT	1450	1950	585	337	3780	6040	7540	13160	7330	470	226	1000
a	0	0	0	0	0	0	0	20	601	883	578	233

CAL YR 1985 TOTAL 9000.92 MEAN 24.7 MAX 193 MIN .21 AC-FT 17850 AC-FT a 2650

SACRAMENTO RIVER BASIN

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 September 1986. Records since October 1980 are available in files of the U.S. Geological Survey.

GAGE.--Nonrecording gage read periodically. Datum of gage is 7,894.0 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.).

REMARKS.--Lake is formed by one earthfill and one concrete dam at the spillway; dam was completed and storage began in 1924. Capacity, 21,581 acre-ft, between gage heights 6.0 ft, and 62.0 ft, top of flashboards. Released water flows past Caples Lake Outlet (station 11437000). In addition, when the gage height is above the spillway crest of 59.0 ft, there is leakage or spill. This water is included in the outlet gage record. 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 and 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 CURRENT YEAR.--Maximum observed contents, 21,581 acre-ft, many days in June and July, gage height, 62.0 ft; minimum observed, 7,064 acre-ft, Jan. 20, gage height, 34.1 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)

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 (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9926	9079	7557	7356	8028	10182	12971	14428	21581	21458	21520	15571
2	9926	8980	7607	7345	8037	10243	13041	14566	21458	21520	21489	15258
3	9926	8853	7655	7334	8046	10304	13555	14661	21458	21581	21396	14878
4	9926	8755	7650	7323	8055	10365	13555	14756	21458	21581	21335	14503
5	9957	8630	7646	7312	8064	10426	13524	14851	21335	21581	21273	14184
6	9988	8505	7642	7301	8073	10489	13493	14946	21212	21581	21151	13816
7	10019	8380	7631	7299	8080	10690	13462	15040	21090	21581	21059	13504
8	10008	8254	7620	7281	8192	10891	13431	15040	20967	21581	20966	13452
9	9996	8167	7609	7263	8304	11092	13401	15040	20844	21581	20905	13388
10	10008	8008	7598	7245	8416	11293	13375	15131	20875	21520	20783	13323
11	10019	7849	7587	7227	8528	11494	13349	15222	20905	21489	20661	12990
12	10008	7689	7576	7209	8640	11693	13332	15312	21028	21520	20539	12990
13	9996	7676	7565	7191	8752	11745	13315	15477	21151	21551	20356	12965
14	9973	7664	7554	7173	8864	11797	13298	15696	21274	21581	20235	12940
15	9950	7652	7543	7155	8976	11849	13281	15932	21397	21581	20084	12940
16	9926	7640	7532	7137	9088	11901	13264	16168	21520	21581	19932	12940
17	9880	7628	7521	7119	9200	11953	13247	16450	21458	21581	19751	12923
18	9808	7616	7510	7101	9312	12005	13195	16817	21520	21581	19541	12906
19	9736	7604	7499	7083	9424	12057	13144	17254	21470	21581	19332	12889
20	9664	7604	7488	7064	9536	12112	13092	17691	21396	21581	19093	12886
21	9592	7561	7477	7294	9648	12157	13246	18129	21335	21581	18855	12884
22	9520	7514	7466	7524	9755	12231	13400	18294	21335	21581	18617	12882
23	9447	7509	7455	7754	9816	12305	13555	18487	21335	21581	18382	12839
24	9379	7429	7444	7983	9877	12379	13686	18879	21458	21581	18088	12845
25	9360	7348	7433	7985	9938	12453	13816	19271	21520	21581	17808	12851
26	9355	7307	7422	7987	9999	12527	13911	19663	21581	21581	17564	12857
27	9342	7357	7411	7989	10060	12601	14006	20054	21581	21581	17275	12864
28	9330	7407	7440	7992	10121	12675	14101	20539	21581	21581	16932	12870
29	9319	7457	7389	8001	---	12749	14196	21028	21581	21581	16591	12876
30	9277	7507	7378	8010	---	12823	14290	21335	21581	21569	16196	12882
31	9178	---	7367	8019	---	12897	---	21520	---	21581	15884	---
MAX	10019	9079	7655	8019	10121	12897	14290	21520	21581	21581	21520	15571
MIN	9178	7307	7367	7064	8028	10182	12971	14428	20844	21458	15884	12839
a	38.97	35.17	34.85	36.36	41.02	46.72	49.40	61.90	62.00	62.00	52.34	46.69
b	-780	-1671	-140	+652	+2102	+2776	+1393	+7230	+61	0	-5697	-3002

WTR YR 1986 b +2924

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

SACRAMENTO RIVER BASIN

11437000 CAPLES LAKE OUTLET 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.--September 1922 to current year. Records for water year 1945 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1969, published as Twin Lakes Outlet near Kirkwood.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder and concrete control below outlet gate, and water-stage recorder for channel below spillway. Elevation of gage is 7,730 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Caples Lake (station 11436950) 500 ft upstream, capacity, 19,751 acre-ft at spillway level and 21,581 acre-ft with 3 ft of flashboards. Flow over Caples Lake spillway and leakage occurred May 28 to Sept. 15, 3,940 acre-ft, and is included in the table below. No diversion upstream from station. See schematic diagram of South Fork American River basin.

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

AVERAGE DISCHARGE.--(including flow over Caples Lake spillway).--64 years, 38.0 ft³/s, 27,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum combined daily discharge for outlet and spillway, 669 ft³/s, June 3, 1969; minimum daily, 0.1 ft³/s, Mar. 25-31, 1944, Nov. 27, 28, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum combined daily discharge, 396 ft³/s, June 4; minimum daily, 5.1 ft³/s, several days in January and February.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	51	6.2	6.3	5.1	5.5	6.9	64	385	105	40	167
2	5.5	56	6.3	6.2	5.2	5.6	19	64	378	85	50	172
3	5.5	60	6.2	6.2	5.2	5.7	42	65	376	84	55	176
4	5.5	63	6.2	6.4	5.2	5.9	59	65	396	86	60	174
5	5.5	65	6.2	6.4	5.2	5.9	64	65	356	88	71	173
6	5.6	70	6.2	6.4	5.1	5.8	64	65	300	88	78	176
7	5.9	73	6.2	6.4	5.1	6.4	64	65	255	88	27	84
8	6.2	74	6.2	6.4	5.1	8.1	64	65	225	85	75	12
9	6.2	75	6.2	6.4	5.1	5.9	64	62	167	84	75	9.8
10	6.2	77	6.2	6.4	5.1	5.9	64	60	149	79	79	78
11	6.2	76	6.2	6.4	5.1	5.8	64	61	149	63	82	82
12	6.2	41	6.2	6.4	5.1	5.7	64	57	127	47	86	10
13	6.2	6.2	6.2	6.4	5.1	5.8	64	51	144	43	89	10
14	6.2	6.1	6.2	6.4	5.5	5.7	64	50	163	48	93	10
15	6.2	6.2	6.2	6.4	5.4	5.8	64	50	187	48	83	10
16	6.2	6.2	6.2	6.5	5.4	5.9	63	51	224	48	98	9.0
17	27	6.2	6.2	6.8	5.6	5.9	63	52	238	45	108	7.8
18	46	6.2	6.2	6.6	6.6	5.9	63	53	235	43	127	7.8
19	46	20	6.2	6.6	6.4	5.9	64	55	222	42	134	7.7
20	46	35	6.2	6.6	5.8	5.9	61	55	193	41	134	7.7
21	40	28	6.2	6.6	5.7	5.9	60	56	148	40	133	7.7
22	34	20	6.2	6.6	5.7	6.0	61	56	131	40	132	7.7
23	34	25	6.2	6.6	5.7	6.0	61	56	125	42	134	7.7
24	27	30	6.2	6.5	5.7	6.1	62	56	129	45	138	7.7
25	16	20	6.2	6.3	5.8	6.2	62	59	134	52	141	7.7
26	11	8.2	6.2	6.2	5.8	6.3	62	68	135	55	146	7.7
27	13	6.2	6.2	6.4	5.9	6.4	62	87	137	54	161	7.7
28	16	6.2	6.2	5.8	5.5	6.5	63	120	137	48	171	7.7
29	27	6.2	6.2	5.1	---	6.6	63	211	136	37	179	7.7
30	36	6.2	6.4	5.2	---	6.8	63	353	130	32	178	7.7
31	44	---	6.3	5.2	---	6.9	---	374	---	32	168	---
TOTAL	557.8	1029.1	192.6	195.1	153.2	188.7	1763.9	2671	6211	1817	3325	1460.8
MEAN	18.0	34.3	6.21	6.29	5.47	6.09	58.8	86.2	207	58.6	107	48.7
MAX	46	77	6.4	6.8	6.6	8.1	64	374	396	105	179	176
MIN	5.5	6.1	6.2	5.1	5.1	5.5	6.9	50	125	32	27	7.7
AC-FT	1110	2040	382	387	304	374	3500	5300	12320	3600	6600	2900

CAL YR 1985 TOTAL 8715.6 MEAN 23.9 MAX 125 MIN 2.4 AC-FT 17290
WTR YR 1986 TOTAL 19565.2 MEAN 53.6 MAX 396 MIN 5.1 AC-FT 38810

SACRAMENTO RIVER BASIN

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.

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. Elevation of gage is 3,840 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1962, at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Low and medium flows regulated by Silver Lake, Caples Lake (stations 11435900, 11436950), Lake Aloha, and Echo Lake, total capacity, 37,100 acre-feet. See schematic diagram of South Fork American River basin. For records of combined discharge of river and canal, see following page.

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

AVERAGE DISCHARGE.--River only: 64 years (water years 1923-86), 308 ft³/s, 223,100 acre-ft/yr.
Combined river and diversion: 64 years (water years 1923-86), 423 ft³/s, 306,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 17,400 ft³/s, Dec. 23, 1964, gage height, 10.92 ft, 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, 17,500 ft³/s, Dec. 23, 1964; minimum daily, 10 ft³/s, Oct. 17, 19, 1929.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 10,800 ft³/s, Mar. 8, gage height, 9.60 ft; minimum daily, 38 ft³/s, Sept. 6.
Combined flow: Maximum discharge, 10,900 ft³/s, Mar. 8; minimum daily, 44 ft³/s, Oct. 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	51	58	175	174	1240	1370	1260	2320	300	59	42
2	45	51	262	142	164	1220	1200	1300	2180	259	59	40
3	44	51	224	118	146	1220	980	1530	2150	247	60	42
4	46	51	107	222	125	1250	941	1210	1930	223	60	42
5	50	51	79	800	109	1220	896	966	1690	188	60	41
6	53	52	66	491	96	1120	902	840	1480	166	63	38
7	67	51	113	276	80	1740	958	745	1220	155	57	94
8	74	51	119	210	88	6210	845	721	1060	137	56	51
9	81	51	76	190	76	2580	784	766	987	127	53	40
10	61	54	60	144	74	1800	876	931	880	116	53	41
11	46	50	70	106	71	1440	1000	994	889	101	53	43
12	45	50	72	77	107	1200	1050	1070	853	86	52	45
13	44	52	89	57	667	1040	867	1200	910	85	52	39
14	44	52	119	54	1370	897	771	1300	955	89	52	42
15	45	52	92	59	1520	833	758	1380	936	71	62	62
16	47	65	68	185	1350	772	716	1420	899	59	56	74
17	47	54	54	1300	5410	698	655	1480	905	59	53	68
18	47	54	55	549	6400	648	623	1650	909	65	53	68
19	45	54	55	377	5900	639	671	1840	791	60	54	61
20	44	56	55	319	2500	675	884	1750	673	59	54	61
21	44	55	55	221	1710	704	1240	1410	598	61	55	57
22	43	55	55	169	1440	729	1500	1210	566	60	52	55
23	44	55	55	147	1310	744	1520	1220	560	86	52	53
24	49	95	55	119	1280	722	1330	1280	566	96	52	62
25	46	126	60	107	1300	742	1200	1580	556	96	51	86
26	47	74	62	99	1290	797	1110	1760	511	105	51	84
27	47	58	58	96	1290	927	1100	1840	528	62	52	94
28	47	63	55	94	1280	1040	1350	1930	491	59	60	84
29	46	89	69	93	---	1150	1360	2110	420	59	52	78
30	46	60	470	273	---	1450	1290	2320	351	59	57	80
31	48	---	262	262	---	1380	---	2400	---	59	51	---
TOTAL	1528	1783	3149	7531	37327	38827	30747	43413	29764	3454	1706	1767
MEAN	49.3	59.4	102	243	1333	1252	1025	1400	992	111	55.0	58.9
MAX	81	126	470	1300	6400	6210	1520	2400	2320	300	63	94
MIN	43	50	54	54	71	639	623	721	351	59	51	38
AC-FT	3030	3540	6250	14940	74040	77010	60990	86110	59040	6850	3380	3500

SACRAMENTO RIVER BASIN

11439501 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SOUTH FORK AMERICAN RIVER
AND EL DORADO CANAL NEAR KYBURZ, CA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	149	99	220	315	1240	1500	1420	2480	462	209	196
2	45	150	320	187	305	1220	1340	1460	2340	424	216	197
3	44	151	284	163	287	1220	1130	1690	2310	412	217	207
4	46	151	167	267	266	1250	1080	1370	2090	383	216	208
5	50	150	138	845	245	1240	1030	1120	1850	354	217	206
6	53	151	121	536	230	1180	1030	995	1640	329	229	203
7	67	154	158	321	214	1810	1090	900	1380	316	208	180
8	74	151	164	255	222	6280	974	880	1220	302	196	57
9	83	151	121	235	213	2670	914	926	1150	292	215	46
10	80	164	99	205	215	1900	1010	1090	1040	281	213	47
11	86	164	115	192	207	1540	1130	1160	1050	266	216	178
12	80	165	117	187	241	1300	1180	1230	1020	251	211	204
13	73	103	123	176	801	1140	996	1360	1070	250	215	185
14	57	90	125	168	1500	998	900	1460	1120	254	212	74
15	63	88	97	177	1640	933	888	1540	1100	235	226	74
16	72	111	90	317	1460	873	845	1580	1060	213	163	80
17	92	107	87	1440	5470	798	785	1640	1070	190	157	71
18	122	91	88	681	6400	749	753	1810	1070	224	192	69
19	130	81	92	511	5900	740	802	2000	953	223	207	61
20	119	102	95	453	2500	790	1020	1910	835	215	218	61
21	127	102	95	355	1710	829	1370	1570	760	224	220	57
22	127	92	96	306	1440	854	1630	1370	728	225	216	55
23	153	97	97	285	1310	869	1650	1380	723	251	212	53
24	178	163	100	258	1280	850	1460	1440	729	261	213	62
25	158	186	105	245	1300	872	1330	1740	720	261	212	87
26	127	130	107	237	1290	927	1240	1920	676	270	212	85
27	116	101	103	235	1290	1060	1230	2000	693	219	216	97
28	139	115	100	232	1280	1170	1490	2090	657	200	224	87
29	138	148	114	232	---	1280	1510	2270	585	211	208	81
30	143	114	515	413	---	1580	1450	2480	516	218	222	83
31	146	---	307	402	---	1510	---	2560	---	213	198	---
TOTAL	3035	3872	4439	10736	39531	41672	34757	48361	34635	8429	6506	3351
MEAN	97.9	129	143	346	1412	1344	1159	1560	1155	272	210	112
MAX	178	186	515	1440	6400	6280	1650	2560	2480	462	229	208
MIN	44	81	87	163	207	740	753	880	516	190	157	46
AC-FT	6020	7680	8800	21290	78410	82660	68940	95920	68700	16720	12900	6650
CAL YR 1985	TOTAL	97750	MEAN	268	MAX	1410	MIN	37	AC-FT	193900		
WTR YR 1986	TOTAL	239324	MEAN	656	MAX	6400	MIN	44	AC-FT	474700		

SACRAMENTO RIVER BASIN

11441001 UNION VALLEY RESERVOIR NEAR RIVERTON, CA

LOCATION.--Lat 38°51'49", long 120°26'15", 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.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District).

REMARKS.--Reservoir is formed by earthfill dam completed in December 1962. Storage began May 1962. Usable capacity, 270,300 acre-ft between elevations 4,645.0 ft, minimum operating level and 4,870.0 ft, top of radial spillway gates. Dead storage, 7,000 acre-ft. Reservoir receives water from the South Fork Rubicon River via Robbs Peak powerplant (station 11429300). Water is used for power development in the South Fork American River basin. Records, including extremes, represent total contents at 2400 hours. See schematic diagrams of Middle Fork American and Rubicon River basins and South Fork American River basin.

COOPERATION.--Capacity tables provided by Sacramento Municipal Utility District.

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, 274,400 acre-ft, June 3, elevation, 4,869.0 ft; minimum, 140,700 acre-ft, Oct. 27, elevation, 4,812.7 ft.

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

4,680	17,000	4,780	90,000
4,700	25,000	4,800	118,900
4,720	35,300	4,820	154,400
4,740	48,800	4,840	197,400
4,760	66,800	4,870	277,300

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148100	144500	168400	146900	170500	241000	241300	257400	272000	259100	224100	187500
2	147700	145400	170000	146900	171100	240200	242400	257400	272900	258500	222800	186800
3	147300	146200	170900	146900	170500	240200	242900	258200	274400	257900	221800	185000
4	147100	147100	171100	148100	169400	240200	243200	258500	273800	257400	220200	183200
5	146900	147900	170000	151900	169000	239700	243800	258800	273500	256200	219000	181500
6	146900	148600	169200	153800	168800	238900	244300	258500	273500	255700	217700	179300
7	146900	149600	168400	154000	168100	241300	245100	258200	273500	254800	216200	178400
8	146800	150400	168100	153800	167700	248200	245700	257900	273200	253700	214900	176400
9	146800	151300	166900	153600	167500	246000	246200	257700	272900	252600	213700	174900
10	146600	152700	165700	153600	166900	244600	246500	257900	272600	251200	212700	173000
11	146400	153600	164000	153400	166500	243200	247300	257900	272000	249800	211400	171100
12	146200	154000	162400	153600	166900	241800	248200	258200	271400	248700	210000	169200
13	146000	154800	161200	153300	171100	240800	248400	258500	270900	247300	208700	167300
14	145800	155600	159600	153600	175100	240000	248700	259100	270600	245900	207300	166900
15	145800	156600	159200	154000	181200	238900	248700	259400	270000	244900	206000	164600
16	145400	157600	157600	157200	188000	238100	249000	259900	269100	243800	204600	163000
17	145300	158400	156200	162800	207300	237000	249000	260200	268800	242400	203600	161000
18	144900	159400	154600	164400	225400	236500	249300	260800	268200	241000	201900	159600
19	144500	160200	153300	165700	238600	235900	249500	261900	267700	239700	200700	157800
20	144300	161200	151900	166300	241300	235600	250100	261600	266800	238900	199600	155800
21	144300	162200	150400	166900	242100	235600	251200	261400	266200	237800	197900	155400
22	144300	163000	150000	167300	242100	235600	252600	261100	265400	236500	196700	153400
23	144300	163600	148800	167900	242100	235600	254000	261600	265100	235400	195300	151700
24	143600	165200	148500	168600	242100	235900	254600	263900	264200	234000	194600	150200
25	142700	164400	148100	168600	242400	235900	255100	265900	263600	232700	193700	148800
26	141600	165000	146800	168600	242100	236700	255400	267100	262800	231400	192800	148600
27	140700	165700	145600	168600	242100	237500	256000	267400	262200	230600	192100	148100
28	141600	166900	144500	168800	241800	238300	256800	267700	261400	229300	190900	147300
29	142500	167700	144500	169000	---	238900	257400	268800	259600	228000	190000	147500
30	142900	167900	146400	170000	---	239700	257400	269700	259400	226700	188900	147900
31	143800	---	146900	170500	---	239700	---	270900	---	225400	188200	---
MAX	148100	167900	171100	170500	242400	248200	257400	270900	274400	259100	224100	187500
MIN	140700	144500	144500	146900	166500	235600	241300	257400	259400	225400	188200	147300
a	4814.4	4826.7	4816.1	4827.9	4857.5	4856.7	4863.1	4867.8	4863.8	4851.3	4836.0	4816.6
b	-4800	+24100	-21000	+23600	+71300	-2100	+17700	+13500	-11500	-34000	-37200	-40300

CAL YR 1985 b -58200

UTM 10 1000 1 2000

SACRAMENTO RIVER BASIN

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 powerhouse intake structure near right bank, 0.5 mi north of Ice House Dam on South Fork Silver Creek, 5.2 mi northwest of Kyburz.

DRAINAGE AREA.--27.2 mi².

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

REVISED RECORDS.--WSP 1931: 1960.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (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, 45,800 acre-ft between elevations 5,327.5 ft, centerline of fishwater outlet, and 5,450.0 ft, top of spillway gates. Dead storage, 160 acre-ft. Reservoir is used to store water for power development. Reservoir is also forebay for Jones Fork Powerplant 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 at 2400 hours. See schematic diagram of South Fork American River basin.

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, 43,600 acre-ft, June 12-18, elevation, 5,446.7 ft; minimum, 20,000 acre-ft, Dec. 28, elevation, 5,405.3 ft.

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

5,345	1,080	5,400	17,600
5,350	1,760	5,420	27,400
5,360	3,840	5,440	39,200
5,380	9,600	5,451	46,700

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28500	25800	21700	20400	22500	35900	34500	34500	42100	42400	39800	34900
2	28300	25500	21600	20200	22600	36300	34500	35100	42200	42400	39700	34600
3	28200	25300	21500	20200	22800	36500	34300	35500	42400	42400	39700	34500
4	28000	25000	21400	20100	22900	36600	34300	35500	42600	42500	39500	34300
5	27900	24800	21400	20600	22800	36600	34200	35400	42800	42600	39300	34000
6	27800	24600	21300	20800	22600	36500	34200	35200	42900	42700	39100	33800
7	27800	24400	21300	20700	22500	37100	34100	35000	43200	42600	39000	33800
8	27800	24200	21400	20600	22400	38500	34000	34800	43500	42500	38800	33600
9	27800	24000	21200	20600	22400	37800	33900	34700	43500	42400	38600	33400
10	27800	23900	21200	20600	22200	37500	33700	34700	43500	42200	38500	33100
11	27800	23700	21200	20600	22100	37200	33700	34700	43500	42200	38400	32900
12	27800	23600	21200	20600	22200	37000	33700	34800	43600	42100	38200	32700
13	27800	23400	21100	20600	22400	36800	33600	35000	43600	42200	38000	32500
14	27800	23200	21000	20500	23000	36600	33400	35100	43600	42100	37800	32500
15	27800	23000	21000	20400	23700	36500	33200	35300	43600	42000	37600	32400
16	27800	22800	20900	20500	24300	36300	33100	35500	43600	41900	37400	32400
17	27700	22600	20800	21500	26600	36100	32900	35800	43600	41700	37400	32300
18	27700	22300	20700	21900	29200	35900	32700	36100	43600	41600	37200	32100
19	27700	22100	20600	22200	31100	35700	32500	36600	43500	41600	37000	31900
20	27700	21900	20500	22400	31900	35500	32500	37200	43300	41600	36800	31700
21	27700	21700	20400	22600	32400	35400	32800	37800	43200	41500	36600	31600
22	27700	21500	20400	22700	32800	35200	33100	38000	43100	41300	36500	31500
23	27700	21300	20300	22600	33300	35100	33400	38200	43000	41100	36300	31300
24	27600	21200	20400	22500	33700	34800	33400	38500	43000	41000	36200	31200
25	27300	21300	20400	22400	34100	34700	33500	39200	42800	40900	36000	31000
26	27000	21400	20300	22500	34500	34500	33600	40000	42700	40700	35800	30900
27	26800	21400	20200	22400	35000	34300	33600	40400	42600	40700	35500	30800
28	26600	21500	20000	22200	35400	34300	33700	40700	42500	40600	35400	30800
29	26400	21600	20200	22200	---	34300	33900	41000	42600	40400	35200	30600
30	26200	21600	20200	22400	---	34400	34000	41400	42400	40200	34900	30400
31	26000	---	20300	22600	---	34500	---	41800	---	40000	34900	---
MAX	28500	25800	21700	22700	35400	38500	34500	41800	43600	42700	39800	34900
MIN	26000	21200	20000	20100	22100	34300	32500	34500	42100	40000	34900	30400
a	5417.1	5408.5	5405.8	5410.4	5434.1	5432.6	5431.8	5443.9	5444.9	5441.2	5433.3	5425.7
b	-2600	-4400	-1300	+2300	+12800	-900	-500	+7800	+600	-2400	-5100	-4500

CAL YR 1985 b -2300

WTR YR 1986 b +1800

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1959, at site 0.3 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated by Ice House Reservoir beginning in December 1959 (station 11441100). Diversion to Jones Fork powerplant 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.

AVERAGE DISCHARGE (prior to diversion to Jones Fork powerplant).--60 years (1925-84), 78.1 ft³/s, 56,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 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 Ice House Dam in 1959, 1,930 ft³/s, May 26, 1982, gage height, 5.74 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,000 ft³/s, Mar. 8, gage height, 5.07 ft; minimum daily, 2.8 ft³/s, Jan. 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	12	5.1	4.6	3.8	5.1	4.6	9.7	9.7	16	16	17
2	13	10	8.0	3.6	3.9	4.9	4.6	9.7	9.7	16	16	17
3	13	10	6.6	2.8	3.9	4.8	4.4	10	9.7	16	16	17
4	13	9.6	5.5	4.1	3.8	4.7	4.3	10	9.7	16	16	17
5	13	9.9	5.4	4.7	3.7	4.6	4.1	10	9.7	16	16	17
6	13	10	5.3	3.5	3.5	4.4	4.3	10	9.3	16	16	17
7	13	10	5.7	3.1	3.5	6.4	4.8	10	9.0	16	16	17
8	13	10	5.2	3.0	3.4	649	4.4	10	9.0	16	16	16
9	13	10	4.9	3.5	3.4	563	4.3	10	9.1	16	16	16
10	12	10	4.7	3.8	3.4	232	4.3	10	9.3	16	16	16
11	12	10	4.5	3.8	3.3	102	4.2	10	9.5	16	16	16
12	12	10	4.2	3.7	5.0	27	4.3	9.7	9.3	16	16	16
13	12	10	4.1	3.6	5.3	6.1	4.3	9.3	9.3	16	15	16
14	13	10	4.1	3.6	6.0	5.6	3.9	9.3	9.6	16	15	16
15	13	11	4.2	3.7	9.2	5.5	3.6	9.3	9.7	16	15	16
16	13	12	4.3	6.0	12	5.4	3.7	9.0	9.7	16	15	16
17	13	12	4.4	5.5	21	5.3	3.8	8.6	9.7	16	16	16
18	13	8.6	4.5	4.1	16	5.3	3.5	8.6	9.7	16	16	16
19	12	4.2	4.6	4.0	19	5.5	3.5	8.8	9.7	16	15	16
20	12	4.1	4.7	3.8	10	5.3	3.5	8.9	9.7	16	15	16
21	12	4.2	4.6	3.7	7.9	4.9	3.5	8.9	9.7	16	15	16
22	12	4.5	4.5	3.6	8.2	4.9	3.6	8.9	10	16	16	16
23	12	5.0	4.4	3.7	7.6	4.7	3.7	8.9	9.7	16	17	16
24	12	5.9	4.4	3.7	7.0	5.0	3.9	9.1	9.7	16	17	17
25	12	6.4	4.5	3.7	6.1	5.3	3.5	9.3	9.7	16	17	17
26	12	5.4	4.3	3.7	5.9	5.0	3.4	9.7	9.7	16	17	17
27	12	4.8	4.3	3.6	5.6	4.5	3.4	9.8	9.7	16	17	17
28	12	6.1	4.3	3.6	5.3	4.3	3.4	9.7	9.7	16	17	16
29	12	6.3	4.7	3.6	---	4.7	3.4	9.7	9.7	16	17	17
30	12	5.1	5.6	4.2	---	4.5	6.2	9.7	12	16	17	17
31	12	---	4.6	4.0	---	4.7	---	9.7	---	16	17	---
TOTAL	387	247.1	150.2	119.6	196.7	1704.4	120.4	294.3	289.7	496	498	493
MEAN	12.5	8.24	4.85	3.86	7.02	55.0	4.01	9.49	9.66	16.0	16.1	16.4
MAX	14	12	8.0	6.0	21	649	6.2	10	12	16	17	17
MIN	12	4.1	4.1	2.8	3.3	4.3	3.4	8.6	9.0	16	15	16
AC-FT	768	490	298	237	390	3380	239	584	575	984	988	978
a	2640	4860	2840	3420	1740	14190	13210	10840	9040	3880	4230	3930

CAL YR 1985 TOTAL 6072.8 MEAN 16.6 MAX 110 MIN 2.9 AC-FT 12050
WTR YR 1986 TOTAL 4996.4 MEAN 13.7 MAX 649 MIN 2.8 AC-FT 9910

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (Sacramento Municipal Utility District bench mark).

REMARKS.--No estimated daily discharges. Records good except flows below 10 ft³/s, which are fair. Flow is regulated by Ice House Reservoir (station 11441100) since 1959, Union Valley Reservoir, (station 11441001) since 1962, and Junction and Camino Reservoirs. Diversions to Camino powerplant since 1961. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE (unadjusted).--26 years, 99.9 ft³/s, 72,380 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,800 ft³/s, Feb. 17, 1986, gage height, 11.70 ft, 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,800 ft³/s, Feb. 17, gage height, 11.70 ft; minimum daily, 7.6 ft³/s, Nov. 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	14	13	16	17	734	308	22	23	20	22	21
2	17	9.3	37	15	26	416	90	24	21	20	22	21
3	17	10	28	14	29	312	113	27	21	22	22	20
4	19	11	19	19	26	243	61	27	21	21	22	26
5	19	11	17	30	23	387	83	27	21	21	22	22
6	19	9.0	17	26	20	440	64	27	20	21	22	21
7	18	8.5	21	21	18	895	111	27	20	21	22	22
8	17	8.1	19	17	16	5690	129	27	21	21	22	22
9	19	8.7	17	16	15	5690	40	26	21	21	22	21
10	19	9.4	16	14	14	3770	179	26	21	21	22	21
11	19	8.5	14	13	13	3260	51	26	21	21	22	22
12	19	7.6	13	13	22	2200	28	25	21	21	22	22
13	18	8.5	13	12	65	1770	12	25	20	21	22	21
14	17	8.6	12	12	53	1360	12	26	20	22	22	21
15	18	8.6	12	13	132	1120	11	25	20	21	22	22
16	19	9.0	12	31	2330	851	11	23	20	21	22	22
17	18	9.2	11	63	9810	776	12	21	20	21	23	22
18	17	9.1	11	37	5810	504	29	20	20	21	21	22
19	18	8.5	10	29	6140	492	11	21	20	20	21	22
20	18	8.8	10	24	2100	387	10	20	19	20	22	22
21	19	7.7	9.6	20	1470	355	10	20	19	20	22	22
22	19	8.1	9.6	18	1010	373	9.7	20	19	22	22	22
23	18	9.5	9.7	17	780	354	9.4	19	19	22	22	23
24	18	14	9.8	15	590	511	10	36	20	22	22	25
25	18	14	10	13	672	382	13	25	20	22	22	23
26	19	11	9.6	12	567	518	13	27	20	21	22	23
27	19	11	10	12	515	475	12	25	20	21	22	24
28	19	19	11	11	421	606	12	23	20	22	22	23
29	17	22	11	11	---	687	12	23	20	22	22	23
30	18	15	21	14	---	844	14	23	20	22	21	22
31	18	---	16	15	---	1000	---	23	---	21	21	---
TOTAL	565	316.7	449.3	593	32704	37402	1480.1	756	608	655	679	665
MEAN	18.2	10.6	14.5	19.1	1168	1207	49.3	24.4	20.3	21.1	21.9	22.2
MAX	19	22	37	63	9810	5690	308	36	23	22	23	26
MIN	17	7.6	9.6	11	13	243	9.4	19	19	20	21	20
AC-FT	1120	628	891	1180	64870	74190	2940	1500	1210	1300	1350	1320

CAL YR 1985 TOTAL 6299 MEAN 17.3 MAX 37 MIN 7.6 AC-FT 12490
WTR YR 1986 TOTAL 76873.1 MEAN 211 MAX 9810 MIN 7.6 AC-FT 152500

SACRAMENTO RIVER BASIN

11442500 SOUTH FORK AMERICAN RIVER BELOW SILVER CREEK, NEAR POLLOCK PINES, CA

LOCATION.--Lat 38°47'37", long 120°37'02", in NE 1/4 NE 1/4 sec.22, T.11 N., R.12 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 350 ft upstream from El Dorado powerplant, 2.4 mi downstream from Silver Creek, and 2.8 mi northwest of Pollock Pines.

DRAINAGE AREA.--449 mi².

PERIOD OF RECORD.--August to December 1923 (published as "below Silver Creek"), November 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,862.79 ft above National Geodetic Vertical Datum of 1929. (Pacific Gas and Electric Co. bench mark). Aug. 11 to Dec. 16, 1923, nonrecording gage at same site at different datum.

REMARKS.--No estimated daily discharges. Records good. There are two diversions to Camino Powerplant and El Dorado powerplant which bypass this station. Refer to listed monthly figures below. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE (unadjusted).--16 years, 569 ft³/s, 412,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,500 ft³/s, Jan. 13, 1980, gage height, 17.83 ft, from rating curve extended above 13,000 ft³/s; minimum daily, 9.6 ft³/s, Oct. 19, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,100 ft³/s, Feb. 17, gage height, 16.66 ft; minimum daily, 70 ft³/s, Oct. 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	76	185	352	380	2320	2090	1400	2490	393	107	91
2	73	73	542	302	407	2020	1580	1330	2290	349	107	80
3	71	72	640	288	452	1850	1360	1760	2280	338	107	77
4	70	72	349	298	380	1790	1190	1440	2090	309	107	83
5	73	72	273	1040	319	1940	1210	1150	1820	282	107	82
6	78	72	228	881	288	1940	1170	1000	1610	252	126	80
7	89	72	273	555	230	2990	1320	883	1330	242	117	134
8	103	72	355	440	232	14300	1190	849	1130	222	99	155
9	108	72	260	376	200	8880	1030	856	1080	206	102	88
10	111	116	195	330	192	6490	1210	1000	938	193	98	80
11	108	91	166	304	176	5590	1220	1100	977	178	97	91
12	96	213	171	287	229	4180	1300	1140	882	151	96	85
13	74	143	183	227	1300	3500	1080	1290	976	146	96	81
14	72	122	186	127	1810	2830	965	1380	989	154	96	81
15	72	115	172	151	3500	2500	932	1470	1010	134	96	98
16	73	128	152	237	6540	2150	895	1540	955	119	111	121
17	75	161	143	1820	19600	1910	833	1570	961	110	98	127
18	75	134	140	948	18400	1570	798	1750	973	111	97	126
19	74	105	141	664	17500	1520	794	1950	884	116	95	114
20	73	117	144	566	8060	1450	947	1970	753	110	95	110
21	96	138	143	432	5000	1390	1300	1570	673	108	97	107
22	80	125	145	346	3710	1410	1640	1300	628	111	98	102
23	75	122	140	322	3010	1440	1730	1320	623	124	94	100
24	79	220	139	268	2580	1530	1500	1310	630	156	93	117
25	74	366	152	237	2600	1410	1340	1660	627	155	93	161
26	75	233	154	213	2400	1570	1260	1890	580	173	93	157
27	76	162	151	198	2260	1630	1170	1990	594	132	93	199
28	77	210	144	190	2170	1900	1440	2050	571	110	100	157
29	75	390	145	181	---	2070	1510	2250	511	108	99	137
30	74	247	570	332	---	2580	1400	2470	447	107	95	136
31	74	---	487	478	---	2660	---	2550	---	107	96	---
TOTAL	2499	4311	7268	13370	103925	91310	37404	47188	32302	5506	3105	3357
MEAN	80.6	144	234	431	3712	2945	1247	1522	1077	178	100	112
MAX	111	390	640	1820	19600	14300	2090	2550	2490	393	126	199
MIN	70	72	139	127	176	1390	794	849	447	107	93	77
AC-FT	4960	8550	14420	26520	206100	181100	74190	93600	64070	10920	6160	6660
a	16890	5710	46270	38430	65760	81130	78570	71610	70440	47940	48600	50450
b	2470	2130	0	5340	4830	5960	7940	9290	8610	8440	7810	2240
CAL YR 1985	TOTAL	92338	MEAN	253	MAX	1460	MIN	35	AC-FT	183200		
WTR YR 1986	TOTAL	351545	MEAN	963	MAX	19600	MIN	70	AC-FT	697300		

a Diversion, in acre-feet, to Camino powerplant, provided by Sacramento Municipal Utility District.

b Diversion, in acre-feet, to El Dorado powerplant, provided by Pacific Gas and Electric Company.

SACRAMENTO RIVER BASIN

11443500 SOUTH FORK AMERICAN RIVER NEAR CAMINO, CA

LOCATION.--Lat 38°46'23", long 120°42'02", in NE 1/4 SW 1/4 sec.25, T.11 N., R.11 E., El Dorado County, Hydrologic Unit 18020129, on right bank 500 ft downstream from Slab Creek Dam, 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, published in WSP 1315-A. Records for the river and the American River flume, published separately October 1922 to September 1956, October 1962 to December 1964 when flume was destroyed. Records of river and flume combined October 1956 to September 1962.

REVISED RECORDS.--WSP 931: 1928, 1938, 1940(M). WSP 1931: Drainage area at former site.

GAGE.--Water-stage recorder. Elevation of gage is 1,620 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 2131 for history of changes prior to Oct. 12, 1966.

REMARKS.--No estimated daily discharges. Records good except flows below 100 ft³/s, which are fair. Flow regulated by six reservoirs, total usable capacity, 347,000 acre-ft. Since 1967 diversion from Slab Creek Dam to White Rock powerplant 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 Consummes 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.

AVERAGE DISCHARGE.--37 years (water years 1923-59, prior to extensive regulation and transbasin diversion in South Fork American River basin), 961 ft³/s, 695,700 acre-ft/yr, combined flow of South Fork American River and American River flume; 8 years (water years 1960-67, transition period prior to bypass to White Rock powerplant), 1,062 ft³/s, 769,400 acre-ft/yr; 19 years (water years 1968-86), 162 ft³/s, 117,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,800 ft³/s, Dec. 23, 1955, gage height, 32.6 ft, from floodmarks, site and datum then in use, from rating curv extended above 24,000 ft³/s, on basis of computation of peak flow over dam; minimum daily, 1.3 ft³/s, Aug. 24, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 27,500 ft³/s, Feb. 18, gage height, 20.36 ft; minimum daily, 26 ft³/s, June 30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	36	38	39	38	47	245	38	41	39	41	38
2	37	36	38	39	38	59	46	35	41	40	41	38
3	37	36	39	39	38	45	45	32	41	40	41	38
4	37	44	39	40	39	45	45	32	41	40	41	38
5	37	69	39	40	39	44	45	32	40	40	40	38
6	44	69	39	40	38	44	45	32	40	40	39	38
7	37	60	39	38	38	44	46	34	40	40	39	38
8	43	43	40	38	38	11000	46	35	40	40	39	38
9	36	38	39	38	38	7630	46	35	40	39	38	38
10	36	38	37	38	38	4470	46	35	41	39	38	38
11	37	40	36	38	38	3790	46	35	41	39	38	38
12	36	40	36	38	37	2540	47	35	41	39	38	38
13	36	40	36	39	38	1720	47	35	41	39	38	37
14	36	40	35	39	38	856	47	35	41	39	38	37
15	37	40	35	39	54	456	47	35	41	39	38	37
16	37	40	33	39	5400	183	47	38	41	39	38	37
17	37	40	33	40	20200	47	47	41	40	38	38	37
18	37	40	32	40	17600	44	47	41	41	38	38	37
19	37	39	35	39	17600	43	47	41	39	38	38	37
20	37	40	40	39	7260	41	47	41	40	38	38	37
21	37	40	41	38	3210	42	47	41	40	39	38	36
22	36	40	41	38	1880	44	47	40	38	39	38	36
23	36	40	38	38	947	44	47	40	39	39	38	36
24	36	38	33	38	424	45	42	40	39	39	38	36
25	37	37	33	38	386	45	38	40	38	39	38	36
26	37	37	36	38	195	45	38	40	38	38	38	36
27	37	37	38	38	87	44	38	40	38	38	38	37
28	37	38	35	38	83	45	38	40	39	40	38	37
29	37	38	35	41	---	45	38	40	34	39	38	38
30	37	40	37	49	---	45	38	40	26	40	38	38
31	37	---	39	38	---	190	---	41	---	41	38	---
TOTAL	1152	1253	1144	1211	75859	33782	1535	1159	1180	1214	1195	1118
MEAN	37.2	41.8	36.9	39.1	2709	1090	51.2	37.4	39.3	39.2	38.5	37.3
MAX	44	69	41	49	20200	11000	245	41	41	41	41	38
MIN	36	36	32	38	37	41	38	32	26	38	38	36
AC-FT	2280	2490	2270	2400	150500	67010	3040	2300	2340	2410	2370	2220
a	21550	18140	54730	70630	142700	204900	155000	167800	136600	63200	59310	56560

CAL YR 1985 TOTAL 13879 MEAN 38.0 MAX 69 MIN 32 AC-FT 27530

SACRAMENTO RIVER BASIN

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, July 1964 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 931.05 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas and Electric Co.). Aug. 11, 1911, to July 31, 1920, nonrecording gage 0.6 mi downstream at different datum.

REMARKS.--Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

COOPERATION.--Records collected by Pacific Gas and Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.-- (prior to extensive regulation and transbasin diversion).--9 years (water years 1912-20), 1,132 ft³/s, 820,100 acre-ft/yr; 21 years (water years 1965-86), 1,590 ft³/s, 1,152,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,300 ft³/s, Dec. 23, 1964, gage height, 17.4 ft from floodmarks, from rating curve extended above 18,000 ft³/s on basis of computations of flow over dam of peak flow; minimum daily, 0.2 ft³/s, Nov. 12, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 28,200 ft³/s, Feb. 17; minimum daily, 125 ft³/s, Nov. 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	942	358	1370	938	2010	4050	4340	3190	4030	1160	1300	872
2	462	508	425	1270	1230	4100	3930	3200	4060	1260	951	875
3	424	418	925	1140	3220	4040	3650	3300	4050	1130	929	1310
4	434	428	1420	1280	2450	4000	3610	3400	4040	800	1120	1320
5	427	125	1460	1790	2090	3960	3090	3200	3870	1210	1200	1330
6	449	133	1250	2860	1910	3910	2280	3190	3830	1030	1200	1110
7	383	147	1420	2330	1870	4330	2700	2930	3300	1130	1150	755
8	344	322	670	1480	1750	14500	3190	2520	2150	1420	1140	1200
9	357	365	1150	1030	1290	11300	3210	2490	2390	1580	1140	1080
10	309	710	1190	1030	1550	9150	2970	2930	3400	1300	612	1210
11	373	256	1090	736	1800	8790	2920	2500	2880	1390	1140	1350
12	363	441	982	724	1770	7440	2570	2930	2290	1490	1110	1240
13	371	368	1360	934	3280	6330	2360	2930	2200	600	1210	1180
14	489	369	1190	826	4100	5440	2510	2950	2280	1100	1190	906
15	313	288	757	1010	5520	5000	2670	2910	1940	1300	1000	1200
16	296	150	1240	1190	12500	4800	2870	3170	2200	1240	1240	1200
17	420	154	1320	3780	28200	4490	2860	3130	3180	1270	936	1260
18	412	544	1320	3210	25900	4360	2880	3020	2820	1070	1040	1240
19	403	297	1300	1810	26100	3870	2290	3330	2610	1030	1060	1190
20	408	324	1140	1880	13200	3820	1760	3970	2350	872	1150	1140
21	285	155	1010	1680	8780	3770	2740	3970	2670	1120	1260	655
22	293	391	1010	1180	6710	3830	3850	3380	2760	1270	1240	888
23	390	253	801	1320	5560	3860	3410	2900	2170	1400	1310	1350
24	626	368	580	1160	4900	3310	3380	1640	2040	1220	687	1530
25	648	1270	588	1130	4710	3090	3380	1340	1840	1240	1080	855
26	931	767	1180	679	4440	3050	3360	1580	1730	1200	1210	612
27	735	783	1170	1150	4200	3250	2770	3270	1810	959	991	652
28	394	152	872	1190	4120	3360	2580	4000	2260	863	1070	550
29	137	1270	770	1180	---	3930	2620	3990	2010	1330	1030	863
30	643	1470	1370	1540	---	3930	3050	4020	1420	1450	959	646
31	578	---	1230	1840	---	4030	---	4030	---	1230	791	---
TOTAL	14039	13584	33560	45297	185160	157090	89800	95310	80580	36664	33446	31569
MEAN	453	453	1083	1461	6613	5067	2993	3075	2686	1183	1079	1052
MAX	942	1470	1460	3780	28200	14500	4340	4030	4060	1580	1310	1530
MIN	137	125	425	679	1230	3050	1760	1340	1420	600	612	550
AC-FT	27850	26940	66570	89850	367300	311600	178100	189000	159800	72720	66340	62620
CAL YR 1985 TOTAL	339323			930	MAX 3420	MIN 125	AC-FT 673000					
WTR YR 1986 TOTAL	816099			2236	MAX 28200	MIN 125	AC-FT 1619000					

SACRAMENTO RIVER BASIN

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA

LOCATION.--Lat 38°49'07", long 120°56'45", in NW 1/4 SW 1/4 sec.11, T.11 N., R.9 E., El Dorado County, Hydrologic Unit 18020129, on left bank 0.4 mi downstream from Greenwood Creek, 2.4 mi northwest of Lotus, and 3.3 mi northwest of Coloma.

DRAINAGE AREA.--673 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 1931: Drainage area. WDR CA-75-4: 1964, 1966, 1970.

GAGE.--Water-stage recorder. Elevation of gage is 635 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE.--11 years (water years 1952-62, prior to extensive regulation and transbasin diversion), 1,109 ft³/s, 802,900 acre-ft/yr; 24 years (water years 1963-86), 1,618 ft³/s, 1,172,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,800 ft³/s, Dec. 23, 1955, gage height, 21.37 ft; minimum daily, 14 ft³/s on several days during July 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1862 and prior to beginning of record, 20.4 ft from floodmarks, Nov. 21, 1950, discharge, 64,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57,000 ft³/s, Feb. 17, gage height, 19.40 ft; minimum daily, 105 ft³/s, Nov. 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	490	370	1350	947	2390	4240	4390	3190	3840	1120	1230	880
2	398	423	926	1230	1630	4240	3980	3210	3840	1210	1100	871
3	406	417	1030	1210	3470	4180	3760	3190	3840	1270	907	1090
4	401	405	1620	1240	2690	4150	3690	3530	3830	875	1010	1320
5	424	105	1570	1980	2270	4120	3270	3220	3660	1090	1080	1350
6	361	111	1260	2800	2030	4100	2500	3210	3630	1120	1140	1230
7	328	115	1420	2400	1950	5010	2880	2990	3150	1070	1120	861
8	306	158	905	1700	1820	17400	3270	2600	2130	1270	1180	1030
9	314	409	1060	950	1440	12600	3350	2570	2370	1610	1170	1190
10	331	715	1150	1150	1480	9740	3170	2950	3210	1180	709	1120
11	308	317	1180	784	1820	9380	3060	2560	2710	1350	1030	1360
12	389	379	1010	701	1860	8040	2690	2950	2270	1510	1120	1200
13	377	356	1210	992	3210	6690	2590	2940	2180	772	1120	1270
14	379	350	1150	799	4140	5690	2580	2960	2240	1020	1190	1020
15	327	328	887	1130	6260	5360	2790	2920	1770	1100	1100	1060
16	271	138	1050	1320	15000	5310	2920	3130	2300	1370	1120	1210
17	391	139	1320	4230	42300	4770	2940	3110	3020	1100	1040	1210
18	383	447	1280	3330	38400	4510	2940	3020	2670	1200	989	1300
19	392	311	1280	1880	37400	4030	2530	3140	2490	1020	1040	1160
20	427	303	1090	1990	15800	4010	2010	3880	2330	885	1120	1180
21	300	152	1030	1730	9510	3850	2590	3870	2540	1010	1200	847
22	267	306	1040	1220	7200	3890	3770	3370	2570	1210	1160	831
23	352	296	793	1440	5940	3930	3490	2920	2070	1270	1430	1200
24	499	364	595	1140	5230	3480	3390	1880	1950	1240	764	1610
25	605	1300	590	1270	4970	3300	3380	1580	1770	1130	1010	1040
26	897	868	1050	736	4710	3180	3370	1420	1690	1300	1100	688
27	667	798	1140	1060	4450	3310	2890	3180	1860	959	1110	707
28	389	308	917	1290	4360	3420	2630	3820	2050	817	1040	608
29	120	1510	779	1100	---	4000	2740	3820	1940	1110	1060	886
30	516	1600	1390	1970	---	3990	3050	3830	1650	1430	978	682
31	563	---	1410	2210	---	4040	---	3840	---	1180	823	---
TOTAL	12578	13798	34482	47929	233730	167960	92610	94800	77570	35798	33190	32011
MEAN	406	460	1112	1546	8348	5418	3087	3058	2586	1155	1071	1067
MAX	897	1600	1620	4230	42300	17400	4390	3880	3840	1610	1430	1610
MIN	120	105	590	701	1440	3180	2010	1420	1650	772	709	608
AC-FT	24950	27370	68400	95070	463600	333100	183700	188000	153900	71010	65830	63490

CAL YR 1985 TOTAL 340423 MEAN 933 MAX 3670 MIN 105 AC-FT 675200
WTR YR 1986 TOTAL 876456 MEAN 2401 MAX 42300 MIN 105 AC-FT 1738000

SACRAMENTO RIVER BASIN

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957-1968, 1970 to current year.

CHEMICAL DATA: Water years 1958-1966, 1978 to November 1980, December 1983 to current year.

BIOLOGICAL DATA: Water years 1979-1980.

WATER TEMPERATURE: Water years 1960-68, 1970 to current year.

SEDIMENT DATA: Water years 1957-62.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: December 1959 to September 1968, February 1970 to current year.

INSTRUMENTATION.--Temperature recorder December 1959 to September 1968, and since February 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 29.5°C July 20, 1968, Aug. 12, 22, 1977; minimum recorded, 1.0°C several days in 1960 and 1962.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 18.0°C July 13, 14, Sept 1-8; minimum recorded, 4.0°C Dec. 12, 13, Feb. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	BARO- TEMPER- ATURE WATER (DEG C)	METRIC PRES- SURE (MM OF HG)	OXYGEN, OXYGEN, DIS- SOLVED (MG/L)	DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT 24...	1130	118	40	6.80	12.5	750	10.3	98	15	1	4.0
DEC 19...	1100	996	31	6.90	5.0	755	11.8	93	12	0	3.0
MAR 18...	0920	4540	38	7.10	6.0	755	13.3	108	14	0	3.4
JUN 12...	1045	1700	23	7.20	12.5	760	10.5	99	7	0	2.0
SEP 05...	1015	413	22	7.10	15.0	760	9.9	98	9	0	2.0
DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LITY, CARBON- ATE IT-FLD (MG/L CACO3)	ALKA- LITY WH WAT TOTAL FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 24...	1.1	2.1	23	0.2	0.70	17	14	14	2.6	2.1	<0.10
DEC 19...	1.0	1.7	23	0.2	0.40	16	13	13	1.9	1.8	<0.10
MAR 18...	1.4	2.7	28	0.3	0.60	17	14	15	2.2	1.8	<0.10
JUN 12...	0.50	1.3	27	0.2	0.40	11	9	10	1.7	0.80	<0.10
SEP 05...	1.0	3.0	40	0.4	0.50	11	9	10	1.4	1.0	<0.10
DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 24...	8.0	29	29	0.04	<0.100	0.020	0.020	0.20	<0.010	<0.010	<0.010
DEC 19...	7.1	19	25	0.03	<0.100	0.020	--	0.30	0.020	<0.010	<0.010
MAR 18...	10	38	31	0.05	<0.100	0.020	<0.010	0.30	0.010	<0.010	<0.010
JUN 12...	7.2	25	20	0.03	<0.100	0.020	0.020	0.20	0.030	0.010	0.010
SEP 05...	5.7	--	21	0.03	<0.100	<0.010	<0.010	<0.20	<0.010	<0.010	<0.010

SACRAMENTO RIVER BASIN

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

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

SACRAMENTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (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 is available for release. Spillway design flood pool elevation, 475.4 ft, capacity, 1,120,200 acre-ft. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of South Fork American River basin.

COOPERATION.--Records 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, 1,007,300 acre-ft, Feb. 19, elevation, 465.74 ft; minimum, 491,100 acre-ft, Nov. 23, elevation, 413.08 ft.

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

345	133,100	400	393,300
350	148,000	420	548,300
360	181,900	440	732,900
370	222,300	460	942,600
380	270,700	480	1,176,000
390	327,800		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	584800	522300	519200	598500	721700	614000	665000	713900	919000	965300	773400	679400
2	583000	520400	524700	601400	719300	612700	668800	719200	927700	959800	767000	679600
3	581300	518200	535400	604300	721000	612400	671100	726100	937300	954400	760200	680900
4	579600	516100	543600	607900	720300	611500	672300	734700	946200	948700	753200	682800
5	577700	514100	549000	618400	716400	609800	672200	741800	953200	943000	745500	684600
6	575600	512300	552800	633700	711200	615200	670100	749300	958900	937800	738400	686200
7	573600	510200	557000	642600	712000	614800	670900	755600	963400	931900	731700	687500
8	571400	508000	560600	646500	712500	680200	671600	760800	965000	926800	724600	688600
9	570100	506400	563800	648100	712500	672600	671500	765800	966300	922400	718000	691100
10	568700	506800	566900	651700	710900	661400	671200	769900	968700	916800	711000	693500
11	567400	505900	569200	653900	709600	666500	670600	775000	972200	910600	704800	696300
12	566700	504400	571500	655500	709500	666200	669500	780900	974200	905300	699200	698900
13	565000	503200	573300	658100	726100	652000	667900	787400	975700	899400	693500	699900
14	563500	502300	575000	659800	731100	634700	669100	793400	978100	893600	688700	700000
15	561600	501400	576000	662900	740700	626700	667800	799600	979900	887600	685800	700300
16	559200	500300	576500	667400	799900	621100	668300	806200	980400	881200	683900	701200
17	557000	498400	578200	699700	864000	617500	666200	812700	983300	874700	682400	701800
18	554700	496600	579400	709800	986100	614500	666600	819200	985600	868600	681500	699400
19	550700	495900	580500	711500	1007300	615700	665600	827800	988500	861600	681000	695500
20	546400	494500	581200	712800	896600	619200	663500	835400	989200	853300	680400	690400
21	542600	493100	582000	712500	786900	623200	663700	843900	991500	845900	680100	685000
22	539200	491900	582100	710500	733800	626200	671700	851200	992300	839400	679800	679000
23	537200	491100	581600	709000	676100	628700	675500	859000	991000	833500	679800	672800
24	535400	491900	582100	706300	643300	630200	678800	862300	989800	827400	678800	668700
25	533400	496800	582000	708000	626000	630700	683100	865800	987400	820800	678800	664100
26	532600	499400	582000	709100	622900	636500	687200	868600	985000	815000	679100	658200
27	531300	500800	582700	712200	617800	643700	690200	875500	982200	807900	679700	655400
28	529300	501800	583400	715900	614300	647200	693900	883700	980400	799800	679300	653600
29	527100	509100	583600	718600	---	651500	699600	892100	977300	792600	679600	652500
30	525500	515800	589300	718800	---	655600	708400	900600	972200	786600	679500	653200
31	524100	---	595600	723100	---	659900	---	909600	---	779900	679500	---
MAX	584800	522300	595600	723100	1007300	680200	708400	909600	992300	965300	773400	701800
MIN	524100	491100	519200	598500	614300	609800	663500	713900	919000	779900	678800	652500
a	417.13	416.13	425.42	439.00	427.49	432.23	437.50	457.00	462.64	444.69	434.50	431.71
b	-63300	-8300	+79800	+127500	-108800	+45600	+48500	+201200	+62600	-192300	-100400	-26300
c	2410	790	210	560	910	1660	2780	5020	6810	6990	5770	3580

CAL YR 1985 b -4100

WTR YR 1986 b +65800

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

SACRAMENTO RIVER BASIN

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.

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 National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to July 15, 1970.

REMARKS.--Estimated daily discharges: Apr. 14, 15. 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 ft and 125.0 ft and by Nimbus powerplant. Many diversions above station for irrigation, municipal, and domestic water supply. Diversions of 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.

AVERAGE DISCHARGE.--50 years (water years 1905-55, prior to regulation by Folsom Lake), 3,741 ft³/s, 2,708,000 acre-ft/yr; 31 years (water years 1956-86, unadjusted for storage or diversion), 4,021 ft³/s, 2,913,000 acre-ft/yr.

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 construction of Folsom Dam in 1953, 134,000 ft³/s, Feb. 19, 1986, gage height, 27.96 ft, present datum; minimum, 86 ft³/s, Apr. 7, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 134,000 ft³/s, Feb. 19, gage height, 27.96 ft; minimum daily, 617 ft³/s, Sept. 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2480	1420	1470	1530	8480	12700	7270	3500	2000	5070	5050	1590
2	1980	1440	1440	1430	8510	12400	7340	2510	2000	4460	5080	1170
3	1940	1460	1430	1440	8500	11600	7210	2520	2000	4540	5100	1050
4	1940	1500	1430	1480	8450	11600	7240	2510	1990	4540	5110	1050
5	1930	1500	1430	1490	8380	11500	7290	2520	2030	4500	5140	1050
6	1930	1480	1470	1550	8030	8030	7360	2480	2930	4550	5050	1050
7	1960	1470	1500	1510	4720	13800	7080	2430	2960	4640	5220	1050
8	1950	1490	1500	2430	4430	33500	7300	2430	2970	4730	5130	852
9	1460	1500	1500	1820	4410	40900	7000	2430	2980	4740	5010	668
10	1440	1490	1500	1440	4430	34300	7030	2440	2990	4720	5010	618
11	1490	1500	1510	1450	4440	26900	6990	2440	2980	4680	4680	619
12	1480	1480	1490	1460	4470	26600	6970	2450	2970	4570	4580	617
13	1480	1460	1450	1460	6050	26700	6960	2450	2460	4560	4570	1470
14	1460	1480	1450	1460	16200	24300	5900	2500	2460	4560	4010	1590
15	1470	1420	1450	1440	20200	20100	6560	2470	2450	4560	3050	1590
16	1460	1450	1450	1450	26700	18400	6340	2470	2440	4990	2480	1590
17	1460	1450	1480	3070	80100	15400	6110	2470	2440	4980	2420	1610
18	1500	1490	1480	4990	124000	13400	6130	2010	2420	5010	1980	3540
19	2400	1500	1510	4950	131000	9800	6100	1950	2430	4980	2040	4230
20	2450	1450	1530	4950	114000	8660	6070	1970	2440	5000	2090	4760
21	2420	1460	1530	4970	82400	8740	5150	2000	2480	5010	2100	4760
22	1860	1480	1540	4960	47400	8470	3090	2000	2960	5000	2110	4780
23	1480	1470	1500	4990	44400	8410	5160	1990	3490	4980	2100	5130
24	1490	1480	1480	4950	31700	8450	5000	1990	3530	5000	2100	5080
25	1480	1540	1470	2830	22700	8400	3980	2000	3550	4990	1550	5040
26	1460	1490	1480	2430	16700	5320	4020	2000	3560	5000	1570	5020
27	1450	1430	1480	1710	16500	5310	3980	2000	3560	5020	1580	4100
28	1450	1450	1470	1640	14500	7370	3470	2000	3540	5010	1570	3000
29	1480	1450	1480	1660	---	7020	2610	2000	3750	5000	1580	2190
30	1440	1470	1480	4830	---	6950	1780	2000	4850	4990	1590	883
31	1440	---	1480	5110	---	7180	---	2000	---	5030	1580	---
TOTAL	53110	44150	45860	82880	871800	462210	174490	70930	85610	149410	102230	71747
MEAN	1713	1472	1479	2674	31140	14910	5816	2288	2854	4820	3298	2392
MAX	2480	1540	1540	5110	131000	40900	7360	3500	4850	5070	5220	5130
MIN	1440	1420	1430	1430	4410	5310	1780	1950	1990	4460	1550	617
10-YR MEAN	1452	1472	1479	1640	172900	91680	34610	14070	16980	29640	20280	14230

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA
(National stream-quality accounting network station)

LOCATION.--Lat 38°27'15", long 121°29'54", 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). Gage heights collected in the vicinity of "at Sacramento" gage November 1879 to May 1888, December 1890 to September 1963 are contained in reports of National Weather Service.

GAGE.--Water-stage recorder and acoustic velocity system. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Nov. 16, 1956, nonrecording gage and water-stage recorder at various sites in vicinity of I Street Bridge in Sacramento 13 mi. upstream at datum of low-water mark of Oct. 23, 1856, 0.12 ft NGVD. Nov. 17, 1956, to Sept. 30, 1979, at site 1,000 ft upstream from I Street Bridge.

REMARKS.--Estimated daily discharges: Aug. 28 to Sept. 30. Records good. Natural flow of stream affected by storage reservoirs, power development, diversions for irrigation, return flow from irrigated areas, and tide. Flood flows bypass station through Yolo Bypass (stations 11426000, 11453000). Flows are considered equivalent to those at I Street Bridge.

AVERAGE DISCHARGE.--38 years (water years 1949-86), 24,600 ft³/s, 17,823,000 acre-ft/yr.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 117,000 ft³/s Feb. 19, elevation, 25.00 ft, at I Street Bridge, elevation, 30.58 ft; minimum daily, 8,260 ft³/s, Nov. 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10800	8590	25000	12600	46500	78500	45700	12600	13600	16100	16900	15300
2	10600	8310	25100	12500	50600	77700	44500	11700	13900	16400	16700	15100
3	10500	8260	24200	12600	54200	76700	42700	10900	14000	16300	16500	15400
4	10200	8390	28500	12800	58300	75500	39800	11400	14000	16500	16500	15800
5	10100	9050	30400	14300	62200	74700	36800	11400	14000	15900	16200	16200
6	9590	8960	27200	16100	63300	72100	34900	12700	14000	16000	16300	16200
7	10600	8740	23900	18000	57700	72000	33200	13200	13600	16400	16300	16000
8	10200	8670	22100	18700	49600	80500	32100	13500	13100	16200	16100	15000
9	10300	8830	19800	18100	42000	94900	31300	13000	12800	16100	15800	14500
10	9190	9000	18400	16200	36500	96900	30700	12300	11900	15900	15800	14100
11	9150	9850	16900	15300	33400	93200	29500	11900	11600	15800	16100	13900
12	9090	9530	15400	14400	30800	91700	27900	11100	11200	15900	15900	14000
13	8990	9490	14100	13800	31700	90900	27100	10600	10100	16100	15500	14800
14	8830	9050	13400	13700	45100	89800	25300	10600	10000	16700	15200	14700
15	8690	8960	13000	14400	64100	85700	24100	11800	10100	16200	14600	14700
16	8500	9160	12700	14900	81500	85000	23500	14700	10300	17200	14100	15500
17	8460	9540	12400	17100	98100	81500	22200	15800	10100	16800	14000	16700
18	8500	10600	12200	26600	108000	79700	21400	14400	10500	17200	13900	19800
19	9730	10400	11700	34800	115000	75800	21500	12700	9800	17200	13700	21300
20	9910	10000	11200	33900	113000	73600	21100	12300	9600	17200	13800	22800
21	11400	9790	11100	30200	103000	71900	20300	12600	9400	17500	13900	23000
22	11200	9840	10900	29100	91300	70600	16400	12800	9900	17900	14300	22700
23	10500	9820	10900	27500	87400	69000	17500	13000	10000	18200	14600	22600
24	10400	11200	10800	25600	83300	67700	17300	13300	11100	17300	14500	22600
25	10500	13100	10700	23500	82100	66200	16300	13200	11200	17400	14400	22500
26	10200	13700	10600	21200	80100	63200	15100	13200	11500	17700	14400	23000
27	9500	14500	10500	19500	79600	59600	15200	13400	11800	17800	14400	22900
28	8970	14000	10700	17900	80600	57500	15000	14000	12600	18100	14200	21900
29	8770	14500	10700	17600	---	54200	14000	14100	13800	18400	14400	21400
30	9020	18700	12100	22100	---	50400	12400	13700	15100	17700	14600	19800
31	8640	---	12700	33900	---	47800	---	13700	---	17200	14900	---
TOTAL	301030	312530	499300	618900	1929000	2324500	774800	395600	354600	523300	468500	544200
MEAN	9711	10420	16110	19960	68890	74980	25830	12760	11820	16880	15110	18140
MAX	11400	18700	30400	34800	115000	96900	45700	15800	15100	18400	16900	23000
MIN	8460	8260	10500	12500	30800	47800	12400	10600	9400	15800	13700	13900
AC-FT	597100	619900	990400	1228000	3826000	4611000	1537000	784700	703300	1038000	929300	1079000

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959 to current year.

CHEMICAL DATA: Water years 1959 to current year.

BIOLOGICAL DATA: Water years 1974-81.

WATER TEMPERATURE: Water years 1960 to current year.

SEDIMENT DATA: Water years 1957 to current year (prior to water year 1980 published as 11447500 Sacramento River at Sacramento).

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: June 1960 to June 1963.

SPECIFIC CONDUCTANCE: June 1960 to June 1963, February 1974 to July 1975.

WATER TEMPERATURE: June 1960 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1956 to current year.

INSTRUMENTATION.--Temperature recorder since June 1960.

REMARKS.--Temperature recorder located on right bank 1.9 mi northwest of Freeport, and 7.4 mi southwest of State Capitol Building in Sacramento. Records of sediment discharge from 1957 to 1979 were obtained at Sacramento and are considered equivalent.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 27.0°C Sept. 8, 1977; minimum recorded, 4.5°C Dec. 12-15, 1972.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,960 mg/L Dec. 24, 1964; minimum daily mean, 8 mg/L Dec. 29, 30, 1976, several days during May and June 1981, and June 16, 1984.

SEDIMENT DISCHARGE: Maximum daily, 525,000 tons Dec. 24, 1964; minimum daily, 151 tons Oct. 21, 22, 1977.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 23.5°C June 23-25; minimum recorded, 6.0°C Dec. 15, 16.

SEDIMENT CONCENTRATION: Maximum daily mean, 720 mg/L Feb. 19; minimum daily mean, 6 mg/L Nov. 22.

SEDIMENT DISCHARGE: Maximum daily, 224,000 tons Feb. 19; minimum daily, 159 tons Nov. 22.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT 22...	1040	11200	134	7.30	14.0	765	14	8.8	85	K3500	K850	54
DEC 18...	1100	11200	181	7.80	6.0	775	6.0	12.0	95	K40	K33	72
MAR 20...	1045	73600	110	7.60	12.5	765	62	11.0	103	--	--	43
JUN 10...	0930	11900	156	7.80	21.5	760	5.5	8.9	101	26	26	54
SEP 03...	1045	15400	186	7.70	22.0	755	29	7.6	88	170	--	70
DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WHOLE IT-FLD (MG/L)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L CACO3)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT 22...	0	11	6.3	8.3	25	0.5	1.4	69	57	56	8.8	5.6
DEC 18...	0	15	8.4	12	26	0.6	1.6	87	72	74	12	8.9
MAR 20...	0	9.6	4.6	4.6	18	0.3	1.2	54	44	44	5.8	2.9
JUN 10...	0	11	6.4	11	30	0.7	1.0	70	57	57	7.4	7.5
SEP 03...	0	14	8.4	13	28	0.7	1.2	95	78	77	9.8	7.0

See footnotes at end of table.

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT 22...	<0.10	17	92	93	0.13	0.010	0.130	--	0.030	0.30	0.060
DEC 18...	<0.10	21	114	120	0.16	<0.010	0.220	0.040	0.040	0.40	0.050
MAR 20...	<0.10	17	77	73	0.10	0.010	0.120	0.030	0.030	0.50	0.050
JUN 10...	<0.10	17	95	96	0.13	<0.010	0.130	0.030	0.030	0.40	0.060
SEP 03...	<0.10	19	117	120	0.16	<0.010	<0.100	0.040	0.030	0.50	0.100

DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT 22...	0.030	0.020	--	30	--	1	21	--	<0.5	--	--	<1
DEC 18...	0.040	0.020	--	20	--	1	27	--	<0.5	--	--	<1
MAR 20...	0.030	0.030	--	160	--	<1	62	--	<0.5	--	--	<1
JUN 10...	0.040	0.030	--	30	--	2	24	--	<0.5	--	--	1
SEP 03...	0.041	0.041	2300	20	2	2	34	<10	0.8	100	1	<1

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
OCT 22...	--	<1	<3	--	1	--	42	--	<1	5	--
DEC 18...	--	<1	<3	--	1	--	48	--	<1	<4	--
MAR 20...	--	<1	<3	--	1	--	160	--	<1	<4	--
JUN 10...	--	<1	<3	--	3	--	31	--	<5	<4	--
SEP 03...	11	<1	<3	17	2	3700	17	<5	<5	5	110

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)
OCT 22...	5	0.1	--	<10	--	1	--	<1	--	<1	79
DEC 18...	9	0.1	--	<10	--	1	--	<1	--	<1	120
MAR 20...	8	<0.1	--	<10	--	1	--	<1	--	<1	71
JUN 10...	4	<0.1	--	<10	--	1	--	<1	--	<1	98
SEP 03...	2	<0.1	2	<10	15	2	<1	<1	<1	<1	120

See footnotes at end of table.

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)
OCT 22...	<6	--	12	<0.7	<0.6	2.6	0.7	2.3	0.7	0.03	0.15
DEC 18...	<6	--	10	--	--	--	--	--	--	--	--
MAR 20...	<6	--	19	<0.7	--	1.5	1.8	1.3	1.6	0.03	<0.06
JUN 10...	<6	--	7	--	--	--	--	--	--	--	--
SEP 03...	<6	20	5	<0.4	<0.4	1.3	<0.4	1.0	<0.4	0.03	0.05

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

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDE (MG/L)
OCT									
22...*	1115	106	130	7.3	14.0	765	8.9	86	24
22...*	1125	228	132	7.3	14.0	765	9.0	87	29
22...*	1130	300	135	7.3	14.0	765	8.8	85	34
22...*	1140	373	134	7.3	14.0	765	8.8	85	30
22...*	1145	460	138	7.3	14.5	765	8.8	86	27
MAR									
20...*	0953	106	111	7.5	12.5	765	11.0	103	135
20...*	1000	228	109	7.5	12.5	765	11.0	103	135
20...*	1014	300	110	7.6	12.5	765	11.0	103	173
20...*	1018	373	102	7.6	13.0	765	11.0	104	121
20...*	1021	460	103	7.6	13.0	765	11.0	104	110

* Instantaneous streamflow at the time of cross-sectional measurements:
 Oct. 22; 11200 ft³/s
 Mar. 20; 73700 ft³/s

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

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

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	10800	13	379	8590	12	278	25000	94	6350
2	10600	14	401	8310	11	247	25100	126	8540
3	10500	15	425	8260	10	223	24200	110	7190
4	10200	16	441	8390	11	249	28500	124	9540
5	10100	17	464	9050	12	293	30400	256	21000
6	9590	14	363	8960	14	339	27200	210	15400
7	10600	13	372	8740	14	330	23900	114	7360
8	10200	14	386	8670	15	351	22100	66	3940
9	10300	14	389	8830	16	381	19800	47	2510
10	9190	12	298	9000	17	413	18400	42	2090
11	9150	13	321	9850	13	346	16900	38	1730
12	9090	12	295	9530	13	335	15400	35	1460
13	8990	13	316	9490	9	231	14100	27	1030
14	8830	13	310	9050	15	367	13400	18	651
15	8690	17	399	8960	14	339	13000	19	667
16	8500	15	344	9160	14	346	12700	20	686
17	8460	10	228	9540	13	335	12400	17	569
18	8500	9	207	10600	13	372	12200	19	626
19	9730	12	315	10400	12	337	11700	12	379
20	9910	16	428	10000	10	270	11200	11	333
21	11400	20	616	9790	9	238	11100	11	330
22	11200	24	726	9840	6	159	10900	10	294
23	10500	11	312	9820	8	212	10900	9	265
24	10400	12	337	11200	11	333	10800	8	233
25	10500	13	369	13100	25	884	10700	9	260
26	10200	14	386	13700	26	962	10600	10	286
27	9500	12	308	14500	27	1060	10500	10	284
28	8970	10	291	14000	25	945	10700	11	318
29	8770	10	237	14500	26	1020	10700	11	318
30	9020	11	268	18700	48	2420	12100	12	392
31	8640	11	257	---	---	---	12700	30	1030
TOTAL	301030	---	11188	312530	---	14615	499300	---	96061
JANUARY			FEBRUARY			MARCH			
1	12600	29	987	46500	355	44600	78500	132	28000
2	12500	28	945	50600	434	59300	77700	128	26900
3	12600	26	885	54200	372	54400	76700	136	28200
4	12800	24	829	58300	295	46400	75500	142	28900
5	14300	38	1470	62200	306	51400	74700	138	27800
6	16100	40	1740	63300	248	42400	72100	112	21800
7	18000	30	1460	57700	170	26500	72000	182	35400
8	18700	26	1310	49600	120	16100	80500	136	29600
9	18100	22	1080	42000	100	11300	94900	230	58900
10	16200	22	962	36500	90	8870	96900	204	53400
11	15300	27	1120	33400	86	7760	93200	160	40300
12	14400	20	778	30800	84	6990	91700	138	34200
13	13800	23	857	31700	92	7870	90900	114	28000
14	13700	23	851	45100	140	17000	89800	97	23500
15	14400	24	933	64100	188	32500	85700	98	22700
16	14900	24	966	81500	220	48400	85000	100	23000
17	17100	30	1200	98100	238	63000	81500	92	20200
18	26600	62	2010	108000	352	103000	79700	112	24100
19	34800	332	3100	115000	720	224000	75800	96	19600
20	33900	300	19200	113000	620	189000	73600	112	22300
21	30200	180	14700	103000	458	127000	71900	120	23300
22	29100	74	5810	91300	310	76400	70600	118	22500
23	27500	86	6390	87400	206	48600	69000	112	20900
24	25600	80	5530	83300	186	41800	67700	110	20100
25	23500	60	3810	82100	170	37700	66200	110	19700
26	21200	58	3320	80100	156	33700	63200	114	19500
27	19500	29	1530	79600	160	34400	59600	126	20300
28	17900	33	1590	80600	150	32600	57500	130	20200
29	17600	40	1900	---	---	---	54200	129	18900
30	22100	62	3700	---	---	---	50400	124	16900
31	33900	122	11200	---	---	---	47800	122	15700
TOTAL	618900	---	102163	1929000	---	1492990	2324500	---	814800

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	45700	120	14800	12600	32	1090	13600	32	1180
2	44500	116	13900	11700	23	727	13900	27	1010
3	42700	106	12200	10900	18	530	14000	25	945
4	39800	94	10100	11400	20	616	14000	21	794
5	36800	84	8350	11400	24	739	14000	20	756
6	34900	81	7630	12700	26	892	14000	29	1100
7	33200	80	7170	13200	23	820	13600	26	955
8	32100	79	6850	13500	40	1460	13100	23	814
9	31300	76	6420	13000	53	1860	12800	42	1450
10	30700	74	6130	12300	46	1530	11900	24	771
11	29500	70	5580	11900	43	1380	11600	22	689
12	27900	60	4520	11100	20	599	11200	24	726
13	27100	52	3800	10600	21	601	10100	25	682
14	25300	50	3420	10600	32	916	10000	27	729
15	24100	50	3250	11800	49	1560	10100	25	682
16	23500	50	3170	14700	42	1670	10300	25	695
17	22200	46	2760	15800	44	1880	10100	24	654
18	21400	48	2770	14400	50	1940	10500	22	624
19	21500	49	2840	12700	56	1920	9800	20	529
20	21100	41	2340	12300	57	1890	9600	18	467
21	20300	26	1430	12600	27	919	9400	14	355
22	16400	18	797	12800	26	899	9900	17	454
23	17500	24	1130	13000	30	1050	10000	15	405
24	17300	26	1210	13300	34	1220	11100	32	959
25	16300	20	880	13200	34	1210	11200	30	907
26	15100	26	1060	13200	34	1210	11500	26	807
27	15200	28	1150	13400	35	1270	11800	28	892
28	15000	32	1300	14000	32	1210	12600	30	1020
29	14000	38	1440	14100	31	1180	13800	32	1190
30	12400	28	937	13700	33	1220	15100	36	1470
31	---	---	---	13700	34	1260	---	---	---
TOTAL	774800	---	139334	395600	---	37268	354600	---	24711
JULY			AUGUST			SEPTEMBER			
1	16100	29	1260	16900	36	1640	15300	18	744
2	16400	31	1370	16700	36	1620	15100	16	652
3	16300	27	1190	16500	35	1560	15400	22	915
4	16500	22	980	16500	34	1510	15800	18	768
5	15900	25	1070	16200	33	1440	16200	20	875
6	16000	24	1040	16300	23	1010	16200	26	1140
7	16400	22	974	16300	21	924	16000	22	950
8	16200	19	831	16100	20	869	15000	16	648
9	16100	32	1390	15800	19	811	14500	18	705
10	15900	34	1460	15800	24	1020	14100	22	838
11	15800	36	1540	16100	32	1390	13900	27	1010
12	15900	32	1370	15900	31	1330	14000	32	1210
13	16100	29	1260	15500	31	1300	14800	25	999
14	16700	33	1490	15200	20	821	14700	23	913
15	16200	30	1310	14600	23	907	14700	22	873
16	17200	34	1580	14100	24	914	15500	27	1130
17	16800	30	1360	14000	23	869	16700	34	1530
18	17200	39	1810	13900	20	751	19800	38	2030
19	17200	36	1670	13700	21	777	21300	40	2300
20	17200	30	1390	13800	22	820	22800	43	2650
21	17500	23	1090	13900	23	863	23000	64	3970
22	17900	26	1260	14300	24	927	22700	60	3680
23	18200	38	1870	14600	25	986	22600	38	2320
24	17300	34	1590	14500	23	900	22600	36	2200
25	17400	24	1130	14400	30	1170	22500	36	2190
26	17700	28	1340	14400	35	1360	23000	35	2170
27	17800	32	1540	14400	34	1320	22900	38	2350
28	18100	39	1910	14200	31	1190	21900	45	2660
29	18400	33	1640	14400	29	1130	21400	48	2770
30	17700	36	1720	14600	26	1020	19800	32	1710
31	17200	35	1630	14900	20	805	---	---	---
TOTAL	523300	---	43065	468500	---	33954	544200	---	48900

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 22...	1100	11200	14.0	24	726
DEC 18...	1100	11200	6.0	19	575
MAR 20...	1015	73800	12.5	135	26900
JUN 10...	0930	11900	21.5	20	643
SEP 03...	1045	15400	22.0	22	915

SACRAMENTO RIVER BASIN

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.

GAGE.--Water-stage recorder. Datum of gage is 1,475.44 ft above National Geodetic Vertical Datum of 1929. Prior to July 16, 1955, at site 600 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Apr. 17 to May 7. Records good except for estimated daily discharges, which are fair. No regulation or diversion above station.

AVERAGE DISCHARGE.--40 years, 77.0 ft³/s, 55,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,200 ft³/s, Jan. 26, 1983, gage height, 13.31 ft; maximum gage height, 13.48 ft, Jan. 5, 1985; minimum daily, 0.18 ft³/s, Aug. 15-23, 25, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 2,400 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 14	1445	*7,860	*12.46	Mar. 10	0100	2,700	9.45

Minimum daily, 2.7 ft³/s, Aug. 22.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	5.7	38	12	320	127	71	30	14	6.1	3.6	3.4
2	3.6	5.6	684	12	615	116	68	32	14	5.7	3.6	3.4
3	3.3	5.6	153	11	433	107	65	35	14	5.5	3.7	3.0
4	3.1	5.7	69	36	263	98	63	33	13	5.4	3.6	2.8
5	3.0	5.7	61	70	179	91	61	29	14	5.7	3.5	3.0
6	3.1	5.6	44	51	132	85	62	28	14	5.8	3.4	2.9
7	3.3	5.6	51	35	105	204	64	28	14	5.5	3.3	3.0
8	3.5	5.6	41	27	88	846	58	28	13	5.7	3.2	3.2
9	3.5	6.0	34	23	76	546	55	27	12	5.5	3.2	3.9
10	3.5	13	28	20	67	1260	52	26	11	5.2	3.1	5.1
11	3.6	11	24	18	63	700	50	26	11	5.1	3.1	5.0
12	3.8	8.9	21	17	186	508	48	25	11	5.1	3.3	5.2
13	3.8	7.7	19	16	449	514	47	25	11	4.9	3.2	5.4
14	3.7	7.1	17	29	4170	319	45	24	10	4.6	3.0	5.7
15	3.6	6.9	16	101	3420	638	48	23	11	4.7	3.1	6.1
16	3.7	9.0	15	709	2540	532	47	23	10	4.6	3.3	7.0
17	3.7	7.8	14	345	6020	339	46	22	11	4.9	3.5	11
18	3.6	7.2	13	142	2060	253	44	22	11	4.7	3.5	10
19	3.8	6.9	12	93	1690	205	42	21	11	4.7	3.2	9.8
20	4.5	6.8	12	70	823	175	40	21	10	4.6	3.0	8.8
21	20	6.8	11	57	497	153	39	21	9.3	4.6	2.9	8.3
22	9.2	6.8	11	55	346	138	38	20	8.8	4.5	2.7	8.6
23	8.6	7.3	10	94	276	126	37	20	8.2	4.7	2.8	7.9
24	7.1	73	10	60	231	116	36	19	7.9	4.6	2.9	9.4
25	6.2	52	9.9	51	198	108	35	19	7.2	4.6	3.2	11
26	5.8	22	9.6	45	176	101	34	18	7.1	4.4	3.2	12
27	5.7	15	9.4	41	157	95	33	18	7.3	4.3	3.3	17
28	5.6	44	9.2	38	141	89	32	17	7.2	4.3	3.3	8.7
29	5.7	225	11	298	---	84	30	16	6.8	4.3	3.3	6.9
30	5.7	55	20	314	---	79	29	16	6.7	4.2	3.2	6.5
31	5.7	---	14	595	---	75	---	15	---	3.9	3.2	---
TOTAL	156.9	650.3	1491.1	3485	25721	8827	1419	727	316.5	152.4	100.4	204.0
MEAN	5.06	21.7	48.1	112	919	285	47.3	23.5	10.6	4.92	3.24	6.80
MAX	20	225	684	709	6020	1260	71	35	14	6.1	3.7	17
MIN	3.0	5.6	9.2	11	63	75	29	15	6.7	3.9	2.7	2.8
AC-FT	311	1290	2960	6910	51020	17510	2810	1440	628	302	199	405

CAL YR 1985	TOTAL	9975.2	MEAN	27.3	MAX	1090	MIN	1.6	AC-FT	19790
WTR YR 1986	TOTAL	43250.6	MEAN	118	MAX	6020	MIN	2.7	AC-FT	85790

SACRAMENTO RIVER BASIN

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, in concrete block building at 410 Esplanada Street in Lakeport.

DRAINAGE AREA.--528 mi².

PERIOD OF RECORD.--1874-1900 (incomplete), January 1913 to April 1982, Oct. 12, 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,318.26 ft above National Geodetic Vertical Datum of 1929 (California State Land Commission bench mark). Prior to July 8, 1947, nonrecording gage, and July Mar. 17, 1949, at municipal wharf at foot of Third Street in Lakeport at datum 0.33 ft higher. Mar. 18, 1949, to Sep. 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 "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 from which it is diverted for irrigation (station 11451000).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 11.34 ft, Feb. 21, 1986, 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.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 11.34 ft, Feb. 21; minimum daily, 1.37 ft, Nov. 17, 18, 23.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.68	1.46	1.71	2.22	4.10	10.17	7.77	7.44	6.60	5.21	3.80	2.58
2	1.67	1.45	1.86	2.23	4.35	10.00	7.67	7.43	6.56	5.15	3.76	2.55
3	1.67	1.45	1.97	2.22	4.60	9.82	7.55	7.41	6.51	5.09	3.72	2.52
4	1.66	1.45	2.01	2.27	4.80	9.66	7.43	7.40	6.45	5.02	3.68	2.49
5	1.64	1.44	2.06	2.30	4.92	9.49	7.39	7.36	6.40	4.98	3.63	2.46
6	1.61	1.44	2.07	2.32	5.01	9.32	7.40	7.35	6.35	4.93	3.58	2.42
7	1.59	1.43	2.09	2.33	5.06	9.21	7.43	7.34	6.31	4.89	3.53	2.38
8	1.57	1.38	2.10	2.34	5.10	9.21	7.46	7.35	6.28	4.84	3.49	2.32
9	1.56	1.38	2.14	2.34	5.13	9.24	7.47	7.32	6.25	4.79	3.45	2.28
10	1.54	1.42	2.15	2.34	5.15	9.42	7.49	7.27	6.21	4.73	3.41	2.25
11	1.51	1.43	2.15	2.35	5.17	9.53	7.49	7.27	6.17	4.67	3.37	2.22
12	1.50	1.43	2.15	2.35	5.27	9.65	7.44	7.25	6.12	4.63	3.33	2.17
13	1.50	1.43	2.15	2.35	5.53	9.68	7.48	7.21	6.07	4.58	3.30	2.10
14	1.50	1.42	2.15	2.37	6.17	9.66	7.49	7.17	6.00	4.54	3.25	2.07
15	1.49	1.39	2.15	2.45	7.31	9.72	7.48	7.15	5.94	4.47	3.20	2.04
16	1.48	1.39	2.15	2.62	8.09	9.78	7.50	7.13	5.89	4.40	3.16	2.03
17	1.45	1.37	2.15	2.92	9.28	9.74	7.51	7.10	5.83	4.36	3.11	2.01
18	1.45	1.37	2.15	3.06	10.42	9.67	7.53	7.07	5.76	4.32	3.07	1.99
19	1.45	1.38	2.15	3.13	10.97	9.56	7.54	7.02	5.73	4.28	3.04	1.99
20	1.45	1.38	2.15	3.18	11.26	9.44	7.54	6.97	5.67	4.26	3.01	1.98
21	1.51	1.38	2.16	3.22	11.33	9.30	7.54	6.91	5.64	4.24	2.98	1.96
22	1.51	1.38	2.16	3.25	11.30	9.17	7.53	6.91	5.60	4.19	2.94	1.96
23	1.51	1.37	2.16	3.30	11.19	9.02	7.52	6.87	5.57	4.15	2.90	1.94
24	1.51	1.46	2.17	3.31	11.04	8.87	7.50	6.84	5.52	4.11	2.87	1.91
25	1.51	1.51	2.16	3.35	10.87	8.74	7.49	6.82	5.48	4.07	2.83	1.92
26	1.50	1.51	2.16	3.37	10.70	8.61	7.49	6.79	5.44	4.03	2.80	1.92
27	1.50	1.53	2.16	3.39	10.53	8.48	7.49	6.77	5.38	4.00	2.76	1.92
28	1.49	1.60	2.16	3.40	10.35	8.35	7.47	6.74	5.32	3.97	2.71	1.93
29	1.49	1.66	2.18	3.48	---	8.21	7.47	6.72	5.27	3.93	2.67	1.91
30	1.48	1.68	2.22	3.68	---	8.08	7.47	6.67	5.24	3.88	2.64	1.90
31	1.46	---	2.22	3.88	---	7.95	---	6.64	---	3.85	2.61	---
MAX	1.68	1.68	2.22	3.88	11.33	10.17	7.77	7.44	6.60	5.21	3.80	2.58
MIN	1.45	1.37	1.71	2.22	4.10	7.95	7.39	6.64	5.24	3.85	2.61	1.90

SACRAMENTO RIVER BASIN

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 Copsey 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. Elevation of gage is 1,280.34 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Clear Lake (station 11450150) 500 ft upstream.

AVERAGE DISCHARGE (unadjusted).--42 years, 390 ft³/s, 283,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft³/s, Feb. 24, 1958, gage height, 9.40 ft; no flow Nov. 8-20, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,460 ft³/s, Feb. 19, gage height, 8.66 ft; minimum daily, 0.16 ft³/s, Jan. 12, 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	2.4	.59	.31	1.4	4320	3210	513	561	568	544	346
2	5.2	2.6	.77	.24	1.7	4260	3140	508	561	610	553	345
3	5.1	2.6	.74	.21	1.6	4230	2500	502	551	604	563	344
4	5.2	2.7	.74	.28	1.6	4170	2380	482	554	609	561	343
5	5.4	2.7	.77	.26	1.6	4040	31	469	553	593	550	343
6	5.5	2.6	.74	.25	1.7	3900	30	434	555	586	532	329
7	5.6	2.4	.72	.21	1.7	3910	29	437	576	634	507	314
8	5.1	2.2	.63	.19	1.7	4130	29	434	584	678	469	311
9	3.4	2.2	.61	.18	1.7	4130	29	413	571	709	445	299
10	3.8	1.9	.57	.17	1.8	4540	29	462	584	733	443	282
11	5.5	1.5	.56	.17	1.7	4330	28	485	645	710	446	275
12	4.8	1.4	.54	.16	1.8	4380	26	496	685	713	427	271
13	4.3	1.3	.52	.16	1.8	4380	26	498	701	688	411	255
14	3.2	1.3	.49	.18	673	4320	25	511	702	642	403	246
15	2.7	1.2	.50	.18	1770	4560	24	534	678	604	406	235
16	2.4	1.2	.62	.31	2840	4540	24	567	645	469	391	208
17	2.5	1.1	.49	.36	3690	4420	24	590	647	348	358	160
18	4.9	1.0	.49	.42	3900	4340	76	576	681	347	324	128
19	3.0	.98	.47	.45	4450	4260	142	572	678	345	300	128
20	3.0	.81	.44	.49	4920	4130	141	579	653	330	315	128
21	3.2	.77	.45	.46	4870	4030	107	550	634	299	336	128
22	2.8	.75	.39	.49	4880	4070	20	495	619	288	343	96
23	2.8	.74	.37	.49	4770	3980	14	452	568	298	344	81
24	2.6	.83	.29	.50	4630	3900	14	432	523	291	343	35
25	2.4	.74	.29	.53	4600	3810	13	429	543	297	329	5.4
26	2.3	.76	.30	.54	4460	3680	13	458	576	296	314	5.0
27	2.5	.72	.28	.59	4460	3510	13	496	591	284	306	4.8
28	2.1	.71	.30	.73	4430	3460	13	550	570	407	309	4.6
29	1.9	.73	.37	1.3	---	3430	13	581	551	535	332	32
30	1.9	.62	.30	1.3	---	3360	350	575	532	529	346	47
31	2.0	---	.28	1.5	---	3260	---	570	---	535	346	---
TOTAL	112.3	43.46	15.62	13.61	59364.8	125780	12513	15650	18072	15579	12596	5728.8
MEAN	3.62	1.45	.50	.44	2120	4057	417	505	602	503	406	191
MAX	5.6	2.7	.77	1.5	4920	4560	3210	590	702	733	563	346
MIN	1.9	.62	.28	.16	1.4	3260	13	413	523	284	300	4.6
AC-FT	223	86	31	27	117800	249500	24820	31040	35850	30900	24980	11360
a	0.95	3.49	2.92	5.96	16.55	6.42	0.95	0.32	0	0	0	0.99

CAL YR 1985 TOTAL 39809.88 MEAN 109 MAX 635 MIN .28 AC-FT 78960
WTR YR 1986 TOTAL 265468.59 MEAN 727 MAX 4920 MIN .16 AC-FT 526600

a Precipitation, in inches.

SACRAMENTO RIVER BASIN

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 1,840 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 13, 1980 at datum 2.0 ft higher. Recording rain gage 4.7 mi northeast of gage. Elevation of rain gage is 2,050 ft above NGVD of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Feb. 23 to Mar. 2 and Mar. 19-25. Records good. No regulation or diversion above station.

AVERAGE DISCHARGE.--15 years, 113 ft³/s, 81,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s, Feb. 17, 1986, gage height, 12.84 ft, from rating curve extended above 2,700 ft³/s on basis of slope-area measurement at gage height 11.23 ft; no flow for many days in 1972, 1976-77.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 16	1800	2,250	6.67	Feb. 17	1230	*10,800	*12.84
Feb. 2	0615	1,650	5.94	Mar. 10	0630	1,810	6.85

Minimum daily, 0.14 ft³/s, Sept. 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	2.6	57	15	610	201	130	42	15	5.5	1.0	.26
2	.85	2.6	610	14	1090	180	121	44	14	4.8	1.0	.31
3	.85	2.6	253	14	974	168	114	47	13	4.9	1.0	.39
4	.85	2.6	115	45	690	150	109	44	13	4.3	.99	.32
5	.85	2.6	88	79	469	134	106	38	13	4.1	.72	.27
6	.85	2.6	68	86	332	123	99	38	13	4.1	.72	.14
7	.85	2.6	82	61	252	267	101	39	13	3.8	.72	.29
8	.85	2.6	88	47	201	951	91	37	13	3.8	.72	.36
9	.79	2.7	67	38	164	636	81	35	12	3.8	.72	.47
10	.77	5.6	52	32	139	1340	77	33	11	3.3	.48	1.1
11	.77	5.5	43	29	122	885	75	31	12	3.3	.47	1.4
12	.77	5.0	34	27	372	814	76	30	11	3.2	.47	.92
13	.77	4.3	30	25	819	656	74	30	9.9	2.9	.47	1.1
14	.77	4.0	27	29	3370	460	74	30	9.9	2.9	.47	1.3
15	.77	3.9	25	167	3960	510	70	29	9.2	2.9	.47	1.2
16	.82	4.2	23	1210	3700	611	70	28	9.2	2.9	.49	1.4
17	.85	4.4	22	827	8340	479	70	27	9.5	2.9	.47	3.8
18	.85	4.6	20	364	3530	380	65	25	9.9	2.9	.47	3.7
19	.85	4.5	19	219	2410	312	61	24	9.2	2.5	.47	3.8
20	1.2	4.4	18	151	1330	275	58	23	9.0	2.4	.47	3.3
21	6.9	4.3	17	116	783	245	55	23	8.5	2.1	.47	3.4
22	4.8	4.2	16	103	561	215	55	22	8.3	2.0	.36	3.6
23	4.4	5.0	15	162	410	195	51	22	7.8	1.7	.47	3.3
24	5.3	112	15	121	355	181	51	22	7.2	1.7	.47	3.7
25	3.8	80	14	101	305	172	49	20	6.2	1.6	.47	3.7
26	3.2	27	14	87	273	165	46	20	6.4	1.3	.35	4.1
27	3.0	17	13	77	245	165	44	19	6.4	1.3	.47	6.0
28	2.8	127	13	70	222	169	39	18	6.0	1.3	.58	4.7
29	2.6	377	14	349	---	158	39	18	5.7	1.3	.50	4.1
30	2.6	96	19	568	---	147	42	17	5.7	1.3	.35	4.1
31	2.6	---	17	653	---	140	---	16	---	1.0	.26	---
TOTAL	58.78	923.4	1908	5886	36028	11484	2193	891	297.0	87.8	17.54	66.53
MEAN	1.90	30.8	61.5	190	1287	370	73.1	28.7	9.90	2.83	.57	2.22
MAX	6.9	377	610	1210	8340	1340	130	47	15	5.5	1.0	6.0
MIN	.77	2.6	13	14	122	123	39	16	5.7	1.0	.26	.14
AC-FT	117	1830	3780	11670	71460	22780	4350	1770	589	174	35	132
a	1.92	7.67	4.53	12.69	29.80	9.33	0.70	0.69	0	0	0	0

CAL YR 1985 TOTAL 13317.31 MEAN 36.5 MAX 1390 MIN .20 AC-FT 26410
 WTD YR 1986 TOTAL 5084.05 MEAN 164 MAX 8340 MIN 14 AC-FT 118700

SACRAMENTO RIVER BASIN

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 of 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 September 1986.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Recording rain gage located on top of Indian Valley Dam.

REMARKS.--No estimated daily discharges. Records good below 1,000 ft³/s, and poor above. Flow completely regulated by Indian Valley Dam (capacity 300,000 acre-ft).

EXTREMES OUTSIDE PERIOD OF RECORD--Flood of Jan. 26, 1983 reached a stage of 12.47 ft, present datum, discharge about 9,500 ft³/s.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 5,390 ft³/s, Mar. 12, gage height 9.80 ft; minimum daily, 3.0 ft³/s, Feb. 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	7.7	12	11	9.5	423	9.5	25	21	63	11	21
2	13	11	13	11	9.4	320	11	25	28	26	13	21
3	13	10	13	11	6.6	239	12	24	22	20	12	20
4	15	9.8	13	11	5.6	236	12	24	22	16	15	20
5	18	10	13	11	3.0	232	12	28	21	14	15	20
6	13	11	12	11	11	223	12	26	23	15	19	20
7	8.7	12	12	11	12	174	12	24	23	15	23	20
8	9.0	12	12	11	9.0	24	12	21	23	15	24	22
9	8.7	12	12	11	8.8	997	12	20	22	18	23	22
10	12	12	11	11	8.6	2270	11	21	24	16	22	21
11	9.9	12	11	11	8.6	4970	11	21	19	18	21	22
12	7.5	12	11	11	8.6	4770	12	21	16	16	22	22
13	7.6	10	11	11	8.8	2740	11	20	15	13	21	23
14	8.1	8.0	12	19	16	1120	11	17	15	13	23	23
15	8.6	10	12	24	4.9	1040	11	15	18	13	23	18
16	9.5	13	12	21	7.8	29	11	14	16	171	24	10
17	10	13	12	13	16	1850	11	14	15	232	24	11
18	9.1	13	11	12	686	2330	11	14	15	232	22	12
19	10	13	11	11	1940	688	11	17	15	232	23	12
20	10	13	11	11	3480	200	11	19	15	232	23	12
21	10	13	11	11	4180	221	69	19	15	232	23	13
22	10	13	11	10	3320	227	167	19	15	232	23	14
23	9.8	13	9.6	9.1	1480	228	182	19	97	232	23	14
24	9.4	11	7.9	9.6	536	230	214	22	126	232	21	13
25	9.4	9.2	10	9.8	1170	230	263	23	127	232	20	13
26	9.4	11	12	9.8	634	199	313	24	128	232	21	13
27	9.4	11	11	9.8	418	68	348	23	124	232	21	13
28	9.4	11	13	9.8	444	10	401	22	123	118	22	13
29	9.7	12	12	9.8	---	9.4	478	21	123	14	22	12
30	13	12	12	10	---	9.3	212	21	125	14	22	25
31	9.7	---	11	9.9	---	9.4	---	21	---	13	22	---
TOTAL	322.9	340.7	357.5	362.6	18442.2	26316.1	2873.5	644	1391	3173	643	515
MEAN	10.4	11.4	11.5	11.7	659	849	95.8	20.8	46.4	102	20.7	17.2
MAX	18	13	13	24	4180	4970	478	28	128	232	24	25
MIN	7.5	7.7	7.9	9.1	3.0	9.3	9.5	14	15	13	11	10
AC-FT	640	676	709	719	36580	52200	5700	1280	2760	6290	1280	1020
a	1.15	3.76	2.30	5.18	12.79	5.74	0.62	0.35	0	0	0	1.01

WTR YR 1986 TOTAL 55381.5 MEAN 152 MAX 4970 MIN 3.0 AC-FT 109800

a Precipitation, in inches.

SACRAMENTO RIVER BASIN
11451760 CACHE CREEK ABOVE RUMSEY, CA

LOCATION.--Lat 38°54'47", long 122°16'14", in NW 1/4 SE 1/4 sec. 2, T.12 N., R.4 W., Yolo County, Hydrologic Unit 18020110, on right bank 3.0 miles northwest of Rumsey and 0.4 mile downstream from highway bridge.

DRAINAGE AREA.--955 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to September 1962, June 1965 to September 1973, October 1983 to September 1986 (discontinued). December 1975 to September 1982, published as "at Rumsey."

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 480 ft above National Geodetic Vertical Datum of 1929, from topographic map. December 1975 to September 1982 at site 3.0 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Apr. 5-7 and Sept. 23-30. Records good except periods of estimated record, which are fair. Flow partly regulated by Clear Lake (station 11450000) beginning in 1915. Flow also regulated by Indian Valley Reservoir beginning in June 1974, capacity, 296,000 acre-ft.

AVERAGE DISCHARGE.--19 years (water years 1961-62, 1966-73, 1977-82, 1984-86), 747 ft³/s, 541,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,400 ft³/s, Jan. 24, 1970, gage height, 19.59 ft, from rating curve extended above 14,000 ft³/s on basis of slope-area measurement at gage height 21.42 ft; no flow many days in 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 5, 1965, reached a stage of 21.42 ft from floodmarks, discharge, 59,000 ft³/s by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34,000 ft³/s Feb. 17, gage height, 17.66 ft; minimum daily, 14 ft³/s, Nov. 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	19	66	37	961	5250	3420	658	656	709	597	386
2	25	18	736	35	1270	5110	3350	666	654	692	599	386
3	24	14	326	35	1060	4840	2770	671	653	678	611	386
4	23	17	127	54	752	4750	2940	661	632	671	615	384
5	23	18	84	107	465	4600	926	637	650	665	609	383
6	26	17	66	86	346	4440	351	601	639	642	590	381
7	30	17	58	69	287	4440	338	577	661	681	575	356
8	24	17	54	56	240	4970	324	597	675	736	540	353
9	20	18	49	50	205	5090	287	536	671	760	505	348
10	18	20	43	47	181	9330	269	565	651	808	486	333
11	17	25	39	46	166	10300	254	606	702	798	497	318
12	23	23	37	44	507	8460	236	620	770	778	482	317
13	20	20	35	43	2020	7790	225	612	772	764	463	310
14	16	18	35	44	15400	5970	218	622	787	720	447	289
15	15	17	35	59	10500	7770	212	625	766	675	448	289
16	15	16	35	553	10000	7870	211	656	734	645	450	272
17	15	20	34	1320	25800	6710	213	694	702	618	421	236
18	16	21	33	404	14100	7220	200	692	745	622	386	172
19	17	21	32	242	13300	5710	276	667	757	619	347	165
20	18	21	31	178	12300	4990	306	685	738	616	345	163
21	26	19	31	142	11700	4780	300	670	709	583	367	163
22	29	19	31	123	10300	4730	308	623	688	560	381	177
23	24	19	30	130	7610	4600	341	558	681	563	386	150
24	24	39	30	128	6270	4450	349	538	692	575	386	130
25	21	77	29	107	6550	4260	392	519	704	555	384	120
26	19	48	26	97	6030	3890	436	538	742	571	356	80
27	18	36	29	90	5650	3740	475	573	773	561	355	68
28	17	37	29	86	5520	3600	499	629	752	577	342	62
29	17	110	32	637	---	3490	566	677	735	623	355	54
30	17	125	39	1200	---	3590	710	677	715	586	382	51
31	17	---	41	1030	---	3490	---	671	---	588	386	---
TOTAL	641	906	2302	7279	169490	170230	21702	19321	21206	20239	14093	7282
MEAN	20.7	30.2	74.3	235	6053	5491	723	623	707	653	455	243
MAX	30	125	736	1320	25800	10300	3420	694	787	808	615	386
MIN	15	14	26	35	166	3490	200	519	632	555	342	51
AC-FT	1270	1800	4570	14440	336200	337700	43050	38320	42060	40140	27950	14440
CAL YR 1985 TOTAL	112326			308	MAX 1970	MIN 14	AC-FT 222800					
WTR YR 1986 TOTAL	454691			1246	MAX 25800	MIN 14	AC-FT 901900					

SACRAMENTO RIVER BASIN

11451760 CACHE CREEK ABOVE RUMSEY, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961-70, 1984 to September 1986 (discontinued).

WATER TEMPERATURE: Water years 1961-70, 1984 to September 1986 (discontinued).

SEDIMENT DATA: Water years 1961-63, 1967-70, 1984 to September 1986 (discontinued).

PERIOD OF DAILY RECORD,--

WATER TEMPERATURE: January 1960 to September 1970, December 1975 to September 1976.

SUSPENDED-SEDIMENT DISCHARGE: January 1960 to September 1963, June 1965 to September 1970, December 1975 to September 1976, November 1983 to May 1986 (storm season only), discontinued.

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

EXTREMES FOR PERIOD OF RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean 10,800 mg/L, Feb. 17, 1986; minimum daily mean, 1 mg/L, on many days during most years.

SEDIMENT LOAD: Maximum daily, 774,000 tons, Feb. 17, 1986; minimum daily, 0.01 ton, many days in 1960, 1961, and 1976.

EXTREMES FOR CURRENT YEAR. --

SEDIMENT CONCENTRATION: Maximum daily mean, 10,800 mg/L, Feb. 17; minimum daily mean, 2 mg/L, Nov. 23, Dec. 17, 18, 28, 29.

SEDIMENT LOAD: Maximum daily, 774,000 tons, Feb. 17; minimum daily, 0.10 ton, Nov. 23.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

[illegible]

SACRAMENTO RIVER BASIN

11451760 CACHE CREEK ABOVE RUMSEY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR NOVEMBER 1985 TO MAY 1986

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER				NOVEMBER			DECEMBER		
1				19	6	.31	66	140	25
2				18	7	.34	736	746	2150
3				14	8	.30	326	290	255
4				17	9	.41	127	105	36
5				18	8	.39	84	56	13
6				17	7	.32	66	41	7.3
7				17	8	.37	58	27	4.2
8				17	9	.41	54	18	2.6
9				18	9	.44	49	16	2.1
10				20	9	.49	43	15	1.7
11				25	10	.68	39	13	1.4
12				23	9	.56	37	11	1.1
13				20	8	.43	35	8	.76
14				18	6	.29	35	5	.47
15				17	5	.23	35	3	.28
16				16	5	.22	35	3	.28
17				20	6	.32	34	2	.18
18				21	6	.34	33	2	.18
19				21	7	.40	32	3	.26
20				21	8	.45	31	3	.25
21				19	6	.31	31	4	.33
22				19	4	.21	31	4	.33
23				19	2	.10	30	4	.32
24				39	13	1.4	30	4	.32
25				77	26	5.4	29	3	.23
26				48	32	4.1	26	3	.21
27				36	80	7.8	29	3	.23
28				37	58	5.8	29	2	.16
29				110	115	34	32	2	.17
30				125	240	81	39	3	.32
31				---	---	---	41	6	.66
TOTAL				906	---	147.82	2302	---	2505.34
DAY	JANUARY			FEBRUARY			MARCH		
1	37	7	.70	961	860	2230	5250	415	5880
2	35	10	.95	1270	1110	5140	5110	400	5520
3	35	14	1.3	1060	900	2580	4840	388	5070
4	54	19	2.8	752	380	772	4750	375	4810
5	107	30	8.7	465	180	226	4600	360	4470
6	86	29	6.7	346	90	84	4440	300	3600
7	69	18	3.4	287	60	46	4440	258	3090
8	56	13	2.0	240	46	30	4970	342	4590
9	50	12	1.6	205	43	24	5090	366	5360
10	47	12	1.5	181	42	21	9330	1410	37500
11	46	10	1.2	166	45	20	10300	1570	44300
12	44	9	1.1	507	525	1240	8460	1390	32800
13	43	8	.93	2020	1350	9600	7790	1380	30000
14	44	6	.71	15400	8180	424000	5970	750	12100
15	59	6	.96	10500	6030	189000	7770	955	21300
16	553	831	3070	10000	4710	165000	7870	760	16100
17	1320	1160	4130	25800	10800	774000	6710	665	12000
18	404	260	284	14100	4450	185000	7220	670	13100
19	242	60	39	13300	2790	101000	5710	265	4090
20	178	35	17	12300	1680	55800	4990	220	2960
21	142	25	9.6	11700	1200	37900	4780	230	2970
22	123	15	5.0	10300	970	27000	4730	230	2940
23	130	13	4.6	7610	780	16000	4600	228	2830
24	128	10	3.5	6270	650	11000	4450	225	2700
25	107	8	2.3	6550	550	9730	4260	220	2530
26	97	6	1.6	6030	485	7900	3890	180	1890
27	90	5	1.2	5650	445	6790	3740	145	1460
28	86	4	.93	5520	425	6330	3600	135	1310
29	637	429	2790	---	---	---	3490	125	1180
30	1200	868	4240	---	---	---	3590	120	1160
31	1030	692	3200	---	---	---	3490	110	1040

SACRAMENTO RIVER BASIN

11451760 CACHE CREEK ABOVE RUMSEY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR NOVEMBER 1985 TO MAY 1986

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			
1	3420	100	923	658	82	146
2	3350	90	814	666	53	95
3	2770	57	426	671	44	80
4	2940	17	135	661	42	75
5	926	15	38	637	46	79
6	351	14	13	601	50	81
7	338	10	9.1	577	47	73
8	324	16	14	597	47	76
9	287	15	12	536	48	69
10	269	14	10	565	48	73
11	254	12	8.2	606	48	79
12	236	12	7.6	620	49	82
13	225	12	7.3	612	32	53
14	218	12	7.1	622	26	44
15	212	12	6.9	625	29	49
16	211	12	6.8	656	32	57
17	213	13	7.5	694	29	54
18	200	14	7.6	692	27	50
19	276	12	8.9	667	25	45
20	306	11	9.1	685	25	46
21	300	16	13	670	25	45
22	308	40	33	623	24	40
23	341	59	54	558	23	35
24	349	74	70	538	23	33
25	392	88	93	519	24	34
26	436	97	114	538	25	36
27	475	105	135	573	30	46
28	499	116	156	629	35	59
29	566	127	194	677	37	68
30	710	128	245	677	38	69
31	---	---	---	671	37	67
TOTAL	21702	---	3578.1	19321	---	1938
PERIOD	391230		2355115.54			

SUMMARY OF WATER AND SEDIMENT DISCHARGE, NOVEMBER 1985 TO MAY 1986

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
NOVEMBER 1985	906.00	147.82	0	148
DECEMBER	2302.00	2505.34	18	2520
JANUARY 1986	7279.00	17833.28	336	18200
FEBRUARY	169490.00	2038463.00	83600	2120000
MARCH	170230.00	290650.00	66400	357000
APRIL	21702.00	3578.10	4420	8000
MAY.....	19321.00	1938.00	290	2230
PERIOD.....	391230.00	2355115.54	155064	2508098

SACRAMENTO RIVER BASIN

11451760 CACHE CREEK ABOVE RUMSEY, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
DEC 1985								
02...	1420	1500	9.0	1230	4980	51	64	76
JAN 1986								
30...	1230	875	9.0	516	1220	51	64	77
FEB								
14...	1145	21200	11.0	10400	595000	33	40	47
15...	1245	7360	10.5	3220	64000	30	41	48
18...	1430	11200	12.0	3250	98300	24	34	39
MAR								
10...	1145	9250	10.5	1630	40700	32	40	49

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
DEC 1985							
02...	86	91	93	94	96	99	100
JAN 1986							
30...	88	95	99	100	--	--	--
FEB							
14...	63	76	85	95	99	100	--
15...	61	72	82	92	99	100	--
18...	51	62	73	87	97	100	--
MAR							
10...	62	74	86	95	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT.	BED MAT.	
					SIEVE DIAM.	SIEVE DIAM.	
					% FINER THAN .250 MM	% FINER THAN .500 MM	
OCT 1985							
15...	0915	15.5	3	15	1	5	
APR 1986							
07...	1000	15.0	5	315	---	0	
SEP							
30...	1000	16.0	3	51	---	---	
	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	
DATE	% FINER THAN 1.00 MM	% FINER THAN 2.00 MM	% FINER THAN 4.00 MM	% FINER THAN 8.00 MM	% FINER THAN 16.0 MM	% FINER THAN 32.0 MM	% FINER THAN 64.0 MM
OCT 1985							
15...	11	16	25	40	59	75	100
APR 1986							
07...	1	2	5	11	27	70	100
SEP							
30...	---	0	1	7	29	80	100

SACRAMENTO RIVER BASIN

11451950 CACHE CREEK NEAR BROOKS, CA

LOCATION.--Lat 38°44'15", long 122°07'24", in Canada de Capay Grant, Yolo County, Hydrologic Unit 18020110, on right bank 2.8 mi upstream from diversion dam, 1.1 mi east of Brooks, and 6.4 mi northwest of Esparto.

DRAINAGE AREA.--1,041 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to September 1986 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 265 ft above National Geodetic Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow partially regulated by Clear Lake beginning in 1915 and by Indian Valley Reservoir beginning in 1974. About 3,700 acre-ft diverted annually between stations above Rumsey and near Brooks for irrigation of approximately 900 acres, from data provided by U.S. Soil Conservation Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,800 ft³, Feb. 17, 1986, gage height, 26.99 ft from rating curve extended above 17,000 ft³; minimum daily, 14 ft³, Oct. 18-20, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37,800 ft³, Feb. 17, gage height, 26.99 ft; minimum daily 14 ft³, Oct. 18-20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	16	97	41	1410	5790	3670	733	667	695	578	377
2	26	16	491	38	1330	5590	3600	702	662	702	581	377
3	24	16	532	37	1370	5290	3430	724	663	667	594	377
4	20	16	196	53	1060	5210	2940	699	645	666	596	377
5	19	16	122	85	654	5020	1590	688	659	664	596	372
6	17	16	93	101	490	4820	511	670	652	641	578	370
7	19	16	78	85	394	4830	435	639	665	661	566	350
8	22	15	68	70	331	5520	425	654	678	715	540	338
9	20	16	62	60	286	5400	361	606	678	737	506	335
10	18	18	56	55	254	12700	328	599	656	781	485	319
11	17	21	50	52	232	12400	303	645	684	784	494	302
12	17	22	46	50	440	11400	279	649	750	765	481	301
13	15	22	43	48	2370	10300	258	652	755	762	465	300
14	17	21	41	48	20000	6840	245	659	771	722	444	296
15	16	20	41	53	16300	8890	235	659	761	675	444	292
16	15	20	40	174	12300	11600	228	681	732	640	450	280
17	15	19	38	1480	31600	7730	225	708	699	624	432	252
18	14	18	37	583	20100	8810	209	711	731	619	398	196
19	14	20	36	313	16600	6470	282	685	741	619	358	155
20	14	20	36	226	14400	5310	385	693	727	618	338	151
21	19	21	35	180	13400	5130	385	693	708	588	358	146
22	19	21	35	155	12200	5240	387	660	686	548	371	149
23	22	20	34	146	8750	5150	415	602	679	557	382	132
24	21	34	33	157	6350	5030	426	572	679	571	380	110
25	21	55	33	135	6870	4890	468	546	686	545	376	103
26	20	65	32	122	6680	4710	509	548	719	567	351	74
27	18	46	30	113	6100	4470	558	589	756	557	340	59
28	17	42	31	107	5930	4090	577	628	745	544	326	54
29	16	56	33	231	---	4080	626	675	732	612	333	49
30	16	129	37	1680	---	3930	699	680	712	575	365	47
31	16	---	41	887	---	3840	---	681	---	572	376	---
TOTAL	574	853	2577	7565	208201	200480	24989	20330	21078	19993	13882	7040
MEAN	18.5	28.4	83.1	244	7436	6467	833	656	703	645	448	235
MAX	30	129	532	1680	31600	12700	3670	733	771	784	596	377
MIN	14	15	30	37	232	3840	209	546	645	544	326	47
AC-FT	1140	1690	5110	15010	413000	397700	49570	40320	41810	39660	27530	13960
CAL YR 1985	TOTAL	115117	MEAN	315	MAX	2510	MIN	14	AC-FT	228300		
WTR YR 1986	TOTAL	527562	MEAN	1445	MAX	31600	MIN	14	AC-FT	1046000		

SACRAMENTO RIVER BASIN

11451950 CACHE CREEK NEAR BROOKS, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), NOVEMBER 1985 TO MAY 1986

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER				NOVEMBER				DECEMBER	
1				16	7	.30	97	10	2.6
2				16	7	.30	491	276	665
3				16	6	.26	532	290	417
4				16	6	.26	196	80	42
5				16	6	.26	122	32	11
6				16	7	.30	93	18	4.5
7				16	7	.30	78	10	2.1
8				15	8	.32	68	2	.37
9				16	8	.35	62	2	.33
10				18	7	.34	56	2	.30
11				21	7	.40	50	3	.41
12				22	7	.42	46	3	.37
13				22	7	.42	43	3	.35
14				21	5	.28	41	3	.33
15				20	4	.22	41	3	.33
16				20	5	.27	40	3	.32
17				19	6	.31	38	3	.31
18				18	7	.34	37	3	.30
19				20	8	.43	36	4	.39
20				20	8	.43	36	5	.49
21				21	7	.40	35	5	.47
22				21	7	.40	35	6	.57
23				20	6	.32	34	6	.55
24				34	8	.73	33	6	.53
25				55	30	4.5	33	5	.45
26				65	30	5.3	32	5	.43
27				46	6	.75	30	5	.41
28				42	4	.45	31	4	.33
29				56	12	1.8	33	4	.36
30				129	30	10	37	4	.40
31				---	---	---	41	5	.55
TOTAL				853	---	31.16	2577	---	1153.85
JANUARY				FEBRUARY				MARCH	
1	41	6	.66	1410	635	2420	5790	800	12500
2	38	7	.72	1330	658	2830	5590	750	11300
3	37	8	.80	1370	525	1940	5290	710	10100
4	53	25	3.6	1060	480	1370	5210	670	9420
5	85	45	10	654	200	353	5020	640	8670
6	101	52	14	490	120	159	4820	620	8070
7	85	21	4.8	394	80	85	4830	580	7560
8	70	15	2.8	331	55	49	5520	550	8200
9	60	12	1.9	286	35	27	5400	570	8310
10	55	10	1.5	254	30	21	12700	2130	79600
11	52	8	1.1	232	90	56	12400	1640	56200
12	50	6	.81	440	350	416	11400	1760	59200
13	48	6	.78	2370	1720	13300	10300	1960	54500
14	48	5	.65	20000	5620	399000	6840	1020	18800
15	53	5	.72	16300	5660	258000	8890	1370	32900
16	174	95	157	12300	3450	115000	11600	2100	71600
17	1480	1140	5220	31600	6840	598000	7730	1100	23000
18	583	335	527	20100	5200	282000	8810	1200	28500
19	313	140	118	16600	3730	169000	6470	870	15200
20	226	80	49	14400	4000	156000	5310	630	9030
21	180	70	34	13400	2160	78100	5130	430	5960
22	155	62	26	12200	1900	62600	5240	334	4730
23	146	58	23	8750	1540	36400	5150	312	4340
24	157	50	21	6350	1300	22300	5030	298	4050
25	135	38	14	6870	1260	23400	4890	286	3780
26	122	22	7.2	6680	1030	18600	4710	282	3590
27	113	18	5.5	6100	900	14800	4470	280	3380
28	107	18	5.2	5930	840	13400	4090	280	3090
29	231	120	75	---	---	---	4080	282	3110
30	1680	1450	7840	---	---	---	3930	288	3060
31	887	360	862	---	---	---	3840	292	3030

SACRAMENTO RIVER BASIN

11451950 CACHE CREEK NEAR BROOKS, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), NOVEMBER 1985 TO MAY 1986

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			
1	3670	275	2720	733	80	158
2	3600	240	2330	702	54	102
3	3430	212	1960	724	44	86
4	2940	195	1550	699	38	72
5	1590	114	489	688	34	63
6	511	30	41	670	32	58
7	435	15	18	639	25	43
8	425	10	11	654	25	44
9	361	8	7.8	606	32	52
10	328	6	5.3	599	36	58
11	303	6	4.9	645	37	64
12	279	9	6.8	649	33	58
13	258	12	8.4	652	31	55
14	245	18	12	659	36	64
15	235	19	12	659	50	89
16	228	19	12	681	55	101
17	225	18	11	708	53	101
18	209	17	9.6	711	35	67
19	282	16	12	685	24	44
20	385	15	16	693	25	47
21	385	14	15	693	26	49
22	387	15	16	660	26	46
23	415	16	18	602	24	39
24	426	23	26	572	24	37
25	468	54	68	546	25	37
26	509	63	87	548	25	37
27	558	65	98	589	26	41
28	577	66	103	628	26	44
29	626	70	118	675	27	49
30	699	77	145	680	27	50
31	---	---	---	681	27	50
TOTAL	24989	---	9930.8	20330	---	1905
PERIOD	464995		2872455.55			

SUMMARY OF WATER AND SEDIMENT DISCHARGE, NOVEMBER 1985 TO MAY 1986

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
NOVEMBER 1985	853.00	31.16	0	31
DECEMBER	2577.00	1153.85	5	1160
JANUARY 1986	7565.00	15028.74	53	15100
FEBRUARY	208201.00	2269626.00	22500	2290000
MARCH	200480.00	574780.00	11000	586000
APRIL	24989.00	9930.80	418	10300
MAY.....	20330.00	1905.00	117	2020
PERIOD.....	464995.00	2872455.55	34093	2904611

SACRAMENTO RIVER BASIN

11451950 CACHE CREEK NEAR BROOKS, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, % FINER PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, % FINER PENDEDED (T/DAY)	SED. SUSP. FALL DIAM. THAN .002 MM	SED. SUSP. FALL DIAM. THAN .004 MM	SED. SUSP. FALL DIAM. THAN .008 MM
JAN 1986								
17...	0800	2190	11.0	1760	10400	35	45	56
17...	1300	1500	11.5	1120	4540	50	62	73
30...	1130	1580	10.0	1740	7420	48	60	75
FEB								
13...	0930	4140	9.5	3030	33900	42	46	53
MAR								
10...	1015	17200	11.0	3560	165000	22	30	33
DATE		SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
JAN 1986								
17...	71	81	87	95	100	--	--	
17...	81	89	92	97	100	--	--	
30...	84	90	92	93	96	99	100	
FEB								
13...	67	81	86	92	97	100	--	
MAR								
10...	42	54	66	85	98	100	--	

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT.	BED MAT.	BED MAT.
					SIEVE DIAM.	SIEVE DIAM.	SIEVE DIAM.
					% FINER THAN .125 MM	% FINER THAN .250 MM	% FINER THAN .500 MM
OCT 1985 15...	1415	16.5	3	16	0	1	8
JAN 1986 03...	1100	13.0	4	37	1	2	11
24...	1500	8.0	7	157	0	5	6
APR 10...	1000	19.5	5	328	---	0	1
DATE	BED MAT.	BED MAT.	BED MAT.	BED MAT.	BED MAT.	BED MAT.	BED MAT.
	SIEVE DIAM.	SIEVE DIAM.	SIEVE DIAM.	SIEVE DIAM.	SIEVE DIAM.	SIEVE DIAM.	SIEVE DIAM.
	% FINER THAN 1.00 MM	% FINER THAN 2.00 MM	% FINER THAN 4.00 MM	% FINER THAN 8.00 MM	% FINER THAN 16.0 MM	% FINER THAN 32.0 MM	% FINER THAN 64.0 MM
OCT 1985 15...	14	18	24	33	48	78	100
JAN 1986 03...	23	31	40	53	71	92	100
24...	16	24	37	52	73	88	100
APR 10...	2	3	7	13	31	79	100

SACRAMENTO RIVER BASIN

11451950 CACHE CREEK NEAR BROOKS, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	DIAM. STREAM WIDTH (FT)	SEDI- SEDI- MENT DIS- DIAM. BEDLOAD (TONS/ DAY)	SED. SED. BEDLOAD SIEVE % FINER THAN .062 MM	SED. SED. BEDLOAD SIEVE % FINER THAN .125 MM	SED. SED. BEDLOAD SIEVE % FINER THAN .250 MM
FEB									
27...	1145	14.0	20	6090	150	594	0	1	4
MAR									
03...	1400	12.0	26	5230	142	63	--	0	5
12...	1700	13.0	20	8070	160	671	--	0	1
AUG									
12...	0915	25.0	14	472	45.0	4.0	--	0	2
		SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 32.0 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 64.0 MM
FEB									
27...	18	30	40	54	69	86	100	--	
MAR									
03...	23	29	34	41	51	67	92	100	
12...	13	35	73	75	76	76	91	100	
AUG									
12...	25	72	91	95	98	100	--	--	

SACRAMENTO RIVER BASIN

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 highway bridge, 0.5 mi south of Yolo, and 7.3 mi downstream from Moore Dam.

DRAINAGE AREA.--1,139 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1903 to current year. Records for water year 1903 incomplete, yearly estimate published in WSP 1315-A.

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 National Geodetic Vertical Datum of 1929. 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.--Estimated daily discharges: Feb. 23 to Mar. 26, Apr. 8-23, Aug. 3-12, 25 to Sept. 30. Records good except for periods of estimated daily discharge, which are poor. Some regulation by Clear Lake (station 11450000) beginning in 1915 and Indian Valley Reservoir beginning in 1974, capacity, 296,000 acre-ft. Diversions for irrigation of about 30,000 acres between Capay and Yolo, from data furnished by Clear Lake Water Co.

AVERAGE DISCHARGE.--84 years, 551 ft³/s, 399,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,400 ft³/s, Feb. 25, 1958, gage height, 85.35 ft present datum; maximum stage observed, 88.44 ft present datum, Mar. 10, 1904; no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,100 ft³/s, Feb. 17, gage height, 80.36 ft; minimum daily, 9.1 ft³/s, Oct. 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	16	56	34	1420	6100	3520	161	89	44	30	22
2	11	17	93	34	855	5900	3460	144	92	30	29	24
3	11	17	718	31	1510	5700	3340	148	84	33	30	25
4	9.1	14	298	67	1150	5500	1970	143	85	27	34	25
5	11	15	148	119	671	5200	1620	124	72	25	37	24
6	12	14	101	81	484	5100	707	110	65	31	38	24
7	11	15	85	81	388	5000	520	121	59	29	38	24
8	11	14	67	70	324	5500	360	121	63	29	37	24
9	12	16	56	59	269	6200	220	135	70	24	36	24
10	12	17	50	51	227	10500	150	103	70	24	35	23
11	13	20	44	47	200	12000	110	90	64	28	34	23
12	14	20	40	44	214	10500	94	104	56	37	33	22
13	11	17	36	41	1820	9000	86	103	58	36	35	23
14	12	16	34	40	8230	8200	80	87	74	36	33	22
15	14	16	32	42	17000	9000	76	78	82	39	33	23
16	14	17	30	47	10600	8800	74	69	87	36	32	23
17	14	16	29	929	20000	7600	74	66	67	34	31	22
18	13	15	28	769	21100	8770	73	62	69	36	31	22
19	13	15	29	385	15300	7110	72	83	64	32	33	22
20	13	15	28	246	13200	5770	95	88	70	34	30	22
21	16	16	28	181	12400	5370	105	95	60	40	25	23
22	15	16	27	148	12000	5210	105	97	61	42	23	25
23	15	17	26	131	9500	5110	110	88	66	35	22	28
24	15	30	25	124	7000	4840	126	86	68	39	23	27
25	15	30	26	125	7500	4700	111	75	46	36	24	32
26	15	19	25	110	7000	4450	104	62	36	28	25	35
27	16	17	24	101	6800	4300	104	56	38	32	25	40
28	14	20	23	95	6500	3920	104	59	48	34	24	38
29	14	22	27	112	---	3900	118	62	46	33	23	37
30	15	20	42	1390	---	3760	107	66	49	30	22	35
31	16	---	35	802	---	3680	---	71	---	30	22	---
TOTAL	410.1	529	2310	6536	183662	196690	17795	2957	1958	1023	927	783
MEAN	13.2	17.6	74.5	211	6559	6345	593	95.4	65.3	33.0	29.9	26.1
MAX	16	30	718	1390	21100	12000	3520	161	92	44	38	40
MIN	9.1	14	23	31	200	3680	72	56	36	24	22	22
AC-FT	813	1050	4580	12960	364300	390100	35300	5870	3880	2030	1840	1550
CAL YR 1985 TOTAL	21260.3		MEAN	58	MAX	2070	MIN	7.7	AC-FT	42170		
WTR YR 1986 TOTAL	415580.1		MEAN	1139	MAX	21100	MIN	9.1	AC-FT	824300		

SACRAMENTO RIVER BASIN

11452500 CACHE CREEK AT YOLO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959-65, November 1966 to February 1967, October 1985 to September 1986 (discontinued).

WATER TEMPERATURE: Water years 1959-65, November 1966 to February 1967.

SEDIMENT DATA: Water years 1959-65, November 1966 to February 1967, October 1985 to September 1986 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Water years 1959-65, November 1966 to February 1967.

EXTREMES FOR PERIOD OF DAILY RECORDS.--

SEDIMENT CONCENTRATION: Maximum daily mean, 7,520 mg/L, Jan. 6, 1965; minimum daily mean, no flow on many days each year.

SEDIMENT LOAD: Maximum daily, 593,000 tons, Jan. 6, 1965; minimum daily, 0 ton on many days each year.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-	TEMPER-	SEDI-	SEDI-	SED.	SED.	SED.
		FLOW, INSTAN- TANEOUS (CFS)	ATURE WATER (DEG C)	MENT, SUS- PENDE (MG/L)	MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SUSP. FALL DIAM. % FINER THAN .002 MM	SUSP. FALL DIAM. % FINER THAN .004 MM	SUSP. FALL DIAM. % FINER THAN .008 MM
JAN 1986								
17...	1445	929	12.0	1370	3440	37	49	59
17...	1615	959	12.0	1540	3990	48	60	73
30...	1130	1390	10.0	2030	7620	36	48	60
FEB								
13...	1600	1820	10.5	2260	11100	39	51	68
18...	1100	21100	11.0	3190	182000	43	54	68
MAR								
17...	1330	7600	13.0	1370	28100	24	26	31
DATE		SED.	SED.	SED.	SED.	SED.	SED.	SED.
		SUSP. FALL DIAM. % FINER THAN .016 MM	SUSP. FALL DIAM. % FINER THAN .031 MM	SUSP. SIEVE DIAM. % FINER THAN .062 MM	SUSP. SIEVE DIAM. % FINER THAN .125 MM	SUSP. SIEVE DIAM. % FINER THAN .250 MM	SUSP. SIEVE DIAM. % FINER THAN .500 MM	SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
JAN 1986								
17...	78	87	96	98	99	100	--	--
17...	85	91	93	97	99	99	99	100
30...	78	87	94	98	99	100	--	--
FEB								
13...	83	92	96	98	99	100	--	--
18...	83	94	98	100	--	--	--	--
MAR								
17...	40	49	63	86	97	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
OCT 1985								
17...	0930	18.0	2	14	--	0	1	4
JAN 1986								
02...	1300	12.5	3	34	--	--	--	--
14...	1000	11.0	2	40	0	1	4	10
SEP								
30...	1400	19.5	2	35	--	--	--	0
DATE	TIME	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
OCT 1985								
17...		10	20	32	45	64	83	100
JAN 1986								
02...		0	1	4	22	50	100	--
14...		13	17	28	43	62	83	100

SACRAMENTO RIVER BASIN

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 September 1977, October 1977 to current year (high flows only). Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 3.41 ft below National Geodetic Vertical Datum of 1929. 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.--Estimated daily discharge: Feb. 3. Records fair. Flow is from Cache Creek and Knights Landing₃ Ridge Cut plus floodwater passing over Fremont weir. Beginning October 1977, only flows above 1,000 ft³/s are computed.

AVERAGE DISCHARGE.--38 years (water years 1939-77), 3,765 ft³/s, 2,728,000 acre-ft/yr.

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, 374,000 ft³/s, Feb. 20, gage height, 34.87 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	---	3330	92700	4140					
2			---	---	3710	77000	3960					
3			---	---	4000	60300	3770					
4			1540	---	4220	49100	3400					
5			2230	---	4130	39600	3200					
6			1090	---	3940	29100	1980					
7			---	---	3760	22300	1290					
8			---	---	3660	23100	---					
9			---	---	3410	64400	---					
10			---	---	2890	101000	---					
11			---	---	1560	129000	---					
12			---	---	---	132000	---					
13			---	---	---	129000	---					
14			---	---	4100	112000	---					
15			---	---	18700	100000	---					
16			---	---	49100	99800	---					
17			---	---	112000	80800	---					
18			---	---	229000	67400	---					
19			---	---	279000	54100	---					
20			---	1070	367000	39600	---					
21			---	---	308000	29100	---					
22			---	---	250000	23000	---					
23			---	---	200000	17700	---					
24			---	---	165000	12800	---					
25			---	---	143000	8530	---					
26			---	---	128000	6730	---					
27			---	---	108000	6050	---					
28			---	---	99500	5490	---					
29			---	---	---	4940	---					
30			---	---	---	4580	---					
31			---	2050	---	4310	---					
TOTAL			---	---	---	1625530	---					
MEAN			---	---	---	52440	---					
MAX			---	---	---	132000	---					
MIN			---	---	---	4310	---					
AC-FT			---	---	---	3224000	---					

SACRAMENTO RIVER BASIN

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, 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 National Geodetic Vertical Datum of 1929 (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 diversion canal for irrigation of about 46,000 acres in the lower Sacramento Valley. Total diverted during current year provided by U.S. Bureau of Reclamation was 203,743 acre-ft. Releases for irrigation began in May 1959. Records, including extremes, show total contents at 2400 hours.

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, 738,600 acre-ft, Nov. 20, 1977, elevation, 388.04 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,662,500 acre-ft, Mar. 16, elevation, 443.10 ft; minimum, 1,181,800 acre-ft, Nov. 22, elevation, 416.84 ft.

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

380	632,400
390	765,700
400	911,200
410	1,068,100
420	1,236,000
430	1,414,200
450	1,799,900

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1207200	1187700	1188800	1194900	1249500	1627100	1612900	1591900	1555300	1508700	1458400	1410900
2	1206000	1187200	1194700	1194700	1258200	1625100	1611400	1591100	1553800	1507200	1456800	1409800
3	1206000	1186700	1196400	1195400	1266100	1623200	1610400	1590200	1551900	1505500	1455100	1408500
4	1204100	1186400	1196800	1195600	1269200	1621200	1609400	1589400	1550500	1503800	1453600	1407200
5	1203300	1186000	1196900	1199300	1271700	1619300	1608700	1588600	1549000	1501800	1452100	1405900
6	1202400	1185700	1197300	1200700	1272900	1617800	1607900	1587800	1547700	1499900	1450500	1404700
7	1201500	1185300	1197600	1201400	1274000	1617900	1607500	1587100	1546200	1498400	1448800	1403200
8	1200500	1185000	1197800	1201000	1274700	1628400	1606700	1586300	1544800	1496900	1447100	1401700
9	1199300	1185700	1197600	1200900	1275400	1630900	1606100	1585300	1543700	1495200	1445500	1400300
10	1198500	1185700	1197500	1200900	1276100	1650000	1605400	1584400	1542400	1493700	1443800	1399000
11	1197600	1185300	1197100	1200900	1276800	1652200	1604600	1583400	1540900	1492200	1442100	1397900
12	1196800	1185000	1196800	1201000	1285700	1652200	1603400	1582700	1539300	1490700	1440500	1396800
13	1195900	1184500	1196600	1201000	1298400	1651000	1602100	1581700	1537800	1489000	1439000	1395500
14	1195100	1184000	1196400	1201200	1375200	1647100	1601100	1580700	1536300	1487500	1437500	1394300
15	1194200	1183500	1196300	1201500	1418400	1658400	1600400	1579600	1534800	1485800	1436100	1393200
16	1193500	1183500	1196100	1211500	1462500	1662500	1600000	1578400	1533300	1484100	1434600	1392300
17	1192800	1183300	1195900	1217800	1580200	1658600	1599600	1577300	1531800	1482500	1433100	1391200
18	1192200	1183100	1195700	1219700	1628800	1653700	1599200	1576300	1530000	1480800	1431800	1390100
19	1191500	1182800	1195600	1220400	1656100	1648100	1599000	1575200	1528500	1479100	1430500	1389300
20	1191000	1182500	1195600	1221100	1662100	1643200	1598800	1573800	1527000	1477400	1429100	1388600
21	1191300	1182000	1195400	1221600	1660800	1638700	1598600	1572100	1525500	1475900	1427400	1387900
22	1191300	1181800	1195100	1222000	1656700	1634400	1597900	1570600	1524000	1474200	1425700	1387200
23	1190800	1182000	1194700	1222500	1652200	1630000	1597300	1569100	1522500	1472600	1424100	1386400
24	1190500	1183800	1194400	1223000	1647300	1626500	1596700	1567500	1520800	1471100	1422400	1385700
25	1190000	1184000	1194200	1223200	1642600	1624000	1596100	1566000	1519100	1469400	1420800	1385200
26	1189800	1184300	1193900	1223400	1637700	1622000	1595500	1564500	1517200	1467700	1419500	1384800
27	1189400	1184200	1193900	1223700	1633500	1620700	1594600	1562900	1515300	1466200	1418000	1383900
28	1189100	1184300	1193700	1223900	1629600	1619100	1593800	1561400	1513400	1464800	1416400	1383400
29	1188800	1185900	1194700	1230600	---	1617400	1593200	1559900	1511700	1463300	1414900	1382800
30	1188400	1186400	1195100	1236100	---	1615800	1592700	1558400	1510200	1461600	1413400	1382100
31	1188100	---	1195100	1243900	---	1614700	---	1556800	---	1460100	1412200	---
MAX	1207200	1187700	1197800	1243900	1662100	1662500	1612900	1591900	1555300	1508700	1458400	1410900
MIN	1188100	1181800	1188800	1194700	1249500	1614700	1592700	1556800	1510200	1460100	1412200	1382100
a	417.21	417.11	417.62	420.46	441.41	440.64	439.50	437.63	435.17	432.49	429.89	428.24
b	-154500	-1700	+8700	+48800	+385700	-14900	-22000	-35900	-46600	-50100	-47900	-30100
c	4367	1500	641	787	1035	3305	5425	8987	10415	10741	9539	5320

CAL YR 1985 b -181400

WTR YR 1986 b +174000

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

SACRAMENTO RIVER BASIN

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.

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 National Geodetic Vertical Datum of 1929 (river-profile survey). June 28, 1930, to Feb. 29, 1940, at datum about 1 ft higher.

REMARKS.--Estimated daily discharges: Mar. 9, 10 and Apr. 20-23. Records good. Flow completely regulated by Lake Berryessa (station 11453900) beginning January 1957.

AVERAGE DISCHARGE.--26 years (water year 1931-56) prior to storage, 477 ft³/s, 345,600 acre-ft/yr; 30 years (water years 1957-86) 623 ft³/s, 451,400 acre-ft/yr, adjusted for change in contents and evaporation from Lake Berryessa; unadjusted flow for same period was 455 ft³/s, 329,600 acre-ft/yr.

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. Maximum discharge since completion of Monticello Dam in 1957, 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,700 ft³/s, Mar. 16, gage height, 15.00 ft; minimum daily, 76 ft³/s, Jan. 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	336	168	93	107	106	2420	1250	515	668	634	659	512		
2	337	121	78	107	94	2060	1100	515	642	662	649	495		
3	336	83	77	107	89	1910	1050	545	627	660	656	495		
4	340	84	77	114	84	1780	999	487	627	677	666	513		
5	344	125	77	112	79	1660	968	449	607	664	643	541		
6	344	149	77	109	77	1560	938	457	572	600	633	501		
7	317	110	94	108	90	1490	926	472	570	607	662	462		
8	302	110	110	107	105	1950	908	482	563	622	677	476		
9	288	110	110	107	104	2400	871	481	553	647	651	476		
10	280	111	114	107	103	3800	849	519	584	659	639	462		
11	311	111	117	107	102	5160	824	523	648	638	653	444		
12	330	96	117	107	107	5330	810	502	639	642	633	410		
13	296	92	119	107	134	5190	782	519	637	618	615	400		
14	278	109	118	107	480	4910	778	531	637	637	582	409		
15	278	109	112	163	445	5130	660	567	637	632	562	409		
16	278	108	106	159	340	6480	500	593	638	642	562	409		
17	278	108	106	91	990	6210	445	627	638	672	540	398		
18	278	108	157	76	1710	5530	384	653	637	679	538	366		
19	278	109	164	126	4990	5050	359	672	609	679	577	377		
20	269	109	108	167	6430	4570	324	701	661	654	595	344		
21	218	109	108	164	6450	4110	385	748	674	643	606	302		
22	178	109	107	165	6020	3690	441	738	665	655	596	302		
23	159	109	107	106	5420	3380	420	719	698	624	596	302		
24	155	112	107	106	4940	3070	447	685	714	616	570	211		
25	155	109	107	106	4460	2390	468	671	741	643	592	162		
26	119	109	107	106	4020	1850	431	696	777	623	628	251		
27	90	110	107	106	3630	1740	421	710	739	574	592	287		
28	99	110	107	106	3090	1640	443	738	728	557	569	277		
29	104	110	107	102	---	1560	513	748	673	585	569	247		
30	100	110	108	99	---	1460	517	740	634	638	551	216		
31	143	---	107	131	---	1380	---	702	---	666	537	---		
TOTAL	7618	3327	3310	3592	54689	100860	20211	18705	19437	19749	18798	11456		
MEAN	246	111	107	116	1953	3254	674	603	648	637	606	382		
MAX	344	168	164	167	6450	6480	1250	748	777	679	677	541		
MIN	90	83	77	76	77	1380	324	449	553	557	537	162		
AC-FT	15110	6600	6570	7120	108500	200100	40090	37100	38550	39170	37290	22720		
CAL YR 1985	TOTAL	129245	MEAN	354	MAX	839	MIN	13	AC-FT	256400	MEAN a	199	AC-FT a	144000
WTR YR 1986	TOTAL	281752	MEAN	772	MAX	6480	MIN	76	AC-FT	558900	MEAN a	1098	AC-FT a	795000

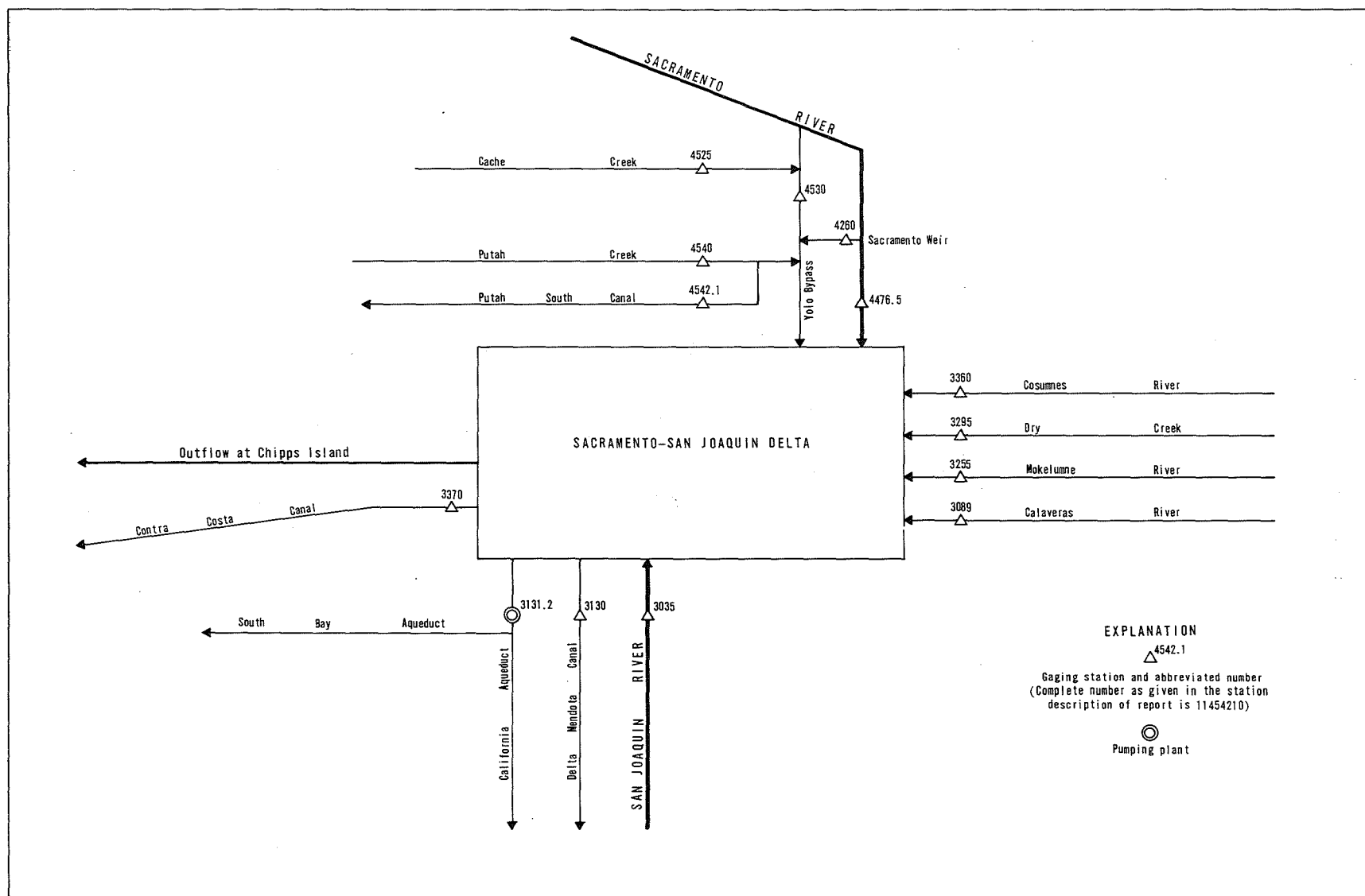


FIGURE 33. — Schematic diagram showing principal inflows and diversions, Sacramento-San Joaquin Delta.

SACRAMENTO-SAN JOAQUIN DELTA, INFLOWS AND DIVERSIONS

LOCATION.--See schematic diagram of inflows and diversions, Sacramento-San Joaquin Delta.

PERIOD OF RECORD.--October 1971 to current year. Data for periods prior to October 1971, can be obtained from published records for stations tabulated below.

COOPERATION.--Records for Delta-Mendota, Contra Costa, and Putah South Canals provided by U.S. Bureau of Reclamation, California Aqueduct and Sacramento Weir spill by California Department of Water Resources.

SUMMARY OF PRINCIPAL INFLOWS AND DIVERSIONS IN THE
SACRAMENTO-SAN JOAQUIN DELTA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

Inflows, in thousands of acre-feet												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Month Apr.	May	June	July	Aug.	Sept.	Water year
11303500 SAN JOAQUIN RIVER NEAR VERNALIS												
127.4	114.8	135.6	126.6	485.6	1539	1166	538.9	370.9	177.9	195.7	248.8	5227
11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM												
5.44	2.55	2.46	2.47	107.4	72.68	4.91	11.93	14.93	15.41	15.47	8.94	264.6
11325500 MOKELUMNE RIVER AT WOODBRIDGE												
6.88	8.86	10.17	11.07	120.2	289.7	147.3	87.69	48.28	21.88	25.32	31.14	808.5
11329500 DRY CREEK NEAR GALT												
0	1.3	5.58	12.01	152.6	72.26	8.65	2.92	1.51	.30	.12	.05	257.3
11335000 COSUMNES RIVER AT MICHIGAN BAR												
1.74	7.13	18.31	41.88	367.1	177.6	48.99	26.10	8.71	3.26	1.56	2.16	704.5
11426000 SACRAMENTO WEIR SPILL												
0	0	0	0	1329	173.8	0	0	0	0	0	0	1503
11447650 SACRAMENTO RIVER AT FREEPORT												
597.1	619.9	990.4	1228	3826	4611	1537	784.7	703.3	1038	929.3	1079	17944
11453000 YOLO BYPASS NEAR WOODLAND ¹												
0	0	9.64	6.19	4957	3224	43.12	0	0	0	0	0	8240
11454000 PUTAH CREEK NEAR WINTERS												
15.11	6.60	6.57	7.12	108.5	200.1	40.09	37.10	38.55	39.17	37.29	22.72	558.5
TOTAL												
753.7	761.1	1179	1433	11453	10360	2996	1489	1186	1296	1205	1393	35505
Diversion, in thousands of acre-feet												
Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Water year
11313000 DELTA-MENDOTA CANAL												
241.2	221.3	238.0	240.1	218.8	149.7	165.9	184.3	178.0	273.7	269.6	238.6	2619
11313120 CALIFORNIA AQUEDUCT (DELTA PUMPING PLANT)												
219.7	206.5	363.2	306.5	112.2	44.64	119.7	184.4	178.5	239.8	330.6	374.8	2681
11337000 CONTRA COSTA CANAL												
11.35	7.56	6.58	8.91	4.02	3.57	4.98	11.09	13.22	14.11	13.76	11.56	110.7
11454210 PUTAH SOUTH CANAL												
13.05	4.08	4.05	4.55	5.54	7.52	14.20	32.09	32.86	33.42	32.48	19.92	203.8
TOTAL												
485.3	439.4	611.8	560.1	340.6	205.4	304.8	411.9	402.6	561.0	646.4	644.9	5614

¹Flow not computed below 1,000 ft³/s

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

SACRAMENTO RIVER BASIN

384212122024800 CACHE CREEK AT CAPAY, CA

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- DIAM. SUS- PENDE (T/DAY)	SED. SUSP. FALL % FINER THAN .002 MM	SED. SUSP. FALL % FINER THAN .004 MM	SED. SUSP. FALL % FINER THAN .008 MM
JAN								
17...	1000	1970	11.5	1770	9410	40	51	61
17...	1415	1260	11.5	1130	3840	59	66	73
30...	1030	1890	9.5	2000	10200	51	61	75
FEB								
18...	1530	20400	12.0	3740	206000	30	42	50
21...	1400	13200	11.0	1740	62000	23	29	40
27...	0935	6000	14.0	903	14600	24	28	33
MAR								
10...	0930	12300	10.5	4040	134000	29	38	43

DATE	TIME	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM
JAN								
17...	76	84	88	95	99	100	--	--
17...	88	93	96	98	100	--	--	--
30...	90	94	97	98	100	--	--	--
FEB								
18...	64	79	90	99	100	--	--	--
21...	52	66	78	95	100	--	--	--
27...	41	52	63	76	92	99	99	100
MAR								
10...	57	74	86	98	100	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	TEMPER- ATURE WATER (DEG C)	NUMBER OF SAM- PLING POINTS	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
OCT								
16...	0900	23.0	5	14	--	0	1	2
JAN								
16...	1300	11.0	3	174	--	0	1	1
31...	1000	9.5	4	887	--	0	1	2
FEB								
05...	1400	10.5	4	654	0	1	2	4
SEP								
30...	1230	21.5	3	35	--	--	--	--
DATE	TIME	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
OCT								
16...	3	5	7	15	51	95	100	
JAN								
16...	2	3	5	10	35	81	100	
31...	4	7	15	25	41	54	100	
FEB								
05...	4	4	6	24	50	88	100	

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CALENDAR FOR WATER YEAR 1986

1985

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